Migration from
PostgreSQL database to MS SQL Server

Document Overview

Exchange Reporter Plus comes bundled with a PostgreSQL database to store reporting, monitoring, and auditing data. The solution also supports MS SQL Server and enables you to migrate from the built-in PostgreSQL to MS SQL database. This guide will walk you through the database migration process.

Supported versions of MS SQL Server: 2005, 2008 R2, 2012, 2014, 2016, and 2017

Prerequisites for the migration process

In the MS SQL Server instance used for migration, make sure that the following conditions are satisfied:

1. The SQL Server browser must be up and running.
2. For SQL Server network configuration, TCP/IP protocol must be enabled.
3. All the client protocols must be enabled.
4. MS SQL Server access is delegated to a user with sysadmin and db_owner permissions at the server and database levels respectively.

Refer to Appendix A for configuring prerequisites 1, 2, and 3. Refer to Appendix B for configuring prerequisite 4.

Migrating from PostgreSQL to MS SQL

Migrating data from Exchange Reporter Plus' PostgreSQL database to MS SQL consists of the following two steps:

1. Backing up the Exchange Reporter Plus database

2. Migrating PostgreSQL data to MS SQL

Step 1: Backing up the Exchange Reporter Plus database

This step is not required if you are looking to migrate the database of a freshly installed Exchange Reporter Plus instance.

1. **Stop Exchange Reporter Plus.** (it is essential to stop Exchange Reporter Plus before performing the backup).

   a. If Exchange Reporter Plus is running in console mode, click the **Windows** icon. Search for **Exchange Reporter Plus**, and choose **Stop Exchange Reporter Plus.**

   b. If Exchange Reporter Plus is running as a service, click the **Windows** icon. Search for **Services.** In the window that appears, choose **ManageEngine Exchange Reporter Plus**, and select the **Stop the service** option on the left side.

2. Navigate to **<Exchange Reporter Plus installation directory>\bin.**

> **Note:** By default, Exchange Reporter Plus is installed at: C:\ManageEngine\ Exchange Reporter Plus
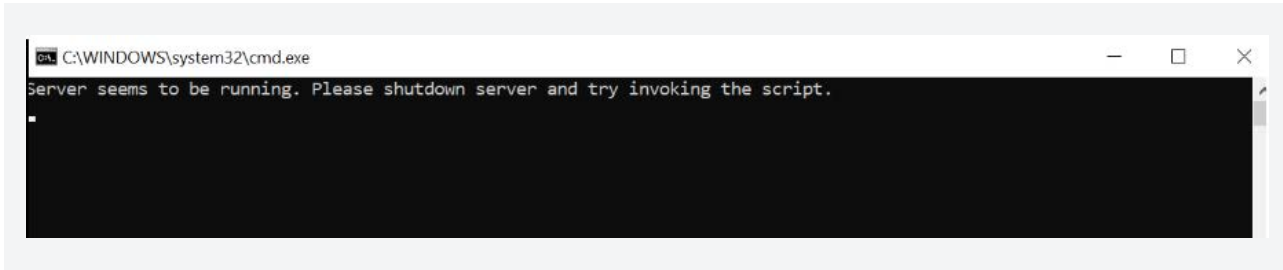
3. Run the **backupDB.bat** (Windows Batch) file as an administrator. Don't terminate until the process is finished.
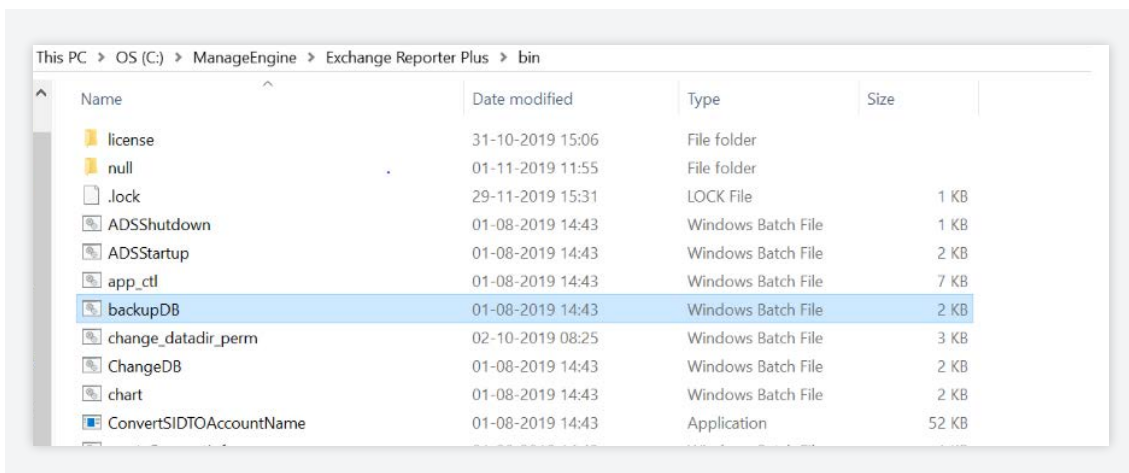
4. Data in the default database of Exchange Reporter Plus will be backed up and stored under <Exchange Reporter Plus installation directory>\backup\OfflineBackup _<Backup Time>.
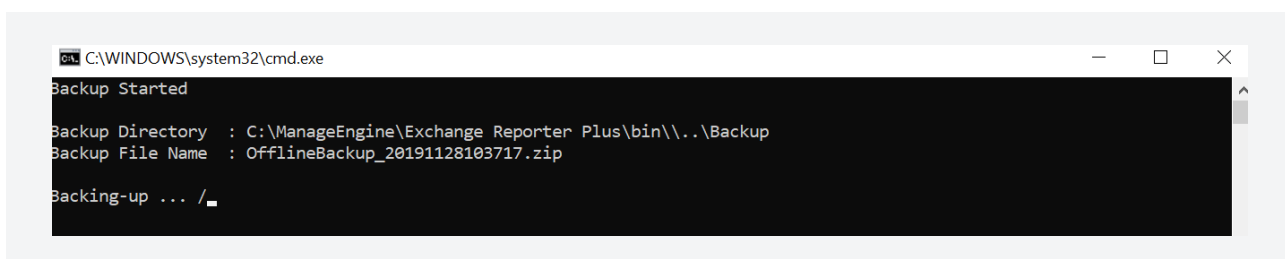
> **Note:** If the below error shows up while running the backupDB file, double-check that the product has been stopped before proceeding.

Step 2: Migrating PostgreSQL Data to MS SQL

1. If MS SQL Server is installed in a **remote computer,** install the necessary command line utilities and native client marked below as per your requirements, then proceed to the next step.

> **Note:** The links provided below will redirect you to the main Microsoft SQL feature pack page. On pressing the corresponding download button, you get a set of command line utilities and native client formats. Install the corresponding SQL Native Client or command line utilities as per the MS SQL Server version and CPU type of the machine where Exchange Reporter Plus is installed. The command line utilities have the term **SQLCMD** in them, and the native client file can be found under the name sqlncli.

SQL Server version	Command line utilities	Native client
2005	Download	Download
2008 R2	Download	Download
2012	Download	Download
2014	Download	Download
2016	Download	Download
2017	Download	Download

2. Copy the following files to <Exchange Reporter Plus installation directory>\bin folder.

    i. **bcp.exe: <MSSQL** installation directory>\Tools\Binn\bcp.exe

    ii. **bcp.rll-:<MSSQL** installation directory>\Tools\Binn\Resources\1033\bcp.rll

3. **Stop Exchange Reporter Plus.** (it is essential to stop Exchange Reporter Plus before performing migration).

   a. If Exchange Reporter Plus is running in console mode, click the **Windows** icon. Search for **Exchange Reporter Plus,** and choose **Stop Exchange Reporter Plus.**

   b. If Exchange Reporter Plus is running as a service, click the **Windows** icon. Search for **Services.** In the window that appears, choose **ManageEngine Exchange Reporter Plus,** and select the **Stop the service** option on the left side.

4. Navigate to **<Exchange Reporter Plus installation directory>\bin.**

5. Run the **ChangeDB** (Windows batch file) as an administrator. In the Database Setup Wizard that appears, select **Server Type** as **MS SQL Server.**
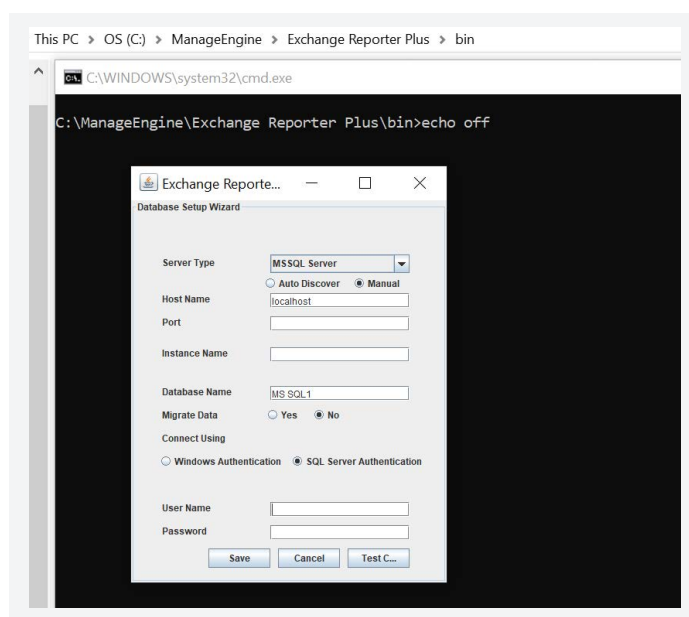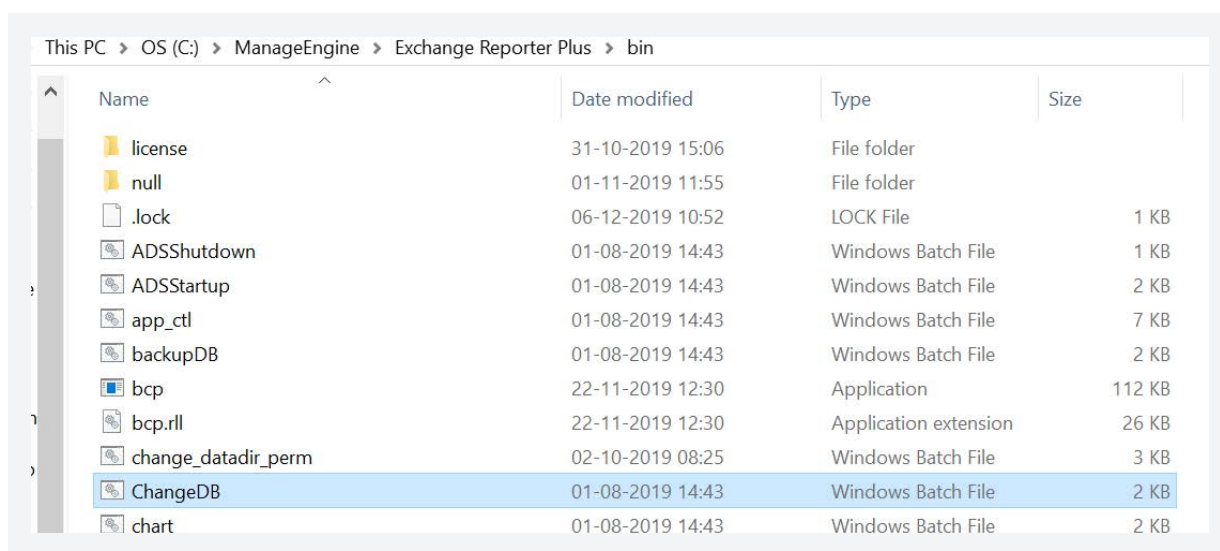
6. Enter the **Host Name, Database Name**, and Port number of MS SQL Server.

7. Select **Yes** beside **Migrate Data** to migrate with data intact. This makes a copy of all the data
   (eg. reports previously generated) in the MS SQL database to which you are migrating.
   If you'd like a fresh installation with no data in place after migration, choose **No**

> **Note:** Data will remain in the default PostgreSQL database even after the migration
> regardless of which option you choose. However, the MS SQL database will be
> active and used.

8. Select the "**SQL Server instance**" from the list of available instances.

9. Select the Authentication type.

   a. If you choose **Windows Authentication**, provide the **Domain Name, Username**, and
   Password of the user account that has access to the server.

   b. If you choose **SQL Server Authentication**, provide the **Username** and **Password** of the
   user who has access to MS SQL Server.

10. Click on **Test Connection** to check the status. If the connection fails, try reentering the
    correct credentials and establishing the connection again.

11. Click **Save.**

12. **Start** the Exchange Reporter Plus server/service to work with MS SQL Server as the database.

Appendix A

Configuring MS SQL Server

Note: If you already have a functional MS SQL Server instance, then this step is not required. Follow the steps below to configure a freshly installed MS SQL Server instance:

1. Open **SQL Server Configuration Manager**, (You can also run **compmgmt.msc** in Command Prompt).

2. Go to **SQL Server Services > SQL Server Browser.** Make sure the SQL Server Browser is running.
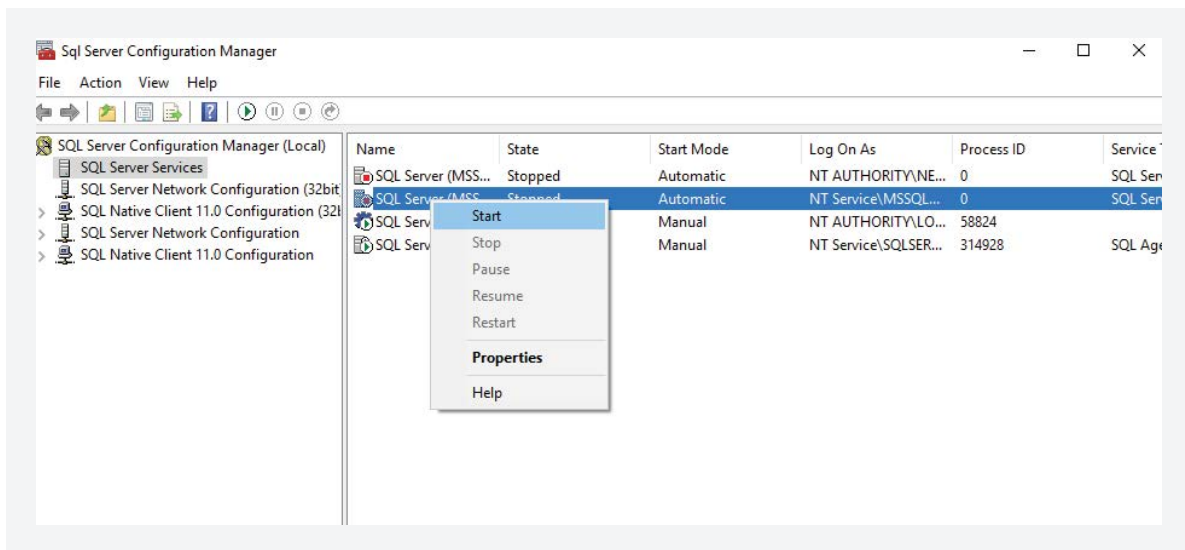
3. Go to **SQL Server Network Configuration,** and double-click **Protocols for <Instance _Name>.**

4. Click on the **TCP/IP** protocol, and enable it.

5. Restart the **SQL Server Service** for the changes to take effect.

> **Note:** SQLEXPRESS is the instance name provided while configuring MS SQL Server in general, however, it can be changed. SQLEXPRESS will be used in document hereafter.

6. Go back to **SQL Server Configuration Manager.** In the left pane:

- Navigate to **SQL Server Network Configuration > Protocols for SQLEXPRESS,** and enable all the protocols.

- Navigate to **SQL Native Client Configuration > Client Protocols**, and enable all the protocols.

Appendix B

Delegating MS SQL Server access to users

It is necessary to add a login for users to access the configured MS SQL Server instance either using Windows Authentication or SQL Server Authentication. It is not, however, mandatory to create new login. You can use existing service accounts, too. If there are none, then follow the steps given below to create a New Login and equip the user with the necessary permissions.

1. Log in to **SQL Server Management Studio.**

2. In the left pane, navigate to **Machine Name > SQLEXPRESS > Security > Logins.**

3. Right-click on **Logins**, and select **New Login.**

4. Provide a **Login Name**, and choose whether to use **Windows Authentication or SQL Server Authentication.**

   - If you choose Windows Authentication, enter the **Windows NT name** of the user to whom access must be granted.

   - If you choose SQL Server Authentication, you will be prompted to create a new **Username** and **Password.**

5. The new user must have the **sysadmin** role in the server level and **db_owner** role in the database level. Follow these steps to provide the sysadmin and db_owner role permission:

   - Navigate to **Machine Name > SQLEXPRESS > Security > Logins**. Right-click the user > **Properties.**

   - Go to **Server Roles**, select the sysadmin check box, and click **OK.**

   - Go to **User Mapping** in the left pane. In the **Users mapped to this login** list, check the box next to the database. In the **Database role membership for** list, select **db_owner,** and click **OK.**
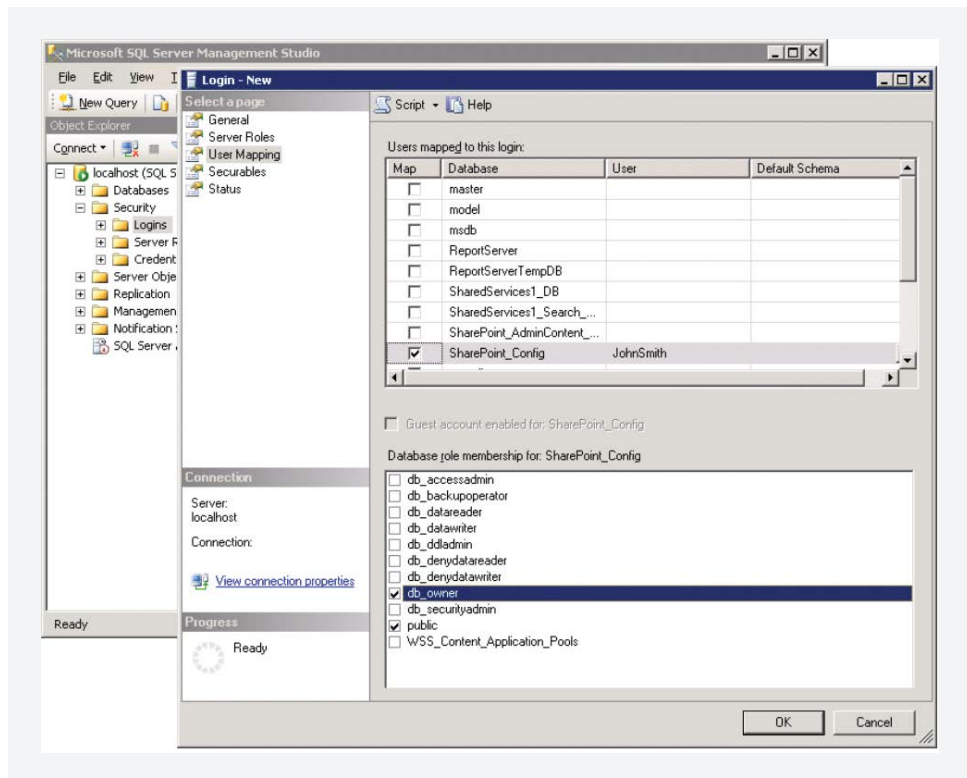
Note: For details about user roles, refer to the following documents:

- For Server-Level Roles: http://msdn.microsoft.com/en-us/library/ms188659.aspx
- For Database-Level Roles: http://msdn.microsoft.com/en-us/library/ms189121.aspx

In general, the configured account needs one of these three sets of privileges to complete the migration process successfully:

	Required database role	Required permissions
Set 1	db_owner	Not required
Set 2	db_datareader, db_datawriter, db_ddladmin, db_backupoperator.	Not required
Set 3	db_ddladmin	ALTER ANY TABLE, ALTER ANY AGGREGATE, ALTER ANY DEFAULT, ALTER ANY FUNCTION, ALTER ANY PROCEDURE,

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ALTER ANY QUEUE,
ALTER ANY RULE,
ALTER ANY SYNONYM,
ALTER ANY TYPE,
ALTER ANY VIEW,
ALTER ANY XML SCHEMA
COLLECTION,
ALTER ANY REFERENCES,
CONTROL ON
CERTIFICATE::[ZOHO_CERT]
TO [user],
CONTROL ON  SYMMETRIC
KEY::[##MS_DatabaseMasterKey##]
TO [user],
CONTROL ON SYMMETRIC
KEY::[ZOHO_SYMM_KEY]
TO [user]
```

Important:

Please note that you must have the db_owner permission while migrating PostgreSQL to MS SQL for the first time. After a successful migration, you can revoke the db_owner permission for the account, and provide the set 2 or set 3 permissions.

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ManageEngine
Exchange Reporter Plus

Exchange Reporter Plus is an analysis, monitoring, and change auditing solution for Exchange Online and Exchange Servers. It features over 300 unique reports on various Exchange entities such as mailboxes, public folders, Outlook Web Access, and ActiveSync. Customize reports to track room mailbox usage, break down email response times, and locate messages based on keywords in their content. Configure alerts in Exchange Reporter Plus for instant notifications on critical changes that require your immediate attention.

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