MIGRATING THE ZERTO VIRTUAL REPLICATION DATABASE TO MICROSOFT SQL SERVER

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Zerto Virtual Replication uses an SQL Server to manage data for scalable business continuity software solutions.

Zerto supports two usages of the SQL Server; either an **embedded** SQL Server, which is provided free of charge with the Zerto Virtual Replication product or, an **external** SQL Server which is deployed and managed by the customer.

During initial installation, the user can decide which usage of the SQL Server to deploy. The default during installation is the embedded SQL Server database.

When using the embedded SQL Server database, Zerto Virtual Replication is limited with the number of resources that can be protected. See Sizing Considerations for Zerto Virtual Replication.

After installation, Zerto Virtual Replication enables migration from the embedded SQL Server to an external Microsoft SQL Server using a Zerto Database Migration tool. This document specifies how to migrate the Zerto Virtual Replication database to an external SQL Server.

You can migrate data between any supported Microsoft SQL Server, or embedded SQL Server databases (Enterprise/ Standard/Express) given their respective product limitations.

Note:

This document applies to **database migrations** from Zerto Virtual Replication version **4.5Ux and later**.

For database migrations from Zerto Virtual Replication version **4.0Ux,** see the documentation for that version.

See the following sections:

Recommendations and Considerations

Before migrating your database, read this section.

Recommendations

- For SQL Server sizing recommendations, see Sizing Considerations for Zerto Virtual Replication.
- Zerto uses username/password authentication. This is because using Windows credentials requires a manual change of the Zerto Virtual Manager Service account (Step 10 > Authentication parameter).
- Although Zerto Virtual Replication supports SQL Server Enterprise/Standard/Express editions, when migrating to an external SQL Server service, Zerto recommends using Standard or Enterprise edition.

Considerations

- Migration between Microsoft SQL Server / embedded SQL Server database is performed using the Zerto Database Migration tool. The following **Microsoft SQL Server** versions are supported: **2008**, **2008R2**, **2012**, **2014, 2016**.
- When migrating the data, you can use either **SQL Server authentication** or **Windows authentication**.

  Zerto **recommends** that you use SQL Server authentication.

Verify SQL Permissions and Roles

- To use **SQL authentication**, the user must have **DB Owner** credentials.
- The user must have the following permissions set:
  - **Public** and **dbcreator** server roles.
  - Both **Database User** and **Default Schema** must be defined as **dbo**.
  - Permission to connect to the database engine.
  - Login enabled.
  - In **User Mapping** choose the **master** database under which to create the Zerto Virtual Replication database and set both **db_owner** and **public** for database role membership.

Now continue to Recommendations and Considerations.

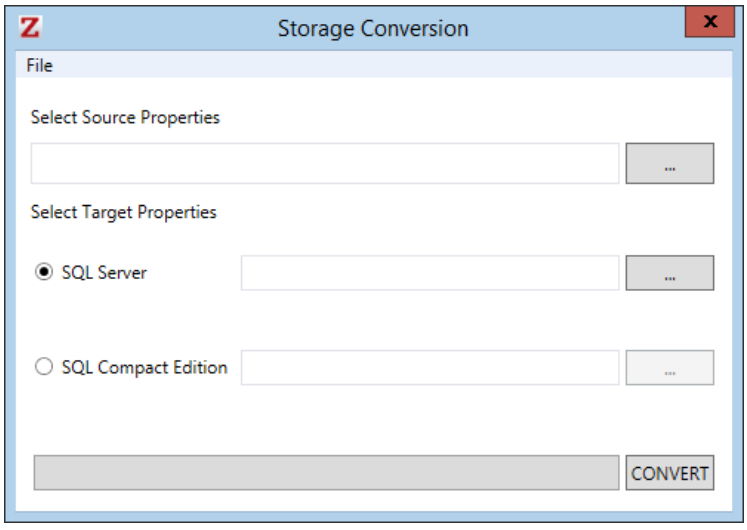
Migrating a Zerto Virtual Replication Database

To migrate the database:

1. From **myZerto > Downloads**, select and download the zip file for **Zerto Virtual Manager Database Migration Tool for 4.5Ux and later**. The Zerto.Storage.ConversionTool.zip file is downloaded.
2. Save the **Zerto.Storage.ConversionTool.zip** file to the host running Zerto Virtual Manager, and to whose database you want to migrate.
3. Extract the files to:

   C:\Program Files\Zerto\Zerto Virtual Replication
4. **Stop** the **Zerto Virtual Manager service** on the host to which you saved the Zerto.Storage.ConversionTool.zip file.
5. **Backup** the **storage_properties.xml** file.
6. If you have SQL Server Compact edition, also backup the **Zvm.sdf** file. The default location is:
   C:\Program Files\Zerto\Zerto Virtual Replication
7. Double-click **Zerto.Storage.Conversion.exe**.

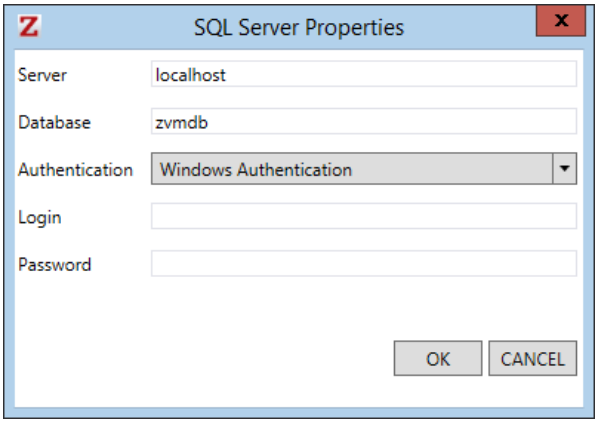
   The Storage Conversion tool wizard opens.



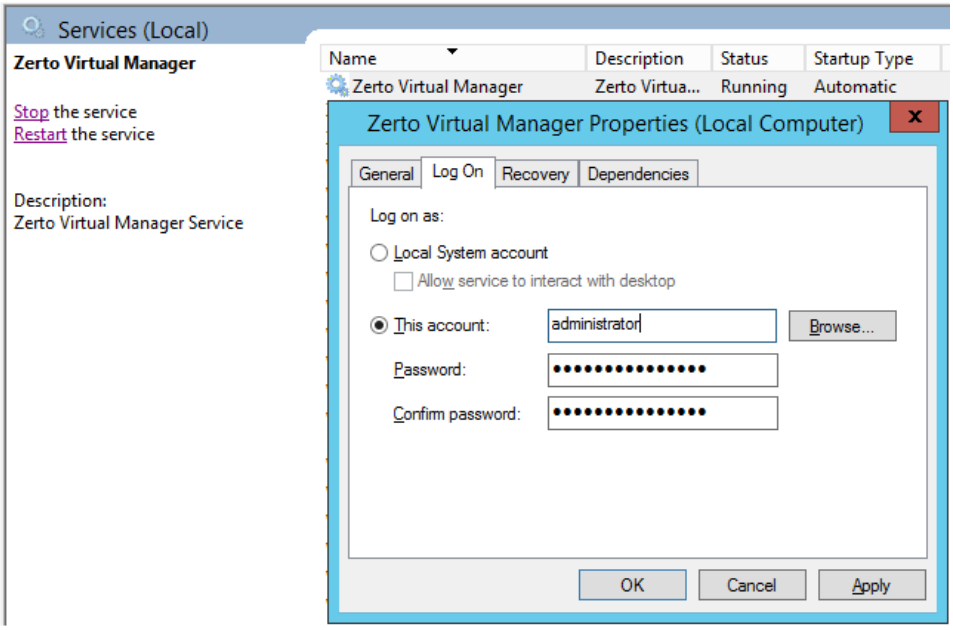
8. In the **Select Source Properties** area:
   a) Click the **...** (More) button and navigate to the file, **storage_properties.xml**.
   This file contains the properties of the Zerto Virtual Replication database.
   For Example: **C:\Program Files\Zerto\Zerto Virtual Replication\storage_properties.xml**
   b) Click **Open** to select the file.
9. In the **Select Target Properties** area, select to migrate the database either to an **SQL Server**, or an **SQL Compact Edition**.
   - To migrate to an **SQL Server** database, continue with Step 10.

- To migrate to an **SQL Compact Edition** database, continue with Step 11.

10. Select **SQL Server**, and enter the properties. To do this:
    a) Click the **...** (More) button.
    The SQL Server Properties window opens, showing the default values for the **Server** and **Database** fields.



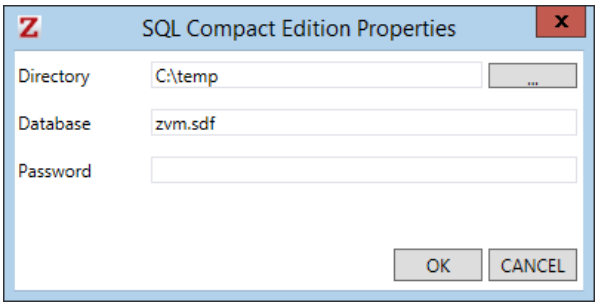
    b) Define the following fields as required:
    - **Server:** The SQL server instance name.
      This is the IP address or DNS of the SQL Server and SQL Server instance name in the form of:
      IP>\<InstanceName>
      For Example: **123.123.123.123\MSSQLSERVER**
    - **Database:** The name of the Zerto Virtual Manager database.
    - **Authentication:** Select the authentication method from the drop-down list, either: **Windows Authentication** or **SQL Server Authentication**.
      If the migration is to an **SQL Server** and you are using **Windows Authentication**, the Zerto Virtual Manager Service must use a user that can be authenticated by the SQL Server.



    - **Login**: If you selected **SQL Authentication** method, this field is **mandatory**.
      If you selected **Windows Authentication**, this field is disabled.
    - **Password: i**f you selected **SQL Authentication** method, this field is **mandatory**.
      If you selected **Windows Authentication**, this field is disabled.

    c) Click **OK**.
    Note: If you selected **SQL Authentication**, the **OK** button is disabled until you enter the appropriate **Login** and **Password** credentials.
    d) Continue with Step 12.

11. Select **SQL Compact Edition**, and enter the properties. To do this:
    a) Click the **...** (More) button.
    The SQL Server Compact Edition Properties window opens, showing default values for the **Directory** and **Database** fields.



    b) If you need to change the **Directory** of the target database, click the **...** (More) button.
    The Browse For Folder window opens.
    c) Browse to, or create the target folder for the database.
    d) Click **OK**.
    e) Set the following fields as required:
    - **Database:** The name of the target database.
    - **Password**

    f) Click **OK**.
12. You are now ready to begin the database migration.
    - To estimate how long the migration process might take, look at the **database file size**:
      - If the embedded database file is **less than 100 MB,** the migration process should take around 2 minutes.
      - If this file is **less than 1 GB**, the migration process should take around 10 minutes.

      These time estimates assume a good network connection between SQL Server and the Zerto Virtual Manager.
    - The database files are stored in either one of the following:
      - In the folder where Zerto Virtual Replication is installed (.SDF file)

      - or -
      - In **<Zerto Installation Root Driver>:\programdata\zerto\data** (.MDF file)
        For Example: **C:\programdata\zerto\data**
13. In the Storage Conversion window, click **CONVERT**.
    The database migration begins.
14. After the database migration ends, **start** the **Zerto EmbeddedDB Manager** service.

Note: If you need to, you can roll back the database. See Rolling Back After Database Migration.

Rolling Back After Database Migration

Use the following procedure to rollback the database immediately after database migration.

To roll back the migration:

1. If you **installed** Zerto Virtual Replication **v5.5** and need to rollback the database (which is an .MDF file), contact Zerto Support.
2. If you **upgraded to** Zerto Virtual Replication **v5.5** and need to rollback the database (which is an .SDF file), perform the following steps:
   a) Ensure that the Zerto Virtual Manager service is stopped before starting the rollback.
   b) Ensure that the original database file is still accessible.
   c) Copy the original **storage_properties.xml** file back to its original location.
   d) Start the Zerto Virtual Manager service.