IBM InfoSphere Master Data Management
Version 11 Release 5

IBM InfoSphere MDM Inspector User's Guide

SC27-6720-01

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Note
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Edition Notice

This edition applies to version 11.5 of IBM InfoSphere Master Data Management and to all subsequent releases and modifications until otherwise indicated in new editions.

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Chapter 1. Introduction to IBM InfoSphere MDM Inspector

IBM® InfoSphere® MDM Inspector is a data stewardship platform that integrates data resolution, relationship management, and data management. This tool is based on the premise that understanding relationships in data helps data stewards to manage and resolve quality issues such as duplicate and inaccurate information.

The large volume of data that is stored across multiple source systems and the often dynamic state of that data can present organizations with challenging data integrity and data profiling issues. The software and associated applications enable you to combine, compare, review, and resolve potential data issues.

Designed to store and manage data from multiple sources, the software uses algorithms to compare the records and attributes that are contained therein to identify potential data issues. InfoSphere MDM Inspector identifies data quality issues so that you can review the records that are involved, manage data relationships, and correct errors.

Terms and concepts

Understanding the following terms and concepts are helpful as you use InfoSphere MDM Inspector. For additional terminology, refer to the Glossary document.

Identifiers used in the software

The software uniquely identifies each record so that selecting, comparing, scoring, and linking are done in an accurate manner. The software uses both unique identification keys that are provided by a source system and a set of keys that are assigned by the software. These identifiers are:

Source ID

This number is assigned by the source system from which the record originated and identifies the source to the software. This identification is used by the software for synchronization and enhances record updates. The user can see the Source ID within Inspector, and can perform searches on the specific ID number. In the database this number is identified as SrcRecno.

Enterprise ID

This identifier number represents records of the same person or object across multiple sources or within the same source. This identifier is assigned by the software and can be shared by more than one record. In the database this number is identified as EntRecno.

When speaking about Enterprise IDs, there are three more terms you may encounter: simple EID, singleton, or non-simple EID.

A *simple EID*—also called a *singleton*—is an Enterprise ID that is associated with only one record. If a record has the same Enterprise ID (EntRecno) and Member ID (MemRecno) stored in the database, this might indicate that only one record is in an entity and is thus called a "simple EID." If the EntRecno and MemRecno are different, the record has been or is part of a multi-record linkage.

A *non-simple EID* is shared by more than one record (records that have been linked).

Record types, records, entities, and entity types

Record type

The software can be configured to operate in multiple types of business environments, such as, healthcare, retail, and banking to name a few. The data that is managed in an organization determines the record type. *Record types* can be associated with specific algorithms designed to fit the data requirements. Examples of record types include: Person, Provider, Guest, and Organization. Depending on business needs, an organization can implement multiple record types and associated algorithms (for example, Person and Provider in healthcare enterprises or Organization and Contacts in commercial environments).

Record

A *record* is a set of demographic information that represents one individual (such as a person) or object (such as a car, machine part, or organization). A record object is the representation of what a single source system asserts to be true about an individual or thing. An entity can potentially have multiple records across multiple source systems.

Note: The flexibility of the software enables record types/records to be configured for data representing something other than "people-related" data. For example, the software can be configured for use in equipment manufacturing environments, product distribution warehouses, and so on. For discussion and illustration purposes, this manual uses "people" record types/records.

Entity An *entity* is defined as *something that exists as a particular and discrete unit*. In terms of identity management, an entity is the logical relationship between two or more records. Entities are represented in the software environment as records that share an Enterprise ID. An entity is also called a *linkage set*. There can be an unlimited number of records in an entity or linkage set.

Entity type

An *entity type* allows for distinction between the way records are viewed and linked within the software. Each entity type has a specific algorithm configuration. The following lists some examples of how entities can be configured:

Identity
an individual. Records in an identity entity (multiple records that represent the same person) are linked based on attribute similarity and share a common Enterprise ID.

Household
multiple individuals who are associated with the same physical location, and share common attributes of home address and phone number (such as family records, non-family records sharing a household). Records within a household entity share a common Enterprise ID, just as records of an identity entity.

Group in normal processing, a record can only belong to a single entity within an entity type. Group entity functionality enables records to have multiple entity record numbers (entRecno) within a single entity type. A member of a group entity must match all members of that entity set above the auto-link threshold.

Organization
multiple individuals who are associated with a single organization

(such as employees of a company or students at a university). Records of an organization entity also share a common Enterprise ID.

Pivot Record/Entity

The pivot record/entity is what the search was initiated with. You can change the pivot record/entity at any time by moving it to a new view, or by double-clicking another item from within the Relationship View.

Attributes

Attributes:

Attributes are the equivalent of puzzle pieces, which, when pulled together, form a complete picture of a record. In the software, attributes provide demographic information about a record. Examples of record attributes include name, phone number, address, Social Security or other identifier numbers, or date of birth for individual persons. In the case of objects, examples can include company name, location, part numbers, or part manufacturer. As a whole, attributes define a record (such as, John Q. Public, 1043 W. Easy Street, Phoenix AZ).

Supplemental attributes:

Attributes that are stored in the database are typically a copy of the attribute values stored in a source system. Supplemental attributes are record attributes that are stored and maintained only in the database. In normal implementations, once a record is merged or logically deleted, their attributes cannot be modified. Additionally, attributes that are in a shadow state cannot be modified. However, if an attribute is defined as "controlled," and thus is independent of a source system, the usual attribute validation does not apply, and modification is allowed. Supplemental attributes are used mainly in concert with data remediation efforts. However, customers outside the realm of remediation may also identify attributes that are specific to the software that are not stored in a source system.

External:

In most implementations, sources that communicate with the software store a copy of their data in the database. However, there are certain situations where data might be useful when reviewing records, but—for a variety of reasons—not required for comparison or approved for storage in any database other than the original source. The software can retrieve such information from external sources for temporary display in the applications. These external attributes are not stored in the database, nor do they participate in the derivation, comparison, and linking process. As well, these attributes cannot be modified by an application. An example of external attributes might be a credit score or a credit limit.

Thresholds

Threshold levels are scoring levels that determine how records are managed in the software. When the IBM project team evaluates your data, they determine the most effective threshold settings for linking records and generating tasks. The thresholds are set to yield the optimal balance between the amount of administrative work that is required for resolving record issues and your organization's goals for ongoing record management.

Thresholds are set at three different levels:

1. **Auto-link Threshold**: This threshold is set at a comparison score for which there is a high enough likelihood that the records represent the same person. Above this threshold, your organization can confidently allow the operational

server to link the records electronically by assigning a common Enterprise ID number to them without further review.

2. **Clerical Review Threshold**: Clerical review is the threshold level at which a task may be created. When a record compares below the auto-link threshold and above the clerical review threshold, the record may generate a task. Records that compare below the clerical review threshold are records that have such a small likelihood of being the same individual that task creation may have little value. Records scoring below the clerical review threshold are still maintained in the database for review and ongoing comparison.
3. **Potential Overlay Threshold**: Overlay thresholds are set at a negative number. Each time a record is compared by the operational server, the first comparison is against itself. A record that is compared against itself should generate a high comparison score. A low or negative score indicates that two or more sets of demographics are being applied against one record. If the comparison generates a negative score, that record is placed in a Potential Overlay task. Further comparison of this record against other records in the database only occurs after the overlay issue has been resolved.

The difference between a trigger record and a glue record

Two terms used during training and throughout the documentation are trigger record and glue record.

Trigger record

When a task search is requested in an application, the results are generated in real time (at the moment the search is initiated). The record or criteria that is used to compare against other records (candidates) is called the *trigger record* (as in, the record that triggers the comparison). When a task search returns results, the trigger record typically displays with a higher score than the other records. The score is higher based on the trigger record that is compared against itself during the comparison process. The other records that are returned are issued comparison scores that are based on their comparison against the trigger record. The trigger record icon displays on the task resolution screen for quick visualization for the user.

A record is also considered to be the trigger if an update to that record causes a cross-match that results in task creation.

Glue record

The term *glue record* is used to describe the record in a linkage set to which all other records in the set are linked. In other words, the record that brings the linkage set together. For example, if you had the following records:

1. John Public, DOB = 10-24-1950, Ph = 602-555-6060
2. John Quentin Public, 10-24-1970, 602-555-6060
3. John Quentin, 10-24-1970, 602-554-3232

During a comparison, Record 1 would likely link with Record 2 and Record 3 would likely link with Record 2; however Record 1 would not likely link with Record 3. Therefore, Record 2 is the glue record for the entity.

Chapter 2. Getting Started

Inspector allows you to search for entities and records, view, and work with relationships and hierarchies, and review and resolve tasks.

Before you begin

InfoSphere MDM Inspector must be installed and configured. For more information, see the *IBM InfoSphere Master Data Management Installation Guide for Standard and Advanced Editions*.

Procedure

Once installed on IBM WebSphere® Application Server, open a browser and enter the following command: `http://WAS_HOST:WAS_PORT/inspector`

Chapter 3. Entity, record, and linkage searches

Use the Search feature to search for Household, Identity, Organization, or custom configured entities, records, or linkages, and inspect them.

To search for an entity, a record, or a linkage follow the steps applicable to your record type implementation. Remember, because attributes are configurable, the search criteria used in these examples can differ from the criteria used by your organization. The criteria used in these procedures represent record type attributes. Consult with your supervisor or application administrator to verify the exact criteria and combinations required.

Tips for searching

- The more data you provide, the better (more accurate) your results will be.
- Wildcard characters are not valid.
- The use of unrestricted naming conventions means that the algorithm accounts for capital letters, hyphens, transpositions in names, prefixes, suffixes, and apostrophes.
- Use of nicknames (for example, Bob instead of Robert) is accounted for in the algorithm.

Searching for entities

Follow these instructions to search for entities in InfoSphere MDM Inspector.

Procedure

1. From InfoSphere MDM Inspector, click **Search**.
2. Select an entity type, and click **Continue**.
3. In the **Search** box, select the **Search For** option.

   Note: The fields in the **Search** box vary slightly depending on the entity type you are searching.

Searching for records

Follow these instructions to search for records in InfoSphere MDM Inspector.

Procedure

1. From InfoSphere MDM Inspector, click **Search**.
2. In the drop-down box, select an entity type, and click **Continue**.
3. Select the **Return records instead of entities** check box.
4. In the **Search** box, complete as much information as necessary, and click **Search**.

Adding notes for record searches

When you review record search results, you may need to add a reminder to seek additional information, or to make certain information about the record available to others in your department. Viewing existing notes may also assist you in your review of the record.

Procedure

1. From the *Search Results*, select a record, and then click the **Notes** icon in the **Notes** column.
2. In the **Notes** callout, type the note in the **Details** box, and then click **Add**.
3. Click **Close**.

Results

Your note icon now displays a stylized "script" that indicates that the note contains the information that you entered.

Retrieving records by Source ID

Retrieving records by Source ID is most useful when trying to retrieve a deleted record.

About this task

If there is a need to retrieve an already deleted record, retrieve the record using the Source ID.

Procedure

1. From InfoSphere MDM Inspector, click **Search**.
2. Select an entity type, and click **Continue**.
3. Select the **Retrieve by Source:ID** option.
   a. To include all records linked with this source ID, select **Return all linked records**.
   b. Select a **Source Code** from the list.
   c. Type a **Source ID**.
4. Click **Retrieve**.

Retrieving records by EID

Use the Enterprise ID (EID) to retrieve records.

About this task

Follow this procedure to retrieve records by EID.

Procedure

1. From InfoSphere MDM Inspector, click **Search**.
2. Select an entity type, and click **Continue**.
3. In the **Search** box, select the **Retrieve by EID** option.
4. Type the **EID**, and click **Retrieve**.
5. Click **Inspect**.

Results

When you click **Inspect**, the **Attributes** tab is displayed. After you retrieve entities or records, use the subtabs to view and work with the entities and records. Within each tab, column sorting is available for all underlined column headings.

Viewing relationships

You can view relationships through record and entity search results.

About this task

You can view relationships after you perform a record or entity search.

Procedure

To view relationships from an entity search:

1. From the entity search results pane, select an entity, and then click the **Inspect** icon.
2. Click the **Relationships** subtab. The Relationship View opens with the entities displayed as rectangles.

   To view relationships from a record search:

3. From the record search results pane, select a record, and then click the **Inspect** icon.
4. Click the **Entities** subtab. The Relationship View opens with the records displayed as ovals.

Viewing relationships from record searches

Procedure

1. From the *Search Results*, select a record, and then click the **Inspect** icon.
2. Click the **Entities** sub-tab. The Relationship View opens.

   Note: Records display as ovals in the Relationship View.

   For more information about relationships, see "Relationships" on page 25

Inspecting records from an entity search

When the entity search is complete, you can inspect the records from the search results.

About this task

Follow these steps to inspect records.

Procedure

1. From the search results pane, select the entity to work with, and then click the Inspect **icon**.
2. Click the **Records** subtab.

Results

A list of records for the selected entity opens. From this list, you can select a specific record and then view the record relationships, linkage details, and so on.

Inspecting attributes

From the entity or record search results, you can inspect attributes from the Attributes subtab. Attribute history is also available from the Attributes tab.

Procedure

From the search results pane, select an entity or record to work with, and then click the Inspect **icon**.

- The Attributes subtab displays by default. If you searched for entities, the Attributes subtab shows a list of attributes and values. Click the Attribute History **icon** on the grid to view the history for the selected attribute.
- If you searched for records only, the Attributes subtab displays with the added functionality of editing, adding, and deleting attributes.

For information about adding, editing, and deleting attributes, see Chapter 8, "Reviewing tasks," on page 43.

Viewing Linkage Details

Procedure

1. From the search results pane, select a record or entity to work with, and then click **Inspect**.
2. Click the **Linkage Details** tab to view the grid.
3. Use the filter **icon** in the upper right corner of the **Linkage Details** tab to filter large subsets of results.
   a. On the Filter Selection pop-up window, enter the information that you want to filter on. The fields are case-sensitive.
   b. Click **Filter**.
   c. Reset the Linkage Details to the original results by clicking the Reset Filtering **icon**.
4. To sort your results, click the Sort **icon**.
   a. On the Sort Section pop-up window, select your primary sort from the column headings that are listed in the **Sort By** drop-down list.
   b. Select a secondary sort from the column headings that are listed in the **Then By** drop-down list.

Results

The following table describes each column that is displayed in the Linkage Details grid.

Table 1. Linkage Details grid

Value	Description
Previous EID	This field is populated if the EID has changed for any reason since the initial creation.
Source:ID	The source system identifier. You can click the Source ID field in to view the member record.

Table 1. Linkage Details grid (continued)

Value	Description
Type	Indicates the linkage type. Linkage type assignment can change for records as they progress through the linkage cycle. Records are assigned the following types that are based on the method in which they were linked, the source from which they originated, and the stage of the merge process the record is in. **AutoLink-MS**: Records that are compared from multiple sources above the auto-link threshold, and a common Enterprise ID was assigned by the software. **AutoLink-SS**: Records that are compared from the same source above the auto-link threshold, and a common Enterprise ID was assigned by the software. (There is an option in InfoSphere MDM Workbench that can disable same source auto-links. If this option is turned off for your implementation, you might not see linkages of this type.) **AutoUnlink**: A previously auto-linked record that because of new information, no longer compares below the auto-link threshold with another record and has been automatically unlinked by the software. After a record is unlinked, if it compares above the clerical review threshold, it can be placed into a task. **Delete**: A user logically deleted the record so that the software no longer includes it in the algorithmic comparison. **ManuLink-MS**: A user manually linked records from multiple sources. **ManuLink-SS**: A user manually linked records from the same source. **ManuUnlink**: A user manually unlinked records that previously had shared a common Enterprise ID. **Merge**: Indicates when the software received a merge message from the source system. **NoChange**: An InfoSphere MDM Inspector user updates the workflow status, but does not change the Enterprise ID. **Premerge**: An InfoSphere MDM Inspector user resolved a record by merging 2 records into one. When the software receives the merge message from the source, this record is set to “Merge." **Undelete**: An InfoSphere MDM Inspector user activated the record after it had been deleted. **UnMerge**: A previously merged record that has been unmerged. You can sort by clicking the Type column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.
Status	The status of the linkage. These are customizable options during implementation, and can include: **Unexamined**: Linkage has not been reviewed. **Examined-OK**: Linkage has been reviewed and confirmed by an InfoSphere MDM Inspector user. **Examined-ERROR**: Linkage has been reviewed and confirmed as incorrect by an InfoSphere MDM Inspector user.

Table 1. Linkage Details grid (continued)

Value	Description
Owner	The owner, or person, working a task. Initially, "mdmadmin" is assigned as the owner of a task. After you begin to work a task, your user name is assigned to the task until it has been resolved. Auto-linked records default to "mdmadmin" owner. **Note:** The default owner name can be configured to be a user name other than "mdmadmin."
Task Status	The task status. These are customized options, and can include **Unexamined**, **Resolved**, **Deferred**.
Assigned EID	The Enterprise ID originally assigned by the software.
Assigned Source:ID	The originally assigned identifier from the source system.
Score	This number is the comparison score that is assigned by the software. The value indicates the likelihood that these records are the same person.
Last Modified	The date this linkage was most recently updated in the database. If configured, the event time (time the linkage was modified) can also show in this field. You can sort by clicking the Last Modified column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.
Created	The date the linkage was created (seen) in the database. If configured, the event time can also show in this field.
Entity Type	This field contains the entity type of the record. For example, Identity, Household, Organization.

Inspecting tasks

Inspecting identification tasks is part of the task resolution process. Inspect a task to determine how to resolve it.

About this task

Follow these steps to inspect a task.

Procedure

1. From the **Search Results**, select a record, and then click the **Tasks** icon.
2. Inspect the task by doing one of the following actions:
   - From the Task List callout, select a task and then click **Inspect**.
   - From the Search Results List, select a record or entity, and then click **Inspect**.
3. Click the **Tasks** sub-tab.
4. Select a task to review, and then click **Inspect Task**.

   For more information about tasks, see Chapter 9, "Resolving Tasks," on page 53.

Searching for Linkages

Linkages are two or more records that share a common Enterprise ID. Linkages can be manually created as a result of resolving a Potential Linkage task, or they can be created automatically when records compare above the auto-link threshold.

About this task

Use this procedure to search for linkage records.

Procedure

1. From InfoSphere MDM Inspector, click **Search**.
2. In the drop-down box, select an entity type, and click **Continue**.
3. Select **Search for linkages**.
4. Specify the search criteria.
5. Click **Search**.

Results

The EIA Search Results grid shows all of the linkages that match your search criteria. Click any of the underlined column headings to sort the results by that column. For example, to sort by ascending EID order, click **Previous EID**. The information that is displayed on the grid includes:

Table 2. EIA Search Results grid

Value	Description
Previous EID	This field is populated if the EID has changed for any reason since the initial creation. A record without a value in this field indicates that the record is a non-surviving record of a merge or premerge.
Source ID	The source system identifier.

Table 2. EIA Search Results grid (continued)

Value	Description
Type	Indicates the linkage type. Linkage type assignment can change for records as they progress through the linkage cycle. Records are assigned the following types that are based on the method in which they were linked, the source from which they originated, and the stage of the merge process the record is in. **AutoLink-MS**: Records that are compared from **multiple sources** above the auto-link threshold, and a common Enterprise ID was assigned by the software. **AutoLink-SS**: Records that are compared from the **same source** above the auto-link threshold, and a common Enterprise ID was assigned by the software. (There is an option in InfoSphere MDM Workbench that can disable same source auto-links. If this option is turned off for your implementation, you do not see linkages of this type.) **AutoUnlink**: A previously auto-linked record that because of new information, no longer compares below the auto-link threshold with another record and has been automatically unlinked by the software. After being unlinked, if the record compares above the clerical review threshold, it can be placed into a task. **Delete**: A user logically deleted the record so that the software no longer includes it in the algorithmic comparison. **ManuLink-MS**: An InfoSphere MDM Inspector user manually linked records from multiple sources. **ManuLink-SS**: An InfoSphere MDM Inspector user manually linked records from the same source. **ManuUnlink**: An InfoSphere MDM Inspector user manually unlinked records that had previously shared a common Enterprise ID. **Merge**: Indicates that when the software received a merge message from the source system. **NoChange**: An InfoSphere MDM Inspector user updates the workflow status, but did not change the Enterprise ID. **Premerge**: An InfoSphere MDM Inspector user resolved a record by merging 2 records into one. When the software receives the merge message from the source, this record is set to “Merge”. **Undelete**: An InfoSphere MDM Inspector user activated the record after it had been deleted. **UnMerge**: A previously merged record that has been unmerged. You can sort by clicking the Type column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.

Table 2. EIA Search Results grid (continued)

Value	Description
Status	The status of the linkage. These are customized options. Typically all implementations have these options: **Unexamined**: Applies if this linkage has not been reviewed. **Examined-OK**: Applies if this linkage has been reviewed and confirmed by an InfoSphere MDM Inspector user. **Examined-ERROR**: Applies if this linkage has been reviewed and confirmed as *incorrect* by an InfoSphere MDM Inspector user.
Owner	The owner, or person, working a task. Initially, "mdmadmin" is assigned as the owner of a task. After you begin to work a task, your user name is assigned to the task until it has been resolved. Auto-linked records default to "mdmadmin" owner.
Task Status	The task status. These customized options can include: • `Unexamined` • `Resolved` • `Deferred`
Assigned EID	The Enterprise ID originally assigned by the software. For all non-merge linkages (such as Auto-Link), clicking the **Inspect** icon takes you to the Linkage Details screen.
Assigned Source ID	The originally assigned identifier from the source system. If the record is the non-surviving record of a merge or premerge, the original source ID is displayed in this field. Clicking the **Inspect** icon takes you to the Attribute
Score	This comparison score is assigned by the software, which indicates the likelihood that record is the same person.
Last Modified	The date this linkage was most recently updated in the database. If configured, the event time can also show in this field. You can sort by clicking the Last Modified column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.
Created	The date the linkage was created (seen) in the database. If configured, the event time can also show in this field.

Chapter 4. Data management

Within InfoSphere MDM Inspector, there are two roles: data steward and data manager.

A data manager role is responsible for the project management aspects of a customer data integration or master data management implementation at an enterprise. A data manager manages the stakeholder expectations, the team of data stewards, and success of the project from a cost and time perspective. The data manager can create, edit, and delete tags and assign rules to define the tags, which allows the data manager to control task assignment to users or groups to improve the process of data resolution.

A data steward role is tasked with maintaining and implementing the data governance policies agreed on by the company.

After you log in to InfoSphere MDM Inspector, you immediately see the **Inbox**. If you have a data manager role, you see the **Data Manager** button on the screen.

Using the Data Manager tab

From this tab, the Data Manager can create and edit tags; add, delete, and edit rules defining those tags, and use the Bulk Assign function.

About this task

- Click the **Data Manager** button. The Data Manager tab opens.

The Data Manager tab has two sub-tabs: **Bulk Assign**, and **Tags**.

Assigning tasks using bulk assign

Bulk assignment enables you to perform a comprehensive search for all issues with a certain task type, status, source, entity type, beginning or end date, or minimum or maximum score (or a combination of options) and assign all, none, or a range of tasks to a specific user or group.

About this task

Within the Bulk Assign Task Search, you can also search by tags that are previously defined.

Procedure

1. Click **Data Manager**. By default, the **Bulk Assign** tab opens.
2. In the **Bulk Assign Task Search** box, complete the search fields as necessary, and then click **Search Tasks**.
3. In the Search Results, the number of tasks that meet the specified criteria is listed, along with the number of tags found.
4. Point to the Tags count. The **Task Count by Tag** callout opens.
5. At the top of the Search Results, select an option for the bulk assignment.
   a. **All** - Click this option to select all of the tasks in the search results.
   b. **None** - No tasks are selected.

c. **Range** - Click this option to type a number range of tasks.

a. After you select the tasks to assign, click **Action**

b. Select the **Action**, and the person or group to assign the tasks to, and then click **Apply**.

Performing bulk assign task searches

Procedure

1. Click the **Data Manager** tab. By default, the **Bulk Assign** tab opens.
2. In the **Bulk Assign Task Search** box, complete the search fields as necessary, and click **Search Tasks**.
3. In the Search Results, the number of tasks that meet the specified criteria is listed, along with the number of tags found.
4. Hover over the Tags count. The **Task Count by Tag** callout opens.
5. Select one of these options for the bulk assignment.
   a. **All** - Click this option to select all of the tasks in the search results.
   b. **None** - No tasks are selected.
   c. **Range** - Click this option to type a number range of tasks.
6. After you select the tasks to assign, click **Action**.
7. Select the **Action** and the person or group to assign the tasks to, and click **Apply**.
8. The Bulk Assign is successful.

Tags

Tags are used to categorize tasks. They are created by a data manager and are composed of a name and a criterion that determines its application.

Tags are a powerful means of organizing and planning task resolution within the operational server. For example, if there are high priority tasks that need to be resolved before any others, the data manager can create a “high priority” tag. When a search is initiated, the data steward can select the high priority tag to return only those tasks that meet the criteria, and resolve the high priority tasks first.

From the Tags tab within Data Manager, you can add, delete, clone, reset, and edit tags.

Adding tags

A data manager can add tags to help categorize tasks during a task search.

Procedure

1. Click **Data Manager**.
2. Click the **Tags** subtab.
3. Click the **Add Tag** icon on the **Tags** sub-tab.
4. In the **Tag Name** field, type a name for the tag you are adding.
5. In the **Entity Type** field, click the list, and select an entity type.
6. If you do not want to add any rules for the tag, click **Save**.

Creating rules

While adding a tag, you can add tag rules to that tag, or you can edit a tag to include rules. Tag rules are used to further filter the tag information.

Procedure

1. In the **Tag Rules** section of the **Tag Details** box, click the **Add New Rule**. The **Rule Definition** box opens.
2. In the **Rule Type** field, select a rule type from the drop-down.
3. Depending on the **Rule Type** selected, the **Rule Definition** box expands with more fields to complete. In this example, **Task Type** was selected.
4. Complete the additional fields, and then click **OK**.
5. Click **Save**.
6. Ater rules are created, the **Use** field is active in the *Tag Rules* section. Use the drop-down to select from **Only Trigger Records**, or **Related Records**. The default is **Only Trigger Records**
7. Move the mouse cursor over the **Rule Count** link to see the rule associated with a specific tag.

   Note: The entity type cannot be changed after a tag has a rule associated with it.

Resetting tags

When resetting a tag, the system analyzes each task to determine whether or not the selected tag should be applied. Use this function if the rules for the tag have been edited since the original creation.

Procedure

1. From the **Tags** tab, click the **Reset** icon for the tag you want to reset.
2. Click **Yes** to confirm the reset.

Cloning tags

If you want to create a tag that is similar to an existing tag, you can clone the existing tag.

Procedure

1. From the **Tags** tab, click the **Clone** icon.

   The **Tag Details** box opens.
2. Update the necessary fields, such as **Tag Name**.
3. Optional: Click the **Add New Rule** link to add rules.
4. Click **Save**.

Chapter 5. Inbox

The Inbox displays a list of identification tasks that are assigned to the logged in user.

When you log in to InfoSphere MDM Inspector, you are immediately taken to the Inbox list of all open (unresolved) tasks that have been assigned to you. Within the Inbox, you can:

- View by tags (if any are defined)
- View tasks by owner. Note that, beyond your own assigned tasks, you can only view other tasks from the Inbox if they have been assigned to a group to which you belong. Owners are categorized in the list by Groups, Active Users, Inactive Users, and Deleted Users. If you do not have any users marked inactive or deleted in the operational server, those categories are not displayed.
- Sort tasks by columns.
- Filter the appearance of the tasks in the Inbox.
- Select tasks assigned to your group and reassign directly to yourself or another group member.
- Directly inspect tasks and begin the resolution process.
- Add and remove tags from tasks.

By using the Inbox, you can immediately see the tasks that require immediate attention and plan your workload accordingly.

Working with the Inbox

About this task

Once you log into InfoSphere MDM Inspector, the first screen you see is the Inbox.

Users will be able to directly act on, and filter the tasks that are displayed within their inbox. Users can still search for tasks using the Resolve screen as in previous versions of InfoSphere MDM Inspector. For more information about searching for tasks, see Chapter 7, “Data Resolution,” on page 33.

Viewing tasks by tags within the Inbox

View tasks by tags to filter the task list that is displayed in the inbox.

About this task

Tags must be added before they display in the Quick View box.

Procedure

1. From the Inbox, click a tag in the **Quick View** box. The tasks that meet the tag criteria display in the Task List of the Inbox.
2. Click **All Tasks** in the **Quick View** box to return to the unfiltered list.

Sorting columns in the Inbox

Within the inbox, you can sort the columns by task type, task status, task date, source ID, and entity type.

About this task

Use this procedure to sort columns.

Procedure

1. Open the inbox.
2. Click the column header for the column you want to sort.

   Note: The Score column cannot be sorted.

Inspecting tasks from the Inbox

Inspect tasks from the inbox to display the task and begin the task resolution process.

About this task

Follow these steps to display task information.

Procedure

1. Click the **Inspect** icon for the task you want to inspect.
2. From the task screen, you are able to review and resolve the task.

Related tasks:

"Resolving potential overlay tasks" on page 58

"Resolving potential duplicate tasks" on page 57

"Resolving potential linkage tasks" on page 57

"Resolving review identifier tasks" on page 56

Filtering the Inbox

Use the filter option to display a subset of the inbox. You can filter by task type, task status, source system, and entity type to name a few.

About this task

Follow this procedure to filter the inbox.

Procedure

1. From the Inbox, click the **Inbox Filter** icon. The Inbox Filter box opens.
2. In the **Inbox Filter** box, complete the necessary search criteria, or select one or more tags, if available.
3. Click **Filter Inbox.**
4. To return to the unfiltered inbox, click the **Remove Filter** icon.

Viewing tasks of other owners

You can only view tasks of other owners from the Inbox if they have been assigned to a group to which you belong.

About this task

Use this procedure to view tasks not assigned to you.

- From the Inbox, click the **Owner** list and select a user or group.

All tasks assigned to the selected user or group are listed in the Inbox.

Assigning tasks from the Inbox

From the inbox, it is simple to assign a task to another user. Data Stewards can assign tasks only to a group that they belong to, or to other users that are a member of the same group.

About this task

Data Stewards can assign tasks only to a group that they belong to, or to other users that are a member of the same group.

Procedure

1. From the Inbox, select the tasks that you want to assign to a user or group.
2. After you select the tasks, click **Action**.
3. Click the **Select Action** list and select **Assign Group** or **Assign User**. Only users that are marked active (status of A) in the operational server are listed.
4. Click **Apply**.

Adding tags to tasks

Procedure

1. From the Inbox, select the tasks that you want to add a tag to by clicking in the checkbox, or select the options (`All`, `None`, `Page`) that are located above the task list.
2. Click the **Select Action** drop-down list and select **Add Tag**.
3. Select a **Tag** from the drop-down list, and click **Apply**.

Removing tags from tasks

Procedure

1. From the Inbox, click the tag to remove from the **Quick View** section.
2. Select the task or tasks to work with.
3. Click **Action**, and select **Remove Tag** from the drop-down.
4. Select the tag from the drop-down, and then click **Apply**.

   The tag has been removed from the selected tasks.

Chapter 6. Managing entities

Use these methods to manage entities.

Relationships

Data stewards and data managers can view, manage, and create relationships between different data types.

Relationships are tightly integrated with data resolution so data stewards can be certain that the relationships they are managing are based on a single trusted view of the data. This integration further benefits data stewards through visual alerts that records involved in relationships may have data quality issues – data stewards can navigate between relationship and data resolution to ensure they are making business decisions with the best data possible.

There are two primary categories of relationships that must be managed:

- **Reflexive, peer-to-peer** – an example of this relationship type would be 3 different entities that are in a group. Another example is a traditional Identity with representation from two or more entities.
- **Non-reflexive –** this includes two basic subtypes:
  - Parent-child – such as in a hierarchy.
  - Order relevance – such as an individual at an organization.

Entity to entity relationship types

- **Family relation** – all relevant records may be from the same or different sources and of the same record type, but may have relationships that are with positional relevance.

  EX: There are 4 records: Adult male, Adult female, Boy, and Girl. There are 6 different relationships between them.
- **Non-peer association** – this is a classic many-to-many entity relationship because an individual may have zero-to-many relationships with Organizations, and an Organization may have zero-to-many relationships with individuals.
- **Peer-to-peer relationships** – these are groupings of entities with no positional context in their relationship. It is an effective way to establish a group or collection of entities.

Within InfoSphere MDM Inspector, users will be able to view relationships, and review and resolve tasks.

Relationship categories

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Within InfoSphere MDM Inspector, users will be able to view relationships, and review and resolve tasks.

Inspecting relationships

Inspect a relationship to display a diagram that shows the relationship between entities or records.

About this task

Follow these steps to inspect a relationship.

Procedure

1. From the search results, select a record or entity, and click the **Inspect** icon.
2. Click the **Relationships** subtab when you are searching for entities, or the **Entities** subtab when you are searching for records.

   When you are viewing the relationship diagram, use the tools in the Tools box to work within the graph in the Relationship View.

   Right-click from any entity in the diagram to display the menu with the following options:
   - **Inspect** – Click this option to display entity details.
   - **Pivot On Item** – Select this option to change the focus from one entity to another within the Relationship view.
   - **Inspect Records** – Select this option to view the records for the entity you are viewing.
   - **Move to Center** – Select this option to move the entity or record to the center of the diagram. This option is especially helpful if you are viewing an entity or entities with multiple relationships.

Creating relationships

Once you have a relationship view open, you can create new relationships between entities or records already in the view, or you can add entities and records to the view.

About this task

Follow these steps to add an entity and relationship to the view.

Procedure

1. From the Relationship view, click **Search**.
2. In the Search box, complete the necessary information, and then click **Search**.

3. From the **Search Results**, select the entity to add to the Relationship view, and then click the **Add** icon.
4. Click **Close** to close the **Search Results** and return to the Relationship View.

   The entity that was added displays in blue.
5. From the **Tools** box in the Relationship view, click the drawing icon to enter drawing mode.
6. Click and drag from the added entity to the entity you want to create a relationship with.
7. Select a **Relationship Type**.

   An error message displays if you attempt to create an invalid relationship.

   Note: The Available Relationships dialog displays only the relationship types that have already been configured. Relationship Types are configured using Workbench.

Deleting relationships

Procedure

1. From the **Relationship View**, right-click on the relationship you want to delete.
2. Click **Delete Relationship**.
3. From the confirmation dialog, click **Yes** to delete the relationship.

   Note: The relationship is deleted in real time.

Viewing relationship attributes

Procedure

1. From the **Relationship View**, right-click on the relationship, and select **Inspect Relationship**.
2. The **Attributes** tab opens and displays the list of attributes that are configured for the selected relationship.

   From this view, you can add, edit, and delete relationship attributes.

Adding relationship attributes

Add relationship attributes to the attributes list using the Add Attributes icon.

Procedure

1. From the **Relationship View**, right-click on the relationship, and select **Inspect Relationship**.
2. From the **Attributes** tab, click the **Add Attributes** icon.
3. In the **Add Attribute** callout, select an attribute from the **Available Attributes** list, and then click **Add**.
4. In the Edit box, add the attribute value, and then click **Update**.
5. Click **Save** to add the relationship attribute.

Editing relationship attributes

Procedure

From the **Relationship View**, right-click on the relationship, and select **Inspect Relationship**.

Results

The **Attributes** tab opens and displays the list of attributes that have been configured for the selected relationship.

Deleting relationship attributes

Procedure

From the **Relationship View**, right-click on the relationship, and select **Inspect Relationship**.

Results

The **Attributes** tab opens and displays the list of attributes that have been configured for the selected relationship.

Setting relationships to unmodifiable by engine

Based on this setting, the engine will or will not delete a relationship if it does not agree with the underlying data.

Procedure

1. From the **Relationship View**, right-click on the relationship you want to change.
2. The **Modifiable By Engine** option is selected, which means it can be changed by the engine. Click this option to make the relationship **Unmodifiable**.

Adding records to entities

While you are viewing relationships, you can add records to the existing entity by performing a record search and then selecting the records to add to the relationship.

Procedure

1. Click **Search**.
2. Complete the fields as necessary, and then click **Search**.
3. Click the **Inspect** icon for the entity you want to add a record to.
4. For the selected entity, click the **Relationships** subtab.
5. Click **Search** in the Relationship View.
6. In the **Search** box, complete the necessary fields.
7. Click the **Return Records instead of Entities** check box, and then click **Search**.
8. From the Search Results, click the green plus sign to add that record to the Relationship View.

   The new record appears in **blue** on the Relationship view.
9. Click the edit button to draw the relationship line.
10. Click and drag from the record to the entity you want to add it to.
11. From the Inspector Confirmation dialog, click **Yes**.

Results

The record is added to the entity and displays as a dotted line.

Note: In a non-group environment, the record will be removed from its old entity when it is added to a new entity. If the record was in a singleton entity, the singleton entity will be removed from the system but still displays in the view.

Removing records from entities:

You can remove records from entities.

Procedure

1. Right-click on the dotted line between record and entity, and select **Remove Record From Entity**.
2. From the **Delete Relationship** box, click **Yes** to confirm the deletion.

Results

A warning displays and the record is removed from the entity in real time.

Note: You cannot delete a record from a singleton entity.

Viewing records in the cloud

When the number of relationships of a specific type exceeds the threshold that is set during configuration, a cloud displays in the Relationship View.

About this task

Follow this procedure to view clouds in the relationship view.

Procedure

1. From the **Relationship** view, double-click the cloud. Notice that the cloud entity shows a number. In the grid, you see the same number of entities as the number shown in the graphic of the cloud entity. This number is a configurable amount. If there is more than one page on the grid, use the arrows on the top of the grid to go forward or backward.
2. From the **Cloud Entities** grid, click the **Add** icon. The entity that you add is pulled out of the cloud, and the relationship between that entity and the cloud is displayed on the Relationship View.

Viewing Entities in the cloud

When the number of entities exceeds the entity threshold set during configuration, a cloud displays in the Entity view.

About this task

Follow this procedure to view entities in the Entity view.

Procedure

1. From the Entity view, double-click the cloud entity under the Source:ID heading. In the grid that opens, you see the same number of entities as the number shown in the cloud entity. If there is more than one page on the grid, use the arrows on the top of the grid to go forward or backward.

   Note: During configuration, the threshold to display the cloud is set to 100. This threshold can be reset by adding the **`task.resolution.cloud.entity.threshold`** property to the `inspector.properties` file and setting it to above or below 100.

2. From the grid, click the **Add** icon. The entity that you add is pulled out of the cloud, and the relationship between that entity and the cloud is displayed on the Task Resolution View.

Force-directed graphing

To visually understand the scoring between pairs of members, you can view all of the members within an entity as a force-directed graph. The graph identifies the glue members and potentially identifies which entities to decompose into subentities.

Procedure

1. Open an entity tab.
2. Click the **Members Graph** subtab. A force-directed graph is displayed. The graph displays the current member scores that are above the auto-link threshold. The auto-links are represented by dashed lines and the rules are identified by solid lines. The line label equals the matching score between the two members; the node label equals the `srcCode:memIdnum` of a member.
3. In the force-directed graph you can perform these actions:
   - Zoom in or out
   - Drag Member nodes
   - Revise the graph to display fewer or more connections:
     a. Enter a lower or higher number in the **Minimum Score** text box.
     b. Select or clear **Always Show Rules**, which identifies whether to show the rules if the score is less than the identified **Minimum Score**.
     c. Click **Filter** to rebuild the graph.

     The revised force-directed graph displays with fewer or more connections.
   - View the score between any two of members within the current entity:
     a. In **Record 1** text box, type the srcCode:memIdnum for the first record.
     b. In **Record 2** text box, type the srcCode:memIdnum for the second record.
     c. Click **Show Score**.

     The connection and score between the two members is highlighted.
   - Compare any two members within the current entity:
     a. In **Record 1** text box, type the srcCode:memIdnum for the first record.
     b. In **Record 2** text box, type the srcCode:memIdnum for the second record.
     c. Click **Compare**.

Hierarchies

Hierarchy is a system of ranking and organizing objects such as organizations, individuals, or widgets, where each object of the system (except for the top element) is subordinate to another object.

With regards to this software, a hierarchy is the relationship between two or more entities of the same type by virtue of a parent-child identifier on one or both of the records. A record may have only one parent for a given Hierarchy Type.

With the Relationship view, the Hierarchy view allows you to see the same relationships in a tree view. The user can drag-and-drop within the hierarchies, and to reparent the relationships as well.

Navigating the Hierarchy tab

The **Hierarchy** tab is available after you search for and inspect an entity.

Click the **Hierarchy** tab to display the following information.

Table 3. Hierarchy tab

Section	Description
Hierarchy tree	Displays the hierarchy tree. You can drag-and-drop nodes to reparent and reorganize the tree.
Selected item in tree	Displays the selected item to view.
Children	Displays the list of children within the hierarchy that you viewed. Notice the number of children that are listed equals the number in parentheses in the tree view.
Search tab	From this view, you can perform a Search to add an entity to the hierarchy view.
Hierarchy type	You can change the hierarchy type to view by using the drop-down list. Hierarchy types are configured in Workbench.

The **Hierarchy** view is sizeable in both directions, so you can view all information easily.

Viewing hierarchies

Procedure

1. From Inspector, click **Search**.
2. From the **Search** tab, select **Organization** from the drop-down list, and click **Continue**.
3. Type the necessary information in the Search form, and click **Search**.
4. From the Search Results, click **Inspect** on the entity for which you want to view a hierarchy tree.
5. Click the **Hierarchies** tab.

   The Hierarchy tab displays with the currently selected entity information.

Results

Notice that the top node shows a (12) next to it. This number indicates that there are 12 children for the selected node that are listed below it, and also on the **Details** tab.

From the Details tab, you can view another node.

Viewing clouds in a hierarchy view

If a parent has a large number of children, a cloud displays on the node, with the number of children shown in parentheses.

Procedure

1. Click on the node with the cloud displayed.
2. The children for that node display in the Details list.

Changing the type of hierarchy to display

Hierarchy types are configured in Workbench. There is no limit on the number of hierarchy types that can be configured.

Procedure

1. From the **Hierarchy** tab, click the **Hierarchy Type** drop-down list and select a hierarchy type.
2. Click **View**.

Performing a re-parent

Procedure

1. From the **Hierarchy** tab, view the hierarchy tree for the selected entity.
2. Drag and drop the organization that you want to move to the "new" parent.
3. From the Inspector Confirmation dialog, click **Yes** to complete the reparent.

   The selected node has been reparented.

Removing nodes from parents

Procedure

1. From the tree view, right-click on the node you want to remove and then click **Remove From Parent**.
2. From the *Inspector Confirmation* dialog, click **Yes** to remove the selected node from its parent.

   The node is removed and the hierarchy tree refreshes.

Viewing in new tree

About this task

- From the tree view, right-click on the node you want to view in its own tree, and then click **View In New Tree**.

  The node is pulled out and into its own tree view. You can navigate this tree independently from the original hierarchy tree.

Viewing path to root

Follow these steps to view the tree from the selected node up to the top or root level.

About this task

- From the tree view, right-click on the node that you want to view, and click **View Path to Root**.

The Path to Root for the selected node displays below the original tree. This view is read-only.

Searching within the Hierarchy tab

Within hierarchies, you have the ability to search for and add other entities into the hierarchy you are working with.

Procedure

1. From the **Hierarchy** view, click the **Search** tab.
2. Type the necessary information, and click **Search**.
3. Click the **Add** icon for the entity you want to add to the hierarchy view.

   The organization is added to a new tree.
4. Click on the added organization and drag it into the original tree.
5. Click **Yes** to confirm the move. The organization is added to the original tree.

Chapter 7. Data Resolution

InfoSphere MDM Inspector is a web-based application that enables resolution of data quality issues through a “task model”.

The flexibility of InfoSphere MDM Inspector enables you to customize your task management and workload by defining task search parameters. For example, you might choose to work specific task types, tasks that are created during a certain date range, tasks from certain sources, tasks within a given threshold or score range, or a combination of these parameters. Some of the options available on the Task Search screen can be used alone (identifiers such as Enterprise or Source ID), while some can be used in combination (, task owners and types). The combinations depend on your configuration. Consult with your supervisor for minimum search input requirements and appropriate combinations.

There are areas on the Task Search screens that are consistent for each record type: Search Criteria (for example, Owner, Task Type, ID numbers, Task Score, and Date Ranges) and Search Results. However, additional areas specific to a record type requirement may also be available, such as Prioritization for Providers. The fields on the individual Task Search screens are discussed in this chapter as applicable for their given record types. Again, you have the option of using a combination of parameters to search. For example, you might want to review all Potential Duplicate tasks from a specific source, which means you must enter criteria in the Task Status and Source fields.

When a task search is initiated, the results are generated in real time (at the moment the search is requested). The process flow is:

1. Search criteria are entered on the Task Search screen, such as task type and status.
2. The operational server returns a list of records that match the criteria and displays these records in the Search Results area of the Task Search screen.
3. When you select a record from the Search Results list, that record becomes the trigger record. The operational server compares that attributes from that record against other candidates.
4. The records that compare above the clerical review threshold and below the auto-link threshold with the trigger record are returned to the Task Summary view. Review Identifier tasks (low or negative scores) and Potential Overlay records (negative scores) might also be returned.

When task search results are displayed, the trigger record typically has a higher score than the other records returned. The score is higher because the trigger record is compared against itself during the search and comparison process. The other associated records are issued comparison scores that are based on their comparison against the trigger record.

As information is entered into your source systems, the operational server continuously compares this new information with existing records and identifies potential data issues, resulting in linkages, duplicates, identifier, or overlay task creation. These tasks address both internal duplicates (more than one record per record within a single source system that scores below the auto-link threshold) and also enterprise linkages (across multiple systems) associated with internal duplicates.

When a task is retrieved, you can begin to work towards a resolution as defined by your workflow process.

To access the Resolve Tasks screen, click Resolve from any screen, or use the Inbox.

Related tasks:

"Resolving review identifier tasks" on page 56

"Relationship Tasks" on page 63

Identification Task types

Records comparing above the overlay threshold or between the clerical review and auto-link threshold levels are those with data issues that require manual review and resolution.

Although a record may have numerous data issues, the software allows a record to be a trigger record for one task type only. The assignment is based on a task type hierarchy; some data issues are more important than others and should be resolved first. From highest to lowest, the hierarchy is:

- Potential Overlay
- Potential Duplicate
- Potential Linkage
- Review Identifier

Occasionally, updates to record data can cause a new, more serious, data issue. When this issue occurs, the record is promoted to the higher task type. Likewise, updates can cause the data issue to be removed, thus removing the task.

Related tasks:

"Resolving potential duplicate tasks" on page 57

"Resolving potential linkage tasks" on page 57

"Resolving potential overlay tasks" on page 58

"Resolving review identifier tasks" on page 56

Potential Overlay task

The operational software detects overlays by comparing updated demographic data that is associated with a single Source ID. If certain data elements—such as name, Social Security number, or phone—are different, the software flags these records as Potential Overlays. Potential Overlay scores have a negative score value, as it reflects the differences within the data as opposed to the similarities. A high negative score signals that the most current information likely does not belong to the original record associated with the Source ID. In the following example, it is clear that two different persons are sharing the Source ID number in error.

Table 4. Potential Overlay Example

Source	Source ID	Score	Name	SSN	Sex	Phone	DOB
SYS A	**895688**	-4.0	Graham, Lynn	482-89-9182	F	1231234	5/01/60
SYS A	**895688**	-4.0	Public, John	428-89-1822	M	8989890	12/3/50

Potential Duplicate task

When two or more records from the same source have a comparison score that is above the clerical review threshold and below the auto-link threshold, the software

creates a Potential Duplicate task for review. This means that a record possibly has a potential duplicate issue with another record. A Potential Duplicate task can have an indefinite number of records from the same source. An example of how this might occur is John Q. Public arrives at a hospital for testing and a record is entered in Source System A for `Jon Public, SSN482-89-1822`. A few months later John Q Public returns to the hospital. The registrar mistakenly searches for `John Q. Public, SSN422-89-1822` in Source System A. When the registrar is unable to locate an exact match, he may create a new record in Source A for `Jon Public`.

A comparison by the software determines that the two records share enough common attributes and creates a Potential Duplicate task. The following example shows these records as they were entered; in the example, **bold** = matching data.

Table 5. Potential Duplicate Example

Source	Source ID	Score	Name	SSN	Sex	Phone	DOB
SYS A	895677	15.0	**John** Q. **Public**	422-**89-1822**	**M**	**1230004**	**12/3/50**
SYS A	895688	15.0	**Jon Public**	482-**89-1822**	**M**	**1230004**	**12/3/50**

Note in the previous example the spelling of `John` and `Jon`. The algorithms provide for phonetic matches, therefore a name match is determined. The software likewise can map nicknames, for example `William` to `Will` or `Bill`.

Potential Linkage task

When two or more records have a comparison score that is above the clerical review threshold and below the auto-link threshold, and the records are from different sources, a Potential Linkage task is created. This means that a record possibly has a potential linkage issue with another record. A Potential Linkage task can have an indefinite number of records from multiple sources. Using the scenario in Table 3, if the patient's name was entered as `Jon Public` in Source System A on his first visit, and then entered as `John Q. Public` in Source System B when he was admitted, a comparison would determine a high likelihood that the two entries were the same, and create a Potential Linkage task.

Table 6. Potential Linkage Example

Source	Source ID	Score	Name	SSN	Sex	Phone	DOB
SYS B	895677	15.0	**John** Q. **Public**	482-**89-1822**	**M**	**1230004**	**12/3/50**
SYS A	895688	15.0	**Jon Public**	422-89-1822	**M**	**1230004**	**12/3/50**

Note: The software differentiates between Potential Duplicates and Potential Linkages because, in most instances, a duplicate within a source system is a higher priority issue than duplicates across multiple systems in an enterprise.

Review Identifier task

The software detects unique identifiers by comparing records and tracking duplication of these identifiers, such as Social Security number. For example, when the software detects two records that contain the same Social Security number, they should represent the same record. If the attributes other than the identifiers reflect two different individuals, and the comparison score is below the clerical review threshold, a Review Identifier task is assigned. Review Identifier tasks have a low

or negative score. Review Identifier tasks are not a reflection of a comparison, but rather an identification of data that should not be shared.

Table 7. Review Identifier Example

Source	Source ID	Score	Name	SSN	Sex	Phone	DOB
SYS A	895688	2	Graham, Lynn	**482-89-1822**	F	123-1234	12/3/50
SYS A	123456	2	Jon Public	**482-89-1822**	M	123-6789	12/3/50

Custom Tasks

Custom tasks allow an organization to use additional criteria to evaluate their data and inject a task into the system for resolution by a data steward. For example, an implementation may require that all records have a home address and phone number, or requires that all new vendor entries must go through a finance approval check. By creating a "missing home address" or "missing approval" task, data stewards can add the appropriate information and resolve the tasks.

Custom tasks are created outside the InfoSphere MDM database, and then imported into the InfoSphere MDM database using an ETL tool.

The Custom Task model allows members to be involved in multiple custom tasks. Additionally, a member can be involved in both a custom task and a single predefined task at one time.

Relationship Task Types

Relationship tasks are recorded events within the operational server that indicate that the operational server has detected a possible data quality issue regarding one or more relationships.

Related tasks:

"Resolving invalid reference tasks" on page 64

"Resolving missing relationship tasks" on page 64

"Resolving multiplicity relationship tasks" on page 64

Multiplicity relationship

This is a type of task in which an entity has violated its multiplicity constraints for a particular relationship type. For example, a person has two managers even though the relationship dictates a 1-to-many multiplicity rule.

Relationship creation

This task type results when an entity has a relationship that the operational server has detected should not be there (according to creation rules). This occurs when the user has marked a relationship as "manually managed". The operational server in turn wants to delete the relationship but cannot since it is manually managed. This task type can also occur when a user manually creates a relationship, or manually deletes a relationship that was created by the operational server.

Invalid reference

This task type occurs when an entity (according to its data and creation rules) wants to have a relationship with another entity, but the target entity does not exist within the operational server.

Missing relationship

This task type occurs when an entity is supposed to have a relationship according to the relationship type constraints, but does not. For example, within the operational server, every patient might be required to have at least one provider. If a patient does not have a provider, a missing relationship task is created.

Identification Task creation and lifecycle

When you search for a task, the search criteria creates a "trigger" record that is compared against other trigger records in the database. The comparison process is as follows:

1. The record is compared against itself to rule out a Potential Overlay issue. If the comparison score is below the Potential Overlay threshold, the record is placed into a Potential Overlay task and no further comparison is made until the overlay is resolved.
2. If no Potential Overlay is detected, the record is then compared against other records. If the records:
   a. Compare below the clerical review threshold, no task is created.
   b. Compare above the auto-link threshold, the records are automatically linked and assigned common Enterprise ID numbers.
   c. Compare above the clerical review threshold and below the auto-link threshold, the records are placed into a task.

The process occurs in real time, thus the tasks are dynamically created. The exception to dynamic creation occurs when a task has been previously retrieved and its task status set to deferred. Deferred tasks are stored as a set in the database until they have been resolved.

Because of both dynamic task creation and task promotion, a task that you previously displayed may contain different records the next time you retrieve it. Information is continually reviewed from your source systems, and on occasion this new information results in one of the following scenarios:

- The new information resolves the task entirely; or
- The information may correct an issue with one of the records in the task and cause that record to drop out of the task set; or
- The information may cause another record to become part of the task set; or
- The information may introduce another data error causing a record to be promoted in the hierarchy.

When a task search is requested, the returned results include records as a related entity. Understanding the process can help as you review the records for task resolution.

Searching for Identification tasks

Procedure

1. Click **Resolve**.
2. In the *Select Task Type* box, select **Identification Tasks of Record Type** and then select a record type from the drop-down list.
3. Click **Continue**.
4. In the *Task Search* box, complete the necessary information, and click **Search Tasks**.

Identification Task Search screen

The following information describes the sections and usage of the Task Search screen. The screen looks the same regardless of the entity type requested.

Search Criteria

Owner: When a task is first created, the application administrative user "mdmadmin" is assigned as the owner.

Previous Owner: Use the drop-down to select the Previous Owner of the tasks you want to retrieve. Any time Inspector makes an assignment change of a task (from the Inbox) it sets the previous owner to the task's current owner as a part of that assignment.

Task Type: From the Task Type pull-down list, you can limit your search by task type.

- All Task Types
- Potential Duplicate
- Potential Linkage
- Potential Overlay
- Review Identifier

Task Status: (also referred to as Workflow Status) The pull-down list displays task status options. Task status identifies where a task is in the review and resolution process. These customized options may include:

- **Deferred**: This means that you have reviewed the task, but need further verification by consulting the record or reviewing other information. Searching on this category also provides a quick reference for a supervisor to assist staff with resolution of data issues. The task model that is employed in the software enables dynamic task creation, which means comparisons are performed and tasks that are created when you request a task search. When the task status is set to deferred, however, the records in the task are held as a set in the database until resolution.
- **Resolved**: This means that review and resolution of the task has been completed.
- **Unexamined**: This means that a task has not yet been reviewed. As long as a task remains in an unexamined state, the task owner does not change unless you manually change it.
- **Expired**: This means that task expiration has been configured in InfoSphere MDM Workbench, and the selected task has not been “touched” for the specified number of days.

Source System: Because records can be stored across multiple source systems, you have the option of retrieving tasks from a single source system or from any source that is contained in the database. To retrieve tasks from all sources, leave this field blank. If you want to select tasks that have one or more records from a specific source, you can select that source from the pull-down list. For example, if you want to retrieve all the Review Identifier tasks in Source A, select that Task Type from the pull-down list and then select Source A from the Source System pull-down list.

Source ID: If retrieving a task associated with a specific record, enter their Source ID along with the appropriate Source. If you enter a Source ID, you must specify the Source.

Entity Type: Entity types allow for distinction between the way records are viewed and linked within the software. Examples of entity types include:

- **Identity**—an individual. Records in an identity entity (multiple records that represent the same person) are linked based on attribute similarity.
- **Household**—multiple individuals who are associated with the same physical location and share common attributes of home address and phone number (e.g., family records, non-family records that share a household). Records of a household entity share a common Enterprise ID.

When searching for records in Inspector, you will select an entity type (e.g., Identity or Household). Only one entity type can be viewed and worked at one time.

Enterprise ID: You can retrieve a task by entering only the Enterprise ID number of a record.

Beginning Date: Click in this field to display the calendar and select a beginning date.

End Date: Click in this field to display the calendar and select an end date.

Note: The date format can be changed in the `inspector.properties` file.

Min Score: Type a minimum score. (You cannot use 0 in the search.)

Max Score: Type a maximum score. (You cannot use 0 in the search.)

Tag Search box: If tags are present, they are listed in this box. Select the check box to limit the search results to tasks that contain the specified tags.

Search Tasks: Click Search Tasks to return a list of records from the database that meets the defined criteria. The list displays in the Search Results area at the bottom of the Resolve Tasks screen.

Search Results

This area presents the pre-configured number of task sets that meet the selected criteria and were initially identified as potential task records. Only one record (the trigger record) of the set is displayed. Use the scroll bar to review all the information returned. After selecting a specific task, all the records associated with that task are displayed in the Search Results screen.

Use the buttons at the top of the Search Results screen to display the next tasks, go back to a prior task, or go to the beginning or end of the task list. You can also print the Task Search Results using the Print icon.

Note: If there are multiple pages of results, the printout will be the entire list regardless of what page you are currently on.

Searching for Custom tasks

Procedure

1. Click **Resolve**.
2. In the **Select Task Type** box, select **Custom Tasks**, and click **Continue**.
3. In the **Custom Task Search** box, complete the necessary information, and click **Search Tasks**.

Custom Task Search Screen

The following information describes what you see in the Custom Task Search screen.

Owner: When a task is first created, the application administrative user "mdmadmin" is assigned as the owner.

Previous Owner: Use the drop-down menu to select the Previous Owner of the tasks you want to retrieve. Any time Inspector makes an assignment change of a task (from the Inbox) it sets the previous owner to the task's current owner as a part of that assignment.

Task Type: From the Task Type pull-down list, you can limit your search by task type.

Task Status: The pull-down list displays task status options. Task status identifies where a task is in the review and resolution process. These customized options may include:

- **Deferred**: This means that you have reviewed the task, but need further verification by consulting the record or reviewing other information. Searching on this category also provides a quick reference for a supervisor to assist staff with resolution of data issues.
- **Resolved**: This means that review and resolution of the task has been completed.
- **Unexamined**: This means that a task has not yet been reviewed. As long as a task remains in an unexamined state, the task owner does not change unless you manually change it.
- **Expired**: This means that task expiration has been configured in InfoSphere MDM Workbench, and the selected task has not been “touched” for the specified number of days.

Source System: Because records can be stored across multiple source systems, you have the option of retrieving tasks from a single source system or from any source that is contained in theInfoSphere MDM database. To retrieve tasks from all sources, leave this field blank. If you want to select tasks that have one or more records from a specific source, you can select that source from the pull-down list.

Beginning Date: Click in this field to display the calendar and select a beginning date.

End Date: Click in this field to display the calendar and select an end date

Tag Search box: If tags are present, they are listed in this box. Select the check boxes to limit the search results to tasks that contain the specified tags.

Search Tasks: Click Search Tasks to return a list of records from the InfoSphere MDM database that meets the defined criteria. The list displays in the Search Results area of the Resolve Tasks screen.

Search Results

The results of the Custom task search display in the Search Results grid. Use the scroll bar to review all the information returned.

Searching for Relationship tasks

Procedure

1. Click **Resolve**.
2. From the *Resolve* screen, select **Relationship Tasks** and then click **Continue**.
3. In the *Relationship Task Search* box, complete the necessary information, and click **Search Tasks**.

Relationship Task Search Screen

The following information describes the sections and usage of the Relationship Task Search.

Owner: When a task is first created, the application administrative user "mdmadmin" is assigned as the owner.

Select Task Type: From the Select Task Type drop-down list, you can limit your search by task type.

- All Task Types
- Invalid Reference
- Missing Relationship
- Multiplicity Relationship
- Relationship Creation

Task Status: (also referred to as Workflow Status) The drop-down list displays task status options. Task status identifies where a task in the review and resolution process. The options for Relationship Task Status may include:

- **All Task Statuses:** Retrieves tasks with all statuses.
- **Deferred:** As stated in the previous section, this means you have reviewed the task, but need further verification.
- **ManuLink as Equals:** *Not currently implemented*
- **ManuLink at Parent:** *Not currently implemented*
- **Resolved:** The task has been reviewed and resolved.
- **Unexamined:** The task has not yet been reviewed.

Relationship Type: The Relationship Types are configured through the Workbench client. These types may include:

- **All Relationship Types:** Retrieves tasks of all Relationship Types.
- **Boss:** Retrieves only those tasks that have a “Boss” relationship type.
- **Owns:** Retrieves only those tasks with an “Owns” relationship type.

Beginning Date: Click in this field to display the calendar and select a beginning date.

End Date: Click in this field to display the calendar and select an end date.

Search Results

The Relationship Task Results display the number of pre-configured tasks that meet the specified criteria. Only one record of the task is displayed. Now you are ready to review and resolve tasks.

Chapter 8. Reviewing tasks

InfoSphere MDM Inspector provides multiple options for reviewing tasks and records to assist in the determination of task resolution.

The information that is displayed in both the Record Grid and Record Attributes grid for Identification and Custom tasks can be used to help you understand the full picture of a record.

View Identification Task information

The following subsections explain what you see in the Identification Task Record and Record Attributes grids when you retrieve tasks and records to work.

Record Grid

Task record rows are sorted first by Enterprise ID and then sub-sorted by score.

When you begin to work and resolve tasks, the Record Grid view is where you will select the surviving Enterprise and Source IDs, and where you select the appropriate task status.

On the Record Grid, you can also expand and/or collapse the view.

From the Record Grid, you can also select the Add/Remove checkboxes one by one to filter them from the Record Attributes view, or you can click on the first checkbox to Show/Hide all records in the Attribute Grid.

Record Attributes

The Record Attributes show the known, unfiltered attributes for each record that is displayed in the Record Grid.

The attribute types are listed along the left side of the Attribute column under the Record Attribute banner. Each additional column header contains the record's Source ID. The default number of records that display is configured in the `inspector.properties` file. The check box on the far left of the screen can be used to show/hide each record in the top section of the screen. In the Record Attributes at the bottom of the screen, you can click the X next to the record name to remove that record from the view.

This view enables you to look across the board at each record's attribute values and determine whether the records in the task truly are the same person. As you compare attribute values between the records, you can use the `Highlight Same` and `Highlight Different` options to highlight values that are the same between records and those values that are different.

`Similarities`: Attribute values that are identical display with a green background.

`Differences`: Values that are not identical display with a red background.

Comparing records

You can compare the content of two records during task resolution.

Procedure

1. Open a task.
2. In the **Records** box, check the boxes of two records.
3. Click the **Compare** icon to open the **Compare Records** tab for the comparison details.

Editing/Adding/Viewing details

Above the record grid a line appears showing the **Task Status**, **Entity Type, Comments**, and an option to **Edit/Add/View Details**.

About this task

- From this line, click the **Edit/Add/View** icon. The screen expands allowing you to make changes.

To change task status for the trigger record only:

Procedure

1. Click the **drop-down menu** in the **Current Status** field.
2. Select a task status.
3. Click **Save**.

Related tasks:

"Resolving review identifier tasks" on page 56

"Resolving potential linkage tasks" on page 57

"Resolving potential duplicate tasks" on page 57

Assigning tasks and managing tags

You can assign a task to another user or group and manage task tags.

Procedure

1. In the task resolution screen, click the pencil icon.
2. In the **Action** box, select one of these options:
   - Assign Group
   - Assign User
   - Add Tag
   - Remove Tag

   The **Assign To Group**, **Assign To User**, or **Tag** box displays.
3. In the **Assign To Group**, **Assign To User**, or **Tag** box, select the appropriate group, user, or tag.
4. Optional: Add information to the comments box. Click **Add**.
5. Click **Apply**.

Results

A task has been assigned to another user or group, or a tag has been added or removed.

Adding/editing/deleting attributes

You can add, edit, or delete attributes from a record. Adding attributes is available from the Record Details grid when you are inspecting attributes during task resolution, and from the search results grid when you are searching for records instead of entities.

Procedure

1. Click **Search**.
2. Select an entity type from the drop-down list, and click **Continue**.
3. In the *Search* box, click the **Return records instead of entities** check box.
4. Type as much information as necessary, and click **Search**.

   The Search Results open.
5. Select a record, and click **Inspect**.

   The Attributes tab opens.
6. Click **Add Attribute** at the upper right of the grid.
7. Select the attribute to add from the drop-down list, and then click **Add**.
8. In the **Edit** box, complete the necessary fields to add the attribute, and then click **Update**.
9. On the **Attributes** tab, click **Save** to add the attribute. If you close the Attributes tab without clicking **Save**, your changes are lost.

Adding attributes

Adding attributes is available from the Record Details grid when you are inspecting attributes during task resolution, and from the search results grid when searching for records instead of entities.

Procedure

1. Click **Search** at the top of the page.
2. Select an entity type from the drop-down list, and then click **Continue**.
3. In the *Search* box, click the **Return records instead of entities** checkbox.
4. Type as much information as necessary, and then click **Search**.

   The Search Results open.
5. Select a record, and then click **Inspect**.

   The Attributes tab opens.
6. Click **Add Attribute** at the top right of the grid.
7. Select the attribute to add from the drop-down list, and then click **Add**.
8. In the **Edit** box, complete the necessary fields to add the attribute, and then click **Update**.
9. On the **Attributes** tab, click **Save** to add the attribute. If you close the Attributes tab without clicking **Save**, your changes will be lost.

Editing attributes

Only users with security access to read/write are able to edit attributes.

Procedure

1. Click **Search**.
2. Select an entity type from the drop-down list, and click **Continue**.
3. In the *Search* box, click the **Return records instead of entities** check box.
4. Type as much information as necessary, and click **Search**.

The **Search Results** open.

5. Select a record to edit attributes for, and click **Inspect**.

   The **Attributes** tab opens.

6. Click the edit icon for the attribute to edit.
7. In the Edit Location dialog, change the information, and click **Update**.
8. On the **Attributes** tab, click **Save**.

Deleting record attributes

Procedure

1. From the Attributes tab, click the **Delete Attribute** icon for the attribute you want to delete.
2. The **Undelete** icon appears. Click **Save** to complete the deletion. The attribute is not changed or deleted until you click **Save**.

Applying changes to all records

Procedure

1. Click the **Apply to All Records** checkbox.
2. Click **Save**.

Adding comments

Procedure

1. In the Comments field, type the comment to add to the record.
2. Click **Add**. The comment displays on the record.
3. To remove the comment, click **Remove**.

Results

Once all of your changes have been made, you can click the Edit/Add/View icon again to hide the information.

Note: You can only remove the comment before the changes have been saved. Comments are associated with a task, and are removed as part of the task when the task is resolved.

Viewing attribute history at an entity level

Procedure

1. Click **Search**t.
2. Select an entity type from the drop-down list, and then click **Continue**.
3. In the *Search* box, type as much information as necessary.
4. Click **Search**.
5. Select an entity, and then click **Inspect**.

   The Attributes tab opens.

6. Click the **Attribute History** tab to view the grid.
7. Use the **Filter** icon in the icon bar in the upper right corner of the **Attribute History** tab to filter large subsets of results.
   a. On the Filter Selection pop-up window, enter the information that you want to filter on. The fields are case-sensitive.
   b. Click **Filter**.

c. Reset the Attribute History to the original results by clicking the **Reset Filtering** icon

8. To sort your results, click the **Sort** icon.
   a. On the Sort Section pop-up window, select your primary sort from the column headings that are listed in the **Sort By** drop-down list.
   b. Select a secondary sort from the column headings that are listed in the **Then By** drop-down list.

Results

Table 8. Attribute History grid

Attribute	Description
Source:ID	This column lists the ID for the source system of the attribute.
Attribute	This column shows the attribute for which you are viewing the history. You can sort the attributes by clicking the Attribute column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.
Value	This column shows the actual value of the attribute.
Creation Time	The date this attribute value was created (seen) in the InfoSphere MDM database from the source system.
Modification Time	This column shows the date and time the selected attribute was modified. You can sort by clicking the Modification Time column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.
Event Creation Time	The date this attribute value was entered into the source system. This information is received over data updates that are coming from the source system.
Status	This column shows the attribute status, A=Active, I=Inactive, D=Deleted.

If you are adding or editing attributes during task resolution, the new value goes into a "shadow" state rather than active (for non-operational server controlled attributes). Shadow represents an attribute that has been updated in the software, but before it is confirmed as being updated in the source system. A Shadow value becomes ***Active*** when an update message is received by software from the source system. The Shadow value is never displayed on screen.

Changing attribute status

Procedure

1. From the **Attribute History** sub-tab, click the drop-down list in the **Status** column.
2. Select a status (**A**=Active, **D**=Deleted, **I**=Inactive, **S**=Shadow).

   Once you change the status, the attribute line becomes highlighted to indicate that you need to save your changes.
3. Click **Save**.

   The Attribute Status grid displays with the status change in effect.

Viewing attribute history at a record level

Procedure

1. Click **Search**.
2. Select an entity type from the drop-down list, and then click **Continue**.
3. Select the **Return records instead of entities** check box.
4. Type as much information as necessary, and then click **Search**.

   The **Search Results** open.
5. Select a record, and then click **Inspect**.

   The Attributes tab opens.
6. Click the **Attribute History** icon for the attribute that you want more information about. The **Attribute History** grid opens.
7. Use the **Filter** icon in the icon bar in the upper right corner of the **Attribute History** tab to filter large subsets of results.
   a. On the Filter Selection pop-up window, enter the information that you want to filter on. The fields are case-sensitive.
   b. Click **Filter**.
   c. Reset the Attribute History to the original results by clicking the Reset Filtering icon
8. To sort your results, click the **Sort** icon.
   a. On the Sort Section pop-up window, select your primary sort from the column headings that are listed in the **Sort By** drop-down list.
   b. Select a secondary sort from the column headings that are listed in the **Then By** drop-down list.

Results

Table 9. Attribute History grid

Fields	Description
Attribute	This column shows the attribute for which you are viewing the history. You can sort the attributes by clicking the Attribute column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.
Value	This column shows the actual value of the attribute.
Creation Time	The date this attribute value was created (seen) in theInfoSphere MDM database from the source system.
Modification Time	This column shows the date and time the selected attribute was modified. You can sort by clicking the Modification Time column heading. The sort icon indicates whether the results are sorted in an ascending (down arrow) or descending (up arrow) order.
Event Creation Time	The date this attribute value was entered into the source system. This information is received over data updates that are coming from the source system.
Status	This column shows the attribute status, A=Active, I=Inactive, D=Deleted.

Checking for rules

Identity and non-identity rules are applied by the software to identify records that have been deemed, by user interaction, as the same or not the same as a means of providing historical tracking. This information can be important when you are determining task resolution.

About this task

A *non-identity* rule is applied when records originally assigned common Enterprise IDs are determined to not be the same. For example, the software assigns a common Enterprise ID to two records that compare above the auto-link threshold. However, after you review "Record A" and "Record B," you determine that they are not the same member and assign "Record B" a new Enterprise ID and set the workflow status to indicate that these records are not the same. The software creates a non-identity rule between the two records. Consequently, you can see that the records shared a common Enterprise ID, but now are appropriately assigned separate IDs.

A non-identity rule is only applied when a new Enterprise ID is assigned. It is encouraged that you set the task status to indicate that they are not the same member, although workflow status does not affect the application of rules. The task status matters if you have two members in a task, both with different Enterprise IDs. If you then set the task status of both to resolved and leave the Enterprise IDs different, the result is a non-identity rule between the two members. If it is later determined that the members are the same—and the Enterprise IDs are manually changed to the same ID and the task status is appropriately changed—the rule becomes an identity rule.

An *identity* rule is applied when two members have been given the same Enterprise ID. An identity rule is not applied if the Enterprise IDs are assigned as a result of automatic linking. If a member record has a rule that is associated with it, the Rules icon displays as shown in the following example.

To view the rule:

Procedure

1. From the Record Search Results or Task Resolution screen, notice the **Rules** icon in the grid.
2. Click the **Rules** icon.

   The rules for the selected record display and show the Source:ID and the Rule Type.

   Note: Another way to view rules is to inspect the record, and then click the **Rules** tab.

Comparing records from a record search

The Compare Members function can assist you in understanding the differences between selected records and their assigned scores. This function breaks down the individual attributes that determined the overall comparison score.

Procedure

1. Perform a records search.
2. From the *Search Results*, select a record, and then click the **Inspect** icon.

3. From the **Attributes** tab, click the **Compare** icon. The **Compare Records** tab opens.

   The record you selected is shown in the first row of the Record Details.
4. Click the **Search** button in the second row. The **Search** screen opens.
5. Complete the necessary fields and click **Search**.
6. From the *Search Results*, click the **Add** icon for the record you want to add to the **Compare Records** screen.
7. (Optional) You can click the **Validate** icon to be sure the src:id combination is valid.
8. Click **Compare**. The **Compare Records** grid opens.

Results

This grid displays the results of the algorithmic comparison. The attributes used in the comparison, and that display in this grid, depend upon the data items stored for the individual records as well as your organization's attribute configuration and member type implementation.

Comparing records from an entity search

The compare function is available from the records search and the entity search.

Procedure

1. Perform an entity search.
2. From the Search Results, click the Inspect icon for the entity you want to view.
3. Click the Records sub-tab.
4. In the Entity Records grid, click the Compare checkbox for the two records you want to compare, and then click the Compare icon.

   Note: You can only select two records two compare. If you try to select more than 2, an error message opens.

Results

This grid displays the results of the algorithmic comparison. The attributes used in the comparison, and that display in this grid, depend upon the data items stored for the individual records as well as your organization's attribute configuration and member type implementation.

Adding and viewing notes

When you review attributes, you may need to add a reminder to seek additional information, or to make certain information about the record available to others in your department. Viewing existing notes may also assist you in your review of the record.

Procedure

1. From the **Attributes** tab when you view records, click the **Notes** icon that is located at the top of the screen in the **icon bar**.
2. In the *Notes* callout, type the note in the **Details** box, and then click **Add**.

   The new note contains the date, time, and name of the user that created the note.

View Custom Task information

The following subsections explain what you will see on the Custom Task screen when you retrieve tasks.

Record Grid

You will notice that the Record Grid for Custom tasks looks different than the Record Grid for Identification tasks.

Task record rows are sorted by Source ID. Just like when resolving Identification tasks, you can expand and/or collapse the view on the Record Grid.

On the Record Grid, you can also select the Add/Remove checkboxes one by one to filter them from the Record Attributes Grid, or you can click on the first checkbox to Show/Hide all records in the Attribute Grid.

Record Attributes Grid

The Record Attributes show the known, unfiltered attributes for each record that is displayed in the Record Grid.

The attribute labels are listed down the left side of the Attribute column under the Record Attribute banner. Each column header contains the record's Source ID. The default number of records that display is five, but is configurable in the InfoSphere MDM Workbench. The check box on the far left of the screen under the check box column heading icon can be used to show or hide each record in the top section of the screen. In the Record Attributes section at the bottom of the screen, you can click the **X** icon within the record name cell to remove that record from the view.

Within the Record Attributes Grid for Custom tasks, you may see a highlighted row. This highlighting shows the inconsistency, or reason for the task.

Adding comments

Procedure

1. In the Comments field, type the comment to add to the record.
2. Click **Add**. The comment displays on the record.
3. To remove the comment, click **Remove**.

Results

Once all of your changes have been made, you can click the Edit/Add/View icon again to hide the information.

Note: You can only remove the comment before the changes have been saved. Comments are associated with a task, and are removed as part of the task when the task is resolved.

Chapter 9. Resolving Tasks

Depending upon the particular data issues and your organizations policies, task resolution may require edits to attribute values and status, logical deletion of attributes, assigning or reassigning Enterprise IDs and/or Source IDs, marking records as obsolete or even adding records to the database.

Each organization defines a workflow and task resolution process that best fits their needs and requirements. Because of the uniqueness of each organization, specific task resolution workflow is not discussed; however, a general workflow is presented.

Identification Task resolution workflow

Review Identifier task resolution

Once you have reviewed an Identification task and made a determination that records do or do not represent the same record, you must determine what steps to take to resolve the task. The following subsections discuss generic workflows using the functionality that is described in this chapter for task resolution. The workflows are included only as an illustration of task resolution. *Again, this workflow and the functionality used may not be applicable to your organization; verify your processes with your supervisor.*

This task type indicates that the records involved are sharing an identifier that should normally be unique. Using the example in Table 2, we see the records have the same Social Security number, but a review of other attributes indicates that they are not the same person.

Table 10. Review Identifier task

Record 1	**Record 2**
Source A Source ID: 124355	Source A Source ID: 8955688
Name: Lynn Graham	Name: John Smith
SSN: 482-89-1822	SSN: 482-89-1822
Phone: 480-998-9797	Phone: 480-997-3639
DOB: 05/01/62	DOB: 12/10/59
Gender: F	Gender: M
Occupation: Engineer	Occupation: Teacher
Address: 78 W. Green Scottsdale, AZ 85030	Address: 402 E. Main Mesa, AZ 86402
Employer: Honeywell	Employer: Mesa College

To resolve this task, the following workflow can be used:

1. Determine which record has the incorrect identifier. Review all the attribute information for each record in the task.
2. Correct the identifier. Verify that the correct identifiers are active for the appropriate records.

3. Edit the task status of each record to indicate that the task was reviewed and resolved.

Note: To assist you in determining which record has the incorrect identifier, you may want to research the records in the source systems or other available information.

Potential Linkage task resolution

This task type is assigned when two or more records from different sources have enough common attributes to appear to be the same person. Using the following example, we see that the two records do share similar names, and Social Security numbers, and have identical birth dates, addresses, phone numbers, occupation, gender, and employer.

Table 11. Potential Linkage task

Record 1	**Record 2**
Source A Source ID: 895677	Source B Source ID: 895688
Name: John N. Lewis	Name: John Lewis
SSN: 482-89-1822	SSN: 422-89-1822
Phone: 602-749-8002	Phone: 602-749-8002
DOB: 12/3/50	DOB: 12/3/50
Gender: M	Gender: M
Occupation: Sales	Occupation: Sales
Address: 350 N. Cactus Phoenix, AZ 85001	Address: 305 N. Cactus Phoenix, AZ 85001
Employer: Big Time Sports	Employer: Big Time Sports

If after reviewing the complete attribute picture of these records it is determined that the records do represent the same record, the following workflow could be used to resolve the task in Inspector.

1. Make any attribute edits required - for example, the Social Security numbers and addresses in the rows in Table 3.
2. Assign a common Enterprise ID number to the records.
3. Edit the task status for each record to indicate that the task has been reviewed and that the records *do* represent the same person.

If your review leads you to determine that these records are not the same:

1. Assign different Enterprise IDs to the records.
2. Edit the task status for each record, indicating that the task has been reviewed and that the records do *not* represent the same person.

Note: To assist you in determining whether the record represents the same record, you may want to research the records in the source systems or other available information.

Potential Duplicate task resolution

A Potential Duplicate task is assigned when two or more records from the same source appear to be the same record. In this example, different Source IDs are assigned. However, the names and Social Security numbers are similar, while other attribute values are identical.

Table 12. Potential Duplicate task

Record 1	**Record 2**
Source A Source ID: 895677	Source A Source ID: 895688
Name: John N. Lewis	Name: Jon Lewis
SSN: 482-89-1822	SSN: 472-89-1822
Phone: 602-749-8002	Phone: 602-749-8002
DOB: 12/3/50	DOB: 12/3/50
Gender: M	Gender: M
Occupation: Sales	Occupation: Sales
Address: 350 N. Cactus Phoenix, AZ 85001	Address: 350 N. Cactus Phoenix, AZ 85001
Employer: Big Time Sports	Employer: Big Time Sports

After reviewing the records, if it is determined that they are the same record:

1. Choose which record of the two is the surviving record, and which one becomes obsolete.
2. For the record that survives, assign a Surviving Source ID number.
3. Assign the same Surviving Source ID to the obsolete record.
4. Edit the workflow status for each record to indicate that the task has been reviewed and the records *are* the same member.
5. Make any edits to attribute values and status as necessary.

Note: When editing attributes during resolution of a Potential Duplicate task, make sure that you edit attributes in the surviving record. Depending upon your implementation, attribute edits that are made in Inspector may or may not be reflected in the record that is stored in the source. Check with your supervisor for process instructions.

If you determine that the records are not the same:

1. Verify that both records to not share common Source ID and Enterprise ID numbers.
2. Edit the workflow status for each record, indicating that the task has been reviewed and that the records do *not* represent the same member.

Note: To assist you in determining whether the record represents the same record, you may want to research the records in the source systems or other available information.

Potential Overlay task resolution

A Potential Overlay task is the most serious of the four data issues. When this task type is assigned, one record's attributes have been overlaid by another record's attributes within the same source system. Reviewing the following information, we can see that these are two different individuals.

Table 13. Potential Overlay task

Record 1	Record 2
Source A Source ID: 770125	Source A Source ID: 770125
Name: John N. Lewis	Name: Sara Jones
SSN: 482-89-1822	SSN: 589-74-6891
Phone: 602-749-8002	Phone: 480-998-3290
DOB: 12/3/50	DOB: 10/02/64
Gender: M	Gender: F
Occupation: Sales	Occupation: Nurse
Address: 350 N. Cactus Phoenix, AZ 85001	Address: 4578 W. Ray Chandler, AZ 86404
Employer: Big Time Sports	Employer: St. Josephs

The workflow for this task would be:

1. Determine which data belongs to the member originally assigned the Source ID. Typically, the most recent information applies to the member who overlaid the original.
2. Set the status of the correct attribute values for the original member: most current = Active, older = Inactive, and those that are not correct for the original person = Deleted.
3. Search the source system for a record of the member who overlaid the original. If a record exists, update that record to reflect the current information. If a record does not exist, create one in the source system.
4. Edit the task status to indicate that the task has been reviewed and resolved.

Note: To assist you in determining which data belongs to the appropriate record, you may want to research the records in the source systems or other available information.

Keep in mind that because of task promotion, once you resolve one data issue for a record, a new comparison can potentially create a task of a different type.

Use the following procedures to edit records and resolve tasks. Again, verify your organization's specific processes and requirements.

Note: As you work tasks, be aware that if the auto-timeout feature activates and you do not extend your session, your current work will not be saved in theInfoSphere MDM database.

Resolving review identifier tasks

You can resolve tasks within the application wherever you see the **Task** icon.

About this task

For information on searching for tasks, see Chapter 7, “Data Resolution,” on page 33.

Procedure

1. From the Search Results, click the **Inspect** icon on the task you want to resolve.
2. From the **Review Identifier** screen, you can click the **Edit/Add/View Details** icon to see more information.
3. From the Record grid, click the **Inspect** icon to display the Attributes tab for the record.
4. From the **Attributes** tab, click the **Edit Attribute** icon for the attribute to edit.
5. In the *Edit Attribute* box, make the necessary changes and then click **Update**.
6. Click **Save**.
7. In the **Task Status** column, change the status to **Resolved**.
8. Click **Save.**
9. Click **Close Tab**.

Related concepts:

"Identification Task types" on page 34

Chapter 7, "Data Resolution," on page 33

Related tasks:

"Inspecting tasks from the Inbox" on page 22

"Editing/Adding/Viewing details" on page 44

Resolving potential linkage tasks

This task type is assigned when two or more records from different sources have enough common attributes to appear to be the same person.

Procedure

1. From the Search Results, click the **Inspect** icon for the task you want to resolve.
2. From the **Potential Linkage** screen, you can click the **Edit/Add/View Details** icon to see more information. For more information about the *Edit/Add/View Details* box, see "Editing/Adding/Viewing details" on page 44.
3. From the **Record grid**, click on the record that you want to "link", drag it to the surviving entity, and drop it when it turns green.

   The **Task Status** is automatically changed to **Resolved**.

   Note: Resolved is the default task status. The default can be changed in the inspector.properties file.

Related concepts:

"Identification Task types" on page 34

Related tasks:

"Inspecting tasks from the Inbox" on page 22

"Editing/Adding/Viewing details" on page 44

Resolving potential duplicate tasks

Procedure

1. From the Search Results, click the **Inspect** icon on the task you want to resolve.
2. From the **Potential Duplicate** screen, you can click the **Edit/Add/View Details** icon to see more information.
3. From the Record grid, select the record to work with. Drag that record into the surviving record.

Note: As you drag the record, you will see the "surviving record" turn green. Once you see the green, you can drop the record to resolve the task.

Results

The **Task Status** is automatically changed to **Resolved**.

Related concepts:

"Identification Task types" on page 34

Related tasks:

"Inspecting tasks from the Inbox" on page 22

"Editing/Adding/Viewing details" on page 44

Moving attribute values to surviving records

If your task resolution leads to a record being marked obsolete, you can move attribute values from an obsolete record to a surviving record if necessary.

Procedure

1. From the **Task Record** grid, drag and drop the "obsolete" record into the surviving record.
2. Click the pencil icon to select the surviving attributes.

   The **Attribute Merge Table** opens.
3. Click the arrows in the attribute columns to move them to the **Current Values** column. Once all surviving attributes have been selected, click **Save**.

Resolving potential overlay tasks

To resolve a potential overlay task, specific actions must be taken to reinstate the correct information with a Source ID. It is important that you evaluate the available information to determine which data should be associated with which individual.

About this task

Overlay tasks have negative scores. The greater the negative score (e.g., -3.0 versus -1.0), the less likelihood that the new information applies to the original record assigned the Source ID. In other words, the most recent data probably applies to the most recent person assigned the ID.

Procedure

1. Retrieve the overlay task using the task search procedure.
2. Review the information provided in the **Record Attributes** grid.
3. From the **Potential Overlay** screen, you can click the **Edit/Add/View Details** icon to see more information. For more information about the *Edit/Add/View Details* box, see "Editing/Adding/Viewing details" on page 44.
4. Click the **Attribute History** icon to display the **Attribute History** and review historical attribute data.
5. Use the arrows in the **Values Before Overlay** and **Values After Overlay** columns to move the values to the **Current Value** column.
6. If you change your mind, click the **Undo** icon (for individual attributes) or **Undo All** icon to revert to the original values.
7. Update the status in the **Task Status** column to **Resolved**.
8. Click **Save** to store the changes in the database.

Note: Your processes may include review of specific attributes or other external information to assist in associating data wit the correct record.

Related concepts:

"Identification Task types" on page 34

Related tasks:

"Inspecting tasks from the Inbox" on page 22

Exporting tasks

Potential Duplicate, Potential Linkage, and Review Identifier tasks can be exported from the Task Resolution screen to an external spreadsheet. This allows a user to work with the task from outside of InfoSphere MDM Inspector. This is especially useful when the tasks are large, for example, a Potential Linkage task with thousands of records.

Procedure

1. Perform an **Identification Task Search**.
2. From the **Task Search Results**, select a task and click the **Inspect** icon.
3. From the **Task Resolution** screen, click **Export**.
4. From the *Task Export* box, select a character to use as a separator. A comma is the default.
5. Click **Export**.
6. The *File Download* dialog opens. Click **Open** to export the task.
7. The task is exported into a .csv file. Save the file.

Importing large tasks

Once a task has been exported and resolved outside of InfoSphere MDM Inspector, you can import the task back into Inspector to resolve the issue within the application.

About this task

Note: Keep the amount of time between export and import short. The longer the gap, the greater the chance that the data may be changed by other users of the system and potentially result in a failure during the import process.

Procedure

1. Click **Resolve**.
2. Click the **Import** icon. The Import Task for Resolution dialog opens.
3. Using the drop-down, select the **Task Status** and **Entity Type**.
4. In the **CSV separator character** field, a comma is the only valid character at this time.
5. In the **Select File to Import** field, click **Browse**. The **File Upload** screen opens.
6. Select the `.CSV` file to import, and click **Open**.
7. Click **Import Task**. The Import Complete dialog opens and lists what was processed, resolved successfully, and failed to resolve.

Results

Note: If you edited the exported `.CSV` file using Microsoft Excel, Excel saves it to its binary format by default, which fails to import back into Inspector. Use the **Save As** > **Other Formats** option and select `.CSV` format.

Note: The task-related data in the `.CSV` file is not validated during the import process. Additionally, any user with authority to resolve tasks is able to import tasks for resolution with this option.

Note: If changes were made to any of the record attributes in the file to be imported, those changes are ignored. Only the task-related data changes are acknowledged once they are imported into Inspector. If there are rows that you do not want to resolve, remove them from the `.CSV` file before starting the import process. Typically, only the supentrecno column in the `.CSV` file will be changed.

Adding records to tasks

Procedure

1. From the **Inbox** or the **Task Search Results,** click the **Inspect** icon for the selected task.
2. Click the **Add Record to Task** icon at the upper right of the screen.
3. In the *Search* callout, type the necessary information and click **Search**.
4. From the Search Results within the callout, click the **Add** icon to add that record to the task you are inspecting.

Results

The task displays with the record added.

Note: You can add a record to a task only if it is not already assigned to a task.

Getting the next task

During task resolution from the Inbox, you can save the task that was resolved, and get the next task.

About this task

To get the next task:

After you resolve a task, click the **Save & Next Task** icon on the Task Resolution screen. The next task from the **Search Results** grid opens.

Creating Identification tasks

Occasionally, information is made available that may not be stored in the database. This information may provide additional insight about records that should have been associated (linked) in the software but were not.

About this task

Although this rarely occurs, for process purposes, it is important to define and track the linkage relationship in Inspector. You can manage the appropriate relationship by creating a task.

Procedure

1. Perform a record search.
2. From the **Search Results**, click the **Inspect** icon for the record to view. Make sure that there is an icon in the Tasks column indicating there are no tasks that are assigned to the selected record.

   Note: Tasks can only be created for records that are not already in a task.
3. Click the **Tasks** tab.
4. Click the **Create Task** icon.
5. In the *Select a Task Type to Create* callout, click the drop-down list to select an available task type.
6. Select an **Entity Type** from the list.
7. Click **Create**.

   Note: The user can only create Potential Duplicate, Potential Linkage, and Review Identifier Tasks. Potential Overlay tasks cannot be created.
   The Task Resolution screen opens. Notice the record that you created the task for becomes the trigger record.
8. Click the **Add Record to Task** icon.
9. In the **Search** box, complete the necessary information for the record to add to the task, and then click **Search**.
10. From the Search Results, click the **Add** icon. The record is added to the task you created.

    Note: A task is created even if you have not added another member to it. If a single member task is created, set the status to **Resolved** and click **Save** to remove the task.
11. Click **Save**.

Committing a merge

When a Potential Duplicate task is resolved, it normally leads to a merge request being sent to the source system. If the source system is unavailable or the operational server is not configured with outbound brokers, it may be necessary to commit the merge manually.

Procedure

1. Search by **Source ID** for the non-surviving record.
2. Verify a **Cancel Merge** and **Commit Merge** icon appears in the search result.
3. Click the **Commit Merge** icon. The *Inspector Confirmation* dialog opens.
4. Click **Yes** to complete the merge.
5. If the Merge is successful, the pre-merge icons no longer appear in the search results. Only the **Unmerge** icon displays.

Viewing a premerge

About this task

Use this procedure to view the obsolete and surviving records in a premerge state.

Procedure

1. Search by **Source ID** for the non-surviving record.
2. From the search results, click the **Inspect** icon.

Results

A premerge dialog shows the surviving record.

Cancelling a pre-merge

hen resolving Potential Duplicate tasks, sometimes the wrong surviving record may have been selected or two records that are not really duplicates may have been incorrectly linked during task resolution and identified as needing to be merged. In both cases these pending merges can be canceled.

About this task

Note: Cancelling a merge using Inspector does NOT notify the source system to stop any merge that may be in progress.

Procedure

1. Search by **Source ID** for the non-surviving record.
2. Verify a **Cancel Merge** icon appears in the search result.
3. Click the **Cancel Merge** icon. The Inspector Confirmation dialog opens.
4. Click **Yes** to cancel the merge.

   Note: There may be a delay when searching by Source ID once the commit/cancel merge has occurred. Wait at least 10 seconds before performing the search for the Source ID of the recently committed/cancelled merge.

Unmerging records

Use this procedure to unmerge records from the same source.

Procedure

1. Click **Search**.
2. Select an entity type and click **Continue**.
3. Select the **Retrieve Identity by Source:ID** option.
4. Select a **Source Code** from the drop-down list.
5. In the **Source:ID** field, type the **ID**, and then click **Retrieve**.
6. Click the **Unmerge** icon.
7. Click **Yes** to confirm the unmerge.

   Note: If you are trying to inspect a task that was part of a pre-merge and the old tab is appearing, close that tab, and click the **Inspect** icon again to open the new tab.

Merging entities

Use the drag-and-drop functionality to quickly merge many entities as a group.

Use these scenarios to decide how to merge entities.

Table 14. Allowable and non-allowable dragging scenarios

Dragging scenarios	Description
Allowable	• Drag a non-cloud entity to a non-cloud entity • Drag a non-cloud entity to a cloud entity • Drag a cloud entity to a cloud entity
Non-Allowable	• Drag a cloud entity to a non-cloud entity

Moving to own entity

This function is used when a record has been dropped in the wrong place accidentally. For example, the user linked records when they meant to merge them.

Procedure

1. From the **Record** grid during task resolution, click the **Move to Own Entity** icon.
2. The entity that was moved displays as **New** on the grid, with a task status of **Resolved**.
3. Click **Save**.

Custom Task Resolution

Once you have reviewed the Custom Tasks, you will need to determine what needs to be done to resolve them.

About this task

Note: Each Custom Task will be different, and the steps for resolution will vary by implementation. See your administrator with questions.

Resolving custom tasks

Procedure

1. Perform a search for Custom Tasks.
2. From the **Search Results**, click **Inspect** for the task you want to resolve.
3. From the **Custom Task** screen, click the **Edit/Add/View Details** icon.
4. Note the Description. This will explain what the issue is, and what needs to be edited. For example, it may be a missing postal code.
5. In the **Record Attributes Grid**, click on the **Edit** icon for the attribute to edit. In this example, you will be editing the Address attribute.
6. Type the **Postal Code**, and then click **Update**.
7. In the **Current Status** field, select **Resolved** from the drop-down list.
8. Click **Save**.

Relationship Tasks

About this task

As discussed in Chapter 7, “Data Resolution,” on page 33, Relationship Tasks were introduced in the 8.1 version of InfoSphere MDM Inspector.

Related concepts:

Chapter 7, “Data Resolution,” on page 33

Resolving invalid reference tasks

Procedure

1. Search for the **Invalid Reference** relationship task type.
2. From the Search Results, click the **Inspect** icon for the task you want to resolve.

   The task tab opens. It is divided into three sections: Summary, Potential Issues, and Resolution Grid.
3. From the **Summary** section, click on the **RelationshipType** link shown in the previous example.

   The Relationship Type callout displays the creation rules for the task type. This will help you understand the violation for the selected task.
4. In the **Potential Issues** section, the user should view each issue row by row.

   The first rows of the Potential Issues and Resolution Grids are shaded. The first row of the Resolution Grid is the attribute that is listed in the Potential Issues grid. This lets the user know which attribute may need to be updated in order to resolve the task.
5. From the **Resolution Grid**, click the **Inspect** icon. The **Attributes** tab opens.
6. Click the **Edit** icon for the attribute you need to update.
7. Type the necessary information in the **Edit** box, and then click **Update**.
8. Click **Save**.
9. Change the Task Status to **Resolved**, and then click **Save**.

Related concepts:

"Relationship Task Types" on page 36

Resolving multiplicity relationship tasks

Procedure

1. Search for the **Multiplicity Relationship** task type.
2. From the Search Results, click the **Inspect** icon for the task you want to resolve.
3. From the Summary Grid, click the Relationship Type link if you want to view the creation rules.

   Note: A (D) on the Summary indicates the task is "data" derived. An (M) indicates it was manually derived.

Related concepts:

"Relationship Task Types" on page 36

Resolving relationship creation tasks

Procedure

1. Search for the **Relationship Creation** task type.
2. From the Search Results, click the **Inspect** icon for the task you want to resolve.

Results

The **Relationship Creation** task tab opens.

Resolving missing relationship tasks

Procedure

1. Search for the **Missing Relationship** task type.

2. From the **Search Results**, click the **Inspect** icon for the task you want to resolve.
3. From the **Summary Grid**, click the **Relationship Type** link if you want to view the creation rules.
4. To resolve the task, create a relationship. For the previous example, you can create a relationship in which General Electric owns another organization.
5. Change the **Task Status** to **Resolved**, and then click **Save**.

Related concepts:

"Relationship Task Types" on page 36

Chapter 10. Add Records

InfoSphere MDM Inspector gives you the ability to add records to the operational server.

About this task

By default, the option to show that the Add Record tab is turned off. To display the Add a Record tab, you must configure it in InfoSphere MDM Workbench first.

To add a record to a source system, follow these steps. When a new record is added through this function, the record receives a Source ID for the InfoSphere MDM database only. This function does not add the new record to a source system, nor does it allow you to use a source-system identifier as the Source ID.

Adding records

Procedure

1. Click **Add a Record**.
2. Select the **Record Type** from the drop-down list and then click **Continue**.
3. Select the **Record Storage Location** (or source) from the drop-down list, and then click **Continue**.

   Note: While you are selecting a Record Storage Location for the new record, the ID is assigned by the software and is not reflected in the source system.

Deleting/undeleting records

About this task

Note: Deleting a record removes that record from the matching and linking comparison process, but does not physically delete the record from the database.

Procedure

1. Click **Search**.
2. In the drop-down box, select an entity type, and click **Continue**.
3. In the *Search* box, complete as much information as necessary.
4. Click the **Return records instead of entities** checkbox.
5. From the *Search Results*, click the **red X** that is on the right of the grid and under the **Print** icon.
6. From the confirmation box, click **Yes** to delete the record.
7. You are returned to the Search Results grid, with the deleted record highlighted and the word DELETED displayed in red.

Undeleting records

Procedure

1. To undelete, click the Undo icon.
2. From the confirmation box, click Yes to undelete the record.

Results

The record is reinstated and you are returned to the Search Results. Once you delete a record, it can only be retrieved by performing a search using the Source ID in the Search tab.

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IBM does not believe that any single process can be completely effective in helping identify and address security vulnerabilities. IBM has a multilayered approach:

- An ongoing, internal initiative promotes consistent adoption of security practices in development of products and services, with the goal of continually improving the quality and security characteristics of all IBM products and services. This initiative is described in the IBM Redguide *Security in Development: The IBM Secure Engineering Framework*, which contains public information about software development practices from IBM.
- Tests and scans of IBM products use various IBM technologies to proactively identify and remediate defects and vulnerabilities, including high or greater criticality vulnerabilities. Remediation takes place within IBM-defined response target timeframes for analysis, impact assessment, and fix delivery.
- The IBM Product Security Incident Response Team (PSIRT) manages the receipt, investigation, and internal coordination of security vulnerability information that is related to IBM offerings. The IBM PSIRT team acts as a focal point that security researchers, industry groups, government organizations, vendors, and customers can contact through the IBM PSIRT portal to report potential IBM product security vulnerabilities. This team coordinates with IBM product and solutions teams to investigate and identify the appropriate response plan.
- A global supply-chain integrity program and framework provide buyers of IT products with a choice of accredited technology partners and vendors in the Open Group Trusted Technology Forum (OTTF).

Because security of computer systems and computer software is a very complex issue, IBM does not provide information about development practices for individual products other than what is found in standard product documentation or as published though IBM's public activities.

Public information about software development practices recommended by IBM is documented in the IBM Secure Engineering Framework. This information is a compilation of practices from across IBM business units and development teams.

In most cases, published vulnerabilities are documented at timely intervals through IBM Security Bulletins that include the associated Common Vulnerability Scoring System (CVSS) base score. In some cases, IBM might contact customers directly and discreetly regarding specific vulnerabilities.

Customers who want to further validate the vulnerability of IBM Software beyond the assessments that are performed internally by IBM are welcome to conduct their own scans against licensed software. They may use the tool of their choice within the existing software licensing terms. For example, scanning is acceptable, but reverse compiling or reverse engineering IBM Software is not authorized except as expressly permitted by law without the possibility of contractual waiver.

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Contacting IBM

You can contact IBM for customer support, software services, product information, and general information. You also can provide feedback to IBM about products and documentation.

The following table lists resources for customer support, software services, training, and product and solutions information.

Table 15. IBM resources

Resource	Description and location
Product documentation for InfoSphere MDM	You can search and browse across the InfoSphere MDM documents at http://www.ibm.com/support/knowledgecenter/SSWSR9_11.4.0.
Product documentation for InfoSphere MDM Custom Domain Hub, including InfoSphere MDM Reference Data Management	You can search and browse across the InfoSphere MDM Custom Domain Hub documents at http://www.ibm.com/support/knowledgecenter/SSLSQH_11.4.0.
IBM Support Portal	You can customize support information by choosing the products and the topics that interest you at www.ibm.com/support/.
Software services	You can find information about software, IT, and business consulting services, on the solutions site at www.ibm.com/businesssolutions/.
My IBM	You can manage links to IBM web sites and information that meet your specific technical support needs by creating an account on the My IBM site at www.ibm.com/account/.
Training and certification	You can learn about technical training and education services designed for individuals, companies, and public organizations to acquire, maintain, and optimize their IT skills at www.ibm.com/software/sw-training/.
IBM representatives	You can contact an IBM representative to learn about solutions at www.ibm.com/connect/ibm/us/en/.

Providing feedback

The following table describes how to provide feedback to IBM about products and product documentation.

Table 16. Providing feedback to IBM

Type of feedback	Action
Product feedback	You can provide general product feedback through the Consumability Survey at https://www.ibm.com/survey/oid/wsb.dll/studies/consumabilitywebform.htm.

Table 16. Providing feedback to IBM (continued)

Type of feedback	Action
Documentation feedback	To comment on the product documentation: • Click **Add Comment** on the topic in IBM Knowledge Center • Click the **Feedback** link on the topic in IBM Knowledge Center • Use the online reader comment form: www.ibm.com/software/data/rcf/ • Send an email: comments@us.ibm.com

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