



# **Delphix Engine 4.3**

## **Quick Start Guide**

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Delphix Engine 4.2 Pre-Install User Guide

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# \_QuickStart

# Quick Start Guide for The Delphix Engine

These topics describe the basic processes for setting up environments, setting up dSources, provisioning VDBs, and then deleting dSources and VDBs.

These topics are excerpted from the larger user guide, and are intended to provide you with a quick overview of basic procedures for working with database objects in the Delphix Engine. This guide does not cover setting up and configuring the Delphix Engine, and the requirements of your installation and database platform may require more detailed instructions. We highly recommend that you read the topics linked from the topics in this guide, as well as the conceptual overview topics included at the beginning of each chapter of the user guide, before undertaking complex operations with the Delphix Engine.

- [Create a Group](#)
- [SQL Server Quick Start Topics](#)
- [Set Up a SQL Server Target Environment](#)
- [Set Up a SQL Server Source Environment](#)
- [Link a SQL Server Data Source](#)
- [Provision a SQL Server VDB](#)
- [Oracle Quick Start Topics](#)
- [Set Up an Oracle Single Instance or RAC Environment](#)
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- [Provision an Oracle VDB](#)
- [PostgreSQL Quick Start Topics](#)
- [Add a PostgreSQL Environment](#)
- [Link a PostgreSQL Data Source](#)
- [Provision a PostgreSQL VDB](#)
- [SAP ASE Quick Start Topics](#)
- [Delete a VDB](#)
- [Delete a dSource](#)
- [Disable a dSource](#)

## Oracle Quick Start Topics

These topics, which are excerpted from the larger User Guide, are intended to provide you with a quick overview of working with Oracle database objects in the Delphix Engine. Before undertaking any of these procedures we strongly recommend that you read the topics in the **Oracle Support and Requirements** section.

- **Set Up an Oracle Single Instance or RAC Environment**
- **Link an Oracle Data Source**
- **Provision an Oracle VDB**

## Set Up an Oracle Single Instance or RAC Environment

### Prerequisites

- See the topics [Requirements for Oracle Target Hosts and Databases](#) and [Supported Operating Systems and DBMS Versions for Oracle Environments](#)

### Procedure

1. Login to the **Delphix Admin** application using **Delphix Admin** credentials.
2. Click **Manage**.
3. Select **Environments**.
4. Click the **Plus** icon next to **Environments**.
5. In the **Add Environment** dialog, select **Unix/Linux**.
6. Select **Standalone Host** or **Oracle Cluster**, depending on the type of environment you are adding.
7. For standalone Oracle environments enter the **Host IP** address.
8. For Oracle RAC environments, enter the **Node Address** and **Cluster Home**.
9. Enter an optional **Name** for the environment.
10. Enter the **SSH** port.  
The default value is **22**.
11. Enter a **Username** for the environment.  
See [Requirements for Oracle Target Hosts and Databases](#) for more information on the required privileges for the environment user.
12. Select a **Login Type**.  
For **Password**, enter the password associated with the user in Step 10.

#### Using Public Key Authentication

If you want to use public key encryption for logging into your environment:

- a. Select **Public Key** for the **Login Type**.
- b. Click **View Public Key**.
- c. Copy the public key that is displayed, and append it to the end of your `~/.ssh/authorized_keys` file. If this file does not exist, you will need to create it.
  - i. Run `chmod 600 authorized_keys` to enable read and write privileges for your user.
  - ii. Run `chmod 755 ~` to make your home directory writable only by your user.

The public key needs to be added only once per user and per environment.

You can also add public key authentication to an environment user's profile by using the command line interface, as explained in the topic [CLI Cookbook: Setting Up SSH Key Authentication for UNIX Environment Users](#).

13. For **Password Login**, click **Verify Credentials** to test the username and password.
14. Enter a **Toolkit Path**.  
The toolkit directory stores scripts used for Delphix Engine operations, and should have a persistent working directory rather than a temporary one. The toolkit directory will have a separate sub-directory for each database instance. The toolkit path must have 0770 permissions and at least 345MB of free space.
15. Click **OK**.

### Post-Requisites

After you create the environment, you can view information about it by selecting **Manage > Environments**, and then select the environment name.

### Related Links

- [Requirements for Oracle Target Hosts and Databases](#)
- [Supported Operating Systems and DBMS Versions for Oracle Environments](#)





## Link an Oracle Data Source

### Prerequisites

- Make sure you have the correct user credentials for the source environment, as described in [Requirements for Oracle Target Hosts and Databases](#).
- If you are linking a dSource to an Oracle or Oracle RAC physical standby database, you should read the topic [Linking Oracle Physical Standby Databases](#).
- If you are using Oracle Enterprise Edition, you must have Block Change Tracking (BCT) enabled as described in [Requirements for Oracle Source Hosts and Databases](#).
- The source database should be in ARCHIVELOG mode and the NOLOGGING option should be disabled as described in [Requirements for Oracle Source Hosts and Databases](#)
- You may also want to read the topic [Advanced Data Management Settings for Oracle dSources](#).

### Procedure

1. Log into the **Delphix Admin** application using **Delphix Admin** credentials.
2. Select **Manage > Databases > Add dSource**.  
Alternatively, on the **Environment Management** screen, you can click **Link** next to a database name to start the dSource creation process.
3. In the **Add dSource** wizard, select the source database.

#### Changing the Environment User

If you need to change or add an environment user for the source database, see [Managing Oracle Environment Users](#).

4. Enter your login credentials for the source database and click **Verify Credentials**. If you are linking a mounted standby, click **Advanced** and enter non-SYS login credentials as well. Click **Next**.  
See the topics under [Linking Oracle Physical Standby Databases](#) for more information about how the Delphix Engine uses non-SYS login credentials.
5. Select a **Database Group** for the dSource, and then click **Next**.  
Adding a dSource to a database group lets you set Delphix Domain user permissions for that database and its objects, such as snapshots. See the topics under [Users, Permissions, and Policies](#) for more information.
6. Select an **Initial Load** option.  
By default, the initial load takes place upon completion of the linking process. Alternatively, you can set the initial load to take place according to the SnapSync policy, for example if you want the initial load to take place when the source database is not in use, or after a set of operations have taken place.
7. Select whether the data in the database is **Masked**.  
This setting is a flag to the Delphix Engine that the database data is in a masked state. Selecting this option will not mask the data.
8. Select a **SnapSync** policy.  
See [Advanced Data Management Settings for Oracle dSources](#) for more information.
9. Click **Advanced** to edit LogSync, Validated Sync, and Retention policies.  
See [Advanced Data Management Settings for Oracle dSources](#) for more information.
10. Click **Next**.
11. Review the **dSource Configuration** and **Data Management** information, and then click **Finish**.  
The Delphix Engine will initiate two jobs, **DB\_Link** and **DB\_Sync**, to create the dSource. You can monitor these jobs by clicking **Active Jobs** in the top menu bar, or by selecting **System > Event Viewer**. When the jobs have successfully completed, the database icon will change to a dSource icon on the **Environments > Databases** screen, and the dSource will be added to the list of **My Databases** under its assigned group.

#### The dSource Card

After you have created a dSource, you can view information about it on the dSource card, and also make modifications to its policies and permissions. In the **Databases** panel, click on the **Open** icon to view the front of the dSource card. The card will then flip, showing you information such as the **Source Database** and **Data Management** configuration. For more information, see [Advanced Data Management Settings for Oracle dSources](#).

### Related Links

- [Advanced Data Management Settings for Oracle dSources](#)
- [Requirements for Oracle Source Hosts and Databases](#)

- **Requirements for Oracle Target Hosts and Databases**
- **Linking dSources from an Encrypted Oracle Database**
- **Linking Oracle Physical Standby Databases**
- **Users, Permissions, and Policies**
- **Managing Oracle Environment Users**

## Provision an Oracle VDB

### Prerequisites

- You will need to have linked a dSource from a source database, as described in [Linking an Oracle Data Source](#), or have already created a VDB from which you want to provision another VDB
- You will need to have the correct OS User privileges on the target environment, as described in [Requirements for Oracle Target Hosts and Databases](#)
- If you want to use customized database configuration settings, first create a **VDB Config Template** as described in [Customizing Oracle VDB Configuration Settings](#)
- If you are creating a VDB from a dSource linked to an encrypted database, make sure you have copied the wallet file to the target environment as described in [Provisioning a VDB from an Encrypted Oracle Database](#)

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**.
3. Select **Databases**.
4. Select **My Databases**.
5. Select a **dSource**.
6. Select a **dSource snapshot**.  
See [Provisioning by Snapshot and LogSync](#) in this topic for more information on provisioning options.

You can take a snapshot of the dSource to provision from by clicking the **Camera** icon on the dSource card.

7. **Optional:** Slide the **LogSync** slider to the open the snapshot timeline, and then move the arrow along the timeline to provision from a point of time within a snapshot.

You can provision from the most recent log entry by opening the snapshot timeline, and then click the red **Arrow** icon next to the LogSync Slider.

8. Click **Provision**.  
The **Provision VDB** panel will open, and the fields **Installation Home**, **Database Unique Name**, **SID**, **Database Name**, **Mount Base**, and **Environment User** will auto-populate with information from the dSource.
9. If you need to add a new target environment for the VDB, click the green **Plus** icon next to the **Filter Target** field, and follow the instructions in [Adding an Oracle Single Instance or RAC Environment](#).
10. Review the information for **Installation Home**, **Database Unique Name**, **SID**, and **Database Name** and edit as necessary.
11. Review the **Mount Base** and **Environment User** and edit as necessary.  
The Environment User must have permissions to write to the specified Mount Base, as described in [Requirements for Oracle Target Hosts and Databases](#). You may also want to create a new writeable directory in the target environment with the correct permissions, and use that as the Mount Base for the VDB.
12. Select **Provide Privileged Credentials** if you want to use login credentials on the target environment other than those associated with the **Environment User**.
13. Click **Advanced** to select Oracle Node Listeners or enter any VDB configuration settings or file mappings.  
For more information, see [Customizing Oracle VDB Configuration Settings](#) and [Customizing VDB File Mappings](#).

If you are provisioning to a target environment that is running a Linux OS, you will need to compare the `SGA_TARGET` configuration parameter with the shared memory size in `/dev/shm`. The shared memory configured on the target host should match the SGA memory target. You can check this by opening the **Advanced** settings, and then finding the value for `SGA_TARGET` under **DB Configuration**.

14. Click **Next**.
15. Select a **Target Group** for the VDB.  
Click the green **Plus** icon to add a new group, if necessary.
16. Select a **Snapshot Policy** for the VDB.  
Click the green **Plus** icon to create a new policy, if necessary.

17. Click **Next**.
18. Enter any operations that should be run at **Hooks** during the provisioning process.  
For more information, see [Customizing Oracle Management with Hook Operations](#).
19. Click **Next**.
20. Click **Finish**.  
When provisioning starts, you can review progress of the job in the Databases panel, or in the **Job History** panel of the **Dashboard**.  
When provisioning is complete, the VDB will be included in the group you designated, and listed in the **Databases** panel. If you select the VDB in the **Databases** panel and click the **Open** icon, you can view its card, which contains information about the database and its Data Management settings.

### Provisioning by Snapshot or LogSync

When provisioning by snapshot, you can provision to the start of any particular snapshot, either by time or SCN.

Provisioning By Snapshot	Description
Provision by Time	You can provision to the start of any snapshot by selecting that snapshot card from the Timeflow view, or by entering a value in the time entry fields below the snapshot cards. The values you enter will snap to the beginning of the nearest snapshot.
Provision by SCN	You can use the <b>Slide to Provision by SCN</b> control to open the SCN entry field. Here, you can type or paste in the SCN you want to provision to. After entering a value, it will "snap" to the start of the closest appropriate snapshot.

When provisioning by LogSync information, you can provision to any point in time, or to any SCN , within a particular snapshot. The TimeFlow view for a dSource shows multiple snapshots by default. To view the LogSync data for an individual snapshot, use the **Slide to Open LogSync** control at the top of an individual snapshot card.

Provisioning By LogSync	Description
Provision bySCN	Use the <b>Slide to Open LogSync</b> and <b>Slide to Provision bySCN</b> controls to view the range of SCNs within that snapshot. Drag the red triangle to the LSN that you want to provision from. You can also type or paste in the specific SCN you want to provision to. Note that if the SCN doesn't exist, you will see an error when you provision.
Provision by Time	Use the <b>Slide to Open LogSync</b> control to view the time range within that snapshot. Drag the red triangle to the point in time that you want to provision from. You can also enter a date and time directly.

### Related Links

- [Linking an Oracle Data Source](#)
- [Requirements for Oracle Target Hosts and Databases](#)
- [Customizing Oracle VDB Configuration Settings](#)
- [Provisioning a VDB from an Encrypted Oracle Database](#)
- [Adding an Oracle Single Instance or RAC Environment](#)
- [Customizing VDB File Mappings](#)

## PostgreSQL Quick Start Topics

These topics, which are excerpted from the larger User Guide, are intended to provide you with a quick overview of working with PostgreSQL data sources in the Delphix Engine. Before undertaking any of these procedures we strongly recommend that you read the topics in the **PostgreSQL Support and Requirements** section.

- **Add a PostgreSQL Environment**
- **Link a PostgreSQL Data Source**
- **Provision a PostgreSQL VDB**

## Add a PostgreSQL Environment

This topic describes how to add a PostgreSQL source environment to the Delphix Engine.

### Prerequisites

Make sure your environment meets the requirements described in the following topics:

- [Requirements for PostgreSQL Source Hosts and Databases](#)
- [Requirements for PostgreSQL Target Hosts and Databases](#)
- [Supported Operating Systems and Database Versions for PostgreSQL Environments](#)

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**.
3. Select **Environments**.
4. Next to **Environments**, click the green **Plus** icon.
5. In the **Add Environment** dialog, select **Unix/Linux** in the operating system menu.
6. Select **Standalone Host**.
7. Enter the **Host IP** address.
8. Enter an optional **Name** for the environment.
9. Enter the **SSH** port.  
The default value is **22**.
10. Enter a **Username** for the environment.  
For more information about the environment user requirements, see [Requirements for PostgreSQL Target Hosts and Databases](#) and [Requirements for PostgreSQL Source Hosts and Databases](#).
11. Select a **Login Type**.  
For **Password**, enter the password associated with the user in Step 9.

#### Using Public Key Authentication

If you want to use public key encryption for logging into your environment:

- a. Select **Public Key** for the **Login Type**.
- b. Click **View Public Key**.
- c. Copy the public key that is displayed, and append it to the end of your `~/.ssh/authorized_keys` file. If this file does not exist, you will need to create it.
  - i. Run `chmod 600 authorized_keys` to enable read and write privileges for your user.
  - ii. Run `chmod 755 ~` to make your home directory writable only by your user.

The public key needs to be added only once per user and per environment.

You can also add public key authentication to an environment user's profile by using the command line interface, as explained in the topic [CLI Cookbook: Setting Up SSH Key Authentication for UNIX Environment Users](#).

12. For **Password Login**, click **Verify Credentials** to test the username and password.
13. Enter a **Toolkit Path**.  
See [Requirements for PostgreSQL Target Hosts and Databases](#) and [Requirements for PostgreSQL Source Hosts and Databases](#) for more information about the toolkit directory requirements.
14. Click **OK**.  
As the new environment is added, you will see two jobs running in the Delphix Admin Job History, one to **Create and Discover** an environment, and another to **Create** an environment. When the jobs are complete, you will see the new environment added to the list in the **Environments** panel. If you don't see it, click the **Refresh** icon in your browser.

### Post-Requisites

- After you create the environment, you can view information about it by selecting **Manage > Environments**, and then select the environment name.

## Related Links

- [Setting Up PostgreSQL Environments: An Overview](#)
- [Requirements for PostgreSQL Source Hosts and Databases](#)
- [Requirements for PostgreSQL Target Hosts and Databases](#)
- [Supported Operating Systems and Database Versions for PostgreSQL Environments](#)
- [Adding an Installation to a PostgreSQL Environment](#)

## Link a PostgreSQL Data Source

This topic describes the basic procedure for linking a dSource from a PostgreSQL database to the Delphix Engine.

### Prerequisites

- Make sure you have the correct user credentials for the source environment, as described in [Requirements for PostgreSQL Source Hosts and Databases](#)
- You may also want to read the topic [Advanced Data Management Settings for PostgreSQL Data Sources](#).

### Procedure

1. Login to the **Delphix Admin** application using **Delphix Admin** credentials.
2. Click **Manage**.
3. Select **Databases**.
4. Select **Add dSource**.  
Alternatively, on the **Environment Management** screen, you can click **Link** next to a database name to start the dSource creation process.
5. In the **Add dSource** wizard, select the source database.

#### Changing the Environment User

If you need to change or add an environment user for the source database, see [Managing PostgreSQL Environment Users](#).

6. Enter your login credentials for **DB Cluster User** and **DB Cluster Password**.
7. Click **Advanced** to enter a **Connection Database**.  
The **Connection Database** will be used when issuing SQL queries from the Delphix Engine to the linked database. It can be any existing database that the **DB Cluster User** has permission to access.
8. Click **Next**.
9. Select a **Database Group** for the dSource, and then click **Next**.  
Adding a dSource to a database group lets you set Delphix Domain user permissions for that database and its objects, such as snapshots. See the topics under [Users, Permissions, and Policies](#) for more information.
10. Select a **SnapSync Policy**, and, if necessary, a **Staging Installation** for the dSource.  
The **Staging installation** represents the PostgreSQL binaries that will be used on the staging target to backup and restore the linked database to a warm standby.
11. Click **Advanced** to select whether the data in the data sources is **Masked**, to select a **Retention Policy**, and to indicate whether any pre or post scripts should be executed during the dSource creation.  
For more information, see [Advanced Data Management Settings for PostgreSQL Data Sources](#) and [Using Pre- and Post-Scripts with PostgreSQL dSources](#).
12. Click **Next**.
13. Review the **dSource Configuration** and **Data Management** information, and then click **Finish**.  
The Delphix Engine will initiate two jobs, **DB\_Link** and **DB\_Sync**, to create the dSource. You can monitor these jobs by clicking **Active Jobs** in the top menu bar, or by selecting **System > Event Viewer**. When the jobs have successfully completed, the database icon will change to a dSource icon on the **Environments > Databases** screen, and the dSource will be added to the list of **My Databases** under its assigned group.

#### The dSource Card

After you have created a dSource, you can view information about it on the dSource card, and also make modifications to its policies and permissions. In the **Databases** panel, click on the **Open** icon to view the front of the dSource card. The card will then flip, showing you information such as the **Source Database** and **Data Management** configuration. For more information, see [Advanced Data Management Settings for PostgreSQL Data Sources](#).

### Related Links

- [Advanced Data Management Settings for PostgreSQL Data Sources](#)
- [Requirements for PostgreSQL Target Hosts and Databases](#)
- [Using Pre- and Post-Scripts with PostgreSQL dSources](#)
- [Users, Permissions, and Policies](#)





## Provision a PostgreSQL VDB

This topic describes how to provision a virtual database (VDB) from a PostgreSQL dSource.

### Prerequisites

- You will need to have linked a dSource from a source database, as described in [Linking a PostgreSQL dSource](#), or have already created a VDB from which you want to provision another VDB

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**.
3. Select **Databases**.
4. Select **My Databases**.
5. Select a **dSource**.
6. Select a **dSource snapshot**.  
See [Provisioning by Snapshot and LogSync](#) in this topic for more information on provisioning options.

You can take a snapshot of the dSource to provision from by clicking the **Camera** icon on the dSource card.

7. **Optional:** Slide the **LogSync** slider to the open the snapshot timeline, and then move the arrow along the timeline to provision from a point in time within a snapshot.
8. Click **Provision**.  
The **VDB Provisioning Wizard** will open, and the fields **Installation**, **Mount Base**, and **Environment User** will auto-populate with information from the environment configuration.
9. Enter a **Port Number**.  
The TCP port upon which the VDB will listen.
10. Click **Advanced** to enter any VDB configuration settings.  
For more information, see [Customizing PostgreSQL VDB Configuration Settings](#).
11. Click **Next** to continue to the **VDB Configuration** tab.
12. Modify the **VDB Name** if necessary.
13. Select a **Target Group** for the VDB.
14. Click the green **Plus** icon to add a new group, if necessary.
15. Select a **Snapshot Policy** for the VDB.
16. Click the green **Plus** icon to create a new policy, if necessary.
17. Click **Next** to continue to the **Hooks** tab.
18. Specify any **Hooks** to be used during the provisioning process.  
For more information, see [Customizing PostgreSQL Management with Hook Operations](#).
19. Click **Next** to continue to the **Summary** tab.
20. Click **Finish**.  
When provisioning starts, you can review progress of the job in the Databases panel, or in the **Job History** panel of the **Dashboard**.  
When provisioning is complete, the VDB will be included in the group you designated, and listed in the **Databases** panel. If you select the VDB in the Databases panel and click the **Open** icon, you can view its card, which contains information about the database and its Data Management settings.

### Provisioning by Snapshot or LogSync

When provisioning by snapshot, you can provision to the start of any snapshot by selecting that snapshot card from the Timeflow view, or by entering a value in the time entry fields below the snapshot cards. The values you enter will snap to the beginning of the nearest snapshot.

When provisioning by LogSync information, you can provision to any point in time within a particular snapshot. The TimeFlow view for a dSource shows multiple snapshots by default. To view the LogSync data for an individual snapshot, use the **Slide to Open LogSync** control at the top of an individual snapshot card to view the time range within that snapshot. Drag the red triangle to the point in time that you want to provision from. You can also enter a date and time directly.

## Related Links

- [Linking a PostgreSQL dSource](#)
- [Requirements for PostgreSQL Target Hosts and Databases](#)
- [Using Pre- and Post-Scripts with dSources and VDBs](#)
- [Customizing PostgreSQL VDB Configuration Settings](#)

## MySQL Quick Start Topics

These topics, which are excerpted from the larger User Guide, are intended to provide you with a quick overview of working with MySQL database objects in the Delphix Engine. Before undertaking any of these procedures we strongly recommend that you read the topics in the **MySQL Support and Requirements** section.

## Add a MySQL Environment

This topic describes how to add a MySQL source environment to the Delphix Engine.

### Prerequisites

Make sure your environment meets the requirements described in the following topics:

- [Requirements for MySQL Source Hosts and Databases](#)
- [Requirements for MySQL Target/Staging Hosts and Databases](#)
- [Supported Operating Systems and Database Versions for MySQL Environments](#)

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**.
3. Select **Environments**.
4. Next to **Environments**, click the green **Plus** icon.
5. In the **Add Environment** dialog, select **Unix/Linux** in the operating system menu.
6. Select **Standalone Host**.
7. Enter the **Host IP** address.
8. Enter an optional **Name** for the environment.
9. Enter the **SSH** port.  
The default value is **22**.
10. Enter a **Username** for the environment.  
For more information about the environment user requirements, see [Requirements for MySQL Target/Staging Hosts and Databases](#) and [Requirements for MySQL Source Hosts and Databases](#).
11. Select a **Login Type**.  
For **Password**, enter the password associated with the user in step 9.

#### Using Public Key Authentication

If you want to use public key encryption for logging into your environment:

- a. Select **Public Key** for the **Login Type**.
- b. Click **View Public Key**.
- c. Copy the public key that is displayed, and append it to the end of your `~/.ssh/authorized_keys` file. If this file does not exist, you will need to create it.
  - i. Run `chmod 600 authorized_keys` to enable read and write privileges for your user.
  - ii. Run `chmod 755 ~` to make your home directory writable only by your user.

The public key needs to be added only once per user and per environment.

You can also add public key authentication to an environment user's profile by using the command line interface, as explained in the topic [CLI Cookbook: Setting Up SSH Key Authentication for UNIX Environment Users](#).

12. For **Password Login**, click **Verify Credentials** to test the username and password.
13. Enter a **Toolkit Path**.  
For more information about the toolkit directory requirements, see [Requirements for MySQL Target/Staging Hosts and Databases](#) and [Requirements for MySQL Source Hosts and Databases](#).
14. Click **OK**.  
As the new environment is added, you will see two jobs running in the Delphix Admin Job History, one to **Create and Discover** an environment, and another to **Create** an environment. When the jobs are complete, you will see the new environment added to the list in the **Environments** tab. If you do not see it, click the **Refresh** icon in your browser.

### Post-Requisites

To view information about an environment after you have created it:

1. Click **Manage**.

2. Select **Environments**.
3. Select the **environment name**.

#### Related Links

- [Setting Up MySQL Environments: An Overview](#)
- [Requirements for MySQL Source Hosts and Databases](#)
- [Requirements for MySQL Target/Staging Hosts and Databases](#)
- [Supported Operating Systems and Database Versions for MySQL Environments](#)
- [Adding an Installation to a MySQL Environment](#)

## Link a MySQL dSource

This topic describes the basic procedure for linking a dSource from a MySQL database to the Delphix Engine.

### Prerequisites

- Make sure you have the correct user credentials for the source environment, as described in [Requirements for MySQL Source Hosts and Databases](#)
- You may also want to read the topic [Advanced Data Management Settings for MySQL Data Sources](#).

### Procedure

1. Login to the **Delphix Admin** application using Delphix Admin credentials.
2. Click **Manage**.
3. Select **Databases**.
4. Click **Add dSource**.  
Alternatively, on the **Environment Management** screen, you can click **Link** next to a database name to start the dSource creation process.
5. In the **Add dSource** wizard, select the **source database**.

#### Changing the Environment User

If you need to change or add an environment user for the source database, see [Managing MySQL Environment Users](#).

6. Enter your login credentials for **DB Username** and **DB Password**.
7. Click **Next**.
8. Select a **Database Group** for the dSource.
9. Click **Next**.  
Adding a dSource to a database group lets you set Delphix Domain user permissions for that database and its objects, such as snapshots. For more information, see the topics under [Users, Permissions, and Policies](#).
10. Select the **Initial Load** type.
  - a. If selecting **Existing MySQL Backup**, provide the **Path** to the backup and select the **Dump Type**.
11. Select a **SnapSync Policy**, a **Staging Installation**, and a **Staging Port** for the dSource.  
The **Staging installation** represents the MySQL binaries that will be used on the staging target to backup and restore the linked database to a replication slave.
12. If you want to enable **LogSync**, check the **LogSync** checkbox.
13. Click **Advanced** to select a **Retention Policy** and to manually specify replication coordinates.  
For more information, see [Advanced Data Management Settings for MySQL Data Sources](#).
14. Click **Next**.
15. Specify any operations to run before and after the initial sync.  
For more information, see [Using Pre- and Post-Scripts with MySQL dSources](#).
16. Click **Next**.
17. Review the **dSource Configuration** and **Data Management** information.
18. Click **Finish**.

The Delphix Engine will initiate two jobs, **DB\_Link** and **DB\_Sync**, to create the dSource. You can monitor these jobs by clicking **Active Jobs** in the top menu bar, or by selecting **System > Event Viewer**. When the jobs have successfully completed, the database icon will change to a dSource icon on the **Environments > Databases** screen, and the dSource will be added to the list of **My Databases** under its assigned group.

#### The dSource Card

After you have created a dSource, you can view information about it on the dSource card, and also make modifications to its policies and permissions. In the **Databases** panel, click the **Open** icon to view the front of the dSource card. The card will then flip, showing you information such as the **Source Database** and **Data Management** configuration. For more information, see [Advanced Data Management Settings for MySQL Data Sources](#).

### Related Links

- **Requirements for MySQL Source Hosts and Databases**
- **Advanced Data Management Settings for MySQL Data Sources**
- **Managing MySQL Environment Users**
- **Requirements for MySQL Target/Staging Hosts and Databases**
- **Using Pre- and Post-Scripts with MySQL dSources**
- **Users, Permissions, and Policies**



## Provision a MySQL VDB

This topic describes how to provision a virtual database (VDB) from a MySQL dSource.

### Prerequisites

You must have already:

- linked a dSource from a source database, as described in [Linking a MySQL dSource](#)

or,

- created a VDB from which you want to provision another VDB

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**.
3. Click **My Databases**.
4. Select a **dSource**.
5. Select a dSource **snapshot**.  
For more information on provisioning options, see [Provisioning by Snapshot or LogSync](#) below.
6. **Optional:** Slide the **LogSync** slider to open the snapshot timeline, and then move the arrow along the timeline to provision from a point in time within a snapshot.
7. Click **Provision**.  
The **VDB Provisioning Wizard** will open, and the fields **Installation**, **Mount Base**, and **Environment User** will auto-populate with information from the environment configuration.
8. Enter a **Port Number**. This is the TCP port upon which the VDB will listen.
9. Click **Advanced** followed by clicking the green **Plus** icon (Add Parameter) to add new or update existing VDB configuration settings on the template provided.  
For more information, see [Customizing MySQL VDB Configuration Settings](#).
10. Click **Next** to continue to the **VDB Configuration** tab.
11. Modify the **VDB Name** if necessary.
12. Select a **Target Group** for the VDB.
13. If necessary, click the green **Plus** icon to add a new group.
14. Select a **Snapshot Policy** for the VDB.
15. If necessary, click the green **Plus** icon to create a new policy.
16. Click on **LogSync** option to enable LogSync process for point-in-time provisioning/refresh.
17. Click **Next** to continue to the **Hooks** tab.
18. Specify any **Hooks** to be used during the provisioning process.  
For more information, see [Customizing MySQL Management with Hook Operations](#).
19. Click **Next** to continue to the **Summary** tab.
20. Verify all the information displayed for the VDB is correct.
21. Click **Finish**.

When provisioning starts, you can view progress of the job in the **Databases** panel or in the **Job History** panel of the **Dashboard**. When provisioning is complete, the VDB will be included in the group you designated, and listed in the **Databases** panel. If you select the VDB in the **Databases** panel and click the **Open** icon, you can view its card, which contains information about the database and its Data Management settings.

### Provisioning by Snapshot or LogSync

When provisioning by snapshot, you can provision to the start of any snapshot by selecting that snapshot card from the Timeflow view, or by entering a value in the time entry fields below the snapshot cards. The values you enter will snap to the beginning of the nearest snapshot.

When provisioning by LogSync information, you can provision to any point in time within a particular snapshot. The TimeFlow view for a dSource shows multiple snapshots by default. To view the LogSync data for an individual snapshot, use the **Slide to Open LogSync** control at the top of an individual snapshot card to view the time range within that snapshot. Drag the red triangle to the point in time from which you want to provision. You can also enter a date and time directly.

## Related Links

- [Linking a MySQL dSource](#)
- [Requirements for MySQL Target/Staging Hosts and Databases](#)
- [Using Pre- and Post-Scripts with dSources and VDBs](#)
- [Customizing MySQL VDB Configuration Settings](#)

## SQL Server Quick Start Topics

These topics, which are excerpted from the larger User Guide, are intended to provide you with quick overview of how to work with SQL Server database objects in the Delphix Engine. Before undertaking any of these procedures we strongly recommend that you read the topics in the **SQL Server Support and Requirements** section.

- **Set Up a SQL Server Target Environment**
- **Set Up a SQL Server Source Environment**
- **Link a SQL Server Data Source**
- **Provision a SQL Server VDB**

## Set Up a SQL Server Target Environment

This topic describes how to add a SQL Server standalone target environment to the Delphix Engine.

As explained in [Setting Up SQL Server Environments: An Overview](#) SQL Server targets can be used for three purposes in a Delphix Engine deployment:

- They can host a target environment for the provisioning of Virtual Databases (VDBs)
- They can host a staging database for a linked dSource and run the validated sync process
- They can serve as a proxy host for database discovery on source hosts

Regardless of the specific purpose, all Windows targets must have the Delphix Connector installed to enable communication between the host and the Delphix Engine. The instructions in this topic cover initiating the Add Target process in the Delphix Engine interface, running the Delphix Connector installer on the target machine, and then verifying that the target has been added in the Delphix Engine interface.

### Prerequisites

- Make sure your target environment meets the requirements described in [Requirements for SQL Server Target Hosts and Databases](#).
- On the Windows machine that you want to use as a target, you will need to download the Delphix Connector software through the Delphix Engine interface, install it and then register that machine with the Delphix Engine.

### Procedure

1. From the machine that you want to use as a target, start a browser session and connect to the **Delphix Engine GUI** using the `delphix_admin` login.
2. Click **Manage**.
3. Select **Environments**.
4. Next to **Environments**, click the green **Plus** icon.
5. In the **Add Environment** dialog, select **Windows** in the operating system menu.
6. Select **Target**.
7. Select **Standalone**.
8. Click the download link for the **Delphix Connector Installer**.  
The Delphix Connector will download to your local machine.
9. On the Windows machine that you want to use as a target, run the Delphix Connector installer. Click **Next** to advance through each of the installation wizard screens.

The installer will only run on 64-bit Windows systems. 32-bit systems are not supported.

- a. For **Connector Configuration**, make sure there is no firewall in your environment blocking traffic to the port on the target environment that the Delphix Connector service will listen to.
  - b. For **Select Installation Folder**, either accept the default folder, or click **Browse** to select another.
  - c. Click **Next** on the installer final 'Confirm Installation' dialog to complete the installation process and then **Close** to exit the DelphixConnector Install Program.
  - d. Note. The Delphix GUI dialog can be closed using the 'Cancel' button at this point.
  - e. Navigate to the folder where the Connector was installed (e.g. `C:\Program Files\Delphix\DelphixConnector`)
  - f. Run this batch script as Administrator: **<Delphix Connector installation folder>\Delphix\DelphixConnector\connector\addhostgui.cmd**.  
When the **Add Windows Target Environment Wizard** launches, provide the **Target Host IP Address**, **Delphix Engine IP Address**, your login credentials, and the environment user on the Windows target host.
  - g. After providing this information, click **Submit**, and then click **Yes** to confirm the target environment addition request.
10. In the Delphix Engine interface, you will see a new icon for the Target environment, and two jobs running in the **Delphix Admin Job History**, one to **Create and Discover** an environment, and another to **Create** an environment. When the jobs are complete, click on the icon for the new environment, and you will see the details for the environment.

### Post-Requisites

- On the target machine, in the **Windows Start Menu**, go to **Services > Extended Services**, and make sure that the **Delphix Connector** service has a **Status** of **Started**, and that the **Startup Type** is **Automatic**.

## Related Links

- [Setting Up SQL Server Environments: An Overview](#)
- [Requirements for SQL Server Target Hosts and Databases](#)

## Set Up a SQL Server Source Environment

This topic describes how to add a SQL Server source environment.

### Prerequisites

- You must have already set up SQL Server target environments, as described in [Adding a SQL Server Standalone Target Environment](#)
  - You will need to specify a target environment that will act as a proxy for running SQL Server instance and database discovery on the source, as explained in [Setting Up SQL Server Environments: An Overview](#)
- Make sure your source environment meets the requirements described in [Requirements for SQL Server Target Hosts and Databases](#)

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**.
3. Select **Environments**.
4. Next to **Environments**, click the green **Plus** icon.
5. In the **Add Environment** dialog, select **Windows** in the operating system menu.
6. Select **Source**.
  - a. If you are adding a Windows Server Failover Cluster (WSFC), add the environment based on which WSFC feature the source databases use:
    - i. Failover Cluster Instances  
Add the environment as a **standalone** source using the **cluster name** or **address**.
    - ii. AlwaysOn Availability Groups  
Add the environment as a **cluster** source using the **cluster name** or **address**.
  - b. Otherwise, add the environment as a **standalone** source.
7. Select a **Connector Environment**.  
Connector environments are used as proxy for running discovery on the source. If no connector environments are available for selection, you will need to set them up as described in [Adding a SQL Server Standalone Target Environment](#). Connector environments must:
  - have the Delphix Connector installed
  - be registered with the Delphix Engine from the host machine where they are located.
8. Enter the **Host Address**, **Username**, and **Password** for the source environment.
9. Click **Validate Credentials**.
10. Click **OK**, and then click **Yes** to confirm the source environment addition request.  
As the new environment is added, you will see multiple jobs running in the Delphix Admin Job History to **Create and Discover** an environment. In addition, if you are adding a cluster environment, you will see jobs to **Create and Discover** each node in the cluster and their corresponding hosts. When the jobs are complete, you will see the new environment added to the list in the **Environments** panel. If you don't see it, click the **Refresh** icon.

### Related Links

- [Setting Up SQL Server Environments: An Overview](#)
- [Adding a SQL Server Standalone Target Environment](#)
- [Adding a SQL Server Failover Cluster Target Environment](#)
- [Requirements for SQL Server Target Hosts and Databases](#)

## Link a SQL Server Data Source

- [Prerequisites](#)
- [Procedure](#)
- [Related Links](#)

### Prerequisites

- Be sure that the source database meets the requirements described in [Requirements for SQL Server Target Hosts and Databases](#)
- You should already have set up a staging target environment as described in [Setting Up SQL Server Environments: An Overview](#) and [Adding a Windows Target Environment](#)

#### Maximum Size of a Database that Can Be Linked

- If the staging environment uses the Windows 2003 operating system, the largest size of database that you can link to the Delphix Engine is 2TB. This is also the largest size to which a virtual database (VDB) can grow.
- For all other Windows versions, the maximum size for databases and VDBs is 32TB

In both cases, the maximum size of the database and resulting VDBs is determined by the operating system on the staging target host.

#### Failover cluster environments cannot be used for staging

When linking a dSource, you cannot use SQL Server failover cluster instances as staging instances. When linking, select a standalone SQL Server instance to use.

### Procedure

1. Login to the **Delphix Admin** application using **Delphix Admin** credentials or as the owner of the database from which you want to provision the dSource.
2. Click **Manage**.
3. Select **Databases**.
4. Select **Add dSource**.  
Alternatively, on the **Environment Management** screen, you can click **Link** next to a database name to start the dSource creation process.
5. In the **Add dSource** wizard, select the **source database**.

#### Changing the Environment User

If you need to change or add an environment user for the source database, see [Managing SQL Server Environment Users](#).

6. Enter your **login credentials** for the source database.
7. Click **Verify Credentials**.
8. Click **Next**.
9. Select a **Database Group** for the dSource.
10. Click **Next**.  
Adding a dSource to a database group lets you set Delphix Domain user permissions for that database and its objects, such as snapshots. For more information, see the topics under [Users, Permissions, and Policies](#).

If your data source name contains non-ASCII characters, you will need to change the default dSource name to something that uses only ASCII characters.

11. Select the **method** for the Initial Load.  
For details on initial load options, see [Linking a dSource from a SQL Server Database: An Overview](#).
12. Enter a **backup path** from which the source database backups will be available for the Delphix Engine to restore.  
Alternatively, select **Autodiscover** to have the Delphix Engine automatically locate the backups by querying MSDB.
13. Select the **target environment** for creating the staging database for validated sync.
14. Select a **standalone SQL Server instance** on the target environment for hosting the staging database.
15. Select whether the data in the database is **Masked**.
16. Select whether you want **LogSync** enabled for the dSource. For more information, see [Advanced Data Management Settings for SQL Server dSources](#).

**LogSync Disabled by Default**

LogSync is disabled by default for SQL Server data sources. For more information about how LogSync functions with SQL Server data sources, see [Managing SQL Server Data Sources](#).

17. Click **Advanced** to edit retention policies and specify pre- and post-scripts. For details on pre- and post-scripts, refer to [Using Pre- and Post-Scripts with SQL Server dSources](#).
18. Click **Next**.
19. Review the **dSource Configuration** and **Data Management** information.
20. Click **Finish**.

The Delphix Engine will initiate two jobs to create the dSource, **DB\_Link** and **DB\_Sync**. You can monitor these jobs by clicking **Active Jobs** in the top menu bar, or by selecting **System > Event Viewer**. When the jobs have completed successfully, the **database** icon will change to a **dSource** icon on the **Environments > Databases** screen, and the dSource will appear in the list of **My Databases** under its assigned group.

You can view the current state of **Validated Sync** for the dSource on the **dSource card** itself.

**The dSource Card**

After you have created a dSource, the **dSource card** allows you to view information about it and make modifications to its policies and permissions. In the **Databases** panel, click the **Open** icon to view the front of the dSource card. You can then flip the card to see information such as the **Source Database** and **Data Management** configuration. For more information, see the topic [Advanced Data Management Settings for SQL Server dSources](#).

**Related Links**

- [Users, Permissions, and Policies](#)
- [Setting Up SQL Server Environments: An Overview](#)
- [Linking a dSource from a SQL Server Database: An Overview](#)
- [Advanced Data Management Settings for SQL Server dSources](#)
- [Adding a SQL Server Standalone Target Environment](#)
- [Requirements for SQL Server Target Hosts and Databases](#)
- [Using Pre- and Post-Scripts with SQL Server dSources](#)



## Provision a SQL Server VDB

### Prerequisites

- You will need to have linked a dSource from a source database, as described in [Linking a SQL Server dSource](#), or have already created a VDB from which you want to provision another VDB
- You should already have set up Windows target environments and installed the Delphix Connector on them, as described in [Adding a SQL Server Standalone Target Environment](#)
- Make sure you have the required privileges on the target environment as described in [Requirements for SQL Server Target Hosts and Databases](#)
- If you are provisioning to a different target environment than the one where the staging database has been set up, you need to make sure that the two environments have compatible operating systems, as described in [Requirements for SQL Server Target Hosts and Databases](#). For more information on the staging database and the validated sync process, see [Setting Up SQL Server Environments: An Overview](#).

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**.
3. Select **Databases**.
4. Select **My Databases**.
5. Select a **dSource**.
6. Select a means of provisioning.  
See [Provisioning by Snapshot and LogSync](#) in this topic for more information.
7. Click **Provision**.  
The **Provision VDB** panel will open, and the **Database Name** and **Recovery Model** will auto-populate with information from the dSource.
8. Select a target environment from the left pane.
9. Select an **Instance** to use.
10. If the selected target environment is a Windows Failover Cluster environment, select a drive letter from **Available Drives**. This drive will contain volume mount points to Delphix storage.
11. Specify any **Pre** or **Post Scripts** that should be used during the provisioning process.  
For more information, see [Using Pre- and Post-Scripts with SQL Server dSources](#).
12. Click **Next**.
13. Select a **Target Group** for the VDB.  
Click the green **Plus** icon to add a new group, if necessary.
14. Select a **Snapshot Policy** for the VDB.  
Click the green **Plus** icon to create a new policy, if necessary.
15. Click **Next**.
16. If your Delphix Engine system administrator has configured the Delphix Engine to communicate with an SMTP server, you will be able to specify one or more people to notify when the provisioning is done. You can choose other Delphix Engine users, or enter email addresses.
17. Click **Finish**.  
When provisioning starts, you can review progress of the job in the **Databases** panel, or in the **Job History** panel of the **Dashboard**.  
When provisioning is complete, the VDB will be included in the group you designated, and listed in the **Databases** panel. If you select the VDB in the Databases panel and click the **Open** icon, you can view its card, which contains information about the database and its Data Management settings.

You can select a SQL Server instance that has a higher version than the source database and the VDB will be automatically upgraded. For more information about compatibility between different versions of SQL Server, see [SQL Server Operating System Compatibility Matrices](#).

### Provisioning by Snapshot or LogSync

When provisioning by snapshot, you can provision to the start of any particular snapshot, either by time or LSN.

You can take a new snapshot of the dSource and provision from it by clicking the **Camera** icon on the dSource card.

<b>Provisioning By Snapshot</b>	<b>Description</b>
Provision by Time	You can provision to the start of any snapshot by selecting that snapshot card from the TimeFlow view, or by entering a value in the time entry fields below the snapshot cards. The values you enter will snap to the beginning of the nearest snapshot.
Provision by LSN	You can use the <b>Slide to Provision by LSN</b> control to open the LSN entry field. Here, you can type or paste in the LSN you want to provision to. After entering a value, it will "snap" to the start of the closest appropriate snapshot.

If LogSync is enabled on the dSource, you can provision by LogSync information. When provisioning by LogSync information, you can provision to any point in time, or to any LSN, within a particular snapshot. The TimeFlow view for a dSource shows multiple snapshots by default. To view the LogSync data for an individual snapshot, use the **Slide to Open LogSync** control at the top of an individual snapshot card.

<b>Provisioning By LogSync</b>	<b>Description</b>
Provision by Time	Use the <b>Slide to Open LogSync</b> control to view the time range within that snapshot. Drag the red triangle to the point in time that you want to provision from. You can also enter a date and time directly.
Provision by LSN	Use the <b>Slide to Open LogSync</b> and <b>Slide to Provision by LSN</b> controls to view the range of LSNs within that snapshot. You must type or paste in the specific LSN you want to provision to. Note that if the LSN doesn't exist, you will see an error when you provision.

#### Related Links

- [Linking a SQL Server dSource](#)
- [Adding a SQL Server Standalone Target Environment](#)
- [Adding a SQL Server Failover Cluster Target Environment](#)
- [Requirements for SQL Server Target Hosts and Databases](#)
- [Setting Up SQL Server Environments: An Overview](#)
- [Using Pre- and Post-Scripts with dSources and SQL Server VDBs](#)

## SAP ASE Quick Start Topics

## Add an SAP ASE Environment

### Prerequisites

See [Requirements for SAP ASE Source Hosts and Databases](#).

### Procedure

1. Login to the **Delphix Admin** application using **Delphix Admin** credentials.
2. Click **Manage**.
3. Select **Environments**.
4. Click the **Plus** icon next to **Environments**.
5. In the **Add Environment** dialog, select **Unix/Linux**.
6. Select **Standalone Host**.
7. Enter the **Host IP** address.
8. Enter an optional **Name** for the environment.
9. Enter the **SSH** port.  
The default value is **22**.
10. Enter a **Username** for the environment.
11. Select a **Login Type**.
12. For **Password**, enter the password associated with the user in Step 10.

#### Using Public Key Authentication

If you want to use public key encryption for logging into your environment:

- a. Select **Public Key** for the **Login Type**.
- b. Click **View Public Key**.
- c. Copy the public key that is displayed, and append it to the end of your `~/.ssh/authorized_keys` file. If this file does not exist, you will need to create it.
  - i. Run `chmod 600 authorized_keys` to enable read and write privileges for your user.
  - ii. Run `chmod 755 ~` to make your home directory writable only by your user.

The public key needs to be added only once per user and per environment.

You can also add public key authentication to an environment user's profile by using the command line interface, as explained in the topic [CLI Cookbook: Setting Up SSH Key Authentication for UNIX Environment Users](#).

13. For **Password Login**, click **Verify Credentials** to test the username and password.
14. Enter a **Toolkit Path**.  
The toolkit directory stores scripts used for Delphix Engine operations. It must have a persistent working directory rather than a temporary one. The toolkit directory will have a separate sub-directory for each database instance. The toolkit path must have 0770 permissions.
15. Click the **Discover SAP ASE** checkbox.
16. Enter a **Username** for an instance on the environment.
17. Enter the **Password** associated with the user in Step 15.
18. Click **OK**.

### Post-Requisites

After you create the environment, you can view information about it by selecting **Manage > Environments** and then selecting the **environment name**.

### Related Links

- [Link an SAP ASE Data Source](#)

## Link an SAP ASE Data Source

This topic describes the process of linking to a source database and creating a dSource.

### Prerequisites

- Make sure you have correctly set up the source and target environment, as described in [Managing SAP ASE Environments](#)

### Procedure

1. Login to the **Delphix Admin** application using **Delphix Admin** credentials.
2. Click **Manage**.
3. Select **Databases**.
4. Click **Add dSource**.  
Alternatively, on the **Environment Management** screen, you can click **Link** next to a database name to start the dSource creation process.
5. In the **Add dSource** wizard, select the **source database**.

#### Changing the Environment User

If you need to change or add an environment user for the source database, see [Managing SAP ASE Environment Users](#).

6. Enter your **login credentials** for the source database.
7. Click **Verify Credentials**.
8. Click **Next**.
9. Select a **Database Group** for the dSource.  
Adding a dSource to a database group lets you set Delphix Domain user permissions for that database and its objects, such as snapshots. For more information, see the topics under [Users, Permissions, and Policies](#).
10. Click **Next**.
11. Select an **Initial Load** option and enter any **additional settings** needed. There are three different options for the initial load of the dSource:
  - **New Full Backup** - Let Delphix create a new full backup file and load it. Note that when Delphix creates the backup, it is dumped to Delphix storage, not the **Backup Location** specified in the next step.
  - **Most Recent Existing Full Backup** - Find the most recent existing full backup file in the **Backup Location** and load it.
  - **Specific Existing Full Backup** - Specify which backup files in the **Backup Location** that you want to load.
12. Enter the **Backup Location**. This is the directory where the database backups are stored. Delphix recursively searches this location so the database backups or transaction logs may reside in any subdirectories below the path entered.
13. Select whether the data in the database is **Masked**.  
This setting is a flag to the Delphix Engine that the database data is in a masked state. Selecting this option will not mask the data.
14. Enable or disable **LogSync**.
15. Select **Backup Location Type**.
16. Click **Advanced** to edit **Retention policies**, **Pre and Post Scripts** and **External Data Directory**.
17. Click **Next**.
18. Review the **dSource Configuration** and **Data Management** information, and then click **Finish**.  
The Delphix Engine will initiate two jobs, **DB\_Link** and **DB\_Sync**, to create the dSource. You can monitor these jobs by clicking **Active Jobs** in the top menu bar, or by selecting **System > Event Viewer**. When the jobs have successfully completed, the database icon will change to a dSource icon on the **Environments > Databases** screen, and the dSource will be added to the list of **My Databases** under its assigned group.

#### The dSource Card

After you have created a dSource, you can view information about it on the dSource card. You can also make modifications to its policies and permissions. To view the front of the dSource card, click the **Open** icon in the **Databases** panel. The card will then flip, showing you information such as the **Source Database** and **Data Management** configuration.

### Related Links

- [Requirements for SAP ASE Source Environments](#)

- **Requirements for SAP ASE Target Hosts and Databases**
- **Users, Permissions, and Policies**

## Provision an SAP ASE VDB

This topic describes how to provision a virtual database (VDB) from a SAP ASE dSource.

### Prerequisites

Before you provision an SAP ASE VDB, you must:

- Have linked a dSource from a source database, as described in [Linking an SAP ASE Data Source](#), or have already created a VDB from which you want to provision another VDB
- Have set up target environments as described in [Adding an SAP ASE Environment](#)
- Ensure that you have the required privileges on the target environment as described in [Requirements for SAP ASE Target Hosts and Databases](#)
- If you are provisioning to a target environment that is different from the one in which you set up the staging database, you must make sure that the two environments have compatible operating systems, as described in [Requirements for SAP ASE Target Hosts and Databases](#). For more information on the staging database and the validated sync process, see [Managing SAP ASE Environments: An Overview](#).

### Procedure

1. Login to the **Delphix Admin** application.
2. Click **Manage**
3. Select **Databases**.
4. Click **My Databases**.
5. Select a **dSource**.
6. Select a **means of provisioning**.  
For more information, see [Provisioning by Snapshot and LogSync](#).
7. Click **Provision**.  
The **Provision VDB** panel will open, and the **Instance** and **Database Name** fields will auto-populate with information from the dSource.
8. Select whether to enable **Truncate Log on Checkpoint** database option for the VDB.
9. Click **Next**.
10. Select a **Target Group** for the VDB.  
Click the green **Plus** icon to add a new group, if necessary.
11. Select a **Snapshot Policy** for the VDB.  
Click the green **Plus** icon to create a new policy, if necessary.
12. Click **Next**.
13. Specify any **Hooks** to be used during the provisioning process.  
For more information, see [Customizing SAP ASE Management with Hook Operations](#).
14. If your Delphix Engine system administrator has configured the Delphix Engine to communicate with an SMTP server, you will be able to specify one or more people to notify when the provisioning is done. You can choose other Delphix Engine users or enter email addresses.
15. Click **Finish**.  
When provisioning starts, you can review progress of the job in the **Databases** panel, or in the **Job History** panel of the **Dashboard**.  
When provisioning is complete, the VDB will be included in the group you designated, and it will be listed in the **Databases** panel. If you select the VDB in the **Databases** panel and click the **Open** icon, you can view its card, which contains information about the database and its Data Management settings.

### Provisioning by Snapshot

You can provision to the start of any snapshot by selecting that snapshot card from the **TimeFlow view**, or by entering a value in the time entry fields below the snapshot cards. The values you enter will snap to the beginning of the nearest snapshot.

### Provisioning by LogSync

If LogSync is enabled on the dSource, you can provision by LogSync information. When provisioning by LogSync information, you can provision to any point in time within a particular snapshot. The **TimeFlow view** for a dSource shows multiple snapshots by default. To view the LogSync data for an individual snapshot, use the **Slide to Open LogSync** control at the top of an individual snapshot card. Drag the red triangle to the point in time from which you want to provision. You can also enter a **date and time** directly.

## Related Links

- [Linking an SAP ASE Data Source](#)
- [Adding an SAP ASE Environment](#)
- [Requirements for SAP ASE Target Hosts and Databases](#)
- [Managing SAP ASE Environments: An Overview](#)
- [Customizing SAP ASE Management with Hook Operations](#)



## Create a Group

Before you can link to a dSource or provision a VDB, you will need to create a group that will contain your database objects. Permissions and policies for database objects are also determined within the group, as described in [Users, Groups, and Permissions: An Overview](#).

When you first start up the Delphix Engine, a default group, <New Group>, is already defined. You can edit the name of this group, as well as the policies and permissions associated with it, to use as your first group, or you can create a group as described in the following steps.

### Groups for dSources and VDBs

Since policies and permissions for database objects are set by the group they belong too, you may want to create two groups, one for dSources, one for VDBs, so you can set policies and permissions by object types.

## Adding a Group

1. Log into the **Delphix Admin** application as a user with **Delphix Admin** privileges.
2. In the **Databases** menu, select **Add New Group**.
3. Enter a **Group Name** and an optional description.
4. Click **OK**.

## Deleting a Group

1. Log into the **Delphix Admin** application as a user with **Delphix Admin** privileges or group **OWNER** privileges for the target group.
2. Open the group card in the **Databases** panel by selecting the target group
3. Click the **Trash Can** icon.
4. Click **OK**.

### Deleting Groups Containing Objects

A group cannot be deleted if it contains VDBs or dSources. All databases within a group must be deleted prior to deleting the group.

### At Least One Group Must Exist

At least one group must always exist on the Delphix Engine in order to link a dSource. If you delete the last group, you will need to create a new group in order to create a dSource.

## Delete a dSource

### Prerequisites

- You cannot delete a dSource that has dependent VDBs. Before deleting a dSource, make sure all dependent VDBs have been deleted as described in [Delete a VDB](#).

### Procedure

1. Login to the **Delphix Admin** application using **Delphix Admin** credentials.
2. Select **Manage**.
3. Select **Databases**.
4. Select **My Databases**.
5. In the **Databases** panel, select the **dSource** you want to delete.
6. Click the **Trash Can** icon.
7. Click **Yes** to confirm.



Deleting a dSource will also delete all snapshots, logs, and descendant VDB Refresh policies for that database. The deletion cannot be undone.

## Delete a VDB

This topic describes how to delete a VDB.

### Procedure

1. Login to the **Delphix Admin** application using Delphix Admin credentials.
2. Click **Manage**.
3. Click **My Databases**.
4. Select the **VDB** you want to delete.
5. Click the **Trash** icon.
6. Click **Yes** to confirm.

## Disable a dSource

This topic describes how to enable and disable dSources for operations such as backup and restore.

For certain processes, such as backing up and restoring the source database, you may want to temporarily disable your dSource. Disabling a dSource turns off communication between the dSource and the source database, but does not tear down the configuration that enables communication and data updating to take place. When a disabled dSource is later enabled, it will resume communication and incremental data updates from the source database according to the original policies and data management configurations that you set.

Disabling a dSource is also a prerequisite for several other operations, like database migration and upgrading the dSource after upgrade of the associated data source.

### Procedure

1. Click **Manage**.
2. Select **Databases**.
3. Click **My Databases**.
4. Select the **dSource** you want to disable.
5. On the back of the dSource card, move the slider control from **Enabled** to **Disabled**.
6. Click **Yes** to acknowledge the warning.

When you are ready to enable the dSource again, move the slider control from **Disabled** to **Enabled**, and the dSource will continue to function as it did previously.