IBM StoredIQ Data Workbench

User Guide

IBM

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

Contents

Tables

About this publication

IBM® StoredIQ® Data Workbench User Guide describes how to use the data management tool to learn about the data in your system and manage it to achieve your business goal.

IBM StoredIQ product library

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

- *IBM StoredIQ Overview Guide*
- *IBM StoredIQ Deployment and Configuration Guide*
- *IBM StoredIQ Data Server Administration Guide*
- *IBM StoredIQ Administrator Administration Guide*
- *IBM StoredIQ Data Workbench User Guide*
- *IBM StoredIQ Cognitive Data Assessment User Guide*
- *IBM StoredIQ Insights User Guide*
- *IBM StoredIQ Integration Guide*

The most current version of the product documentation can always be found online: https://www.ibm.com/support/knowledgecenter/en/SSSHEC_7.6.0/welcome/storediq.html

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:

- 1-866-227-2068

Or, see the Contact IBM web site at http://www.ibm.com/contact/us/.

IBM Knowledge Center

The IBM StoredIQ documentation is available in IBM Knowledge Center.

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/.

What can a data expert do with IBM StoredIQ Data Workbench

IBM StoredIQ Data Workbench is a data visualization and management tool that helps you actively manage your company's data.

IBM StoredIQ Data Workbench helps you find out how much data you have, where it is, who owns it, and when it was last used. When you have a clear understanding of your company's data landscape, IBM StoredIQ Data Workbench helps you take control of it and make informed decisions about your data and act on that knowledge.

Big data is a pervasive problem for the business. IBM StoredIQ Data Workbench is developed to help you learn about your data, make educated decisions about that data, and turn a dangerous risk into a valuable asset.

IBM StoredIQ Data Workbench can be used in the following ways:

- Find specific data and collect it in infosets for assessing and acting on it:
  - Identify unused data that stays in the system for a long time.
  - Search for a specific format of files on the network for a defined time period. For example, search image files that were created in 2007, and see how much space these files take on the network.
  - Identify if and where a data source contains forbidden information such as credit card numbers, Social Security numbers, or other sensitive information.
- Get a visual overview of the data, for example, of the number of objects and a breakdown of files per data source.
- Act on the data, for example, perform cleanup activities.
- Make selected data available for unified governance and enterprise-wide search in IBM Information Server.

Data cleanup scenario

Assess your data to find relevant sets of data that can be deleted from the data source. Use filters to identify content that no longer has business value. After the data is identified and collected in an infoset, you can apply a Delete action to the infoset and thus the data objects it contains. However, you might not want to remove the content immediately. Instead, you might decide to distribute detailed reports about the content eligible for depletion to lines of business, retaining the content for a certain period of time to wait for feedback. In this case, you can keep the content in place for the selected period of time, checking the modified date before actually deleting the content. Alternatively, you can move the respective data to a staging or quarantine area until it can be deleted.

Getting started with IBM StoredIQ Data Workbench

Before you can use IBM StoredIQ Data Workbench, the administrator must set up the IBM StoredIQ environment.

The administrator must ensure that these tasks are completed before you can use IBM StoredIQ Data Workbench:

- Install and configure IBM StoredIQ.
- Ensure that the data servers are up and running.
- Add volumes and create indexes through IBM StoredIQ Administrator or IBM StoredIQ Data Server.
- Harvest volumes and generate system infosets.
- Create and define actions for the user to manage data objects that are contained within infosets.

To log in to the IBM StoredIQ Data Workbench user interface, follow these steps:

1. Open the IBM StoredIQ user interface from a browser.
   Ask your system administrator for the URL.
2. In the login window, enter your user name or email address and your password.
   The login window also provides an option to reset your password.
3. If you have access to several IBM StoredIQ applications, click the down triangle arrow to open the list of the available applications.
4. Select to open IBM StoredIQ Data Workbench.

Infoset management

Infoset Dashboard presents all infosets to which you have access.

You can sort these infosets by column: **Name**, **Total objects**, **Infoset size**, **Composition**, **Created**, **Type**, **Publish to catalog**, and **Description**. The infosets are then sorted alphabetically or numerically, depending on the column you select. The up and down arrows let you change between an ascending and a descending sort order. To quickly find a specific infoset, you can enter its name in the search field.

Tip: The **Publish to catalog** column is available only if your system is configured for synchronization with the governance catalog.

Creating an infoset

Infosets can be created to include the data map and its function, or they can exclude data maps, resulting in a faster creation time. Additionally, you can interrupt infosets during their creation.

Infosets are created from other existing infosets.

To create an infoset, follow these steps:

1. On the Infoset Dashboard, select the infoset from which you want to create a new infoset and click **Select**.

   The infoset can be either a system or user infoset.

   The Details page of the selected infoset opens.

2. On the side navigation bar, click **Create** to see the list of available filters.

   If you hadn't worked with filters before, you must create a custom filter. See Building a filter.

3. Select a filter and click **Create Infoset**.

   The **Create New Infoset** dialog box appears.

4. Enter a name and a description for this infoset.

   When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.

5. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.

   - To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

     Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.

6. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.

7. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.

8. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

   You can select overlays only if you select to generate the data map.

9. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

Interrupting infoset creation

Infoset creation can sometimes exceed the time that you have available. Infoset interruption makes it possible for you to opt out of the creation process.

Infoset creation contains different forms. In some instances, you might want to interrupt the infoset's creation, preserve what was found, and then log the unfinished work as an exception. In other instances, you might want to halt infoset creation and then delete that infoset altogether and any artifacts from the creation process.

- After an interrupted and partially created infoset was moved from **Created** > **Interrupted** > **Completed**, you can use that infoset. However, you must keep in mind that the completion state depends on when the infoset is stopped.

- When you are deleting an infoset partway through its creation, click **Delete**. When an infoset is deleted, it is no longer available within the user interface.

- If an infoset is processing, a **Stop Processing** link is available within the dashboard. During this processing state, this link can be used to interrupt its creation and access the Stop Processing confirmation window.

To stop infoset creation, follow these steps:

1. During infoset creation, in the Create New Infoset dialog box, click **Save and View** or **Save**.

   Note: In the **Total objects** and **Infoset size** columns, the infoset is listed as **Pending**.

2. To stop or interrupt infoset creation, click **Stop Processing**.

3. Click **OK** to verify your action.

   The infoset's creation is now changed to **Interrupting**. It then moves to a **Completed** state.

   Note: If you opt to use this interrupted infoset, it is only a partial infoset as its creation was interrupted.

Editing an infoset

When you are editing an existing infoset, you can modify the infoset's name and description, and you can change the setting for the synchronization with the governance catalog.

1. Select a user infoset from the **Dashboard** and click **Select** to open the **Details** page of the infoset.

2. Click **Edit**, which is in the upper right corner of the infoset window.

   Note: Because system infosets cannot be edited, this **Edit** link is disabled if a system infoset is selected within the infoset window.

3. Click within either the **Name** or **Description** text boxes to edit the infoset.

4. If your system is enabled for synchronization with the governance catalog, review the setting of the synchronization option and change it as required.

   If the **Publish to catalog** checkbox is selected, the infoset is included in the synchronization. If you no longer want the infoset to be synchronized, clear the checkbox.

   If the checkbox is not selected, the infoset either wasn't yet published to the governance catalog at all or was synchronized automatically. An infoset is automatically synchronized if it serves as direct input to one or more objects that are selected for publishing and is therefore required for proper object modeling in the governance catalog. To include the infoset in the set of fully synchronized objects, select the checkbox.

Changes to this setting are reflected in the governance catalog after the next synchronization run: the respective asset was either removed from or added to the governance catalog.

5. Click **Save**.

Deleting an infoset

Infosets can be deleted in both the **Complete** and **Pending** states.

An infoset cannot be deleted under these circumstances:

- If an infoset was created with another infoset as its source, the child infoset must be deleted before you delete the parent infoset.
- If an action was run or is running against the infoset, the infoset cannot be deleted.

1. On the Infoset Dashboard, select an infoset that you want to delete. Click **Delete**.
2. Click **OK** to confirm your delete action.

Deleting an infoset permanently removes its history. If the infoset was marked for synchronization with the governance catalog, the respective information asset is also deleted from the catalog with the next synchronization.

View of the infoset details

To view detailed information about an infoset, select an infoset from the **Infoset Dashboard** and click **Select**.

Details expands the side navigation bar to show **Ancestry**, **Action Log**, and **Data Objects**.

When the **Details** page opens, **Ancestry** is highlighted and displays the history and genealogy of the selected infoset. For example, it displays the system infoset from which the user infoset was created and which filter was used.

The following details are displayed for the selected infoset:

Table 1. Infoset details	
Infoset Column Name	**Description**
Total objects	The number of data objects that are contained within the infoset. When you hover the mouse pointer over the number, you can see how many top-level and child-level objects the infoset contains. **Note:** If the infoset is still being created, only the **Details** window is active. Infosets that are still being created list **0** in this column.
Composition	The composition of the data that is contained within an infoset, either **Mixed** or **Top Level**.
Type	The type of infoset, either **User** or **System**.
Creator	The person who originally created the infoset. For older infosets, the creator is listed as N/A.
Infoset size	The size of the infoset.
Created	The date and time at which the infoset was created. **Note:** The All Data Objects and All System-Level Objects infosets show N/A in this field. User and user-created system infosets show the creation date, even if their creation status shows pending.

Table 1. Infoset details (continued)	
Infoset Column Name	**Description**
Access	This entry indicates whether the infoset is public or private. For a public infoset, the value **Public** is displayed. For a private infoset, the name of the person or the number of users who have access to the infoset is displayed. When you hover your mouse pointer over the entry, the user name or a list of names is displayed.
Description	A brief description of the infoset, which was provided during infoset creation.
Publish to Catalog	This information is available only if your system is enabled for synchronization with the governance catalog. The entry indicates whether the infoset is published to the governance catalog. A value of **Yes (Inferred)** indicates that part of the infoset information was automatically synchronized although not selected for publishing. Automatic synchronization happens because the infoset serves as direct input to one or more objects that are selected for publishing and thus, is required for proper object modeling in the governance catalog. Such an automatically synchronized infoset is marked in the governance catalog as **Inferred Partial**.
Infoset in Catalog	A link to the asset in the governance catalog. This information is available only for infosets that are published to the governance catalog.
Asset Attributes	A link for displaying the asset's custom attributes and terms that are applied in the governance catalog. This information is available only for infosets that are published to the governance catalog and that have custom attributes or terms assigned.

Viewing infoset ancestry

After you select an infoset, the **Details** page opens to show the infoset's ancestry.

1. From the **Infoset Dashboard**, select an infoset and click **Select**.
2. In the **Ancestry** pane, select the item for which you want to view ancestry information.

   For any selected item, the ancestor details section shows the name, the description, and the type.

   Item-specific details include the following information:

Type of item	Details
Infoset	The number of total objects, top-level objects, and child objects, the infoset size, the composition, the date and time when the infoset was created, who created the infoset, whether the infoset is published to governance catalog and, if so, a link to the asset in the catalog and information about any synchronized custom attributes and terms
Filter	A link to view the filter code, the date and time when the filter was created, whether the filter is published to governance catalog and, if so, a link to the asset in the catalog and information about any synchronized custom attributes and terms
Set operation	The list of infosets to which the operation was applied
Node operation	The name of the infoset to which the operation was applied

Type of item	Details
Duplicate operation	The names of the two infosets that are checked for duplicates
Data map filter	A link to view the filter code, and the date and time when the filter was created
Exception filter	No additional information

Viewing action logs of infosets

When you select an action from the list, the **Action Details** pane provides information about that action, including name, description, status, and which infosets it was last used on.

1. Select a user infoset from the **Infoset Dashboard** and click **Select**.
2. Click **Action Log** on the side navigation bar to open the **Action Log** page.
3. Select an action.

   The **Action Details** pane shows this information for all action types: name, description, status, the infoset on which the action was last used, and any exceptions.

   In addition, the following information is provided depending on the action type:

   - For report actions, a link to view or download the generated report. For a **CSV Term Hit Details Export** report, also the report search terms are listed.
   - For Step-up Analytics actions, a link for generating an audit report and these cartridge details: the name that the administrator assigned to the cartridge, the cartridge version, supported results, and the languages that are supported.

     Note: Step-up Analytics actions are run only against documents in the supported languages.

   If exceptions occurred, the percentage of data objects in error is shown. Clicking this value takes you to the **Exceptions Objects** pane, where you can find more context and detail regarding the exceptions.

Generating an audit report

Audit reports can be generated for actions that are selected within the **Action** page.

The Action Audit Report provides detailed information in these areas:

- Execution Summary
- Data Object Result Count Summary
- Infoset Summary
- Participating Data Server and Volume Summary
- Action Parameters

1. Select an action on the **Action** pane.
2. In the **Action Details** pane, click **Generate Report**.

   The **Generate Audit Report** dialog box appears.
3. In the **Report Name** text box, the report's name is prefilled, based on the selected action in the **Action**.
4. In the **Send To:** text box, enter the email addresses to whom this report is sent. Separate multiple email addresses with a comma.
5. Click **Generate** to generate the audit report.

   When the audit report is being generated, its status changes to **Running** in both the **Action Details** area and the **Action Log**.

   When the report is generated, it is sent to the email addresses entered in the **Send To:** text box, and it can be opened from that email. The report can also be downloaded within the **Action** pane.

Viewing data objects

When you click **Data Objects** on the side navigation bar, the list of objects in the infoset is displayed.

As a user with the **Data User** role, you can spot-check a data object by viewing its content. As a user with the **Data User (No Preview)** role, you can only check the list of data objects.

1. On the side navigation bar, click **Details** > **Data Objects**.

   The list of data objects that are contained in the selected infoset is displayed. If you have the proper permissions, each data object's file name is a link to the object's content.

2. Click an object's file name to view and verify that object in **Data Object Viewer**.

   You can view only the first ten pages of a data object.

3. Configure columns when you are reviewing data objects:

   a) In the table header, click the blue gear icon.

   b) In the **Configure Column: Data Objects** window, rearrange the columns as required by changing the selections.

      You can also insert additional columns. However, the first column cannot be changed. It defaults to the file name.

   c) At any time, you can reset the columns to the default selections.

   d) Save your settings.

Feedback for an auto-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.

You can provide feedback for the classification model through the **Data Object Viewer**. You can review objects and assign pertinent categories as needed and score each object to see how it pertains to the classification model. This feedback is then used to retrain the classification model. More feedback increases the model's validity.

Retraining a classification model

Use feedback to retrain a classification model.

The administrator must create a classification model with IBM StoredIQ Administrator. For information about creating a model, see the respective section in the IBM StoredIQ Administrator information..

To be able to select categories for a data object, you must have the standard **Data User** role or any other role that permits previewing data objects.

1. From IBM StoredIQ Data Workbench, create a user infoset.

2. Select the user infoset and run the Step-up Snippet in the **Action** pane.

3. Select an enhancement in the **Enhance** pane to apply to the user infoset and then click **Run Enhancement**.

4. Create a filter and apply the filter:

   a) Select the **Auto-classify** option.

   b) In the list below the **Auto-classify** option, select the classification model for which results are 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>**.

5. Click **Preview Results**.
6. Select one of the returned objects to view in the Data Object Viewer.
7. Click the button to the right of **Auto-class Scores**.

   A list of categories and score of the object for each category appear. The category with the highest score is listed at the top.

8. Select the categories to which the selected data object belongs.

   Data objects with a value closer to one (1) are more closely associated with that category. Data objects with a value closer to zero (0) are not associated with that category.

9. Click **Submit**.

   This feedback helps 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** panel in IBM StoredIQ Administrator.

10. At this step, the administrator needs to select the classification model from IBM StoredIQ Administrator and start the retraining 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.

11. From IBM StoredIQ Data Workbench, run the enhancement against the user infoset again to see the new scores within the **Data Object Viewer**.

    The improved scores indicate greater validity and accuracy.

Filters

Filters are objects that can be applied to infosets. They are used to refine the infosets. You can apply one filter with multiple filter attributes to an infoset, continuously refining the infoset until it represents the data that is relevant to you.

Filters are always applied to the currently available document version.

These options under **Create** on the side navigation bar provide access to filters and infoset operations: **Filters**, **Build**, **Set Ops**, **Node Ops**, and **Duplicate**.

Library of available filters

The **Filters** pane lists all filters that are available for use with infosets.

Within the **Filters** pane, you can view the names and descriptions of all saved filters. Additionally, you can edit or clone filters, or delete any filter that is not used by an active infoset.

To search the list of filters for a specific filter, either enter the complete filter name in the search field or enter a partial string in this field to filter the list of filters.

The **Filter Details** area displays the filter's name, description, a link to view the filter's code, and the name of the infoset in which the filter was last used.

The listed filters are also available as overlays when you are creating new infosets. For more information, see Creating an infoset.

Managing filters

You can edit, clone, or delete filters from the **Filters** pane.

To manage filters, navigate to the list of available filters by clicking **Create** > **Filters**.

You can select either of the following options:

- Clone an existing filter to create other or identical filters.

    a) Select the filter that you want to clone and click **Clone**.

    b) Enter the name and description of the new filter.

    c) Review the setting of the synchronization option and change it as required.

    If the **Publish to catalog** checkbox is selected, the cloned filter is also included in the synchronization. If you do not want this filter to be synchronized, clear the checkbox.

    If the checkbox is not selected, the source filter isn't published to the governance catalog. To include the cloned filter in the set of synchronized objects, select the checkbox. A respective asset is then added to the governance catalog in the next synchronization run.

    d) In the **Expression** field, edit the code as required. Then, validate the new code.

    e) When validation is complete, click **Save**.

- Edit an existing filter.

    a) Select the filter that you want to edit and click **Edit.**

    b) If the filter is not in use, you can edit it as needed, determining the filter's scope and validating the code.

    c) Review the setting of the synchronization option and change it as required.

    If the **Publish to catalog** checkbox is selected, the filter is included in the synchronization. If you no longer want the filter to be synchronized, clear the checkbox.

    If the checkbox is not selected, the filter either wasn't yet published to the governance catalog at all or was synchronized automatically. A filter is automatically synchronized if it was used to create

an infoset that is selected for publishing. The filter is then required for proper object modeling in the governance catalog. To include the filter in the set of fully synchronized objects, select the checkbox.

Changes to this setting are reflected in the governance catalog after the next synchronization run: the respective asset was either removed from or added to the governance catalog.

    d) Save your settings.

- Delete a filter.

If the filter is in use by an infoset, the filter cannot be deleted and an error message is displayed.

Building a filter

Create filters to customize your search for specific data, either by selecting from a set of predefined conditions or by building your own filter expressions.

Creating a filter based on predefined conditions

Create a filter by selecting from a set of predefined conditions.

1. Open the **Details** page of any infoset.
2. From the side navigation bar, click **Create** > **Build**.
3. Select one or more conditions for the filter that you want to create.

You can choose from these options:

Condition	Filter criteria

File	File filters are based on common file fields.
	
	  a. Select from the options **Contains**, **Is**, or **Begins with** and enter the string to filter on.
	  b. Select one or more attributes to which to apply the file filter: **File Name**, **Extension**, **File Path**, **Container Path**.

Date	Date filters are based on common date information.
	
	  a. Select from the options **After**, **Before**, **On**, or **Between** and enter a date.
	  b. Select one or more attributes to which to apply the date filter: **Accessed**, **Modified**, **Created**.

Size	Size filters are based on the data-object file size. Select from the options **More Than**, **Less Than**, **Is**, or **Between** and specify the appropriate size or size range in bytes, KB, MB, or GB.

Name	Name filters are based on name parameters.
	
	  a. Specify one or more names. Separate multiple names by commas, for example, `John Smith, Mary Jones, Ellen Sideways`.
	  b. Select the attribute to which to apply the name filter: **Owner**, **SharePoint Owner**, or both.

Email	Email filters are based on common email fields. You can filter on addressees or senders, on the email subject, or on all of these. • To filter on addressees or senders: a. Specify one ore more names or email addresses. Separate multiple names or email addresses by commas, for example, `John Smith, Mary Jones` or

Condition	Filter criteria

	jsmith@company.com, mjones@company.com, or John Smith, mjones@company.com.
	
	    b. Select one or more attributes to which to apply the filter: **To**, **From**, **CC**, **BCC**
	
	• To filter on the email subject:
	
	    a. Select the **Email Subject** option.
	
	    b. Select from the options **Contains**, **Is**, or **Begins with** and enter the string on which to filter the subject.

Full Text	Full-text filters return results only for full-text harvests. They are based on simple search strings, full-text macros, indexed cartridge terms, regular expressions, or any combination of these. For more information about setting up sophisticated full-text filters, see "Filter condition reference and expression language" on page 13.
Auto-classify	Auto-classify filters are based on the step-up snippet action and the auto-classification enhancement. They can be run on an infoset, extracting and storing text for any data object to which it is applied. Select a classification model and one or more of the categories that are available for this model. In addition, you can select any or all of these options: • **And the highest score in the selected category** • **And where score is** in combination with any of the available comparison operators and the appropriate number.

Attributes within a filter category are ORed. For example, when you are creating a file filter that is defined by file name and extension contains .DOC, the filter syntax is `"file name OR file extension contains doc"`. Adding another file attribute category, the categories are ANDed. Therefore, the file category filter attribute `"extension OR file name contains doc"` and adding the name category with `"owner name John Smith,"` the syntax is `"file name"` OR `"extension contains doc"` AND `"owner names contains John Smith."`

4. Click **Save**.

   The filter is validated and the **Save Filter** window is displayed.

5. Enter a name and description for the new filter.

   When you name the filter, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

6. Optional: Select **Publish to catalog** to have the filter added to the governance catalog and regularly synchronized.

   Even if you do not select this option, the filter might be published to the catalog as an inferred object. This type of synchronization happens when the filter is used to create an infoset that is selected for publishing. The filter is then required for proper object modeling in the governance catalog.

7. Click **Save Filter**.

The new filter is listed in the **Filters** pane.

Creating customized searches with the code view

Use the code view to create customized searches with search syntax.

1. Click **Create** > **Build**.
2. Click **Code View**.

Note: To return to the filter's form view on the Build Filter pane, click **Filter Form View**. Then, you can create and save filters with the prebuilt forms.

3. In the large text box, create and enter a customized search with correct filter syntax. For more information about appropriate filter syntax, including tips and example, see "Full-text syntax" on page 13.

4. Click **Validate Code**.

   For a valid expression, the message The filter expression passed validation is returned. For an invalid expression, the message The filter expression is not valid is returned.

5. In the **Filter Details** area, complete the following steps.

   a) Enter the name of this new filter.

      When you name the filter, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   b) Enter a brief description of this filter.

   c) Click **Save Filter**.

Filter condition reference and expression language

The following topics provide in-depth information about full-text and attribute conditions and how to use the expression language.

Full-text syntax

The full-text editor supports full-text syntax.

The full-text feature supports a wide range of full-text syntax to broaden or narrow filters. A one-word term like September returns results from all harvested data objects that include the term in their content. Word matching is case-insensitive. A list of words matches any of those words. For example, September OR October match all objects that contain either September or October.

Term expansion

When lemmas are turned off (by default), a simple term such as went returns only those documents that contain the exact same character sequence. For more information, see the section on configuring full-text index settings in the IBM StoredIQ Data Server Administration documentation.

When lemmas are turned on, the simple term went is automatically expanded to return documents that contain words with the same meaning as went, such as go, goes, going, and gone.

Automatic term expansion applies to any terms. Term expansion can be disabled by placing the term within single quotation marks. Term expansion does not occur when a wildcard is present.

Note: To use term expansion for the anticipated results, lemmas must be turned on before the documents are indexed.

Grouping

When you are examining text, IBM StoredIQ Data Workbench evaluates the requested operators and gives precedence to some over others. These rules are described in the following list.

When parentheses are used to group operators, the expression in parentheses is given the highest precedence. If no parentheses are used in the expression, associativity rules are used instead. Right-associative means that the operator is grouped initially with the operand to its right. Left-associative means that the operators and operands to the left are evaluated before the operators and operands to the right.

- The NOT operator is right-associative.

  "October NOT November OR December" means "(October AND (NOT November)) OR December".

- Proximity operators (w/ and pre/) are left-associative.

`"October w/3 November pre/5 December"` means `"(October w/3 November) pre/5 December"`, where `"October"` and `"November"` must be within three words of each other, but both must be before `"December"` by no more than five words.

`"October w/3 November and December"` means `"(October w/3 November) and December"`.

- The AND operator is left-associative.

`"October AND November OR December"` means `"(October AND November) OR December"`.

- The OR operator is left-associative. If you do not specify an operator, expressions are ORed.

`"October November OR December"` is equivalent to `"(October OR November) OR December"`.

Boolean Operators

This table lists Boolean operator syntax and descriptions.

Table 2. Boolean operator syntax	
Item	**Description**
AND &&	• When used between two terms, the AND operator ensures that both terms appear in the data object. For example, the filter `chairman AND stock` returns only data objects where `chairman` and `stock` both appear. • The double ampersand (&&) can be used instead of the AND operator. AND can be uppercase or lowercase.
OR ||	• When used between two terms, the OR operator returns data objects where either term appears. For example, the filter `chairman OR stock` returns data objects that have `chairman`, `stock`, or both in the data object. • The double pipe (||) can be used instead of the OR operator. OR can be uppercase or lowercase.
NOT !	• When used before a term, the NOT operator ensures that the following term does not appear in any data objects returned. For example, `Apple NOT IBM` returns data objects where word `Apple` appears, but not `IBM`. You can think of the NOT item as `"and not"` or `"but not"`. • The exclamation point (!) can be used instead of the NOT operator.NOT can be uppercase or lowercase.

Multiple Terms or Term Phrase

This table lists multiple terms or term phrase syntax items and descriptions.

Table 3. Terms	
Item	**Description**
" "	• Double quotation marks around a term phrase return data objects that have that phrase in order in a data object. For example, `"September 20 1998"` returns only data objects with the exact phrase of `September 20 1998`. Double quotation marks allow for wildcards in terms whereas single quotation marks do not. • Stop words are removed from a double-quoted term phrase. For example, `stock and option` returns documents with `stock option`. • Asterisks (*) and question marks (?) are treated as wildcards. For example, `stop option*` returns both `stock option` and `stock options`. • Automatic term expansion is performed if lemmas are turned on. For example, `fox jumps` returns any of these phrases: `fox jumps`, `fox jumped`, `foxes jump`, and so on.
' '	• Single quotation marks around a term phrase return data objects that have the exact same character sequence in a data object. For example, `'february 4 2013'` returns exactly `february 4 2013`. • Asterisks (*) and question marks (?) are treated as regular characters. For example, `'*ism'` returns exactly `*ism`. • Stop words are not removed. For example, `'to be or not to be'` returns exactly `to be or not to be`. • Term expansion is not performed even if lemmas are turned on. For example, `'went'` returns exactly `went`.
Multi-term, no Boolean operators	A filter for a multiple word without Boolean operators or quotation marks is an implied OR filter. For example, `September 20 1998` returns data objects that have `September OR 20 OR 1998`.
Grouping	• Grouping with Boolean operators and parentheses allows users to narrow results by using attributes. For example, `($10 OR billion) AND options` returns data objects where `$10` or `billion` might be in the data object, but `options` must exist. • Boolean operators (AND, OR, NOT) work in a grouping or in a proximity group. So `("Sahara Desert" AND "Southeast Asia") OR ("Pacific Ocean" AND "Bavaria")` returns data objects that have `Sahara Desert` and `Southeast Asia` or `Pacific Ocean` and `Bavaria`.

Wildcards

This table lists wildcard syntax items and descriptions.

Table 4. Wildcard	
Item	**Description**
*	• A single asterisk finds multiple characters or letters at beginning of a term. An asterisk that is placed before a partial word finds terms that end with those letters. For example, a filter for `*olol` returns results for `betaxolol`, `carteolol`, `levobetaxolol`, `levobunolol`, `metipranolol`, and `timolol`. • An asterisk matches any number of characters in the middle of a term. An asterisk that is placed in the middle of a term finds terms that have those characters on either side of the asterisk. For example, `te*t` returns results for `text`, `test`, `tent`, and `tempest`. • An asterisk that is placed after a partial word finds terms that begin with those letters at the end of a term. For example, a filter for `ap*` returns results for `Apple`, `April`, `applied`, and `application`. • An asterisk alone finds all objects. **Note:** An asterisk within single quotation marks is treated as a regular character.
?	The question mark matches a single character. For example, `compl?` returns results for `comply` but not `complies` or `compliance`. A filter for `ap?` finds `ape`, but not `apple`. To filter for more than one character, use a question mark for each letter, for example, `ap??e`. **Note:** A question mark within single quotation marks is treated as a regular character.

Proximity

This table lists proximity syntax items and descriptions.

Table 5. Proximity syntax	
Item	**Description**
w/x	• Filtering uses the w/*x* syntax (*x* represents the number of terms between the two terms) to use the relationship between terms to get more targeted results. A two-term filter with one term that appears at the beginning of a data object and the other at the end might not be as relevant as when the terms appear in the same paragraph or sentence. For example, in an SEC data object, `chairman w/15 options` is a more relevant filter than `chairman AND options` appearing in the same data object that might be several pages long. • `w/0` matches terms that are next to each other in any order. • `w/1` matches for terms with one word between them. The terms can appear in any order in the document. • Grouping with proximity allows for even more targeted results. For example, `("Sahara Desert" "Southeast Asia") w/5 ("Pacific Ocean" Bavaria)` finds either `Sahara Desert` or `Southeast Asia` within five terms of `Pacific Ocean` or `Bavaria`. • Terms can have wildcards or phrases.
pre/x	• With the pre/*x* syntax (*x* represents the number of terms between the two terms), you can further target proximity filters by dictating which term comes before another term in the data object and how far before it is. For example, `chairman pre/15 options` returns data objects where `chairman` comes up to 15 terms before `options`. • `pre/0` matches terms that are next to each other and in the same order. • `pre/1` matches terms with at most one word between them and in the same order. • Terms can have wildcards or phrases.

Table 5. Proximity syntax (continued)	
Item	**Description**
w/p	The w/p syntax lets you find terms within the same paragraph. The terms can appear within the paragraph in any order.
pre/p	The pre/p syntax lets you find terms within the same paragraph. The terms must appear in the specified order.
w/s	The w/s syntax lets you find terms within the same sentence. The terms can appear within the sentence in any order.
pre/s	The pre/s syntax lets you find terms within the same sentence. The terms must appear in the specified order.

Full-text macros

The IBM StoredIQ full-text filter supports a set of predefined macros.

A macro is an abbreviated set of instructions that are used in common filter patterns. For example, the filter {SSN} finds any document that contains Social Security numbers.

Full-text macros have the following characteristics:

- A macro is an alphanumeric name that is enclosed in curly braces, for example, {SSN}.
- A macro's name is case insensitive. For example, the macro {ssn} is the same as the macro {SSN}.
- The macro's value is replaced in the macro's full-text query. Then, the filter is parsed and run.
- Any unrecognized macro results in a syntax error.
- Regular expressions, that is named character classes, do not match macros. That is, a regular expression like \p{Lower} (matches any lowercase ASCII character) is not recognized as a macro.

The following macros are defined within the full-text feature of IBM StoredIQ. Each of these macros is a high-confidence macro. It means that the filter {SSN} finds any document that contains Social Security numbers with high confidence that the matches really are Social Security numbers. To find anything that might be a Social Security number, use the low-confidence macro {SSN-lc}.

Macros can be combined with any other full-text expression, such as {SSN} w/5 "John Doe".

- {SSN}: Social Security numbers, which can include dashes and numbers
- {USPhone}: US phone numbers, which can include dashes, dots, parentheses, numbers, and letters. This macro can filter for mnemonics like 1-800-flowers.
- {InternetAddress}: Legal IP addresses, either as numbers or as names, which can include dots, numbers, and letters.
- {EmailAddress}: Legal email addresses, which can include @, dots, numbers, and letters.
- {CCAmex}: American Express credit-card numbers, which can include dashes and numbers.
- {CCDiners}: Diners Club credit-card numbers (including enRoute credit-card numbers), which can include dashes and numbers.
- {CCDiscover}: Discover credit-card numbers, which can include dashes and numbers.
- {CCJCB}: JCB credit-card numbers, which can include dashes and numbers.
- {CCMC}: MasterCard credit-card numbers, which can include dashes and numbers.
- {CCVisa}: Visa credit-card numbers, which can include dashes and numbers.
- {CreditCard}: Any credit-card number from the listed providers.

Indexed annotations

To search for indexed annotations (terms indexed when a cartridge is applied), you can create filters with the query format `ia:`*`filter_term`*.

You can search by indexed annotations after the system administrator deployed the cartridge and created a Step-up Analytics action with the cartridge, and you ran the respective Step-up Analytics action on an infoset. Set up an indexed annotation query by creating a full-text filter with a `ia:`*`filter_term`* expression.

Contact your system administrator for a list of deployed cartridges, their supported search results, and their associated actions. You can also find out about the supported results by checking the **Action Details** section of a selected Step-up Analytics action.

By default, the latest versions of the IBM provided cartridges that you can download from Fix Central support these indexed annotation terms:

Basic cartridge

> `ia:BankAccountNumber`
> `ia:EmailAddress`
> `ia:IntraAddress`
> `ia:IPAddress`
> `ia:NationalIdNumber`
> `ia:PhoneNumber`
> `ia:TaxNumber`

Advanced cartridge

> `ia:Address`
> `ia:Date`
> `ia:GenderIndicator`
> `ia:Location`
> `ia:Organization`
> `ia:Person`
> `ia:PhoneNumber`

The searches are case-sensitive. If the supported language field is populated, only documents in those languages are searched.

These cartridges can be modified to produce different sets of indexed annotations. For more information, see the documentation that is packaged with the cartridges.

Regular expressions

To search for patterns, you can create full-text filters with regular expressions. The format for a regular expression query is `re:"`*`regex`*`"`.

For DataServer - Distributed, `re:` queries basically follow the Lucene regular expression syntax as described here:

> Elasticsearch Reference: Regular expression syntax
> Lucene RegExp class

The character classes \d, \D, \w, and \W are supported, POSIX character classes such as \p{Alpha} or \p{Alnum} aren't. Complex constructs such as backreferences or lookaround are also not supported.

For DataServer - Classic, `re:` queries basically follow the Java regular expression syntax as described here: Java regex pattern

Patterns in IBM StoredIQ are always anchored at the beginning. For example, the string abcde would be a match for the query `re:"ab.*"` but not for the query `re:"bcd"`.

The IBM StoredIQ full-text index is a tokenized index. It does not include spaces or other special characters such as / * \@ \\ # " and others. Therefore, you cannot create regular expressions that try to match spaces as part of a string.

For example, if you wanted to identify eight numbers in groups of four separated by a space like 1234 5678, you would probably try the following regular expressions:

- `re:"\d{4} \d{4}"`
- `re:"\d{4}\s\d{4}"`
- `re:"\d{4}( )\d{4}"`
- `re:"\d{4}[ ]\d{4}"`

However, neither of these regular expression would yield a result. Instead, you can consider the string to be two 4-digit words. You could then use proximity search to join them:

```
re:"\d{4}" w/0 re:"\d{4}"
re:"\d{4}" pre/0 re:"\d{4}"
```

This type of query is called a *low confidence query* because it is more likely to produce false positives. In addition, such queries consume considerable processing time.

In contrast, indexed annotations from a regular expression cartridge can contain spaces and special characters because a cartridge is applied to the source text and not to the tokenized text in the index. So, depending on your use case, you might want to create a regular expression cartridge, run it on your data, and then use `ia:` queries instead of `re:` queries to find such strings.

Extended ASCII characters
Extended ASCII characters are handled several different ways in the full-text filter. Some are special characters while others are treated as spaces. Some are treated as letters that depend on the spaces around the characters.

Special characters or punctuation are not indexed and cannot be searched for in filters. The following table describes what behavior applies to these characters in the filter.

Table 6. Extended ASCII Character syntax	
Extended ASCII Character Syntax	**Description**
Special characters	Some special characters generate syntax errors because they cannot be processed. Either remove the character from the filter or surround the filter with single quotation marks. For example, a filter for `hello!` without quotations generates an error. However, if the filter is `'hello!'` (with single quotation marks), the query can be processed.
	In general, special characters are treated as a space in a filter and they are not indexed. For example, `Hello!` is indexed as `Hello`. Searching for `'Hello!'` returns zero object. To search for `'hello'`, data object that has the word `hello!` or `hello` is returned. However, there are some exceptions, and they are discussed later in this table
	Most special characters can also be searched for with quotation marks. For example, `"12/24/2014"` finds 12/24/2014. The difference between quotation marks and single quotation marks is that quotation marks also have another function: to find words that are next to each other. Because of this, special characters that are used elsewhere in the syntax, such as ∗ and ?, are treated as the full-text operators for wildcards instead of as the characters ∗ and ?.
	These special characters generate errors unless surrounded by quotation marks: `@ / & : ! ( ) { } [ ] ^ ~ , # =`

Table 6. Extended ASCII Character syntax (continued)	
Extended ASCII Character Syntax	**Description**
Period (.)	A period with no space on either side is treated like a letter. For example, a filter for `172.16.0.46` finds the whole number of `172.16.0.46`, not partial numbers of `172, 16, 0, 46`. A period with a space on either side is treated as a space and ignored. For example, a filter for `"1234 Mahana St."` ignores the period and just finds `1234 Mahana St` only without a period.
At (@)	An @ symbol is indexed like a letter when there are no spaces on either side. For example, a filter for `jdoe@yourcompany.com` finds the entire email address. An @ symbol with a space on either side or one side is treated as a space and ignored. For example, @home finds home in the data object.
Hyphen (-)	A hyphen is indexed like a letter when there are no spaces on either side. For example, a filter for `012-44-5668` finds the entire number, not `012, 44, 5668` as separate numbers. A hyphen with a space on either side is treated as a space and ignored.
Slash (/)	A slash is indexed like a letter when there are no spaces on either side. For example, a filter for `10/30/1940` finds the entire expression `10/30/1940` (and not `10 30 1940`) as separate numbers.
Ampersand (&)	An ampersand is indexed like a letter when there are no spaces on either side. For example, a filter for S&P finds S&P in the data objects. However, a filter for `Proctor & Gamble` without quotation marks finds either `Proctor` or `Gamble`. A filter with quotation marks `"Proctor & Gamble"` finds the phrase `Proctor Gamble` only.
Colon (:)	A colon is considered a special character. It is treated as a space in filter and is not indexed. For example, `21:35:15` is indexed as three consecutive words, that is, `21, 35,` and `15`. Searching for `'21:35:15'` returns zero object. To search for `'21 35 15'`, data object that has the word `21:35:15` or that has three consecutive words as `21, 35, 15` is returned. Specifying terms with colons without the single quotation marks results in an invalid syntax error.
Apostrophe (')	The apostrophe in the term is indexed as a whole word. For example, a filter for `patient's` returns results for `patient's` but not for `patient`. A filter for the name `O'Hara` returns results for `O'Hara`. An apostrophe is treated as a single quotation mark, so it must always be quoted with double quotation marks.
Comma (,)	Commas are left in when surrounded by numerals, and those numerals make a legitimate number. For example, `"1,000"` is indexed as `1,000`. To search this term, specify `1,000` in single quotation marks or quotation marks. Otherwise, it results in an invalid syntax error. For the term `"10,00"`, it is indexed as `10` and `00`. To search for this term, specify `"10 00"`.
Number sign (#), dollar sign ($), percent (%), equal sign (=), underscore (_)	These characters are treated as white space in the filter. For example, a search for $100 returns results for the number 100 whether 100 refers to dollars, a percentage, or a whole number. The term 'JAVA_HOME' is indexed as 'JAVA HOME'. To search for this term, specify JAVA HOME in quotation marks.

Attribute condition reference
The following section explains how to type in a reference to an attribute condition.

If you always select an attribute from the custom filters or one of the attribute groups, IBM StoredIQ takes care of the attribute reference for you. If you do not select an attribute from the custom filters or one of the attribute groups, then you need to review and use this section.

A typed attribute reference is composed of several parts: `attribute-type path/attribute-name`. The `attribute-type` part gives the specific type of attribute to which `path` and `attribute-name` refer. This prefix is a short prefix of the attribute type. Attributes can have duplicate names, even within one folder.

Table 7. Attribute type prefix	
Attribute-type Prefix	**Description**
`att:` or `@`	This prefix is a system-defined attribute or user-defined entity.

`path` describes the folder path to the attribute. Generally, it is optional, but it is required if the attribute name alone is not unique. You do not need to type the full folder path to an attribute.

If an attribute name or folder path name has spaces or punctuation in it, then you must enclose the complete name in double or single quotation marks, not just a part. However, the forward slash (/) between folders or before the attribute name does not require the use of quotation marks. Do not enclose the attribute type prefix in quotation marks.

Specification of attribute conditions
Attributes, entity, tag, or query can be divided up in several ways.

- What type of values does the attribute have? Attributes can have values of `number`, `string`, `enumeration`, `boolean`, or `date`. An enumeration attribute is an attribute that has a limited set of possible values, which are shown in a list.

  When an attribute is a compound attribute, each of its subattributes also has a value type: `string`, `enumeration`, `boolean`, or `date`. The subattributes can also be either `sparse` or `dense`. Currently, all subattributes are single-valued. Compound attributes can also be `sparse` or `dense`. (Currently all compound attributes are sparse.)

- Do all objects have a value for this attribute? If the objects all have a value, it is known as a dense attribute. If the objects do not have a value, it is known as a sparse attribute. All objects have an `Object name` value, so `Object name` is a dense attribute. Only some objects have a CC attribute value, so CC is a sparse attribute.

- Can an attribute have multiple values within one object? Each object has one name, so `Object name` is a single-valued attribute. There might be multiple To values on an email, so To is a multivalued attribute. Compound attributes can be single-valued or multivalued. A compound attribute never exists where all of its subattribute values are missing.

These condition operators are applicable to each attribute category.

Note: For illustration purposes, some operators are shown in uppercase, and some are shown in lowercase. The parser recognizes operators in either uppercase or lowercase.

Conditions for string attributes
Tags are considered single-valued, sparse string attributes. They are not considered enumeration attributes, even though they have a limited set of possible values.

```
attribute = value or attribute is value
```

```
attribute != value or attribute is not value
```

```
attribute contains value
```

```
attribute does not contain value
```

```
attribute starts with value
```

```
attribute does not start with value
```

```
attribute ends with value
```

```
attribute does not end with value
```

```
attribute matches value
```

```
attribute does not match value
```

The `value` can be a single word, a double-quoted string, or a single-quoted string. For matches, the value is a regular expression within quotation marks.

Conditions for enumeration attributes
Some attributes have a limited set of predefined values that they can match, which are called enumeration attributes.

In this case, only '`=`' and '`!=`' operators are supported.

```
attribute = value or attribute is value
```

```
attribute != value or attribute is not value
```

A list of enumeration attributes is as follows:

- Container type
- Is-part-of
- Box reason
- Encryption type
- System processing state
- Content processing state
- Binary processing state
- System error code
- Content error code
- Binary error code
- Message type
- Latest review status
- Object category

Conditions for date attributes
The conditions for date attributes are listed as follows.

attribute = value or attribute is value

attribute !+ value or attribute is not value

```
 attribute < value
```

```
attribute <= value
```

```
attribute> value
```

```
attribute>= value
```

```
attribute between value1 and value2
```

```
attribute not between value1 and value2
```

The value can have one of two forms: an `explicit date` or a `relative date that is offset from today`.

An explicit date is in the form of YYYY-MM-DD, for example, 2009-03-08.

- Other date formats are supported.
- Time is not supported.
- The dates are all interpreted as midnight of the listed date.

A relative date offset is specified as a positive number, followed by a required date units, and the `ago` or `ahead` keyword. The `ago` keyword is the default and means a date in the past. The `ahead` keyword means a date in the future. For example, `3 months ago`, `3 days ahead`, or `3 weeks ahead` are legal relative dates. The allowed date units are as follows:

- days
- weeks
- months
- years

This function is also supported:

- -3 days = 3 days ago
- +3 weeks = 3 weeks ahead

   Note: Months are considered as 30 days; years are considered as 365 days.

- Normally, relative date offsets are in the past, but some dates can be in the future, such as a `Retention expiration date`. For these references, use the `ahead` keyword instead of `ago`.
- Relative date offsets can also be given as a positive or negative number, such as `-3 days` or `+3 months` without the `ago` or `ahead` keyword. In this case, negative numbers are considered in the past and positive numbers are considered in the future.

Conditions for number attributes
Conditions for number attributes are listed as follows.

```
attribute = value   or   attribute is value
```

```
attribute != value   or   attribute is not value
```

```
attribute < value
```

```
attribute <= value
```

```
attribute> value
```

```
attribute>= value
```

```
attribute between value1 and value2
```

```
attribute not between value1 and value2
```

The value is a positive or negative integer. Size attributes (`Size` and `Size (on disk)`) can take an optional size unit after the number. These amounts are the legal size units.

- b or `bytes` for single bytes
- k or `kb` for kilobytes
- m or `mb` for megabytes
- g or `gb` for gigabytes
- k or `kb` for kilobytes

Note: The default size unit is bytes. Size units are based on multiples of 1024, not 1000.

Event duration can have time units. These time amounts are the legal size units:

- m or `minutes` for minutes
- h or `hours` for hours
- d or `days` for days

Conditions for sparse attributes
The conditions for multivalued and single valued sparse attributes are listed as follows.

```
attribute APPEARS
attribute NOT APPEARS or attribute DOES NOT APPEAR
```

These conditions specify whether the attribute has any values for matching objects. In this case, it means that one of the subattributes has a value on this object. Tags are considered single-valued, sparse string attributes.

It is not an error to specify these conditions on dense attributes. However, if you do, the parser warns you that the condition is always `true` or `false`. These operators can also apply to compound attributes. In this case, it means that one of the subattributes has a value on this object.

Note: As a backward compatible measure, if `att: attribute appears` is given on a dense, boolean attribute, it is converted into `att: attribute = true`. If `not appears` is given, it is converted into `att: attribute = false`.

Conditions for compound attributes
Conditions for compound attributes are listed as follows.

```
attribute WHERE <sub-attribute-condition>
attribute WHERE (<sub-attribute expression>)
```

A `<sub-attribute-condition>` is just like any of the attribute conditions that are described except it is on a subattribute of the compound attribute. Additionally, a `<sub-attribute-condition>` can be just the subattribute name. It is equivalent to the subattribute APPEARS.

A `<sub-attribute-expression>` is any combination of `<sub-attribute-condition>`'s combined with **AND**, **OR**, or **NOT**. This expression must be enclosed in parentheses. The `<sub-attribute-expression>` can also be empty. In this case, it is the same as attribute **APPEARS**.

This example uses **WHERE** expressions:

```
att: "Site owner (SharePoint)" WHERE name = "John Smith"
att: "Site owner (SharePoint)" WHERE (name = "John Smith" AND url APPEARS )
att: "Site owner (SharePoint)" WHERE (name = "John Smith" OR url NOT APPEARS)
att: "Site owner (SharePoint)" WHERE ()
att: "Collaborator (Box)" WHERE "Collaborator Role" = "editor"
```

Note: This expression is the same as `att: "Site owner (SharePoint)" APPEARS`.

```
att: "Site owner (SharePoint)" WHERE (name)
```

Note: This expression is the same as `att: "Site owner (SharePoint)" WHERE name APPEARS`.

Conditions for multivalued attributes
Conditions for multivalued sparse or dense attributes are listed as follows.

```
attribute APPEARS operator number
```

```
attribute APPEARS UNIQUE operator number
```

These operators can also apply to compound attributes, and the `operator` can be one of the following operators:

- `=>`
- `>=`
- `<`
- `<=`

The `operator number` specifies a condition on the number of values present for the attribute on any matching object.

- If `operator number` is not given, then `> 0` is assumed.
- If `UNIQUE` is given, it specifies the number of unique values present for the attribute on any matching object.

It is not an error to specify these conditions on single-valued attributes. However, if you do, the parser warns you that the condition is always `true` or `false`.

Access mode attribute
Specifies an attribute that can be used in a search expression for creating infosets that are based on certain file attributes that are collected during harvests.

Access mode attribute supports these operators: APPEARS, NOT APPEARS, and WHERE.

The `Subject` subattribute supports these operators: IS, IS NOT, =, !=, any(), and all().

The `Readable` and `Writable` subattributes both support these operators: IS, IS NOT, =, and !=.

For example,

- To find data objects for which you collect or maintain information about the read or write file system flags, enter `att:"Access Mode" appears`. This search returns every system-level object on CIFS or NFS volumes.
- To find data objects that are writable by either of the three types of subjects, enter `att:"Access Mode" where (Subject is any (Owner, Group,Others) and Writable is True)` or `att:"Access Mode" where (Writable is False)`. These two examples are semantically identical. If you think of the r/w/x flags as separate groups of flags (that is, rwx | rwx | rwx), where one is for the `Owner`, one is for the `Group` that a user might be associated with, and one is for `Others` in that order, then the `Readable` or `Writable` subattributes are evaluated independently for each three group of flags.

  The `Subject` subattribute (if present) then just defines which group out of the three must be considered or ignored. The ` lack of the `Subject` subattribute indicates that the objects must be considered responsive to the expression if the `Readable` or `Writable` conditions (or any combination of them) evaluate to `True` in ANY of the three groups.

- To find data objects that are read-only by everyone, enter `att:"Access Mode" where (Subject is all (Owner, Group, Others) and Readable is True and Writable is False)`. The subattributes are all ANDed together and the `Subject` subattribute lists every possible option with the `all` qualifier.
- To find data objects that are read-only by at least one type of subject, enter `att:"Access Mode" where (Subject is any (Owner, Group, Others) and Readable is True and Writable is False)` or `att:"Access Mode" where (Readable is True and Writable is False)`. Again, the two examples here produce identical results for the same reason as explained in the previous bullet point.

- To find data objects that are read-only by the owner, enter `att:"Access Mode" where (Subject = Owner and Readable is True and Writable is False)`. You care only about the owner in this case, so you explicitly call `Owner` and only `Owner` out.
- To find data objects that owner can either read or write (not necessarily both), enter `att:"Access Mode" where (Subject = Owner and (Readable is True or Writable is True))`.
- To find data objects that can be written by the owner but is read-only by the group, enter `att:"Access Mode" where ((Subject = Owner and Writable = True) and (Subject = Group and Writable is False))`.

Type of object to match

For any attribute condition, you can specify what object that condition must match.

You can specify `IN object-type` after the expression. For example, in `att: Extension = doc=in system`, the object must be a doc file at the system level. The `condition-scope` can be any of these object types here.

Table 8. Available object types	
Available Object Types	**Description**
all	The matching object can be any type of object. This object is the default.
container	The matching object must be a container object that can have other objects nested inside it. File-archive, email-archive, email, calendar, contact, and task objects are included.
simple	The matching object must not be a container object.
system	The matching object must be a system-level object.
contained	The matching object must be nested within some other container object.

Only one condition-scope can apply to any condition. If you give multiple condition-scopes, the parser issues a warning.

Multiple matching values for operators

You can give multiple matching values that use the following operators.

- `=`
- `!=`
- `contains`
- `not contains`
- `matches`
- `not matches`
- `starts with`
- `not starts with`
- `ends with`
- `not ends with`

To specify multiple matching values for these operators, give the keyword `any` or `all` after the operator, then a list of values in parentheses. The any keyword means that any of the values are a match. The `all` keyword means that all the values must be present. The `all` keyword is only meaningful for multivalued attributes. For example:

Table 9. Keyword examples	
Example	**Result**
`att:"System metadata/Owner" = any (joe, bob, sally)`	Owner can be `joe`, `bob`, or `sally`.
`att:Size = any (1mb, 2mb, 1gb)`	Size can be 1mb, 2mb, or 1gb.
`att: "Modified date" = any (1 week ago, 2 months ago)`	
`att: "Accessed date" = any (2009-09-19, 2009-09-20, 2009-09-21)`	
`att:To = all (joe, bob)`	"To" must contain both `joe` and bob

For any, the operator must be true for at least one of the values. It is as if the user spelled out `attribute oper val1 OR attribute oper val2 OR ...`

- For all, the operator must be true for all the values. It is as if the user spelled out `attribute oper val1 AND attribute oper val2 AND....`
- For the NOT various operators, this syntax is the same as using NOT around the entire expression and the corresponding positive operator. For example, `att:Size != any( 1mb, 2mb, 2gb )` is the same as `NOT (att:Size = any( 1mb, 2mb, 1gb ))`. The NOT matches all documents that do not match the positive operator.
- It is not an error to specify `all` on single-valued attributes. However, if you do, the parser warns you that the condition is always false.

At-least expressions

On occasion, it is helpful to specify that some number of conditions must be true before an object is considered to match. These expressions are called `at-least` expressions because at least X subexpressions must match an object before the object matches the overall expression.

The syntax for an at-least expression is to give the keywords "`at least`" followed by a number, and then by a list of expressions in parentheses. For example:

```
at least 2 (att: size=1mb, att: "system metadata/owner"=joe, att:
"object name"=foo.doc, att: "modified date">2009-03-28 )
```

This example specifies that at least two of the four conditions must be true before any object is considered to match the overall expression.

Each subexpression in the list can be arbitrarily complex, but normally they are one condition. Each subexpression in the list must be separated from the others with a comma.

Parent and child conditions

This parent and child conditions represent advanced function that must be undertaken only by experienced administrators.

You might want to filter for objects whose parents or children match certain conditions. For example, find all emails to Joe in a `saved-emails.pst` file or find emails to Joe that have an attachment that is named `big-contract.pdf`. To specify these kinds of queries, give the conditions for the matching objects as normal and add a prefix `parent` or `child` to the conditions that apply to the parent or child objects. Here are the expressions for the two previous examples:

```
att:"any address"=Joe and parent att: "object name"="saved-
emails.pst"

att:To=Joe and child att:"object name"="big-contract.pdf"
```

If there is more than one expression that must match the parent or child objects, you must put all the conditions inside parentheses, for example:

```
att:"any address"=Joe and parent(att: "object name"="saved-
emails1.pst" or att:"object name"="saved-emails2.pst")

att:To=Joe and child (att:"object name"="big-contract.pdf" and
att:"modified date">2009-09-07)
```

It is also possible to specify conditions on the object level of parent or child objects. An object level is the nesting level of an object. System-level objects are at level one , immediately nested objects are at level two, and so on. For example, if you want to find the non-nested emails to Joe in `saved-emails.pst`, you can do:

```
att:"any address"=Joe and att:"object level" = 2
and parent
att:"object name"="saved-emails.pst"
```

It specifies that the emails to Joe must be at object level 2 and be inside `saved-email.pst`.

It is also possible to specify the object level of the parent or child object relative to the other. For example, to find the parent object of any file that is named `nested-file.doc`, you can specify it this way:

```
child att: "object name" = "nested-file.doc" parent-level = child-level - 1
```

It means that `nested-file.doc` can itself be at any level, and the query results are the direct parent of those files.

The general form of relative parent-child level conditions is listed here.

```
parent-level operator child-level +|- number
child-level operator parent-level +|- number
```

```
parent-level operator child-level +|- number
child-level operator parent-level +|- number
```

- Plus (**+**) in the +|- indicates that the parent-child must be more deeply nested than the other objects.
- Minus (**-**) means the parent-child must be less deeply nested than the other objects.

The operator can be any of these comparisons:

Numeric Comparisons for Operators					
=	!=	<	<=	>	>=

No-inheritance conditions
The no-inheritance conditions represent advanced function that must be undertaken only by experienced administrators.

Normally, the search engine allows some objects to inherit the values of their parent objects. Most of the time this behavior is intuitive, but there are times when this behavior must be turned off. When attribute inheritance is not wanted, prefix the expression with `noinheritance`, and attribute inheritance is turned off for that expression. For example, this expression finds emails to Joe containing `stock option` in the body or any attachment:

```
att: To=joe and "stock option"
```

However, if you want to find emails to Joe with `stock option` in the email body itself, then you must turn off inheritance for that part of the expression:

```
noinheritance ( att: To=joe and "stock option" )
```

Sampling

Checking a small, randomly selected subset of an otherwise huge infoset for compliance or violation of documents provides quicker results than scanning the whole infoset. Create a statistically representative random subset of an infoset by modifying any filter with a SAMPLE expression.

Restriction: You can use sampling filters only in IBM StoredIQ Data Workbench, not in IBM StoredIQ Insights. However, infosets created with a sampling filter are available in IBM StoredIQ Insights just like any other infosets.

To create a sampling filter, append the SAMPLE keyword together with the percentage of documents that you want to be taken as sample to your query:

```
filter expression SAMPLE percentage
```

filter expression
> For infosets containing data managed by a data server of the type DataServer - Classic, any IBM StoredIQ filter expression. For infosets containing data managed by a data server of the type DataServer - Distributed (pure or mixed), you can create sampling filters only with filter expressions based on system metadata. Sampling filters with other types of filter expressions are not supported. In either case, you can choose a condition that always returns true.

percentage
> The percentage of documents to contribute to the sample expressed as float value between 0 and 1.

Filter examples:

```
(att:"/Library/Attributes/System metadata/Size"> 20 KB IN all) SAMPLE 0.1
(att:"/Library/Attributes/System metadata/Size">= 0 KB IN all) SAMPLE 0.1
(*) SAMPLE 0.1
```

If *filter expression* returns 1,000 documents, `filter expression` SAMPLE `0.1` returns 100 documents.

If *filter expression* returns zero documents, `filter expression` SAMPLE `0.1` also returns zero documents.

If *filter expression* returns only a few documents, the percentage might be rounded up: a 0.1 sample of 5 documents will be 1 document because you can't have 0.5 documents.

Such a modified filter returns a randomized subset of the base filter expression results; whenever you apply the filter, a different set of documents is returned. The size of the result set remains the same. The result set is a regular infoset on which you can run any IBM StoredIQ action or report.

Sampling from infosets that span multiple volumes is also supported. While the resulting infoset will contain a representative random subset with results from each volume, the order of documents within the resulting infoset might not be randomized but grouped by volume. When you preview the results of a sampling filter applied to an infoset that spans multiple volumes, sampling is done on the final result set from all volumes. In this case, the order of documents within the filter results preview is randomized. Depending on how the sampling filter results are ordered in the final result set, the preview might not have results from all volumes.

Filter code examples: error queries

You can use these filter code examples to create infosets for exceptions that were encountered during harvests or that were written to the audit logs.

The syntax samples in the following tables might be wrapped for readability.

Audit failure codes

Attribute	Operator	Operator	Value	Sample syntax
Failure code	APPEARS			`att:"/Library/Attributes/ Audit/Failure code" APPEARS IN all`
	DOES NOT APPEAR			`att:"/Library/Attributes/ Audit/Failure code" DOES NOT APPEAR IN all`
	IS (or IS NOT)	any or all	Action aborted as object was put in conflicting state	`att:"/Library/Attributes/ Audit/Failure code" IS any ( "Action aborted as object was put in conflicting state" ) IN all`
			All modify actions failed on file	`att:"/Library/Attributes/ Audit/Failure code" IS any ( "All modify actions failed on file" ) IN all`
			Could not copy data to target file	`(att:"/Library/Attributes/ Audit/Failure code" IS any ( "Could not copy data to target file" , ) IN all )`
			Could not create a new file name	`(att:"/Library/Attributes/ Audit/Failure code" IS any ( "Could not create a new file name" , ) IN all )`
			Could not create directory structure	`(att:"/Library/Attributes/ Audit/Failure code" IS any ( "Could not create directory structure" , ) IN all )`
			Could not create target file	`att:"/Library/Attributes/ Audit/Failure code" IS any ( "Could not create target file" ) IN all`
			Could not delete source file	`att:"/Library/Attributes/ Audit/Failure code" IS any ( "Could not delete source file" ) IN all`
			Data object cannot be acted on since the server returned an invalid response	`att:"/Library/Attributes/ Audit/Failure code" IS any ( "Data object cannot be acted on since the server returned an invalid response" ) IN all`
			Data object could not be acted on since its content is forbidden on the target server	`att:"/Library/Attributes/ Audit/Failure code" IS any ( "Data object could not be acted on since its content is forbidden on the target server" ) IN all`
			Data object is a constituent of a	`att:"/Library/Attributes/`

Audit warning codes

Attribute	Operator	Operator	Value	Sample syntax
Warning code	Appears, Does not appear			`att:"/Library/Attributes/ Audit/Warning code" APPEARS IN all`
	Is, Is Not	Any, All	Could not apply configured ACL name to target file	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Could not apply configured ACL name to target file" ) IN all`
			Could not extract text for the object	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Could not extract text for the object" ) IN all`
			Destination object name was modified to respect filesystem rules and may not match the source object name	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Destination object name was modified to respect filesystem rules and may not match the source object name" ) IN all`
			Failed to compute target hash; Computing hash using object name and size	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Failed to compute target hash; Computing hash using object name and size" ) IN all`
			Failed to reset source file timestamps	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Failed to reset source file timestamps" ) IN all`
			Failed to set Directory Attributes	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Failed to set Directory Attributes" ) IN all`
			Failed to set group on the file	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Failed to set group on the file" ) IN all`
			Failed to set owner on the file	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Failed to set owner on the file" ) IN all`
			Failed to set permissions on link to moved file	`att:"/Library/Attributes/ Audit/Warning code" IS any ( "Failed to set permissions on link to moved file" ) IN all`

Attribute	Operator	Operator	Value	Sample syntax

			Failed to set security permissions on the file	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Failed to set security`
				`permissions on the file" )`
				`IN all`

			Failed to set target file access modes	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Failed to set target`
				`file access modes" ) IN all`

			Failed to set target file attributes	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Failed to set target`
				`file attributes" ) IN all`

			Failed to set target file owner	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Failed to set target`
				`file owner" ) IN all`

			Failed to set target file security descriptor	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Failed to set target`
				`file security descriptor" )`
				`IN all`

			Failed to set target file timestamps	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Failed to set target`
				`file timestamps" ) IN all`

			File does not support security descriptors	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "File does not support`
				`security descriptors" )`
				`IN all`

			File is ambiguous due to content processing error	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "File is ambiguous due to`
				`content processing error" )`
				`IN all`

			Path length of the object was truncated for allowing viewing of the object	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Path length of the`
				`object was truncated for`
				`allowing viewing of the`
				`object" )`
				`IN all`

			Unknown warning	`att:"/Library/Attributes/`
				`Audit/Warning code" IS any`
				`( "Unknown warning" )`
				`IN all`

Content processing error codes

Attribute	Operator	Operator	Value	Sample syntax

Content error code	Appears			`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" APPEARS`
				`IN all`

	Does not appear			`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" DOES NOT APPEAR`
				`IN all`

	Appears X-times	=, <,>,>=, <=		`att:/Library/Attributes/`
				`Content and`
				`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" APPEARS < 1`
				`IN all`

	Appears Unique X times	=, <,>,>=, <=		`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" APPEARS UNIQUE> 1`
				`IN all`

	Is, Is NOT	Any, all	Configured max. object size	`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" IS any`
				`( "Configured max. object`
				`size" ) IN all`

			Configured skipped data object	`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" IS any`
				`( "Configured skipped data`
				`object" ) IN all`

			Content tagging failed	`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" IS any`
				`( "Content tagging`
				`failed" ) IN all`

			Could not read source object	`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" IS any`
				`( "Could not read source`
				`object" ) IN all`

			Encrypted or password protected	`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" IS any`
				`( "Encrypted or password`
				`protected" ) IN all`

			Indexing failed	`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" IS any`
				`("Indexing failed" )IN all`

			Max entities reached	`att:"/Library/Attributes/`
				`Processing/Content error`
				`code" IS any`
				`( "Max entities reached" )`
				`IN all`

			Max entity value length reached	`att:"/Library/Attributes/`

Previewing filter results

You can preview sample, returned data before you save that infoset.

When you preview the list of data objects that are contained within an infoset, you can select what type of information is displayed, ensuring that the returned data is meaningful to you.

1. Select the infoset from which you want to create a new infoset.
2. Apply a filter to this infoset by either using an existing filter or creating a new filter.
3. Click **Preview Results**.

   The list of data objects that are contained within that infoset is displayed within the **Filter Results**. By default, the list includes the name, file size, file path, its creation date and time, and the date and time it was last modified. You can configure the layout of the list:

   a) Click the blue gear icon.

   b) In the **Configure Column: Data Objects** window, rearrange the columns as required by changing the selections.

      You can also insert additional columns. However, the first column cannot be changed. It defaults to the file name.

   c) At any time, you can reset the columns to the default selections.

   d) Save your settings.

4. Optional: If you have a user role with the appropriate permissions, you can also preview the content of the listed data objects.

   At the maximum, the first ten pages of the content are shown when you click an object.

Set Ops

Set Ops allows infosets to be combined in different ways to produce another infoset.

You can highlight specific information within the infoset, and apply these types of set operations to infosets: union, intersection, symmetric difference, and subtraction.

Table 10. Set Operations		
Operation	**Description**	**Example**
Union	A union infoset is the combination of two or more infosets: the primary infoset and the checkboxes of whatever available infoset you select.	For example, you have three infosets, two of which contain PSTs by owner and a third that contains all Exchange email. You want to combine all three infosets to make it easier to run actions on all of the data objects therein. All three infosets combine in their entirety, resulting in a new, larger infoset. The combination of the affected areas is turned gray within the interface.
Intersection	An intersected infoset is the result of two or more infosets that contain some of the same objects. This overlap, which is where identical objects are in all infosets, is called the intersection. It is this intersection that results in the new infoset.	For example, you have two custodians, each with a significant amount of data, some of which is shared. You want to ascertain which of the shared data objects are identical. In this case, you must create an intersection infoset as you want to find identical, common data objects between the two. Only the area of similarity, the gray intersection between the two white circles, is found in the new infoset.

Table 10. Set Operations (continued)		
Operation	**Description**	**Example**
Symmetric Difference	A symmetric difference infoset combines a primary and selected infoset and removes identical objects from them. The remaining data objects from both filtered infosets then combine to create a new infoset.	For example, you again have two custodians, each with a significant amount of shared data. You want to ascertain which of the shared data objects are not identical. In this case, you must create a symmetric difference infoset as you want to find data objects that are different between the two. Only the area of difference between the two infosets is the white intersection. This area of difference results in a new infoset of everything but the data that is shared between the two circles.
Subtraction	A subtraction infoset combines a primary and selected infoset, removes identical objects, and then subtracts the remaining objects from the primary infoset. The remainder data objects result in the subtraction infoset.	For example, you have two infosets, both of which contain similar PSTs by owner. You want to combine both infosets and retain only the unique data objects to make a new infoset. The two infosets combine, identical data objects are removed, and only the remaining objects, that area in gray, create the new infoset.

This table describes the options available for set operations for each infoset.

Table 11. Available operation infoset options and descriptions	
Available Operation Infoset Option	**Description**
Name	The name of the infoset against which a set operation can be conducted.
Total Objects	The total number of data objects that are contained within the infoset.
Infoset Size	The size of the infoset.
Composition	The composition of the infoset, top level, or mixed level.
Created	The date and time at which the infoset was created.
Type	The type of infoset. Remember, set operations can be conducted only against user infosets. System infosets are not available in the **Available Operation Infosets** pane.
Search	Search for a particular infoset with the **Enter terms...** text box and **Search**.
Details	Click **Details** to view the Infoset Details window. Information regarding the infoset's name, description, total number of objects, number of parent and child objects, size, composition, created date and time, type, and percentage of exceptions appears.

Note: For union and intersection set operations, check boxes appear to the left of the infoset names, but for symmetric difference and subtraction operations, radio buttons appear.

Creating a union infoset

Union infosets are the combination of two or more infosets where the infosets are joined in their entirety.

1. Select the infoset to which you want to combine one or more infosets. This infoset is the primary infoset.

   The name of the primary infoset appears in the infoset window.

Note: Set operations can be conducted only on user infosets, not system infosets.

2. Click **Create** > **Set Ops**.
3. Click **Union** and then select the checkboxes of the available operation infosets to which you want to join to the primary infoset.

   To select all of the available operation infosets, select the checkbox to the left of **Name**.
4. Click **Create Infoset**.
5. Enter a name and a description for this infoset.

   When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.
6. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.

   - To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

     Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.
7. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.
8. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.
9. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

   You can select overlays only if you select to generate the data map.
10. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

Creating an intersection infoset

Intersected infosets are the result of the combination two or more infosets where identical data objects are the new infoset.

1. Select the infoset to which you want to combine one or more infosets. This infoset is the primary infoset.

   The name of the primary infoset appears in the infoset window.

   Note: Set operations can be conducted only on user infosets, not system infosets.
2. Click **Create** and then click **Set Ops**.
3. Click **Intersection** and then select the checkboxes of the available operation infosets in which you want to find identical data objects. Data objects that are the same in each of the selected infosets are then used to form a new, intersection infoset.

   To select all of the available operation infosets, select the checkbox to the left of **Name**.
4. Click **Create Infoset**.

   The **Create New Infoset** dialog box appears.
5. Enter a name and a description for this infoset.

When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.

6. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.

   - To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

     Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.

7. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.

8. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.

9. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

   You can select overlays only if you select to generate the data map.

10. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

Creating an infoset with a symmetric difference

Symmetric difference infosets remove identical objects from two filtered infosets. The remaining data objects from both filtered infosets then combine to create a new infoset.

1. Select the infoset from which you want to remove the symmetric difference of another infoset. This infoset is the primary infoset.

   Note: Set Operations can be conducted only on user infosets, not system infosets.

   The name of the primary infoset appears within the infoset window.

2. Click **Create** and then click **Set Ops**.

3. Click **Symmetric Difference** and then select the infoset in which you want to find identical data objects. Data objects that are the same in the primary and selected infoset are removed, and the remaining data objects are then combined to form the new infoset.

4. Click **Create Infoset**.

5. Enter a name and a description for this infoset.

   When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.

6. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.

- To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

  Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.

7. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.

8. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.

9. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

   You can select overlays only if you select to generate the data map.

10. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

Creating a subtraction infoset

Subtraction infosets remove objects that are contained within the secondary infoset from the primary infoset. The remaining objects then create a subtraction infoset.

1. Select an infoset. This infoset is the primary infoset.

   Note: Set Operations can be conducted only on user infosets, not system infosets.

   The name of the primary infoset appears within the infoset window.

2. Click **Create** and then click **Set Ops**.

3. Click **Subtraction** and then select the infoset that you want to subtract from the primary infoset. Data objects that are the same in the primary and selected infoset are removed, and the remaining data objects form the new infoset.

4. Click **Create Infoset**.

5. Enter a name and a description for this infoset.

   When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.

6. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.

   - To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

     Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.

7. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.

8. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.
9. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

   You can select overlays only if you select to generate the data map.
10. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

Node Ops

Contained data, such as data within .ZIP, .TAR, or .PST files, is hierarchical and can have many different relationship and connections. Depending on how that data is viewed, that data can give a different perception than what is represented. The **Node Ops** pane helps users understand more fully what data is represented by data sets.

These actions are available:

Expand
This operator expands all of the files within an infoset. Any nested hierarchies or contained files are opened, expanding into a new infoset that is a potentially more accurate representation of the contained data.

Note: If the files within the infoset are not container files, then the **Expand** operator has no effect.

Collapse
This operator collapses or retracts all of the opened or expanded files within an infoset. It results in a new, smaller infoset that is a potentially more accurate representation of the data.

Note: If the files within the infoset are not container files, then the **Collapse** operator has no effect.

Expanding all contained objects

When you are using node ops to expand contained objects, such as nested message threads, email attachments, or compressed archive contents, the resulting infoset can contain all objects that are included with the container and container itself.

1. Select the infoset in which you want to expand hierarchies. This infoset is the primary infoset.

   The name of the primary infoset appears within the infoset window.
2. Click **Create**.
3. Click **Node Ops**.
4. Click **Expand**.

   Nested hierarchies and associations are expanded, and data object counts likely either remain the same or increase.
5. Click **Create Infoset**.
6. Enter a name and a description for this infoset.

   When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.
7. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.
   - To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.

8. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.

9. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.

10. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

    You can select overlays only if you select to generate the data map.

11. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

12. Review and validate the objects within the new infoset as needed.

Collapsing objects into containers

When you are using node ops to collapse an infoset, nested and compressed objects such as message threads, email attachments, or archive contents are no longer part of the infoset. The resulting infoset data object counts can be lower than the original infoset. The resulting infoset can better represent how the data objects appear according to the file system.

1. Select the infoset in which you want to collapse hierarchies. This infoset is the primary infoset.

   The name of the primary infoset appears within the infoset window.

2. Click **Create**.

3. Click **Node Ops**.

4. Click **Collapse**.

   Nested hierarchies and associations are collapsed, and data object counts likely either remain the same or decrease.

5. Click **Create Infoset**.

6. Enter a name and a description for this infoset.

   When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.

7. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.

   - To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

     Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.

8. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.

9. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.

10. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

    You can select overlays only if you select to generate the data map.

11. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

12. Review and validate the objects within the new infoset as needed.

Duplicate

Duplicate operations provides a way for you to identify a wide variety of duplicate data in your system. By generating a new duplicate identification infoset, you can apply filters, operations, reports, or actions to start your data deduplication process.

Duplicate operations compares objects of two infosets that are based on each other's hash value. If an object's hash value matches, the system can flag that object as a duplicate object. To conduct this operation, you must specify a primary infoset to apply against the infoset that you want to identify its duplicate objects. The operation then creates a new duplicate identification infoset that contains all duplicate objects except any objects from the primary infoset.

Creating a duplicate identification infoset

Use the **Duplicate** pane to identify duplicate objects. A new duplicate identification infoset is created to include the duplicate objects.

1. From the **Infoset** list, select an infoset as a source infoset that you want to identify its duplicate objects.

2. Click **Create** > **Duplicate**.

3. In the **Available Operation Infosets** pane, select an infoset as a primary infoset to compare to the source infoset.

4. Click **Create Infoset**.

5. Enter a name and a description for this infoset.

   When you name the infoset, avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.

   If the infoset is published to the governance catalog, the description will be part of the asset details. Therefore, make it as detailed as possible.

6. Decide whether you want to create the infoset with or without the data map.

   - To generate the data map for this infoset, leave the **Include Data Map for the Refine tab** checkbox selected. The infoset takes longer to generate, but you can use the data map and its function later to refine the infoset.

   - To create the infoset without the data map, clear the **Include Data Map for the Refine tab** checkbox. In this case, the infoset generates more quickly, but no visualization of the data is available later to you for refining the infoset.

     Note: If the Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports are run against an infoset without a data map, they contain no data.

7. To include this infoset in the set of objects that are synchronized with the governance catalog, select **Publish to catalog**.

   Even if you do not select this option, the infoset might be published to the catalog as an inferred object. This type of synchronization happens when the infoset serves as direct input to an object that is selected for publishing. The infoset is then required for proper object modeling in the governance catalog.

8. If you want specific users to be notified when the infoset is created, select **Send email when the process is complete** and enter the appropriate email addresses.

9. To determine the overlays that later can be applied to the infoset within the data map, click **Select Overlays** and add up to seven overlays.

   You can select overlays only if you select to generate the data map.
10. Click **Save and View** to go to the **Ancestry** pane, or click **Save** to return to the **Filters** pane.

A new duplicate identification infoset is created to consist of all duplicate objects except any objects from the primary infoset. It is ready for you to start the data deduplication process.

Refinement of infosets and data

The **Refine** pane provides you with a visualization of an infoset. You can see how much data you have, data source types, and breakdown of the data into predefined groups such as file type category or created date.

You can use the visualization and its controls to refine or cull down the data objects that are contained in the selected infoset. The visualization rules out the non-essential data that you do not need.

By saving this visual refinement, you can create new infosets that contain a much further refined set.

Data maps

The data map displays information about data source and allows you to select data source type, view options, data overlay, and details about data size and list of files.

The data map contains these panes:

Data Map Option	Description
Group By	The **Group By** area contains these options: • **Data Source Type**: This view displays the different data source types that make up the selected infoset. By selecting or clearing the data source types, the data map automatically reconfigures, providing you with a visual overview of your data. • **None**: This option removes data source types from the data map.
View By	The **View By** area contains these options: • **Category View**: View data by category, including container files and archives, images, spreadsheets, and email. • **Size View**: View data by size, from less than one MB to over 100 GB. The **Size View** is only active for infosets that have a top-level composition. • **Created View**: View data by created date from within the past 30 days to more than five years ago. • **Last Modified View**: View data by its last modified date, from within the past 30 days to more than five years ago. • **Last Accessed View**: View data by its last accessed date, from within the past 30 days to more than five years ago. By selecting or clearing the viewing options, the data map automatically reconfigures, providing you with a visual overview of your data.
Select Data Overlay	The **Select Data Overlay** list lets you select an overlay to be applied to your data, helping you to analyze your data differently.

Data Map Option	Description
Data Map	Under the Data Map, you can see the total number of objects being viewed as **Viewing x of x total objects**. This total is affected by the selection of the **Object Count** and **Object Size** tabs. • If **Object Count** is selected, this figure indicates the number of data objects that are being viewed compared to the total number of data objects. • If **Object Size** is selected, this figure indicates the data objects' size in bytes compared to the total byte size of the data objects. These same tabs, **Object Count** and **Object Size**, provide you with different viewing options within the Data Map itself. • If **Object Count** is selected, the data map displays the number of objects and their percentage of that data source when you place the pointer over a category. • If **Object Size** is selected, the data map displays the size and percentage of the objects for that data source when you place the pointer over a category. **Object Size** is only active for infosets that have a top-level composition.
Data Map Details	This area displays details about a tile that is selected in the data map. By clicking an individual map tile, details about that specific tile are displayed. You can also see the total number of data objects referred to by the map tile. The **Data Map Details** also shows you the **Total Size** of the selected tile. The bar graph automatically populates, providing a visual representation of how the size of the selected tile relates to that of the size of the infoset as a whole. By clicking **View Full List**, the Data Map Details dialog appears. From here, you can download information about the selected tile to a CSV file.

Refining an infoset

The data map provides additional ways of refining an infoset.

1. On the **Infoset Dashboard**, select the infoset for which you want to refine the data and click **Select** or double-click the highlighted infoset.
2. Click **Refine**.

   The data map opens, providing a visual overview of the data within the selected infoset.
3. To accomplish your tasks, you can refine the infoset as follows:

Refining options	Description
Group by • **Data Source Type** • **None**	You can use this option to group and filter the data objects in the selected infoset by the data sources from which it is fed. You can deselect or select data sources to remove them from or add them to the data map. To view the infoset without grouping, select **None**.
View By • **Category View** • **Size View** • **Created View**	You can view the objects within infosets by different data views, ranging from category or size to its created, last accessed, or last modified date:

Refining options	Description
• **Last Modified View** • **Last Accessed View**	• View data by category, such as collaboration files, email, or image files. • View data by size, from less than one MB to over 100 GB. The Size View is only active for infosets that have a top-level composition. • View data by created date from within the past 30 days to more than five years ago. • View data by its last modified date, from within the past 30 days to more than five years ago. • View data by its last accessed date, from within the past 30 days to more than five years ago. The infoset is displayed within the data map, and the map tiles correspond to the selected view type.
Select Data Overlay	You can apply an overlay to the selected infoset to identify data objects that match the filter criteria. With **Show all** selected, the tile color changes from blue to red depending on the percentage of matching data objects. Overlays are available only if any were added during infoset creation. Overlays can be filters or infosets.

The view is automatically reconfigured to reflect any changes in your selection of viewing options.

4. Optional: You can create a refined infoset that reflects the underlying filter criteria.
5. Optional: You can view the list of data objects that are contained in the refined infoset.

   If you have a user role with the appropriate permissions, you can also preview the content of the listed data objects. However, no more than the first ten pages of the content are shown when you click an object.

Downloading CSV data

Data for a selected tile of an infoset can be downloaded as comma-separate-value files.

1. Select the infoset for which you want to download CSV data.
2. Click **Refine**, and then select a tile in the Data Map.
3. In Data Map Details, click **View Full List**.

   The Data Map Details dialog box appears.
4. Click **Download CSV**, and then open or save the CSV file as needed.

Enhancements to infoset

Clicking **Enhance** on the side navigation bar provides you with a visual layout of available enhancements. Enhancements are created as models within IBM StoredIQ Administrator. When an enhancement is applied to an infoset, it updates that infoset's index.

Table 12. Enhance options and descriptions

Enhance Option	Description
Name	The name of the enhancement that can be applied to an infoset.
Type	The enhancement's type. Currently, the only option is **Auto-class**.
Description	An optional description of the enhancement.

In the **Enhancements Details** pane, a summary of the selected enhancement is displayed, including the enhancement's name, description, and its last usage date.

Running an enhancement

Enhancements are another way to refine or distill an existing infoset. Within an enhancement, existing patterns and rules are used to define the criteria for which the enhancement is comprised. By applying an enhancement to an infoset, the same criteria that make up the enhancement is applied to the selected infoset, creating a new, refined infoset.

Enhancements such as an auto-classification model must be created and defined within IBM StoredIQ Administrator by an administrator. If an enhancement is not available within IBM StoredIQ Administrator, contact the administrator.

1. Select the infoset that you want to enhance.
2. Click **Enhance**.
3. Select the enhancement that you want to apply to the selected infoset.
4. Click **Run Enhancement**.

   The **Run Enhancement Confirmation** window appears. Click **Run and View** or **Run** to run the enhancement.

Actions on data

Actions are preconfigured options that help you to manage data objects that are contained within infosets.

Note: Actions must be created and defined within IBM StoredIQ Administrator by the administrator. They can be scheduled to run immediately or later. If an action is not available within IBM StoredIQ Data Workbench, contact your administrator. Depending on the volume type, action limitations might apply. For more information, see the topic about action limitations in the administration information..

Actions are applied to the document version that is available at the time of execution.

Within IBM StoredIQ Data Workbench, you can take these actions on data objects within infosets:

Basic Move
A move action moves data objects from one location to another. When you are moving an object, the designated location must be specified.

Basic Copy
A copy action copies data objects from a source volume to a destination volume.

Retention Copy
This action copies data objects from a source to a retention location for a specified retention period.

Discovery Export
This action copies data objects and generates files for loading into third-party legal review tools.

Delete
This action removes data objects from the source volumes.

- Only data objects, not directories, are deleted.
- Use caution when you are deleting data objects.
- Delete actions are limited to system level objects. If a responsive object targeted for deletion is within a container object (such as a .zip or .tar file), the container level object is the object that is deleted. Thus, any other objects within the container file are also deleted. The respective logging information reflects the container level object, indicating success or failure or the action.
- A Delete action on a responsive object attached to a CIFS based .msg, .eml, or .pst file also results in the container object being deleted including any other objects attached to or contained within the container object. The respective logging information reflects the container level object, indicating success or failure or the action.
- Delete actions are supported only for .

Modify Attribute
This action changes the access mode for files in an infoset on CIFS and NFS data sources as defined to read-only or to read/write.

Step-up Analytics
Step-up Analytics runs a selected cartridge on an infoset. IBM StoredIQ examines all documents in the infoset, applies the analytics that is contained in the cartridge to the document, and then stores the analysis results in the IBM StoredIQ index.

Step-up Full-Text
The Step-up Full-Text index is applied against a specified infoset. For each object within the infoset, a full-text index is created unless the corresponding file on the data source has metadata that no longer matches the object's metadata. It does not affect the membership of the infoset or its metadata in any way. Step-up Full-Text is audited in the policy audits on the data server.

Step-up Snippet
The Step-up Snippet is applied against a specific infoset. For each object within the infoset, a short capture of the contents of that object is created. It does not affect the membership of the infoset or its metadata in any way. Step-up Snippet is audited in the policy audits on the data server. Snippets are commonly used by the auto-classification feature.

Simulation of the action CIFS copy to Box

When the administrator creates a copy by using a Box target set, the data user can run a **Simulate Action** prior to starting the copy action. From IBM StoredIQ Data Workbench, if you select a copy action with Box as its target data source, **Simulate Action** is enabled and appears under **Action Details** in the bottom pane.

When you click **Simulate Action**, it generates a report that shows what the target looks like in terms of the mapping if the migration was started. The zip file contains three CSV files: the **Permission mapping** CSV file, **Owner mapping** CSV file, and **Collaborator mapping** CSV file.

Preserve Permissions CSV file
> The Preserve Permissions CSV file contains **Permission mapping** from source to destination for the infoset. The file has these fields: **Folder Name**, **Owner**, **Co-owner**, **Editor**, **Viewer Uploader**, **Uploader**, **Viewer**, and **Previewer**.

Preserve Owners CSV file
> The Preserve Owner CSV file lists **Owner mapping** and **Group mapping** from source to destination for the infoset that is selected. The file contains these fields: **Source Owner** and **Destination Owner**.

Preserve Collaborators CSV
> The Preserve Collaborators CSV file lists **Collaborator mapping** from source to destination for the infoset that is selected. The file contains these fields: **Source User** and **Destination Collaborator**.

If the administrator sees any issues from the report, for example, loss of access, he or she can go back to the source and fix permissions on the folder tree. When you run **Simulate Action** again, you can see the changes.

Note: Values in the CSV files vary depending on the action parameter.

Scheduling and running an action

From the **Action** pane, actions can be scheduled to run immediately or at a predetermined schedule, providing you with greater flexibility and control over your data.

1. In the **Action** pane, select the action that you want to schedule, and then click **Run Action**.
   The Action Scheduling dialog box appears.
2. Within the Action Scheduling dialog box, you must determine an action schedule. Select from these options:

   - **Immediate**: If you select this option, the action is queued to run immediately.
   - **Scheduled**: If you select this option, the action is queued to run according to the schedule you set. In the **On** text box, enter the date, and in the **at** text box, enter the time that this action is scheduled to run.
3. After the action schedule is set, click **Run and View** or **Run**.

   The action can be seen in the action log pane by clicking **Details> Action Log**. Actions that were scheduled to run immediately show as **Running** in the **Type** column. Actions that are scheduled to run later are listed as **Queued**.

Canceling a scheduled action

Scheduled or queued actions' executions can be canceled before they run.

1. Click **Details** > **Action Log** and select the action that you want to cancel.

   Note: To cancel an action, the action must be scheduled or queued to run. You cannot cancel an action that is running.
2. In the **Action Details** pane, click **Cancel Queued Action**.

The Cancel confirmation window appears.

3. Click **OK**.

Data reports

Data reports help evaluate and verify processes that were run on IBM StoredIQ Data Workbench.

The generated reports are sent to designated users through email or are available as a download link in the **Action Log** pane for an infoset. To get this default link to work, follow these steps to configure the AppStack:

1. Using an SSH tool, log in as `siqadmin` user and launch the AppStack Configuration utility by running the **appstackcfg** command.
2. In the **Domain** field, enter the IP address of the IBM StoredIQ AppStack.
3. Save the change and exit.
4. Stop and restart the AppStack services.

New reports are created with the IP addresses for your easy access.

System reports

IBM StoredIQ Data Workbench provides the following preconfigured system report types.

Compliance Report
Inspects data for compliance with established guidelines, specifications, or governance policies. The generated report provides detailed information about data-object compliance.

Content Collector Manifest File CSV Export
Exports path, data attributes, and classification data objects that are contained in an Infoset to a modified CSV report. This CSV report is delivered to the user by email or can be viewed in the action log of the infoset. It is saved in a location that IBM Content Collector can retrieve and use.

CSV All Audited Objects Export
Lists all audited data objects after the policy is run. For each data object, the report contains information about its location, type, owner, and size, and the date and time when it was created, last modified or accessed.

CSV Attribute Summary
Lists a summary of attribute counts for in infoset.

CSV Exception List Export
Lists the exceptions that are encountered during the execution of an action.

CSV Infoset Data Object Export
Lists the data objects within an infoset. For each data object, the report contains information about its location, type, owner, and size, and the date and time when it was created, last modified or accessed.

CSV Term Hit Count
Lists the count of term hits for indexed annotations or other terms. With this report, you can identify which data objects contain how many instances of those terms.

For meaningful results, run this report on full-text indexed infosets, preferably infosets on which at least one Step-up Analytics action with one or more cartridges was run.

Before you run this report on an infoset that you created in a product release before version 7.6.0.15, rerun any Step-up Analytics actions to ensure that the information required for proper report results is added to the index. Starting with version 7.6.0.17, unmodified files are skipped when a Step-up Analytics action is run unless any of its cartridges was updated. Therefore, update at least one cartridge per action to be able to rerun the action.

CSV Term Hit Details Export
Lists details about term hits for indexed annotations or other terms. With this report, you can identify which data objects contain how many instances of those terms and where in the object the terms are located.

For meaningful results, run this report on full-text indexed infosets, preferably infosets on which at least one Step-up Analytics action with one or more cartridges was run.

Before you run this report on an infoset that you created in a product release before version 7.6.0.15, rerun any Step-up Analytics actions to ensure that the information required for proper report results is added to the index. Starting with version 7.6.0.17, unmodified files are skipped when a Step-up Analytics action is run unless any of its cartridges was updated. Therefore, update at least one cartridge per action to be able to rerun the action.

Data Assessment Report

Assesses data for IT policies based on distribution.

Data Privacy Report Card

Shows the distribution of sensitive information in an infoset. The search terms and their assignment to security levels is defined in the report configuration. Contact your IBM StoredIQ administrator for information about the report configuration in your system.

Depending on the report configuration, the infoset on which you want to run this report must at least be full-text indexed for the report to return meaningful results. If the configuration includes indexed cartridge terms, you must have run those Step-up Analytics actions that generate the respective annotations to receive meaningful results.

Data Topology Report

Describes how data is distributed across your organization.

Note: Only the top 100 owners of infoset objects across volumes can appear in the data topology report.

Duplication Summary Report

Lists the duplicate data objects that are contained within an infoset.

Overlay Hit Report

Compares data's responsiveness for various overlays.

Term Hit Report

Lists how many data objects in the selected infoset match each of the given search terms. The goal is for you to quickly access several query options and narrow to the terms that you might be interested to pursue.

Generating a system report

If the infoset against which you are generating a report was created without a data map, some report types are affected. The Compliance, Data Assessment, Data Topology, Overlay, and Customized Reports contain no data if they run against an infoset without a data map.

1. Select the infoset on which you want to generate a system report.
2. Click or select **Report** > **a report type** > **Generate Report**.
3. In the Generate Report dialog box, complete these fields:
   a) Enter the name of this report. By default, the report is named by the type of report and the name of the infoset.
   b) Enter one or more email addresses that are separated with commas to the receivers.
4. Click **Generate**.

Generating a term hit report

The Term Hit Report system report provides an overview of how many data objects in the selected infoset match each of the given search terms. This information helps you to assess query options and to focus on the terms that you might be interested to pursue.

The report provides the count of documents that match the search terms that you provide as report parameters. It does not provide any information about which document matches which search expression.

When you generate the report, you specify the search terms in addition to the basic report information such as the report name and optional recipients. These search terms can be freely chosen or based on filters.

Tip: This report returns the most reliable results when it is run on full-text indexed infosets.

To generate a term hit report:

1. Select an infoset and open the report pane.
2. From the system report list, select **Term Hit Report** and fill in the basic information.
3. On the **Terms** tab, add custom terms and filters as required.

   Single search terms must follow full-text filter syntax. For details about the handling of special characters or punctuation in search terms, see the topic about "Extended ASCII characters" on page 19.

   When you add filters, make sure to select only full-text filters to obtain meaningful results.

   You can review your selection in the **List of Terms and Filters to include in the Report** section.
4. Click **Generate** to run the report.

Generating a CSV Term Hit Details Export report

The CSV Term Hit Details Export system report provides an exhaustive list of matches from the documents in the selected infoset to the search terms given as report parameters.

This report returns the most reliable results when it is run on full-text indexed infosets, preferably infosets on which at least one Step-up Analytics action with one or more cartridges was run.

Important: Before you run this report on an infoset that you created in a product release before version 7.6.0.15, rerun any Step-up Analytics actions to ensure that the information required for proper report results is added to the index.

Starting with version 7.6.0.17, unmodified files are skipped when a Step-up Analytics action is run unless any of its cartridges was updated. Therefore, update at least one cartridge per action to be able to rerun the action.

You can use this report, for example, in a development system for debugging during cartridge development and for reviewing the detection quality of your cartridge before promoting the cartridge to production. The report does not cover CDA cartridges. Only cartridges generating indexed annotations are supported. The report also provides important information for risk assessment and remediation efforts: after compiling a set of documents that match a specific pattern, you can find out what exact string matched the pattern at which position in a document and what the context of the string is.

When you generate the report, you specify the search terms in addition to the basic report information such as the report name and optional recipients.

For each match in a data object, the report contains basic information about the object, such as its location, size, type, and ownership, and when the object was created, last accessed, or modified. In addition, these details are available:

- The search term as you entered it in your request.
- The overall match count for a document; a value of 3, for example, indicates that three search expression matches were found in the document. The matches can be for one search expression or for different ones. Each has its own entry in the report resulting in three report rows for that document.
- The text that matched a search expression. A maximum of 128 characters is included in the report.
- Short snippets of the text to the left and right of the match to provide some context. This column is filled only for text matches on indexed annotations in documents that were processed with the respective cartridge.
- The UIMA type of the match. This column is filled only for text matches on indexed annotations in documents that were processed with the respective cartridge.
- The language as detected for that document.

- The offset of both the start and the end of the match within the document as a number of plain text characters.
- The document size in KB.
- An offset percentage to give you a rough understanding of where in the document to look for the match; the lower the value, the closer to the start of the document.
- The node ID, which is the unique StoredIQ identifier of the document.
- The date and time that the index was built.

Important: Depending on your search terms, the generated report might contain sensitive data.

To generate a CSV Term Hit Details Export report:

1. Select an infoset and open the report pane.
2. From the system report list, select **CSV Term Hit Details Export** and enter the basic information.
3. On the **Terms** tab, add custom and cartridge terms as required.

   Single search terms can have the format of full-text filters:

   - Simple terms such as single words that can include wildcards
   - Full-text macros in the format $\{macro\}$
   - Regular expressions in the format $re:"regex"$
   - Indexed annotations in the format $ia:filter\_term$

   Complex terms containing logical AND, OR, or NOT operators, or spaces are not supported. For details about the handling of special characters or punctuation in search terms, see the topic about "Extended ASCII characters" on page 19.

   When you add a cartridge, the list of the cartridge's supported results is expanded and all of the cartridge terms are added to the list of search terms.

   You cannot include CDA cartridges in the report.

   You can review your selection in the **List of Terms to include in the Report** section. The prefix **CustomTerm:** identifies search terms that you added manually. Search terms that stem from a cartridge are prefixed with the cartridge name. You can add terms to or delete terms from the list as required.
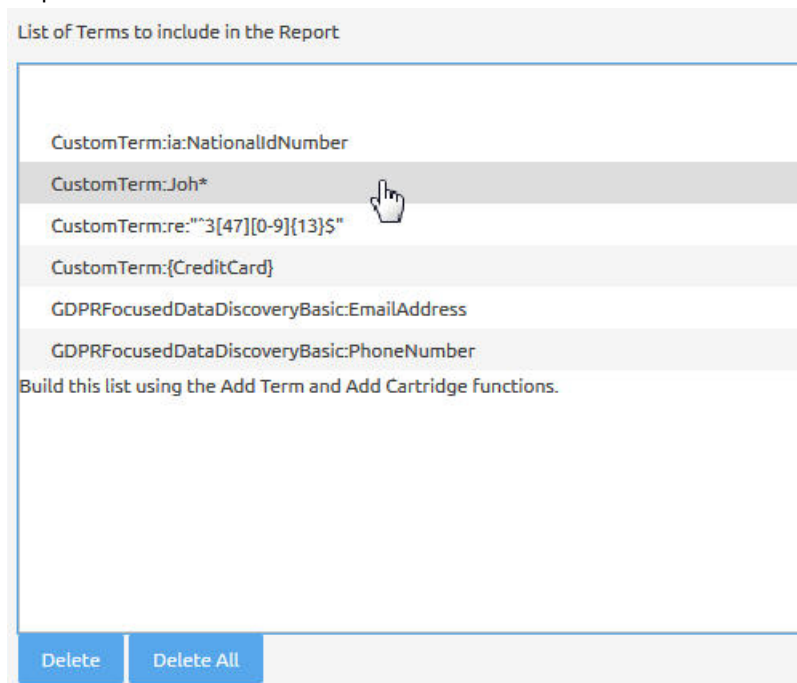
4. Click **Generate** to run the report.

Generating a CSV Term Hit Count report

The CSV Term Hit Count system report lists the number of matches to the search terms given as report parameters for the documents in the selected infoset.

This report returns the most reliable results when it is run on full-text indexed infosets, preferably infosets on which at least one Step-up Analytics action with one or more cartridges was run.

Important: Before you run this report on an infoset that you created in a product release before version 7.6.0.15, rerun any Step-up Analytics actions to ensure that the information required for proper report results is added to the index.

Starting with version 7.6.0.17, unmodified files are skipped when a Step-up Analytics action is run unless any of its cartridges was updated. Therefore, update at least one cartridge per action to be able to rerun the action.

You can use this report to produce a summary of the search terms that were found and their counts. This report does not contain the matching text nor any other text snippets. Thus, it is much smaller than the CSV Term Hit Details Export report. Plus, it does not contain any sensitive information while still providing enough information for an initial risk assessment.

You can import the report data into other applications, such as Microsoft Excel spreadsheets, and sort or aggregate by count or search term. However, the number or columns and the column names changes for each run depending on the selected terms. Therefore, the report doesn't lend itself to use in ETL tools.

When you generate the report, you specify the search terms in addition to the basic report information such as the report name and optional recipients.

For each data object that has a match, the report contains basic information about the object, such as its location, type, and ownership, and when the object was created, last accessed, or modified. In addition, these details are available:

- The node ID, which is the unique StoredIQ identifier of the document.
- The language as detected for that document.
- The date and time that the index was built.
- The match count for each search term that you entered in your request.

To generate a CSV Term Hit Count report:

1. Select an infoset and open the report pane.
2. From the system report list, select **CSV Term Hit Count** and enter the basic information.
3. On the **Terms** tab, add custom and cartridge terms as required.

   Single search terms can have the format of full-text filters:

   - Simple terms such as single words that can include wildcards
   - Full-text macros in the format {*macro*}
   - Regular expressions in the format re:"*regex*"
   - Indexed annotations in the format ia:*filter_term*

   Complex terms containing logical AND, OR, or NOT operators, or spaces are not supported. For details about the handling of special characters or punctuation in search terms, see the topic about "Extended ASCII characters" on page 19.

   When you add a cartridge, the list of the cartridge's supported results is expanded and all of the cartridge terms are added to the list of search terms. However, the report does not cover CDA cartridges. Only cartridges generating indexed annotations are supported.

   You can review your selection in the **List of Terms to include in the Report** section. The prefix **CustomTerm:** identifies search terms that you added manually. Search terms that stem from a cartridge are prefixed with the cartridge name. You can add terms to or delete terms from the list as required.

List of Terms to include in the Report

CustomTerm:ia:NationalIdNumber

CustomTerm:Joh*

CustomTerm:re:"^3[47][0-9]{13}$"

CustomTerm:{CreditCard}

GDPRFocusedDataDiscoveryBasic:EmailAddress

GDPRFocusedDataDiscoveryBasic:PhoneNumber

Build this list using the Add Term and Add Cartridge functions.

Delete   Delete All
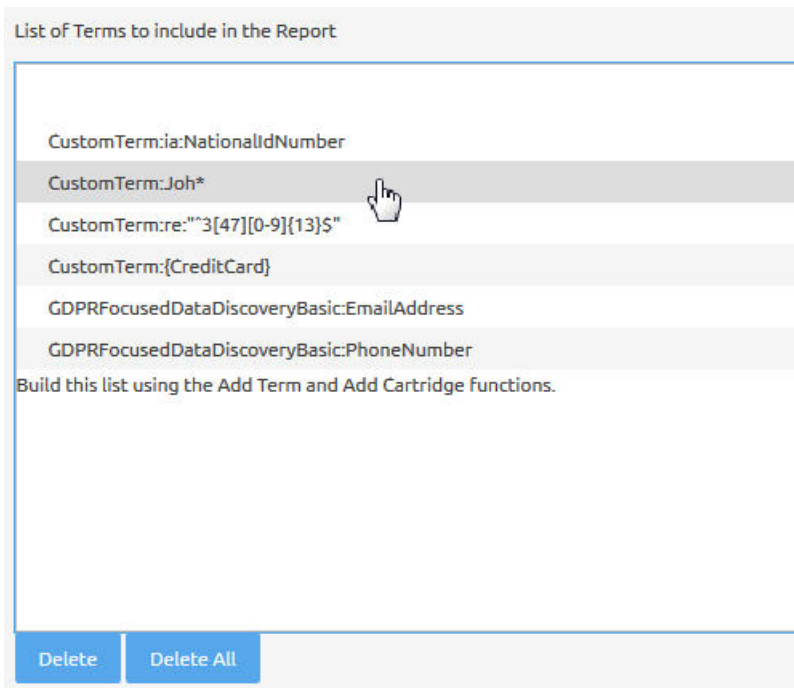
4. Click **Generate** to run the report.

User reports

Use the **User reports** interface to create Custom CSV Export reports on the infoset you selected on the infoset dashboard. You can select and specify the exact metadata information in the report.

Select a metadata category such as **System metadata** from the list. Then specify and add metadata fields that are to be shown in the report.

Generating a user report

Select a user infoset on which you want to generate a report.

1. Click **Report** > **User** on the side navigation bar and click **Create**.
2. Name the report.

   Avoid using commas (,). Although a comma is a valid character, it causes queries to fail when specified as part of the search text.
3. Enter a description about this report.
4. Click **Next**.
5. Select a metadata category from the list, for example, **System metadata**.

   Note: Metadata categories that are specific to certain source type appear only as options if the infoset has objects on that source type. For example, the SharePoint metadata category displays only if the infoset includes SharePoint objects.
6. Select one or multiple attributes from **Available Fields**. Select multiple attributes by combining the mouse click with the Shift key or Alt key.
7. Click **Add** to move the selected attributes to the **Report Fields** pane.
8. Click **Remove** to delete any report fields that you do not need.
9. Use **Move Up** or **Move Down** to rearrange the sequence of the report fields.
10. Click **Save and Exit**.
11. Select the report on the user report list and click **Generate Report**.
12. Enter the email address in the **Send To** field.

13. Click **Generate**.

User reports that are never used to generate reports can be deleted from the **User** pane by selecting a report and clicking **Delete**. After a user report is used to generate a report, it cannot be deleted.

For ease of creating a similar user report, you can clone an existing user report by selecting a report and clicking **Clone**. Rename the report and further customize its metadata category and report fields if necessary. Save it as a new user report.

Format of CSV reports

The format of the `.csv` files and manifest files in the reports is as follows.

- Values are not quoted.
- Values are separated by , (comma).
- There is no whitespace after the comma.
- Lines end with carriage return and line feed characters.

Request management

The **My Requests** link on the IBM StoredIQ Data Workbench dashboard provides an interface to show the list of requests that you received or responded to so that you can track, audit, or work on them.

The legal user of IBM StoredIQ for Legal creates boxes to request data from the data expert working with IBM StoredIQ Data Workbench. For more information about creating boxes, see the section Managing data boxes in the IBM StoredIQ for Legal documentation on IBM Knowledge Center.

When a box is created, it is placed in a **Pending** state. An email is sent to you, the data expert, requesting that you create infosets to match the box request.

My Requests allows you to manage the requests from IBM StoredIQ for Legal. When you address the requests by creating the requested infosets and completing the request, the request is set to **Closed**.

My Requests

My Requests displays all requests specifically for the data expert who must address them.

My Requests provides these functions:

- It displays all requests, including both currently received requests and processed requests.
- Through the **Requests** window, it provides two tabs: **Active** and **Closed**. You can sort the requests by their names and their sent or completed time.

The basic steps to work with **My Requests** are described in the following sequence:

1. Click **My Requests** to open a **Requests** window.
   - The **Active** tab lists the names of the requests, their status, people who issued the requests, and when they were received.
   - The **Closed** tab lists the names of the requests, their status, people who issued the requests, and when they were acted on. The **View** list provides the options of viewing **All**, **Completed**, **Rejected**, or **Canceled** requests from the **Closed** tab.
2. Click a request item; the window loads the name of the request, the legal user, and the content of the request.
3. If you cannot find a matching infoset from the existing infosets, create an infoset to respond to the requests. For information about how to create an infoset, see "Creating an infoset" on page 3.

   All infosets that are listed under **Primary Infosets** are shown as links. Clicking a link opens the infoset's context in the IBM StoredIQ Data Workbench window.

   The **Reject** button and **Accept** button are enabled for all **Open** requests. Clicking **Reject** closes the request item window and sets view to the **Closed** tab. Clicking **Accept** updates the request item window with the **Accepted** status and time stamp.

   In the **Fulfillment Notes** field, you must enter notes for the **Reject** action. The request item window does not close if you do not enter notes. Notes for the **Complete** action are optional. Notes are not sent and stored for the **Accept** action.
4. Select the new infoset that you created from **Primary Infoset** and click **Complete**. The request is back to the default **Request** list window and the **Closed** tab shows the request as **Completed**.
5. You can open the requests from the Closed tab.

   If you click a completed request, you see all information about this request: its original request information, its status, and information about the infoset that was created for this request. The infoset is shown as a link so that you can click it to see its context.

   If you open a rejected request, you see only the rejection note and the original request.

Canceled requests store the original requests and time stamps.

User notification

The user notification icon is at the top of the IBM StoredIQ Data Workbench interface. It becomes active when a new notification arrives.

The user notification icon turns blue when these notifications occur:

- A box request comes from the legal user of IBM StoredIQ eDiscovery.
- A new user infoset is complete or fails to be created.
- An action, enhancement, or report execution is complete.

A number on the notification icon displays the count of all unread notifications. If there are more than 99 notifications, the icon displays the notification count as 99+. The items are listed by time that they come in; the latest comes at the top.

If you click a request notification from the list, a window opens to display the details of that item. If you click an infoset notification, it opens that specific infoset. Clicking the report execution notification takes you to the action log that has details of the completed execution. Clicking outside the list closes this notification list.

All unread notifications display in dark gray. After you click an unread notification, it changes to the *read* state in light color. Clicking **Mark All Read** marks all notifications that are loaded in the list as *read*.

Exceptions

Exception lists contain various data objects such as files, emails, which encountered an error when an action was conducted on the infoset. This list helps you to know exactly what data needs attention due to some error or exception. It also serves as an informational trace of what went wrong during the process.

Clicking **Exceptions** opens three panes: **Events**, **Types**, and **Exception Objects**. Initially, all entries in the **Events** and **Types** panes are selected, and contextual details for all exceptions are displayed within the **Exception Objects** area. Data objects might be listed several times: once for each exception. You can filter the list of exception objects by selecting subsets of events and types.

Events

Table 13. Events column definitions	
Events Column Heading	**Definition**
Name	The name of the event, that is, the name of an action.
Started	The date and time at which the action was started.
Type	The event type.

Types

Table 14. Types column definitions	
Types Column Heading	**Definition**
Name	The name of the exception that occurred for one or more data objects: **Autoclass error**, **Export error**, **File access error**, **File copy error**, **Network error**, **Other**, **Permissions error**, **Server error**, **System rrror**, or **Unsupported action**.
Severity	The severity level of the exception.
% of Infoset	The percentage of the infoset with that error.
Count	The number of data objects with that error.
Size	The overall size of data objects with that error.

Exception objects

Table 15. Exception objects column definitions	
Exception Objects Column Heading	**Definition**
Name	The name of the exception object.
Timestamp	The date and time of the exception.
Event	The run action that resulted in the exception.
Exception	The type of exception encountered.
Message	Based on the exception type, this message provides additional information about the exception itself using information that is pulled from the audit log.
File size	The exception object's file size.

Table 15. Exception objects column definitions (continued)	
Exception Objects Column Heading	**Definition**
File path	The file path to the exception object's location.

Saving the exception objects list

You might want to save the list of exception objects, for example, for reporting purposes.

You can save the list by creating a new infoset or by exporting the information to a CSV file.

1. Select the event, type, and exception objects that you want to export.
2. Choose an option:

   - To create an infoset, click **Create Infoset**.

     In the **Create New Infoset** window, enter the appropriate information. For details, see "Creating an infoset" on page 3.

   - To export the information to a CSV file, click **Export Exception**. Specify the email addresses of one or more persons to receive a link to the CSV file.

     Note: This selection generates a CSV Exception List Export report. This report appears in the action log of the infoset that produced the exceptions.

User analytics

IBM StoredIQ Administrator offers the feature of user analytics that captures user events along with metadata about these events. The data is stored in a log file `/var/siq/log/useranalytics.log` on the AppStack.

The user analytics is started only if the user selects the **Enable Analytics** option from **Help** in IBM StoredIQ Administrator. It is disabled by default and can be activated by an administrator at any time. The event captures and analysis are supported in IBM StoredIQ Administrator and StoredIQ Data Workbench.

By enabling the user analytics, IBM StoredIQ users can periodically share the log files with IBM. Analyzing the logs helps identify usage patterns within the applications. It also helps the IBM StoredIQ user experience designers, offering managers, and support engineers make decisions about potential features and analyze unexpected patterns and data driven feedback on the new features that are delivered.

Data that is captured is related to actions within the applications. It does not collect any confidential customer information such as filter expressions, infoset details, volume definitions, and credentials. Currently, user events are limited to `click`, `page load`, and `page unload`.

IBM StoredIQ discovery export

The discovery export feature provides an iterative cycle of harvesting data across volumes for generating Electronic Discovery Reference Model (EDRM) XML, Concordance Delimited ASCII Text (DAT), or Concordance DAT (Light) file exports for loading into third-party litigation review software.

This feature consists of a copy policy that copies harvested files from retention and runs and saves this data to a discovery export volume within discovery export. The resulting files detail the location of content, original and duplicate files, and key metadata that regards the content according to entered search terms and litigation needs. Native files and, optionally, their plaintext equivalents, are included to describe the content.

Concordance DAT load file

The Concordance DAT load file can be imported into a Concordance database.

The Concordance DAT export produces the following files:

DAT config file
The `siq_dat_config.CSV` provides the appropriate database schema that must be used for importing generated DAT files into Concordance.

Concordance load files
The `siq_load_file.dat` contains Concordance DAT delimited text records for each data object. The `siq_tag_file.gat` contains tag information about which objects in the DAT load file were deemed responsive.

Run files
The XML audit trail outlines the file system metadata for the source and discovery export volumes and the chain of custody for the data objects. Other files include a CSV report about all load files that are exported for the given run and a CSV user-ID-to-name mapping file.

Concordance DAT (Light)

The Light version of the Concordance load file differs from the Concordance DAT in the material that is exported from IBM StoredIQ.

For Concordance DAT (Light):

- Data-object text is not embedded in the load file, but it is instead provided in a separate text file. It is named with the DocID.
- Native files are named with their DocIDs.
- Container-folder hierarchy is not maintained. Email attachments are not placed in folders apart from their emails, and container members do not reside in folders separate from their parents.
- The first row of the load file includes the column names that are used in the load file.
- Folder contents are limited to 10,000 items.
- Load files are limited to 50,000 objects.
- Dates are provided with GMT as the default. Dates are formatted in MM-DD-YYYY. The following `Date` fields are provided:
  - Date, specifically the main date for the object: the `sent` date for an email and the `modified` date for a non-email.
  - Email Sent Date
  - Email Received Date
  - Modified Date
  - Created Date

- The object name is provided in a separate column.
- Objects must always be grouped into separate folders by custodian.
- Email text files include the following header information: `From field, To field, CC field, BCC field, Subject field, Sent Date.`

EDRM XML

The EDRM XML load file can be mapped to a third-party legal review application to import all data pertinent to a legal matter.

These types of files can be mapped:

- Native files: The original source files, such as doc, ppt, txt, and optionally, plain-text versions of the original source files.
- EDRM XML load files: EDRM XML files that fully describe each data object that is produced in a discovery export run.

During the harvest procedures, the system indexes and classifies all of the files in a volume and every file is evaluated for duplicates, content-based attributes, and metadata. Content deduplication is performed automatically while it retains all document instance metadata.

An EDRM XML discovery export policy then copies objects responsive to the classification for the given legal matter and produces the EDRM XML load file. The EDRM XML describes each exported document in terms of where it was sourced from, where the corresponding native files were copied to, and important metadata about the document. The policy is incremental, in that metadata for a document instance cannot be repeated in subsequent export policy cycles unless that data changed.

IBM StoredIQ captures various levels and types of metadata to provide a rich, multiview approach to a document. The information that is captured in the EDRM XML load file conforms to the EDRM XML v1.1 format and includes this information:

- Export information, which is information about the legal matter that is tied to the policy.
- Batch information, which is information about the run that exported the load file.
- Document metadata. For each document in the load file, all metadata in the EDRM XML v1.1 specifications and the attributes in the EDRM XML v1.1 Metadata Tags sheet are described when applicable. These metadata and attributes are available from http://www.edrm.net. In addition, metadata that is defined by IBM StoredIQ is also exported for each document to enrich the metadata available to legal review tools.
- Source location information. The source location where each document was sourced and the Custodian that is attached to that copy of the document is also described in the load file in conformity with the EDRM XML standards.
- Native copy location information. For the legal review tools to locate the individual copies of the native files that are produced for each document, the EDRM XML describes where on the target volume these native files were copied.
- Run files, which are files that cover the entire run. These files include the IBM StoredIQ audit trail report in XML format, a CSV file, a CSV report, and a CSV user-ID-to- name mapping file. The CSV file details all of the EDRM XML tag definitions applicable to the produced load file. The CSV report is about all load files that are produced for the run.

Result directory and EDRM XML load file

Once a policy has completed its run, certain objects are places within the result directory.

The directory structure of the information provides ease of review and use for manual and review tool evaluation of harvested data. Each policy definition includes a destination volume, the configuration used and destination directory under the export volume to which to copy to (optional). A directory, named after the discovery export, is created on the export volume under the specified destination directory, and all runs for the policy export data under this directory. With each export policy execution, a new discovery

export run directory is created under the directory using the sequence number of the run for a name. After the completion of a policy run, the destination directory includes the following:

- The run directory holds all results for each export policy run. These directories include a `documents` subdirectory to hold all of the native files that were exported for the run. However, if the export was configured to deduplicate by custodian, there would be a directory named after each custodian under the run directory, and each of these in turn would have its own `documents` subdirectory.
- Inside each `documents` subdirectory, there is another level of subdirectories with numbers for names to handle exceedingly large amounts of files. Each numbered subdirectory holds up to 10,000 files.
- The documents subdirectory, that is, native files directory, includes the copies of the original source objects and the plaintext for each object (optional) in the same directory as the native copy.
- Destination plaintext files are named using the hash of the content and the file-type suffix, such as 0x7bd1b96d357e7f21d243851653517c889d6605d5.txt. The native files retain their original names from the original source.

File system directory layout

The following Discovery Export Parameters have a significant impact on the content of the EDRM XML run export.

- Destination Directory
- Limit Export process to number of Data Objects
- Save a text copy (that is extracted from data files, otherwise known as plaintext)
- Unique ID prefix, Number of Digits, and Pad Zeros

Source volume files
The following examples are based on harvesting the source volume \\qa01\grogers, starting with the directory home for one of two users: flexus.

Although all directories cannot be seen, this list is the complete list of source volume files and directories:

- home
- home/flexus
- home/flexus/backup
- home/flexus/backup/carlota.zip
- home/flexus/backup/Spaulding.doc
- home/flexus/carlota.zip
- home/flexus/jbowers_identity.doc
- home/flexus/mybcc
- home/flexus/mybcc/to_jbowers.msg
- home/flexus/Spaulding.doc
- home/jbowers
- home/jbowers/Copy of identity.doc
- home/jbowers/from_flexus.msg
- home/jbowers/identity.doc
- home/jbowers/philosophy.txt
- home/flexus.pst

Interesting features of the source documents include the following files and directories:

- The file home/flexus/carlota.zip contains two text files, friends.txt and enemies.txt.
- The directory home/flexus/backup contains copies of two files that are found in home/flexus.

- `home/flexus/mybcc/to_jbowers.msg` contains a saved email message that `flexus` sent to `jbowers`. That message has a copy of `Spaulding.doc` as an attachment.
- `home/flexus.pst` contains two emails, one with subject `Letter from Spaulding` to lawyers and the other with the subject `Philosophy of Life`. Each email further has an attachment; the former has the attachment `Spaulding.doc`, and the latter has the attachment `identity.doc`.
- `home/jbowers/Copy of identity.doc` is a copy of `home/jbowers/identity.doc`. The contents of both are the same as `home/flexus/jbowers_identity.doc`.
- `home/jbowers/from_flexus.msg` contains the same email message as `home/flexus/mybcc/to_jbowers.msg`.

EDRM XML Production provides examples that illustrate how the discovery export feature exports files and metadata.

EDRM XML production

The following section describes the details about the files that are generated for an EDRM XML discovery export.

Note: The discovery export action identifies duplicate files that are based on content-based digest and only exports one copy of a file per data server. The duplicate files are identified in the audit trail.

A run creates directories and files on the discovery export volume. All files for a run are located under a discovery **export-** and run-specific directory on the destination volume under the destination directory.

For each subsequent run, a new subdirectory is created. The directories are named by the run numbers 2, 3, 4, and so on.

Any number of discovery exports can use the same export directory. The output is kept separate by the use of the discovery export name, such as case_123, as the parent directory to the run directories.

This example configuration uses the following information:

Target Volume	auto-P
Destination Directory	exports
Document ID Prefix	NS, number of digits 6, with 0 padding

When a discovery export policy is configured to export EDRM XML, it exports two types of output files:

- Native Files: Copies of original source files such as doc, ppt, txt, and, optionally, plain-text versions of the original source files. The native files are found in the `documents` subdirectory.
- Run Files: Files that cover the entire run. These files include the EDRM XML run siq load file, the audit trail xml, the EDRM tag definition list, a csv load file report, and a user-ID-to-name csv mapping file. These files are found at the top of the `discovery export run` subdirectory.

The `run` directory contains these files:

- `siq_audit_trail.xml`: The audit trail for the discovery export policy execution. It shows the details of each source and destination object. Essentially, it is an XML encoding of the information available using theIBM StoredIQ interface to the audit trail.
- `siq_edrm_tag_definitions.csv`: This file is a csv file that lists all the tags in the EDRM XML load file that is produced by IBM StoredIQ and related information. The file has the same contents as the table of metadata tags in "EDRM XML metadata tags" on page 68.
- `siq_load_file-0-0.xml`: This file is an instance of an EDRM XML load file that is produced in the run.

Note: For performance reasons, more than one instance of an EDRM XML load file can be produced during a single run.

- `siq_loadfile_report.csv`: This csv file lists all load files that are produced by the run and status information that states whether they are valid for a load or not. The file also reports the range of

document IDs produced in each of the load files and other metadata information such as size and date created.

- `siq_userid_map`: This csv file contains a list of user IDs called **uids** in the NFS domain and **SID** in the Windows Share domain with corresponding user names that map to the user IDs. The user IDs and the user names come from the produced native files for the run.

Under the `documents` subdirectory, an intermediate directory is named 1 that contains the files. To avoid putting too many files and directories in a single subdirectory, the files are placed into numbered subdirectories that contain no more than 10,000 files and directories.

In an EDRM XML discovery export, containers are always expanded to clearly articulate their internal structure. A directory structure is built with each level named after the container and any intermediate containers therein. The path to a data object within the container is achieved by flattening the structure on the file system. You can see this path by looking at the directory structure.

For instance, in this image, the data objects `enemies-0.txt` and `friends-1.txt`, which are contained within the `carlota.zip` container, are flattened out under a directory named `carlota.zip.members`. Their corresponding plain-text files are next to them in the same directory.

Plaintext file is optional, but when enabled, all documents have a corresponding plain-text file. The plain-text files are named according to their SHA-1 hash value and suffix, which is **.txt**.

The complete list of files and directories for the EDRM XML export for the example is as follows:

```
//qa1/auto-P/exports/edrm global/
//qa1/auto-P/exports/edrm global/1/
//qa1/auto-P/exports/edrm global/1/documents
//qa1/auto-P/exports/edrm global/1/documents/1
//qa1/auto-P/exports/edrm global/1/documents/1/
0x724b937d5a2750038325c8f4b48d1b5dcba77853.txt
//qa1/auto-P/exports/edrm global/1/documents/1/
0xf4dd8fe9b09c834a2033849ff8a5d63f67823787.txt
//qa1/auto-P/exports/edrm global/1/documents/1/jbowers_identity.doc
//qa1/auto-P/exports/edrm global/1/documents/1/Spaulding.doc
//qa1/auto-P/exports/edrm global/1/documents/1/
0x8d1e7cef561d7d81585af82d9f79f8a703bd96ee.txt
//qa1/auto-P/exports/edrm global/1/documents/1/
0xd7eb7675f2d201c79cf821debaaeba5a208cba29.txt
//qa1/auto-P/exports/edrm global/1/documents/1/from_flexus.msg
//qa1/auto-P/exports/edrm global/1/documents/1/philosophy.txt
//qa1/auto-P/exports/edrm global/1/documents/1/carlota.zip.members
//qa1/auto-P/exports/edrm global/1/documents/1/carlota.zip.members/
0x22e2105930a1ddc75b9bc9dc3d5408c3b0bac8b1.txt
//qa1/auto-P/exports/edrm global/1/documents/1/carlota.zip.members/
0xfce44897add0b77c25fea85118fe47164dc828d4.txt
//qa1/auto-P/exports/edrm global/1/documents/1/carlota.zip.members/enemies-
0.txt
//qa1/auto-P/exports/edrm global/1/documents/1/carlota.zip.members/
friends-1.txt
//qa1/auto-P/exports/edrm global/1/documents/1/from_flexus.msg.members
//qa1/auto-P/exports/edrm global/1/documents/1/from_flexus.msg.members/
0x1564f56aecf315cdecde563605fb151356f8dcc2.txt
//qa1/auto-P/exports/edrm global/1/documents/1/from_flexus.msg.members/
Spaulding-1.doc
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/0x277bab09a965f3840cd8a14300e0fccf59f6f5a9.txt
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/Philosophy of Life-7.msg
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/bcc.members/
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
```

```
flexus.members/bcc.members/Letter from Spaulding to his lawyers-9.msg
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/bcc.members/
0x2a5bccfda550233ce9bac5d1f25e52590702a539.txt
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/bcc.members/.siq_overflow
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/bcc.members/.siq_overflow/
0xd7eb7675f2d201c79cf821debaaeba5a208cba29.txt
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/bcc.members/.siq_overflow/Spaulding-8.doc
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/Philosophy of Life-7.mail.members
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/Philosophy of Life-7.mail.members/
0xf4dd8fe9b09c834a2033849ff8a5d63f67823787.txt
//qa1/auto-P/exports/edrm global/1/documents/1/flexus.pst.members/Top
of Personal Folders.members/Story.members/Production.members/
flexus.members/Philosophy of Life-7.mail.members/identity-6.doc
//qa1/auto-P/exports/edrm global/1/siq_audit_trail.xml
//qa1/auto-P/exports/edrm global/1/siq_edrm_tag_definitions.csv
//qa1/auto-P/exports/edrm global/1/siq_load_file-0-0.xml
//qa1/auto-P/exports/edrm global/1/siq_loadfile_report.csv
//qa1/auto-P/exports/edrm global/1/siq_userid_map.csv
```

Note: Duplicate Files: Although 20 data objects were originally identified for export, only 11 native files were eventually produced, along with corresponding plaintext files. Duplicates are not copied and are marked in the policy audit trail. The EDRM XML load file lists all the exported documents and related metadata according to standard EDRM specifications. Any exceptions are noted in the IBM StoredIQ EDRM metadata tags list.

EDRM XML considerations

To load data from an IBM StoredIQ EDRM XML run, begin by using the `siq_loadfile_report.csv` to locate all the load files successfully produced in the current run.

Load these files one by one, preferably in the order of increasing document IDs mentioned in the report, into the target application. All file references in each of the load files are relative to the location of the load files themselves. Therefore, it is necessary to ensure that this relative location is maintained for a successful load operation.

The EDRM XML produced in each load file is compliant with the EDRM XML Version 1.1 XML specification and can successfully validate against the EDRM XML Validation Tool version 1.1.

XML root information
The name of the discovery export is used as the **CaseID** that describes the load file itself. The discovery export description, which is entered from IBM StoredIQ application interface, is also published in the **Description** attribute.

Batch information
The batch element is associated with a single run in the application. By this definition, there is only one batch element in every load file produced. The name of the batch is the run number.

Document entries in the load file
Intermediate archives inside file archives are only present in the `export all members` case or if these intermediate archives are responsive to the query used to drive the run.

Email archives are never expressed in the XML as documents. Only the emails that are produced from these email archives are described in the XML.

Tag information

In addition to the EDRM XML standard metadata tags, the following information is also present in the load files in the form of IBM StoredIQ EDRM XML tags.

Tag information	Description
Responsive	Whether IBM StoredIQ deemed the document to be responsive or not, based on the query that drives the policy.
Internal path	Path leading to the object that starts from below the file system object, if it was contained within a container.
Internet Message ID	Unique ID identifying every email.

Relationship between documents

The relationships that are described between documents are as follows.

- Attachment: Direct attachments to an email are related to the email.

- Container: A member of a file archive is related to its immediate parent only if the immediate parent is exported in the load file and has a DocID of its own. In the absence of the immediate parent, the member is related to the file system-level file archive that is always present in the load file.

If an email has archives or other emails that are attached to it, the members of the archives or emails are not related to the top email. Instead, they are related to the archives or emails to which they directly belong.

There is no container relationship between an email in an email archive and the email archive itself because the email archive is not produced as a document in the load file.

EDRM XML metadata tags

Describes valid data types and EDRM XML v1.1 metadata tags.

The following data types are valid for IBM StoredIQ EDRM XML tags.

Table 16. Valid data types for EDRM XML Tags	
Type	**Comment**
Boolean	{True/False}
DateTime	YYYY-MM-DDThh:mm:ss.sTZD
Decimal	Standard float
Integer	32-bit integer
LongInteger	64-bit integer
LongText	Text (32,767 characters or fewer)
Text	Text (255 characters or fewer)

EDRM-standard tag names are prefaced with a #. IBM StoredIQ proprietary names are prefaced with an SIQ-. In certain cases, IBM StoredIQ altered the data types for some tags from what is prescribed in the original EDRM XML v1.1 metadata tags list to support a larger range of values. It does not violate EDRM compatibility.

Table 17. EDRM data tags					
Document Type	**Metadata Property**	**Tag Name**	**EDRM Data Type**	**Data Type**	**Description**
All	BookMark URL (Box)	SIQ-Box-BookMarkURL	N/A	Text	URL that is set for a BookMark object.

Table 17. EDRM data tags (continued)

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Collaborator (Box)	SIQ-Box-Collaborator	N/A	Text	Collaborator of this object.
	Comments (Box)	SIQ-Box-Comment	N/A	Text	A comment that was entered in a file in Box.
	Content created at (Box)	SIQ-Box-ContentCreatedAt	N/A	DateTime	Date that the content for this object was created.
	Content modified at (Box)	SIQ-Box-ContentModifiedAt	N/A	DateTime	Date that the content for this object was modified.
	Created At (Box)	SIQ-Box-CreatedAt	N/A	DateTime	Date that the object was created.
	Created By (Box)	SIQ-Box-CreatedBy	N/A	Text	The user that created a file.
	Custom (Box)	SIQ-Box-CUSTOM	N/A	Text	Custom metadata that is set on this object.
	Description (Box)	SIQ-Box-Description	N/A	Text	The description that is entered for the data object.
	Item Status (Box)	SIQ-Box-ItemStatus	N/A	Text	Item status for the data object, whether it is deleted or not.
	Modified At (Box)	SIQ-Box-ModifiedAt	N/A	DateTime	Date that the object was modified.
	Modified By (Box)	SIQ-Box-ModifiedBy	N/A	Text	The user that modified a file.
	Owned By (Box)	SIQ-Box-OwnedBy	N/A	Text	The user that owns a file.
	SharedLink Download Count (Box)	SIQ-Box-SharedLink-DownloadCount	N/A	Text	Download count for the shared link for this object.
	SharedLink Vanity URL (Box)	SIQ-Box-SharedLink-VanityURL	N/A	Text	Vanity URL of the shared link for this object.
	SharedLink Link Access (Box)	SIQ-Box-SharedLink-LinkAccess	N/A	Text	Access level of the shared link for this object.
	SharedLink Unshared At (Box)	SIQ-Box-SharedLink-UnsharedAt	N/A	Text	The date that the shared link for this object was unshared.
	SharedLink Password Enabled (Box)	SIQ-Box-SharedLink-PasswordEnabled	N/A	Boolean	Whether passwords are required to access the shared link for this object.

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	SharedLink Preview Count (Box)	SIQ-Box-SharedLink-PreviewCount	N/A	Text	Preview count for the shared link for this object.
	SharedLink Download URL (Box)	SIQ-Box-SharedLink-DownloadURL	N/A	Text	Download URL of the shared link for this object.
	SharedLinkURL (Box)	SIQ-Box-SharedLink-URL	N/A	Text	URL of the shared link for this object.
	Tag (Box)	SIQ-Box-Tag	N/A	Text	Tags that are applied to this object.
	Internal Path	SIQ- Internal Path	N/A	LongText	This path is the path that leads to an object contained inside a container, relative to the file system-level container.
	Language	#Language	Text	Text	This document is the ISO 639-1 (two-character) primary language of the document. If omitted, then English (EN) can be assumed.
	Responsiveness	SIQ-Responsive-ness	N/A	Boolean	It indicates whether IBM StoredIQ deemed the object to be responsive for the discovery export run.
	All Day Event Flag (SharePoint)	SIQ-SP-AllDay-Event	N/A	Boolean	It indicates whether the Event is an all-day Event or not.
	Announcement Expiry Date (SharePoint)	SIQ-SP-Announce-ment-Expiry	N/A	DateTime	The expiry date set for the announcement, if any.
	Approval status (SharePoint)	SIQ-SP-Moderation Status	N/A	Text	It provides information about the moderation status of the specified Windows SharePoint Services object, one of Approved, Denied, Draft, Pending, or Scheduled.
	Approver comments (SharePoint)	SIQ-SP- Approver Comments	N/A	LongText	These comments are the moderation comments of the specified Windows SharePoint Services weblog object.

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Ask me about (SharePoint)	SIQ-SP-UserAsk MeAbout	N/A	Text	The query topics for which a SharePoint User is open or available. Multiple topics are separated into their individual tags.
	Assigned To (SharePoint)	SIQ-SP- Task AssignedTo	N/A	Text	The user name to which the task was assigned.
	Assistant (SharePoint)	SIQ-SP-User Assistant	N/A	Text	The assistant for the user.
	Author (SharePoint)	#Author	N/A	Text	It represents the specified author of the Windows SharePoint Services object.
	Average Rating (SharePoint)	SIQ-SP-Average-Rating	N/A	Decimal	The average of all ratings that are applied to the object.
	Birthday (SharePoint)	SIQ-SP-User Birthday	N/A	Text	The birth date of SharePoint user (MM-DD).
	Blog or list name (SharePoint)	SIQ-SP- BlogOr ListName	N/A	Text	It is the name of the blog or list to which the object belongs.
	Check in comment (SharePoint)	SIQ-SP-Checkin-Comment	N/A	LongText	It is the check in comments of the specified Windows SharePoint Services object.
	Checked out to (SharePoint)	SIQ-SP-Checked-OutTo	N/A	Text	It represents the designated user who checked out the Windows SharePoint Services object by using version control.
	Colleague (SharePoint)	SIQ-SP-User Colleague	N/A	Text	The colleagues for a user. Multiple colleagues are separated into their individual tags.
	Comments (SharePoint)	#Comments	N/A	Text	It provides comments that are associated with the specified Windows SharePoint Services object. Multiple comments are separated into their individual tags.
	Contact Business Address (SharePoint)	SIQ-SP-Contact-Work-Address	N/A	LongText	The work address of the contact.

Table 17. EDRM data tags (continued)					
Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Contact Business Phone (SharePoint)	SIQ-SP-Contact-WorkPhone	N/A	Text	The work phone of the contact.
	Contact Company (SharePoint)	#Company	N/A	Text	The company of the contact.
	Contact Email (SharePoint)	SIQ-SP-Contact-Email	N/A	Text	The email address of the contact.
	Contact First Name (SharePoint)	SIQ-SP-Contact-FirstName	N/A	Text	The given name of the contact.
	Contact Full Name (SharePoint)	SIQ-SP- Contact FullName	N/A	Text	The full name of the contact.
	Contact Home Phone (SharePoint)	SIQ-SP- Contact HomePhone	N/A	Text	The home phone of the contact.
	Contact Job Title (SharePoint)	SIQ-SP-Contact-JobTitle	N/A	Text	The job title of the contact.
	Contact last name (SharePoint)	SIQ-SP-UserLast-Name	N/A	Text	The surname of the user.
	Contact Mobile Phone (SharePoint)	SIQ-SP-Contact-Mobile- Phone	N/A	Text	The mobile number of the contact.
	Contact Web Page (SharePoint)	SIQ-SP- Contact WebPage	N/A	Text	The web page URL of the contact with its associated description.
	Content type (SharePoint)	SIQ-SP-ContentType	N/A	Text	It is the content type of the specified Windows SharePoint Services object.
	Custom properties (SharePoint)	SIQ-SP-CUSTOM-Attribute Name, where Attribute-Name is the name of the Custom Attribute with white spaces replaced by '_'	N/A	LongText	It provides all custom properties that are applied to specified Windows SharePoint Services object.
	Declared record time (SharePoint)	SIQ-SP-Declared RecordDate	N/A	DateTime	It is the date at which the item was declared a record.

Table 17. EDRM data tags (continued)

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Department (SharePoint)	SIQ-SP-User Department	N/A	Text	The department of the user.
	Description (SharePoint)	SIQ-SP-Description	N/A	LongText	It provides alternative text for specified Windows SharePoint Services object.
	Discussion Last Updated (SharePoint)	SIQ-SP-Discussion-Last-Updated	N/A	DateTime	The time stamp for when the discussion was last updated.
	Discussion Title (SharePoint)	SIQ-SP-Discussion-Title	N/A	Text	The title of the post for which the reply was written.
	Dotted-line Manager (SharePoint)	SIQ-SP-UserDotted LineManager	N/A	Text	The dotted-line manager for the user.
	Editor (SharePoint)	SIQ-SP-Editor	N/A	Text	This information is the editor name or information that is associated with a person who is referenced by a Windows SharePoint Services contact object.
	Event Category (SharePoint)	#Category	N/A	Text	The category that is associated with the event.
	Event Date (SharePoint)	SIQ-SP-EventDate	N/A	DateTime	The start date for the event.
	Event Duration (SharePoint)	SIQ-SP-Duration	N/A	Integer	The duration in seconds for the event.
	Event End Date (SharePoint)	SIQ-SP-EventEnd-Date	N/A	DateTime	The end date for the event.
	Event Location (SharePoint)	SIQ-SP-Event-Location	N/A	Text	The location for the event.
	Event Type (SharePoint)	SIQ-SP-EventType	N/A	Text	The event type, which has one of the following values: • Single Event • Recurring Event • Deleted Recurring Event • Edited Recurring Event
	Hire Date (SharePoint)	SIQ-SP-UserHire-Date	N/A	DateTime	The hire date for SharePoint user.
	Interests (SharePoint)	SIQ-SP-User Interests	N/A	Text	The interests that are listed by SharePoint user. Multiple interests are separated into their individual tags.
	Issue ID (SharePoint)	SIQ-SP-IssueID	N/A	LongInteger	The unique ID for the issue in the list.

Table 17. EDRM data tags (continued)

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Keywords (SharePoint)	#Keywords	N/A	Text	It is the keyword summary of the specified Windows SharePoint Services object. Multiple keywords are separated into their individual tags.
	Link URL (SharePoint)	SIQ-SP-LinkURL	N/A	LongText	The URL that forms the basis of the link, plus an optional description. In the absence of the description, the URL is repeated.
	Litigation hold (SharePoint)	SIQ-SP-Litigation-Holds	N/A	Text	It is the list of all legal holds placed on an object. Multiple litigation holds are separated into their individual tags.
	Managed keywords (SharePoint)	#Keywords	N/A	Text	It describes all managed keywords that are applied to specified Windows SharePoint Services object. Multiple keywords are separated into their individual tags.
	Manager (SharePoint)	SIQ-SP-User-Manager	N/A	Text	The manager of the user.
	Member Of (SharePoint)	SIQ-SP-UserMem-berOf	N/A	Text	It indicates the sites for which a SharePoint User is a member. Multiple sites are separated into their individual tags.
	Message ID (SharePoint)	SIQ-SPMessage-ID	N/A	Text	The unique message ID (similar to those on an email) associated with a post on a discussion board.
	Office (SharePoint)	SIQ-SP-UserOffice	N/A	Text	The office information for SharePoint user.
	Office Communica-torAddress (SharePoint)	SIQ-SP-UserOffice-Communi-catorAddress	N/A	Text	The office communicator address for user.
	Office Location (SharePoint)	SIQ-SP-UserOffice Location	N/A	Text	The office-location information for SharePoint user.
	Organization (SharePoint)	SIQ-SP-User-Organization	N/A	Text	The organization to which the SharePoint user belongs.

Table 17. EDRM data tags (continued)

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Original expiration date (SharePoint)	SIQ-SP- Record Expiration- Date	N/A	DateTime	It is the date at which the retention on the object is set to expire.
	Past Projects (SharePoint)	SIQ-SP-User PastProjects	N/A	Text	The list of past projects that are conducted by SharePoint user. Multiple projects are separated into their individual tags.
	Percent Complete (SharePoint)	SIQ-SP-TaskPercent Complete	N/A	Integer	The completion percentage of the task as an integer.
	Post Category (SharePoint)	#Category	N/A	Text	This category is associated with the post. Categories are defined as managed objects on the blog site for use with posts.
	Predecessors (SharePoint)	SIQ-SP- Task Predecessors	N/A	Text	The names of tasks that have a defined precedence to the task. Multiple predecessors are separated into their individual tags.
	Preferred Name (SharePoint)	SIQ-SP- User Preferred Name	N/A	Text	The preferred name of the user.
	ProfileId (SharePoint)	SIQ-SP-User-ProfileId	N/A	Text	The unique identifier for the user profile.
	Public URL (SharePoint)	SIQ-SP-UserProfile-PublicUrl	N/A	LongText	The public URL to access a SharePoint user profile.
	Published Date (SharePoint)	SIQ-SP-Published-Date	N/A	DateTime	The date on which the post was published.
	Publishing Contact (SharePoint)	SIQ-SP-Publishing Contact	N/A	Text	The user name of the contact.
	Publishing Contact Email (SharePoint)	SIQ-SP-Publishing Contact- Email	N/A	Text	The email address of the contact.
	Publishing Contact Name (SharePoint)	SIQ-SP-Publishing-Contact-Name	N/A	LongText	The friendly name of the contact.
	Publishing level (SharePoint)	SIQ-SP-Publishing-Level	N/A	Text	It is the version-control alert level information of the specified Windows SharePoint Services object, one of Published, Draft, or Checkout.

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Quicklinks (SharePoint)	SIQ-SP-UserQuick links	N/A	Text	The Quick Links entry that is configured on a user profile. Multiple links are separated into their individual tags.
	Rating Count (SharePoint)	SIQ-SP-Rating-Count	N/A	Integer	The total number of ratings that are applied to this object.
	Record restrictions (SharePoint)	SIQ-SP- Record-Restrictions	N/A	Text	Describes the restrictions that are applied to the record by the policies in the Records Center: • None • BlockDelete • BlockEdit
	Recurrence Event (SharePoint)	SIQ-SP-Recurring-Event	N/A	Boolean	It indicates whether an event is a recurring event.
	Related Issues (SharePoint)	SIQ-SP-Related-Issues	N/A	Text	Issues that are marked as related to an issue. Multiple issues are separated into their individual tags.
	Routing rule description (SharePoint)	SIQ-SP- Routing-Rule- Description	N/A	LongText	This description is associated with the object that matched a routing rule.
	Schools (SharePoint)	SIQ-SP-User-Schools	N/A	Text	The schools that are listed by SharePoint user. Multiple schools are separated into their individual tags.
	Skills (SharePoint)	SIQ-SP-UserSkills	N/A	Text	The skills that are listed by SharePoint user. Multiple skills are separated into their individual tags.

Table 17. EDRM data tags (continued)

Table 17. EDRM data tags (continued)

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Status (SharePoint)	SIQ-SP-TaskOr-Issue-Status	N/A	Text	It is either the task status or the issue status. These options for task status: • "Not Started" • "In Progress" • "Completed" • "Deferred" • "Waiting on someone else" These options are for issue status: • "Active" • "Resolved" • "Closed"
	Status Bar (SharePoint)	SIQ-SP-StatusBar	N/A	DateTime	It identifies a field that contains information about the status bar for a specified SharePoint Foundation object.
	Status Message (SharePoint)	SIQ-SP-UserStatus Message	N/A	Text	The most recent status message on SharePoint user profile.
	Survey Completed (SharePoint)	SIQ-SP- Survey Completed	N/A	Boolean	It indicates whether the survey response was completed.
	Task Due Date (SharePoint)	SIQ-SP-TaskDue-Date	N/A	DueTime	The due date for a task.
	Task Priority (SharePoint)	SIQ-SP-TaskPriority	N/A	Text	The priority of the task, which is usually one of "(1) High," "(2) Normal," or "(3) Low." The Administrator has the option of editing the choices.
	Task Start Date (SharePoint)	SIQ-SP-TaskStart-Date	N/A	DateTime	The start date for a task.
	Thread Index (SharePoint)	SIQ-SP-Thread-Index	N/A	LongText	The unique index into the discussion to help determine the position of the post in the threading hierarchy of the discussion.
	Title (SharePoint)	#Title	N/A	Text	It represents information about the occupational title of a specified Windows SharePoint Services contact object.

Table 17. EDRM data tags (continued)					
Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	User name (SharePoint)	SIQ-SP-UserName	N/A	Text	The user name that is associated with a SharePoint user profile.
	URL (SharePoint)	SIQ-SP-URL	N/A	LongText	It represents information about the server-relative URL for the specified Windows SharePoint Services object.
	Version (SharePoint)	SIQ-SP-Version	N/A	Decimal	It represents the version string that is associated with the user interface of the specified Windows SharePoint Services object.
	Virus status (SharePoint)	SIQ-SP-VirusStatus	N/A	Text	It is the virus-scan status of a specified Windows SharePoint Services object: • Clean • Virus reported • Virus reported; can be removed • Virus previously reported; removed since • Virus reported; clean failed • Virus reported; delete recommended • Timeout last processing for Virus
	Wiki Page Categories (SharePoint)	#Category	N/A	Text	They are the managed metadata values that describe categories for the wiki page. Multiple categories are separated into their individual tags.
	Wiki Page Comment (SharePoint)	#Comments	N/A	LongText	This comment describes the Wiki page. There can be only one.
	Work City (SharePoint)	SIQ-SP- Contact WorkCity	N/A	Text	The city of the contact.
	Work Country (SharePoint)	SIQ-SP- Contact-Work- Country	N/A	Text	The country of the contact.
	Work Fax (SharePoint)	SIQ-SP-Contact-WorkFax	N/A	Text	The work fax number of the contact
	Work State (SharePoint)	SIQ-SP-Contact-WorkState	N/A	Text	The work state of the contact.

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Work ZIP (SharePoint)	SIQ-SP-Contact-WorkZip	N/A	Text	The postal code of the contact.
File	Author	#Author	Text	Text	The (Office) document author.
	Category	#Category	Text	Text	The (Office) document category.
	Comments	#Comments	Text	LongText	The (Office) document comments. **Note:** All Office document metadata can be longer than 255 characters.
	Company	#Company	Text	Text	The (Office) document company.
	Creation Time	#Date-Created	DateTime	DateTime	The date the file was created.
	Date Last Printed	#Date-Printed	DateTime	DateTime	The date the file was last printed.
	FileName	#FileName	Text	LongText	The name of the original file. **Note:** File names can be longer than 255 characters.
	File Extension	#File- Extension	Text	Text	The extension of the original file.
	File Size	#FileSize	LongInteger	LongInteger	The size of the original file in bytes.
	Keywords	#Keywords	Text	LongText	The (Office) document keywords.
	Last Accessed Time	#Date-Accessed	DateTime	DateTime	The date the file was last accessed.
	Last Modified Time	#Date-Modified	DateTime	DateTime	The date the file was last modified.
	Subject	#Subject	Text	Text	The (Office) document subject.
	Title	#Title	Text	Text	The (Office) document title.
Message	Attachment Count	#Attachment Count	Integer	Integer	The number of attachments the email has.
	Attachment Names	#Attachment Names	Text	LongText	The concatenated list of attachment names that are separated by semicolons. **Note:** The list of attachment names can be longer than 255 characters.

Table 17. EDRM data tags (continued)

Table 17. EDRM data tags (continued)

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	BCC	#BCC	Text	LongText	The blind carbon-copied recipients of the message in the same format as "From." Multiple recipients are separated into their individual tags.
	CC	#CC	Text	LongText	The carbon-copied recipient of the message in the same format as "From." Multiple recipients are separated into their individual tags.
	Flag Status	#FlagStatus	Text	Text	The (Outlook) flag status.
	From	#From	Text	LongText	The sender of the message in the EDRM-recommended RFC2821 format (either "your-name@domain.com" or "Your Name <your-name@domain.xyz>") **Note:** Email addresses can have 64-character account names and 255-character domain names.
	Full Email Header	#Header	Text	LongText	The message header of the message. **Note:** The header can be longer than 64,000 characters; however, it is truncated in that case.
	Has Attachments	#Has Attachments	Boolean	Boolean	It indicates whether the email has attachments.
	Importance	#Importance Flag	Boolean	Boolean	Indicates whether the email was sent with high importance.
	Internet MessageID	SIQ-Internet MessageID	N/A	Text	The universal Internet message ID assigned to the email. **Note:** The message ID is usually in the form unique_id@domain.
	Message Class	#Message-Class	Text	Text	The (Outlook) message class.
	Read Flag	#ReadFlag	Boolean	Boolean	It indicates if the email was read.
	Received Date	#Date Received	DateTime	DateTime	The date the message was received.

Document Type	Metadata Property	Tag Name	EDRM Data Type	Data Type	Description
	Sent Date	#DateSent	DateTime	DateTime	The date the message was sent.
	Subject	#Subject	Text	Text	The subject of the message.
	To	#To	Text	LongText	The recipient of the message in the same format as "From." Multiple recipients are separated into their individual tags.

Table 17. EDRM data tags (continued)

Metadata by attribute type

Find information about the metadata that is provided for each attribute type.

System metadata attributes

This table describes system metadata attributes for all servers.

Table 18. System metadata attributes								
Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Examples**	**Supported Operators**	**Value Supported**
Accessed Date	Y	N	Date	Y	A time stamp that indicates the last accessed time of the file (YYYY-MM-DD hh:mm:ss)	att:"/Library/ Attributes/System metadata/Accessed date"> "2015-08-09" IN all att:"/Library/ Attributes/System metadata/Accessed date">= 12 weeks ago IN all	=, !=, <, <=,>,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Container path	Y	N	String	N	Path of an object relative to the container that it lives in.	att:"/Library/ Attributes/System metadata/Container path" CONTAINS any ("pst") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match.	Text
Content type description	Y	N	String	N	Derived from the content of an object; a description of the application with which the object was created.	att:"/Library/ Attributes/System metadata/Content type description" CONTAINS any ("word") IN all	is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Content type mismatch	Y	N	Boolean	N	True if the object's extension does not match the content type that is derived from the object.	att:"/Library/ Attributes/System metadata/Content type mismatch" = true IN all	=, !=	True, false
Created date	Y	N	Date	Y	A time stamp that indicates the creation time of the file (YYYY-MM-DD hh:mm:ss)	att:"/Library/ Attributes/System metadata/Created date" < "2016-01-06" IN all att:"/Library/ Attributes/System metadata/Created date"> 5 years ago IN all	=, !=, <, <=,>,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Data object type (is known)	Y	N	Boolean	N	True if the data type of the object can be mapped to a known file extension in the system.	att:"/Library/ Attributes/System metadata/Data object type (is known)" != true IN all	=, !=	True, false

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Examples	Supported Operators	Value Supported
Extension	Y	N	String	N	The extension of the data object.	att:"/Library/ Attributes/System metadata/Extension" IS any ("doc") IN all	is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Group	Y	N	String	N	The name of the group owner of the file that was resolved by a user directory service. If the group identifier was not resolved, it can be because no directory service was configured or an error occurred. The field contains the string representation of the group ID.	att:"/Library/ Attributes/System metadata/Group" BEGINS WITH any ("a") IN all	is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Modified date	Y	N	Date	Y	A time stamp that indicates the last modified time of the file (YYYY-MM-DD hh:mm:ss)	att:"/Library/ Attributes/System metadata/Modified date" < 7 years ago IN all att:"/Library/ Attributes/System metadata/Modified date" <= "2009-01-07" IN all	=, !=, <, <=,>,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Object category	Y	N	String	N	General file type of the object.	att:"/Library/ Attributes/System metadata/Object category" IS any (Collaboration) IN all (att:"/Library/ Attributes/System metadata/Object category" IS any (Collaboration , Presentation) IN all)	is, is not	Collaboration, computer programming, container files and archives, emails, images, miscellaneous, multimedia, presentation, spreadsheets, system files, word processing
Object ID	Y	N	String	N	Name of the data object (file) that is located within the context of the specified volume.	att:"/Library/ Attributes/System metadata/Object ID" CONTAINS any ("cm85") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Object name	Y	N	String	N	Unique data object identifier that provides the data object's "handle" to the system where the data object resides.	att:"/Library/ Attributes/System metadata/Object name" CONTAINS any ("stock") IN all	is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 18. System metadata attributes (continued)

							Supported	Value
Table 18. System metadata attributes (continued)								
Name	Dense	Multiple	Type	Normalized	Description	Filter Code Examples	Supported Operators	Value Supported
Owner	Y	N	String	N	The user name of the file owner that was resolved by a user directory service. If the user identifier cannot be resolved, perhaps it is because no directory service was configured or an error occurred. The field contains the string representation of the user ID.	att:"/Library/ Attributes/System metadata/Owner" IS any ("qa\mtran") IN all IN all	is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Owner (is known)	Y	N	Boolean	N	True if the object's owner attribute can be mapped to a known user name in the system.	att:"/Library/ Attributes/System metadata/Owner (is known)" = false IN all	=, !=	True, false
Size	Y	N	Integer	N	The size of the file in bytes.	att:"/Library/ Attributes/System metadata/Size" > 1 MB IN all	=, !=, <, <=,>,>=, between, not between	Number; bytes, KB, MB, GB
Size (on disk)	Y	N	Integer	N	The amount of physical cluster space that a data object occupies.	att:"/Library/ Attributes/System metadata/Size (on disk)" IS BETWEEN 2 MB and 4 MB IN all	=, !=, <, <=,>,>=, between, not between	Number; bytes, KB, MB, GB
Source container path	Y	N	String	N	The container path of the object on the source volume.	att:"/Library/ Attributes/System metadata/Source container path" CONTAINS any ("msg") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Source volume	Y	N	String	N	The original primary source location.	att:"/Library/ Attributes/System metadata/Source volume" CONTAINS any ("bmorgan") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
System path	Y	N	String	N	All attributes that reference the data object's location.	att:"/Library/ Attributes/System metadata/System path" CONTAINS any ("pst") IN all	is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Documentum server metadata attributes

Documentum attributes are listed in the following table.

Name	Dense	Multiple	Type	Normalized	Description
ACL Domain (Documentum)					The repository owner name or user name that created the Access Control List
ACL Name (Documentum)					Name uniquely identifying the Access Control List on the Documentum server
Authors (Documentum)	N	N	String	N	The creator of the data object, as shown in Document Properties.
Checked out to (Documentum)	N	N	String	N	Name of person the data object is checked out to for editing.
Creation Date	Y	N	Date	Y	A time stamp that indicates the creation time of the file.
File Size	Y	N	Int	N	The size of the file in bytes.
Format (Documentum)					Application type of the data object's content.
Group	Y	N	String	N	The group name of the file owner as resolved by a Documentum server.
Immutable	N	N	String	N	Denotes whether a data object can be change or deleted.
Keywords (Documentum)	N	N	String	N	Keywords that are associated with the data object.

Name	Dense	Multiple	Type	Normalized	Description
Lock Date	Y	N	Date	N	Date that machine was locked (YYYY-MM-DD)
Lock Machine	N	N	String	N	Name of the client machine on which users are working when they lock an object (by a check out or branch operation). If the server is unable to resolve the name, r_lock_attribute is set to the client machine's IP address instead.
Modified Date	Y	N	Date	Y	A time stamp that indicates the modification time of the file.
ObjectID	Y	N	String	N	Unique data object identifier provides the data object's "handle" to the system where the data object is found.
Object Name (Documentum)	Y	N	String	N	Name of the data object (file) located within the context of the specified volume.
Owner	Y	N	String	N	The user name of the file owner as resolved by a Documentum server.
Parent document ID	Y	N	String	N	Data object parent ID
Parent document name	Y	N	String	N	Data object parent name

Name	Dense	Multiple	Type	Normalized	Description
Retain until	Y	N	Date	N	Date data object is released from retention. Set on the Documentum server not through the application.
Retention date (Documentum)	Y	N	Date	N	Date data object was placed on hold. Set on the Documentum server not through the application.
RPS markup name					Retention Policy Services retention policy markup name
RPS policy name					Retention Policy Services retention policy name
Subject (Documentum)	N	N	String	N	The subject of the data object. By default, it is the subject of the Office document as shown in Document Properties. Configurable by the user when it is checked in.
Title (Documentum)	N	N	String	N	The title of the data object. By default, it is the title of the Office document as shown in Document Properties. Configurable by the user when it is checked in.
Version (Documentum)	Y	N	String	N	The version of the data object from a Documentum server perspective.

Note: Access Time not Reset: When harvesting Documentum volumes, IBM StoredIQ does not reset the access time back to the original value before the harvest. The reason is due to a known issue. Resetting the volume access time on IBM StoredIQ causes Documentum to reset its files' modification time and date to the time and date of the harvest.

FileNet metadata attributes

This table describes metadata for FileNet attributes.

Table 19. Metadata for FileNet

Name	Dense	Multiple	Type	Description
FoldersFiledIn	Y	Y	Object	The list of folders where this document is filed.
Id	N	Y	GUID	The unique object ID. References FileNet Id.
Name	N	N	String	This attribute returns the value of the designated name property for the object or its ID if there is no name property. References FileNet Name.
DateContentLastAccessed	N	N	Date/time	The date and time when this content of a document was last accessed. References FileNet DateContentLastAccessed.
DateCreated	N	N	Date/time	The date and time this object was created. References FileNet DateCreated.
DateLastModified	N	N	Date/time	The date and time when this object was last modified. References FileNet DateLastModified.
ContentSize	N	N	Float	The size (in bytes) of the captured content that is associated with this object. References FileNet ContentSize.
Owner	N	N	String	The security owner of the object. References FileNet Owner.
ContentRetentionDate	N	N	Date/time	The date until which the object must be retained, as determined by the content storage subsystem. References FileNet ContentRetentionDate.

Name	Dense	Multiple	Type	Description
Table 19. Metadata for FileNet (continued)				
Name	**Dense**	**Multiple**	**Type**	**Description**
Creator (FileNet)	N	N	String	The name of the user who created this object. References FileNet `Creator`.
DateCheckedIn	N	N	Date/time	The date and time this object was checked in. References FileNet `DateCheckedIn`.
DocumentTitle	N	N	String	Different from `Document.name`. References FileNet `DocumentTitle`.
IsCurrentVersion	N	N	Boolean	Indicates whether it is the current version in the version series. It is not a separate attribute, but rather used to set the `Current` string in attribute `VersionStatus (FileNet)`. References FileNet `IsCurrentVersion`.
IsFrozenVersion	N	N	Boolean	Indicates whether user properties or content can be modified. It is not a separate attribute, but rather used to set the `Frozen` string in attribute `VersionStatus (FileNet)`. References FileNet `IsFrozenVersion`.
IsInExceptionState	N	N	Boolean	Indicates whether the lifecycle of a document is in exception state. References FileNet `IsInExceptionState`.
IsReserved	N	N	Boolean	Indicates whether a user reserved the right to check in a version after this version. References FileNet `IsReserved`.
LastModifier	N	N	String	The name of the user who last modified this object. References FileNet `LastModifier`.

Name	Dense	Multiple	Type	Description
MajorVersionNumber	N	N	Integer	The major version number for this document version. References FileNet `MajorVersionNumber`.
MimeType	N	N	String	The MIME type of the document. References FileNet `MimeType`.
MinorVersionNumber	N	N	Integer	The minor version number for this document version. References FileNet `MinorVersionNumber`.
ReleasedVersion	N	N	Boolean	Indicates whether user properties or content can be modified.
VersionStatus	N	N	Integer	The version status of this document version. These status options are listed here. • In Process • Current version • Released • Superseded • Frozen
Custom properties	N	N	String	The custom metadata for this document.

Table 19. Metadata for FileNet (continued)

Email metadata attributes

This table describes metadata for email attributes.

Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Table 20. Metadata for email								
Any address	N	Y	String	Y	Any recipient or the sender of an email object	att:"/Library/Attributes/Email/Any address" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Attachments				Y	Whether the data object has attachments. True if message has attachments	att:/Library/Attributes/Email/Attachments = true IN all	Appears, Does Not Appear, =, !=	True, False

Table 20. Metadata for email (continued)								
Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
BCC					Recipients that are blind-copied on the email data object	att:/Library/ Attributes/ Email/BCC CONTAINS any ("mtran@ qa.local") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
CC				Y	Recipients that are copied on the email data object	att:/Library/ Attributes/ Email/CC MATCHES any ("logesh@ qa.local") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Table 20. Metadata for email (continued)								
Conversation index	N	N	String	N	A value that indicates the relative position of this message within a conversation thread	att:"/Library/ Attributes/ Email/ Conversatio n index" APPEARS IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (any)
Conversation topic	N	N	String	N	The topic of the first message in a conversation thread	(att:"/ Library/ Attributes/ Email/ Conversatio n topic" CONTAINS any ("data expert" , "matter") IN all)	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text

Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported

Table 20. Metadata for email (continued)

Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Expire time	N	N	Date	N	The date and time at which the messaging system can invalidate the content of a message (YYYY-MM-DD)	att:"/Library/Attributes/Email/Expire time" DOES NOT APPEAR IN all	Appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
From				Y	The sender of the email data object	att:/Library/Attributes/Email/From IS any ("testadmin @qa.local") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches , Does Not Match	Text

Table 20. Metadata for email (continued)								
Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Importance					The importance level that is assigned by the sender of the email data object: High, Normal, Low	att:/Library/ Attributes/ Email/ Importance IS any ("low") IN all or att:/ Library/ Attributes/ Email/ Importance IS any ("high") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches , Does Not Match	Text
Internet message ID	N	N	String	Y	Corresponds to the message ID field as specified in [RFC2822]	att:"/Library/ Attributes/ Email/ Internet message ID" CONTAINS any ("journal. report. generator") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches , Does Not Match	Text
Is-part-of					TRUE if object is part of email body, email attachment, miscellaneo us email item's body or miscellaneo us email item's attachment	att:"/Library/ Attributes/ Email/Is- part-of" IS any ("Email archive") IN all	Is, Is Not	See **Note** below this table.

Table 20. Metadata for email (continued)								
Name	**Dense**	**Multiple**	**Type**	**Available for Non Microsoft Email**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Message create time	N	N	Date	Y	Date the message was created (YYYY-MM-DD)	att:"/Library/ Attributes/ Email/ Message create time" < "2015-05-0 5" IN all	att:"/ Library/ Attributes/ Email/ Message create time" < "2015-05- 05" IN all	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Message modify time	N	N	String	Y	Date the message was last modified (YYYY-MM-DD)	att:"/Library/ Attributes/ Email/ Message modify time"> "2015-05-0 1" IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)

Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Priority	N	N	String	Y	The order or speed at which the message must be sent by the messaging system software: Urgent, Normal, Low	att:/Library/ Attributes/ Email/ Priority IS any ("urgent") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text
Proof of Delivery Requested	N	N	Boolean	N	TRUE if a message sender requests proof of delivery for a particular recipient	att:"/Library/ Attributes/ Email/Proof of delivery requested" = true IN all	Appears, Does Not Appear, =, !=	True, False
Proof of Submission Requested	N	N	Boolean	N	TRUE if a message sender requests proof that the message transfer system was submitted a message for delivery to the originally intended recipient	att:"/Library/ Attributes/ Email/Proof of submission requested" = true IN all	Appears, Does Not Appear, =, !=	True, False

Table 20. Metadata for email (continued)

Table 20. Metadata for email (continued)								
Name	**Dense**	**Multiple**	**Type**	**Available for Non Microsoft Email**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Provider Submit Time	N	N	Date	Y	The date and time a transport provider passed the message to its underlying messaging system (YYYY-MM-DD)	att:"/Library/ Attributes/ Email/ Provider submit time" IS BETWEEN 15 months ago and 13 months ago IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Received by	N	N	String	N	Message recipient	att:"/Library/ Attributes/ Email/ Received by" IS any ("testadmin @qa.local") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text

Table 20. Metadata for email (continued)								
Name	**Dense**	**Multiple**	**Type**	**Available for Non Microsoft Email**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Received date					Date the message was received (YYYY-MM-DD)	att:"/Library/ Attributes/ Email/ Received date" <= "2015-05-2 5" IN all	Appears, does not appear, =, != , <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Received Representing	N	N	String	N	The display name for the messaging user that is represented by the recipient	att:"/Library/ Attributes/ Email/ Received representing " IS any ("testuser @qa.local") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text

Table 20. Metadata for email (continued)								
Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Reply Message ID	N	N	String	Y	The original message's PR_INTER NET_ MESSAGE _ID property value	att:"/Library/ Attributes/ Email/Reply message ID" CONTAINS any ("@ex2010. qa.local") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text
Reply Message time	N	N	Date	N	Time when the reply was sent (YYYY-MM-DD)	att:"/Library/ Attributes/ Email/Reply message time" != any (14 months ago) IN all IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Reply Requested	N	N	Boolean	Y	TRUE if a message sender requests a reply from a recipient	att:"/Library/ Attributes/ Email/Reply requested" = true IN all	Appears, Does Not Appear, =, !=	True, False

Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Table 20. Metadata for email (continued)								
Sensitivity	Y	N	String	N	The sensitivity level that is assigned by the sender of the email data object: Normal, Personal, Private, Confidential	att:/Library/ Attributes/ Email/ Sensitivity IS any ("Confiden tial") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text
Sent date				Y	Date the message was sent (YYYY-MM-DD)	att:"/Library/ Attributes/ Email/Sent date" IS BETWEEN 2 years ago and 23 months ago IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)

Name	Dense	Multiple	Type	Available for Non Microsoft Email	Description	Filter Code Example	Supported Operators	Value Supported
Sent Representing	N	N	String	N	Contains the display name for the messaging user that is represented by the sender	att:"/Library/ Attributes/ Email/Sent representing " CONTAINS any ("QA test administra- tor") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text
Subject				Y	The subject of the email data object	att:/Library/ Attributes/ Email/ Subject CONTAINS any ("Legal user removed from matter named \"TC_ eDiscovery UserMgmt- Matter-1\"") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text

Table 20. Metadata for email (continued)

Table 20. Metadata for email (continued)								
Name	**Dense**	**Multiple**	**Type**	**Available for Non Microsoft Email**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
To				Y	The recipient/s of the email data object	att:/Library/ Attributes/ Email/To CONTAINS any ("nkumar @qa.local") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text
Transport Message Headers	N	N	Date	Y	Contains transport-specific message envelope information	att:"/Library/ Attributes/ Email/ Transport message headers" CONTAINS any ("testing") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text

Note: These are the supported values for `Is-part-of`: Chatter Collaboration Group Post, Chatter Comment, Chatter Private Message, Chatter User Profile Post, Email, Email archive, Email attachment, Email body, File container, Jive Blog Post, Jive Blog Post Comment, Jive Discussion, Jive Discussion Reply, Jive Document, Jive Document Comment, Misc. email, Misc. email attachment, Misc. email body, SharePoint announce-ment, SharePoint (any), SharePoint Calendar, Contact, or Task, SharePoint Discussion Reply, SharePoint Discussion Thread, SharePoint Issue, SharePoint Link, SharePoint Note, SharePoint Post, SharePoint Post Comment, SharePoint Survey, SharePoint User Profile, SharePoint User Profile Noteboard, SharePoint Wiki Page

Data object property attributes

This table describes Data Object Property Attributes. Data object property attributes are stored inside the data object.

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Table 21. Data object property attributes							
Abstract	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Abstract" CONTAINS any ("option") IN all or att:"/ Library/ Attributes/ Data object properties/ Abstract" CONTAINS any ("valuation") IN all or att:"/ Library/ Attributes/ Data object properties/ Abstract" CONTAINS any ("stock") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Account	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Account" MATCHES any ("8904") IN all or att:"/ Library/ Attributes/ Data object properties/ Account" CONTAINS any ("RTC") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Address	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Address" CONTAINS any ("Sacrament o") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Application version	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Application version" IS any ("3.0") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Attachments	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Attachments" CONTAINS any ("MS Word") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Authorization	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Authorization " MATCHES any ("true") IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Backup date	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Backup date" CONTAINS any ("2008") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes *(continued)*							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Base file location	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Base file location" MATCHES any ("Atlanta") IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Bill to	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Bill to" CONTAINS any ("Engineerin g") IN all or att:"/Library/ Attributes/ Data object properties/ Bill to" CONTAINS any ("Sales") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Blind copy	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Blind copy" IS any ("yes") IN all or att:"/ Library/ Attributes/ Data object properties/ Blind copy" APPEARS < 1 IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Bytes	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Bytes" IS any ("45000") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Carbon copy	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Carbon copy" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Category	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Category" IS NOT any ("Sales") IN all or att:"/ Library/ Attributes/ Data object properties/ Category" IS any ("Engineerin g") IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Table 21. Data object property attributes (continued)							
Characters	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Characters" CONTAINS any ("valid") IN all or att:"/ Library/ Attributes/ Data object properties/ Characters" BEGINS WITH any ("in") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Characters (with spaces)	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Characters (with spaces)" IS any ("invalid") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Checked by	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Checked by" ENDS WITH any ("James") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Client	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Client" CONTAINS any ("dry valley") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	(=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Comment	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Comment" DOES NOT CONTAIN any ("yes") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Company	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Company" MATCHES any ("valley") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Completed date	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Completed date" CONTAINS any ("2005") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Created	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Created" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Department	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Department" IS NOT any ("Engineerin g") IN all or att:"/Library/ Attributes/ Data object properties/ Department" IS any ("Sales") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Destination	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Destination" MATCHES any ("Storage") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Disposition	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Disposition" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Division	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Division" IS any ("Atlantic") IN all or att:"/ Library/ Attributes/ Data object properties/ Division" IS any ("west") IN all or att:"/ Library/ Attributes/ Data object properties/ Division" IS any ("midwest") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Table 21. Data object property attributes (continued)							
Document number	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Document number" CONTAINS any ("64") IN all or att:"/ Library/ Attributes/ Data object properties/ Document number" CONTAINS any ("ATO") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Editor	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Editor" CONTAINS any ("Farr") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Forward to	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Forward to" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Group	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Group" CONTAINS any ("North") IN all IN all or att:"/Library/ Attributes/ Data object properties/ Group" IS any ("Atlantic") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Heading pairs	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Heading pairs" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Hidden slides	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Hidden slides" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Keyword	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Keyword" CONTAINS any ("att") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Language	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Language" IS NOT any ("French") IN all and att:"/Library/ Attributes/ Data object properties/ Language" IS any ("German") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Last saved	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Last saved" MATCHES any ("1988") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Last saved by	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Last saved by" CONTAINS any ("Mary") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Lines	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Lines" IS any ("invalid") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Links dirty	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Links dirty" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Mailstop	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Mailstop" CONTAINS any ("5") IN all IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Manager	N	Y	String	Metadata stored inside the data object itself.	att:"/Library/ Attributes/ Data object properties/ Manager" MATCHES any ("Cort") IN all IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Matter	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Matter" MATCHES any ("open") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Multimedia clips	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Multimedia clips" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported

Table 21. Data object property attributes (continued)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Notes	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Notes" CONTAINS any ("valid") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Office	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Office" IS NOT any ("New York") IN all and att:"/ Library/ Attributes/ Data object properties/ Office" IS any ("Seattle") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Operator	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Operator" MATCHES any ("Cor") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Owner	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Owner" CONTAINS any ("Cor") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Pages	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Pages" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Paragraphs	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Paragraphs" CONTAINS any ("valid") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Presentation format	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Presentation format" IS any ("Powerpoint ") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Primary author	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Primary author" MATCHES any ("Cortez") IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Printed	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Printed" IS any ("valid") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Project	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Project" IS any ("Galaxy") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes *(continued)*							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Publisher	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Publisher" CONTAINS any ("Brinks") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Purpose	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Purpose" MATCHES any ("doc") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
					Table 21. Data object property attributes (continued)		
Received from	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Received from" MATCHES any ("Cor") IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Recorded by	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Recorded date" IS any ("July 3, 2000") IN all or att:"/ Library/ Attributes/ Data object properties/ Recorded by" IS any ("cortez") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Recorded date	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Recorded date" IS any ("July 3, 2000") IN all or att:"/ Library/ Attributes/ Data object properties/ Recorded by" IS any ("cortez") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Reference	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Reference" CONTAINS any ("ARI") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Revision date	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Revision date" IS any ("September 15, 2009") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Revision notes	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Revision notes" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Scale crop	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Scale crop" CONTAINS any ("50") IN all and att:"/Library/ Attributes/ Data object properties/ Scale crop" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Secondary author	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Secondary author" MATCHES any ("Farr") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Section	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Section" IS NOT any ("SALES") IN all or att:"/ Library/ Attributes/ Data object properties/ Section" IS any ("ACCT") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	(=,>,>=, <, <=, any, all)
Security	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Security" IS any ("High") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Slides	N	Y	String		Text (=,>,>=, <, <=, any, all)	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Source	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Source" CONTAINS any ("Support") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Table 21. Data object property attributes (continued)							
Status	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Status" IS any ("Published") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Subject	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Subject" CONTAINS any ("pharm") IN all	Appears Does not appear Appears X times Appears unique X-times Is Is not Contains Does not contain Begins with Does not begin with Ends with Does not end with Matches Does not match	Text

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Table 21. Data object property attributes (continued)							
Title	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Title" DOES NOT CONTAIN any ("medical") IN all and att:"/Library/ Attributes/ Data object properties/ Title" CONTAINS any ("user guide") IN all	Appears Does not appear Appears X times Appears unique X-times Is Is not Contains Does not contain Begins with Does not begin with Ends with Does not end with Matches Does not match	Text
Title of parts	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Title of parts" CONTAINS any ("user guide") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Total editing time	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Total editing time" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Type	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Type" CONTAINS any ("text") IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Typist	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Typist" MATCHES any ("Farr") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Version date	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Version date" CONTAINS any ("2014") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
					Table 21. Data object property attributes (continued)		
Version notes	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Version notes" APPEARS IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)
Version number	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Version number" IS any ("3.0") IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Words	N	Y	String		att:"/Library/ Attributes/ Data object properties/ Words" APPEARS IN all IN all	Appears, Does Not Appear, Appears X-times, Appears Unique X-times, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text (=,>,>=, <, <=, any, all)

Table 21. Data object property attributes (continued)

SharePoint attributes

This table describes SharePoint metadata attributes.

Table 22. Metadata for SharePoint

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
All day event (SharePoint)	N	N	Boolean	N	True if the Event is an all-day Event	att:"/Library/ Attributes/ SharePoint/All day event (SharePoint)" = true IN all	Appears, does not appear, =, ! =	True, false
Announce-ment expiry date (SharePoint)	N	N	Date	N	Expiry date set for the announce-ment.	att:"/Library/ Attributes/ SharePoint/ Announce-ment expiry date (SharePoint)" IS BETWEEN "2015-02-01" and "2016-01-12" IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Approval status (SharePoint)	N	N	String	N	Information about moderation status of the specified Windows SharePoint object.	att:"/Library/ Attributes/ SharePoint/ Approval status (SharePoint)" IS any ("approved") IN all		Text (Approved, denied, draft, pending or scheduled.)
Approver comments (SharePoint)	N	N	String	N	The moderation comments of the specified SharePoint weblog object.	att:"/Library/ Attributes/ SharePoint/ Approver comments (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Ask me about (SharePoint)	N	N	String	N	SharePoint user profile's *ask me about* topics.	att:"/Library/ Attributes/ SharePoint/A sk me about (SharePoint)" CONTAINS any ("test") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dens e	Multipl e	Type	Normalize d	Descriptio n	Filter Code Example	Operators Supported	Value Supported
Assistant (SharePoint)	N	N	Compoun d attribute	N	SharePoint assistant.	(att:"/Library/ Attributes/ SharePoint/ Assistant (SharePoint)" WHERE (Name CONTAINS any ("jone")) IN all)	Appears, does not appear; where (account, email, id, name, url) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Author (SharePoint)	Y	N	String	N	Represents the specified author of the SharePoint object. It appears as Created By in the SharePoint UI.	att:"/Library/ Attributes/ SharePoint/ Author (SharePoint)" CONTAINS any ("satwik") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Author account (SharePoint)	Y	N	String	N	The account name of the Author for the data object.	att:"/Library/Attributes/SharePoint/Author account (SharePoint)" CONTAINS any ("winnie") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Birthday (SharePoint)	N	N	Integer	N	SharePoint user's birthday (mm-dd).	att:"/Library/Attributes/SharePoint/Birthday (SharePoint)" IS any ("02-07") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Number
Blog or List ID (SharePoint)	Y	N	Integer	N	ID of the SharePoint blog or list that the object belongs to.	att:"/Library/Attributes/SharePoint/Blog or List ID (SharePoint)" CONTAINS any ("45") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Number

Table 22. Metadata for SharePoint (continued)								
Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Blog or List Name (SharePoint)	Y	N	String	N	Name of the SharePoint blog or list that the object belongs to.	att:"/Library/ Attributes/ SharePoint/ Blog or List name (SharePoint)" CONTAINS any ("enron") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Category (SharePoint)	Y	N	Integer	N	Category associated with the Event.	att:"/Library/ Attributes/ SharePoint/ Category (SharePoint)" CONTAINS any ("2") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Check in comment (SharePoint)	N	N	String	N	The check-in comments of the specified SharePoint object.	att:"/Library/ Attributes/ SharePoint/ Check in comment (SharePoint)" CONTAINS any ("update") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)								
Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Checked Out To	Y	N	String	N	Name of the user who currently has the data object checked out. This attribute is empty if the file is not checked out.	att:"/Library/ Attributes/ SharePoint/ Checked out to (SharePoint)" CONTAINS any ("winnie") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Colleague (SharePoint)	N	N	Compound attribute	N	SharePoint colleague.	(att:"/Library/ Attributes/ SharePoint/ Colleague (SharePoint)" WHERE (Name CONTAINS any ("jsitz")) IN all)	Appears, does not appear, appears X numbers of times, appears unique X times; where (account, email, id, name, url) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Comment post title (SharePoint)	N	N	String	N	Title of the post the comment was written for.	att:"/Library/ Attributes/ SharePoint/ Comment post title (SharePoint)" CONTAINS any ("postman") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Comments (SharePoint)	N	N	String	N	Comments that are associated with the SharePoint object.	att:"/Library/ Attributes/ SharePoint/ Comments (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact company (SharePoint)	N	N	String	N	Company of the contact.	att:"/Library/ Attributes/ SharePoint/ Contact company (SharePoint)" IS any ("someco") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)								
Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Contact email (SharePoint)	N	N	String	N	Email address of the contact – free form text.	att:"/Library/ Attributes/ SharePoint/ Contact email (SharePoint)" CONTAINS any ("someco") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact first name (SharePoint)	N	N	String	N	First name of contact.	att:"/Library/ Attributes/ SharePoint/ Contact first name (SharePoint)" IS any ("joe") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact full name (SharePoint)	N	N	String	N	Full name of the contact.	att:"/Library/ Attributes/ SharePoint/ Contact full name (SharePoint)" IS any ("joe bob") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)								
Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Contact home phone (SharePoint)	N	N	String	N	Home phone of the contact.	att:"/Library/ Attributes/ SharePoint/ Contact home phone (SharePoint)" CONTAINS any ("512") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact job title (SharePoint)	N	N	String	N	Job title of the contact.	att:"/Library/ Attributes/ SharePoint/ Contact job title (SharePoint)" CONTAINS any ("qae") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact last name (SharePoint)	N	N	String	N	Last name of the contact.	att:"/Library/ Attributes/ SharePoint/ Contact last name (SharePoint)" IS any ("bob") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Contact mobile phone (SharePoint)	N	N	String	N	Mobile phone number of the contact.	att:"/Library/ Attributes/ SharePoint/ Contact mobile phone (SharePoint)" IS any ("512334514 5") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact preferred name (SharePoint)	N	N	String	N	Preferred name of contact.	att:"/Library/ Attributes/ SharePoint/ Contact preferred name (SharePoint)" CONTAINS any ("jsitz") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact web page (SharePoint)	N	N	String	N	Web page URL of the contact with its associated description.	att:"/Library/ Attributes/ SharePoint/ Contact web page (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)								
Name	**Dens e**	**Multipl e**	**Type**	**Normalize d**	**Descriptio n**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Contact work address (SharePoint)	N	N	String	N	Work address of contact.	att:"/Library/ Attributes/ SharePoint/ Contact work address (SharePoint)" CONTAINS any ("clay road") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact work city (SharePoint)	N	N	String	N	Work city of contact.	att:"/Library/ Attributes/ SharePoint/ Contact work city (SharePoint)" IS any ("austin") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact work country (SharePoint)	N	N	String	N	Work country of contact.	att:"/Library/ Attributes/ SharePoint/ Contact work country (SharePoint)" CONTAINS any ("USA") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)								
Name	**Dens e**	**Multipl e**	**Type**	**Normalize d**	**Descriptio n**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Contact work fax (SharePoint)	N	N	String	N	Work fax number of contact.	att:"/Library/ Attributes/ SharePoint/ Contact work fax (SharePoint)" CONTAINS any ("512") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact work phone (SharePoint)	N	N	Text	N	Work phone of contact.	att:"/Library/ Attributes/ SharePoint/ Contact work phone (SharePoint)" IS any ("512-295-55 55") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Contact work state (SharePoint)	N	N	String	N	Work state of contact.	att:"/Library/ Attributes/ SharePoint/ Contact work state (SharePoint)" IS any ("pennsylvani a") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Contact work ZIP (SharePoint)	N	N	String	N	Work ZIP code of contact.	att:"/Library/ Attributes/ SharePoint/ Contact work ZIP (SharePoint)" IS any ("78610") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Content type (SharePoint)	Y	N	String	N	The content type of the SharePoint object.	att:"/Library/ Attributes/ SharePoint/ Content type (SharePoint)" IS any ("post") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Created (SharePoint)	Y	N	Date	Y	A time stamp that indicates the creation time of the file.	att:"/Library/ Attributes/ SharePoint/ Created (SharePoint)" IS BETWEEN "2015-05-03 " and "2016-01-13 " IN all	Appears, does not appear, =, != , <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Custom properties (SharePoint)	N	N	String	N	Custom properties created by a user on a SharePoint object.	att:"/Library/ Attributes/ SharePoint/ Custom properties (SharePoint)/ Name" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Declared record date (SharePoint)	N	N	Date	N	Date at which the item was declared a record (e.g. 2010-02-18)	att:"/Library/ Attributes/ SharePoint/ Declared record date (SharePoint)" DOES NOT APPEAR IN all	Appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Department (SharePoint)	N	N	String	N	Department name.	att:"/Library/ Attributes/ SharePoint/ Department (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Description (SharePoint)	N	N	String	N	Alternative text for the object.	att:"/Library/ Attributes/ SharePoint/ Description (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Discussion last updated (SharePoint)	Y	N	Date	N	Date when the discussion was last updated.	att:"/Library/ Attributes/ SharePoint/ Discussion last updated (SharePoint)" < "2016-01-13 " IN all	Appears, does not appear, =, != , <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Discussion message ID (SharePoint)	Y	N	String	N	Unique message ID associated with the discussion on the discussion board.	att:"/Library/ Attributes/ SharePoint/ Discussion message ID (SharePoint)" CONTAINS any ("bbaf") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Discussion status bar (SharePoint)	N	N	Date	Y	Field containing information about the status bar for a SharePoint foundation object (date)	att:"/Library/ Attributes/ SharePoint/ Discussion status bar (SharePoint)" = any ("2010-10-0 8") IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Discussion thread index (SharePoint)	Y	N	String	N	Unique identifier to determine the position of the post in the threading hierarchy of the discussion.	att:"/Library/ Attributes/ SharePoint/ Discussion thread index (SharePoint)" CONTAINS any ("0x0") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Discussion title (SharePoint)	Y	N	String	N	Title of the discussion post that the reply was written for.	att:"/Library/ Attributes/ SharePoint/ Discussion title (SharePoint)" CONTAINS any ("serverfault") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dens e	Multipl e	Type	Normalize d	Descriptio n	Filter Code Example	Operators Supported	Value Supported
Dotted-line manager (SharePoint)	N	N	Compoun d attribute	N	SharePoint dotted line manager.	att:"/Library/ Attributes/ SharePoint/ Dotted-line manager (SharePoint)" APPEARS IN all	Appears, does not appear, appears X numbers of times, appears unique X times; where (account, email, id, name, url) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Editor (SharePoint)	Y	N	String	N	The editor name or information that is associated with a person who is referenced by a Windows SharePoint Services contact object. It appears as Modified By in the SharePoint UI.	att:"/Library/ Attributes/ SharePoint/ Editor (SharePoint)" CONTAINS any ("satwik") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Editor account (SharePoint)	Y	N	String	N	The account name of the editor for the data object.	att:"/Library/ Attributes/ SharePoint/ Editor account (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Event date (SharePoint)	N	N	Date	Y	Start date for the event.	att:"/Library/ Attributes/ SharePoint/ Event date (SharePoint)" <= "2016-01-18 " IN all	Appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Event duration (SharePoint)	N	N	Integer	N	Duration for the event in seconds.	att:"/Library/ Attributes/ SharePoint/ Event duration (SharePoint)" > 10 IN all	Appears, does not appear, =, !=, <, <=, >,>=, between, not between	Number

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Event end date (SharePoint)	N	N	Date	Y	End date of the event.	att:"/Library/ Attributes/ SharePoint/ Event end date (SharePoint)" < "2015-06-07 " IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Event location (SharePoint)	N	N	String	N	Location for the event.	att:"/Library/ Attributes/ SharePoint/ Event location (SharePoint)" IS any ("room 666") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Event type (SharePoint)	N	N	String	N	Event type	att:"/Library/ Attributes/ SharePoint/ Event type (SharePoint)" IS any ("Deleted Recurring Event") IN all	Appears, does not appear, is, is not	Single event, recurring event, deleted recurring event, edited recurring event

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Table 22. Metadata for SharePoint (continued)								
Hire date (SharePoint)	N	N	Date	Y	SharePoint date of hire.	att:"/Library/ Attributes/ SharePoint/ Hire Date (SharePoint)" APPEARS IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Interests (SharePoint)	N	N	String	N	SharePoint user's interest	att:"/Library/ Attributes/ SharePoint/ Interests (SharePoint)" CONTAINS any ("developme nt") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Issue ID (SharePoint)	Y	N	Integer	N	Unique ID of the issue.	att:"/Library/ Attributes/ SharePoint/ Issue ID (SharePoint)" APPEARS IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between	Numbers

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Keywords (SharePoint)	N	N	String	N	The keyword summary of the object.	att:"/Library/ Attributes/ SharePoint/ Keywords (SharePoint)" IS any ("favorite") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Link URL (SharePoint)	Y	N	String	N	URL that forms the basis of the link, plus an optional description. In the absence of a description, the URL is repeated.	att:"/Library/ Attributes/ SharePoint/ Link URL (SharePoint)" CONTAINS any ("enron") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Litigation hold (SharePoint)	N	N	String	N	List of all legal holds placed on an object.	att:"/Library/ Attributes/ SharePoint/ Litigation hold (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Managed keywords (SharePoint)	N	N	String	N	All managed keywords applied to an object.	att:"/Library/ Attributes/ SharePoint/ Managed keywords (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dens e	Multipl e	Type	Normalize d	Descriptio n	Filter Code Example	Operators Supported	Value Supported
Managed metadata tags (SharePoint)	N	N	String	N	All managed metadata tags applied to an object.	att:"/Library/ Attributes/ SharePoint/ Managed metadata tags (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Manager (SharePoint)	N	N	Compound attribute	N	SharePoint manager.	(att:"/Library/ Attributes/ SharePoint/ Manager (SharePoint)" WHERE (Account APPEARS) IN all)	Appears, does not appear, appears X numbers of times, appears unique X times; where (account, email, id, name, url) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)								
Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Member of (SharePoint)	N	N	String	N	SharePoint user profile member-ships.	att:"/Library/ Attributes/ SharePoint/ Member of (SharePoint)" IS any ("internal blog") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Modified (SharePoint)	Y	N	Date	Y	Date object was modified.	att:"/Library/ Attributes/ SharePoint/ Modified (SharePoint)" IS BETWEEN "2015-09-01 " and "2016-01-19 " IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Modified by (SharePoint)	Y	N	String	N	Identifies the user who last modified the object.	att:"/Library/ Attributes/ SharePoint/ Modified by (SharePoint)" CONTAINS any ("winnie") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Organization (SharePoint)	N	N	String	N	SharePoint organization	att:"/Library/ Attributes/ SharePoint/ Organization (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Original expiration date	N	N	Date	Y	Date at which the retention on the object is set to expire (eg. 2010-02-18)	att:"/Library/Attributes/SharePoint/Original expiration date (SharePoint)" < 3 weeks ago IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Past projects (SharePoint)	N	N	String	N	SharePoint user's past projects.	att:"/Library/Attributes/SharePoint/Past Projects (SharePoint)" CONTAINS any ("accounting") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Post category (SharePoint)	N	N	String	N	Category associated with a post. Categories are defined as managed objects on the blog site for use with posts.	att:"/Library/ Attributes/ SharePoint/ Post category (SharePoint)" CONTAINS any ("test automation") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Public URL (SharePoint)	Y	N	String	N	URL of the SharePoint user profile.		Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Table 22. Metadata for SharePoint (continued)								
Published date (SharePoint)	N	N	Date	Y	Date the post was published.	att:"/Library/ Attributes/ SharePoint/ Published date (SharePoint)" = any ("2015-03-25 ") IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Publishing level (SharePoint)	N	N	String	N	Version control alert level information for the object.	att:"/Library/ Attributes/ SharePoint/ Publishing level (SharePoint)" IS any ("draft") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Published, draft, or checkout
Quick link (SharePoint)	N	N	String	N	SharePoint quick link.	att:"/Library/ Attributes/ SharePoint/ Quick link (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Rating (SharePoint)	N	N	Compound attribute	N	SharePoint rating.	att:"/Library/ Attributes/ SharePoint/ Rating (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times; where (title, url, value) appears, is, is not, contains, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Record restrictions (SharePoint)	N	N	String	N	Restrictions applied to the record by policies in the record center.	att:"/Library/ Attributes/ SharePoint/ Record restrictions (SharePoint)" CONTAINS any ("blockedit") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	None, BlockDelete, BlockEdit

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Table 22. Metadata for SharePoint (continued)								
Recurring event (SharePoint)	N	N	Boolean	N	True if event is recurring.	att:"/Library/ Attributes/ SharePoint/ Recurring event (SharePoint)" = true IN all	Appears, does not appear, =, !=	True, false
Referred URL (SharePoint)	N	N	String	N	Represents a URL referred to by an object.	att:"/Library/ Attributes/ SharePoint/ Referred URL (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Related issues (SharePoint)	N	N	String	N	Issues marked as related to the issue.	att:"/Library/ Attributes/ SharePoint/ Related issues (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Routing rule description (SharePoint)	N	N	String	N	Description associated with the object that matched a routing rule.	att:"/Library/ Attributes/ SharePoint/ Routing rule description (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Schools (SharePoint)	N	N	String	N	SharePoint user's schools.	att:"/Library/ Attributes/ SharePoint/ Schools (SharePoint)" IS any ("harvard") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Site owner (SharePoint)	Y	N	Compound attribute	N	SharePoint site owner	(att:"/Library/ Attributes/ SharePoint/ Site owner (SharePoint)" WHERE (Name CONTAINS any ("jsitz")) IN all)	Appears, does not appear; where (Account, email, ID, name, url) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Skills (SharePoint)	N	N	String	N	SharePoint user's skills	att:"/Library/ Attributes/ SharePoint/ Skills (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Status message (SharePoint)	N	N	String	N	SharePoint user's status message.	att:"/Library/ Attributes/ SharePoint/ Status Message (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Survey completed (SharePoint)	N	N	Boolean	N	True if the SharePoint survey response was completed.	att:"/Library/ Attributes/ SharePoint/ Survey completed (SharePoint)" = true IN all	Appears, does not appear, =, !=	True, false

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)								
Name	**Dens e**	**Multipl e**	**Type**	**Normalize d**	**Descriptio n**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Tag (SharePoint)	N	N	Compoun d attribute	N	The tag that appears in user profile.	(att:"/Library/ Attributes/ SharePoint/T ag (SharePoint)" WHERE (URL APPEARS) IN all)	Appears, does not appear, appears X times, appears X unique times; where (name, url) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Task assigned (SharePoint)	N	N	String	N	Usernames to whom the task has been assigned.	att:"/Library/ Attributes/ SharePoint/ Task assigned to (SharePoint)" CONTAINS any ("klay") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Name	Dens e	Multipl e	Type	Normalize d	Descriptio n	Filter Code Example	Operators Supported	Value Supported
Task due date (SharePoint)	Y	N	Date	N	Due date for task.	att:"/Library/ Attributes/ SharePoint/ Task due date (SharePoint)" IS BETWEEN "2015-09-01 " and "2015-10-01 " IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Task or issue status (SharePoint)	Y	N	Boolean	N	Status of the task or issue.	att:"/Library/ Attributes/ SharePoint/ Task or Issue status (SharePoint)" IS any ("Not Started") IN all	Appears, does not appear, is, is not	Not started, in progress, completed, deferred, waiting on someone else, active, resolved, closed
Task percent complete (SharePoint)	N	N	Integer	N	Completion percentage of the task.	att:"/Library/ Attributes/ SharePoint/ Task percent complete (SharePoint)" < 50 IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Number

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Task predecessors (SharePoint)	N	Y	String	N	Names of tasks that have a defined precedence to the task.	att:"/Library/ Attributes/ SharePoint/ Task predecessors (SharePoint)" CONTAINS any ("marketing collateral") IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Task priority (SharePoint)	N	N	Boolean	N	Priority of the task.	att:"/Library/ Attributes/ SharePoint/ Task priority (SharePoint)" IS any ("(1) High") IN all	Appears, does not appear, is, is not	1. High 2. Normal 3. Low
Task start date (SharePoint)	N	N	Date	Y	Start date for task.	att:"/Library/ Attributes/ Task/Task start date" IS BETWEEN 1 months ago and 6 months ago IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Title (SharePoint)	Y	N	String	N	The title of the data object. By default, this attribute is the title of the Office document as shown in Document Properties. Configurable by the user during check-in.	att:"/Library/ Attributes/ SharePoint/ Title (SharePoint)" CONTAINS any ("ECM") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
URL	Y	N	String	N	The URL that points to the data object on SharePoint.	att:"/Library/ Attributes/ SharePoint/U RL (SharePoint)" CONTAINS any ("winnie") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
User name (SharePoint)	N	N	String	N	SharePoint user name	att:"/Library/ Attributes/ SharePoint/ User name (SharePoint)" CONTAINS any ("jsitz") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)								
Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Example**	**Operators Supported**	**Value Supported**
Version	Y	N	String	N	The version of the data object, from a SharePoint server perspective.	att:"/Library/ Attributes/ SharePoint/ Version (SharePoint)" IS BETWEEN "1" and "5" IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	True, false, number
Virus status (SharePoint)	N	N	String	N	The virus scan of a specified Windows SharePoint object.	att:"/Library/ Attributes/ SharePoint/ Virus status (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	0 = Clean 1 = Virus reported 2 = Virus reported, can be removed 3 = Virus previously reported, removed since 4 = Virus reported, clean failed 5 = Virus reported, delete recommend ed 6 = Timeout reported last processing virus

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Wiki average rating (SharePoint)	N	N	Integer	N	Average of all ratings applied to the object.	att:"/Library/ Attributes/ SharePoint/ Wiki average rating (SharePoint)" APPEARS IN all	Appears, does not appear, =, != , <, <=, >,>=, between, not between	Number
Wiki page categories (SharePoint)	N	Y	String	N	Categories associated with a wiki page. Categories are defined as managed objects on the wiki page.	att:"/Library/ Attributes/ SharePoint/ Wiki page categories (SharePoint)" APPEARS IN all	Appears, does not appear, appears X number of times, appears unique X times, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Wiki page comment (SharePoint)	N	N	String	N	Comment describing the wiki page. There can only be one per page.	att:"/Library/ Attributes/ SharePoint/ Wiki page comment (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)

Table 22. Metadata for SharePoint (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Wiki publishing contact (SharePoint)	N	N	String	N	User name of contact.	att:"/Library/ Attributes/ SharePoint/ Wiki publishing contact (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Wiki publishing contact email (SharePoint)	N	N	String	N	Email address of the contact: free form text.	att:"/Library/ Attributes/ SharePoint/ Wiki publishing contact email (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Wiki publishing contact name (SharePoint)	N	N	String	N	Friendly name of contact – free form text.	att:"/Library/ Attributes/ SharePoint/ Wiki publishing contact name (SharePoint)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Table 22. Metadata for SharePoint (continued)								
Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Operators Supported	Value Supported
Wiki rating count (SharePoint)	N	N	Integer	N	Total number of ratings applied to an object.	att:"/Library/ Attributes/ SharePoint/ Wiki rating count (SharePoint)" APPEARS IN all	Appears, does not appear, =, != =, <, <=, >,>=, between, not between	True, false, number

Calendar metadata attributes

This table describes metadata attributes for calendar items.

Table 23. Metadata for calendar					
Attribute Name	Dense	Multiple	Type	Normalized	Description
Event duration	No	No	Integer	No	Time in minutes
Event end date	No	No	String	Yes (ISO 8601)	Date a calendar entry end (YYYY-MM-DD)
Event location	No	No	String	Yes (lowercase)	Location field in a calendar entry
Event start date	No	No	String	Yes (ISO 8601)	Date that a calendar entry begins (YYYY-MM-DD)
is Meeting	No	No	Boolean	No	True if the calendar entry is a meeting (Any entry that has attendees)

Contact metadata attributes

This table describes metadata attributes for contacts.

Table 24. Metadata for contact					
Attribute Name	Dense	Multiple	Type	Normalized	Description
Business address	No	No	String	Yes (lowercase)	Business address that is listed for a contact entry
Business phone	No	No	String	Yes (lowercase)	Business phone that is listed for a contact entry

Table 24. Metadata for contact (continued)

Attribute Name	Dense	Multiple	Type	Normalized	Description
Company	No	No	String	Yes (lowercase)	Company that is listed for a contact entry
Contact job title	No	No	String	Yes (lowercase)	Job title that is listed for a contact entry
Contact keywords	No	No	String	Yes (lowercase)	Keywords that are listed for a contact entry
Department	No	No	String	Yes (lowercase)	Department that is listed for a contact entry
Email display name	No	No	String	Yes (lowercase)	Email display name that is listed for a contact entry
Full name	No	No	String	Yes (lowercase)	Full name that is listed for a contact entry
Home address	No	No	String	Yes (lowercase)	Home address that is listed for a contact entry
Home phone	No	No	String	Yes (lowercase)	Home phone that is listed for a contact entry
IM address	No	No	String	Yes (lowercase)	Instant Messenger address that is listed for a contact entry
Mobile phone	No	No	String	Yes (lowercase)	Mobile phone number that is listed for a contact entry
Office location	No	No	String	Yes (lowercase)	Office location that is listed for a contact entry
Pager	No	No	String	Yes (lowercase)	Pager number that is listed for a contact entry
Web page	No	No		Yes (lowercase)	Web page that is listed for a contact entry

Digital signatures metadata attributes

This table describes attributes that are used in IBM StoredIQ data analysis.

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Supported Operators	Value Supported
Table 25. Metadata for digital signatures								
Encryption type	No	No	Enum	Yes (lowercase)	Lotus Notes' or 'General'	att:"/Library/Attributes/Digital signatures/Encryption type" IS any (General) IN all	Appears, Does Not Appear, Is, Is Not	General, Lotus Notes, Rights Management Protected
Hash	Yes	No	String	Yes (lowercase)	Hash value for the object. Hash is not computed for data objects on volumes that have only a system metadata index.	att:"/Library/Attributes/Digital signatures/Hash" DOES NOT CONTAIN any ("00") IN all IN all	Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text
NSRL digital signature	Yes	No	Boolean	No	True if the object's hash value matches an item on the NSRL hash list. The **Determine whether data objects have NSRL digital signature** option must be selected on the Harvester settings pane for each data server prior to harvest.	att:"/Library/Attributes/Digital signatures/NSRL digital signature" != true IN all	=, !=	True, False

Processing metadata attributes

This table describes attributes that are used in data processing.

To harvest processing metadata attributes, the **Binary processing** options must be selected in the harvester settings on each data server. For more information about configuring harvester settings, see the respective section in the Data Server administration guide.

Table 26. Metadata for processing data

Attribute Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Supported Operators	Value Supported
Binary error code	No	Yes	String	Yes (lowercase)	When binary processing is performed, the following codes apply: Indexing of binary text failed, Binary text partially indexed, Binary content tagging failed, Max entities reached in binary text, Binary text extraction failed, Binary full processing completed	att:"/ Library/ Attributes/ Processing/ Binary error code" APPEARS IN all	Appears, Does Not Appear, Appears X-Times, Appears Unique X-Times, Is, Is Not	Text (any, all, =,>,>=, <, <=, Binary content tagging, failed, Binary full processing completed, Binary text extraction failed, Binary text partially indexed, Indexing of binary text failed, Max entities reached in binary text)
Binary processing state	Yes	No	Integer	Yes	State of binary processing: Not Performed, Successful, Partial, Failed	att:"/ Library/ Attributes/ Processing/ Binary processing state" IS any (Successful) IN all	Is, Is Not	Text (Not Performed, Successful, Partial, Failed)

Table 26. Metadata for processing data (continued)								
Attribute Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Content error code	No	Yes	String	Yes (lowercase)	When the content processing state is "Partial" or "Failed," the following codes apply: Configured skipped data object, Unsupported file format, Configured max. object size, Indexing failed, Partially indexed, Unknown file format, Content tagging failed, Max entities reached, Encrypted or password protected, Text extraction failed, No text in this file format, Could not read source object, Max entity value length reached	att:"/ Library/ Attributes/ Processing/ Content error code" IS any ("Configured skipped data object") IN all	Appears, Does Not Appear, Appears X-Times, Appears Unique X-Times, Is, Is not	Text (=,>,>=, <, <=, Configured max object size, Configured skipped data object, Content tagging failed, Could not read source object, Encrypted or password protected, Indexing failed, Max entities reached, Max entity value length reached, No text in this file format, Partially indexed, Text extraction failed, Unknown file format, Unsupported file format)
Content processing state	Yes	No	Integer	Yes	State of content processing: Not Performed, Successful, Partial, Failed	att:"/ Library/ Attributes/ Processing/ Content processing state" IS any (Successful) IN all	Is, Is Not	Text (Failed, Not Performed, Partial, Successful)

Attribute Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Supported Operators	Value Supported
Table 26. Metadata for processing data (continued)								
System error code	No	Yes		Yes (lowercase)	When system processing state is "Partial," the following code applies: User/Group lookup failed	att:"/ Library/ Attributes/ Processing/ System error code" IS NOT any ("User/ Group lookup failed") IN all	Appears, Does Not Appear, Appears X-Times, Appears Unique X-Times, Is, Is not	Text (=,>,>=, <, <=, User/ Group lookup failed)
System processing state	Yes	No	Integer	Yes	State of system processing: Successful, Partial	att:"/ Library/ Attributes/ Processing/ System processing state" IS any (Successful) IN all	Is, Is Not	Text (Failed, Not Performed, Partial, Successful)

Task metadata attributes

This table describes metadata for task attributes.

To harvest task metadata attributes, the **Harvest miscellaneous email items** in the harvester settings on each data server must be selected prior to harvest. For more information about configuring harvester settings, see the respective section in the Data Server administration guide.

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Supported Operators	Value Supported
Table 27. Metadata for task items								
Task complete	No	No	Boolean	No	True if the task is marked as complete	att:"/ Library/ Attributes/ Task/Task complete" = false IN all	Appears, Does not appear, =, ! =	True, false

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Supported Operators	Value Supported
Task due date	No	No	String	Yes (ISO 8601)	Date the task is marked as being due (YYYY-MM-DD)	att:"/ Library/ Attributes/ Task/Task due date" IS BETWEEN "2013-05-01" and "2013-05-15" IN all	Appears, does not appear, =, != , <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Task owner	No	No	String	Yes	Creator of the task	att:"/ Library/ Attributes/ Task/Task owner" CONTAINS any ("gwilliams") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text
Task percent complete	No	No	Integer	Yes	Percent complete of a task	att:"/ Library/ Attributes/ Task/Task percent complete" = any (75) IN all	Appears, Does Not Appear, =, != , <, <=, >,>=, Is Between, Is Not Between	Number

Table 27. Metadata for task items (continued)

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Example	Supported Operators	Value Supported
Table 27. Metadata for task items (continued)								
Task start date	No	No	String	Yes (ISO 8601)	Date the task is marked as being started (YYYY-MM-DD)	att:"/ Library/ Attributes/ Task/Task start date" IS BETWEEN "2013-05-0 1" and "2013-05-3 1" IN all	Appears, does not appear, =, ! =, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Task status	No	No	String	Yes	Status of a task	att:"/ Library/ Attributes/ Task/Task status" CONTAINS any ("Complete ") IN all	Appears, Does Not Appear, Is, Is Not, Contains, Does Not Contain, Begins With, Does Not Begin With, Ends With, Does Not End With, Matches, Does Not Match	Text

Attribute value types

This table describes the value and instance-based expressions that can be used with a query condition, depending on the type of attribute.

Table 28. Attribute value types				
Value Type	**Dense**		**Sparse**	
	Single Instance	**Multi-instance**	**Single Instance**	**Multi-instance**
String			Appears	Appears
			Appears uniquely	Appears uniquely
			Does not appear	Does not appear
	Is	Is	Is	Is
	Is not	Is not	Is not	Is not
	Contains	Contains	Contains	Contains
	Does not contain	Does not contain	Does not contain	Does not contain
	Begins with	Begins with	Begins with	Begins with
	Ends with	Ends with	Ends with	Ends with
	Matches regular expression	Matches regular expression	Matches regular expression	Matches regular expression
		at least n times (n>0)		at least n times
		at most n times (n>0)		at most n times
		exactly n times (n=0)		exactly n times
Date			Appears	Appears
			Appears uniquely	Appears uniquely
			Does not appear	Does not appear
	Is	Is	Is	Is
	Between x and y days ago	Between x and y days ago	Between x and y days ago	Between x and y days ago
	At least x days ago	At least x days ago	At least x days ago	At least x days ago
	At most x days ago	At most x days ago	At most x days ago	At most x days ago
		at least n times (n>0)		at least n times
		at most n times (n>0)		at most n times
		exactly n times (n=0)		exactly n times
			Appears	Appears

Table 28. Attribute value types (continued)				
Value Type	**Dense**		**Sparse**	
	Single Instance	**Multi-instance**	**Single Instance**	**Multi-instance**
Int			Appears	Appears
			Appears uniquely	Appears uniquely
			Does not appear	Does not appear
	Equals	Equals	Equals	Equals
	At least	At least	At least	At least
	At most	At most	At most	At most
	Between	Between	Between	Between
		at least n times (n>0)		at least n times
		at most n times (n>0)		at most n times
		exactly n times (n=0)		exactly n times
	Not performed		Not performed	
	Successful		Successful	
	Partial		Partial	
	Failed		Failed	

IBM Lotus Notes metadata attributes

This table describes metadata for IBM Lotus Notes attributes.

Table 29. Metadata for IBM Lotus Notes					
Attribute Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**
Attachments					Whether the data object has attachments. True if message has attachments
Bcc, BlindCopyTo, EnterBlindCopyTo					Recipients that are blindcopied on the email data object
CC, CopyTo, EnterCopyTo					Recipients that are copied on the email data object

Attribute Name	Dense	Multiple	Type	Normalized	Description
Thread_Topic	N	N	String	N	The topic of the first message in a conversation thread
From					The sender of the email data object
Importance					The importance level that is assigned by the sender of the email data object: High, Normal, Low
Message-ID	N	N	String	Y	Corresponds to the message ID field as specified in [RFC2822]
Is-part-of					TRUE if object is part of email body, email attachment, miscellaneous email item's body or miscellaneous email item's attachment
Create, ComposedDate	N	N	Date	Y	Date the message was created (YYYY-MM-DD)
DeliveredDate	N	N	Date	Y	
Modify	N	N	String	Y	Date the message was last modified (YYYY-MM-DD)
DeliveryPriority	N	N	String	Y	The order or speed at which the message must be sent by the messaging system software: Urgent, Normal, Low

Table 29. Metadata for IBM Lotus Notes (continued)

Table 29. Metadata for IBM Lotus Notes (continued)					
Attribute Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**
ReturnReceipt	N	N	Boolean	N	TRUE if a message sender requests proof of delivery for a particular recipient
Sensitivity					The sensitivity level that is assigned by the sender of the email data object: Normal, Personal, Private, Confidential
Sent, Posted					Date the message was sent (YYYY-MM-DD)
SentRepresenting-Name	N	N	String	N	Contains the display name for the messaging user that is represented by the sender
Subject					The subject of the email data object
To, SendTo					The recipient/s of the email data object

Jive metadata attributes

This table describes attributes that are used in Jive items.

Table 30. Metadata for Jive					
Attribute Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**
Author ID (Jive)	No	No	String	No	The unique ID of the author within Jive.
Author Name (Jive)	No	No	String	No	The author's full name within Jive.
Author Username (Jive)	No	No	String	No	The author's user name within Jive.

Attribute Name	Dense	Multiple	Type	Normalized	Description
Table 30. Metadata for Jive (continued)					
Content ID (Jive)	No	No	String	No	The unique ID of content within Jive.
Content URL (Jive)	No	No	String	No	The content's URL within Jive.
Discussion Question (Jive)	No	No	Boolean	No	Indicates whether the Jive discussion was marked as a question.
Like Count (Jive)	No	No	Date	No	Indicates that the number of times that content was marked as "liked" on Jive.
Place ID (Jive)	No	No	String	No	The unique ID of the parent place on Jive.
Place Name (Jive)	No	No	String	No	The name of the parent place on Jive.
Place URL (Jive)	No	No	String	No	The URL of the parent place on Jive.
Published Date (Jive)	No	No	Date	No	The post's published date on Jive.
Reply Count (Jive)	No	No	Date	No	Indicates that the number of replies posted to content on Jive.
Status (Jive)	No	No	String	No	Indicates a discussion's status on Jive.
Subject (Jive)	No	No	String	No	Indicates content's subject on Jive.
Version (Jive)	No	No	String	No	Indicates a document's version on Jive.
View Count (Jive)	No	No	Date	No	Indicates that the number of times content was viewed on Jive.

Chatter metadata attributes

This table describes attributes that are used in Chatter items

Table 31. Metadata for Chatter					
Attribute Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**
Object ID (Chatter)	No	No	String	No	The unique ID of the object within Chatter.
Object type (Chatter)	No	No	String	No	The type of object within Chatter.
Parent group ID (Chatter)	No	No	String	No	The unique ID of the parent group or profile within Chatter.
Parent group name (Chatter)	No	No	String	No	The name of the parent group or profile within Chatter.
Parent post ID (Chatter)	No	No	String	No	The unique ID of the parent post within Chatter.
Parent post type (Chatter)	No	No	Boolean	No	The object type of the parent post within Chatter.
Created by user ID (Chatter)	No	No	Date	No	The unique ID of the creator within Chatter.
Created by username (Chatter)	No	No	String	No	The user name of the creator within Chatter.
Created date (Chatter)	No	No	Datetime	No	The posted date within Chatter.
Comment count (Chatter)	No	No	Integer	No	The number of comments for a post within Chatter.
Like count (Chatter)	No	No	Integer	No	The number of "likes" for a post or comment within Chatter.
Title (Chatter)	No	No	String	No	The title for links and attachments within Chatter.

Table 31. Metadata for Chatter (continued)					
Attribute Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**
Link URL (Chatter)	No	No	String	No	The content of links posted within Chatter.

Box attributes

The Box attributes are listed in the following table.

Table 32. Box attributes							
Name	**Dense**	**Multiple**	**Type**	**Description**	**Filter Code Example**	**Supported Operators**	**Value Supported**
Bookmark URL (Box)	N	N	String	URL set for a Bookmark object.	att:"/Library/ Attributes/Box/ Bookmark URL (Box)" CONTAINS any ("google") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Collaborator (Box)	N	Y	Compound attribute	Collaborator set on an object. **Note:** In the case that a document is incrementally reharvested after only an attribute is updated on Box, the change of the attribute is not reflected in indexes. It is necessary to reharvest with the full harvest option.	att:"/Library/ Attributes/Box/ Collaborator (Box)" APPEARS> 3 IN all	appears, does not appear, appears X times (=,>,>=, <, <=) appears unique x times (=,>,>=, <, <=), where (Collaborator id, collaborator login, collaborator name, collaborator role, collaborator type)	Text
Collaborator ID	N	N	String (sub-attribute for **Collaborator (Box)**)	Box user ID. **Note:** In the case that a document is incrementally reharvested after only an attribute is updated on Box, the change of the attribute is not reflected in indexes. It is necessary to reharvest with the full harvest option.	(att:"/Library/ Attributes/Box/ Collaborator (Box)" WHERE ("Collaborator Id" APPEARS) IN all)	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Collaborator Login	N	N	String (sub-attribute for **Collaborator (Box)**)	Primary email address of the Box user. **Note:** In the case that a document is incrementally reharvested after only an attribute is updated on Box, the change of the attribute is not reflected in indexes. It is necessary to reharvest with the full harvest option.	(att:"/Library/ Attributes/Box/ Collaborator (Box)" WHERE ("Collaborator Login" CONTAINS any ("nirmal")) IN all)	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Collaborator Name	N	N	String (sub-attribute for **Collaborator (Box)**)	Box user name. **Note:** In the case that a document is incrementally reharvested after only an attribute is updated on Box, the change of the attribute is not reflected in indexes. It is necessary to reharvest with the full harvest option.	(att:"/Library/ Attributes/Box/ Collaborator (Box)" WHERE ("Collaborator Name" BEGINS WITH any ("ni")) IN all)	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Collaborator Role	N	N	String (sub-attribute for **Collaborator (Box)**)	Access levels defined by Box 'owner', 'co-owner', 'editor', 'viewer', 'previewer', 'uploader', and 'previewer uploader' or 'viewer uploader'. **Note:** In the case that a document is incrementally reharvested after only an attribute is updated on Box, the change of the attribute is not reflected in indexes. It is necessary to reharvest with the full harvest option.	(att:"/Library/ Attributes/Box/ Collaborator (Box)" WHERE ("Collaborator Role" IS any ("editor")) IN all)	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	
Collaborator Type	N	N	String (sub-attribute for **Collaborator (Box)**)	Box collaborator type. **Note:** In the case that a document is incrementally reharvested after only an attribute is updated on Box, the change of the attribute is not reflected in indexes. It is necessary to reharvest with the full harvest option.	(att:"/Library/ Attributes/Box/ Collaborator (Box)" WHERE ("Collaborator Type" IS any ("user")) IN all)	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Comment (Box)	N	Y	Compound attribute	A comment that was entered in a file in Box.	(att:"/Library/ Attributes/Box/ Comment (Box)" WHERE ("Created by name" CONTAINS any ("nirmal")) IN all)	appears, does not appear, appears X times (=,>,>=, <, <=) appears unique x times (=,>,>=, <, <=), where (Created at, Created by id, Created by login, Created by name, message)	Text
Content created at (Box)	N	N	Date	Date that the content for this object was created.	att:"/Library/ Attributes/Box/ Content created at (Box)" IS BETWEEN "2015-09-01" and "2015-09-15" IN all	Appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Content modified at (Box)	N	N	Date	Date that the content for this object was modified.	att:"/Library/ Attributes/Box/ Content modified at (Box)" IS NOT BETWEEN "2014-03-15" and "2014-03-31" IN all	Appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)

Table 32. Box attributes (continued)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Table 32. Box attributes (continued)							
Created at (Box)	N	N	Date	Date that this object was created on the server of Box.	att:"/Library/ Attributes/Box/ Created at (Box)" IS BETWEEN "2015-12-01" and "2016-01-08" IN all	appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Created by (Box)	N	N	Compound attribute	The user that created a file.	(att:"/Library/ Attributes/Box/ Created by (Box)" WHERE (Name CONTAINS any ("kumar")) IN all)	appears, does not appear; where (id, login, name, type) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Custom properties (Box)	N	Y	String	Custom metadata set on this object.	att:"/Library/ Attributes/Box/ Custom properties (Box)/Title" APPEARS IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Description (Box)	N	N	String	The description that is entered for the data object.	att:"/Library/ Attributes/Box/ Description (Box)" CONTAINS any ("marketing") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Item status (Box)	N	N	String	Item status for the data object, whether it is deleted or not.	att:"/Library/ Attributes/Box/Item status (Box)" IS any ("active") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Modified at (Box)	N	N	Date	Date that this object was modified on the server of Box.	att:"/Library/ Attributes/Box/ Modified at (Box)" IS BETWEEN "2015-10-14" and "2015-10-21" IN all	appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Modified by (Box)	N	N	Compound attribute	The user that modified a file.	(att:"/Library/ Attributes/Box/ Modified by (Box)" WHERE (Name CONTAINS any ("nirmal")) IN all)	appears, does not appear; where (id, login, name, type) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Owned by (Box)	N	N	Compound attribute	The user that owns a file.	(att:"/Library/ Attributes/Box/ Owned by (Box)" WHERE (Name CONTAINS any ("morgan")) IN all)	appears, does not appear; where (id, login, name, type) Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Metadata by attribute type **199**

Table 32. Box attributes (continued)

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Shared link access (Box)	N	N	String	Access level of the shared link for this object.	att:"/Library/ Attributes/Box/ Shared link access (Box)" IS any ("open") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Shared link download count (Box)	N	N	Integer	Download count for the shared link for this object.	att:"/Library/ Attributes/Box/ Shared link download count (Box)" IS BETWEEN 0 and 1 IN all	appears, does not appear, =, !=, <, <=, >,>=, between, not between	Number
Shared link download URL (Box)			String	Download URL of the shared link for this object.	att:"/Library/ Attributes/Box/ Shared link download URL (Box)" CONTAINS any ("boxnote") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Shared link password enabled (Box)	N	N	Boolean	Whether passwords are required to access the shared link for this object.	att:"/Library/ Attributes/Box/ Shared link password enabled (Box)" != false IN all	appears, does not appear, =, !=	True, false
Shared link preview count (Box)	N	N	Integer	Preview count for the shared link for this object.	att:"/Library/ Attributes/Box/ Shared link preview count (Box)" APPEARS IN all	appears, does not appear, =, !=, <, <=, >,>=, between, not between	Number
Shared link unshared (Box)	N	N	Date	The date that the shared link for this object was unshared.	att:"/Library/ Attributes/Box/ Shared link unshared at (Box)" IS BETWEEN "2015-06-15" and "2016-01-11" IN all	appears, does not appear, =, !=, <, <=, >,>=, between, not between	Absolute date, Relative date (days ago, weeks ago, months ago, years ago, days ahead, weeks ahead, months ahead, years ahead)
Shared link URL (Box)	N	N	String	URL of the shared link for this object.	att:"/Library/ Attributes/Box/ Shared link URL (Box)" CONTAINS any ("marketing") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Shared link vanity URL (Box)	N	N	String	Vanity URL of the shared link for this object.	att:"/Library/ Attributes/Box/ Shared link vanity URL (Box)" CONTAINS any ("pricelist") IN all	appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Tag (Box)	N	Y	String	Tags that are applied for this object.	att:"/Library/ Attributes/Box/Tag (Box)" IS any ("expenses") IN all	appears, does not appear, appears X times (=,>,>=, <, <=) appears unique x times (=,>,>=, <, <=), is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Note: For information about compound attributes, see "Conditions for compound attributes" on page 24.

Content Manager attributes

This table describes attributes that are used in IBM Content Manager items.

Table 33. Content Manager attributes

Name	Dense	Multiple	Type	Description
Name	N	N	String	The name of the item. It is the value of the `ICM$NAME` attribute in IBM Content Manager, if this attribute is in the item type.
Itemtype name	Y	N	String	The name of the item type that this document is stored in.
Creator	Y	N	String	The userid of the creator of the document. It maps to the `CREATEUSERID` attribute in IBM Content Manager.
Last modifier	Y	N	String	The userid of the last modifier of the document. It maps to the `LASTCHANGEDUSERID` attribute in IBM Content Manager.
Version number	Y	N	Integer	The version number of the document. It maps to the `VERSIONID` attribute in IBM Content Manager
Semantic type	Y	N	String	The semantic type of the document. It maps to the `SEMANTICTYPE` attribute in IBM Content Manager.
Original file name	N	N	String	The original file name for this document. For document model item types, it is the original file name for the first base part. It maps to the `ORIFNAME` attribute in IBM Content Manager.
Retention date	N	N	Date/ time	The retention date of the document. It is the date that the document is retained until, if the item type was enabled for retention. It maps to the `ICM$RETENTIONDATE` in IBM Content Manager.
Expiration date	N	N	Date/ time	The expiration date of the document. It is the date when the document expires and might be automatically deleted. It is used only if the item type was enabled for expiration. It maps to the `ICM$AUTODELETEDATE` in IBM Content Manager.
Managed record flag	Y	N	Integer	This flag indicates whether the document is declared as a record. It maps to the `SYSROOTATTRS.ICMMANAGEDRECORD` in IBM Content Manager.
Mime type	N	N	String	The mime type of the document. If it is a document model item type, it is the mime type of the first base part.
Number of content elements	Y	N	Integer	The number of parts that this document contains.
Custom properties	N	N	String	The custom metadata for this document. It includes all user-defined and system attributes that are not included in the properties above or in the file system metadata.

Connections attributes

This table describes Connections attributes and provides their use examples.

Table 34. Connections attributes								
Name	**Dense**	**Multiple**	**Type**	**Normalized**	**Description**	**Filter Code Examples**	**Supported Operators**	**Value Supported**
ConnsObjType (Connections)	Y	N	String	N	Type of Connections object	att:"/Library/ Attributes/ Connections/ ConnsObjType (Connections)" CONTAINS any ("file") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
IsComplete (Connections)	N	N	Boolean	N	Is activity complete	att:"/Library/ Attributes/ Connections/ IsComplete (Connections)" != false IN all	Appears, does not appear, =, !=	True, false
BlogVisits (Connections)	N	N	Integer	N	Number of Blog visits	att:"/Library/ Attributes/ Connections/ BlogVisits (Connections)"> 2 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number
BlogEntriesCount (Connections)	N	N	Integer	N	Number of Blog Entries for object	att:"/Library/ Attributes/ Connections/ BlogEntriesCount (Connections)"> 2 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number
CommentsCount (Connections	N	N	Integer	N	Number of Comments for blogs, events, files, forums or status object	att:"/Library/ Attributes/ Connections/ CommentsCount (Connections)"> 2 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number
CommunityMemberCount (Connections)	N	N	Integer	N	Number of members in a Community	att:"/Library/ Attributes/ Connections/ CommunityMemberCount (Connections)"> 2 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number
DownloadCount (Connections)	N	N	Integer	N	Number of file downloads	att:"/Library/ Attributes/ Connections/ DownloadCount (Connections)"> 2 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number
IsManager(Connections)	Y	N	String	N	Is profile a manager	att:"/Library/ Attributes/ Connections/ IsManager (Connections)" CONTAINS any ("y") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text ('y' or 'n')

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Examples	Supported Operators	Value Supported
Table 34. Connections attributes (continued)								
GraduatedIdea Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents if an idea has been graduated or not)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ GraduatedIdea Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
EventLocation Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents the location of a calendar event)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ EventLocation Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
EmployeeType Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents an employee type		Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
CommunityIs Private Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents if a community is private)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ CommunityIsPrivate Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
OrgName Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents the organization that a profile belongs to)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ OrgName Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
IsQuestion Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents if a forum topic is a question or not)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ IsQuestion Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
EcmMimeType Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents Mime type of ECM file)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ EcmMimeType Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Normalized	Description	Filter Code Examples	Supported Operators	Value Supported
Table 34. Connections attributes (continued)								
EventIsAllDay Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents if calendar event is all day)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ EventIsAllDay Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
EventIsRepeating Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents if calendar event is recurring)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ EventIsRepeating Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
City Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents city of a profile)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/City Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
EcmVersion Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents version of ECM file)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/ EcmVersion Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
Country Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents Country that profile belongs to)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/Country Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
State Custom Attribute (Connections)	N	N	String	N	Custom metadata set on this object. (Represents state in the country that profile belongs to)	att:"/Library/ Attributes/ Connections/Custom properties (Connections)/State Custom Attribute (Connections)" APPEARS IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

OneDrive for Business attributes

The OneDrive for Business attributes are listed in the following table.

Table 35. OneDrive for Business attributes

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
description (OneDrive)	N	N	String	Description of drive item	att:"/Library/ Attributes/OneDrive/ description (OneDrive)" CONTAINS any ("desc") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
mimeType (OneDrive)	N	N	String	Mimetype of OneDrive object	att:"/Library/ Attributes/OneDrive/ mimeType (OneDrive)" CONTAINS any ("ascii") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
WebUrl (OneDrive)	N	N	String	Weburl of object	att:"/Library/ Attributes/OneDrive/ webUrl (OneDrive)" CONTAINS any ("sharepoint") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
sharedScop e (OneDrive)	N	N	String	Scope of shared object	att:"/Library/ Attributes/OneDrive/ shareScope (OneDrive)" CONTAINS any ("file") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
sharingLink Scope (OneDrive)	N	N	String	Scope of sharing link object	att:"/Library/ Attributes/OneDrive/ sharingLinkScope (OneDrive)" CONTAINS any ("file") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
sharingLink Type (OneDrive)	N	N	String	Type of sharing Link	att:"/Library/ Attributes/OneDrive/ sharingLinkType (OneDrive)" CONTAINS any ("file") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
remoteItem Id (OneDrive)	N	N	String	Id of a remote item	att:"/Library/ Attributes/OneDrive/ remoteItemId (OneDrive)" CONTAINS any ("file") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text
remoteItem Name (OneDrive)	N	N	String	Name of a remote item	att:"/Library/ Attributes/OneDrive/ remoteItemName (OneDrive)" CONTAINS any ("file") IN all	Appears, does not appear, is, is not, contains, does not contain, begins with, does not begin with, ends with, does not end with, matches, does not match	Text

Name	Dense	Multiple	Type	Description	Filter Code Example	Supported Operators	Value Supported
Table 35. OneDrive for Business attributes (continued)							
locAltitude (OneDrive)	N	N	Integer	For a location facet, the altitude of the object	att:"/Library/ Attributes/OneDrive/ locAltitude (OneDrive)"> 283 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number
locLatitude (OneDrive)	N	N	Integer	For a location facet, the latitude of the object	att:"/Library/ Attributes/OneDrive/ locLatitude (OneDrive)"> 283 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number
locLongitud e (OneDrive)	N	N	Integer	For a location facet, the longitude of the object	att:"/Library/ Attributes/OneDrive/ locLongitude (OneDrive)"> 283 IN all	Appears, does not appear, =, !=, <, <=,>,>=, between, not between	Number

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Index

Q

queries
    regex 18

R

re: queries 18
reference 21
refine
    data map 44
    Data Source Type 44
    group
        data overlay 44
        data source type 44
    infoset 44
    viewing data with different views 44
Refine 43
regex 18
regular expressions 18
relationship between documents 68
reports
    types of reports 50
request management 57
result directory 63
run 48
run file 62

S

save
    exception object list 60
schedule
    action 48
scope operations 39, 40
search 12
search syntax 12
secondary infoset 38
select
    data overlay 44
Select Data Overlay 43
Set Operations 34
Simulate Action 48
single-valued attribute 21
size view 44
sparse attribute 21
specification of attribute conditions 21
string attributes 21
symmetric infoset 37

T

tag information 68
target infoset 41
term hit report 51

U

user analytics 61
user notification 58
user reports 55, 56

V

view
    Action Details 7
    action log of infoset 7
    Ancestor Filter Details 6
    Ancestor Infoset Details 6
    data objects 8
    Details tab 5, 6
    infoset ancestry 6
    infoset details 5
viewing data with different views 44

X

XML root information 67