Informatica

Informatica® PowerCenter
10.5.1

Data Validation Option Installation and Configuration Guide

Informatica PowerCenter Data Validation Option Installation and Configuration Guide
10.5.1
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Table of Contents

Preface 6

Informatica Resources 6

- Informatica Network 6
- Informatica Knowledge Base 6
- Informatica Documentation 6
- Informatica Product Availability Matrices 7
- Informatica Velocity 7
- Informatica Marketplace 7
- Informatica Global Customer Support 7

Chapter 1: Prepare to Install Data Validation Option 8

Verify Informatica Services Requirements 8

Verify the System Requirements 8

Prepare the Data Validation Option Repository Database 9

- IBM DB2 Database Requirements 9
- Microsoft SQL Server Database Requirements 10
- Oracle Database Requirements 10

Configure Associated PowerCenter Users 11

Record the Configuration Information 12

Chapter 2: Install Data Validation Option 15

Before You Install 15

- Read the Release Notes 15
- Verify the License Key 15
- Extract the Installer Files 15
- Install Data Validation Option in Graphical Mode 16

Install Data Validation Option in Silent Mode 16

Chapter 3: Configure Data Validation Option 17

Configure the PowerCenter Integration Service 17

Configure PowerCenter Client Properties 17

- Create the Target Folder in the PowerCenter Repository 18
- Create a Connection to the Data Validation Option Repository 19

Configure Data Validation Client Preferences 20

- Create the Data Validation Option Repository 20
- Configure Mapping Properties 24
- Enable Informatica User Authentication 26
- Configure JasperReports Properties 28

Add the PowerCenter Repository 29

Configure Environment Variables 32

Test the Data Validation Option Installation and Configuration. . . . 33
JasperReports Server Setup. . . . 34

Chapter 4: Configuring Multiple Environments 35

Configuring Multiple Environments Overview. . . . 35
Configuration Process. . . . 36
Environment Configuration Files 36
preferences.xml. . . . 36
DVConfig.properties. . . . 38
Batch Files. . . . 38
Multiple Data Validation Option Users. . . . 39
Sample Batch Files for Multiple Users. . . . 39
Multiple Data Validation Option Repositories. . . . 39
Sample Batch Files for Multiple Data Validation Option Repositories. . . . 40
Multiple PowerCenter Versions. . . . 40
Adding Repositories of Multiple PowerCenter Versions. . . . 40
Sample Batch Files for Multiple PowerCenter Versions. . . . 41

Chapter 5: Upgrade Data Validation Option. . . . 42

Upgrade Data Validation Option Overview. . . . 42
Upgrade Data Validation Option. . . . 42
Update Informatica Authentication Configuration 43
UpdateInformaticaAuthenticationConfiguration. . . . 43

Chapter 6: Install DVOcmd on UNIX. . . . 45

Install DVOCmd on UNIX Overview. . . . 45
Prepare to Install DVOCmd on UNIX. . . . 45
Step 1. Extract the DVOCmd Files. . . . 46
Step 2. Prepare Other DVOCmd Files. . . . 46
Step 3. Configure Environment Variables. . . . 47
Step 4. Configure DVOCmd for Kerberos. . . . 48

Appendix A: Installation and Configuration Checklist. . . . 49

Installation and Configuration Checklist Overview. . . . 49
Prepare to Install Data Validation Option. . . . 49
Install Data Validation Option. . . . 50
Configure Data Validation Option. . . . 50
Install DVOCmd on UNIX. . . . 50

Index. . . . 52

Preface

Follow the instructions in the *Informatica Data Validation Option Installation and Configuration Guide* to install, configure, and upgrade Data Validation Option. It includes the installation information for DVO command line program and the commands in it. It describes how to configure multiple environments and set up standalone JasperReports server.

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CHAPTER 1

Prepare to Install Data Validation Option

This chapter includes the following topics:

- Verify Informatica Services Requirements, 8
- Verify the System Requirements, 8
- Prepare the Data Validation Option Repository Database, 9
- Configure Associated PowerCenter Users, 11
- Record the Configuration Information, 12

Verify Informatica Services Requirements

You must install and configure Informatica services before you can install Data Validation Option.

Complete the following tasks before you install and configure Data Validation Option:

- Install and configure Informatica services.
- Configure at least one PowerCenter Integration Service.
- Configure at least one PowerCenter Repository Service.
- To integrate Data Validation Option with Metadata Manager, configure a Metadata Manager Service.
- To run Data Validation reports and dashboards, configure a JasperReports Server.
- Install and configure the PowerCenter Client on the same machine where you plan to install Data Validation Option.

Verify the System Requirements

You must install Data Validation Option on a PowerCenter Client machine. Verify that the machine where you plan to install Data Validation Option meets the minimum system requirements.

Verify that the PowerCenter Client machine meets the following requirements:

Minimum system requirements

The PowerCenter Client machine where you install Data Validation Option must have at least 1 GB of RAM and 256 MB of disk space.

Based on the PowerCenter version that you use, you also need to download and install Visual C++ Redistributable Package for version 2013.

Download and install Visual C++ 2013 Redistributable Package for Visual Studio 2013 from the following link:

https://www.microsoft.com/en-us/download/details.aspx?id=40784

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PowerCenter version requirements

The PowerCenter version must be at least 10.2.0.

Permission requirements

Verify that you have permissions on the PowerCenter Client machine to complete the following tasks:

- Create and modify environment variables.
- Read from and write to the Data Validation Option installation directory and subdirectories.

For more information about product requirements and supported platforms, see the Product Availability Matrix on Informatica Network:
https://network.informatica.com/community/informatica-network/product-availability-matrices

Prepare the Data Validation Option Repository Database

Set up the database for the Data Validation Option repository. After you install Data Validation Option, you can create the Data Validation Option repository in this database.

The Data Validation Option repository database must meet the following requirements:

- The database type must be IBM DB2, Microsoft SQL Server, or Oracle.
- The database server must have at least 100 MB of disk space to create the Data Validation Option repository.
- The database user account must have permissions to create and drop tables, indexes, sequences and views, and to select, insert, update, and delete data from tables.
- Use 7-bit ASCII to create the password for the account.

IBM DB2 Database Requirements

Use the following guidelines when you set up the repository on IBM DB2:

- Ensure that the page size is at least 16 KB and use the default schema.
- Set the tablespace pageSize parameter to 32768 bytes.

- Ensure that the user name and schema name are the same.
- Do not set up the database on an IBM DB2 database cluster.
- Verify that table aliases have not been created for any tables in the database. Informatica does not support IBM DB2 table aliases for repository tables.

Microsoft SQL Server Database Requirements

Use the following guidelines when you set up the repository on Microsoft SQL Server:

- Verify that the database user account has the CONNECT, CREATE TABLE, and CREATE VIEW privileges.

Oracle Database Requirements

Use the following guidelines when you set up the repository on Oracle:

- Verify that the database user has the ALTER TABLE, CREATE INDEX, CREATE SEQUENCE, CREATE SESSION, CREATE SYNONYM, CREATE TABLE, CREATE VIEW, and INSERT INTO TABLE privileges.
- Verify that HIBERNATE_SEQUENCE has SELECT and ALTER privileges.
- Verify that public synonyms have not been created for any tables in the database. Informatica does not support Oracle public synonyms for repository tables.
- Verify that the NLS setting is compatible with the code page of the PowerCenter Integration Service process. If the PowerCenter Integration Service runs on a grid, verify the compatibility for every PowerCenter Integration Service process in the grid.

Data Validation Option Repository Support

Effective in version 10.4.0, Data Validation Option supports Oracle 19c for the Data Validation Option repository.

To use Oracle 19c as Data Validation Option Repository, copy `dworacle.jar` from Informatica installation directory to Data Validation Option installation directory.

1. Go to `<Data Validation Option installation directory>\lib`.
2. Copy the `dworacle.jar` file to a different location on the host machine.
3. For Data Validation Option client running on windows, copy `dworacle.jar` from `<Informatica installation directory>\clients\PowerCenterClient\CommandLineUtilities\MM\rcfmuUtil\lib` and paste it in `<Data Validation Option installation directory>\lib`.
   or

   For DVOCmd utility running on Unix, copy `dworacle.jar` from `<Informatica installation directory>\clients\PowerCenterClient\CommandLineUtilities\MM\rcfmuUtil\lib` and paste it in `<DVOCmd installation directory>\lib`.
4. Restart the Data Validation Option Client.

Oracle Advanced Security (ASO) Requirements

To use an Oracle database as the Data Validation Option repository with Oracle Advanced Security (ASO) enabled, download and install the Java Cryptography Extension (JCE) unlimited strength jurisdiction policy files.

If you use IBM AIX, download the unrestricted JCE policy files for older releases. The policy files are available in a file named unrestricted.zip. If you use platforms other than IBM AIX, download JCE Unlimited Strength Jurisdiction Policy Files 7. The policy files are available in a file named jce_policy-7.zip.

1. Download the .zip file that contains the JCE policy files.
   - To download the unrestricted.zip file on AIX, see https://www.ibm.com/docs/en/integration-bus/10.0?topic=authentication-downloading-installing-unrestricted-jce-policy-files
   - To download the jce_policy-7.zip file on other platforms, see http://www.oracle.com/technetwork/java/javase/downloads/jce-7-download-432124.html
2. Extract local_policy.jar and US_export_policy.jar from the .zip file to the following directory: `<Informatica installation directory>\java\jre\lib\security`
3. If you use a JasperReports Server for reports and dashboards, copy the jar files to the following directory: `<Jasperserver home>\java\jre\lib\security`

Configure Associated PowerCenter Users

Each Data Validation Option user is associated with a PowerCenter user. When you run a data validation test, the PowerCenter Integration Service runs the underlying workflow based on the credentials of the associated PowerCenter user. You must configure the user permissions and user privileges on the corresponding PowerCenter Repository Service.

Create a user account for each Data Validation Option user.

1. Log in to the Administrator tool.
2. Click the **Security** tab.
3. In the **Users** area, click the **Actions** button, and then select **Create User**.
4. Enter the user information and then click **OK**.

   If the domain uses Kerberos authentication, enter a user name that matches the Windows login name.

   You specify this PowerCenter user when you add the PowerCenter repository for Data Validation Option.
5. Select the user in the **Users** area.
6. Click the **Privileges** tab.
7. Select the PowerCenter Repository Service.

   The **Edit Roles and Privileges** dialog box appears.
8. On the **Roles** tab, expand the folder for the PowerCenter Repository Service.
9. Enable the PowerCenter Connection Administrator custom role.
10. Click **OK**.
11. Click the **Permissions** tab.

    The **Permissions** tab shows that no permissions are assigned to the user.
12. Select the PowerCenter Repository Service.

13. Click the **Edit Direct Permissions** button.

    The **Edit Direct Permissions** dialog box appears.
14. In the **Access** column, select **Allow**.
15. Click **OK**.

    The **Permissions** tab shows that the user has permission on the PowerCenter Repository Service.

Record the Configuration Information

When you install and configure Data Validation Option, you need to know information about the domain, services, and databases. Use the tables in this section to record information that you need.

Data Validation Option Repository Information

When the installation completes you are prompted to configure the Data Validation Option repository.

The following table gives Data Validation Option repository information:

Name	Description
Data Validation Option users	Names of the Data Validation Option users. If you plan to use Informatica authentication, you can use a domain user name. If the name does not match a name in the domain, you must link the names through the DVOCmd LinkDVOUsersToInformatica command.
Repository database type	The database type for the Data Validation Option repository.
Database driver	The database driver.
URL to the database	The URL of the database type.
Database user	The database user name.
Database password	The password for the database user.

Domain Information

After you install Data Validation Option, you need information about the domain when you configure the Data Validation Client.

Tthe following table gives domain information:

Name	Description
Informatica domain	Name of the Informatica domain.
PowerCenter Integration Service	Name of the PowerCenter Integration Service.
PowerCenter Repository Service	Name of the PowerCenter Repository Service.
PowerCenter repository user name	User name of the PowerCenter repository.

Name	Description
PowerCenter repository password	Password of the PowerCenter user.
Location of the domains.infa file	Location of the domains.infa file on a machine that hosts Informatica services.
Metadata Manager Service host	Optional. Host name of the machine that hosts the Metadata Manager Service.
Metadata Manager Service port	Optional. Port on which the Metadata Manager Service runs. Default is 10250.
Resource name	Optional. Name of the Metadata Manager resource for the PowerCenter repository for Data Validation Option.

User Authentication Information

If you plan to use Informatica authentication, you need information about user authentication when you configure the Data Validation Client. You can get information from the domain file nodemeta.xml. You can find nodemeta.xml in the following directory: `<Informatica installation directory>\isp\config`

The following table gives user authentication information:

Name	Description
Informatica Server Host Name	Host name of the machine where you installed Informatica. Use the `host` attribute of the `address` element in nodemeta.xml.
Informatica Server HTTP Port	Port number through which Data Validation Option accesses the domain. Use the `httpport` attribute.
Is Secure Connection	Indicates whether TLS is enabled in the domain. Use the `tlsEnabled` element in nodemeta.xml.

JasperReports Information

To add the Data Validation Option reports and dashboards to the recommended JasperReports Server, configure the JasperReports properties.

The following table describes JasperReports server properties:

Properties	Description
JasperReports Server Host name	Host name of the JasperReports Server.
JasperReports Server Port	Port number of the JasperReports Server.
JasperReports Server Web Application Name	Name of the JasperReports web application.

Properties	Description
JasperReports Server Root Folder	JasperReports Server folder that stores the Data Validation Option reports. Data Validation Option creates the folder on the Jaspersoft Server after you configure the JasperReports properties.
Is Secure Connection	Select if the JasperReports Server runs on a secure connection.

CHAPTER 2

Install Data Validation Option

This chapter includes the following topics:

- Before You Install , 15
- Install Data Validation Option in Silent Mode, 16

Before You Install

Before you install Data Validation Option, complete tasks such as extracting the installer files and verifying the license key.

Read the Release Notes

Read the Release Notes for updates to the installation and upgrade process. You can also find information about known and fixed limitations for the release.

Verify the License Key

Before you install the software, verify that you have the license key available.

When you download the installation files from the Informatica Electronic Software Download (ESD) site, the license key is in an email message from Informatica. Copy the license key file to a directory accessible to the user account that installs the product.

Contact Informatica Global Customer Support if you do not have a license key or if you have an incremental license key and you want to create a domain.

Extract the Installer Files

The installer files are compressed and distributed as a compressed file.

You can get the installation file from the FTP link contained in your fulfillment email. Download the Informatica installation tar file from the Informatica Electronic Software Download site to a directory on your machine and then extract the installer files.

Extract the installer files to a directory on your machine. The user that runs the installer must have read and write permissions on the installer files directory and execute permissions on the executable file.

Note: Make sure that you download the file to a local directory or a shared network drive that is mapped on your machine. You can then extract the installer files. However, you cannot run the installer from a mapped file. Copy the extracted files to a local drive and then run the installer.

Install Data Validation Option in Graphical Mode

You can install Data Validation Option in graphical mode.

1. Close all other applications.
2. Run `Install_DataValidator_<version>_Release_Build.exe` on the machine where you want to install Data Validation Option.
3. Click **Next**.
4. Enter the absolute path for the installation directory.

   The installation directory must be on the current machine. The path must not contain spaces or the dollar sign ($). The maximum length of the path must be less than 260 characters.
5. Click **Next**.
6. Optionally, select the Start Menu folder or enter the folder name.
7. To create a shortcut for all users, select **Create Shortcuts for All Users**.
8. Click **Next**.

   The installer copies the Data Validation Client files to the installation directory.
9. After the installer copies the files, click **Finish**.

   A message appears indicating that the Data Validation Option needs to be configured.
10. Complete the installation without performing configuration.
    You will configure Data Validation Option in a later task.

You can view the installation log file to get more information about the tasks performed by the installer. You can find the `installation.log` file in the following directory: `<Data Validation Option installation directory>\.install4j`

Install Data Validation Option in Silent Mode

You can install Data Validation Option in silent mode. Use silent mode to install Data Validation Option on multiple machines. You can create a batch file to run the installation on each machine.

1. Copy the Data Validation Option installer to the client machine.

   You can use software, such as Tivoli, to copy the installer.
2. Run the following command on the client machine:

   ```
   Install_DataValidator_10.5.1_Release_Build.exe -q
   -dir <Data Validation Option installation directory>
   ```

   Enclose the directory path with double quotes if the directory path has spaces. For example, you can use the following syntax:

   ```
   Install_DataValidator_10.5.1_Release_Build.exe -q
   -dir "C:\Program Files(x86)\Informatica<version>\DVO"
   ```

After you complete the silent installation, you must configure Data Validation Option on each machine.

CHAPTER 3

Configure Data Validation Option

This chapter includes the following topics:

- Configure the PowerCenter Integration Service, 17
- Configure PowerCenter Client Properties, 17
- Configure Data Validation Client Preferences, 20
- Add the PowerCenter Repository, 29
- Configure Environment Variables, 32
- Test the Data Validation Option Installation and Configuration, 33
- JasperReports Server Setup, 34

Configure the PowerCenter Integration Service

The PowerCenter Integration Services uses Java to run data validation tests. The dvoct.jar file contains the libraries that the PowerCenter Integration Service uses to run Data Validation Option tests.

You must copy the dvoct.jar file to the PowerCenter Integration Service machine and then configure the location of the file in the Administrator tool. If the PowerCenter Integration Service runs on a grid, copy the file to all machines that run the service process and configure the location for each service process.

1. Copy the dvoct.jar file from the Data Validation Client machine to any location on the PowerCenter Integration Service machine.

   You can find the dvoct.jar file in the following directory on the Data Validation Client machine:

   ```
   <Data Validation Option installation directory>\DVO\powercenterlibs
   ```

2. In the Administrator tool, edit the PowerCenter Integration Service process properties.
3. Specify the full path and file name of dvoct.jar in the **Java SDK Classpath** property.

   For example, specify the following value for Windows: `C:\Program Files (x86)\Informatica<version>\DVO\powercenterlibs\dvoct.jar`. To add multiple values in **Java SDK Classpath** property, separate the values with a semicolon for Windows or a colon for UNIX or Linux.

Configure PowerCenter Client Properties

Before you can use Data Validation Option, you need to configure the PowerCenter repository to connect to the Data Validation Option repository and to store data validation objects.

Create the Target Folder in the PowerCenter Repository

The target folder in the PowerCenter repository stores the Data Validation Option objects such as mappings, sessions, and workflows. Create a folder for each PowerCenter user associated with Data Validation Option.

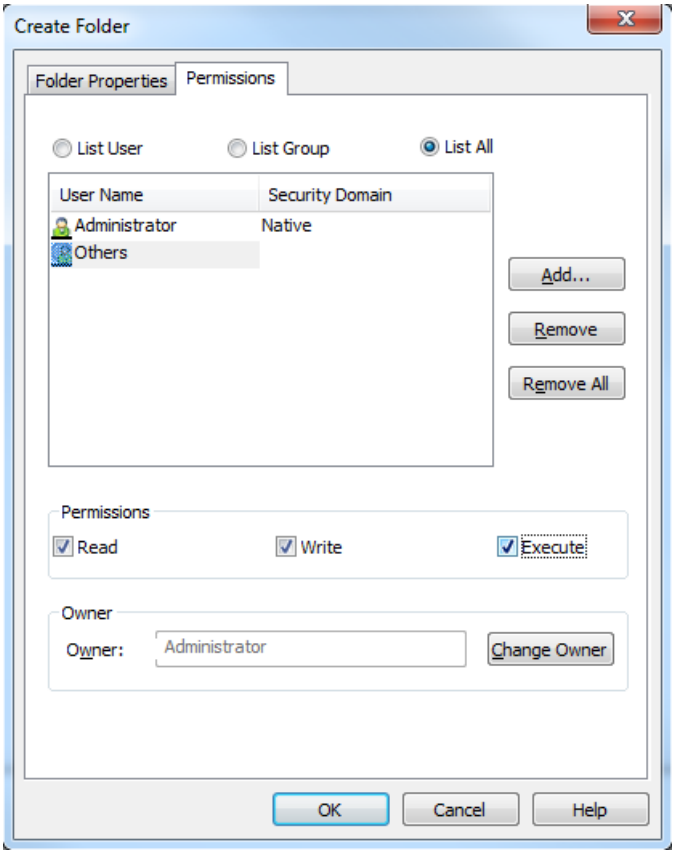
1. In the PowerCenter Repository Manager, right-click the PowerCenter repository and then select **Connect**.
2. Click **Folders** > **Create**.

   The **Create Folder** dialog box appears.
3. Enter the folder properties.

   Enter a folder name for Data Validation Option objects. For example, enter the name DataValidationOption_Objects.

   Note: Do not use "Folder" as the folder name, as it is a reserved word that causes an exception when used.
4. Click the **Permissions** tab.

   The **Permissions** tab shows the permissions for each user on the folder.



5. Select the PowerCenter user associated with Data Validation Option.
6. Grant Read, Write, and Execute permissions on this folder to the user.
7. Record the PowerCenter repository name.

   You must specify this repository name when you add a PowerCenter repository for Data Validation Option.
8. Record the folder name.

   You must specify this folder name as the target folder when you add a PowerCenter repository in the Data Validation Client properties.

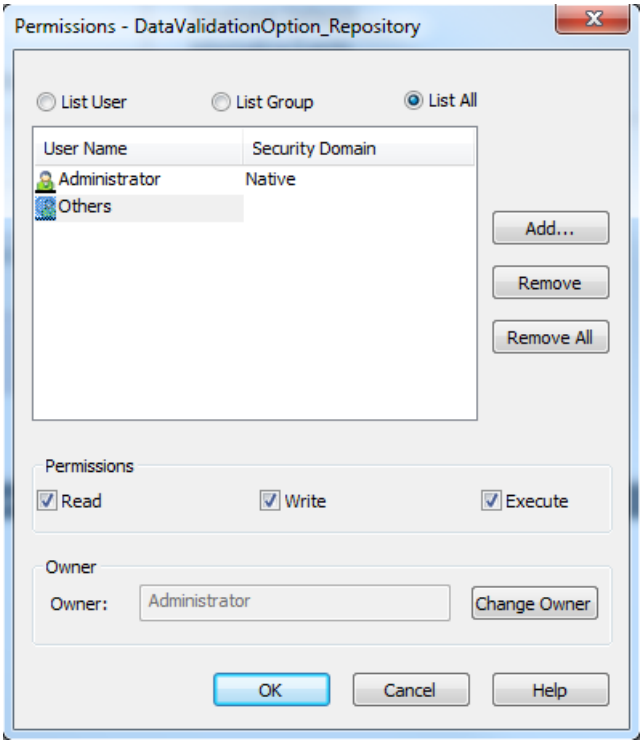
Create a Connection to the Data Validation Option Repository

Create a connection to the Data Validation Option repository to enable the PowerCenter Integration Service to write test results to the repository.

1. In the PowerCenter Workflow Manager, click **Connections** > **Relational**.
2. Click **New**.
3. In the **Select Subtype** dialog box, select the database type of the Data Validation Option repository.
4. Click **OK**.
5. Enter the connection name and database properties.

   Enter a meaningful connection name that implies that the connection is for Data Validation Option repository. For example, enter the name DataValidationOption_Repository.
6. Click **OK**.
7. Click **Permissions**.

   The **Permissions** dialog box appears.



8. Select the PowerCenter user associated with Data Validation Option.
9. Grant Read, Write, and Execute permissions on this folder to the user.
10. Record the connection name.

    You must specify this connection name when you add a PowerCenter repository for Data Validation Option.
11. Click **OK**.

Note: If the Data Validation Option repository is in a secure domain, ensure that you perform SSL configurations for the required databases and the Data Validation Client machine can access the databases through SSL mode.

Configure Data Validation Client Preferences

After you install Data Validation Option, you need to configure the preferences.

Data Validation Client preferences include user and repository properties for Data Validation Option, mapping properties, authentication, and JasperReports properties.

To open the Data Validation Client preferences, click **File** > **Settings** > **Preferences**.

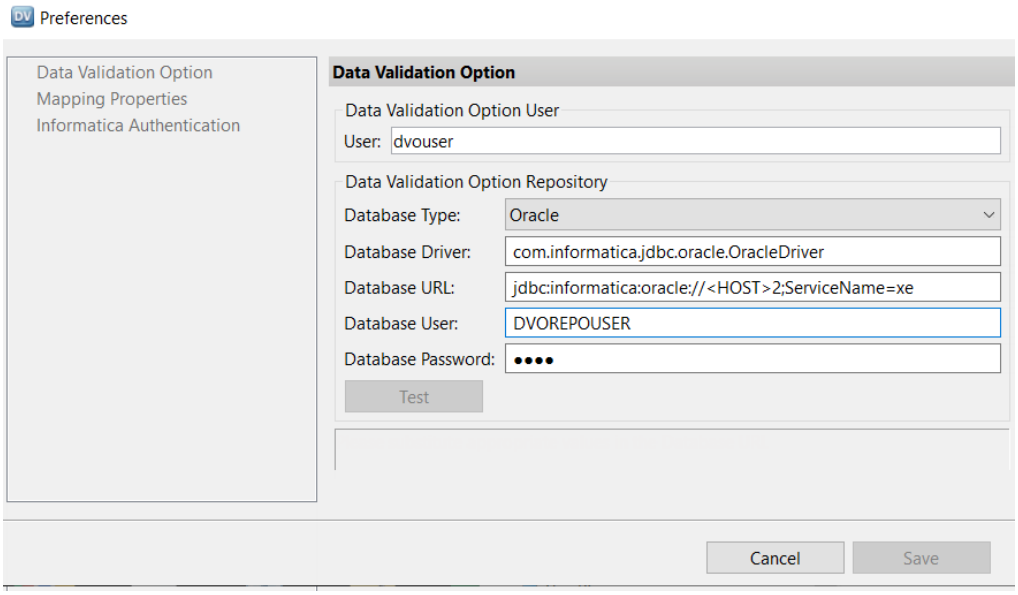
Important: To ensure that Data Validation Option saves global settings, verify that all users close the Data Validation Client when you configure preferences.

Create the Data Validation Option Repository

To create the Data Validation Option repository, you must specify the Data Validation Option user and connection to the repository. The Data Validation Client uses this information to connect to the Data Validation Option repository.

1. Open the Data Validation Client.
2. Select **File** > **Settings** > **Preferences**.
3. In the **Preferences** dialog box, select **Data Validation Option**.

   The **Data Validation Option** section appears.



4. Specify the Data Validation Option user.
5. Configure the database connection properties to the Data Validation Option repository.
6. Click **Test** to test the database connection.

   A message appears indicating that the repository needs to be created.
7. Click **Yes**.
8. Click **OK**.
9. Click **Save**.

   A message appears indicating that you need to shut down the application.
10. Click **OK**.

Data Validation Option shuts down.

11. Open the Data Validation Client.

    The **Informatica Data Validation** dialog box prompts you to enter the license key.

12. Browse for the license key file, select the file, and then click **OK**.

    The Data Validation Client opens.

Data Validation Option Users and Informatica Users

Data Validation Option users and users with Informatica credentials can launch the Data Validation Client. When users launch the Data Validation Client, they connect to a Data Validation Option schema. Enable Informatica authentication so that valid Informatica domain users can log in to Data Validation Option.

To enable authentication, map each Data Validation Option user to an Informatica user. If you want Data Validation Option to map the name of a Data Validation Option user to an Informatica user automatically, use the same name for both users. If the two users have different names, then you can use the DVOCmd LinkDVOUsersToInformatica command to map the Data Validation Option user to the Informatica user.

The permissions of an Informatica user determine whether the associated Data Validation Option user can access PowerCenter metadata. After you enable Informatica authentication, verify that the permissions and privileges are set correctly for each Informatica user.

Data Validation Option Repository Properties

The Data Validation Option repository properties determine how the Data Validation Client connects to the Data Validation Option repository.

Configure the following repository properties:

User

Unique name for the Data Validation Option user. Use alphanumeric characters only. If you enabled Informatica authentication and the Data Validation Option user name does not match the associated PowerCenter user name, run the DVOCmd LinkDVOUsersToInformatica command to link the Data Validation Option user to the associated PowerCenter user.

Database Type

Type of database for the Data Validation Option repository.

Database Driver

The driver of the database type that you selected.

Database URL

The URL of the database type that you selected. Specify the values for the URL parameters, such as database host name, database name, and port number. The following examples show the URL formats for different databases:

IBM DB2

Use the following URL format:

```
jdbc:informatica:db2://<hostname>:<port>;DatabaseName=<database_name>
```

For example, use the following URL:

```
jdbc:informatica:db2://127.0.0.1:50000;DatabaseName=sampleDatabase
```

Use the following URL format if you have enabled SSL on the DB2 database server:

```
jdbc:informatica:db2://
<hostname>:<port>;databaseName=<database_name>;EncryptionMethod=SSL;HostNameInCertifi
cate=
<hostname_in_certificate>;ValidateServerCertificate=true;TrustStore=<full_path_to_tru
ststore_file>;TrustStorePassword=<truststorepassword>
```

For example, use the following URL:

```
jdbc:informatica:db2:// myhost.myorg.com:
60012;databaseName=mydb;EncryptionMethod=SSL;HostNameInCertificate=
myhost.myorg.com;ValidateServerCertificate=true;TrustStore=\\myhost
\db2\certs_cacerts;TrustStorePassword=mypwd
```

Oracle

The URL format depends on whether or not Oracle Advanced Security (ASO) is enabled on the Oracle server.

ASO is not enabled

Use the following URL format:

```
jdbc:informatica:oracle://<hostname>:<port>;ServiceName=<service_name>
```

For example, use the following URL:

```
jdbc:informatica:oracle://127.0.0.1:1521;ServiceName=sampleService
```

Use the following URL format if you enabled SSL on the Oracle database server:

```
jdbc:informatica:oracle://
<hostname>:<port>;ServiceName=<service_name>;EncryptionMethod=SSL;HostNameInCerti
ficate=
<hostname_in_certificate>;ValidateServerCertificate=true;TrustStore=<full_path_to
_truststore_file>;TrustStorePassword=<truststorepassword>
```

For example, use the following URL:

```
jdbc:informatica:oracle://myhost.myorg.com:
60012;ServiceName=<service_name>;EncryptionMethod=SSL;HostNameInCertificate=
myhost.myorg.com;ValidateServerCertificate=true;TrustStore=\\myhost
\db2\certs_cacerts;TrustStorePassword=mypwd
```

ASO is enabled

```
jdbc:informatica:db2://
<hostname>:<port>;databaseName=<database_name>;EncryptionMethod=SSL;HostNameInCer
tificate=
<hostname_in_certificate>;ValidateServerCertificate=true;TrustStore=<full_path_to
_truststore_file>;TrustStorePassword=<truststorepassword>
```

For example, use the following URL:

```
jdbc:informatica:db2:// myhost.myorg.com:
60012;databaseName=mydb;EncryptionMethod=SSL;HostNameInCertificate=
myhost.myorg.com;ValidateServerCertificate=true;TrustStore=\\myhost
\db2\certs_cacerts;TrustStorePassword=mypwd
```

Use the following URL format:

```
jdbc:informatica:oracle://
<hostname>:<port>;ServiceName=<service_name>;EncryptionLevel=required;EncryptionT
ypes=<encryption_types>;DataIntegrityLevel=required;DataIntegrityTypes=<data_inte
grity_types>
```

For example, use the following URL:

```
jdbc:informatica:oracle://
127.0.0.1:1521;ServiceName=sampleService;EncryptionLevel=required;EncryptionTypes
=AES256;DataIntegrityLevel=required;DataIntegrityTypes=MD5
```

In this example, AES256 is one of the encryption types and MD5 is one of the data integrity types that DataDirect JDBC Driver for Oracle supports. Consult the Oracle administrator to verify the data encryption and data integrity settings of your Oracle server. To specify multiple encryption types and data integrity types, enter a comma-separated list of values.

Microsoft SQL Server

Use the following URL format:

```
jdbc:informatica:sqlserver://<hostname>:<port>;DatabaseName=<database_name>
```

For example, use the following URL:

```
jdbc:informatica:sqlserver://127.0.0.1:1433;DatabaseName=sampleDatabase
```

Use the following URL format if you have enabled SSL on the SQL server:

```
jdbc:informatica:db2://
<hostname>:<port>;databaseName=<database_name>;EncryptionMethod=SSL;HostNameInCertifi
cate=
<hostname_in_certificate>;ValidateServerCertificate=true;TrustStore=<full_path_to_tru
ststore_file>;TrustStorePassword=<truststorepassword>
```

For example, use the following URL

```
jdbc:informatica:sqlserver:// myhost.myorg.com:
1433;DatabaseName=AUTODB;EncryptionMethod=SSL;HostNameInCertificate=myhost.myorg.com;
ValidateServerCertificate=true;TrustStore=\\myhost\SSL\SQL
\mycert_truststore.jks;TrustStorePassword=mypwd
```

Database User

The database user name.

Database Password

The password of the database user.

LinkDVOUsersToInformatica

Links the existing Data Validation Option users with Informatica domain users. You can run this command on Windows.

Create a text file that contains a list of the Data Validation Option users and Informatica domain users in the following format:

```
<dvo_user_name1>,<Informatica_user_name1>
<dvo_user_name2>,<Informatica_user_name2>
.
.
<dvo_user_nameN>,<Informatica_user_nameN>
```

The LinkDVOUsersToInformatica command uses the following syntax:

```
DVOCmd LinkDVOUsersToInformatica [file_name] [--confdir conf_dir] [--username User name] [--password Password] [--ePassword Password Environment Variable] [--namespace Namespace]
```

The following table describes LinkDVOUsersToInformatica argument:

Option	Argument	Description
-	file_name	Name of the file that contains the mapping between Data Validation Option users and Informatica users. Enclose the file path in quotes.
--confdir	conf_dir	The user configuration directory. Specify the configuration directory if you have multiple Data Validation Option repositories on a client machine. If you have one Data Validation Option repository on a client machine and have not changed the configuration directory, you do not need to specify this option. Because Windows directories often contain spaces, you must enclose the file path in quotes.
--username	User name	Informatica domain administrator user name for the domain to which you configured Informatica authentication. Required if you configure Informatica authentication.
--password	Password	Password for the Informatica user name. Required if you configure Informatica authentication. If you set the **password** option, then do not set the **ePassword** option.
--ePassword	Password Environment Variable	Encrypted form of the password of the Informatica user name. Use the DVOCmd EncryptPassword command to encrypt the password. Set an environment variable to the encrypted password and use the variable in the ePassword option. The command replaces the environment variable with the encrypted password and then decrypts the password. If you set the **ePassword** option, then do not set the **password** option. If the command contains both the **password** and **ePassword** options, then the Data Validation Option uses the **ePassword** and ignores the **password.**
--namespace	Namespace	Namespace of the LDAP domain. Required if you configure Informatica Authentication with LDAP domain.

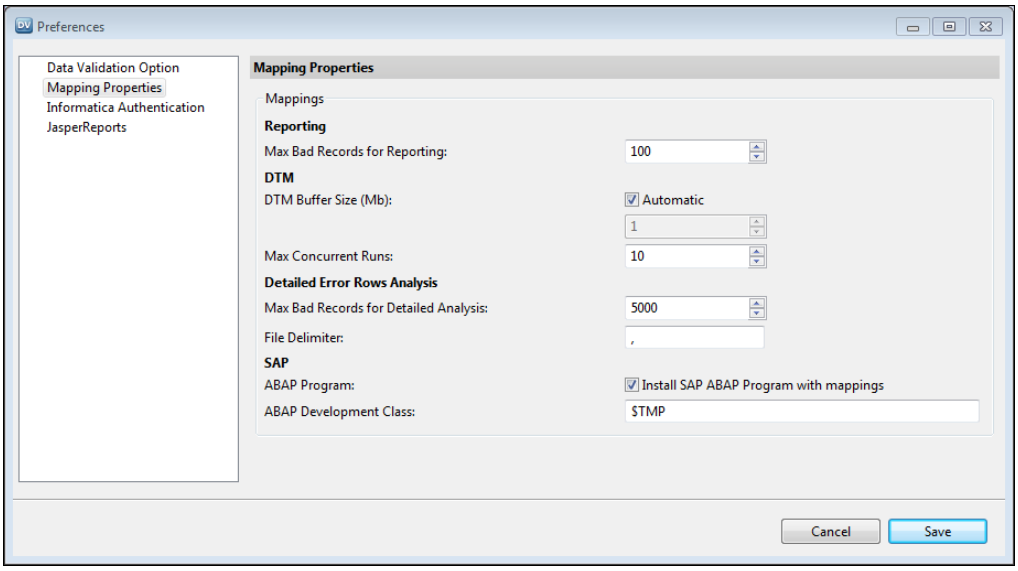
Configure Mapping Properties

When you run a data validation test, Data Validation Option creates and runs a PowerCenter mapping with the logic required to complete the test. You can configure the mapping properties to determine how the PowerCenter Integration Service processes the test data.

Important: To ensure that Data Validation Option saves global settings, verify that all users close the Data Validation Client when you configure preferences.

1. In the Data Validation Client, click **File** > **Settings** > **Preferences**.
2. In the **Preferences** dialog box, select **Mapping Properties**.

   The **Mapping Properties** section appears.



3. Configure the following mapping properties:

Properties	Description
Max Bad Records for Reporting	Maximum number of bad records written to the Data Validation Option repository for each test. Default is 100. Maximum value is 1,000.
DTM Buffer Size	Amount of memory in megabytes that the DTM process allocates for the PowerCenter session. Specify a numeric value. Or, select Automatic to enable Data Validation Option to use the buffer size specified for the PowerCenter session. Increase the default DTM buffer size if the Data Validation Option tests contain a large number of table pairs. Contact the PowerCenter administrator before changing this value. Default is Automatic.
Max Concurrent Runs	Maximum number of PowerCenter sessions that run at the same time. The PowerCenter Integration Service runs each table pair as one session regardless of the number of tests it contains. Default is 10. Maximum value is 50.
Max Bad Records for Detailed Analysis	Maximum number of bad records stored for detailed error record analysis. Default is 5000. Maximum value is 16,000,000.
File Delimiter	Delimiter character to separate the error records if you choose to store the bad records in a file.

Properties	Description
ABAP Program	Indicator that determines whether you install the ABAP program. Select **Install SAP ABAP Program with mappings** to install the ABAP program in the development environment. Data Validation Option creates an ABAP program for each SAP source mapping. In the development environment, the ABAP program name is associated with the table object that you create in the Data Validation Client. When you import or copy a table object, Data Validation Option maintains the ABAP reference. Data Validation Option verifies that the ABAP program exists in the SAP system when it runs a test. **Note:** Do not select this option in a production or test environment if the programs are migrated from the development environment.
ABAP Development Class	Required if you access SAP. Enter the name of the development class where you want to install the program in the development environment. Default is $TMP.

4. Click **Save**.

Enable Informatica User Authentication

By default, Data Validation Option does not authenticate users. If the Informatica domain has TLS enabled and you access a PowerCenter repository version 10.2 HotFix 2 or later, you can enable Informatica Authentication to validate users based on Informatica domain credentials.

You must have the Administrator role in the Informatica domain to enable Informatica authentication. The Data Validation Client determines roles based on the PowerCenter user associated with the Data Validation Option user. Also, the Informatica services must be running to test the domain settings.
Use the nodemeta.xml file to determine the values for these properties. You can find the nodemeta.xml file in the following directory on the machine where you installed Informatica services: `<Informatica installation directory>\isp\config`

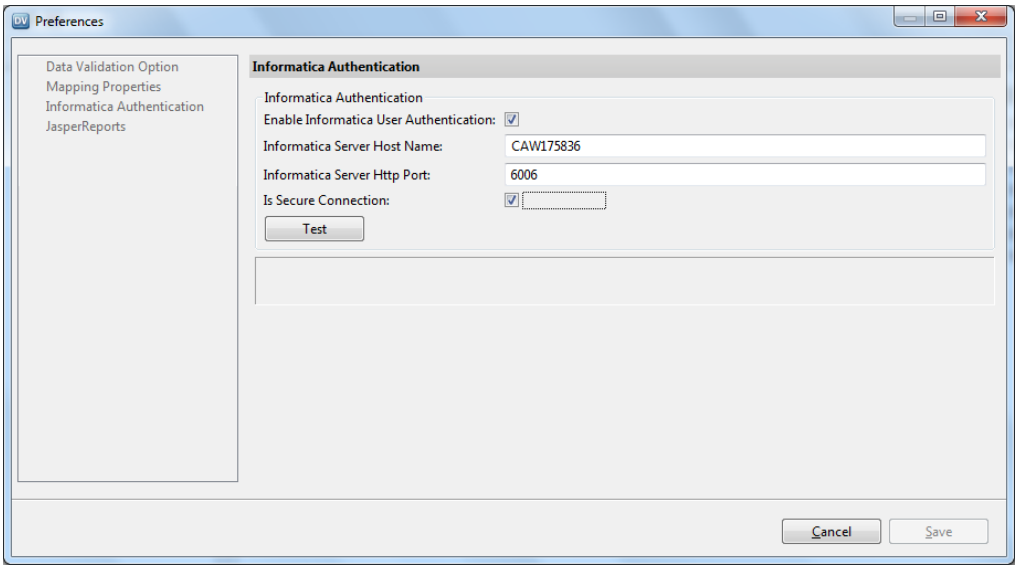
You can also use the DVOCmd UpdateInformaticaAuthenticationConfiguration command to enable Informatica user authentication.

Important: To ensure that Data Validation Option saves global settings, verify that all users close the Data Validation Client when you configure preferences.

1. In the Data Validation Client, click **File** > **Settings** > **Preferences**.

   The **Preferences** dialog box appears.
2. Select **Informatica Authentication**.

The Informatica Authentication dialog box appears.



3. Configure the following Informatica authentication properties:

Properties	Description
Enable Informatica User Authentication	Enables Informatica authentication in the Data Validation Client. By default, Informatica authentication not enabled.
Informatica Server Host Name	Host name of the machine where you installed Informatica services. **Note:** You can find the host name specified in the `host` attribute of the `address` element in the nodemeta.xml file.
Informatica Server HTTP Port	Port number through which Data Validation Option accesses the Informatica domain. Use the port number specified in the `httpport` attribute in the nodemeta.xml file.
Is Secure Connection	Indicates whether TLS is enabled in the domain. **Note:** If TLS is not enabled in the Informatica domain, the `tlsEnabled` element is not available in the nodemeta.xml file.

4. Click **Test** to test the domain settings.
5. Click **Save** to save the domain settings.
6. Close the Data Validation Client.
7. Open the Data Validation Client.

   The **Login** dialog box appears.
8. Enter the PowerCenter user name and password.

   If you use an LDAP domain, you must also enter the security domain.

After you enable Informatica authentication, users can log in to the Data Validation Client with their Informatica login credentials. If the Informatica domain uses Kerberos authentication, enter the security domain instead of the user name and password. If the Informatica domain uses LDAP authentication, enter the security domain in addition to the user credentials.

Troubleshooting Informatica Authentication

Informatica authentication can fail for different reasons.

Review the following troubleshooting tip for Informatica authentication:

Why does a secure connection error appear when I try to log in to the Data Validation Client?

If the Informatica domain is changed to use the Transport Layer Security (TLS) protocol while Data Validation Option uses Informatica authentication to authenticate users, the following error might appear when you log in to the Data Validation Client:

```
Com.informatica.pcsf.servicesframework.ServicesFramework.Exception: [DTF_0001]
An error occurred in the underlying transport layer: [Secure connection is required.]
```

Because you cannot log in to the Data Validation Client, run the DVOCmd UpdateInformaticaAuthenticationConfiguration command to enable TLS in Data Validation Option.

For example, run the following command:

```
DVOCmd UpdateInformaticaAuthenticationConfiguration --confdir c:\DVO_User --
infaHostName MachineName --infaHttpPort 6005 --isSecureConnection true --username
AdminUser --password AdminPassword
```

Configure JasperReports Properties

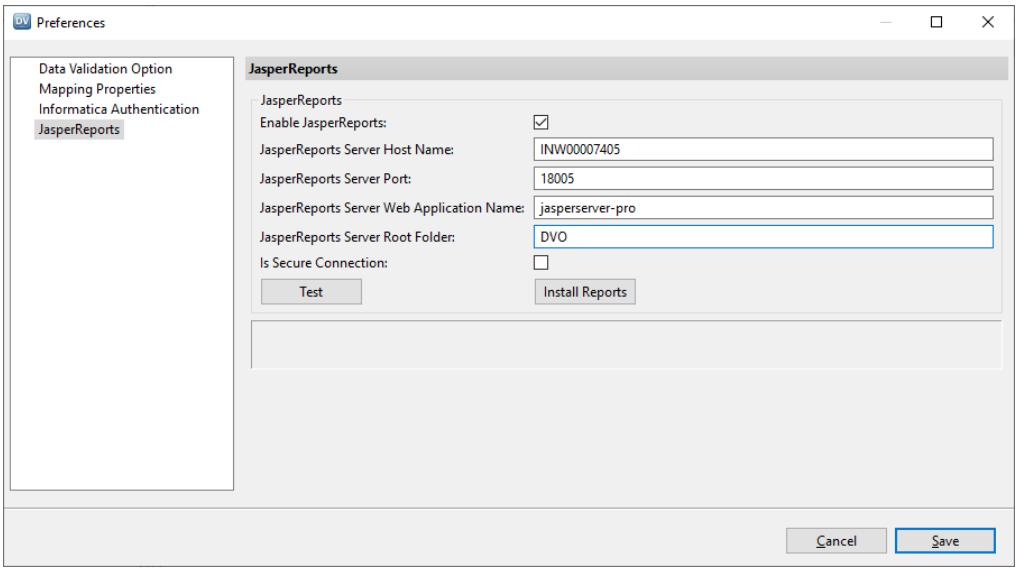
You can download and install Standalone JasperReports Server .
Important: To ensure that Data Validation Option saves global settings, verify that all users close the Data Validation Client when you configure preferences.

1. In the Data Validation Client, click **File** > **Settings** > **Preferences**.

   The **Preferences** dialog box appears.

2. Click **JasperReports**.

   The **JasperReports** properties appear.



3. Click **Enable JasperReports**.

4. Enter the following JasperReports properties:

Properties	Description
JasperReports Server Host Name	Host name of the JasperReports Server.
JasperReports Server Port	Port number of the JasperReports Server.
JasperReports Server Web Application Name	Name of the JasperReports web application.
JasperReports Server Root Folder	JasperReports Server directory that stores the Data Validation Option reports. If the directory does not exist, Data Validation Option creates it on the Jaspersoft Server after you configure the JasperReports properties. **Warning:** If the directory exists, Data Validation Option removes all contents before installing the reports. The directory name can include only alphanumeric and underscore characters, and must begin with a letter.
Is Secure Connection	Select if the JasperReports Server runs on a secure connection.

5. Click **Test** to validate the connection to JasperReports Server.
6. Click **Install Reports**.
7. When prompted, enter the user name and password of a JasperReports Server user with administrator privileges.
8. Click **OK.**

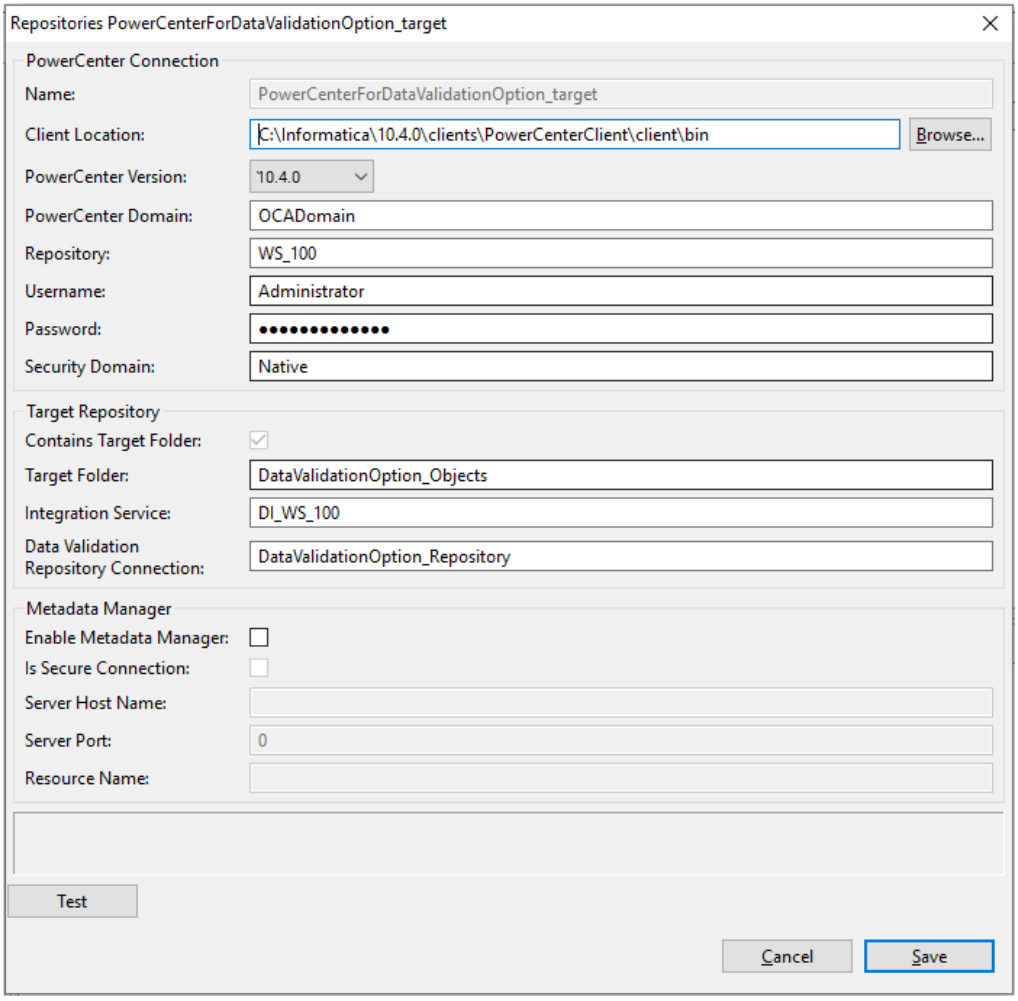
   If necessary, Data Validation Option creates the root directory on the Jaspersoft Server and imports the Data Validation Option reports and dashboards into JasperReports Server.
9. Click **Save** to save the properties.

Add the PowerCenter Repository

You must add a PowerCenter repository and designate one repository folder to store Data Validation Option mappings, sessions, and workflows. Optionally, you can integrate Metadata Manager to view additional metadata about data sources.

1. Open the Data Validation Client.
2. Right-click **INFA Repositories** in the Navigator, and select **Add Repository**.

The **Repository Editor** dialog box appears.



3. Enter the following PowerCenter connection properties:

Property	Description
Name	Logical name of the PowerCenter repository for Data Validation Option. This name appears in the Navigator pane of the Data Validation Client. **Tip:** If this is the repository that contains the target folder, append “target” to the name.
Client Location	Location of the pmrep.exe file on the PowerCenter Client machine. For example: `C:\Informatica\<version>\clients\PowerCenterClient\client\bin`.
PowerCenter Version	The PowerCenter version that runs Data Validation Option.
PowerCenter Domain	Name of the Informatica domain. **Note:** If PowerCenter uses Kerberos authentication, the user name and password text boxes become unavailable when you enter the name of the domain.

Property	Description
Repository	Name of the PowerCenter repository for Data Validation Option that is defined in the Informatica domain.
User name	User name for the PowerCenter repository. The text box is unavailable if PowerCenter uses Kerberos authentication.
Password	User password for the PowerCenter repository. The text box is unavailable if PowerCenter uses Kerberos authentication.
Security Domain	Security domain for the PowerCenter user. Specify the name of the LDAP security domain. Leave this property blank if you use native authentication.

4. If the PowerCenter repository that you entered contains the target folder for the data validation metadata, enter the following target repository properties:

Property	Description
Contains Target Folder	Indicator that determines whether this repository contains the target folder to store Data Validation Option mappings, sessions, and workflows. If you add multiple PowerCenter repositories, select this option for one PowerCenter repository. The Data Validation Option can read from multiple PowerCenter repositories, but it can create objects in only one PowerCenter repository.
Target Folder	Name of the target folder that stores Data Validation Option mappings, sessions, and workflows.
Integration Service	Name of the PowerCenter Integration Service that runs the Data Validation Option workflows.
Data Validation Repository Connection	Name of the repository connection that you created in the PowerCenter Workflow Manager.

5. If you are integrating Data Validation Option with Metadata Manager, enter the following Metadata Manager properties.

Property	Description
Enable Metadata Manager	Select to integrate Data Validation Option with the Metadata Manager Service.
Is secure connection	Indicator that determines whether the Metadata Manager Service runs over a secure connection.
Server Host Name	Host name of the machine on which the Metadata Manager Service runs.
Server Port	Port of the Metadata Manager Service.
Resource Name	Name of the PowerCenter resource created in Metadata Manager.

6. Click **Test** to test the connection to the PowerCenter repository.
7. Click **Save**.

8. Click **OK** to import the list of folders and connections from the PowerCenter repository into the Data Validation Client.

Configure Environment Variables

To apply the environment variable changes, you must restart the Data Validation Client and, if applicable, open a new command-line session.

Configure the following environment variables on the Data Validation Client machine:

DV_CONFIG_DIR

Optional. Location of the DVConfig.properties file. By default, DVConfig.properties file is available in the user configuration directory.

For example DVConfig.properties is available in the following location on a 64-bit Windows machine: `C:\Users\<user name>\DataValidator`

DV_DEFAULT_RTRIM_VALUES

Optional. Specify a default setting for the **Trim Trailing Space** option for tests. Set the value to `Y` to trim trailing spaces by default.

If you set the value to `Y`, the **Trim Trailing Space** option is selected by default when you create a test in the **Table Pair Test Editor** dialog box or the **Single Table Test Editor** dialog box.

DV_DOUBLE_COMPARISON_EPSILON

Optional. Set the tolerance value for floating point numbers if you want to test high-precision data. Default is 1e-15. The tolerance value does not affect join keys. The variable applies to the "equal to" operator only.

DV_MAPPING_STRING_MAX_PRECISION

Optional. Set the maximum precision for string fields in the Data Validation Option mappings. Valid values are whole numbers greater than 0. The maximum value depends on the String data type in the database. If you do not set the environment variable, Data Validation Option retains the precision set in PowerCenter.

DV_RTRIM_JOIN_KEYS

Optional. Set the trailing space setting for join keys. Set the value to "Y" to remove the trailing spaces from join keys. Set the value to "N" to retain the trailing spaces. If you do not set the environment variable, Data Validation Option retains the trailing spaces.

DV_TREAT_EMPTY_STRING_AS_NULL

Optional. Set to indicate that a null value and an empty string are equal when Data Validation Option compares the values of fields in an Oracle database. If you do not set this environment variable and Data Validation Option compares two fields where one is null and the other has an empty value, Data Validation Option considers the values as not equal.

DVO_PC_VERSION

- If you use Informatica authentication with version 10.2, set `10.2.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.2 HotFix 2, set `10.2.0.2` as the value for the environment variable.

- If you use Informatica authentication with version 10.4, set `10.4.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.5, set `10.5.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.5.1, set `10.5.1` as the value for the environment variable.

INFA_DOMAINS_FILE

Set to the following location of the domains.infa file on the Data Validation Client machine:

```
$INFA_HOME/domains.infa
```

INFA_HOME

Required. Set the INFA_HOME environment variable to the PowerCenter Client installation directory.

INFA_TRUSTSTORE

The variable points to the directory that contains the trust store files for the SSL certificates. The directory must contain trust store files named infa_truststore.jks and infa_truststore.pem.

INFA_TRUSTSTORE_PASSWORD

Required if you access a domain version that has custom SSL certificate.

KRB5_CONFIG

Required. Use the KRB5_CONFIG environment variable to store the path and file name of the Kerberos configuration file. The name of the Kerberos configuration file is *krb5.conf*. You must set the KRB5_CONFIG environment variable on each machine that hosts an Informatica client.

Set the variable to the following value:

```
$INFA_HOME/services/shared/security/krb5.conf
```

Test the Data Validation Option Installation and Configuration

To verify that you properly installed and configured Data Validation Option, run a sample test. Create and run a COUNT_ROWS test on a single table that has a small amount of data.

1. Open the Data Validation Client.
2. Right-click the folder where you want to store the single table, and then select **Add Single Table**.

   The **Single Table Editor** appears.
3. Enter the description of the single table.
4. Click **Browse** to select a table.

   The **Select Data Source** dialog box appears.
5. Select a table with the least amount of data, and then click **Select**.

   The **Single Table Editor** appears again.
6. Click **Edit** to select a connection.

   The **Select Connection for Table A** dialog box appears.

7. Select the appropriate connection, and then click **OK**.

   The **Single Table Editor** appears again.
8. Select the primary key for the table.
9. Save the single table.
10. Right-click the table in the navigator, and then select **Add Constraint Test**.

    The **Single Table Test Editor** dialog box appears.
11. In the **Function** field, select **COUNT_ROWS** to add a COUNT_ROWS test.
12. In the **Constraint Value** field, enter a constraint value.
13. Click **Save**.
14. Right-click the test in the details area, and then select **Run Test**.
15. Verify that the test runs successfully.

JasperReports Server Setup

You must set up a JasperReports Server before you can generate Jasper reports.

If you want to use a standalone JasperReports Server, download and install JasperReports Server 4.2.1. You can download the JasperReports Server installer from the following location:

http://community.jaspersoft.com/project/jasperreports-server/releases

You must update the JasperReports Server with the DataDirect drivers available with Data Validation Option. Copy `dwdb2.jar`, `dwsqlserver.jar`, and `dworacle.jar` from the following location:

`<Data Validation Option installation directory>\lib`.

Paste the files in the following directory: `<JasperReports Server installation directory>\tomcat\lib`.

You must install the SSL certificate if you use a JasperReports Server that runs over an HTTPS connection.

From the command line, browse to the following location: `<Data Validation Option Installation Directory>\DVO\jre\bin`

Run the following command:

```
keytool -importcert -alias <certificate alias name> -file " <certificate path>
\<certificate filename>" -keystore ..\lib\security\cacerts
```

CHAPTER 4

Configuring Multiple Environments

This chapter includes the following topics:

- Configuring Multiple Environments Overview, 35
- Configuration Process, 36
- Environment Configuration Files , 36
- Batch Files, 38
- Multiple Data Validation Option Users, 39
- Multiple Data Validation Option Repositories, 39
- Multiple PowerCenter Versions, 40

Configuring Multiple Environments Overview

By default, an installation of the Data Validation Client supports one user, one Data Validation Option repository, and one Informatica domain. When you launch the Data Validation Client, the client accesses the Data Validation Option repository associated with the user. You can access multiple environments from one instance of the Data Validation Client through configuration files.

If you configure multiple users and repositories, you must specify which user and repository to use when you launch the Data Validation Client. When you configure the Data Validation Client, you specify the user and database connection for the Data Validation Option repository. Data Validation Option stores this information in configuration files in the user configuration directory.

You can also switch PowerCenter installations. For example, you might run tests in a development environment on one PowerCenter installation, but you run tests in a production environment on a different PowerCenter installation. You specify the PowerCenter installation directory in the INFA_HOME environment variable.

Create a batch file to launch Data Validation Client for each specific environment.

Configuration Process

To configure multiple environments for a single installation of the Data Validation Client, you need to create configuration files and configure the Data Validation Client preferences.

1. Identify a user configuration directory for each user. Each environment that you configure requires a separate configuration directory.
2. Create the preferences.xml file. Use DVOCmd to create a preferences file that stores all the preferences that you configure in Data Validation Client. Move the file to the user configuration directory.
3. Create a .bat file. The batch file contains information about the domain and the user configuration directory. Each environment associated with a Data Validation Client requires a separate .bat file.
4. Launch Data Validation Client from the batch file.
5. Configure preferences and create a repository. When you configure the preferences and create a repository within the Data Validation Client, it updates the preferences.xml file and creates the DVConfig.properties file.

Environment Configuration Files

Data Validation Option uses configuration files to access multiple environments through one Data Validation Client for multiple users, repositories, or PowerCenter installations.

Each user has a separate set of configuration files. When you launch the Data Validation Client, Data Validation Option uses the information from preferences.xml and DVconfig.properties to launch the client application with the proper environment configuration. You launch Data Validation Client from a .bat file.

Store the configuration files in the user configuration directory. The user configuration directory contains environment configuration files, log files, reports, and temporary files. Data Validation option creates a user configuration directory for each user. By default, you can find the user configuration directory in the following location:

```
C:\Users\<user name>\DataValidator\
```

Data Validation Option uses following environment configuration files:

preferences.xml

Contains configuration properties that you configure in the Data Validation Client preferences that you configure in the **Preferences** dialog box. Each user that shares access to one Data Validation Client requires a preferences file. Store the preferences file in the user configuration directory.

DVConfig.properties

Contains database and user information that the Data Validation Client uses when you launch the tool. Store the properties file in the user configuration directory.

preferences.xml

The preferences.xml file stores user preferences and the database connection for the Data Validation Option repository. Each user has a separate preferences file.

When you configure the user preferences and the connection to the Data Validation Option repository, Data Validation Option stores this information in the preference files.

If you need to configure multiple users, each user requires a separate preferences.xml file. Run the DVOCmd CreateUserConfig command to create a preferences.xml file for each user. When you launch the Data Validation Client, it retrieves the user preferences and database connection from the preference files.

Before you run DVOCmd CreateUserConfig command, identify the directories where you want to store the preferences.xml file for each user.

To view the directory that contains the preference file, click **File** > **Settings** > **Open Settings Folder**.

Creating the preferences.xml File

Create a preferences.xml file for each unique environment that you want to access or for each user that accesses the Data Validation Client on the same machine.

1. From the command line, run the DVOCmd CreateUserConfig command.

   The command generates the preference file and stores it in the specified output directory. The name of the preference file is <user name>-preferences.xml.
2. Rename the preferences file to preferences.xml, and move it to the user configuration directory for the user.
3. If you create preference files for multiple users in the same output directory, move the renamed preference file to a unique location for each user.

CreateUserConfig

Creates a preferences file with the specified user names and user configuration directory. You can run this command on Windows.

The CreateUserConfig command uses the following syntax:

```
DVOCmd CreateUserConfig user_name [user_name2 …] [--confdir conf_dir] --outputdir output_dir
[--overwrite]
```

Creates a preferences file called <username>-preferences.xml for each user in the output directory. The preferences file contains connection information for the Data Validation Option repository. Copy each preferences file from the output directory to the user configuration directory and rename it to preferences.xml. This allows each user to access the Data Validation Option repository.

The following table describes CreateUserConfig options and arguments:

Option	Argument	Description
-	user_name	The name of the Data Validation Option user. To create multiple users, enter multiple user names separated with spaces.
--confdir	conf_dir	The user configuration directory. Specify the configuration directory if you have multiple Data Validation Option repositories. If you have one Data Validation Option repository on a client machine and have not changed the configuration directory, you do not need to specify this option. Enclose the file path in quotes.
--outputdir	output_dir	Directory in which to store user preferences files. Enclose the file path in quotes. Use double-quotes if the path has space or special characters.
--overwrite	-	Overwrites the configuration files.

DVConfig.properties

The DVConfig.properties file contains database and user information that the Data Validation Client uses when you launch the tool.

The first time that you configure the Data Validation Client preferences, it creates the properties file in the user configuration directory. When you update the preferences that are contained in the properties file, the Data Validation Client updates the file.

Batch Files

Create batch files to switch between multiple Data Validation Clients, users, repositories, or PowerCenter instances. The batch file specifies the user configuration directory and the path to the Data Validation Client executable.

A batch file can contain the following parameters:

DVO_PC_VERSION

- If you use Informatica authentication with version 10.2, set `10.2.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.2 HotFix 2, set `10.2.0.2` as the value for the environment variable.
- If you use Informatica authentication with version 10.4.0, set `10.4.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.5, set `10.5.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.5.1, set `10.5.1` as the value for the environment variable.

INFA_HOME environment variable

Set the INFA_HOME environment variable to the PowerCenter Client installation directory to run the Data Validation Client with a specific PowerCenter instance.

Directory and name of the Data Validation Client executable file

Specify the directory and name of the Data Validation Client executable file to run a specific Data Validation Client.

Directory and name of the DVOCmd executable file

Specify the directory and name of the DVOCmd executable file to run a specific instance of DVOCmd.

DV_CONFIG_DIR environment variable

Set the DV_CONFIG_DIR environment variable to the Data Validation Option user configuration directory to launch the Data Validation Client under a different Data Validation Option user account.

Use the following syntax when you create a batch file for PowerCenter 10.2.0, 10.2 HotFix 2, 10.4.0, 10.5, or 10.5.1:

```
@echo off
SET DVO_PC_VERSION=<10.2.0_10.2.0.2_or_10.4.0_or_10.5.0_or_10.5.1>
SET INFA_HOME=<Informatica installation directory>
SET DV_CONFIG_DIR=<User configuration directory>
cd\
cd <directory and name of executable file>
```

Note: If you use a shortcut to launch the Data Validation Client, edit the shortcut to call the batch file instead of DVOClient.exe.

Multiple Data Validation Option Users

Each Data Validation Option user needs to have a separate Data Validation account. If multiple users need access to one Data Validation Client, you can set up the environment through the configuration files.

To set up multiple users to access one instance of the Data Validation Client, complete the following tasks:

- Verify that each user has a separate user configuration directory.
- Create a batch file for each user.
- Run the DVOCmd CreateUserConfig command to create the preferences.xml file.

Sample Batch Files for Multiple Users

You can create batch files to run one instance of the Data Validation Client under different user accounts.

For example, you install Data Validation Option in the default directory. You create a separate batch file for each user and store the configuration files in the user configuration directory for each user.

You create the following batch file for the user named Mohan:

```
@echo off
SET INFA_HOME=C:\Informatica\<version>\clients\PowerCenterClient
set DV_CONFIG_DIR=C:\users\mohan\DataValidator
cd\
c:\Program Files(x86)\Informatica<version>\DVO\DVOClient.exe
```

You create the following batch file for the user named Susan:

```
@echo off
SET INFA_HOME=C:\Informatica\<version>\clients\PowerCenterClient
set DV_CONFIG_DIR=C:\users\susan\DataValidator
cd\
c:\Program Files(x86)\Informatica<version>\DVO\DVOClient.exe
```

Multiple Data Validation Option Repositories

You can configure the Data Validation Client machine to access multiple Data Validation Option repositories. You might create multiple Data Validation Option repositories if you run multiple versions of Data Validation Option simultaneously or if you have development and production environments.

Data Validation Option creates a separate user configuration directory for each user and repository. If you create multiple repositories, you must specify a unique user configuration directory for each repository.

To create an additional Data Validation Option repository, complete the following steps:

1. Create a database for the Data Validation Option repository.
2. Run the DVOCmd CreateUserConfig command to create the preferences file.
3. Create a batch file that specifies the user configuration directory.
4. Run the batch file to access the Data Validation Client.

5. Configure preferences and create a Data Validation Option repository.

Sample Batch Files for Multiple Data Validation Option Repositories

You can create batch files for one user to access multiple Data Validation Option repositories.

For example, you install Data Validation Option in the default directory. You need separate Data Validation Option repositories to store development and testing objects. You create separate user configuration directories to store the configuration files.

You create the following batch file for the development environment:

```
@echo off
SET INFA_HOME=C:\Informatica\<version>\clients\PowerCenterClient
set DV_CONFIG_DIR=C:\users\hakumar\DataValidator\DVO_DEV
cd\
c:\Program Files\Informatica<version>\DVO\DVOClient.exe
```

You create the following batch file for the production environment:

```
@echo off
SET INFA_HOME=C:\Informatica\<version>\clients\PowerCenterClient
set DV_CONFIG_DIR=C:\users\hakumar\DataValidator\DVO_PRD
cd\
c:\Program Files\Informatica<version>\DVO\DVOClient.exe
```

Multiple PowerCenter Versions

You can configure multiple PowerCenter versions with Data Validation Option. You might need to use different PowerCenter versions based on different project requirements. For example, you might have two business units that use different versions of PowerCenter.

To change the PowerCenter instance associated with Data Validation Option, create a batch file. In each batch file, specify the corresponding PowerCenter Client installation directory in the INFA_HOME environment variable.

Adding Repositories of Multiple PowerCenter Versions

If the target repository is in a previous PowerCenter version, you need to modify the domains.infa file.

1. Copy the domains.infa file from the `<PowerCenter Client installation directory>\clients\PowerCenterClient\` to the location you want, for example C:\DVO\domains.infa.
2. Use a text editor to modify the copied domains.infa file.
3. Copy the following lines of code from the domains.infa file of an earlier PowerCenter version:.

   ```
   <vector xsi:type="domainservice:Portals" objVersion="1.0.0"><domainName>$DomainName</
   domainName><address xsi:type="metadata:NodeRef" objVersion="1.0.0"><host>$HostName</
   host><port>6005</port></address></vector>
   ```

   Note: Place the lines before the `<portals>` tag.
4. Save the domains.infa file. Ensure that you do not change the name of the file.
5. Update either the INFA_HOME or INFA_DOMAINS_FILE environment variable with the location of the modified domains.infa file, that is C:\DVO\domains.infa, and launch the Data Validation Client.

6. Test the connection with target repository as the current version and the secondary repository as an earlier version.

Sample Batch Files for Multiple PowerCenter Versions

You can create batch files to associate different versions of PowerCenter with the Data Validation Client.

For example, you install Data Validation Option in the default directory. You create a separate batch file for each PowerCenter version and store the configuration files in the separate user configuration directories.

For PowerCenter 10.2.0, 10.2 HotFix 2, 10.4.0, 10.5. or 10.5.1, you create the following batch file and name it DVO_PC<version>_<username>:

```
@echo off
SET DVO_PC_VERSION=<10.2.0_10.2.0.2_or_10.4.0_or_10.5.0_or_10.5.1>
SET INFA_HOME=C:\Informatica\10.5\clients\PowerCenterClient
set DV_CONFIG_DIR=C:\users\<username>\DataValidator
cd\
c:\Program Files(x86)\Informatica10.5.1\DVO\DVOClient.exe
```

CHAPTER 5

Upgrade Data Validation Option

This chapter includes the following topics:

- Upgrade Data Validation Option Overview, 42
- Upgrade Data Validation Option, 42
- Update Informatica Authentication Configuration , 43

Upgrade Data Validation Option Overview

You can upgrade Data Validation Option from multiple prior versions. If the product version that is currently installed cannot be upgraded to the current version of Data Validation Option, you must first upgrade to a supported version, and then upgrade to the current version.

To determine the product version that is currently installed, click **Help** > **About** in the Data Validation Client.

After you upgrade Data Validation Option, if you use Informatica authentication, you can run the UpdateInformaticaAuthenticationConfiguration Data Validation command to connect to the domain.

After you upgrade, you can install the latest Data Validation Option reports in the standalone JasperReports Server. If you install the latest reports, you must install them in a different folder in the standalone JasperReports Server. Do not overwrite the existing reports.

Upgrade Data Validation Option

You can upgrade from Data Validation Option version 10.2 HotFix 2 to 10.5.1. If you are on a previous version, you must first upgrade to Data Validation Option 10.2 HotFix 2 before you can upgrade to version 10.5.1.

1. Back up the database of the Data Validation Option repository.
2. Uninstall Data Validation Option.
3. Install Data Validation Option.
4. Run the following DVOCmd command to upgrade the Data Validation Option repository:

```
DVOCmd UpgradeRepository [--confdir CONFDIR]
```

Specify the configuration directory if you have multiple Data Validation Option repositories on a client machine. If you have one Data Validation Option repository on a client machine and have not changed the configuration directory, you do not need to specify this option.

If you upgrade multiple Data Validation Clients that connect to the same Data Validation Option repository, upgrade the Data Validation Option repository one time.

5. Configure the following environment variables:
   - DV_CONFIG_DIR. Set to the full path of the new user configuration directory.
   - INFA_HOME. To change the PowerCenter installation associated with Data Validation Option, reset the INFA_HOME environment variable on the Data Validation Client to the location of the domains.infa file.
     The domains.infa file is available in the following location:

     ```
     <Informatica Client installation directory>\clients\PowerCenterClient\
     ```
   - DVO_PC_VERSION.
     - If you use Informatica authentication with version 10.2, set `10.2.0` as the value for the environment variable.
     - If you use Informatica authentication with version 10.2 HotFix 2, set `10.2.0.2` as the value for the environment variable.
     - If you use Informatica authentication with version 10.4.0, set `10.4.0` as the value for the environment variable.
     - If you use Informatica authentication with version 10.5, set `10.5.0` as the value for the environment variable.
     - If you use Informatica authentication with version 10.5.1, set `10.5.1` as the value for the environment variable.
6. Start the Data Validation Client.

Update Informatica Authentication Configuration

After you upgrade, if you use Informatica authentication, you can run the UpdateInformaticaAuthenticationConfiguration Data Validation command to connect to the domain.

UpdateInformaticaAuthenticationConfiguration

Updates the Informatica authentication properties in the Data Validation Option schema. You can run this command on Windows. After you upgrade Data Validation Option, if you use Informatica authentication, you can run the command to connect to the domain.

The UpdateInformaticaAuthenticationConfiguration command uses the following syntax:

```
DVOCmd UpdateInformaticaAuthenticationConfiguration
[--confdir CONFDIR]
[--infaHostName INFAHOSTNAME]
[--infaHttpPort INFAHTTPPORT]
[--isSecureConnection ISSECURECONNECTION]
[--username USERNAME]
[--password PASSWORD]
[--ePassword PASSWORD ENVIRONMENT VARIABLE]
[--namespace NAMESPACE]
```

You can get these parameters from the nodemeta.xml file available in the following location:

<Informatica installation directory>/server/isp

The following table describes UpdateInformaticaAuthenticationConfiguration options and arguments:

Option	Argument	Description
--confdir	CONFDIR	The user configuration directory. Specify the configuration directory if you have multiple Data Validation Option repositories on a client machine. If you have one Data Validation Option repository on a client machine and have not changed the configuration directory, you do not need to specify this option. Because Windows directories often contain spaces, you must enclose the file path in quotes.
--infaHostName	INFAHOSTNAME	Host name of the Informatica gateway.
--infaHttpPort	INFAHTTPPORT	Port number that you use to connect to the Informatica gateway.
--isSecureConnection	ISSECURECONNECTION	Set the argument as true if TLS is enabled in the Informatica gateway.
--username	USERNAME	Informatica administrator user for the Informatica gateway.
--password	PASSWORD	Password of the Informatica administrator account. If you set the **password** option, then do not set the **ePassword** option.
--ePassword	PASSWORD ENVIRONMENT VARIABLE	Encrypted form of the password of the Informatica administrator account. Use the DVOCmd EncryptPassword command to encrypt the password. Set an environment variable to the encrypted password and use the variable in the ePassword option. The command replaces the environment variable with the encrypted password and then decrypts the password. If you set the **ePassword** option, then do not set the **password** option. If the command contains both the **password** and **ePassword** options, then the Data Validation Option uses the **ePassword** and ignores the **password.**
--namespace	NAMESPACE	Namespace of the LDAP domain. Required if you configure Informatica Authentication with LDAP domain.

CHAPTER 6

Install DVOcmd on UNIX

This chapter includes the following topics:

- Install DVOCmd on UNIX Overview, 45
- Prepare to Install DVOCmd on UNIX, 45
- Step 1. Extract the DVOCmd Files, 46
- Step 2. Prepare Other DVOCmd Files, 46
- Step 3. Configure Environment Variables, 47
- Step 4. Configure DVOCmd for Kerberos, 48

Install DVOCmd on UNIX Overview

DVOCmd installs with Data Validation Option. You can also install DVOCmd separately on a UNIX or Linux machine. You must install DVOCmd on a node within the Informatica domain.

Perform the following tasks to install DVOCmd on UNIX:

1. Extract the DVOCmd files and create the directory structure.
2. Copy files from the Data Validation Client and the Informatica installation directory to the DVOCmd directory structure.
3. Configure environment variables.
4. If you run DVOCmd in a Kerberos environment, cache a ticket-granting ticket.

Prepare to Install DVOCmd on UNIX

Before you install DVOCmd on UNIX, you must perform prerequisite tasks on the UNIX machine, such as configuring PowerCenter for Data Validation Option.

Before you install DVOCmd on UNIX, perform the following tasks:

- If you installed a previous version of DVOCmd, delete the DVOCmd installation folder before you install DVOCmd.
- If you connect to more than one domain from the PowerCenter Client copy the `domains.infa` file from the PowerCenter Client installation directory to the following directory on the UNIX machine: `/home/<user>/Informatica/<version>`.

Step 1. Extract the DVOCmd Files

The installer files are compressed and distributed as a .tar file.

You must install DVOCmd on a machine that hosts a node in the Informatica domain.

To unzip the .tar file on Solaris, use GNU Tar. You can download GNU Tar from the following website: http://www.gnu.org/software/tar/

1. Log in as a user with permission to untar the DVOCmd files.
2. Use binary mode to transfer the tar file to a machine that hosts an Informatic domain node through FTP.
3. From the command line, unzip or untar the DVOCmd package to a directory, such as the home directory.

   For example, you might run the following command: `cd $HOME tar -xvf install-dvocmd-<version>.tar`

   This command creates the installation directory structure and extracts files to the directory.
4. To convert the text files to a UNIX format, run the following command from the DVOCmd installation directory: `$HOME/DVO/DVOCmd dos2unix DVOCmd`

Step 2. Prepare Other DVOCmd Files

After you extract the installer files, you need to copy files from the Informatica installation directory to the DVOCmd installation directory. You also need to create a directory for the Data Validation properties file and copy DVOConfig.properties from the client machine.

1. Copy the jlmapi.jar file from the following directory: `$INFA_HOME/server/bin/javalib/jlmapi.jar`

   to the following directory: `<DVOCmd installation directory>/lib`
2. Copy the locale files from the following directory: `$INFA_HOME/server/bin`

   `pm_KAMMSG_PC_EN.res`

   `pm_KAMMSG_PC_JA.res`

   `pm_S_EN.res`

   `pm_S_JA.res`

   `pmlocale.bin`

   to the following directory: `<DVOCmd installation directory>/lib/pclib_<version>`
3. Create the following directory: `$HOME/.config/DataValidator`
4. Copy the DVOConfig.properties file from the Data Validation Client machine to the following directory: `$HOME/ .config/DataValidator`.

Step 3. Configure Environment Variables

Informatica uses environment variables to store configuration information when it runs the application services and connects to the clients. Configure the environment variables to meet the Data Validation Option requirements.

Log in with the system user account you used to install Informatica.

Set the following environment variables on the UNIX or Linux machine:

JRE

Set to the directory where JRE is installed with Informatica Services. For example, specify `$INFA_HOME/server/java/jre/bin`.

INFA_DOMAINS_FILE

Set to the path and file name of the domains.infa file. For example, specify `/home/<user>/Informatica/<version>/domains.infa`.

PC_CLIENT_INSTALL_PATH

Set to the installation path. For example, specify `$INFA_HOME/server/bin`.

PATH

Add the following directories to the PATH environment variable: `$INFA_HOME/server/bin` and `$JRE/bin`.

LD_LIBRARY_PATH

If you run DVOCmd on Linux, verify that LD_LIBRARY_PATH includes the following path: `$INFA_HOME/server/bin`.

LIBPATH

If you run DVOCmd on AIX, verify that LIBPATH includes the following path: `$INFA_HOME/server/bin`.

DVO_PC_VERSION

- If you use Informatica authentication with version 10.2, set `10.2.0` as the value for the environment variable.
- you use Informatica authentication with version 10.2 HotFix 2, set `10.2.0.2` as the value for the environment variable.
- If you use Informatica authentication with version 10.4.0, set `10.4.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.5, set `10.5.0` as the value for the environment variable.
- If you use Informatica authentication with version 10.5.1, set `10.5.1` as the value for the environment variable.

DV_CONFIG_DIR

Set to the directory where you copied the DVConfig.properties file. Specify the full path of the file, such as `$HOME/ .config/DataValidator/DVConfig.properties`.

If the domain uses Kerberos authentication in a version 10.2 HotFix 2 or later domain, configure the following environment variables:

INFA_TRUSTSTORE

If you enable secure communication, set the INFA_TRUSTSTORE variable with the directory that contains the truststore files for the SSL certificates. The directory must contain truststore files named infa_truststore.jks and infa_truststore.pem.

You must set the INFA_TRUSTSTORE variable if you use the default SSL certificate provided by Informatica or a certificate that you provide.

INFA_TRUSTSTORE_PASSWORD

If you enable secure communication for the domain and you specify the SSL certificate to use, set the INFA_TRUSTSTORE_PASSWORD variable with the password for the infa_truststore.jks that contains the SSL certificate. The password must be encrypted. Use the command line program pmpasswd to encrypt the password.

KRB5_CONFIG

Use the KRB5_CONFIG environment variable to store the path and file name of the Kerberos configuration file. The name of the Kerberos configuration file is `krb5.conf`. You must set the KRB5_CONFIG environment variable on each machine that hosts an Informatica client.

Set the variable to the following value: `$INFA_HOME\services\shared\security\krb5.conf`

Step 4. Configure DVOCmd for Kerberos

If you are running Data Validation Option in a Kerberos environment, cache a ticket-granting ticket for the user on the Data Validation Option host.

1. Run the following command: `kinit -f <username>` where *username* is the Active Directory user name of the user.

   The kinit command prompts you for the Active Directory password of the user.

2. To verify that the kinit command has cached the ticket, run the following command: `klist`.

   For example, to run the RunTests command from UNIX in a Kerberos domain, enter the following commands in sequence:

   ```
   kinit -f <username>
   ./DVOCmd RunTests <External ID> --namespace <security domain name>
   ```

APPENDIX A

Installation and Configuration Checklist

This appendix includes the following topics:

- Installation and Configuration Checklist Overview, 49
- Prepare to Install Data Validation Option, 49
- Install Data Validation Option, 50
- Configure Data Validation Option, 50
- Install DVOCmd on UNIX, 50

Installation and Configuration Checklist Overview

The installation and configuration checklist summarizes the tasks that you must perform to complete an installation.

Prepare to Install Data Validation Option

To prepare for an installation, perform the following tasks:

- ❑ Verify Informatica services requirements. Verify that application services are running in the domain.
- ❑ Verify the system requirements. Verify that the PowerCenter Client machine meets the following requirements:
  - Minimum system requirements
  - PowerCenter version requirements
  - Permission requirements
- ❑ Prepare the Data Validation Option repository database. Perform the following tasks to set up the repository database:
  - Set up a database user account for the repository database.
  - Verify the database requirements for the database that you use.

- ❑ Configure associated PowerCenter users. Each Data Validation Option user is associated with a PowerCenter user.
- ❑ Record information that you will need when you configure Data Validation Option. Record information about the repository, the domain, and user authentication.

Install Data Validation Option

Perform the following tasks associated with the installation:

- ❑ Read the Release Notes.
- ❑ Verify the license key.
- ❑ Extract the installer files.
- ❑ Perform the installation in graphical mode or in silent mode.

Configure Data Validation Option

To complete the configuration of Data Validation Option, perform the following tasks:

- ❑ Configure the PowerCenter Integration Service. Copy the dvoct.jar file to the PowerCenter Integration Service machine and configure the location of the file in the Administrator tool.
- ❑ Configure PowerCenter Client properties. Perform the following tasks in the PowerCenter Client:
  - Create a target folder in the Repository Manager to store data validation metadata.
  - Create a connection in the Workflow Manager to the Data Validation Option repository.
- ❑ Configure Data Validation Client preferences. Configure the following global settings in the Data Validation Client:
  - Create the Data Validation repository.
  - Configure mapping properties.
  - Enable authentication.
- ❑ Add the PowerCenter repository to the Data Validation Client.
- ❑ Configure environment variables.

Install DVOCmd on UNIX

You can also DVOCmd separately on a UNIX or Linux machine. You must install DVOCmd on a node within the Informatica domain.

Perform the following tasks to install DVOCmd on a UNIX or Linux machine:

- ❑ Complete pre-installation tasks. Perform the following pre-installation tasks:
  - Uninstall any previous version of DVOCmd.
  - If you connect to more than one domain from the PowerCenter Client, copy the domains.infa file to the UNIX machine.
- ❑ Extract the DVOCmd files and convert the files to a UNIX format.
- ❑ Prepare other DVOCmd file:
  - Copy other files to the DVOCmd installation directory.
  - Create a directory for the configuration file, and copy DVOConfig.properties to that directory.
- ❑ Configure environment variables.
- ❑ If you are running Data Validation Option in a Kerberos environment, configure Kerberos.

INDEX

A

Authentication
  update configuration at command line 43

B

batch file
  multiple PowerCenter instances 41
  multiple users 39
batch files
  configuring for multiple environments 38

C

CreateUserConfig
  command 37

D

Data Validation Option repository
  creating 20
  database connection 21
  mapping properties, configuring 24
  multiple instances 39
database connection
  Data Validation Option repository 21
DVO repository requirements
  Microsoft SQL Server 10
DVOCmd
  CreateUserConfig command 37
  LinkDVOUsersToInformatica command 23
  UpdateInformaticaAuthenticationConfiguration command 43

I

installation
  graphical mode 16
  PowerCenter version requirements 8
  in silent mode 16
  minimum system requirements 8
  permission requirements 8
  upgrading from version 10.2 HotFix 2 42

L

license
  specifying 20
license keys
  verifying 15
LinkDVOUsersToInformatica
  command 23

M

mapping properties
  configuring 24
Metadata Manager
  configuring 20
Microsoft SQL Server
  DVO repository requirements 10
minimum system requirements
  installation 8
multiple users
  configuring 39

O

Oracle Advance Security (ASO)
  requirements 11

P

PowerCenter repository
  adding 29
PowerCenter users
  creating 11
pre-install
  record information 12

R

repositories
  PowerCenter, adding 29
repository database
  Oracle ASO 11

T

table-pair tests
  troubleshooting 28

U

UpdateInformaticaAuthenticationConfiguration
  command 43
user configuration directory
  creating at the command line 37
users
  creating 11

users *(continued)*
linking 23