

Migration from **PostgreSQL database** to **Microsoft SQL Server**



Document Overview

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

Supported versions of Microsoft SQL Server: 2005, 2008 R2, 2012, 2014, 2016, 2017, and 2019.

Prerequisites for the migration process

In the Microsoft SQL Server instance you wish to migrate to, make sure that the following conditions are satisfied:

1. The SQL Server browser must be up and running.
2. The TCP/IP protocol must be enabled.
3. All the client protocols must be enabled.
4. Microsoft 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 number one, two, and three. Refer to [Appendix B](#) for configuring prerequisite number four.

Migrating data from PostgreSQL to Microsoft SQL

Step 1: Backing up the Exchange Reporter Plus database

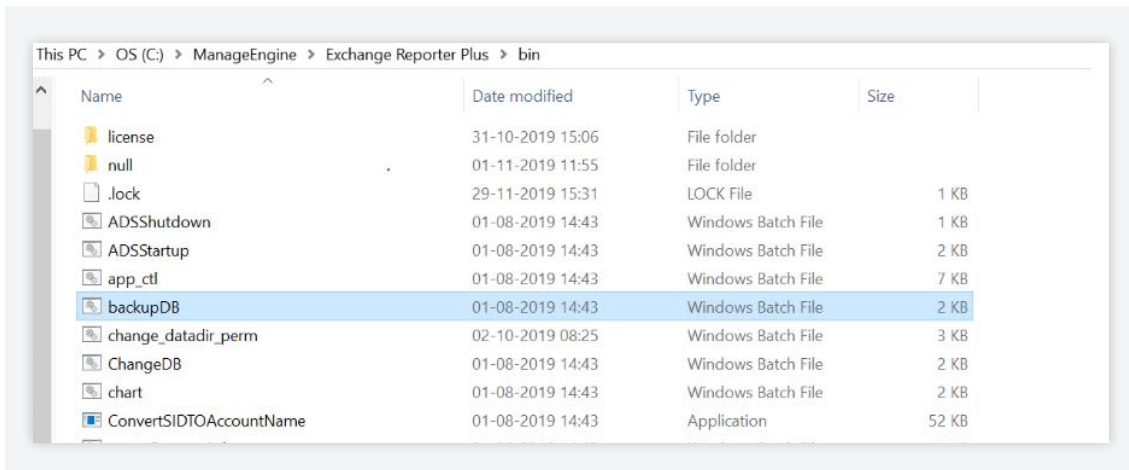
This step is not required if you are looking to migrate the database of a freshly installed Exchange Reporter Plus instance.

1. **Stop Exchange Reporter Plus.** (it is essential to stop Exchange Reporter Plus before performing the backup).
 - a. If Exchange Reporter Plus is running as an application, 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.

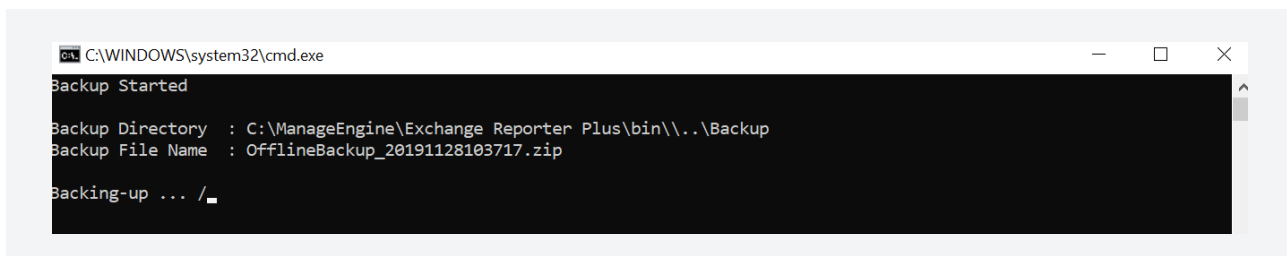
2. Navigate to <Exchange Reporter Plus installation directory>\bin.

Note: By default, Exchange Reporter Plus is installed at: C:\ManageEngine\Exchange Reporter Plus

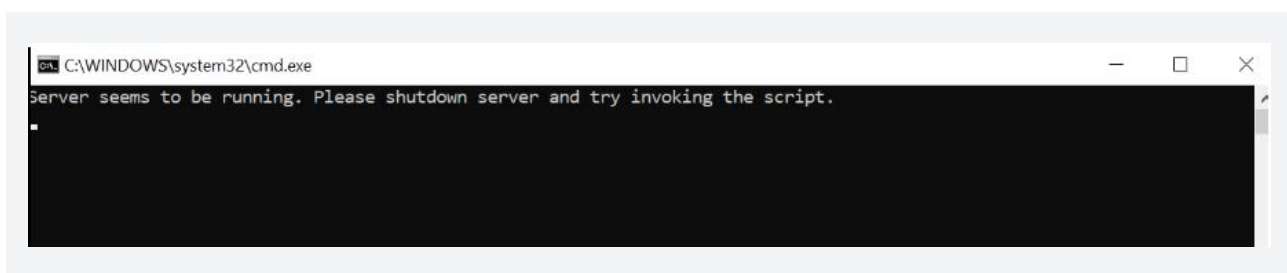
3. Run the **backupDB.bat** (Windows Batch) file as an administrator. Don't terminate until the process is finished.



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 Microsoft SQL

1. If Microsoft SQL Server is installed on 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 Microsoft SQL feature pack page. On pressing the corresponding download button, you will get a set of command line utilities and native client formats. Install the corresponding SQL Native Client or command line utilities as per the Microsoft SQL Server version and CPU type of the machine where Exchange Reporter Plus is installed. The command line utilities have the term **sqlcmdlnutils** or **mssqlcmdlnutils** in them, and the native client file can be found under the name **sqlncli**.

SQL Server version	Command line utilities (sqlcmdlnutils or mssqlcmdlnutils)	Native client (sqlncli)	ODBC driver (msodbcsql)
2008 R2	Download	Download	Not needed
2012	Download	Download	Not needed
2014 and 2016	Download	Not needed	Download
2017 and 2019	Not needed	Not needed	Download

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

i. **bcp.exe**- <Microsoft SQL installation directory>\Tools\Binn\bcp.exe

ii. **bcp.rll**- <Microsoft SQL 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 as an application, 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.

- Run the **ChangeDB** (Windows batch file) as an administrator. In the Database Setup Wizard that appears, select **Server Type** as **MS SQL Server**.

Note: The name of the Microsoft SQL server instance has to be entered manually in case you have not selected the **Auto Discover** option. In addition, if the Microsoft SQL server you wish to migrate to has the **Force encryption** option enabled, select the check box against *SSL connection*.

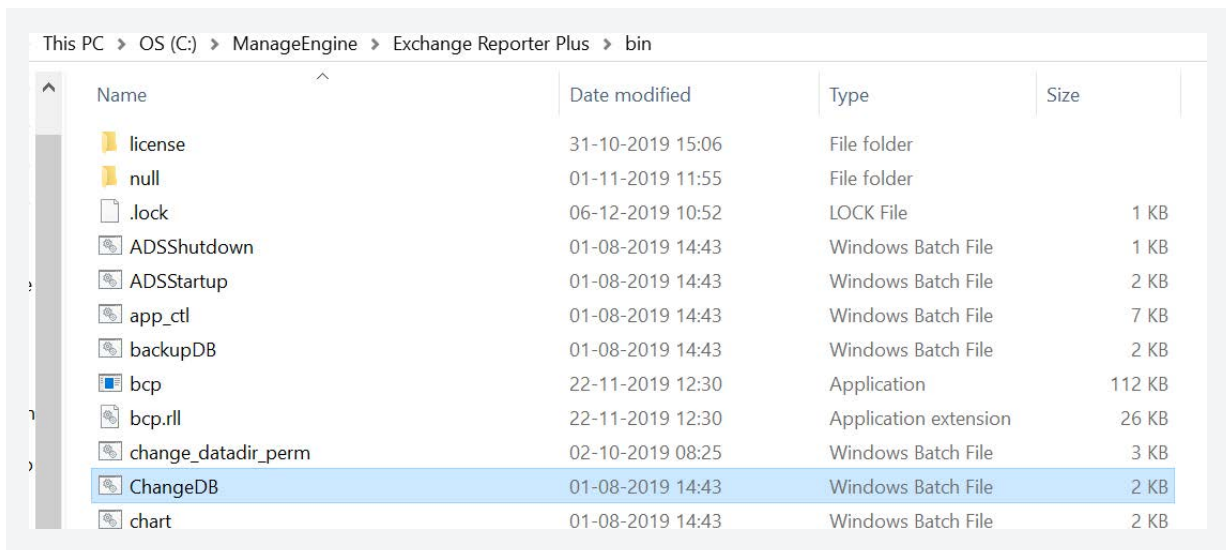


Figure 1. Run the changeDB.bat file to initiate the database migration process

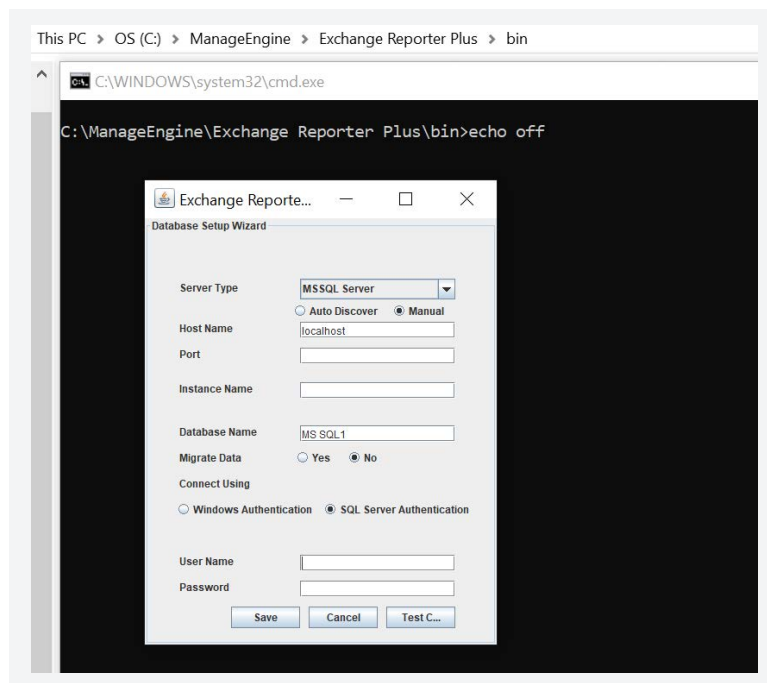


Figure 2. Enter the required details in the Database Setup Wizard

6. Enter the **Host Name** and **Database Name** of Microsoft SQL Server.
7. If you want to migrate all the data stored in the old database and also keep a copy of it in the newly-migrated database, select **Yes** next to *Migrate Data*. If you do not want to migrate the data, select **No**

Note: Data will remain in the old database even after the migration, regardless of which option you choose. However, the Microsoft SQL database will be active and used.

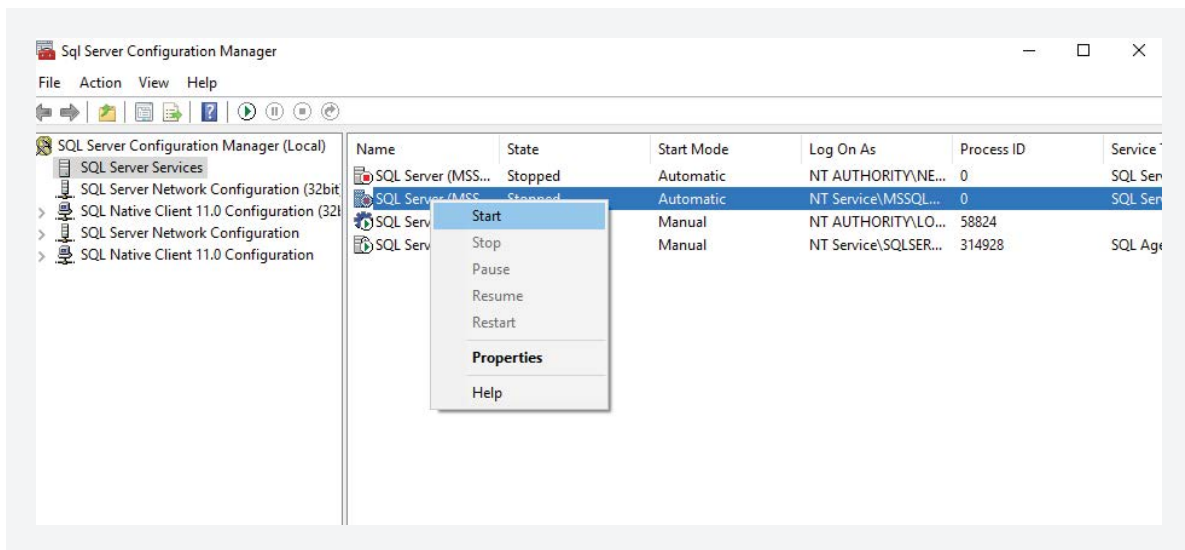
8. Select the SQL server instance from the Select **MS SQL Server Instances** drop-down menu.
9. Select the Authentication type.
 - a. If you choose **Windows Authentication**, provide the **Domain Name**, **Username**, and **Password** of the user account that has access to the server.
 - b. If you choose **SQL Server Authentication**, provide the **Username** and **Password** of the user who has access to Microsoft 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 Microsoft SQL Server as the database.

Appendix A

Configuring Microsoft SQL Server

Note: If you already have a functional Microsoft SQL Server instance, then this step is not required. Follow the steps below to configure a freshly installed Microsoft 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 Microsoft SQL Server in general, however, it can be changed. SQLEXPRESS will be used in document hereafter.

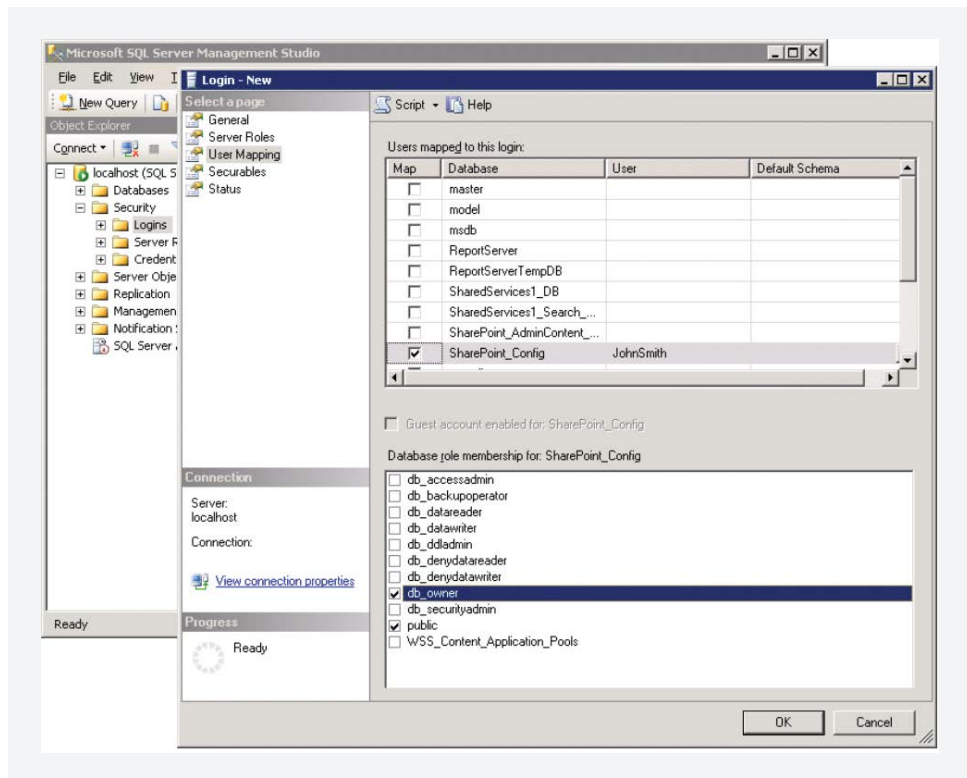
6. Go back to **SQL Server Configuration Manager**. In the left pane:
 - Navigate to **SQL Server Network Configuration > Protocols for SQLEXPRESS**, and enable all the protocols.
 - Navigate to **SQL Native Client Configuration > Client Protocols**, and enable all the protocols.

Appendix B

Delegating Microsoft SQL Server access to users

It is necessary to add a login for users to access the configured Microsoft 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 one	db_owner	Not required
Set two	db_datareader, db_datawriter, db_ddladmin, db_backupoperator.	Not required
Set three	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 Microsoft SQL for the first time. After a successful migration, you can revoke the db_owner permission for the account and provide the set two or set three permissions.

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