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Tutorial Objectives

Welcome to the tutorial on Informatica Enterprise Information Catalog. The objective of this tutorial is to get you started with an overview on Enterprise Information Catalog. You will also learn about some of the key features of Enterprise Information Catalog by performing tasks in a configured environment.

This tutorial follows a concept-task approach to provide learning with a hands-on experience. This tutorial does not cover the advance features and all capabilities provided by Enterprise Information Catalog. See the following documents on the Informatica Knowledge Base portal for more information:

- Informatica Live Data Map Administrator Guide
- Informatica Enterprise Information Catalog User Guide

After completing this tutorial, you will be familiar with the important features and tasks in Enterprise Information Catalog.

The following are the objectives of this tutorial:

- Create users to access Enterprise Information Catalog.
- Discover data assets in the catalog using multiple search methods and filters.
- Create resources to extract metadata from data sources.
- Associate business context with assets and enrich assets with custom attributes.
- Understand and configure data domains.
- Understand data lineage, change impact, and relationships.

Note: Make sure that you import the sample catalog data to perform the tasks in this tutorial.
Enterprise Information Catalog Overview

Overview
In this chapter, you will learn about Enterprise Information Catalog and understand its key features.

Objectives
- Understand the basic concepts of Enterprise Information Catalog and the key features.
- Access Enterprise Information Catalog.

Enterprise Information Catalog
Enterprise Information Catalog helps you analyze and understand large volumes of metadata in the enterprise. You can extract physical and operational metadata for many objects, organize the metadata based on business concepts, and view data lineage and relationships for each object.

The catalog serves as a centralized repository that stores all metadata extracted from different external sources. The sources include databases, data warehouses, business glossaries, data integration resources, business intelligence reports, and more. For ease of search, the catalog maintains an indexed inventory of all the assets in an enterprise. Assets represent the data objects such as tables, columns, reports, views, and schemas. Metadata and statistical information in the catalog include profile results, information about data domains, and information about data relationships.

You can use Enterprise Information Catalog to perform the following tasks:
- Find available assets.
- Explore assets to verify the quality of data, such as profiling information.
- View lineage for assets.
- View relationships between assets.
- Enrich assets by tagging them with additional attributes.

Key Features
This deep dive tutorial focuses on the following key features of Enterprise Information Catalog:
- Data discovery. Semantic search, dynamic filtering, data lineage, and relationships for assets across the enterprise.
- Data Classification. Automatic and manual annotations to classify data aiding in governance and discovery.
- Resource administration using Live Data Map Administrator that includes the following tasks:
  - Resource management. Create, edit, and remove resources.
  - Schedule management. Create, edit, and remove schedules.
  - Attribute management. View system-defined attributes for metadata object types. Create custom attributes and assign to metadata object types, such as tables, views, and columns.
Accessing Enterprise Information Catalog

After deploying Enterprise Information Catalog, you can access Enterprise Information Catalog and Live Data Map Administrator using the following URLs:

- **URL to access Enterprise Information Catalog:**
  
  `http://<host>:<port>/ldmcatalog`

  **Note:** The `<host>` is the gateway node host name. The `<port>` is the Informatica Catalog Service port number. The default port number is 8085 for an HTTP connection.

- **URL to access Live Data Map Administrator:**
  
  `http://<host>:<port>/ldmadmin`

  **Note:** The `<host>` is the gateway node host name. The `<port>` is the Informatica Administrator port number. The default port number is 6008.

- Connection management. View automatically assigned connections and schemas. Assign schemas and connections to resources. Unassign user-assigned connections.
- Profile configuration management. Create and edit reusable profile-definition settings.
- Resource monitoring. Monitor resources and tasks.
- Data domain management. Create and edit data domains and data domain groups. Assign logical data domains to data domain groups.
- Monitor status of tasks and progress.
Creating Users in Informatica Administrator

Overview
In this chapter, you will learn how to create users in Informatica Administrator. After creating the following user credentials: username john password welcome1, you can use the credentials to perform the tasks listed in this tutorial.

Objective
Create a user account in Informatica Administrator. You can access the Informatica Administrator using a URL in the following format: http://<host>:<port>/administrator/

Creating a User Using Informatica Administrator
Perform the following steps to create native users in Informatica:

1. Log in to Informatica Administrator using the http://<host>:<port>/administrator/ URL.
   Note: <Host> and <port> in the URL represent the host name and port number of the master gateway node.
2. In the Administrator tool, click the Security tab.
4. Enter the following details for the user:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login Name</td>
<td>Login name for the user account. The login name for a user account must be unique within the security domain to which it belongs. The name is not case sensitive and cannot exceed 128 characters. It cannot include a tab, newline character, or the following special characters: + &quot; \ &lt; &gt; ; / * % ? &amp; The name can include an ASCII space character except for the first and last character. All other space characters are not allowed. Note: Data Analyzer uses the user account name and security domain in the format UserName@SecurityDomain to determine the length of the user login name. The combination of the user name, @ symbol, and security domain cannot exceed 128 characters.</td>
</tr>
<tr>
<td>Password</td>
<td>Password for the user account. The password can be from 1 through 80 characters long.</td>
</tr>
<tr>
<td>Confirm Password</td>
<td>Enter the password again to confirm. You must retype the password. Do not copy and paste the password.</td>
</tr>
<tr>
<td>Property</td>
<td>Description</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| Full Name  | Full name for the user account. The full name cannot include the following special characters: `< > “  
*Note:* In Data Analyzer, the full name property is equivalent to three separate properties named first name, middle name, and last name. |
| Description| Description of the user account. The description cannot exceed 765 characters or include the following special characters: `< > “             |
| Email      | Email address for the user. The email address cannot include the following special characters: `< > “        
Enter the email address in the format UserName@Domain. |
| Phone      | Telephone number for the user. The telephone number cannot include the following special characters: `< > “                  |

5. Click **OK** to save the user account.
Discovering Assets Using Enterprise Information Catalog

Overview
In this chapter, you will learn how to discover assets using search and dynamic filtering capabilities in Enterprise Information Catalog. You will also learn to explore search by business terms and synonyms.

You can search for the required assets in the catalog. You can search based on the name of the asset or perform a generic search using the wildcard character asterisk (*) or the wildcard character question mark (?). Enterprise Information Catalog also displays probable matches when you type the name of a required asset.

From the search results displayed, you can sort the results based on the asset name, the relevance, or the system attributes or the custom attributes. You can use the search filters displayed to filter the search results and view additional details for the displayed assets. After searching and finding the required asset, you can annotate and enrich the required assets with custom attributes.

You can sort the displayed assets based on the name of the listed assets, the relevance, or the system attributes or the custom attributes selected.

Objectives
• Learn about search features such as suggestions, wildcards, and asset type inference
• Filter the search results
• Search using business terms
• Search using synonyms

Search Features
1. Launch the Enterprise Information Catalog login page using the following URL:
   http://<host>:8085/ldmcatalog

2. Log in to Enterprise Information Catalog with the following credentials:
   Username: john password: welcome1

   Note: Make sure that the user john with the password is configured in Informatica. See the section Creating Users in Informatica for more information.
1. Type **customer**. Enterprise Information Catalog displays suggestions based on the assets in the catalog that match the search string.

2. You can also search for an asset using a wildcard.
3. Enterprise Information Catalog displays all assets that match the search string along with the asset type.

Filter Search Results

To filter the search results by resource name, for example, CRM, perform the following steps:

1. Click Show All from Resource Name.
2. Select **CRM** from the list of all resource names and click **OK**.

You can filter based on the asset type. For example, you can Select **Table** from **Asset Type** to filter the assets based on the table asset type.
You can also use one of the following search options to view the required details:

- **Search using the string** **tables with customer**. Enterprise Information Catalog returns the following results:
  - Tables with the word **customer** in the name.
  - Tables with descriptions that contain the word **customer**.
  - Tables that have the associated business term **customer**.
  - Tables that contain columns with the word **customer** in the column name.
  - Tables that contain columns for which the **customer** data domain is inferred or assigned.

- **Search for Sales Files or Sales Reports** to view only files or reports that include the term **Sales**.

**Searching Using Business Terms**

You can search for assets associated with business terms, for example **Sale price**.

**Searching Using Synonyms**

You can use synonyms defined in Business Glossary to search for the required data asset. For example, search for **Cell** and press **ENTER**.

**Note**: The synonyms are uploaded in the trial setup for you.
Combining both synonym search and asset type search, you can search for revenue reports to retrieve sales reports. Search for **Revenue Reports** and press **ENTER**.

*Figure 10 Searching Using Synonyms and Asset Types*
Viewing Data Lineage Diagrams

Overview
In this chapter, you will learn how to use the lineage feature in Enterprise Information Catalog to visualize data provenance and how to export lineage to a file. You will also learn how to use the detailed impact analysis reports in Enterprise Information Catalog to understand impact of changes in assets or ETL flows.

Lineage describes the flow of data from the origins to an asset. Lineage shows you where the data for an asset comes from and which assets affect the asset that you are studying. When you view an asset in a lineage and impact diagram, the lineage includes the asset that you are viewing and all of the upstream assets in the data flow.

Impact describes the flow of data from an asset to the destinations. Impact shows you where the data is used and which assets might be affected if you change the asset that you are studying. When you view an asset in a lineage and impact diagram, the impact includes the asset that you are viewing and all of the downstream assets in the data flow.

Objectives
- Use a lineage diagram to perform detailed impact analysis
- Export lineage diagrams

Using a Lineage Diagram to Perform Detailed Impact Analysis
The data flow for an asset includes two components:
- Lineage. Shows the flow of data from the origin to an asset.
- Impact. Shows the flow of data from an asset to the endpoints.

Perform the following steps to view the lineage and impact for an asset:

1. Type Sales Report in the Enterprise Information Catalog Search box and click the Search icon.
2. Select Certified under Trust Rating to filter the search results.
3. Click the report to view metadata associated with the report.
4. Open Sales_Acme report in Enterprise Information Catalog.
5. Click the Lineage and Impact tab. The Data Lineage report provides a summarized view of lineage with endpoints.

1. Use the lineage sliders to add the required lineage levels in the lineage diagram.

Alternatively, you can also expand a specific lineage path by clicking the (+) icon on the link:
Click Close (X) to collapse individually expanded paths that appear on the side pane.

You can use the Zoom In icon to view further details in a specific portion of the diagram.

2. Click Show Business Terms to display business terms in the lineage diagram.
3. Click the plus icon next to the Sales_Acme report to view the cust_gender metric and expand all columns in the lineage diagram that directly affect the metric.
4. Click **cust_gender** to view the details of the metric.

**Figure 16 Details of the Metric**
Exporting a Lineage Diagram

Click **Export** to export the lineage diagram.

*Figure 17 Exporting a Lineage Diagram*
Identifying Asset Relationships

Overview
In this chapter, you will learn how to use the Relationships view to identify the relationship between the selected asset and other assets in Enterprise Information Catalog. The view displays the asset relationships in a graphical form. The related assets that you view for a selected asset depend on the asset type. For example, if the selected asset is a column, the Relationships view shows all the data domains, similar columns, business term, and users that are related to the column. If the selected asset is a data domain, the Relationships view shows all the columns, business term, users, and data domain groups that are related to the data domain.

By default, the Relationships view displays the relationships for the selected asset. You can hover the cursor over any related asset in the Relationships view for additional details such as the asset type, resource type, and the time and date the asset was last updated.

Objective
Use a Relationship view to identify the relationship between the selected asset and other assets in the catalog.

Viewing Relationships
1. Open Sales_Acme report in Enterprise Information Catalog.
2. Click the Relationships tab.

Figure 18 Relationships View

3. The Relationships view displays the relationship that the Sales_Acme report has with other assets in the catalog.
5.

To expand the asset type circle, click the number icon at the top of the circle, and then click **Show All** to display all the assets of the same asset type which are included in the selected asset. When you click **Show All**, a dialog box appears, which provides you details about all the assets of the same asset type.

You can adjust the Relationships view to view specific assets or asset relationships in detail. You can zoom in, zoom out, reset to the original view size, and search for related assets.
Associating Business Context with Assets

Overview

A Business Glossary comprises of online glossaries of business terms and policies that define important concepts within an organization. Analysts create and publish terms that include information such as descriptions, relationships to other terms, and associated categories. These terms can be associated to the related assets in Enterprise Information Catalog for classifying the assets.

In this chapter, you will learn how to use business glossaries in the Enterprise Information Catalog that are created in Informatica Analyst. You will also learn how to associate business terms with assets, how to create custom attributes in the catalog and add values to the custom attribute. Finally, you will use the discovery features in Enterprise Information Catalog to search for assets using business terms and custom attributes.

Objectives

- Associating business terms to assets
- Adding Custom Attributes to Catalog and adding values

Associating Business Terms to Assets

5. Log in to Enterprise Information Catalog as john.
6. Search for the report Sales_Acme and open the asset.
7. Click Associate a Business Term.

Figure 20 Associating Business Terms

8. Select Trustlevels from the Glossary drop-down list, and choose Certified.
9. Click **OK**.

You can now search for assets using business terms. For example, search for the business term *certified* to get the associated assets.

**Adding Custom Attributes to Catalog and Adding Values**

You can create custom attributes based on the search filters that you need to use in Enterprise Information Catalog where you search for metadata. Custom attributes help you quickly find specific metadata.

1. Log in to the Live Data Map Administrator using the following URL: `http://<host>:6008/ldmadmin` and select **Manage > Attributes**.
2. Select New from Attributes.

3. Enter a name and description for the custom attribute. For example, enter the name as New_Attribute.
   a) Choose String as the Data Type.
   b) Select Allow Filtering to use the custom attribute as a filter type.
   c) Search for Table from Object Types and select Table to enable the custom attribute to be assigned to relational tables.
4. Log in to Enterprise Information Catalog and click **Application Configuration**.

5. In the **Application Configuration** dialog box, go to **Custom Attributes** section and click **Add**.
6. Select the custom attribute you created in step 3 of this procedure and click **OK**.

   *Figure 26 Selecting Custom Attributes*

7. Search for the CRM_CUSTOMER_MAIN table.
8. Open the CRM_CUSTOMER_MAIN relational table asset.
9. Click **Edit Custom Attribute**.

   Figure 27 Editing Custom Attributes

<table>
<thead>
<tr>
<th>Custom Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Description:</td>
</tr>
<tr>
<td>Business Owner: Bill Board</td>
</tr>
<tr>
<td>New_Attribute:</td>
</tr>
<tr>
<td>Technical Owner: John Smith</td>
</tr>
<tr>
<td>Trust Rating: Certified</td>
</tr>
</tbody>
</table>

10. Select the new attribute, enter the text **Assignment** for the attribute, and click **OK**.

   Figure 28 Assigning a New Custom Attribute

   ![Figure 28 Assigning a New Custom Attribute](image)

You can now search for the string **Assignment** and view the asset **CRM_CUSTOMER_MAIN** in the search results.
Ingesting Metadata into the Catalog

Overview
In this chapter, you will learn about how to ingest metadata into Enterprise Information Catalog by creating a resource and configuring various metadata extraction properties for the resource.

A resource is a catalog object that represents an external data source or metadata repository from where scanners extract metadata. A resource represents an instance of a specific resource type. The basic metadata operations, such as extraction and storage of metadata, are performed at the resource level.

A resource can be of resource types, such as relational databases, Business Glossary classification, and business intelligence sources. A resource might have an associated schedule. Each resource can extract both source metadata and profile metadata from the external data sources.

A scanner is a pluggable component of Live Data Map that extracts specific metadata, such as source metadata or profile metadata, from external data sources and stores the metadata in the catalog. A scanner typically maps to a single resource type. However, there can be more than one scanner for a resource type. Examples are profiling scanner and lineage analyzer. A scanner performs a scan job on the metadata sources to fetch metadata into the catalog. When you have scanners for newer resource types ready, you can plug in those scanners to Live Data Map without having to upgrade Live Data Map.

Objectives
• Creating a resource
• Configuring metadata and profiling settings
• Running a resource
• Monitoring a task
• Browsing resources in the catalog

Creating a Resource
1. Log in to Live Data Map Administrator using the following URL:
   http://<host>:6008/ldmadmin
2. Click **New > Resource**. The **New Resource** wizard appears.

3. Enter **ResourceData** in the **Name** box.

4. Optional. Enter a description for the resource in the **Description** box.

5. Select **Amazon S3** as the resource type from the **Select Resource Type** dialog box and click **Select**.
6. Enter the connection properties for the resource:
7. Click **Test Connection** to verify that the connection properties are correct.
8. Click **Next** to configure metadata and profiling settings for the resource.

**Configuring Metadata and Profiling Settings**

Enter the details as shown in the following images to specify the metadata and profiling settings for the resource:

![Configuring Metadata and Profiling Settings](Figure 33 Configuring Metadata and Profiling Settings)
1. Click **Next** to go to the **Custom Attributes** page. You can use the page to bulk assign custom attributes to all objects imported from the catalog. In this session, we will skip assigning any custom attributes.

2. Click **Next** to go to the **Schedule** page. On this page, you can specify schedules for loading source metadata and profiling metadata. You can create a global schedule if required. Live Data Map uses the schedules to run the metadata extraction and data profiling jobs at the specified frequency. For this session, we will skip schedule creation.

### Running a Resource

Click **Save and Run**.

---

**Figure 34 Configuring Profiling Settings**

![Configuring Profiling Settings](image)

**Figure 35 Running a Resource**

![Running a Resource](image)
Monitoring a Task

After scanners start extracting metadata from resources, you can monitor the resource statistics in the Monitoring tab. You can view a consolidated summary of resources with different task status updates. The monitoring statistics include the task type, resource name, schedule, task status, and the start and end time for the task.

Click Refresh to see the status of the tasks. You can also click the Progress tab to see the status of the tasks that are currently running.

Figure 36 Monitoring Tasks

After the metadata extraction task is complete, you can view the assets extracted by the Amazon S3 resource in the catalog.

Browse Resources in the Catalog

You can browse the resources in the library, by clicking on Open > Resources or you can also search for the resource name ResourceData
Figure 37 Resources View
Discovering Data Domains

Overview
In this chapter, you will learn how to manage data domains using Live Data Map Administrator. Managing data domains involves creating new data domains. You will also learn how to use column data similarity and smart data domain inference to tag data domains.

A data domain is a predefined or user-defined Model Repository object based on the semantics of column data or a column name. Examples include Social Security number, phone number, and credit card number. You use rules to define data and column name patterns that match source data and metadata and create data domains in Live Data Map. A data domain helps you find important data that remains undiscovered in a data source.

Data similarity refers to identification of similar columns based on source data available in an enterprise. As a data analyst or a data architect, you can scan your enterprise data to find similar data and then attach data domains to similar data patterns. This process helps you to search and discover assets of interest in the catalog faster.

If you enable data domain discovery on resources, Live Data Map uses defined data domains to infer matching column data or column name patterns from metadata extracted by resources. After identifying matching column data or column names, Live Data Map marks the inferred data domains in the catalog for approval or rejection. You can approve or reject inferred data domains (smart data domains) in Enterprise Information Catalog.

Objectives
- Creating rule-based data domains
- Running data domain discovery for a resource
- Smart data domains

Creating Rule-based Data Domains
1. Log in to Live Data Map Administrator.
2. Click New > Data Domain.
3. Enter CameoCategory in the Domain Name box.
4. Enter Identifies Cameo Category Codes in the Description box.
5. Select Yes for the Specify Rules for Data Domain option.
6. Select CameoCodeDomainMapplet as the data rule from the EIC project.
7. Click **Save**.

**Running Data Domain Discovery for a Resource**

1. Log in to Live Data Map Administrator.
2. Open the **ResourceData** resource from the **Library**.
3. Click **Edit**.
4. Click the **Metadata Load Settings** tab.
5. Click **Select** and add the required data domains. For example, **CameoCategory** from the **Data Domains** dialog box.
6. Click **Save and Run**.
7. Log in to Enterprise Information Catalog after the resource run is complete.
8. Type **FullName** in the Search box and click **Search**. The list of inferred data domains and associated columns appear in the search results.
9. Open the associated columns in Enterprise Information Catalog and curate the domains by clicking the tick icon on the inferred domain.

**Enabling Smart Data Domains**

1. Search for the **cust_tier** column in the **acme_hive_customer** table in Enterprise Information Catalog.
2. Open the column and confirm that the column is from the **ACME_LAKE** resource.
3. Click **Edit** in the **Data Domain** section.
4. In the Add Domain field, enter CustomerTier as the name of the data domain and click Add.
5. Optional. Enter a description for the data domain.

*Figure 42 Description for the Data Domain*

6. Log in to Live Data Map Administrator with the following credentials: Username: john, Password: welcome1
7. Click **Open > Resources.**
8. Open the **DataDomainPropagation** resource and run the resource.
9. Monitor the resource run process to completion.

After the resource run is complete, Enterprise Information Catalog propagates the CustomerTier domain to all similar columns of cust_tier column. Searching for **CustomerTier** displays all the three columns in Enterprise Information Catalog.
Appendix A Supported Data Sources

A scanner performs a scan job on the metadata sources to fetch metadata into the catalog. Enterprise Information Catalog provides scanners for the following data sources:

<table>
<thead>
<tr>
<th>Data Source Type</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database</td>
<td>• Oracle</td>
</tr>
<tr>
<td></td>
<td>• DB2</td>
</tr>
<tr>
<td></td>
<td>• DB2 for z/OS</td>
</tr>
<tr>
<td></td>
<td>• SQL Server</td>
</tr>
<tr>
<td></td>
<td>• Sybase</td>
</tr>
<tr>
<td></td>
<td>• JDBC</td>
</tr>
<tr>
<td></td>
<td>• Teradata</td>
</tr>
<tr>
<td></td>
<td>• Netezza</td>
</tr>
<tr>
<td>Cloud</td>
<td>• Amazon S3 (CSV/XML/JSON)</td>
</tr>
<tr>
<td></td>
<td>• Amazon Redshift</td>
</tr>
<tr>
<td>Big Data</td>
<td>• Cloudera Navigator</td>
</tr>
<tr>
<td></td>
<td>• Hive (Cloudera/Hortonworks/MapR)</td>
</tr>
<tr>
<td></td>
<td>• Hive on EMR/HDInsights</td>
</tr>
<tr>
<td></td>
<td>• HDFS Files (CSV/XML/JSON)</td>
</tr>
<tr>
<td>Informatica</td>
<td>• Informatica Powercenter</td>
</tr>
<tr>
<td></td>
<td>• Informatica BDM</td>
</tr>
<tr>
<td></td>
<td>• Informatica Cloud</td>
</tr>
<tr>
<td></td>
<td>• Custom Lineage Scanner</td>
</tr>
<tr>
<td></td>
<td>• User Scanner</td>
</tr>
<tr>
<td></td>
<td>• Informatica Business Glossary</td>
</tr>
<tr>
<td>Business Intelligence</td>
<td>• IBM Cognos</td>
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<tr>
<td></td>
<td>• SAP Business Objects</td>
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<tr>
<td></td>
<td>• Tableau</td>
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<td>• Microstrategy</td>
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<td>• OBIEE</td>
</tr>
<tr>
<td>Applications</td>
<td>• SAP R/3</td>
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<tr>
<td></td>
<td>• Salesforce</td>
</tr>
<tr>
<td>Other ETL Tools</td>
<td>• SSIS</td>
</tr>
</tbody>
</table>