Informatica® MDM - Customer 360
10.2 HotFix 3

Installation and Configuration Guide
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Preface

This Guide is intended for database administrators, system administrators, and implementers who are responsible for installing and setting up Informatica MDM Customer 360. For more information about configuring the underlying Informatica MDM ME environment, see the Informatica MDM Multidomain Edition Configuration Guide.

Informatica Resources

Informatica Network


As a member, you can:

- Access all of your Informatica resources in one place.
- Search the Knowledge Base for product resources, including documentation, FAQs, and best practices.
- View product availability information.
- Review your support cases.
- Find your local Informatica User Group Network and collaborate with your peers.

Informatica Knowledge Base

Use the Informatica Knowledge Base to search Informatica Network for product resources such as documentation, how-to articles, best practices, and PAMs.

To access the Knowledge Base, visit https://kb.informatica.com. If you have questions, comments, or ideas about the Knowledge Base, contact the Informatica Knowledge Base team at KB_Feedback@informatica.com.

Informatica Documentation

To get the latest documentation for your product, browse the Informatica Knowledge Base at https://kb.informatica.com/_layouts/ProductDocumentation/Page/ProductDocumentSearch.aspx.

If you have questions, comments, or ideas about this documentation, contact the Informatica Documentation team through email at infa_documentation@informatica.com.
Informatica Product Availability Matrixes

Product Availability Matrixes (PAMs) indicate the versions of operating systems, databases, and other types of data sources and targets that a product release supports. If you are an Informatica Network member, you can access PAMs at https://network.informatica.com/community/informatica-network/product-availability-matrixes.

Informatica Velocity

Informatica Velocity is a collection of tips and best practices developed by Informatica Professional Services. Developed from the real-world experience of hundreds of data management projects, Informatica Velocity represents the collective knowledge of our consultants who have worked with organizations from around the world to plan, develop, deploy, and maintain successful data management solutions.

If you are an Informatica Network member, you can access Informatica Velocity resources at http://velocity.informatica.com.

If you have questions, comments, or ideas about Informatica Velocity, contact Informatica Professional Services at ips@informatica.com.

Informatica Marketplace

The Informatica Marketplace is a forum where you can find solutions that augment, extend, or enhance your Informatica implementations. By leveraging any of the hundreds of solutions from Informatica developers and partners, you can improve your productivity and speed up time to implementation on your projects. You can access Informatica Marketplace at https://marketplace.informatica.com.

Informatica Global Customer Support

You can contact a Global Support Center by telephone or through Online Support on Informatica Network.

To find your local Informatica Global Customer Support telephone number, visit the Informatica website at the following link: http://www.informatica.com/us/services-and-training/support-services/global-support-centers.

If you are an Informatica Network member, you can use Online Support at http://network.informatica.com.
Introduction to Informatica - MDM Customer 360

Overview of Informatica MDM - Customer 360

Informatica MDM - Customer 360 provides clean, consistent, and connected information about customers. Business managers use the master customer data to make better business decisions about customers and manage customer relationships. You can get a single trusted view of a customer. You can enrich and update the customer data with the data from Data as a Service (DaaS) providers, such as Dun and Bradstreet (D&B).

With Customer 360, business users can achieve the following goals:

• Streamline the customer onboarding and qualification process.
• Centralize the data about customers in a master database.
• Enrich customer data with data from external sources, such as D&B.
• View the relationships between customers, parent companies, subsidiaries, and related organizations.
• Design campaigns based on customer preferences and behavior.
• Improve customer service.
• Connect customer data to the product catalogs and view the buying patterns.
• View customer-to-product relationships.

Customer 360 is based on Informatica MDM Multidomain Edition. Business users connect to master customer data through a business-friendly user interface. The user interface displays an enterprise-level dashboard as well as 360 degree customer views that are customized for different business users.

The Customer 360 environment integrates with Informatica Product 360, which is a product information management system.
Use Customer 360 to access the master data that is stored in the Hub Store. Master data is organized by business entities. Business entities are the type of top-level data that has significance for an organization. Business entities include persons and organizations.

Business users use Customer 360 to perform the following activities:

- Add business entities.
- Request DaaS providers to enrich the data in business entities.
- Search for and edit business entities.
- Manage relationships between business entities.
- Participate in review processes for new and changed business entities.
- Import records in bulk to create new customers.

Architecture


The following diagram shows the architecture for Customer 360:

Customer Data Management

Customer 360 adds additional features to the Informatica MDM environment, such as a database schema for customer data, business processes for customer management, and an interface that the business users can use to access customer data.

Customer data management includes onboarding of a customer and customer profile management.

Informatica MDM Multidomain Edition

Customer 360 includes the standard MDM Multidomain Edition components:
Hub Store

Databases that store and consolidate business data. The Hub Store consists of an MDM Hub Master Database and Operational Reference Stores. The Application ships with a database schema that you use to create an Operational Reference Store for customer master data.

Hub Server

A J2EE application that you deploy on an application server. The Hub Server processes data within the Hub Store and integrates the MDM Hub with external applications. The Hub Server is the run-time component that manages core and common services for the MDM Hub. It also manages user authentication across all components.

Process Server

A J2EE application that you deploy on an application server. The Process Server cleanses and matches data and performs batch jobs such as load, recalculates best version of the truth, and revalidates. The Process Server interfaces with cleanse engines to standardize the data and to optimize the data for match and consolidation.

ActiveVOS Server

Business process management software that automates business processes. The Application ships with business processes that help you to manage the customer lifecycle. These processes ensure that authorized business managers review customer profiles and review internal updates to master data.

Informatica Data Director

A browser-based interface that business managers use to view and manage data. The Application ships with Customer 360, which contains an enterprise-level workspace focused on customers and views designed for business managers.

Hub Console

A browser-based interface that administrators use to manage the MDM Hub and data stewards use for managing records and batch processing of records.

Informatica MDM - Product 360

Informatica MDM - Product 360 creates a single repository for all product data. In Customer 360, MDM - Product 360 is an optional component.

Product 360 supplies the product data and the purchase history of a customer. You can view the data in the customer dashboard.

User Roles

The MDM Hub user roles control read and write privileges of the Operational Reference Store (ORS) that contains the customer master data.

Customer 360 uses the following MDM Hub user roles:

User roles for system users

The ApplicationAdministrator role is for a super user, who has full privileges.
User roles for business users

User roles for the business users control the data privileges in the ORS and also the review privileges in the business processes. Each business user who is authorized to participate in customer data management receives one or more role assignments. Many users can have the same role.

Customer 360 includes the following predefined roles for the business users:

- Sales Operation Analyst
- Sales Operation Manager

Dun and Bradstreet Data Enrichment

You can enrich the business entity data with data from Dun and Bradstreet (D&B). You can get the detailed business entity profile and the linkage data from D&B.

Data as a Service Validation

Use the integration of Customer 360 with Informatica DaaS for data verification and correction. You can verify customer contact information and store accurate data.

You can analyze, verify, correct, and format addresses according to the local postal standards. You can ensure that the email addresses are valid and formatted correctly. You can find email domains involved with spam networks, traps, and other malicious threats and verify that the email address is valid, not valid, or malicious. You can verify the phone numbers of your customers.
CHAPTER 2

Before You Install

This chapter includes the following topics:

- Read the Release Notes, 12
- Software Requirements, 13
- Extracting the Customer 360 Application Archive File, 13
- Creating the Operational Reference Store, 14
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- Registering the Operational Reference Store, 15
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- Copying the JDBC Drivers, 23

Read the Release Notes

Read the MDM - Customer 360 Release Notes. You can also find information about the known limitations for the release.
Software Requirements

Set up the Informatica MDM Multidomain Edition environment before you install Informatica MDM - Customer 360.

Perform the following tasks:


2. Install a supported version of MDM Multidomain Edition and the embedded version of Informatica ActiveVOS® Server. Follow the instructions in the MDM Multidomain Edition 10.2 Installation Guides or the MDM Multidomain Edition 10.2 Upgrade Guides for your environment.

3. If you plan to use Informatica MDM - Product 360, install a supported version.

Extracting the Customer 360 Application Archive File

You receive the Customer 360 application as an archive file. Create the following directory structure and extract the contents of the Customer 360 archive file into it:

\(<MDM\ \text{Installation\ Directory}>/app/tcr\)

The extracted content contains the following files and folders:

- **bin/**. Contains installation scripts.
- **bpm/**. Contains the ActiveVOS default business process in a deployable format.
  - **InfCustomer360Workflow.bpr**. Contains the default business process for the Party table-based data model.
  - **pre_c360_10.2_hf2/**. Directory that contains the default business processes for the Party Role table-based data model.
- **cleanse/**. Contains custom Java cleanse functions.
- **config/**. Contains configuration properties files.
- **data/**. Contains the scripts for inserting lookup or reference data.
- **datamart/**. Contains the data mart service and the chart configurations.
  - **chart-config/**, **config/**, and **lib/**. Directories that contain the chart configurations.
  - **populate_datamart**. Data mart service for the Party table-based data model.
  - **pre_c360_10.2_hf2/**. Directory that contains the data mart service for the Party Role table-based data model.
- **docs/**. Contains the data dictionary.
  - **C360_102HF2_DataDictionary_en.pdf**. Data dictionary for the Party table-based data model.
  - **pre_c360_10.2_hf2**. Directory that contains the data dictionary for the Party Role table-based data model.
- **hub/**. Contains the subdirectories that contain the database schema and the configuration files to deploy.
  - **cocs-config-xml/**. Contains configuration files for the business entities and business entity services.
Creating the Operational Reference Store

Create an Operational Reference Store (ORS) for Customer 360.

For more information about how to create an ORS, see the Informatica MDM Multidomain Edition Installation Guide.
Importing the MDM Metadata

After you create the Customer 360 Operational Reference Store (ORS), import the MDM metadata into the ORS.

For more information about how to import the MDM metadata, see the *Informatica MDM Multidomain Edition Installation Guide*.

Registering the Operational Reference Store

Register the Customer 360 Operational Reference Store.

1. Log in to the MDM Hub Console.
2. In the Configuration workbench, click **Databases**.
3. On the **Write Lock** menu, click **Acquire Lock**.
4. Click **Register database**.
   - The *Informatica MDM Hub Connection Wizard* appears.
5. Follow the online instructions to specify the same parameters that you specified when you created the Operational Reference Store.
6. On the **Summary** page, click **Test Database**.
   - The Wizard tests the database connection parameters.
7. Ensure that you select **Create datasource after registration**.
8. Click **Finish**.
9. When prompted, enter the user credentials for the application server.
   - The wizard creates a data source.

Importing the Application Metadata from a Change List

The metadata for the Customer 360 database schema resides in an MDM Hub change list. You import the change list into the Hub Store. The metadata change list creates components, such as landing tables, user exits, lookup tables, staging tables, base objects, and match and merge rules. The created tables are empty.

Before you import the application metadata, you must start the Hierarchy Manager in the MDM Hub Console. For more information about starting the Hierarchy Manager, see the *Informatica MDM Multidomain Edition Data Steward Guide*.

1. In the Hub Console, in the Configuration workbench, click **Repository Manager**.
2. On the **Import** tab, click the button next to the **Source** field.
   - The *Open Repository* dialog box appears.
3. Click **File Repository**.
4. Browse to the following directory:
Inserting Reference Data

After you import the metadata, you can populate the tables with some reference data. By using reference data, you can complete the configuration steps faster because you do not have to manually insert the rows into the tables.

Before you insert the reference data, you must configure a Process Server. The Process Server is a servlet that cleanses data and processes batch jobs. For more information about configuring a Process Server, see the Informatica MDM Multidomain Edition Configuration Guide.

**Note:** If you use the Dun and Bradstreet (D&B) service, ensure that you populate the lookup data for countries and states.

1. Open a command prompt, and navigate to the following directory:
   `<MDM Installation Directory>/app/tcr/data/reference-data`
2. Run one of the following scripts based on the database you use:
   - For Oracle. `C360_lookup_script_oracle.sql`
   - For Microsoft SQL Server. `C360_lookup_script_MSSQL.sql`
   - For IBM DB2. `C360_lookup_script_DB2.sql`
3. To verify whether the lookup records are loaded successfully, perform the following tasks:
   a. In the Hub Console, in the Utilities workbench, click **Batch Group**.
   b. Expand **BG_All_Lookup_Load**, and select **Control & Logs**.
   c. In the Logs for each job table, review the **Status** column to verify that the load is successful. The **Total records** column shows the number of records added. The columns to the right of the **Total records** column displays zeros if all the records load successfully.
   d. If the load is unsuccessful, try running the load. Select **BG_All_Lookup_Load** and click **Execute**.

Importing and Deploying the Customer 360 Application

Import the **Customer360.zip** file as an IDD application, and then deploy it.

1. To start Informatica Data Director (IDD) Configuration Manager, perform the following tasks:
   a. Open a supported web browser.
b. Enter the following URL:
   https://<Home name:<Port number>/bdd/config

c. Enter the user name and password, and then click Log In.
The Informatica Data Director Configuration Manager starts and the Applications page appears.

2. Click Import > Import complete IDD application (Zip).
3. Click Browse, and navigate to the following directory:
   /app/tcr/idd/config
4. Select Customer360.zip, and click Open.
5. Click Import.
6. Under Bind Logical ORS, select Operational Reference Store (ORS) from the list.
   You must select the ORS that you created for Customer 360 when you installed MDM Multidomain Edition.
7. Click Save.
   Informatica Data Director imports and validates the IDD application. The process might take some time.
8. Ignore any validation errors.
9. With the application selected, click Application State > Full Deployment.
   Informatica Data Director deploys the IDD application.

Informatica Data as a Service

Informatica Data as a Service (DaaS) cleanse functions are available to validate and verify postal addresses, email addresses, and phone numbers. To use a validation service, add the mandatory parameters for the service in the MDM Hub.

Each service contains default values for the optional parameters. If required, change the default values in the Hub Console.

Use the following rules for the validation service parameters:

- Address validation. Prepend the parameter names with ADV5_.
- Email address verification. Prepend the parameter names with EMV6_.
- Phone number validation. Prepend the parameter names with GPV15_.

The following table lists the mandatory parameters for the DaaS validation services:

<table>
<thead>
<tr>
<th>Service</th>
<th>Mandatory Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address validation</td>
<td>LOGIN</td>
</tr>
<tr>
<td></td>
<td>PASSWORD</td>
</tr>
<tr>
<td>Country type</td>
<td>COUNTRYTYPE. Set the parameter value to IS02.</td>
</tr>
<tr>
<td>Email address verification</td>
<td>LICENSE_KEY</td>
</tr>
<tr>
<td>Phone number validation</td>
<td>LICENSE_KEY</td>
</tr>
</tbody>
</table>
Specifying the Mandatory Parameters for DaaS Validation

Configure the mandatory parameters for DaaS validation in the Hub Console.

1. Log in to the MDM Hub Console.
2. Select the Customer 360 ORS.
3. In the Model workbench, click Cleanse Functions.
   The Cleanse Functions tool appears.
4. On the Write Lock menu, click Acquire Lock.
5. Click Informatica Data as a Service.
6. Click the Add button.
7. Specify the parameter name and value.
8. Repeat steps 6 and 7 to add the other mandatory parameters.
9. Save the changes, and click Refresh.

Configuring Message Queue in the MDM Hub

Configure a message queue and message triggers for the linkage service from Dun and Bradstreet (D&B).

1. Configure a JMS queue and connection factory on your application server.
   Follow standard naming conventions for the application server. Remember the JNDI names of the queue
   and the connection factory for future use
2. Register your JMS queue and connection factory in Hub console.
3. Select appropriate events in trigger.
4. Assign created message queue to trigger.
5. Save your configuration.

Configuring JMS Queue and JMS Connection Factory

Configure a JMS queue and a JMS queue connection factory on the application server. Follow the standard
naming convention for the application server.

Note: Ensure that you note the JMS queue name and connection factory name for future use.

1. Log in to the administration console of your application server.
2. Configure a JMS connection factory.
3. Configure a JMS queue.

Configuring the Message Queue in the MDM Hub

Configure the message queue in the MDM Hub. Register the JMS queue and connection factory, select the
events for the trigger, and assign message queue to trigger.

1. Log in to the MDM Hub Console.
2. In the Configuration workbench, click Message Queues.
3. Acquire a write lock.
4. Right-click anywhere in the navigation pane, and choose Add Message Queue Server.
   The Add Message Queue Server dialog box appears.
5. Specify the message queue server properties, and then click OK.
6. Right-click the name of the message queue server that you added, and choose Add Message Queue.
   The Add Message Queue dialog box appears.
7. Specify the message queue properties, and then click OK.
8. Right-click the name of the message queue server that you added, and choose Add Message Queue.
   The Add Message Queue dialog box appears.
9. Specify the message queue properties, and then click OK.
10. Select the message queue that you just added.
11. Under Queue Assignments, select Use with message triggers.
12. In the Model workbench, click Schema.
13. Acquire a write lock.
14. Expand the Party base object that you want to monitor, and select Message Trigger Setup.
15. Select the following event types for the message trigger:

<table>
<thead>
<tr>
<th>Event</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add new data</td>
<td>Used to add data.</td>
</tr>
<tr>
<td>Update existing data</td>
<td>Used to update data.</td>
</tr>
<tr>
<td>Pending update, only XREF</td>
<td>A cross-reference record with a PENDING state is updated. Also, includes</td>
</tr>
<tr>
<td>changed</td>
<td>the promotion of a record.</td>
</tr>
</tbody>
</table>
16. Click Save.

Creating a JCEKS Keystore

Create a JCEKS keystore to store the Informatica MDM - Product 360 and the D&B credentials.

1. Run the following command:

   ```
   <JAVA_HOME>\bin\keytool.exe" -genseckey -alias <aliasname_for_keystore> -keyalg
   <Encryption Algorithm> -keysize <KEY_SIZE> -storetype jceks -keystore
   <name_of_keystore>.keystore
   ```

   **Note:** Recommended encryption algorithm is AES and key size is 256.

   The following sample command uses AES encryption algorithm and key size of 256:

   ```
   C:\Program Files (x86)\Java\jdk1.8.0_91\bin\keytool.exe" -genseckey -alias test -keyalg
   AES -keysize 256 -storetype jceks -keystore test.keystore
   ```

2. When prompted, provide a keystore password.
   **Note:** For future use, note the password.

3. When prompted for key password, press Enter.
4. To confirm that the key is generated, run the following command:

```
JAVA_HOME\bin\keytool.exe" -list -v -storetype jceks -keystore <name_of_keystore>.keystore
```

The first entry with the given alias name appears.

Creating an ApplicationAdministrator User

The ApplicationAdministrator role is a role with all the privileges.

1. Create an MDM Hub user.
2. Assign the ApplicationAdministrator role to the user.

Creating a User in the MDM Hub

Create an MDM Hub user before you assign a role to the user.

1. In the Hub Console, in the Configuration workbench, click Users.
2. Acquire a write lock.
3. On the Users tab, click the Add user button.
   The Add User dialog box appears.
4. Enter the first, middle, and last names for the user.
5. Enter the user name for the user. The user must use the user name logs in to the Hub Console.
6. Enter the default database for the user, which is the Operational Reference Store that contains the customer master data.
7. Enter and verify a password for the user.
8. Click OK.

Assigning the ApplicationAdministrator Role

After you create the user, assign the ApplicationAdministrator role to a user.

1. In the Hub Console, connect to the Operational Reference Store for Customer 360.
2. Acquire a write lock.
3. In the Security Access Manager workbench, click Users and Groups.
   The Users and Groups tool opens. You can use the role-first approach or user-first approach.
4. If you want to follow the role-first approach, on the Assign Users/Groups to Role tab, perform the following steps:
   a. Select the ApplicationAdministrator role.
   b. Click the Edit button.
      The Assign Users to Role dialog box appears.
   c. Select the user that you created earlier.
5. If you want to follow the user-first approach, on the **Assign Roles to User/Group** tab, perform the following steps:
   a. Select the user you created earlier.
   b. Click the **Edit** button.
      The **Assign Users to Role** dialog box appears.
   c. Select **ApplicationAdministrator**.
   d. Click **OK**.

### Configuring the Application Properties File

In the *application.properties* file, configure the properties related to file import, JMS queue, and ActiveVOS.

1. Navigate to the following directory:
   `/app/tcr/config`
2. Open the *application.properties* file in an editor, and configure the following properties:
   ```java
   activevos.datasource.url
   ```
   Specifies the JNDI name of the ActiveVOS data source.
   ```java
   bulkimport.fileupload.directory
   ```
   Specifies the directory to which you want to upload the import files.
   ```java
   bulkimport.fileupload.cleanupMinutes
   ```
   Optional. Manually add the `bulkimport.fileupload.cleanupMinutes` property. Specifies the number of minutes to persist the import file in the specified directory after the import process is completed. The import process deletes the file after the specified time period. Default is 1 minute.
   ```java
   spring.jms.jndi.name
   ```
   Specifies the JNDI name of the JMS queue.
   ```java
   spring.jms.jndi-name
   ```
   Specifies the JNDI name of the JMS connection factory.
3. Save the file.

### Configuring the Keystore and D&B Linkage Properties

Specify the properties related to the keystore and the D&B linkage service in the `c360-config.properties` file.

1. Navigate to the following directory:
   `/app/tcr/config`
2. Open the `c360-config.properties` file in an editor.
3. Specify the following properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>keystore.file.path</td>
<td>Path to keystore.</td>
</tr>
<tr>
<td>keystore.pass.property.path</td>
<td>Path to the keystore password file, which is keystore-pass.properties.</td>
</tr>
<tr>
<td>application.admin.user</td>
<td>Name of the ApplicationAdministrator user that you created earlier.</td>
</tr>
<tr>
<td>base.url</td>
<td>Base URL for the business entity services. For example, http://&lt;Host&gt;:&lt;Port&gt;</td>
</tr>
<tr>
<td>daaslinkage.filter.input.cities</td>
<td>Optional. Comma-separated values of cities.</td>
</tr>
<tr>
<td>daaslinkage.filter.input.country.codes</td>
<td>Optional. Comma-separated list of country codes.</td>
</tr>
<tr>
<td>daaslinkage.filter.input.state.provinces</td>
<td>Optional. Comma-separated list of provinces.</td>
</tr>
<tr>
<td>daaslinkage.filter.input.business.relation.type</td>
<td>Default values are provided. Do not change the values.</td>
</tr>
<tr>
<td>daaslinkage.company.input.order.reason.code</td>
<td>Optional.</td>
</tr>
<tr>
<td>daaslinkage.be.view</td>
<td>Default value is provided. Change only if you want to use a different view for linkage.</td>
</tr>
<tr>
<td>daaslinkage.source.system</td>
<td>Source system.</td>
</tr>
<tr>
<td>daaslinkage.enabled.ors</td>
<td>Comma-separated list of ORS names where the DaaS linkage service is enabled.</td>
</tr>
</tbody>
</table>

4. Save the file.

**Configuring the Keystore Password**

Specify the keystore password in the keystore-pass.properties file.

1. Navigate to the following directory:
   /app/tcr/config
2. Open the keystore-pass.properties file in an editor.
3. Specify the keystore.password parameter.
4. Save the file.
Configuring the Log File Path

Specify the path of the log file in the c360-log4j.properties file.

1. Navigate to the following directory:
   /app/tcr/config
2. Open the c360-log4j.properties file in an editor.
3. For the log4j.appender.FILE.File property, specify the path of the log file.
4. Save the file.

Editing the Resource Bundle Files

The resource bundle files contain the locale specific validation messages. If required, you can edit the files to add custom validation messages.

1. Navigate to the following directory:
   /app/tcr/resource
2. Open the locale specific file that you want to edit.
3. Edit the file as required.
4. Save the file.

Copying the JDBC Drivers

Before you install Customer 360, copy the JDBC driver for your database to the following directory: /app/tcr/lib
Installing MDM - Customer 360

After you perform the pre-installation tasks, you can install MDM - Customer 360.

1. Navigate to the following directory:
   
   `/app/tcr/bin`

2. Run one of the following scripts:
   
   - On Windows: `install-tcr.bat`
   - On Linux: `install-tcr.sh`

3. At the prompts, enter the following parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDM Hub installation directory</td>
<td>Fully qualified path to the directory where you installed MDM Hub.</td>
</tr>
<tr>
<td>MDM - Customer 360 installation directory</td>
<td>Fully qualified path to the directory that contains the Customer 360 files.</td>
</tr>
<tr>
<td>Application Server</td>
<td>Name of the application server in lowercase.</td>
</tr>
<tr>
<td>avos console username</td>
<td>ActiveVOS Console user name.</td>
</tr>
<tr>
<td>avos console password</td>
<td>ActiveVOS Console password.</td>
</tr>
<tr>
<td>PIM portal username</td>
<td>Product 360 user name. If you do not want to enable the Product 360 service, press Enter.</td>
</tr>
<tr>
<td>PIM portal password</td>
<td>Product 360 password.</td>
</tr>
<tr>
<td>linkage service license</td>
<td>D&amp;B linkage service license. If you do not want to enable the linkage service, press Enter.</td>
</tr>
<tr>
<td>Parameter</td>
<td>Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>linkage username</td>
<td>D&amp;B linkage service user name.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: For the linkage service, create a separate user in the MDM Hub with the ApplicationAdministrator role.</td>
</tr>
<tr>
<td>linkage password</td>
<td>D&amp;B linkage service password.</td>
</tr>
</tbody>
</table>

**Note**: If you use a Weblogic application server, you are prompted to enter the Weblogic console password.
Adding User Accounts and Assign Roles

Adding User Accounts

If some business users do not have the MDM Hub user accounts, create the user accounts.

Before you begin, you can review an existing MDM Hub user account to see which authentication type is used in the Informatica MDM environment.

1. In the Hub Console, in the Configuration workbench, click Users.
2. Acquire a write lock.
3. On the Users tab, click the Add user button.
   The Add User dialog box appears.
4. Enter the first, middle, and last names for the user.
5. Enter the user name for the user. The user must use the user name to log in to the Hub Console.
6. Enter the default database for the user, which is the Operational Reference Store that contains the customer master data.
7. Enter and verify a password for the user.
8. Choose the type of authentication.
   - If your MDM Hub implementation uses authentication through a third-party security provider, select **Use external authentication**.
   - If you want to use the internal authentication in the MDM Hub, clear **Use external authentication**.

9. Click **OK**.
   
   The Users tool adds the user to the list of users.

### Role Privileges

The following table lists the user roles and their privileges:

<table>
<thead>
<tr>
<th>Role</th>
<th>Add or edit a customer profile</th>
<th>Review and Approve customer profiles or profile updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>ApplicationAdministrator</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sales Operation Analyst</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Sales Operation Manager</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Assigning Roles to Business Users

You need to assign user roles to the business users who are responsible for reviewing the new customer profiles and the edited customer profiles.

Use the Hub Console to assign user roles. You can follow the role-first or user-first approach. For a role-first approach, you select a role and then select the users and user groups that you want to associate with the role. For a user-first approach, you select a user or user group and then select the roles for the user or user group.

1. In the Hub Console, connect to the Operational Reference Store of Customer 360.
2. Acquire a write lock.
3. In the Security Access Manager workbench, click **Users and Groups**.
   
   The Users and Groups tool opens.
4. If you want to follow the role-first approach, on the **Assign Users/Groups to Role** tab, perform the following steps:
   a. Select a workflow role.
   b. Click the **Edit** button.
      
      The **Assign users to Role** dialog box appears.
   c. Select the users and user groups to whom you want to assign the role.
   d. Click **OK**.
   e. Repeat the steps for other workflow roles.
5. If you want to follow the user-first approach, on the **Assign Roles to User/Group** tab, perform the following steps:
   a. Select a user or user group.
   b. Click the **Edit** button.
The Assign users to Role dialog box appears.

- Select the workflow roles suitable for the user or user group.
- Click OK.
- Repeat the steps for other users and user groups.

**Configure the Operational Reference Store**

Before you start the Customer 360 application, configure the Operational Reference Store that contains customer data. You must disable a trigger, truncate the data in a repository table, and review the value of the GETLIST Limit property.

**Truncating a Repository Table**

If you imported the Oracle database dump, the repository table C_REPOS_RPTDETAILS contains sample data. You must truncate the data.

1. In a database tool, connect to the Operational Reference Store for C360.
2. Run the following command:
   
   `truncate table C_REPOS_RPTDETAILS`

**Populate Customer 360 Charts with Data**

Customer 360 contains a Home Page that contains charts with metrics or data about customers and tasks. The data for all charts come from the data mart service.

The data mart service retrieves data from the Operational Reference Store and stores the results in a repository table. When the Home page loads, the page queries the data mart service for the data and populates the charts.

**Note:** In the data mart service and configuration files, the term report refers to the chart configuration.

To populate the charts, perform the following tasks:

1. Import the chart configurations into a repository table.
2. Configure a database connection between the data mart and the database that contains the Operational Reference Store.
3. Configure the report parameters to include the database name.
4. Populate the data mart with report data.
Charts and Graphs

Charts and graphs on the Home page contain enterprise-level information about all customers and tasks. You can view a visual representation of the customers and related information. You can view the breakdown of tasks, grouped by their state and priority.

The following table lists the charts that the Home page displays:

<table>
<thead>
<tr>
<th>Chart</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customers Added by Year</td>
<td>Displays the number of customers added in each year.</td>
</tr>
<tr>
<td>Customer Onboarding Time</td>
<td>Displays how long it took to qualify customers.</td>
</tr>
<tr>
<td>Source Systems</td>
<td>Displays the percentage of customer data that comes from each source system in each year.</td>
</tr>
<tr>
<td>Tasks Overview</td>
<td>Displays the total number of tasks and breaks down the tasks by status and priority.</td>
</tr>
</tbody>
</table>

Importing Customer 360 Chart Configurations

To import the chart configurations, run an insert script on the Customer 360 Operational Reference Store (ORS). The script imports the chart configurations into the C_REPOS_RPT_CONFIG repository table.

1. Open a command prompt.
2. Navigate to the following directory:
   `<MDM Installation Directory>/app/tcr/damart/chart-config`
3. Use a database tool to run the `insert_c_repos_rpt_config.sql` script.
   For example, log in with the ORS user name and password and the service name and then run the script.
   ```
   .../chart-config> sqlplus <C360 ORS>/password$service SQL> @insert_c_repos_rpt_config.sql
   ```

   The script inserts the charts into the C_REPOS_RPT_CONFIG repository table.

Configuring the Data Mart Database Connection

Before you can generate reports or populate charts, you must configure the data mart database connection.

1. Navigate to the following directory:
   `<MDM Installation Directory>/app/tcr/damart/lib`
2. If the directory is empty, copy the following files from the `<MDM installation directory>/hub/server/lib` directory to the `<MDM installation directory>/app/tcr/damart/lib` directory:
   - log4j-1.2.16.jar
   - ojdbc7.jar
   - siperian-common.jar
   - commons-validator<version number>.jar
3. Navigate to the following directory:
   `<MDM Installation Directory>/app/tcr/damart`
4. Extract the contents of the populate_datamart.jar file.

5. Open the following file in an editor:
   
   ```
   <Directory Containing Extracted Files>/META-INF/MANIFEST.MF
   ```

6. To the Class-Path parameter, add the following value:
   
   ```
   lib/commons-validator-<version number>.jar
   ```

7. Save the file.

8. Open a command prompt.

9. Run the following command:

    ```
    java -jar populate_datamart.jar config
    ```

10. At the prompt, type C to configure the database connection.

11. Answer the prompts described in the following table:

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection Name</td>
<td>Enter a unique name for the connection. If the name exists, the connection is overwritten.</td>
</tr>
<tr>
<td>Type of Connection</td>
<td>Enter the type of connection to the data mart. Currently only DB is supported.</td>
</tr>
<tr>
<td>Database vendor</td>
<td>Enter the database to connect with, such as Oracle or IBM DB2.</td>
</tr>
<tr>
<td>User</td>
<td>Enter the database user.</td>
</tr>
<tr>
<td>Password</td>
<td>Enter the database password.</td>
</tr>
<tr>
<td>Token</td>
<td>Reserved for future use.</td>
</tr>
<tr>
<td>Host Name</td>
<td>Enter the database host name.</td>
</tr>
<tr>
<td>Port</td>
<td>Enter the database port.</td>
</tr>
<tr>
<td>Database Name</td>
<td>Enter the database name/SID.</td>
</tr>
</tbody>
</table>

12. When prompted to finish the configuration, enter Y.

   The connection information is saved in the following file: `/app/tcr/datamart/config/mart-population-config.xml`

### Configuring the Report Parameters

Before you can populate the data mart, you must configure the report parameters for the chart configuration.

1. Open a command prompt.

2. Navigate to the data mart directory.

   ```
   <MDM Installation Directory>/app/tcr/datamart
   ```

3. Run the following command:

   ```
   java -jar populate_datamart.jar config
   ```

4. Type P to configure the report parameters.
5. Answer the prompts described in the following table:

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Name</td>
<td>Specify a report name that appears in the following file: <code>/app/tcr/datamart/config/report-class-mapping.properties file</code>.</td>
</tr>
<tr>
<td>Report Configuration ID</td>
<td>Enter the report configuration ID for the report as it appears in the C_REPOS_RPT_CONFIG table.</td>
</tr>
<tr>
<td>Mart Connection Name</td>
<td>Enter the connection name for connecting the data mart to the Operational Reference Store. Use the connection name that you defined for the Operational Reference Store that contains the customer data.</td>
</tr>
<tr>
<td>Query Connection Name</td>
<td>Enter the connection name for the database to be queried.</td>
</tr>
<tr>
<td></td>
<td>- For reports that include the word Tasks, specify the connection name that you defined for the ActiveVOS database.</td>
</tr>
<tr>
<td></td>
<td>- For all other reports, specify the connection name that you defined for the Operational Reference Store that contains the customer data.</td>
</tr>
</tbody>
</table>

6. When prompted to finish the configuration, enter N.
7. Repeat the steps for other reports.
8. After you enter all tables, exit the configuration tool.

The parameters are saved in the following file: config/mart-population-config.xml.

**Populating the Data Mart with Data**

Run a java command to populate the data mart with data for all charts or for a specific chart. If you want to specify a chart, use its report name.

1. Open a command prompt.
2. To populate the data mart with data for all the available reports, run the following command:
   ```bash
   java -jar populate_datamart.jar
   ```
3. To populate the data mart with data for a specific report, run the following command:
   ```bash
   java -jar populate_datamart.jar exec <report name>
   ```

If the MDM Hub contains data, the C_REPOS_RPTDETAILS repository table is populated with report data. The ROWID_RPT_CONFIG column links the data to the report configuration that requested the data.

**Configuring the Product 360 Connection Parameters**

Configure the Product 360 server connection parameters to display the product data from the party role product table in the dashboard view of a customer.

1. In the Provisioning tool, click **UI Configuration > Component Editor**.
   The **Component Editor** appears.
2. In the **Components** list, select **C360 Product Widget**, and then select **ProductComponent**.
3. In the **Properties** panel, specify the values in the XML code for the following parameters:

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>productHost</td>
<td>Name of the Product 360 server.</td>
</tr>
<tr>
<td>productPort</td>
<td>Port on which the host listens.</td>
</tr>
</tbody>
</table>

4. Optionally, edit the `structureSystem` parameter value to remove the default Heiler Standard structure system, and specify the new structure system.

5. Optionally, edit other default parameter values in the code.

   **Note:** The `contentType` parameter does not support the TIFF image format.

6. Click **Apply**.

7. Publish the changes to the MDM Hub.
   a. Click **Publish**.
      A change confirmation dialog box appears that prompts you to confirm the changes.
   b. Review the changes, and click **Confirm**.
      A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.
   c. Click one of the following buttons:
      - **Publish**. Saves the changes to the MDM Hub.
      - **No**. The changes remain in the temporary workspace.

---

**Integrating Informatica MDM - Relate 360**

You can integrate Relate 360 with Customer 360 to view the relationship graph. A relationship graph displays all the related business entities of a Person business entity and its relationships with the related business entities.

You must create a custom view to display the relationship graph for a Person business entity. You can also create a graph component to display an aggregate view of the related business entities in the Person dashboard.

To integrate Relate 360 with Customer 360, perform the following tasks:

1. Create an external resource for the relationship graph.
2. Design a layout for the Person business entity view to display the relationship graph.
3. Create an external resource for the aggregate view of the relationship graph.
4. Edit the layout of Person dashboard to include the aggregate view of the relationship graph.

Before you integrate Relate 360 with Customer 360, use Relate 360 to process the Customer 360 data and other data related to the customers.

For more information about Relate 360, see the Informatica MDM - Relate 360 documentation set.
Creating an External Resource for the Relationship Graph

An external resource is a custom component that you can add to a layout. For the relationship graph, configure an external resource that you can add to the Person business entity view.

For more information about external resource, see the Informatica MDM Multidomain Edition Provisioning Tool Guide.

1. In the Provisioning tool, click **UI Configuration > Component Editor**.
   The **Component Editor** appears.

2. In the **Components** list, select **External Resources**, and click **Create**.
   The **Properties** panel appears.

3. Specify a name for the external resource.

4. Add the following XML code format for the external resource:
   
   ```xml
   <iframe src="http://<Host>:<Port>/<Relationship Graph UI WAR Name>/noshell/graph/<Source>/Customer/{{rowidObject}}/network" width="100%" height="800px"></iframe>
   ```
   The XML code format uses the following parameters:
   
   **Host**
   
   Host name or IP address of the machine on which you deploy the Relate 360 relationship graph user interface WAR file.

   **Port**
   
   Port on which the host listens.

   **Relationship Graph UI WAR Name**
   
   Name of the relationship graph user interface WAR file that you deploy on the host.

   **Source**
   
   Source name of the business entities. If you do not have the source name for the business entities, use the source name that you used in Relate 360 to process the customer data.

   The following sample XML code creates an external resource for the relationship graph:

   ```xml
   ```

5. Click **Apply**.

6. Publish the changes to the MDM Hub.
   
   a. Click **Publish**.
      A change confirmation dialog box appears that prompts you to confirm the changes.

   b. Review the changes, and click **Confirm**.
      A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.

   c. Click one of the following buttons:
      
      - **Publish**. Saves the changes to the MDM Hub.
      - **No**. The changes remain in the temporary workspace.
Design a Layout for the Person Business Entity View

After you create an external resource for the relationship graph, design a layout to include the external resource for the Person business entity view.

1. In the Provisioning tool, click **UI Configuration > Layout Designer**.
   
   The **Layout Designer** appears.

2. Click **Create > Entity View**.
   
   The **Define Layout Properties** page appears.

3. Define properties for the layout that you want to design.
   
   a. Specify the following properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Layout name</td>
<td>Label for the layout that you design. After you design and publish the layout, the label appears in the layout list in the Layout Designer.</td>
</tr>
<tr>
<td>Unique label</td>
<td>Label used for generating a system ID.</td>
</tr>
<tr>
<td>Description</td>
<td>Optional. A meaningful description to identify the layout.</td>
</tr>
<tr>
<td>List option name</td>
<td>Label for the option that you want in the Informatica Data Director views list.</td>
</tr>
<tr>
<td>List option icon</td>
<td>Icon for the list option that appears in the views list.</td>
</tr>
<tr>
<td>List order</td>
<td>Order of Entity view in the views list.</td>
</tr>
</tbody>
</table>

   b. To assign the layout to the Person business entity view, select **Person > CustomPersonView**.

4. Click **Next**.
   
   The **Define Purpose** page appears.

5. Specify the purpose of the layout that you want to design.
   
   a. Select the user roles that can access the layout.

   The user roles that appear on the **Define Purpose** page are configured in the MDM Hub environment.

   b. Select **Edit entities**.

6. Click **Next**.
   
   The **Select a Template** page appears.

7. Select **Template 1**, and click **Next**.
   
   The **Design** page appears.

8. Drag the external resource that you created for the relationship graph into the workspace.

9. Click **Save**.
   
   The changes are saved to the temporary workspace.

10. Publish the changes to the MDM Hub.
    
    a. Click **Publish**.

    A change confirmation dialog box appears that prompts you to confirm the changes.

    b. Review the changes, and click **Confirm**.
A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.

c. Click one of the following buttons:
   • **Publish**. Saves the changes to the MDM Hub.
   • **No**. The changes remain in the temporary workspace.

Creating an External Resource for the Aggregate View

Configure an external resource for the aggregate view of the relationship graph. The aggregate view displays an aggregated view of the related business entities for a Person business entity.

1. In the Provisioning tool, click **UI Configuration > Component Editor**.

   The Component Editor appears.

2. In the **Components** list, select **External Resources**, and click **Create**.

   The Properties panel appears.

3. Specify a name for the external resource.

4. Add the following XML code format for the external resource:

   ```
   <iframe src="http://<Host>:<Port>/<Relationship Graph UI WAR Name>/noshell/graph/<Source>/Customer/{{rowidObject}}/aggregate" width="100%" height="800px"></iframe>
   ```

   The XML code format uses the following parameters:

   **Host**
   
   Host name or IP address of the machine on which you deploy the Relate 360 relationship graph user interface WAR file.

   **Port**
   
   Port on which the host listens.

   **Relationship Graph UI WAR Name**
   
   Name of the relationship graph user interface WAR file that you deploy on the host.

   **Source**
   
   Source name of the business entities. If you do not have the source name for the business entities, use the source name that you used in Relate 360 to process the customer data.

   The following sample XML code creates an external resource for the aggregate view:

   ```
   ```

5. Click **Apply**.

6. Publish the changes to the MDM Hub.
   a. **Click Publish**.
      
      A change confirmation dialog box appears that prompts you to confirm the changes.

   b. **Review the changes**, and click **Confirm**.
      
      A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.

   c. **Click one of the following buttons**:
      
      • **Publish**. Saves the changes to the MDM Hub.
Edit the Layout of Person Dashboard

After you create an external source for the aggregate view of the relationship graph, edit the layout of Person dashboard to include the aggregate view.

1. In the Provisioning tool, click **UI Configuration > Layout Designer**.
   The **Layout Designer** appears.
2. Expand the **CustomerPerson** layout category, and select **layout2**.
3. Click **Edit**.
   The **Design** page appears.
4. Drag the external resource that you created for the aggregate view into the workspace.
5. Click **Save**.
   The changes are saved to the temporary workspace.
6. Publish the changes to the MDM Hub.
   a. Click **Publish**.
      A change confirmation dialog box appears that prompts you to confirm the changes.
   b. Review the changes, and click **Confirm**.
      A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.
   c. Click one of the following buttons:
      - **Publish**. Saves the changes to the MDM Hub.
      - **No**. The changes remain in the temporary workspace.
Chapter 5

Business Processes for Customer Management

This chapter includes the following topics:

- Workflows, 37
- User Roles, 37
- Role Privileges, 38
- Task Types, 38

Workflows

Business processes automate some common customer lifecycle management workflows. Customer 360 ships with ActiveVOS business processes for the following workflows:

- Create a customer person or customer organization.
- Update a customer profile.

User Roles

User roles control the write privileges. User roles for business users control the data privileges in the ORS and also the review privileges in business processes. Each business user who is authorized to participate in reference data management receives one or more role assignments. Many users can have the same role.

Customer 360 has the following user roles:

- Sales Operation Analyst
- Sales Operation Manager
- Application Administrator
Role Privileges

The following table lists the user roles and summarizes the role privileges:

<table>
<thead>
<tr>
<th>Role</th>
<th>Add or edit a customer person or customer organization</th>
<th>Approve customer person or customer organization or profile updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>ApplicationAdministrator</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Sales Operation Analyst</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Sales Operation Manager</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Task Types

By default, workflows are triggered when a user with the Sales Operation Analyst role creates or updates a record. When a user with the Sales Operation Manager role creates or updates a record, no workflows are triggered.

The Customer 360 default configuration includes the following tasks:

<table>
<thead>
<tr>
<th>Predefined Tasks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DraftState</td>
<td>Triggered when a creator creates or updates a record and chooses to keep the change in draft state.</td>
</tr>
<tr>
<td>Notification</td>
<td>Triggered when an approver approves or rejects a record.</td>
</tr>
<tr>
<td>Update</td>
<td>Triggered when an approver sends back a record for resubmission.</td>
</tr>
<tr>
<td>FinalReview</td>
<td>Triggered when a creator sends a new record or an updated record for approval.</td>
</tr>
</tbody>
</table>

The following steps summarize what happens when a user with the Sales Operation Analyst role creates or updates a record and a user with the Sales Operation Manager role approves the record:

<table>
<thead>
<tr>
<th>Task</th>
<th>Task Owner</th>
<th>Possible Actions</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>DraftState</td>
<td>Creator</td>
<td>Submit</td>
<td>Record is submitted for approval. Record is assigned to the users with the Sales Operation Manager role.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discard</td>
<td>Record is deleted.</td>
</tr>
<tr>
<td>FinalReview</td>
<td>Approver</td>
<td>Claim</td>
<td>User claims the tasks. Record appears in the task inbox of the user.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Disclaim</td>
<td>Record is assigned back to the users with the Sales Operation Manager role.</td>
</tr>
<tr>
<td>Task</td>
<td>Task Owner</td>
<td>Possible Actions</td>
<td>Result</td>
</tr>
<tr>
<td>--------------</td>
<td>------------</td>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Approve</td>
<td>Record is promoted. Notification sent to the creator.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reject</td>
<td>Record is deleted. Notification is sent to the creator.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Send Back</td>
<td>Record is sent back to the creator with comments.</td>
</tr>
<tr>
<td>Update</td>
<td>Creator</td>
<td>Submit</td>
<td>Record is resubmitted for approval. Moves to the FinalReview workflow.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discard</td>
<td>Record is deleted.</td>
</tr>
<tr>
<td>Notification</td>
<td>Creator</td>
<td>Ok</td>
<td>Closes the workflow.</td>
</tr>
</tbody>
</table>
Customizing Customer 360 Overview

After you configure Customer 360, you can customize some of the features to suit your environment. The customization includes extending the data model, modifying the layout for the dashboard view of a customer, modifying the Home page, and adding custom charts and user interface components.

Customizing the Layout

The Customer 360 user interface consists of multiple components. Each component displays data related to an entity. You can configure some of the components that appear in a Customer 360 view.

You can customize the following three user interfaces:

- **Home page**: The default page you see when you log into Customer 360.

- **Person dashboard**: When you open a customer profile, you see the customer dashboard. If the customer is a person, the page you see is the Person dashboard.

- **Organization dashboard**: If the customer is an organization, the page you see is the Organization dashboard.

The default Customer 360 layout comes with preconfigured components. The configuration is present in the `C_REPOS_COMPONENT_INSTANCE` table.
User Interface Components

The Customer 360 user interface consists of default components and external link components. You can edit the default configuration of Customer 360 user interface components.

You can edit the configuration of the following components:

- Task Manager
- My Records
- DaaS Provider
- Data View
- File Import

You can edit the configuration of the following external link components:

- Social
- Overview
- Financials
- Identifiers
- Indicators
- Twitter

You can also add custom external link components and charts.

Components and Parent Elements

The following table lists the parent XML elements for each of the default components:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>components</td>
<td>Top level element that contains the component configuration.</td>
</tr>
<tr>
<td>taskManager</td>
<td>Name of the component for Task Manager. Contains the configuration for the Task Manager.</td>
</tr>
<tr>
<td>myRecordsManager</td>
<td>Name of the component for My Records. Contains the configuration for My Records.</td>
</tr>
<tr>
<td>daasProviders</td>
<td>Name of the component for the DaaS providers. Contains the configuration for the display of the match grade information received from the DaaS provider.</td>
</tr>
<tr>
<td>bulkImport</td>
<td>Name of the component for File Import. Contains the templates for file import.</td>
</tr>
<tr>
<td>dataView</td>
<td>Name of the component for the display of the Draft check box when you create or update a business entity record.</td>
</tr>
</tbody>
</table>
Customizing the Dashboard Components

To customize the dashboard components, use the Application Editor of the Provisioning tool.

1. In the Provisioning tool, click UI Configuration > Application Editor. The Application Editor appears.
2. In the Applications list, select C360 Application Configuration, and then select C360WidgetConfiguration.
3. In the Properties panel, update the values in the XML code as required.
4. Click Apply.
5. Publish the changes to the MDM Hub.
   a. Click Publish. A change confirmation dialog box appears that prompts you to confirm the changes.
   b. Review the changes, and click Confirm. A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.
   c. Click one of the following buttons:
      • Publish. Saves the changes to the MDM Hub.
      • No. The changes remain in the temporary workspace.

XML code for the Task Manager and My Records Components Configuration

The following table lists the sub-elements of the taskManager and the myRecordsManager parent elements:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>taskTypes</td>
<td>Parent element for all the task types. The element contains taskType.</td>
</tr>
<tr>
<td>taskType</td>
<td>Contains the configuration for a task type. For example, UpdateWithApproval or FinalReview. You configure the task types in Tasks configuration as part of the CCO configuration. The Tasks configuration is present in the C_REPOS_CO_CS_CONFIG repository table. Has the name attribute which specifies the name of the task.</td>
</tr>
<tr>
<td>role</td>
<td>Role of the user for which you configure the workflow. Note: You specify the configuration for a task type and a user role. The element contains enableEditRecordDetails, enableAssignTo, and actions.</td>
</tr>
<tr>
<td>enableAssignTo</td>
<td>Indicates whether the assign to a user option is available for the task type and user role. Set to true to make the option available to the user with the role and set to false to make the option unavailable.</td>
</tr>
<tr>
<td>actions</td>
<td>Set of actions that are available for each task. Each task type has a set of possible actions that you can perform in the task context. The element contains action.</td>
</tr>
</tbody>
</table>
The DaaS Providers component contains the configuration to display the match grade information that the DaaS provider returns.

The following sample code shows the configuration of the My Records component.

```xml
<myRecordsManager>
  <!-- Task types as configured in Tasks in CO CS Config -->
  <taskTypes>
    <taskType name="AVOSBeDraftState">
      <role name="SalesOperationAnalyst">
        <enableAssignTo>false</enableAssignTo>
        <!-- Action of task as configured in BPR(ActiveVOS workflow) -->
        <actions>
          <action name="Submit">
            <enableCommentOnAction>false</enableCommentOnAction>
          </action>
          <action name="Discard">
            <enableCommentOnAction>true</enableCommentOnAction>
            <isCommentMandatory>false</isCommentMandatory>
            <actionMessage><![CDATA[If you discard the record, the record will be deleted.]]></actionMessage>
          </action>
        </actions>
      </role>
    </taskType>
  </taskTypes>
</myRecordsManager>
```

**XML Code for the DaaS Providers Component Configuration**

The DaaS Providers component contains the configuration to display the match grade information that the DaaS provider returns.

The following table lists the sub-elements of `daasProviders` element:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>daasProvider</td>
<td>Contains the configuration for a DaaS provider. Has the name attribute.</td>
</tr>
<tr>
<td>dataPackets</td>
<td>Data that the DaaS provider returns.</td>
</tr>
</tbody>
</table>
Ensure that you follow the XML example to write the XML code for the configuration correctly. The following sample code is an excerpt of the `daasProviders` configuration:

```xml
<daasProviders>
    <!-- DAAS provider configuration for particular provider -->
    <daasProvider name="D&amp;B">
        <dataPackets>
            <dataPacket>Detailed Company Profile</dataPacket>
            <dataPacket>Corporate Hierarchy</dataPacket>
        </dataPackets>
        <matchGradeValues>
            <matchGrade>
                <value>A</value>
                <description>Content is the same</description>
            </matchGrade>
            <matchGrade>
                <value>B</value>
                <description>Content is similar</description>
            </matchGrade>
            <matchGrade>
                <value>F</value>
                <description>Content is different</description>
            </matchGrade>
            <matchGrade>
                <value>2</value>
                <description>One or both components are blank</description>
            </matchGrade>
        </matchGradeValues>
        <matchGradeDetail>
            <gradeDetail name="Name" label="Company Name">
                <scoreDetail>
                    <score>00</score>
                    <text>Matches primary name</text>
                </scoreDetail>
            </gradeDetail>
        </matchGradeDetail>
    </daasProvider>
</daasProviders>
```

Refer to the DaaS provider documentation for more information about the match grades.

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>matchGradeValues</td>
<td>Parent element for the match grade values that the DaaS provider returns.</td>
</tr>
<tr>
<td>matchGrade</td>
<td>Each match grade value. Contains the value and description.</td>
</tr>
<tr>
<td>matchGradeDetail</td>
<td>Parent element.</td>
</tr>
<tr>
<td>grade</td>
<td>Grade that the DaaS provider returns.</td>
</tr>
</tbody>
</table>
XML Code for the File Import Component Configuration

The File Import component configuration is used to specify the templates that you can use to import data into Customer 360. Ensure that you follow the XML example to write the XML code for the configuration correctly.

The following table lists the sub-elements of File Import element:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>templates</td>
<td>Top-level element. Contains: template</td>
</tr>
<tr>
<td>template</td>
<td>Name of the import template. Has the name attribute.</td>
</tr>
</tbody>
</table>

The following sample code shows the File Import component configuration:

```xml
<bulkImport>
  <templates>
    <template name="CustomerPersonView" />
    <template name="CustomerOrgView" />
    <template name="ContactView" />
  </templates>
</bulkImport>
```

XML Code for the Data View Component Configuration

The Data View component configuration specifies the business entity for which the Draft check box must be displayed.

The following table lists the sub-elements of the Data View element:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>draft</td>
<td>Parent element. Contains: draftCoName and draftDefault</td>
</tr>
<tr>
<td>draftCoName</td>
<td>Business entity name for which the Draft checkbox must be displayed.</td>
</tr>
<tr>
<td>draftDefault</td>
<td>Indicates whether the Draft check box must be selected by default.</td>
</tr>
</tbody>
</table>

The following sample code shows the Data View component configuration:

```xml
<dataView>
  <draft>
    <draftCoName>draftInd</draftCoName>
    <!-- CO name of the draft field which is to be rendered -->
    <draftDefault>true</draftDefault>
    <!-- Default value of the field -->
  </draft>
</dataView>
The `widgets` element contains the configuration for the external link components.

The following table lists the sub-elements in the `widgets` section:

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>widget</td>
<td>Parent element that contains the configuration for a widget or external link.</td>
</tr>
<tr>
<td>social</td>
<td>Contains the URLs for social media. For example, <code>&lt;Facebook&gt;http://www.facebook.com/Facebook&lt;/Facebook&gt;</code>. Ensure that you use the same format in the implementation configuration. The element contains Facebook, Twitter, and other social media URLs.</td>
</tr>
<tr>
<td>b2b</td>
<td>Contains the configuration for a business-to-business customer profile.</td>
</tr>
<tr>
<td>overview</td>
<td>Title of the overview section. The element contains <code>title</code> and <code>section</code>.</td>
</tr>
<tr>
<td>title</td>
<td>Title of a section in the user interface.</td>
</tr>
<tr>
<td>section</td>
<td>Contains the configuration for a column in the widget. The element contains <code>field</code>.</td>
</tr>
<tr>
<td>field</td>
<td>Contains the configuration for a field in the user interface. Has the following attributes:</td>
</tr>
<tr>
<td></td>
<td>o group. Indicates whether the fields must be displayed as a group.</td>
</tr>
<tr>
<td></td>
<td>o view. Can be set to <code>horizontal</code> to show the field labels and values in the same line. Else, the value appears below the field.</td>
</tr>
<tr>
<td></td>
<td>The element contains <code>label</code>, <code>type</code>, <code>coValue</code>, <code>defaultValue</code>, <code>defaultKey</code>, <code>defaultKeyValue</code>, <code>getStrategy</code>, <code>coFieldValues</code>, <code>concatenateWith</code>, and <code>filterAs</code>.</td>
</tr>
<tr>
<td>label</td>
<td>Text that appears for the field in the user interface.</td>
</tr>
<tr>
<td>type</td>
<td>Specifies the data type of the field. Has the following data types:</td>
</tr>
<tr>
<td></td>
<td>o <code>img</code>. Indicates image.</td>
</tr>
<tr>
<td></td>
<td>o <code>text</code>. Indicates text.</td>
</tr>
<tr>
<td></td>
<td>o <code>address</code>. Indicates address.</td>
</tr>
<tr>
<td></td>
<td>o <code>phone</code>. Indicates phone number.</td>
</tr>
<tr>
<td></td>
<td>o <code>email</code>. Indicates email address.</td>
</tr>
<tr>
<td></td>
<td>o <code>social</code>. Indicates social.</td>
</tr>
<tr>
<td></td>
<td>o <code>currency</code>. Indicates currency.</td>
</tr>
<tr>
<td></td>
<td>o <code>textWithIcon</code>. Indicates text with an icon. Replace with CSS class.</td>
</tr>
<tr>
<td>coValue</td>
<td>Business entity child or field, including the path.</td>
</tr>
</tbody>
</table>
The following sample code shows the configuration of the identifiers external link component:

```xml
<identifiers>
  <title>Identifiers</title>
  <field>
    <label>DUNS</label>
    <type>text</type>
    <coValue>CustomerOrgRole_item_0_CustomerOrgIdentifiers</coValue>
    <defaultValue>-</defaultValue>
    <defaultKey>dl1tInd</defaultKey>
    <defaultKeyValue>1</defaultKeyValue>
    <getStrategy>getByEffectiveStartDate[effStrtDt]_altIdTyp_idTyp[DUNS]</getStrategy>
    <coFieldValues>altIdVal</coFieldValues>
    <concatenateWith />
    <filterAs />
  </field>
</field>
</section>

<field>
  <label>ParentDUNS</label>
  <type>text</type>
  <coValue>CustomerOrgRole_item_0_CustomerOrgIdentifiers</coValue>
  <defaultValue>-</defaultValue>
  <defaultKey>dl1tInd</defaultKey>
  <defaultKeyValue>1</defaultKeyValue>
  <getStrategy>getByEffectiveStartDate[effStrtDt]_altIdTyp_idTyp[ParentDUNS]</getStrategy>
  <coFieldValues>altIdVal</coFieldValues>
</field>
```

**Table: Configuration Elements**

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>getStrategy</td>
<td>Determines how a value is selected when the field has multiple values. Use the element only for child records. Has the following values:</td>
</tr>
<tr>
<td></td>
<td>- defaultOrFirstOne. Default value or the first value in the list is selected. You can either specify the default value or specify the business entity field</td>
</tr>
<tr>
<td></td>
<td>- getOne. Get the first available value.</td>
</tr>
<tr>
<td></td>
<td>- all. Get all values.</td>
</tr>
<tr>
<td></td>
<td>- getByEffectiveStartDate. Effective start date. If the effective start date is not available, then the last updated date is used to select the value.</td>
</tr>
<tr>
<td>defaultValue</td>
<td>If the desired value is not found, the value to be displayed for the field in the user interface.</td>
</tr>
<tr>
<td>defaultKey</td>
<td>If you specify the default strategy as defaultOrFirstOne, specify the name of the business entity field. For example, default indicator.</td>
</tr>
<tr>
<td>defaultKeyValue</td>
<td>If you specify the default strategy as defaultOrFirstOne, specify the value of the default key.</td>
</tr>
<tr>
<td>coFieldValues</td>
<td>Contains the business entity fields that contain the value you want to display on the user interface. Follow the parent-child relationships until you reach the required element of field.</td>
</tr>
<tr>
<td>concatenateWith</td>
<td>Specifies how to concatenate the fields. For example, comma-separated or space.</td>
</tr>
<tr>
<td>filter</td>
<td>Reserved for future use.</td>
</tr>
</tbody>
</table>
The sample code shows the configuration of four identifiers, SSN, TIN, Driver License Number, and Passport Number.

The following image shows the Identifiers section in the user interface:

![Identifiers Section](image)

**XML Code for the Twitter Component**

The configurable parameter in the Twitter component configuration is the number of tweets.

The following sample code shows the Twitter configuration:

```xml
<twitter>
  <numberOfTweets>5</numberOfTweets>
</twitter>
```

<field>
  <label>Social</label>
  <type>social</type>
  <coValue>CustomerOrgRole_item_0_CustomerOrgSocialHandle</coValue>
  <defaultValue>1</defaultValue>
  <defaultKey>df1t1nd</defaultKey>
  <defaultKeyValue>1</defaultKeyValue>
  <coFieldValues>scIMdaVal</coFieldValues>
  <concatenateWith> </concatenateWith>
  <getStrategy>getOne_scIMdaTyp_sclMediaTyp[Twitter]</getStrategy>
  <filterAs />
</field>
```
Use the `numberofTweets` element to specify the number of tweets that you want to display in the user interface. All other XML elements are standard elements that you use in an external link configuration.

Charts Configuration

Charts and graphs in the Home page contain enterprise-level information about all the customers and tasks. You can add or delete charts or modify a chart configuration to display the information you want.

The Customer 360 default configuration includes the following charts and graphs:

- Customers Added by Year
- Customer Onboarding Time
- Source Systems
- Tasks Overview

The data for the charts comes from the data mart. The data mart service retrieves data from the Operational Reference Store and stores the results in a repository table. When the Home page loads, the page queries the data mart service for the data and populates the charts.

The data mart uses the `C_REPOS_RPTDETAILS` table. The chart configurations are stored in the `C_REPOS_COMPONENT_INSTANCE` table.

Adding a Custom Chart

You can add a custom chart to the Home page of Customer 360. Customer 360 uses the Highcharts charting library for the charts. To add a custom chart, create an external resource for the custom chart, and then add the external resource to the Home page layout.

1. In the Provisioning tool, click `UI Configuration > Component Editor`.
   The Component Editor appears.
2. In the `Components` list, select `External Resources`, and click `Create`.
   The Properties panel appears.
3. Specify a name for the chart.
4. Add the code for the custom chart.
   You can refer to the code of the existing charts, such as `CustomerAddedByYearChart` or `SourceSystemsChart`, to understand the code format of a chart.
5. Click `Apply`.
6. Click `UI Configuration > Layout Designer`.
   The Layout Designer appears.
7. Expand the `Start Page` layout category, and then select `layout1`.
8. Click `Edit`.
   The Design page appears.
9. Drag the external resource that you created for the custom chart into the workspace.
10. Click **Save**.
    The changes are saved to the temporary workspace.

11. Publish the changes to the MDM Hub.
    a. Click **Publish**.
        A change confirmation dialog box appears that prompts you to confirm the changes.
    b. Review the changes, and click **Confirm**.
        A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.
    c. Click one of the following buttons:
        - **Publish**. Saves the changes to the MDM Hub.
        - **No**. The changes remain in the temporary workspace.

### REST Web Services for Charts and Reports

Use REST Web Services to extract data from the C_REPOS_RPTDETAILS table and display the data in the charts.

You can use the following REST web services:

- **Report Details**. Retrieves data for a particular report. The web service also returns the metadata information about the report. You can retrieve data based on filters.
- **Report Facet**. Retrieves the unique values present in any column of the C_REPOS_RPTDETAILS table. Use the values as filters to retrieve data from the table.

#### Report Details Web Service

The web service returns the data from the C_REPOS_RPTDETAILS table for a specific report. The web service uses the GET method.

#### Report Details URL

The Report Details URL has the following format:

```
http://<host>:<port>/Customer360/services/<database ID>/reports/details
```

*where database ID is the ID of the ORS that is registered in the Databases tool in the Hub Console.*

#### Query Parameters

The following table lists the query parameters for the Report Details web service:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reportId</td>
<td>ID of the report.</td>
</tr>
<tr>
<td>qryParamString</td>
<td>Optional. Filter condition that can be added as a part of a WHERE clause.</td>
</tr>
<tr>
<td></td>
<td>If you include Date data type as filter, date must be provided in milliseconds. For example, 1400092200000.</td>
</tr>
</tbody>
</table>

**Sample request with no filters specified**
The following sample request returns the details of a report with ID 4:

http://localhost:8080/Customer360/services/localhost-orcl-TCR_HUB/reports/details?reportId=4

Sample response

The following sample response shows the details of the report with ID 4:

```
{
  "metadata": {
    "ROWID_RPT_CONFIG": "4 ",
    "DIMENSION_NAME_1": "Subject area",
    "DIMENSION_NAME_2": "null",
    "TIMEPERIOD_NAME": "Year",
    "RPT_NAME": "MDM Business Entity Growth Trends",
    "METRIC_NAME": "Number Of Records",
    "RPT_DESC": "MDM Business Entity Growth Trends",
    "RPT_TYPE": "null"
  },
  "data": [
    {"Organization": "null", "2011-JAN-10": 450},
    {"Organization": "null", "2012-JAN-10": 266}
  ],
  "TCR": "null", "2013-JAN-10": 450,
  "Customer": "null", "2014-JAN-10": 12903
}
```

Sample request with filters

The following sample request returns the details of a report based on the specified filter and ID 4:


The following sample response shows the details of the report with ID 4:

```
{
  "metadata": {
    "ROWID_RPT_CONFIG": "4 ",
    "DIMENSION_NAME_1": "Subject area",
    "DIMENSION_NAME_2": "null",
    "TIMEPERIOD_NAME": "Year",
    "RPT_NAME": "MDM Business Entity Growth Trends",
    "METRIC_NAME": "Number Of Records",
    "RPT_DESC": "MDM Business Entity Growth Trends",
    "RPT_TYPE": "null"
  },
  "data": [null]
}
```
Report Facet Web Service

The Report Facet web service returns the list of unique values for the specified column for the specified report. You can use the values as filters. Use the GET method for the web service.

Report Facet URL

The Report Facet URL has the following format:

http://<host>:<port>/Customer360/services/<database ID>/reports/facets

Query Parameters

The following table lists the query parameters for the Report Facet web service:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>reportId</td>
<td>ID of the report.</td>
</tr>
<tr>
<td>facetType</td>
<td>Any column of the C_REPOS_RPTDETAILS table.</td>
</tr>
</tbody>
</table>

Sample request

The following sample request returns the unique values in the DIMENSION_VALUE_1 column for the report with ID 4:

http://localhost:8080/Customer360/services/localhost-orcl-TCR_HUB/reports/facets?reportId=1&facetType=DIMENSION_VALUE_1

Sample response

```json
{
  "data": [
    "Organization",
    "null",
    "2012-JAN-10",
    "266"
  ],
  "TCR",
  "null",
  "2013-JAN-10",
  "450"
}
```
Extending the Data Model

You can extend the Customer 360 data model by changing the physical schema or by adding types and values to some of the existing tables. You can also add new tables and attributes.

To extend the data model, perform the following steps:
1. Compare your business requirements with the existing schema.
2. List the tables and columns that you want to add.
3. Take a backup of the existing schema.
4. Review the guidelines to extend the data model.
5. Add the tables and columns.

Guidelines for Extending the Data Model

You can modify the definitions of tables or add new tables to the database.

Consider the following guidelines when you extend the data model:

- Check if you can use an existing child base object.
- Do not add a root base object to store the person or organization information.
- Do not define tables with names greater than 24 characters.
- Do not delete existing base objects.
- Do not delete existing columns.
- Do not modify the physical names of existing base objects. However, you can modify the display names.
- Do not modify the data type of an existing column.
- Do not decrease the length of an existing column.
- Prefix the names of the new base object tables to distinguish the tables from the existing tables. The prefix indicates the type of table. Use the following naming convention when you create a base object:

<table>
<thead>
<tr>
<th>Prefix</th>
<th>Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>C_XO_</td>
<td>Entity root or child base object.</td>
</tr>
<tr>
<td>C_XR_</td>
<td>Relationship base object.</td>
</tr>
<tr>
<td>C_XT_</td>
<td>Lookup base object.</td>
</tr>
</tbody>
</table>

- If you add a column to an existing table, prefix the name of a column with x_.

For more information about adding tables and columns, see the Informatica MDM Multidomain Edition Configuration Guide.
Guidelines for Adding Base Objects

You can add base objects to extend the data model. You can add root or child base objects, lookup base objects, and relationship base objects.

Consider the following guidelines when you add a base object table:

- **Child base object with one-to-many relationship.** Add a Party Role foreign key in the table to relate the table to the Party Role table.
- **Child base object with many-to-many relationship.** Use the relationship base object to relate the table to the Party Role table.
- **Lookup base object.** Set the LookupIndicator to true.

Extending the Customer 360 Resources

Based on the business requirements, you can extend the Customer 360 resources. For example, to extend business entities, you can create a business entity or a lookup business entity. After you create a business entity, you can add a business entity view. You can also add a child, field, or reference fields to an existing business entity.

Guidelines for Extending the Customer 360 Resources

When you extend the Customer 360 resources, follow the naming guidelines so that you can distinguish the custom resources from the predefined Customer 360 resources.

The following table lists the naming guidelines for different Customer 360 resources:

<table>
<thead>
<tr>
<th>Resource</th>
<th>Guidelines</th>
</tr>
</thead>
</table>
| Business entity and business entity view                                 | - Add the prefix Ex to the names of the new business entities or lookup entities. For example, Ex_<Business Entity Name>.  
- Add the prefix Ex_ to the names of the new child, field, or reference field. For example, Ex_<Business Entity Child Name>.  
- Do not add a new view to an existing business entity. Create a new business entity, and then add the business entity view. |
| Relationship type, queries, packages hierarchy, and hierarchy code      | Add the prefix X.                                                                                                                                 |
| Staging tables                                                          | Add the prefix C_X.                                                                                                                                 |
| Business entity relationships, transformations, business entity service extensions, and component instances, such as layouts and external links | Add the prefix Ex.                                                                                                                                 |
Chapter 7

Upgrading Customer 360

This chapter includes the following topics:

- Upgrade Overview, 55
- Before You Upgrade, 55
- Upgrading Customer 360, 62
- Updating the Charts, 63

Upgrade Overview

A Customer 360 environment can include a development environment, a test environment, and a production environment. You must upgrade each of these environments. As a best practice, upgrade your development environment first. Identify and resolve any upgrade issues. After you successfully upgrade the development environment, you can upgrade the test and production environments with a high degree of confidence.

Before you upgrade Customer 360, review the Product Availability Matrix to learn about changes to the system requirements.

You can find the Product Availability Matrix on Informatica Network:

Before You Upgrade

Before you upgrade Customer 360, upgrade the MDM Multidomain Edition installation and back up the Customer 360 installation files.

1. Upgrade the MDM Multidomain Edition installation to a supported version.
2. Back up the Customer 360 library and configuration files.
3. Extract the latest Customer 360 application archive file.
4. Copy the Customer 360 configuration files to the tcr folder.
5. Configure the base URL for the business entity services.
6. Import the latest Customer 360 application metadata.
Upgrading MDM Multidomain Edition

Upgrade the MDM Multidomain Edition environment to a supported version.

For more information about upgrading MDM Multidomain Edition, see the Informatica MDM Multidomain Edition Upgrade Guide.

Backing Up the Customer 360 Library and Configuration Files

Before you back up the Customer 360 library and configuration files, ensure that you close the Customer 360 user interface and the Provisioning tool.

1. Go to the following directory:
   <MDM Installation Directory>/app
2. Rename the tcr folder.
   For example, rename the folder to tcr_backup.

Extracting the Customer 360 Application Archive File

You receive the Customer 360 application as an archive file. Create the following directory structure and extract the contents of the Customer 360 archive file into it:

<MDM Installation Directory>/app/tcr

The extracted content contains the following files and folders:

- **bin/**. Contains installation scripts.
- **bpm/**. Contains the ActiveVOS default business process in a deployable format.
  - pre_c360_10.2_hf2/. Directory that contains the default business processes for the Party Role table-based data model.
- **cleanse/**. Contains custom Java cleanse functions.
- **config/**. Contains configuration properties files.
- **data/**. Contains the scripts for inserting lookup or reference data.
- **datamart/**. Contains the data mart service and the chart configurations.
  - chart-config/, config/, and lib/. Directories that contain the chart configurations.
  - populate_datamart. Data mart service for the Party table-based data model.
  - pre_c360_10.2_hf2/. Directory that contains the data mart service for the Party Role table-based data model.
- **docs/**. Contains the data dictionary.
  - pre_c360_10.2_hf2. Directory that contains the data dictionary for the Party Role table-based data model.
- **hub/**. Contains the subdirectories that contain the database schema and the configuration files to deploy.
  - cocs-config-xml/. Contains configuration files for the business entities and business entity services.
  - entity360config-xml/. Contains copies of the Entity 360 component instance definitions that ship with MDM Multidomain Edition.
• change.xml. Contains the MDM Hub metadata including components, such as landing tables, lookup tables, staging tables, base objects, and match and merge rules, cleanse functions, component instances, business entities, and business entity services.

• idd/. Contains IDD application archive to support Hierarchy Manager interface.

• lib/. Directory for the external libraries. Copy the JDBC driver files for your database to the lib directory.

• notices/. Contains the legal copyright file.

• pre_c360_10.2_hf2/. Directory that contains the Task Manager, My Records, Timeline, File Import, Charts, and Linkage-related services for the Party Role table-based data model.

• resources/. Contains the resource bundle.properties files for each of the supported locales.

• user_exit/. Contains the MDM Hub user exit archive.

• customer360view-ear.ear and uiwebapp-ear.ear. Files for the Customer 360 user interface.

• Customer360.war. File that contains the Task Manager, My Records, Timeline, File Import, Charts, and Linkage-related services for the Party table-based data model.

Copying the Customer 360 Configuration Files

To retrieve the existing Customer 360 configuration, copy the backed up Customer 360 configuration files to the newly created tcr folder.

1. Copy all the files in the following directory:
   <MDM Installation Directory>/app/<renamed tcr folder>/config

2. Paste the files in the following directory:
   <MDM Installation Directory>/app/tcr/config

   **Note:** You must replace the existing files.

Configuring the Application Properties File

In the application.properties file, configure the properties related to file import and ActiveVOS.

1. Navigate to the following directory:
   /app/tcr/config

2. Open the application.properties file in an editor, and configure the following properties:

   activevos.datasource.url
   
   Specifies the JNDI name of the ActiveVOS data source.

   bulkimport.fileupload.cleanupMinutes
   
   Optional. Manually add the bulkimport.fileupload.cleanupMinutes property. Specifies the number of minutes to persist the import file in the specified directory after the import process is completed. The import process deletes the file after the specified time period. Default is 1 minute.

3. Save the file.
Configuring the Base URL for the Business Entity Services

If the base URL is not previously configured, configure the base URL for the business entity services to access the Hub Server.

1. Open the following file in a text editor:
   
   ```
   <MDM Installation Directory>/app/tcr/config/c360-config.properties
   ```

2. Configure an appropriate URL for the `base.url` property to access the Hub Server.
   
   Use one of the following formats for the base URL based on your environment:
   
   - `http://<Host>:<Port>`
     
     Host indicates the host name or the IP address of the machine on which you deploy Customer 360 and Port indicates the port number on which the host listens.
   
   - `http://<Domain name>`
     
     Domain name indicates the fully qualified domain name of the machine that hosts Customer 360.

Updating the Customer 360 Database Schema

Use the latest change list file to update the Customer 360 database schema. Move the incremental changes from the change list to the Operational Reference Store (ORS) of Customer 360 and promote the incremental changes.

**Note:** If you upgrade Customer 360 from version 10.2 HotFix 2, do not update the database schema because your database schema is already up-to-date.

The latest change list supports new relationship types for the CustomerOrg business entity type. You can use the existing `employee` relationship type with the new ones or replace the `employee` relationship type with the new ones. If you do not want to use the new ones, you can continue to use the `employee` relationship type. If you want to replace the `employee` relationship type, contact Global Customer Support for assistance. For information about the new relationship types, see the *Informatica MDM - Customer 360 Release Guide*.

1. Back up the Operational Reference Store (ORS) of Customer 360.

2. In the Configuration workbench of the Hub Console, click **Repository Manager**.
   
   The Repository Manager tool opens.

3. To select the source repository, perform the following tasks:
   
   a. On the **Promote** tab, click **Visual**.
   
   b. Click the **Select** button next to the **Source** list.
      
      The **Open Repository** dialog box appears.
   
   c. On the **File Repository** tab, browse to the following directory:
      
      ```
      <MDM Installation Directory>/app/tcr/change-xml/pre_c360_10.2_hf2
      ```
   
   d. Select the TCR_HUB.change.xml file, and click **Open**.
      
      The Repository Manager tool loads and validates the repository from the selected file.
   
   e. Click **OK**.
      
      The Repository Manager tool displays the source repository as a hierarchical tree.

4. To select the target repository, in the **Target** list, select the ORS of Customer 360.
5. In the hierarchy tree of the source repository, select the following objects:

<table>
<thead>
<tr>
<th>Parent Object</th>
<th>Hierarchy</th>
<th>Objects to Promote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Objects</td>
<td>C_BO_PRTY &gt; Message Triggers</td>
<td>CustomerOrg Trigger</td>
</tr>
<tr>
<td>Business Entity/Business Entity Services Configurations &gt; View Configuration &gt; Views</td>
<td>CustomerOrgView &gt; Children &gt; CustomerOrgElectronicAddress (many) &gt; Fields</td>
<td>etrncAddr</td>
</tr>
<tr>
<td></td>
<td>CustomerOrgView &gt; Children &gt; CustomerOrgElectronicAddress (many) &gt; Children &gt; CustomerOrgEAddrPreferences (many) &gt; Fields</td>
<td>avlbtyTyp tmPrdGrpFk</td>
</tr>
<tr>
<td></td>
<td>CustomerOrgView &gt; Children &gt; CustomerOrgPhone (many) &gt; Children &gt; CustomerOrgPhonePreferences (many) &gt; Fields</td>
<td>avlbtyTyp tmPrdGrpFk</td>
</tr>
<tr>
<td></td>
<td>CustomerOrgView &gt; Children &gt; CustomerOrgPhone (many) &gt; Fields</td>
<td>phnNum</td>
</tr>
<tr>
<td></td>
<td>CustomerOrgView &gt; Children &gt; CustomerOrgPostalAddress (many) &gt; Children &gt; CustomerOrgAddressPreferences (many) &gt; Fields</td>
<td>avlbtyTyp tmPrdGrpFk</td>
</tr>
<tr>
<td></td>
<td>CustomerPersonView &gt; Children &gt; CustomerPersonElectronicAddress (many) &gt; Children &gt; CustomerPersonEAddrPreferences (many) &gt; Fields</td>
<td>avlbtyTyp tmPrdGrpFk</td>
</tr>
<tr>
<td></td>
<td>CustomerPersonView &gt; Children &gt; CustomerPersonElectronicAddress (many) &gt; Fields</td>
<td>etrncAddr</td>
</tr>
<tr>
<td></td>
<td>CustomerPersonView &gt; Children &gt; CustomerPersonPhone (many) &gt; Children &gt; CustomerPersonPhonePreferences (many) &gt; Fields</td>
<td>avlbtyTyp tmPrdGrpFk</td>
</tr>
<tr>
<td></td>
<td>CustomerPersonView &gt; Children &gt; CustomerPersonPhone (many) &gt; Fields</td>
<td>phnNum</td>
</tr>
<tr>
<td></td>
<td>CustomerPersonView &gt; Children &gt; CustomerPersonPostalAddr (many) &gt; Children &gt; CustomerPersonAddrPreferences (many) &gt; Fields</td>
<td>avlbtyTyp tmPrdGrpFk</td>
</tr>
<tr>
<td>Queries</td>
<td>Query Group Report</td>
<td>Query Custom Party Info Query Custom Party Postal Address</td>
</tr>
</tbody>
</table>

**Note:** When you promote changes to a query, the Repository Manager tool replaces the existing query. If you use any customized query, clone it before you promote changes to it.
6. If you want to use the new relationship types for the CustomerOrg business entity type, select the following objects:

<table>
<thead>
<tr>
<th>Parent Object</th>
<th>Hierarchy</th>
<th>Objects to Promote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Entity/Business Entity Services Configurations</td>
<td>View Configuration &gt; Views &gt; CustomerOrgView &gt; Children &gt; CustomerOrgContacts (many) &gt; Fields</td>
<td>hmRelTypCd</td>
</tr>
<tr>
<td></td>
<td>Business Entities &gt; Objects &gt; CustomerOrg &gt; Children &gt; CustomerOrgContacts (many) &gt; Fields</td>
<td>hmRelTypCd</td>
</tr>
<tr>
<td></td>
<td>Business Entities &gt; Relationships</td>
<td>OrganizationContactContactPerson OrganizationContactEmployeePerson OrganizationCustomerContactPerson OrganizationCustomerEmployeePerson</td>
</tr>
<tr>
<td></td>
<td>Business Entity Services &gt; Services</td>
<td>ReadOrganizationContactContactPerson ReadOrganizationContactEmployeePerson ReadOrganizationCustomerContactPerson ReadOrganizationCustomerEmployeePerson WriteOrganizationContactContactPerson WriteOrganizationContactEmployeePerson WriteOrganizationCustomerContactPerson WriteOrganizationCustomerEmployeePerson</td>
</tr>
<tr>
<td>Parent Object</td>
<td>Hierarchy</td>
<td>Objects to Promote</td>
</tr>
<tr>
<td>---------------</td>
<td>-----------</td>
<td>--------------------</td>
</tr>
<tr>
<td></td>
<td>REST Business Entity Service Configuration &gt; Requests</td>
<td>ReadOrganizationContact ContactPerson ReadOrganizationContact EmployeePerson ReadOrganizationCustomerContactPerson ReadOrganizationCustomerEmployeePerson WriteOrganizationContact ContactPerson WriteOrganizationContact EmployeePerson WriteOrganizationCustomerContactPerson WriteOrganizationCustomerEmployeePerson</td>
</tr>
<tr>
<td>Component Instances</td>
<td>OrgContactHierarchy</td>
<td></td>
</tr>
<tr>
<td>Hierarchies</td>
<td>Profiles &gt; Default &gt; Relationship Types</td>
<td>ContactContact ContactEmployee CustomerContact CustomerEmployee</td>
</tr>
<tr>
<td></td>
<td>Relationship Objects &gt; C_BR_PRTY_REL &gt; Relationship Types</td>
<td>ContactContact ContactEmployee CustomerContact CustomerEmployee</td>
</tr>
</tbody>
</table>

**Note:** When you promote changes to a component instance, the Repository Manager tool replaces the existing component instance. If you use any customized component instance, clone it before you promote changes to it.

7. To promote the selected objects, perform one of the following tasks:
   - Right-click the selected objects, and select **Promote**.
   - Click the **Promote** icon.
   - Drag the selected objects from the source repository to the target repository.

8. If the Repository Manager tool detects any conflicts in the target repository, select an appropriate action.

9. After you resolve the conflicts, click the **Apply Changes** icon.

**Adding the Employee Relationship Type**

If you want to use the existing employee relationship type with the new ones, after you update the database schema, add the employee relationship type to the CustomerOrg business entity type.

**Note:** If you upgrade Customer 360 from version 10.2 HotFix 2, do not add the employee relationship type because the employee relationship type already exists in your environment.

1. In the Provisioning tool, click **Business Entity > Modeling**.
2. Select **Business Entities**, and then select **CustomerOrg**.
3. In the **Tree View** panel, expand **many > CustomerOrgContacts > field > hmRelTypCd**.

4. In the **Properties** panel, include **Employee** as a value.
   
   The value then becomes **ContactEmployee, ContactContact, Employee**.

5. Click **Apply**.

6. Click **UI Configuration > Component Editor**.

7. Select **Related Records**, and then select **OrgContactHierarchy**.

8. In the **Tree View** panel, select **filter**, and then click **Create**.

9. In the **Properties** panel, specify a name for the filter with prefix **Ex**. For example, **Ex_OrgEmpPerson**.

10. Select **relationship** as the type of filter.

11. Select **OrganizationEmployeePerson** as the filter value.

12. Click **Apply**.

13. Publish the changes to the MDM Hub.
   
   a. Click **Publish**.
      
      A change confirmation dialog box appears that prompts you to confirm the changes.
   
   b. Review the changes, and click **Confirm**.
      
      A validation process runs on the application. A confirmation dialog box appears that prompts you to publish the changes.
   
   c. Click one of the following buttons:
      
      - **Publish**. Saves the changes to the MDM Hub.
      - **No**. The changes remain in the temporary workspace.

---

**Upgrading Customer 360**

After you import the application metadata, run the installation script to upgrade Customer 360.

1. At a command prompt, go to the following directory:

   `<MDM Installation Directory>/app/tcr/bin`

2. Run one of the following scripts based on your operating system:

   - On Windows. `upgrade-tcr.bat`
   - On Linux. `upgrade-tcr.sh`

3. At the prompts, enter the following parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDM Hub installation directory</td>
<td>Fully qualified path to the directory where you installed MDM Hub.</td>
</tr>
<tr>
<td>MDM - Customer 360 installation directory</td>
<td>Fully qualified path to the directory that contains the Customer 360 files.</td>
</tr>
<tr>
<td>Application Server</td>
<td>Name of the application server in lowercase.</td>
</tr>
</tbody>
</table>
### Parameter Description

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>avos console username</td>
<td>ActiveVOS Console user name.</td>
</tr>
<tr>
<td>avos console password</td>
<td>ActiveVOS Console password.</td>
</tr>
<tr>
<td>PIM portal username</td>
<td>Product 360 user name that you entered in the previous installation. If you do not want to enable the Product 360 service, press Enter.</td>
</tr>
<tr>
<td>PIM portal password</td>
<td>Product 360 password that you entered in the previous installation.</td>
</tr>
<tr>
<td>linkage service license</td>
<td>D&amp;B linkage service license. If you do not want to enable the linkage service, press Enter.</td>
</tr>
<tr>
<td>linkage username</td>
<td>D&amp;B linkage service user name.</td>
</tr>
<tr>
<td>linkage password</td>
<td>D&amp;B linkage service password.</td>
</tr>
</tbody>
</table>

**Note:** If you use a WebLogic application server, you are prompted to enter the WebLogic console password.

---

### Updating the Charts

After you upgrade Customer 360, you can update a specific chart or all the charts.

1. At a command prompt, go to the following directory:
   - If you upgrade Customer 360 from version 10.2 or 10.2 HotFix 1. `<MDM Installation Directory>/app/tcr/datamart/pre_c360_10.2_hf2`
   - If you upgrade Customer 360 from version 10.2 HotFix 2. `<MDM Installation Directory>/app/tcr/datamart`

2. To update a specific chart, run the following command:
   ```
   java -jar populate_datamart.jar exec <report name>
   ```

3. To update all the charts, run the following command:
   ```
   java -jar populate_datamart.jar
   ```
CHAPTER 8

Troubleshooting

This chapter includes the following topics:

- Generate Business Entity Schema for the Customer 360 Application, 64
- Check Your Security Access Manager Configuration, 65
- Import of the IDD ZIP File Fails in IBM DB2, 65
- Financials Section of the Dashboard Displays Null Values, 66
- Provisioning Tool Does Not Respond, 66
- Installer Does Not Update the JNDI Path for JBoss, 66

Generate Business Entity Schema for the Customer 360 Application

In the Informatica Data Director Configuration Manager, if you accidentally generate business entity schema for the Customer 360 application, the Configuration Manager overwrites your business entity configuration. After you generate the business entity schema, Customer 360 does not function as expected. For example, the task inbox and the Task Manager does not display any tasks even though you have valid tasks.

To resolve this issue, perform the following tasks:

1. In the Configuration workbench of the Hub Console, click Repository Manager. The Repository Manager tool opens.
2. To select the source repository, perform the following tasks:
   b. Click the Select button next to the Source list. The Open Repository dialog box appears.
   c. On the File Repository tab, browse to the following directory:
      - For Party table-based data model. <MDM installation directory>/app/tcr/hub/change.xml
      - For Party Role table-based data model. <MDM installation directory>/app/tcr/hub/change-
        xml/pre_c360_10.2_hf2
   d. Select the TCR_HUB.change.xml file, and click Open.
      The Repository Manager tool loads and validates the repository from the selected file.
e. Click OK.

The Repository Manager tool displays the source repository as a hierarchical tree.

3. To select the target repository, in the Target list, select the ORS of Customer 360.

4. In the hierarchy tree of the source repository, select Business Entity/Business Entity Services Configurations.

5. To promote the selected object, perform one of the following tasks:
   - Right-click the selected object, and select Promote.
   - Click the Promote icon.
   - Drag the selected object from the source repository to the target repository.

The Promotion dialog box appears.

6. Select Replace the target objects with source objects, and click OK.

   The Impact Analyser dialog box appears.

7. Click OK.

8. Click the Apply Changes icon.

9. If you have extended your business entities, restore or reconfigure the extended objects.

10. On the Validate tab, select the ORS of Customer 360, and click Validate.

11. Reopen a browser, and log in to Customer 360.

---

Check Your Security Access Manager Configuration

Verify that Security Access Manager (SAM) has the correct permissions assigned at all levels.

A resource is an MDM Hub object that is used in your MDM Hub implementation. Ensure that all the resources are secure.

---

Import of the IDD ZIP File Fails in IBM DB2

In a WebSphere and IBM DB2 environment, when you import an IDD application in the Zip format, the import might fail.

To resolve the issue, use one of the following options:

- Increase the size of BLOB_DATA column to 30 MB in the CMX_SYSTEM.C_REPOS_DS_CONFIG table with the following IBM DB2 command:
  ```sql
  ALTER TABLE CMX_SYSTEM.C_REPOS_DS_CONFIG ALTER COLUMN BLOB_DATA SET DATA TYPE BLOB(31457280);
  ```

- Import and deploy the BDDConfig.xml file.
Financials Section of the Dashboard Displays Null Values

If D&B returns multiple values for total equity and annual revenue parameters, the financials section of the customer dashboard displays null values in the respective fields.

To resolve the issue, specify the value that you want to display in the Financials section of the customer dashboard.

To specify the values for the Financials section, perform the following tasks:

1. In the Provisioning tool, click UI Configuration > Application Editor.
   The Application Editor appears.
2. In the Applications list, select C360 Application Configuration, and then select C360WidgetConfiguration.
3. In the Properties panel, configure appropriate values in the following XML code block:
   
   `<field>
     <label>Annual Revenue</label>
     <type>curreny</type>
     <coValue>CustomerOrgRole_item_0_CustomerOrgAnnualRevenue</coValue>
     <defaultValue>0</defaultValue>
     <defaultKeyKey>df1Ind</defaultKeyKey>
     <defaultKeyValue>1</defaultKeyValue>
     <getStrategy>getOne_finInfoType[Annual Revenue]</getStrategy>
     <coFieldValues>ann1Rvnu_ann1RvnuCrncy_crncyCd_ann1RvnuUnt–untDesc</coFieldValues>
     <concatenateWith />
     <filterAs />
   </field>

The preceding sample XML code specifies how to select a value when D&B returns multiple values for the annual revenue field.

Provisioning Tool Does Not Respond

In the C_REPOS_CO_CS_CONFIG repository table, if the TASKS configuration contains the LookupSegmentValue business entity for a trigger, the Provisioning tool does not respond.

To fix this issue, remove the LookupSegmentValue business entity from the TASKS configuration. However, after you remove the LookupSegmentValue business entity from the TASKS configuration, you cannot add a new tag to a business entity.

Installer Does Not Update the JNDI Path for JBoss

During reinstallation of Customer 360, if you change the installation directory, the JNDI path in the JBoss application server does not reflect the change.

Restart the JBoss application server to get the changed installation directory path.