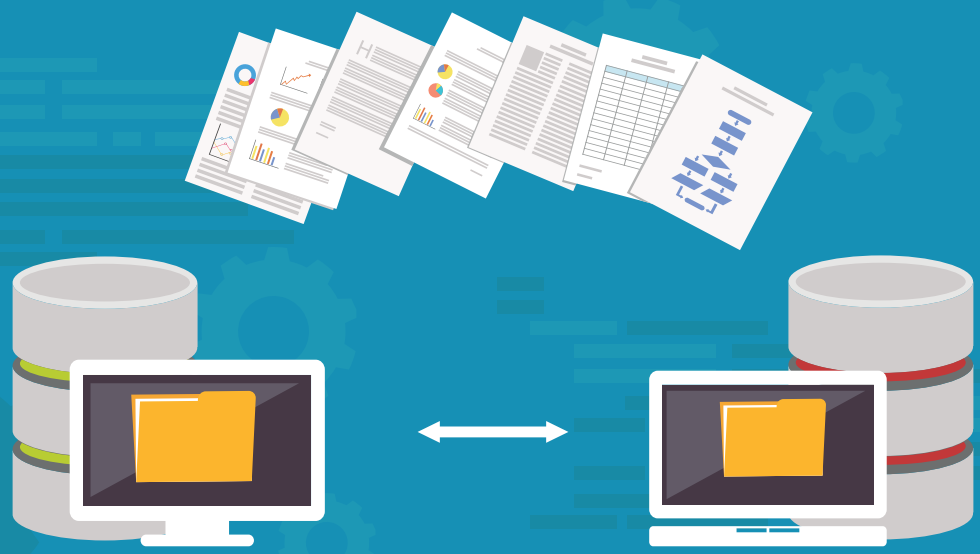
ManageEngine
ADAudit Plus

ADAudit Plus
Migration guide



www.adauditplus.com

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Document summary

ADAudit Plus allows administrators to store and retrieve Windows servers' audit log data from MySQL, MS SQL, or PostgreSQL databases.

This document covers the steps to-

- Move DB and/or data from PostgreSQL/MySQL to MS SQL.
- MySQL/MS SQL to PostgreSQL migration
- Move DB and/or data between two different versions of MS SQL.
- Move ADAudit Plus from one server/drive to another.
- Move ADAudit Plus from 32-bit to 64-bit architecture.
- Backup and restore

PostgreSQL/MySQL to MS SQL Migration

By default, ADAudit Plus comes bundled with PostgreSQL database.
To move the DB and/or data from PostgreSQL/MySQL to MS SQL, follow the 5 steps outlined below.

The following versions of MSSQL are supported:

- SQL server 2008 R2 (EOLed by Microsoft)
- SQL server 2012
- SQL server 2014
- SQL server 2016
- SQL server 2017
- SQL server 2019

1. Configuring the MS SQL server

(i). Open the SQL Server Configuration Manager on the computer running the MS SQL instance (to which the DB and/or data is to be moved).

(ii). In the left pane, click SQL Server Services --> Ensure that the SQL Server Browser is running.

(iii). In the left pane, click SQL Server Network Configuration --> Select Protocols for <the given instance> --> Enable TCP/IP.

Note: The given instance refers to the MS SQL instance to which the DB and/or data is to be moved.

(iv). In the left pane, click SQL Native Client Configuration --> Select Client Protocols for <the given instance> --> Enable TCP/IP.

(v). Restart the SQL Server Service.

2. Providing permissions to the MS SQL instance

The user account associated with ADAudit Plus must have access and appropriate permissions to the MS SQL instance (to which the DB and/or data is to be moved).

Note: If SQL Server Autentication is used to move the DB and/or data, access and permissions to the MS SQL instance are automatically provided. However, when Windows Authentication is used, access and permissions have to be granted, as explained below-

(i). To grant access-

Login to Microsoft SQL Server Management Studio with an account that has been assigned the sysadmin role --> Select the server instance to which you will be migrating --> Security --> Logins. Check whether the user running ADAudit Plus is on the list-

- If the user is already listed --> Proceed to 2(ii).
- If the user is not listed, right click on Logins --> New Login --> Create a new login --> Proceed to 2(ii).

(ii). To grant permissions-

Right click on the user -> Properties -> Server Roles -> **Check whether the user has been assigned the sysadmin role-**

- If the user has --> Proceed to 3.
- If the user has not --> Select sysadmin in the checkbox and click OK --> Proceed to 3.

Note: To grant the user only the **minimum permission required instead of sysadmin role, follow the two steps found below:**

1. Right-click on the user --> Properties --> User Mapping --> Select db_datareader, db_datawriter, db_ddladmin in the checkbox and click OK.
2. Right-click on the database --> Properties --> Permissions --> Provide 'Execute' permission for the user and click OK.
   - Also, execute the below query in the database: Right-click on the database --> New Query --> GRANT CONTROL ON CERTIFICATE::[ZOHO_CERT] TO [newly_created_user]

3. Enabling communication with the MS SQL server

If ADAudit Plus and the MS SQL instance are running on different computers-

(i). Download and install SQL native client, command line utilities, and ODBC Driver; in the computer on which ADAudit Plus is running.

SQL Server version	Command Line Utilities (cmdlnutils)	Native Client (ncli)	ODBC Driver (odbc)
2008	https://www.microsoft.com/en-in/download/details.aspx?id=44272	https://www.microsoft.com/en-in/download/details.aspx?id=44272	Not needed.
2012	https://www.microsoft.com/en-in/download/details.aspx?id=36433	https://www.microsoft.com/en-us/download/details.aspx?id=50402	Not needed.
2014	https://www.microsoft.com/en-US/download/details.aspx?id=53164	Not needed.	https://www.microsoft.com/en-in/download/details.aspx?id=36434
2016, 2017, and 2019	https://www.microsoft.com/en-us/download/details.aspx?id=56833	Not needed.	https://www.microsoft.com/en-us/download/details.aspx?id=56833

Note: Native client, command line utilities, and ODBC driver version has to be the same as the MS SQL version (to which the DB and/or data is to be moved).

(ii). Copy the following 2 files from the MS SQL server installation folder to the ADAudit Plus bin folder-

- bcp.exe- <MSSQL Installation Dir>\Tools\Binn\bcp.exe
- bcp.rll- <MSSQL Installation Dir>\Tools\Binn\Resources\1033\bcp.rll

Note: If ADAudit Plus and the MS SQL instance are running on the same computer-
Copy the following 2 files from the MS SQL server installation folder to the ADAudit Plus bin folder-

- bcp.exe- <MSSQL Installation Dir>\Tools\Binn\bcp.exe &
- bcp.rll- <MSSQL Installation Dir>\Tools\Binn\Resources\1033\bcp.rll

4. Opening UDP and TCP ports (applicable only if the firewall is enabled in the MS SQL Server computer)

i.UDP port number is 1434.

ii. To find the TCP port number, open SQL Server Configuration Manager on the computer where the MS SQL instance to which the DB and/or data is to be moved, resides. --> SQL Server Network Configuration --> Protocols for <the given instance>. Right click on TCP/IP --> Properties --> IP Addresses --> IPALL --> TCP Port Number.

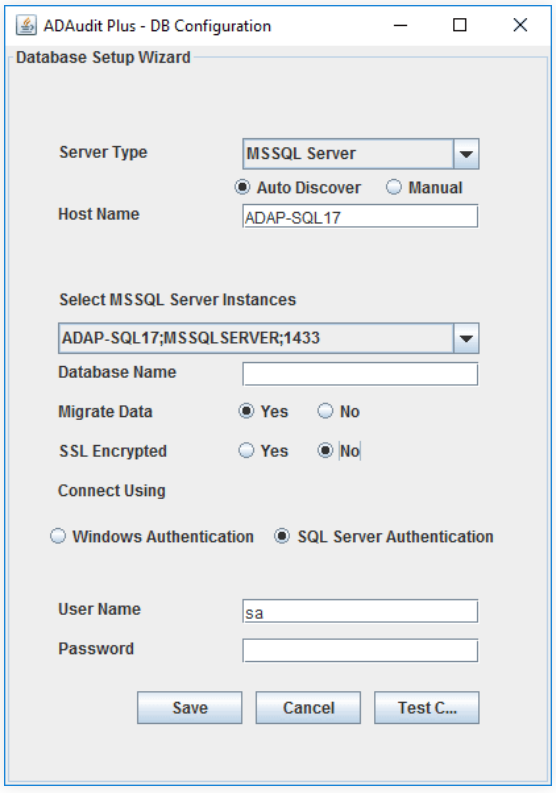
iii. Open the UDP and TCP ports under firewall settings.

5. Moving DB and/or data

i. Stop ADAudit Plus.

ii. Invoke <ADAudit Plus Home>\bin\ChangeDB.bat in command prompt.

Note: Make sure that the user running the command prompt is same as the one running ADAudit Plus.



iii. a. DB Configuration wizard will pop-up --> Select server type as MS SQL --> Select the Host Name, Instance Name, and Database Name.

b. If you want to migrate existing data from the PostgreSQL/MySQL to MS SQL, then select Yes for the Migrate Data option. Otherwise, select No (for a new installation of ADAudit Plus).

c. If your MS SQL server is SSL enabled, then select Yes for SSL Encrypted. Otherwise, select No.

Note: The name of the **MS SQL Server Instance** has to be entered manually in case you have not chosen the **Auto Discover** option.

Note: To learn how to create an SSL certificate in MS SQL server, follow the steps in this page.

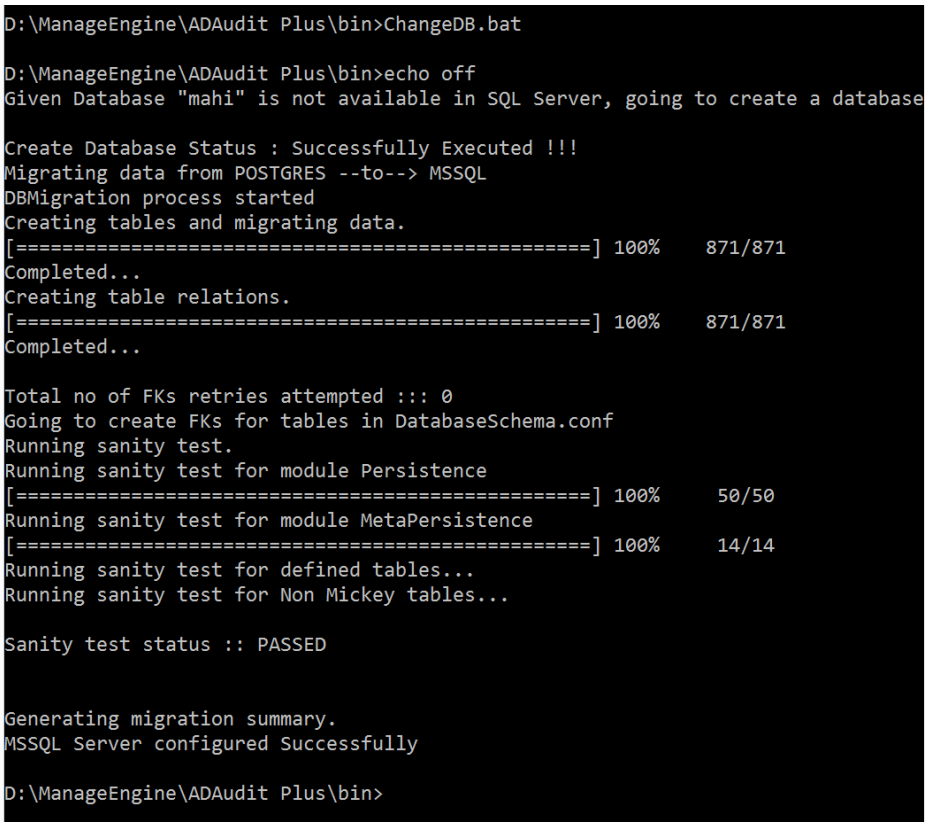
d. Select the Authentication type. If you have selected Windows Authentication, the credentials are automatically taken. If you have selected SQL Server Authentication, enter the corresponding credentials.

Note: If SQL Server Authentication is used to move the DB and/or data, access and permissions to the MS SQL instance are automatically provided. However, when Windows Authentication is used, access and permissions have to be granted, as explained in step 2.

vi. Click Test Connection to check whether the credentials are correct.

vii. Click Save.

The migration procedure will start and it will take a few minutes to complete. Successful migration will end with the below screen-



6. Converting the format of archived files after migration

The data in archived files is stored in different formats across databases. After migrating from one database to another, the format of the existing archived files has to be converted for them to be compatible with the new database. To convert the format of the archived files, follow the steps below:

1. Navigate to <Installation_Folder>\ManageEngine\ADAudit Plus\archive and create a new folder with a suitable name, say, tableBackup_new.
2. Open the Command Prompt as an administrator, navigate to <Installation_Directory>\ManageEngine\ADAudit Plus\bin, and execute the following command:

```
ChangeArchive2BCPSupport "<Archive_Directory>" "<New_Directory>" <Old_Backend_DB> <New_Backend_DB>
```

In the above command,

- Replace <Archive_Directory> with the path to the original folder that contains the archived files. The default name of this folder is tableBackup and it can be found at <Installation_Folder>\ManageEngine\ADAudit Plus\archive.
- Replace <New_Directory> with the path to the tableBackup_new folder that you just created in step 1.
- Replace <Old_Backend_DB> and <New_Backend_DB> with postgres or mysql or mssql depending on which database you are migrating from and which database you are migrating to.

  For example: If you are migrating from PostgreSQL to MS SQL, and your archive directory and new directory are C:\ManageEngine\ADAudit Plus\archive\tableBackup and C:\ManageEngine\ADAudit Plus\archive\tableBackup_new respectively, then the command will be as follows:

```
ChangeArchive2BCPSupport "C:\ManageEngine\ADAudit Plus\archive\tableBackup" "C:\ManageEngine\ADAudit Plus\archive\tableBackup_new" postgres mssql
```

Once the command executes successfully, new files whose format is compatible with the MS SQL database will be created in the tableBackup_new folder.

3. Move the archived files from the original folder (tableBackup) to a secure location for backup.
4. Copy the new files from the tableBackup_new folder and paste them in the original folder (tableBackup).

Migrating data between different versions of MS SQL

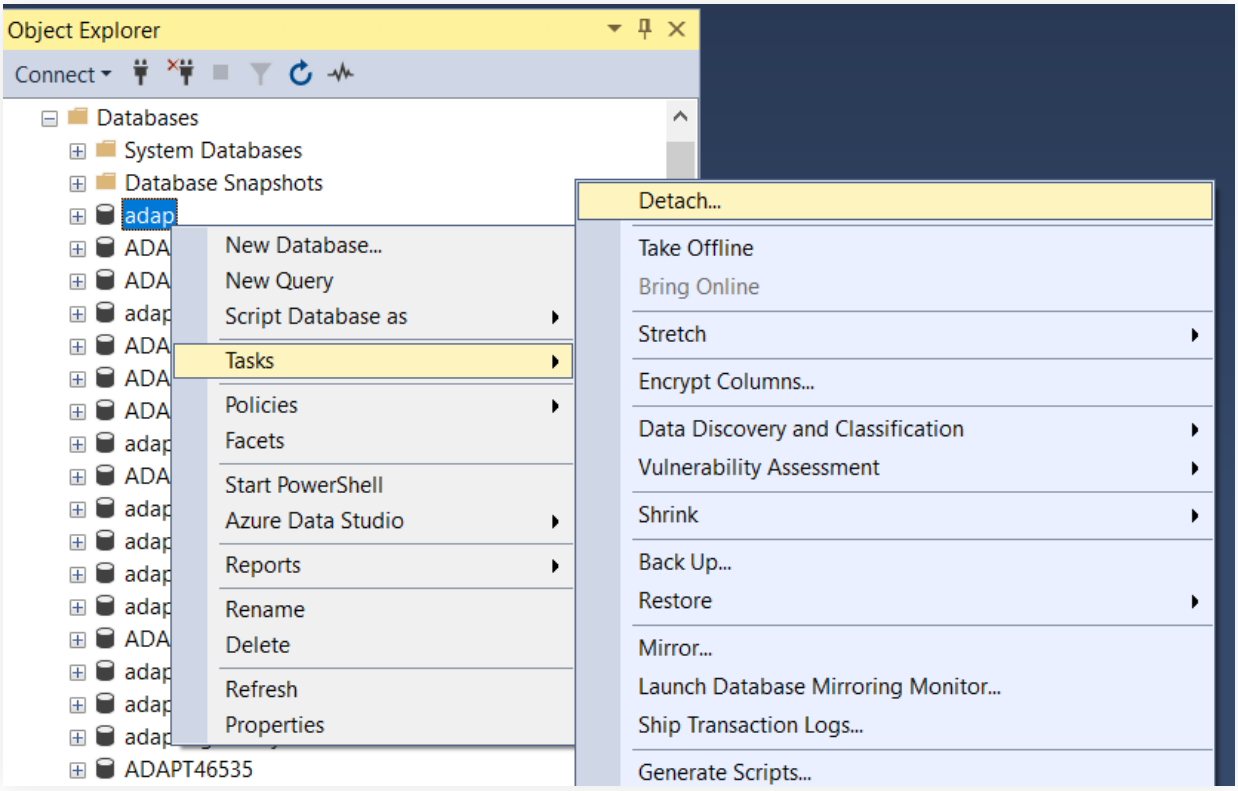
MS SQL server has built-in methods to migrate data from one version to another. Two of these methods are described below:

1. MS SQL DB Migration using Detach and Attach Method

Recommended for: Full DB backup, moving DB data to another drive, moving DB data between different versions of SQL server (Ex: SQL Server 2008 R2 to SQL Server 2012).

i. Login to Microsoft SQL Server Management Studio and connect to your current SQL Server.

ii. Right-click the DB that you want to move (Eg: adap). Select **Tasks --> Detach.**



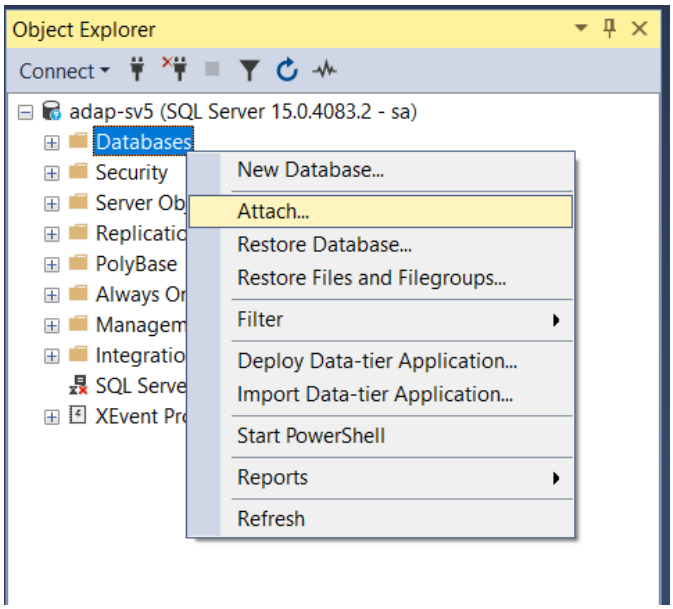
iii. In the Detach DB wizard --> Select both the check boxes (Drop Connections and Update Statistics) --> Ok.

iv. Go to the DB storage path (Path syntax: C:\Program Files\Microsoft SQL Server\MSSQL<SQL_Server_Version>.<Instance_Name>\MSSQL\DATA
For example, the path for 2019 SQL Server with Instance_Name or Service_Name as MSSQLSERVER: C:\Program Files\Microsoft SQL Server\MSSQL15.MSSQLSERVER\MSSQL\DATA)
--> Copy the .mdf and .LDF files (For example: adap.mdf and adap_log.LDF).

v. Save both of the above files in a desired location.

vi. Login to Microsoft SQL Server Management Studio and connect to the new SQL Server to which you want to migrate the DB.

vii. Right-click the destination database and select **Attach.**



viii. In the Attach DB wizard, click Add button.

ix. Select the .mdf file from where it has been saved --> Ok (the .LDF file will get selected automatically).

x. Go to <ADAudit Installation>\conf folder --> Open database_params --> Change the SQL server location and DatabaseName, so that the product is pointed to the new DB.

2. MS SQL DB Migration using Import Data Method

Recommended for: Moving particular table data from one DB to another.

i. Login to Microsoft SQL Server Management Studio.

ii. Right click on the DB that you want the data moved to (Ex: adap_new). Select Tasks --> Import Data.

iii. The SQL Server Import and Export wizard opens up --> Click Next

iv. In the Data Source wizard, that opens up, specify:
(In the Data source drop down, select SQL Server Native Client if it's not selected already.)

- Server Name.
- Authentication (Used to login to SSMS).
- Database.
- Click Next.

v. Under the Destination wizard, enter the following:
(In the Data source drop down, select SQL Server Native Client if it's not selected already.)

- Server Name (will get automatically detected, you can change the destination, if you want).
- Authentication.
- Database (will get automatically detected, you can change the destination, if you want).
- Click Next.

vi. Under Specify Table Copy or Query --> Choose Copy Data From One or More Tables/Views --> Next.

vii. Under Select Source Tables and Views --> Choose the tables to be copied from source, select the tables from the left column using Edit Mappings --> Select particular table operations --> Next.

viii. Check the Run Immediately box--> Next.

ix. Click Finish.

MySQL/MS SQL to PostgreSQL migration

ADAudit Plus allows administrators to store and retrieve Windows servers' audit log data from MySQL, MS SQL, or PostgreSQL databases.

To move the DB and/or data from MySQL/MS SQL to PostgreSQL, follow the steps found below.

1. Stop ADAudit Plus, go to the **Start menu** **Services** Right-click the **ADAudit Plus service**, and select **Stop.**

2. Download PostgreSQL and extract the downloaded file to <Installation_folder>\ManageEngine\ADAudit Plus.

Note: Before downloading the file, please ensure that the ADAudit Plus installation folder does not contain any folder named **pgsql.** If it does, please rename the folder to something else, like **pgsql_old,** before downloading the PostgreSQL file.

3. Go to <Installation-folder>\ManageEngine\ADAudit Plus\bin, open an elevated Command Prompt (right-click Command Prompt and select Run as administrator), and execute **ChangeDB.bat.**

4. In the **Database Setup Wizard** that pops up, fill in the following details, and click **Save:**

- Beside **Server Type,** select **PostgreSQL** from the drop-down.
- Beside **Host name,** enter **localhost.**
- Beside **Port,** enter **33307** or **33308.** If you are migrating from MS SQL, the port number is 33307, and if you are migrating from MySQL, the port number is 33308.
- Beside **Database,** enter **ADAP** or any other name of your choice.
- Beside **Migrate Data,** select **Yes or No,** depending on whether you want to migrate the data or not.
- Beside **User Name** and **Password,** enter a user name and password of your choice.

Note: The migration usually takes a few minutes, however, it might take a bit longer depending on the volume of data to be migrated from your MySQL/MS SQL database.

1. Converting the format of archived files after migration

The data in archived files is stored in different formats across databases. After migrating from one database to another, the format of the existing archived files has to be converted for them to be compatible with the new database. To convert the format of the archived files, follow the steps below:

1. Navigate to <Installation_Folder>\ManageEngine\ADAudit Plus\archive and create a new folder with a suitable name, say, tableBackup_new.
2. Open the Command Prompt as an administrator, navigate to <Installation_Folder>\ManageEngine\ADAudit Plus\bin, and execute the following command:

```
ChangeArchive2BCPSupport "<Archive_Directory>" "<New_Directory>" <Old_Backend_DB> <New_Backend_DB>
```

In the above command,

- Replace <Archive_Directory> with the path to the original folder that contains the archived files. The default name of this folder is tableBackup and it can be found at <Installation_Folder>\ManageEngine\ADAudit Plus\archive.
- Replace <New_Directory> with the path to the tableBackup_new folder that you just created in step 1.
- Replace <Old_Backend_DB> and <New_Backend_DB> with postgres or mysql or mssql depending on which database you are migrating from and which database you are migrating to.

  For example: If you are migrating from MySQL to PostgreSQL, and your archive directory and new directory are C:\ManageEngine\ADAudit Plus\archive\tableBackup and C:\ManageEngine\ADAudit Plus\archive\tableBackup_new respectively, then the command will be as follows:

```
ChangeArchive2BCPSupport "C:\ManageEngine\ADAudit Plus\archive\tableBackup" "C:\ManageEngine\ADAudit Plus\archive\tableBackup_new" mysql postgres
```

Once the command executes successfully, new files whose format is compatible with the PostgreSQL database will be created in the tableBackup_new folder.

3. Move the archived files from the original folder (tableBackup) to a secure location for backup.
4. Copy the new files from the tableBackup_new folder and paste them in the original folder (tableBackup).

Moving ADAudit Plus from one server/ drive to another

1. Stop the ADAudit Plus server (Start → Run → type services.msc → Stop "ManageEngine ADAudit Plus").

2. Stop the DB,
   - Open the Command Prompt as an administrator
   - Navigate to *<Installation-Directory>\ManageEngine\ADAudit Plus\bin*
   - Execute StopDB.bat

3. Remove the ADAudit Plus service,
   - Open the Command Prompt as an administrator
   - Navigate to *<Installation-Directory>\ManageEngine\ADAudit Plus\bin*
   - Execute the command: *wrapper.exe -r ..\conf\wrapper.conf*

Note: **The 4th step found below, is required only for build numbers 6000 and above.**

4. Remove the ADAudit Plus - DataEngine service,
   - Open the Command Prompt as an administrator
   - Navigate to *<Installation-Directory>\ManageEngine\ADAudit Plus\apps\dataengine-xnode\bin*
   - Execute the command: *dataengine-xnode.bat -r*

5. Copy the entire ADAudit Plus folder to the new server or drive.

6. Ensure both folder sizes are the same.

7. To install ADAudit Plus as a service,
   - Open the Command Prompt as an administrator
   - Navigate to *<Installation-Directory>\ManageEngine\ADAudit Plus\bin*
   - Execute the command: *InstallNTService.bat*

8. To provide "Authenticated Users" sufficient privileges over the database folder,
   - Open the Command Prompt as an administrator
   - Navigate to *<Installation-Directory>\ManageEngine\ADAudit Plus\bin*
   - Execute the command: *initPgsql.bat*

9. If you want to start the product as service, go to Services.msc → 'ManageEngine ADAudit Plus' Service → Right click on properties → Click on 'Log on' tab and select 'This Account' → Provide the suitable credentials.

Note:

If you are using MS SQL server as your database and if the MS SQL server is running in a remote computer- Download and install SQL native client, command line utilities, and ODBC Driver; in the computer on which ADAudit Plus is running.

SQL Server version	Command Line Utilities (cmdlnutils)	Native Client (ncli)	ODBC Driver (odbc)
2008	https://www.microsoft.com/en-in/download/details.aspx?id=44272	https://www.microsoft.com/en-in/download/details.aspx?id=44272	Not needed.
2012	https://www.microsoft.com/en-in/download/details.aspx?id=36433	https://www.microsoft.com/en-us/download/details.aspx?id=50402	Not needed.
2014	https://www.microsoft.com/en-US/download/details.aspx?id=53164	Not needed.	https://www.microsoft.com/en-in/download/details.aspx?id=36434
2016, 2017, and 2019	https://www.microsoft.com/en-us/download/details.aspx?id=56833	Not needed.	https://www.microsoft.com/en-us/download/details.aspx?id=56833

Note:

Native client, command line utilities, and ODBC driver versions have to be the same as the MS SQL version (to which the DB and/or data is to be moved).

Note: If you want to change the location of the archived files as well, kindly contact support.

Converting 32-bit installation of ADAudit Plus to 64-bit installation

1. Check the product build number.

2. If it's not the latest build, upgrade your 32-bit version of ADAudit Plus to the latest build using the service pack below-
https://www.manageengine.com/products/active-directory-audit/service-pack.html

3. Install the latest 64-bit version of ADAudit Plus in a different computer. Do not start the product.

4. Stop the 32-bit installation.

5. Rename the lib, jre, and bin folders as lib_old, jre_old, and bin_old respectively in your 32-bit installation.

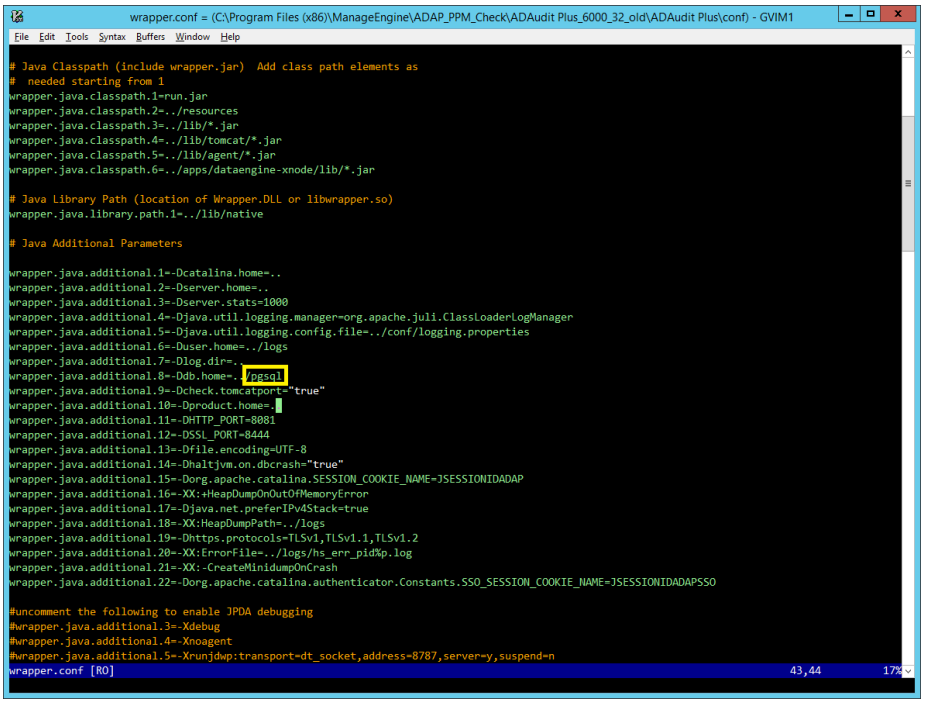
6. Now copy the lib, jre, and bin folders from the 64-bit installation folder and paste it into the 32-bit installation folder.

Note: If the back-end DataBase is MS SQL, in addition to copying and pasting the lib, jre, and bin folders,

- Go to bin_old folder found under the 32-bit installation folder, copy and paste the following 2 files- bcp.exe and bcp.rll to the bin folder found under the 32-bit installation folder (copy-pasted in step 6).

If the back-end DataBase is MySQL, in addition to copying and pasting the lib, jre, and bin folders,

- Go to bin_old folder found under the 32-bit installation folder, copy and paste the following 3 files- StartDB.bat, StopDB.bat, and SetCommonEnv.bat, to the bin folder found under the 32-bit installation folder (copy-pasted in step 6).
- Go to conf folder under the 64-bit installation folder, copy and paste the file wrapper.conf to the conf folder under the 32-bit installation folder. Open the wrapper.conf file and change pgsql (refer to the image below) to mysql.



7. Go to <installation-dire>\ManageEngine\ADAudit Plus\conf folder in 32-bit installation.

8. Open product.conf file using Wordpad.

9. Change "product.processor_architecture" to 64.

Note: **The 10th step found below, is required only for build numbers 6000 and above.**

10. Copy the wrapper.conf file from the location \ManageEngine\ADAudit Plus\apps\dataengine-xnode\conf\ in 64 bit installation and replace it in the 32 bit installation.

11. Start the 32-bit installation and re-apply the license file.

Backup and restore

Follow these 10 steps to backup and restore the database in ADAudit Plus.

1. Stop ADAudit Plus, go to the **Start** menu > **Services** > Right-click the **ADAudit Plus** service, and select **Stop.**

2. Go to <Installation-directory>\ManageEngine\ADAudit Plus\bin, open an elevated command prompt (right-click **Command Prompt** and select **Run as administrator)**, and execute **StartDB.bat.**

3. Execute **BackupDB.bat.**

On executing BackupDB.bat, the back up file will be saved at the default location (<Installation-directory>\ManageEngine\ADAudit Plus\backup), under the default name (OfflineBackup_<timestamp>.ezip), with the default password (Backup@123$).

Note 1: On executing BackupDB.bat, in addition to a timestamped .ezip file titled 'OfflineBackup_<timestamp>.ezip' getting created under <Installation-directory>\ManageEngine\ADAudit Plus\backup, a timestamped folder will also get created under <Installation-directory>\ManageEngine\ADAudit Plus\backup\EventData.

Alternately, if you want to specify a location, name, and password for the back up file, execute **BackupDB.bat BackupDirectory BackupFileName -p <password>.**

Here, BackupDirectory is the location where you want to save the back up file.
BackupFileName is the name you want to provide for the back up file.
-p <password> is the password you want to configure for the back up file.

For example, if you want to save the back up file at E:\smith\backup, name the file as ADAPBackup, and configure the password as Pass@123$, execute **BackupDB.bat E:\smith\backup ADAPBackup -p Pass@123$.**

Note 2: Ensure that you remember the configured password, without which the back up file cannot be recovered.

4. Install a new instance of ADAudit Plus with the same build number as the old one. Start the new instance, go to the **Start** menu > **Services** > Right-click the **ADAudit Plus** service, and select **Start.** Now, stop the new instance, go to the **Start** menu **> Services >** Right-click the **ADAudit Plus** service, and select **Stop.**

5. Go to <Installation-directory of old instance>\ManageEngine\ADAudit Plus, copy and paste the folder titled 'patch' to <Installation-directory of new instance>\ManageEngine\ADAudit Plus.

6. Go to <Installation-directory of new instance>\ManageEngine\ADAudit Plus\bin, open an elevated Command Prompt (right-click **Command Prompt** and select **Run as administrator)**, and execute **RestoreDB.bat ZipFileLocation -p password.**

Here, ZipFileLocation is the location of the back up file.
-p password is the password of the back up file.

For example, in step 3, if you have saved the back up file at E:\smith\backup, named the file as ADAPBackup, and configured the password as Pass@123$, execute **RestoreDB.bat E:\smith\backup\ADAPBackup -p Pass@123$.**

In step 3, if you did not specify a location, name, and password for the back up file and simply executed BackupDB.bat, execute **RestoreDB.bat <Installation-directory>\ManageEngine\ADAudit Plus\backup\OfflineBackup_<timestamp>.ezip -p Backup@123$.**

7. Execute **RestoreEventTables.bat FolderLocation.**

Here FolderLocation is the location of the folder mentioned in Note 1 under step 3.

For example, in step 3, if you have saved the back up file at E:\smith\backup, execute **RestoreEventTables.bat E:\smith\backup\EventData.**

In step 3, if you did not specify a location, name, and password for the back up file and simply executed BackupDB.bat, execute **RestoreEventTables.bat <Installation-directory>\ManageEngine\ADAudit Plus\backup\EventData.**

8. Go to <Installation-directory of new instance>\ManageEngine\ADAudit Plus\conf, rename the customer-config.xml and database_params.conf files to any name.

9. Go to <Installation-directory of old instance>\ManageEngine\ADAudit Plus\conf, copy and paste the customer-config.xml and database_params.conf files into <Installation-directory of new instance>\ManageEngine\ADAudit Plus\conf.

10. Go to <Installation-directory of old instance>\ManageEngine\ADAudit Plus, copy and paste the apps folder into <Installation-directory of new instance>\ManageEngine\ADAudit Plus.

11. Start ADAudit Plus, go to the **Start** menu > **Services** > Right-click the **ADAudit Plus** service, and select **Start.**