

# Erwin Data Modelling

Last updated by | NVZR (Naveen Raju) | Feb 11, 2025 at 8:51 AM GMT+1

---

## INTRODUCTION TO ERWIN DATA MODELLER

### Contents

1. Pre-requisites
2. Introduction
3. Building and Managing Data Models in Erwin
  - 3.1 Setting up a new model
  - 3.2 Creating Entities
  - 3.3 Defining Attributes
  - 3.4 Establishing Relationships
4. Understanding and Viewing Model Types
  - 4.1 Conceptual Model
  - 4.2 Logical and Physical Models
5. Integrating with Erwin Mart and ER360
  - 5.1 Erwin Mart Portal
  - 5.2 Erwin ER360

### 1. Pre-requisites

Before starting with Erwin Data Modeler, ensure the following prerequisites are met:

- **Installation:** Erwin Data Modeler software should be installed on your computer. Follow the [Erwin Data Modeler Onboarding](#) guide here.
- **Access:** Ensure you have the necessary permissions or licenses to use the software.
- **Database Knowledge:** Familiarity with database design concepts, including entities, attributes, relationships, primary keys, and foreign keys, will be helpful.
- **Best Practices:** Follow standard naming conventions, normalization principles, and documentation guidelines to maintain consistency and clarity in your data models. Follow [Best Practices for Data Modelling\\_v0.1.docx](#) here.

### 2. Introduction

Erwin Data Modeler is a powerful tool for designing and visualizing database structures, commonly referred to as data models. These models can be either Logical Models or Physical Models. Logical models capture business requirements in detail, while physical models define database-specific implementations.

Although there is no specific option to create a Conceptual Model, it can be represented by defining only the entities or by building a logical model without attributes. These high-level representations are ideal for initial planning and discussions, providing a foundational overview of the database structure.

Erwin also integrates with Erwin Mart and ER360, a centralized repository that supports collaboration, version control, and model sharing across teams, ensuring consistency and efficiency in data modelling projects.

This guide provides a step-by-step overview of using Erwin to create, define, and manage data models. It also includes instructions for uploading models from Erwin to Erwin Mart and ER360 for sharing, to Microsoft Purview for governance, and to NNDM for enabling data discovery and consumption. Can we add a picture

of Erwin Architecture with other tools like NNDM. A simple block diagram.) Please add change control table to end of document.

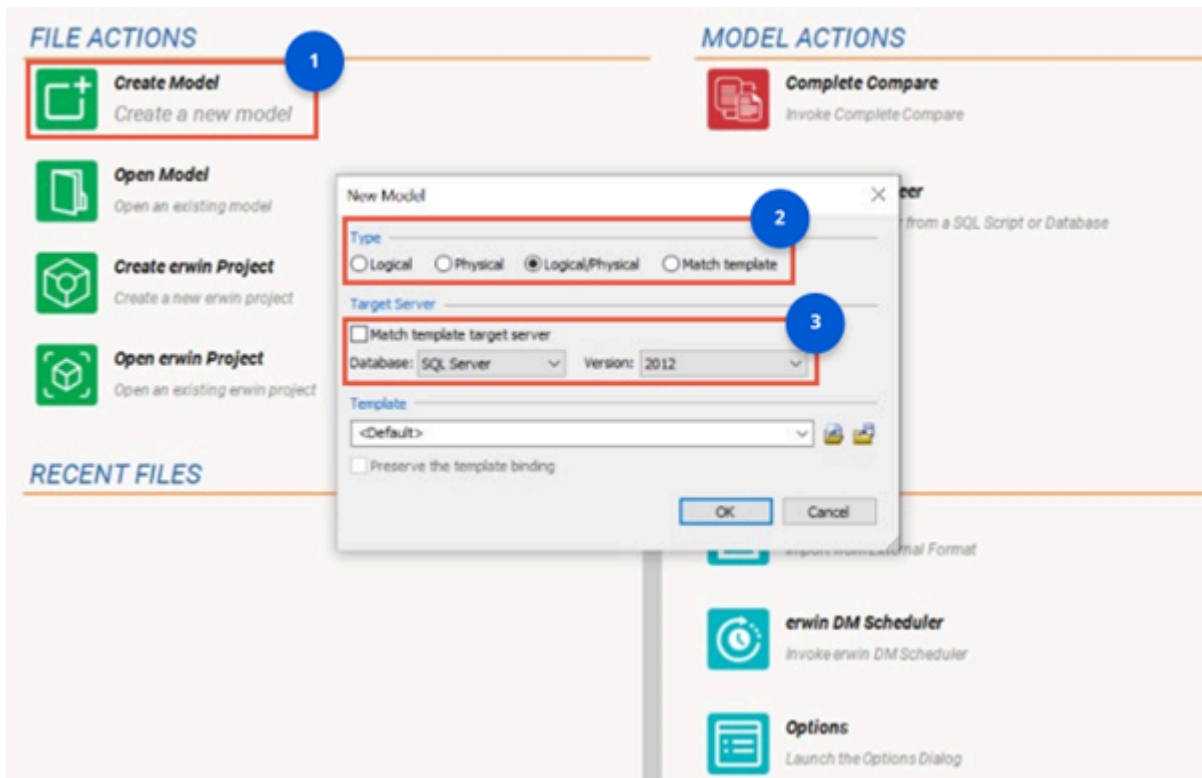
This is the first release of the guide. IT will be updated semi-annually based on user feedback and process updates.

### 3. Building and Managing Data Models in Erwin

The following section provides a step-by-step approach to creating and managing data models in Erwin. Beginning with defining entities and their attributes, it covers establishing relationships, organizing logical and physical models, and generating database schemas. Each step is designed to help users build a structured and accurate representation of their database, tailored to specific business requirements.

#### 3.1 Setting up a new model

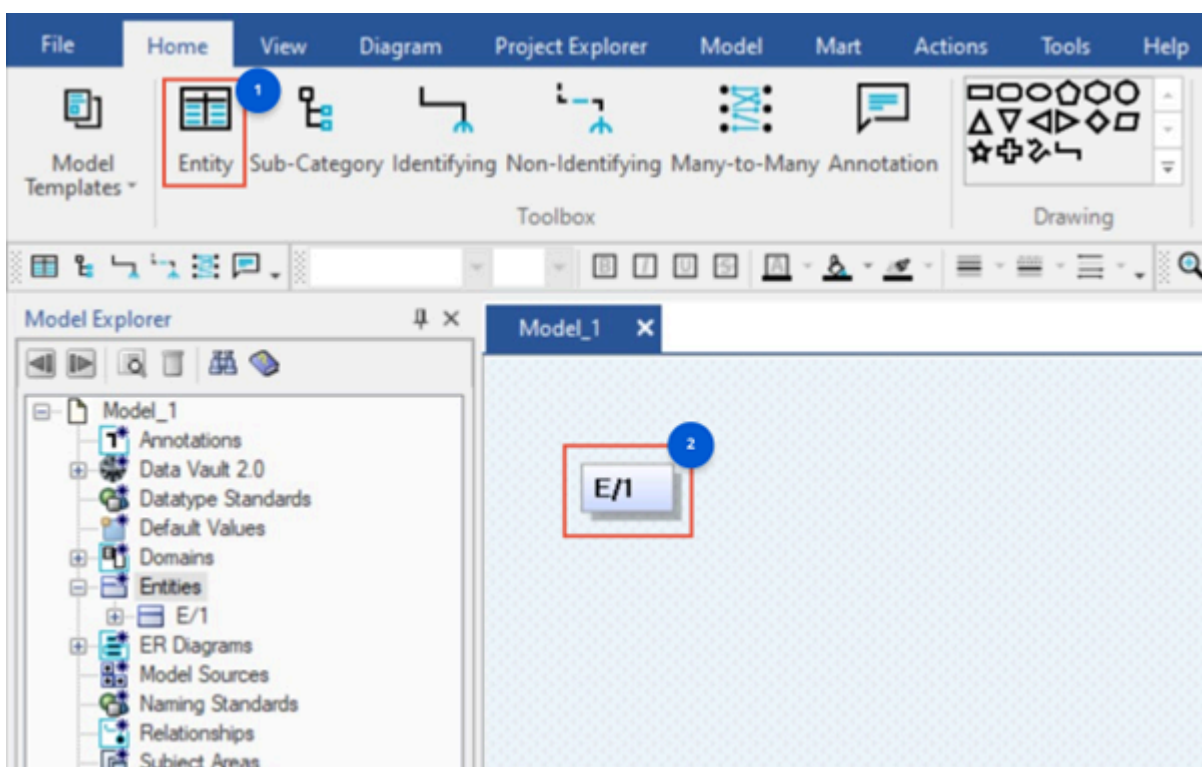
1. Open Erwin Data Modeler and click on Create Model.
2. Select Model Type: You will typically choose between a Logical Model, Physical Model, or a Logical/Physical Model combined. A combined model allows to design both the business-focused logical structure and database-specific physical implementation within a single, integrated model, ensuring alignment between requirements and execution.
  - a. It is recommended to always use a combined Logical/Physical Model in Erwin. Do we really want to suggest a physical model? Unless they can import from Database and import. While the focus can remain on designing the logical structure at this stage, the combined model provides the flexibility to transition to the physical level in the future, ensuring alignment and consistency without duplicating efforts.
  - b. When the combined model option is selected, the logical and physical models can be toggled by right clicking on the canvas, navigating to Properties and changing the View Mode from the drop-down menu.
  - c. Note that all the steps outlined in this guide henceforth apply only if the Logical/Physical combined option has been selected and the view mode is set to Logical.
3. Configure Database: If creating a physical model, select the specific database you intend to use (e.g., MySQL, Oracle, SQL Server).
4. Using Templates (Optional): Erwin offers a template feature that provides predefined data modelling structures and standards, which can help jumpstart your modelling process. Templates are essentially reusable models or portions of models that include common entities, attributes, relationships, and database configurations based on best practices. To use a template:
  - a. Choose the desired template, then click OK to apply it to your new model.
  - b. Modify the model as needed to suit your project's specific requirements.
5. Save the Model: Once inside the tool and configuration is complete, regularly save your work by going to File > Save.
  - a. Choose a location on your system or in your Erwin Mart repository (if integrated) to store the model.

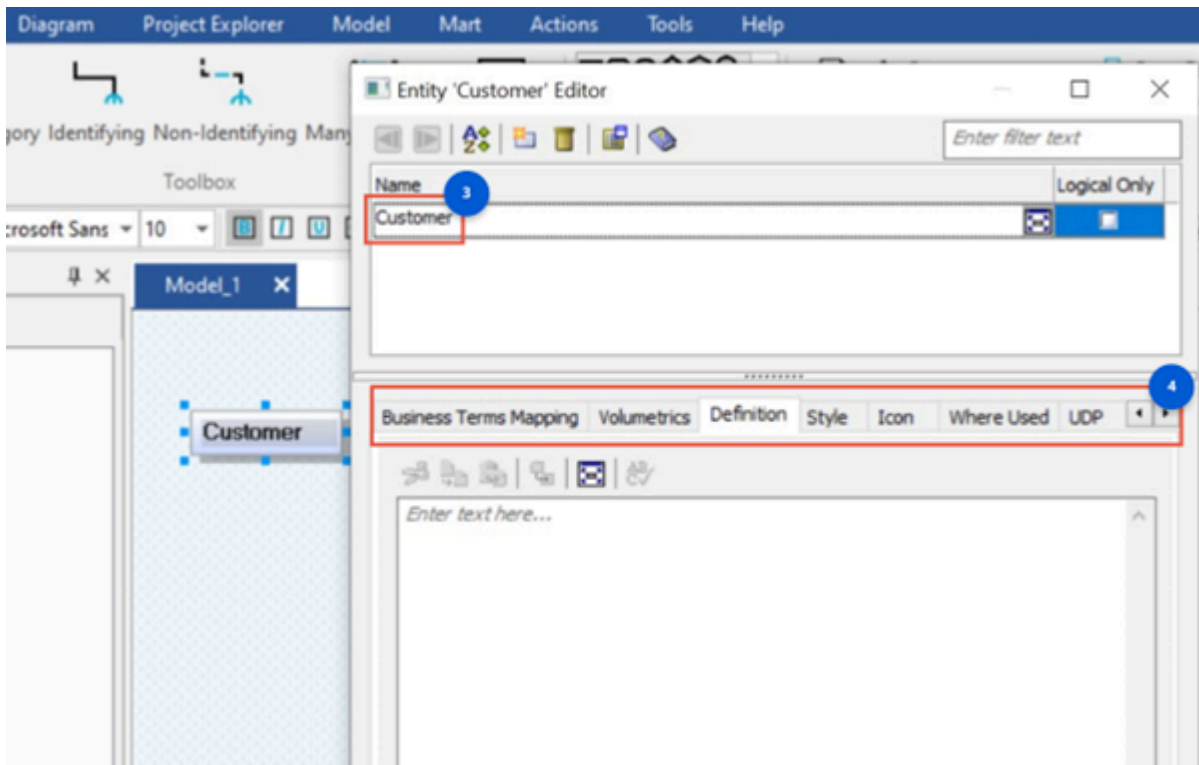


### 3.2 Creating Entities

Entities represent tables in your database. To create entities:

1. Go to the Model Explorer or toolbar and select the Entity Tool.
2. Add Entity: Click on the canvas where you want to place the entity.
3. Name the Entity: Double-click the entity, enter a meaningful name, and save changes.
4. Define Entity Properties: Right click on the entity diagram to customize additional properties for the entity, such as its definition, icons, volumetrics, etc.

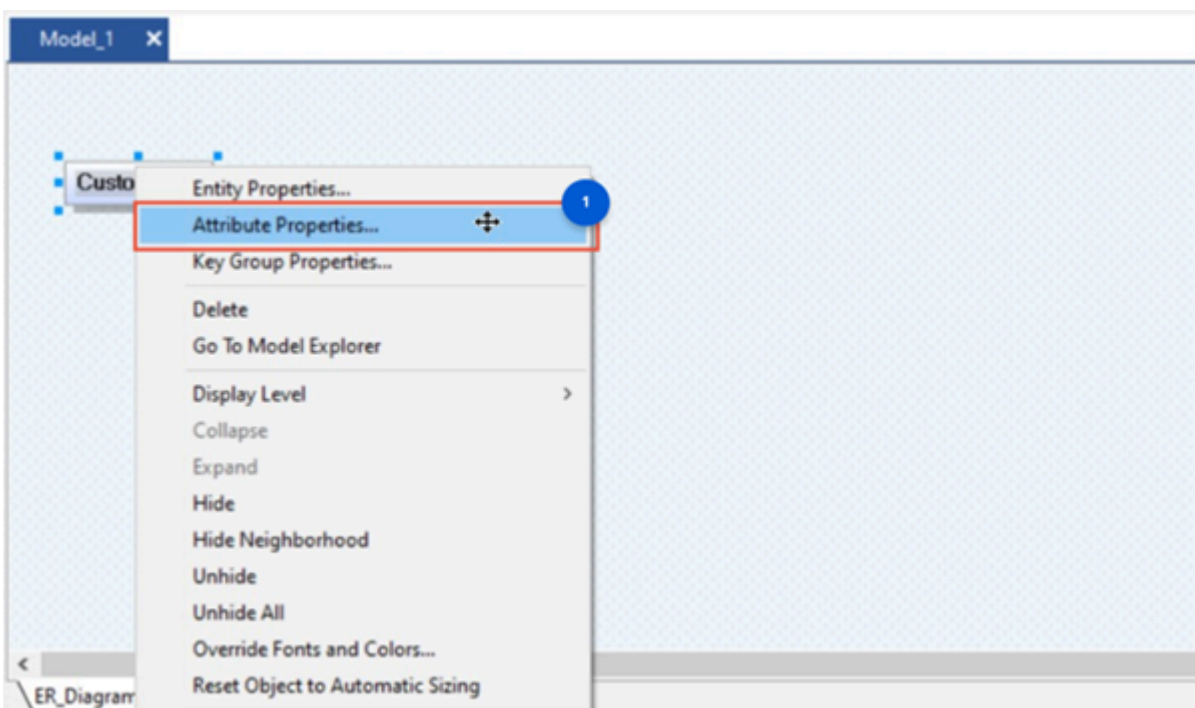


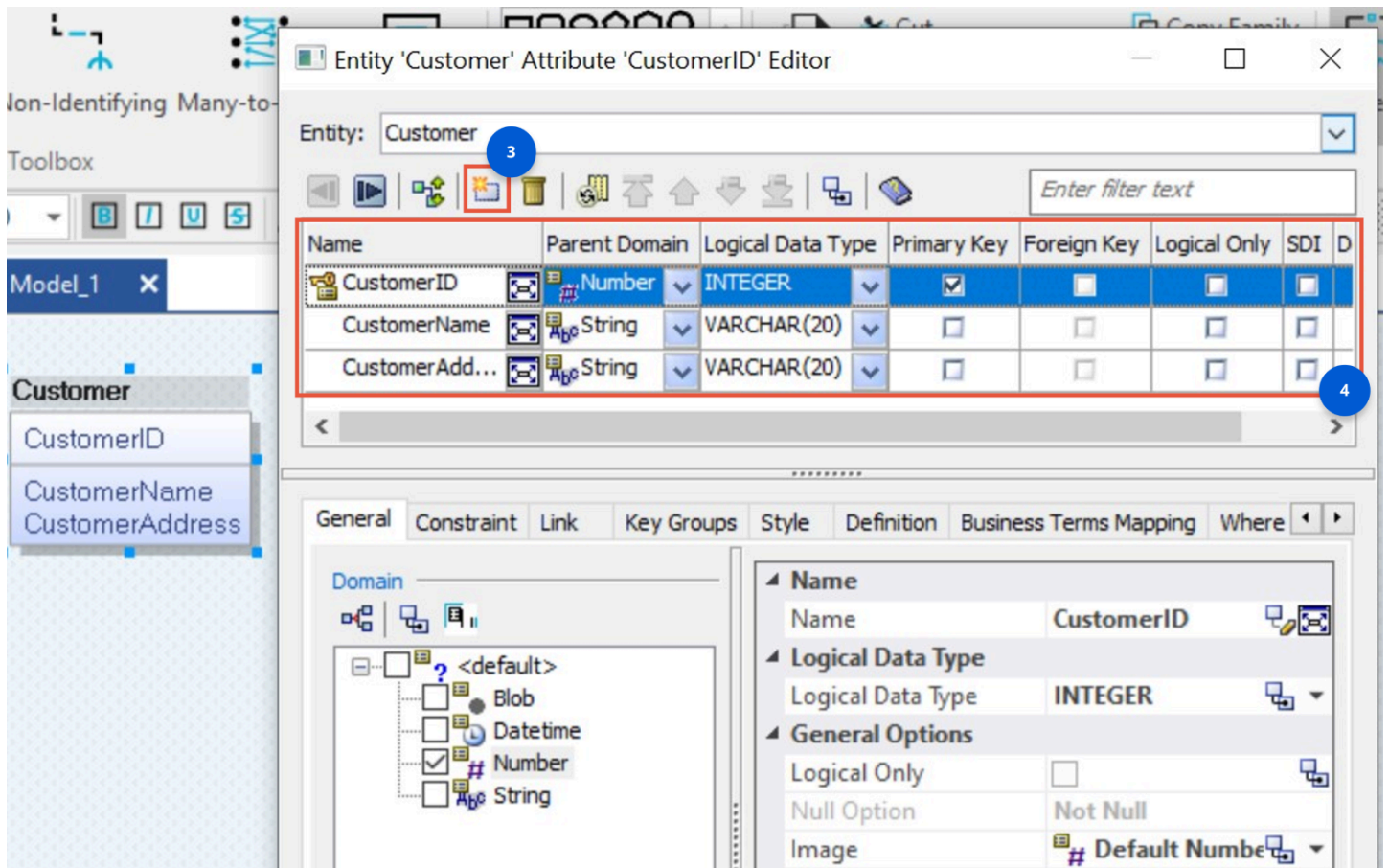


### 3.3 Defining Attributes

Attributes represent the columns or fields within an entity.

1. Open Entity Attribute Editor: Right-click the entity and select Attribute Properties.
2. Navigate to the Attributes Tab: Here, you can define attributes.
3. Add an Attribute: Enter the attribute name, definition, data type, and properties (e.g., domain, null option, etc.)
4. Set Keys: Identify any primary and foreign keys. A primary key uniquely identifies each record, while foreign keys define relationships.





### 3.4 Establishing Relationships

Relationships represent the links between entities (typically as foreign key constraints).

1. In the Erwin toolbox in the Home tab, choose the appropriate relationship type:

- Identifying Relationship: A strong relationship where a child entity's identity depends on its parent, meaning the child cannot exist without the parent. One parent instance relates to multiple child instances.
- Non-Identifying Relationship: A weaker relationship where a child entity's identity is independent of the parent, allowing it to exist without the parent. One parent instance relates to multiple child instances.
- Subtype Relationship: Connects a parent (supertype) entity defining a category to child (subtype) entities representing its subcategories, such as EMPLOYEE with FULL-TIME and PART-TIME employees.
- Many-to-Many Relationship: A relationship where instances in one entity can relate to multiple instances in another.

2. Click and Drag: Click on the parent entity (e.g., Customers) and drag to the child entity (e.g., Orders) to create a relationship.

3. Set Relationship Properties: Right-click the relationship and select Properties. Specify any additional constraints, such as relationship name, type, cardinality, definition, etc., in the relationship editor.

4. Relationship symbols can be drawn differently depending on the notation of the model:

- IDEF1X notation draws a dashed line with a solid dot on the child end and a diamond on the parent end.
- IE notation draws a dashed line with a cross and a circle on the parent end. The child end indicates the cardinality with:

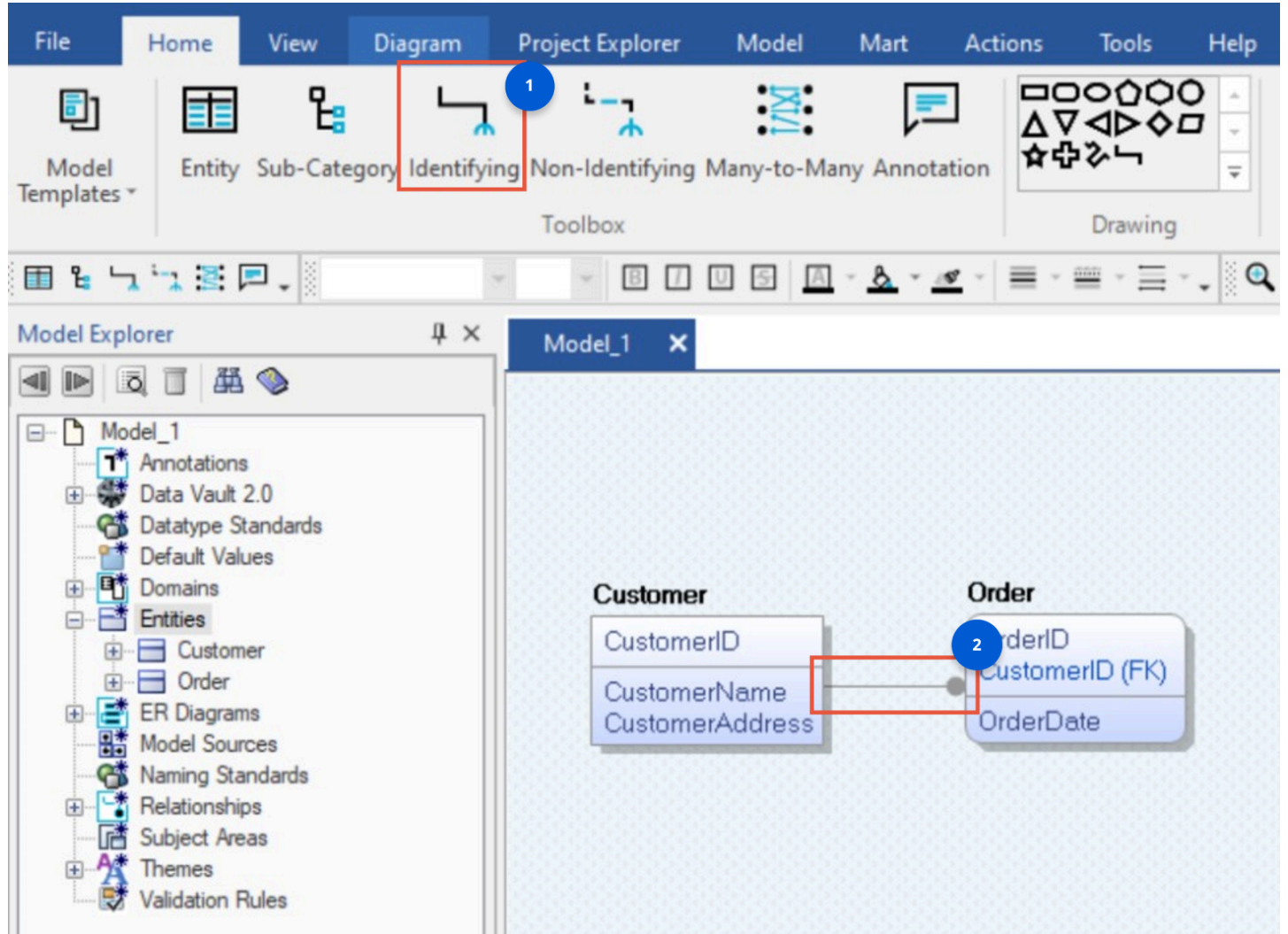
i. Crow's feet with a cross and a circle (Zero, One or more)

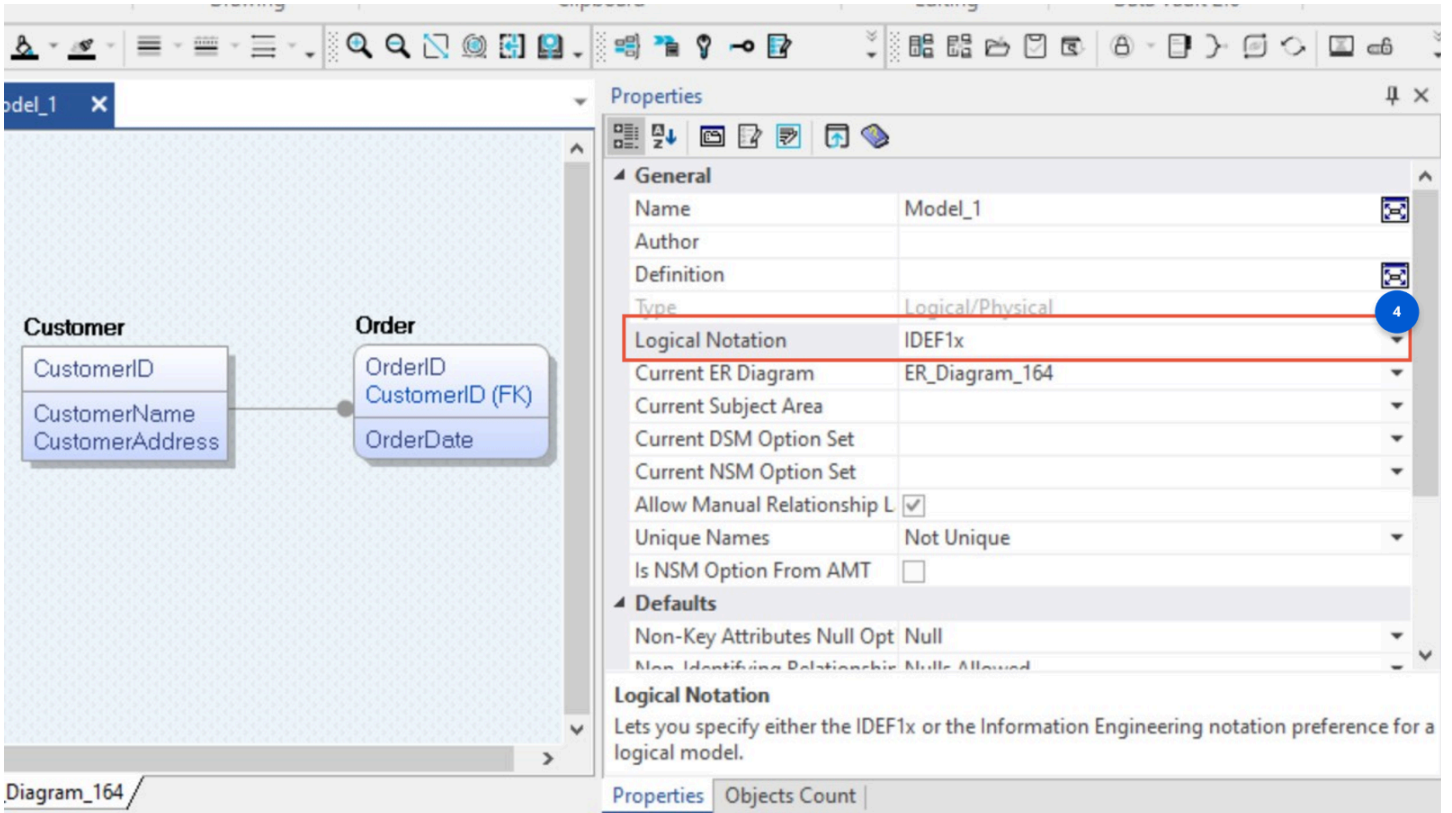
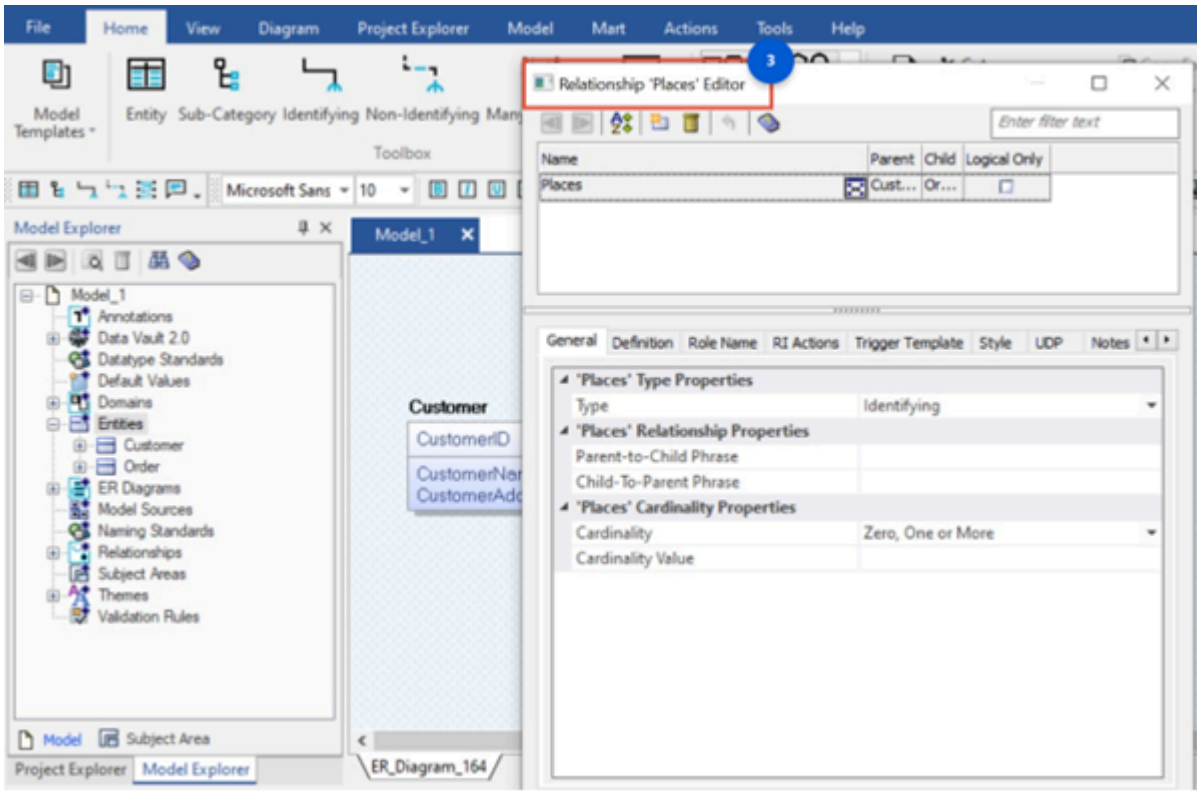
ii. Crow's feet with a cross (One or more)

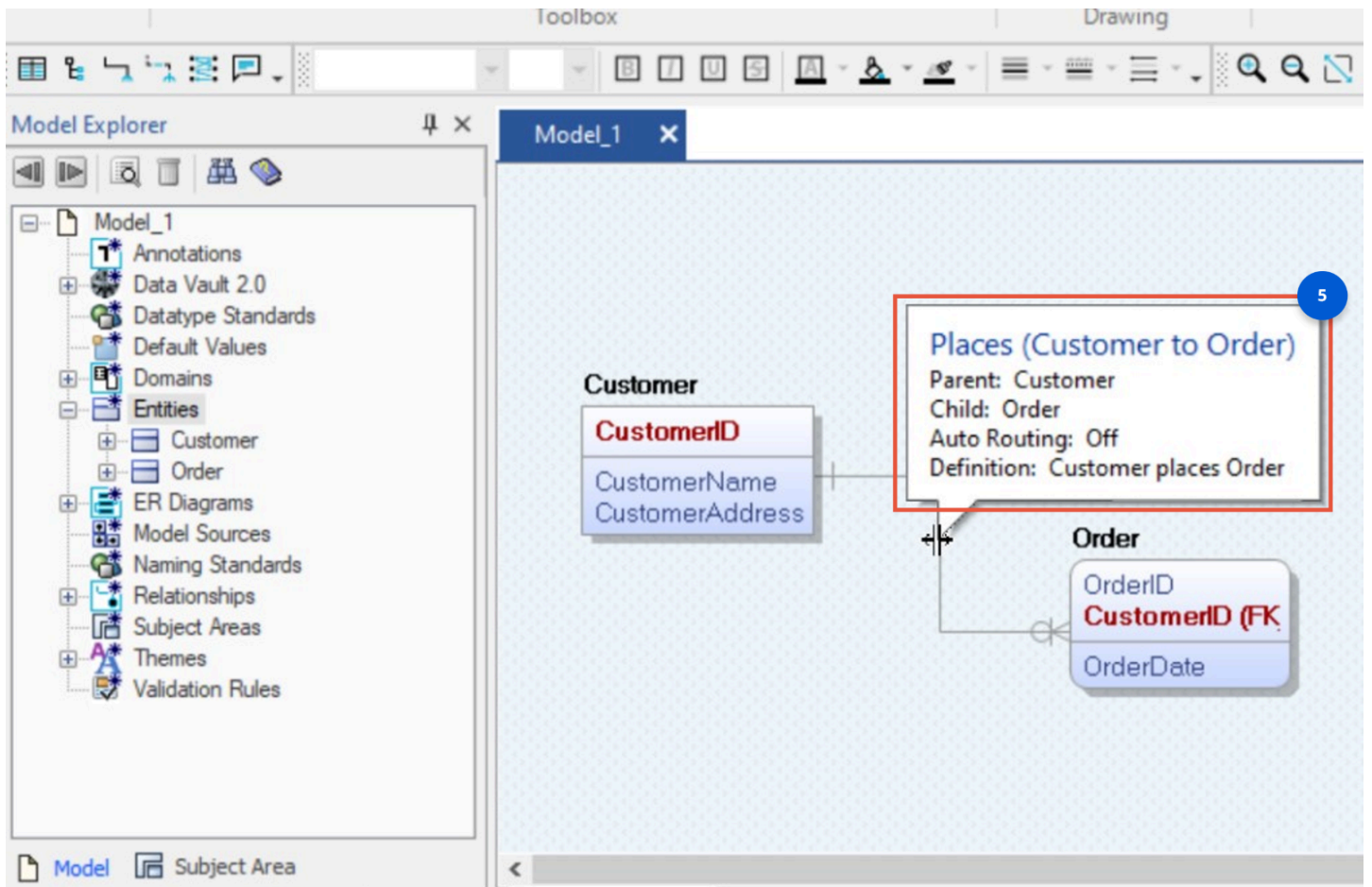
iii. A cross and a circle (Zero or one)

iv. A dashed line (Exactly n)

5. Hovering the mouse over a relationship highlights the relationship properties and the involved primary and foreign keys.







## 4. Understanding and Viewing Model Types

In Erwin Data Modeler, there are three primary model types: Conceptual, Logical, and Physical. Each model serves a different purpose and can be viewed in various environments such as Erwin Data Modeler and Erwin ER360.

### 4.1 Conceptual Model

- The Conceptual Model provides a high-level view of the data landscape, focusing on business requirements and key entities without getting into implementation details.
- It's ideal for understanding the overall structure and relationships between business concepts.
- It can be viewed in Erwin ER360 with the steps detailed in the following section.

### 4.2 Logical and Physical Models

- The Logical Model represents the structure of data without considering physical storage details, while the Physical Model deals with how data is stored in the system, considering performance and storage factors.
- These models have been detailed above and are accessible via Erwin Data Modeler or Erwin Mart.

## 5. Integrating with Erwin Mart and ER360

This section covers how to utilize Erwin Mart and Erwin ER360 for enhanced collaboration, versioning, and governance of data models.

### 5.1 Erwin Mart Portal

Erwin Mart provides a multiuser modelling environment that facilitates coordinated, large-scale modelling. It supports collaboration among data modelling teams by offering workgroup modelling services.

Key features include:

- Conflict Resolution: Ensures that multiple team members can work on models simultaneously without data conflicts.
- Versioning: Tracks changes over time, allowing users to access previous versions of models.
- Security: Manages user access to ensure only authorized personnel can view or edit the models.
- Standards Management: Helps enforce organizational modelling standards across projects.

### Uploading Models to Erwin Mart:

1. Open Erwin Data Modeler: Ensure the data model is open and ready for upload.
2. Connect to Erwin Mart following the steps outlined [here](#).
3. Save Model to Mart:

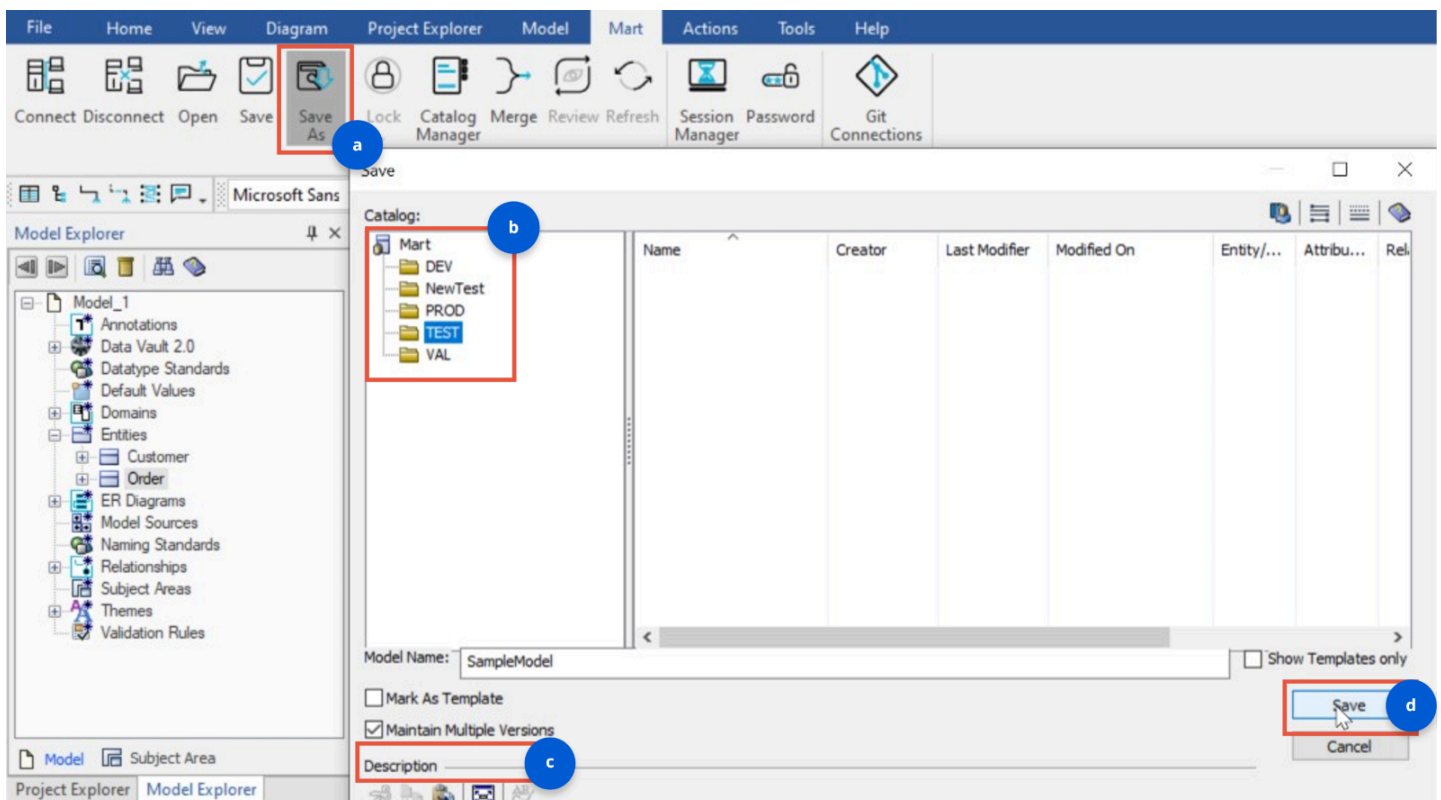
a. Select Mart > Save to Mart...

b. In the dialog box, choose the appropriate folder or project within the Mart repository where the model will be saved.

c. Add any necessary descriptions or metadata to document the model.

d. Click Save to complete the upload.

4. Verify Upload: Open the model directly from the Mart repository to confirm the upload.



## 5.2 Erwin ER360

Erwin ER360 provides a centralized platform for visualizing, managing, and governing your data models. It enhances collaboration among business and governance teams by offering self-service access to metadata and visualization tools.

Key Features include:

- Visualization: Provides intuitive visual representation of your data models for stakeholders to easily understand and assess model structures.
- Metadata Classification: Organizes and classifies metadata to make it easily accessible for business teams, data stewards, and governance personnel.
- Collaboration: Facilitates improved communication among teams, boosting data literacy and overall model comprehension.

### Harvesting Models to Erwin ER360:

1. Login to Erwin Mart Portal, navigate to the Catalog menu, and locate your data model.
2. Click the Harvest to ER360 option on top right corner.
3. Create a new job by providing the required job parameters. Once the job completes successfully, the model is harvested to ER360.

The screenshot displays the Erwin Mart Portal interface. The top navigation bar includes the Erwin logo and 'Mart Portal' text. The left sidebar contains navigation options: Dashboard, Users, Profiles, Permissions, Catalogs (highlighted with a red box and a blue circle '1'), Central NSM, EMC, EG, and Devices. The main content area is titled 'Catalogs' and shows a tree view of loaded catalogs. The 'TEST' catalog is expanded, and the 'SampleModel' is highlighted with a red box. The right sidebar shows a 'Details' view for 'SampleModel' with fields for Name, Description, and Created By (adminuser). A dropdown menu is open in the top right corner, with the 'Harvest to ER360' option highlighted by a red box and a blue circle '2'. Other options in the dropdown include 'DM Connect for DI', 'Access Token', and 'BEST Reports'. The footer contains links for About, Privacy, Legal, Contact, and Impressum, along with social media icons and the copyright notice: © 2025 Quest Software, Inc. All rights reserved. Version 14.0.

**Add Job**

**Job Information**

Job Name: Job1

Start Date/Time: 01/03/2025 12:35 AM

Job Interval: Once

Frequency: [Dropdown]

End Date/Time: 01/04/2025

Days: [Dropdown]

Notify Me

**Harvest to ER360**

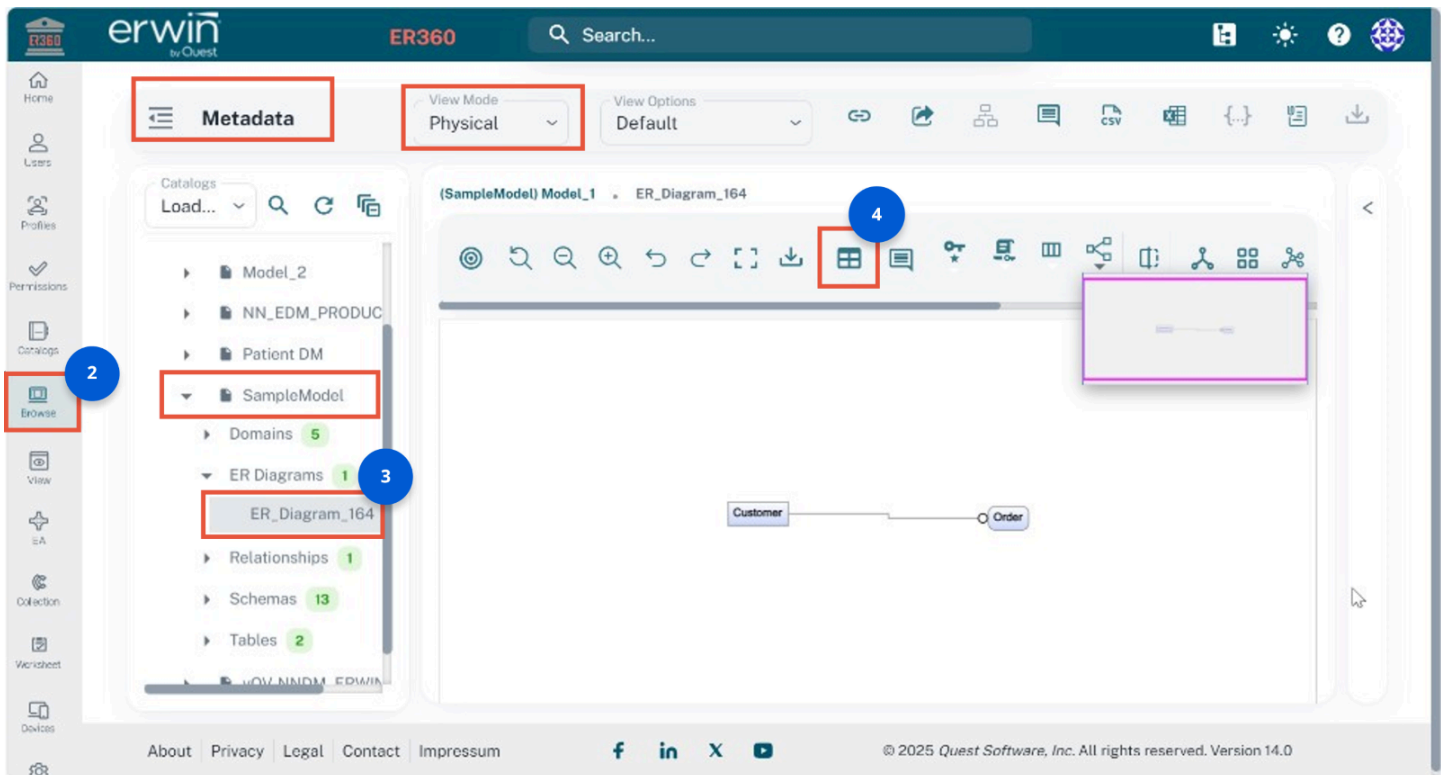
Job Name	Last Schedule Run	Next Schedule Run	Job State	Last Run State	Modified By
Job1	01/03/2025 12:35 AM	01/03/2025 12:35 AM	Completed	Success	adminuser
vOV_test_17345...	12/19/2024 2:14 PM	12/19/2024 2:14 PM	Completed	Success	adminuser
vOV_test	12/19/2024 2:15 PM	12/19/2024 2:15 PM	Completed	Success	adminuser
Sudarshana_test...	12/19/2024 1:47 PM	12/19/2024 1:47 PM	Completed	Success	adminuser
Sudarshana_test	12/19/2024 1:48 PM	12/19/2024 1:48 PM	Completed	Success	adminuser
Notification check_1734588...	12/19/2024 11:38 AM	12/19/2024 11:38 AM	Completed	Success	adminuser

Rows per page: 10 | 1-10 of 17

### Visualizing Data Model in ER360:

1. Login to ER360 following the steps outlined [here](#).
2. Navigate to the Browse menu and locate your data model under the Metadata tab.
3. Click on ER Diagrams to visualize the data model. Model types can be switched by selecting the desired type from the View Mode dropdown menu.
4. A conceptual model is essentially an 'entity-only' representation of the logical diagram. To view the conceptual version of the data model, click the entity button, which will display only the entities and

their relationships.



This guide provides a foundation for using Erwin Data Modeler. Practice with simple models and progressively build more complex structures as you gain confidence in the tool. Happy modelling!

To know about uploading a Data model to Erwin Mart and ER360, please check this link: [How to upload an Erwin Data Model - Overview](#)

Learn more on connecting Erwin with Azure Purview and challenges faced: [Connecting Azure purview with Erwin Mart Challenges - Mitigations - Overview](#)