

## [Tech Note 915](#)

# Migrating QI Analyst Databases from Access to SQL

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## Introduction

This *Tech Note* discusses two topics associated with database migration.

- [Migrating QI 8.0 admin and process databases from Microsoft Access to Microsoft SQL Server](#)

Migrating QI Admin and Process Databases from Microsoft Access to Microsoft SQL Server (.mdb and .qia - > SQL Server) provides efficiency benefits when you need to store large amounts of data and query that data from QI Analyst.

- [Fixing the problem associated with the migration of QI Analyst 4.2 SQL database \(previously converted from Microsoft Access\) to QI Analyst 8.0 SQL database using the QI V4.2-V8.0 Migration Utility.](#)

Problems have been reported when migrating QI 4.2 SQL database to a QI 8.0 SQL database. An error is generated during migration and the utility doesn't proceed further.

This is because the QI 4.2 SQL database was converted from the Access database. During that conversion, the data type of some columns in QI tables was automatically changed from **Image** to **nvarchar** by SQL server Data Transformation Services. This *Tech Note* explains how to fix that problem so that the QI V4.2-V8.0 Migration Utility will complete the migration.

## Assumptions

- You are familiar with QI Analyst and SQL Server
- You have Administrator rights on the server

## Application Versions

- QI Analyst 8.0 and later
- SQL server 2005
- MS Access 2003, 2007 and 2010

**Note:** MS Access 2007 and SQL Server 2005 were used to capture the screen shots in this *Tech Note*.

## Migrating QI 8.0 Admin and Process Databases from Microsoft Access to Microsoft SQL Server

Let us assume your existing Microsoft Access QI admin database name is **QI Admin80.mdb** and your Process database name is **sampledb80.qia**.

## Create Databases Using SQL Enterprise Manager

1. Open SQL Enterprise Manager.
2. Back up the **Admin** and **Process** databases.
3. Fix the data type of the Admin database to ensure a successful conversion.

Do the following:

- Create a new SQL database for the QIA Admin database. In this example, it is called **QI\_Admin\_New** (Figure 1 below).
- Create a new SQL database for the QIA Process database. In this example, it is called **QI\_Process\_New**.

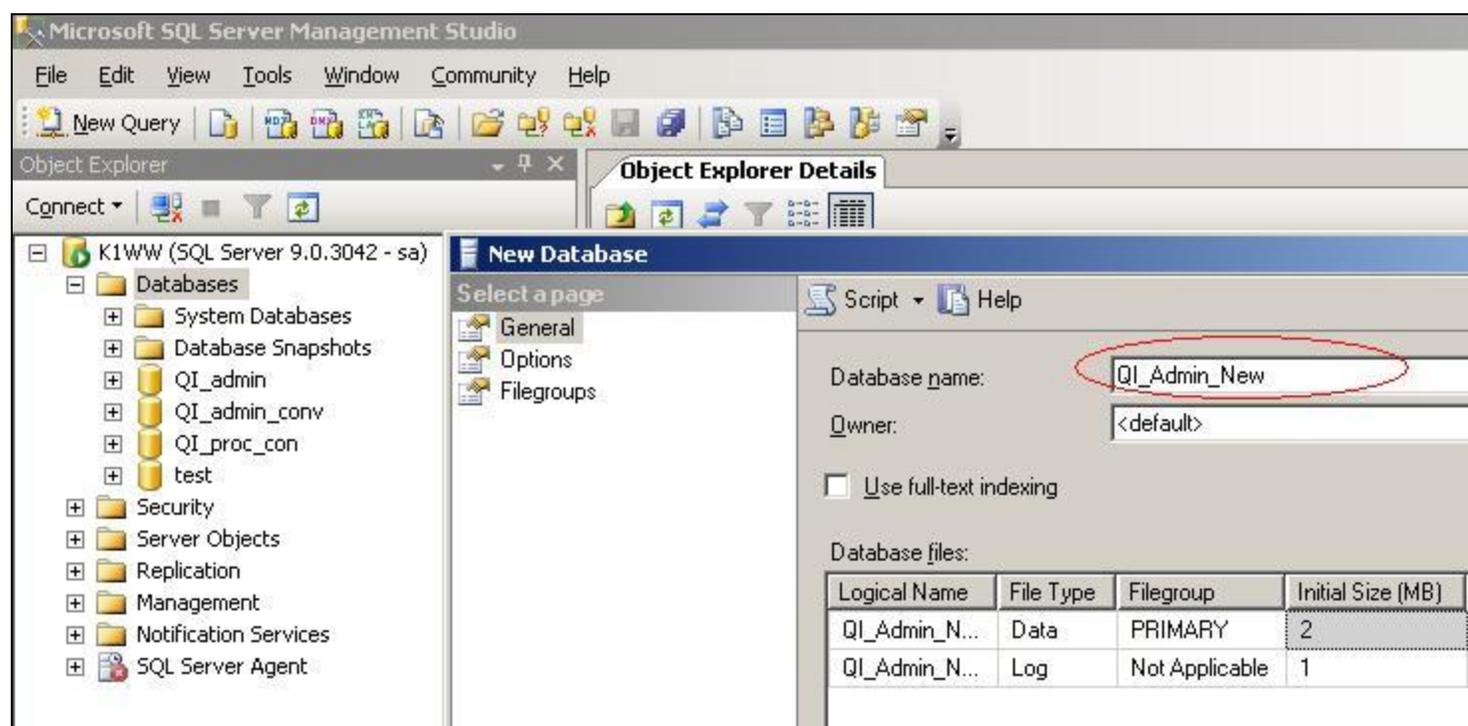


FIGURE 1: CREATING NEW SQL DATABASE FOR QI ADMIN AND PROCESS DB CONVERSION

## Convert the Admin Database

Use Data Transformation Services (DTS) to import the data from **QI Admin80.mdb**.

For the conversion, your **Data Source** is your *existing* QI Access database and your **Destination** should always be the empty SQL database that you created.

1. In SQL Server Management Studio, right-click the **QI\_Admin\_New** database, and select **Tasks/Import Data** (Figure 2 below).

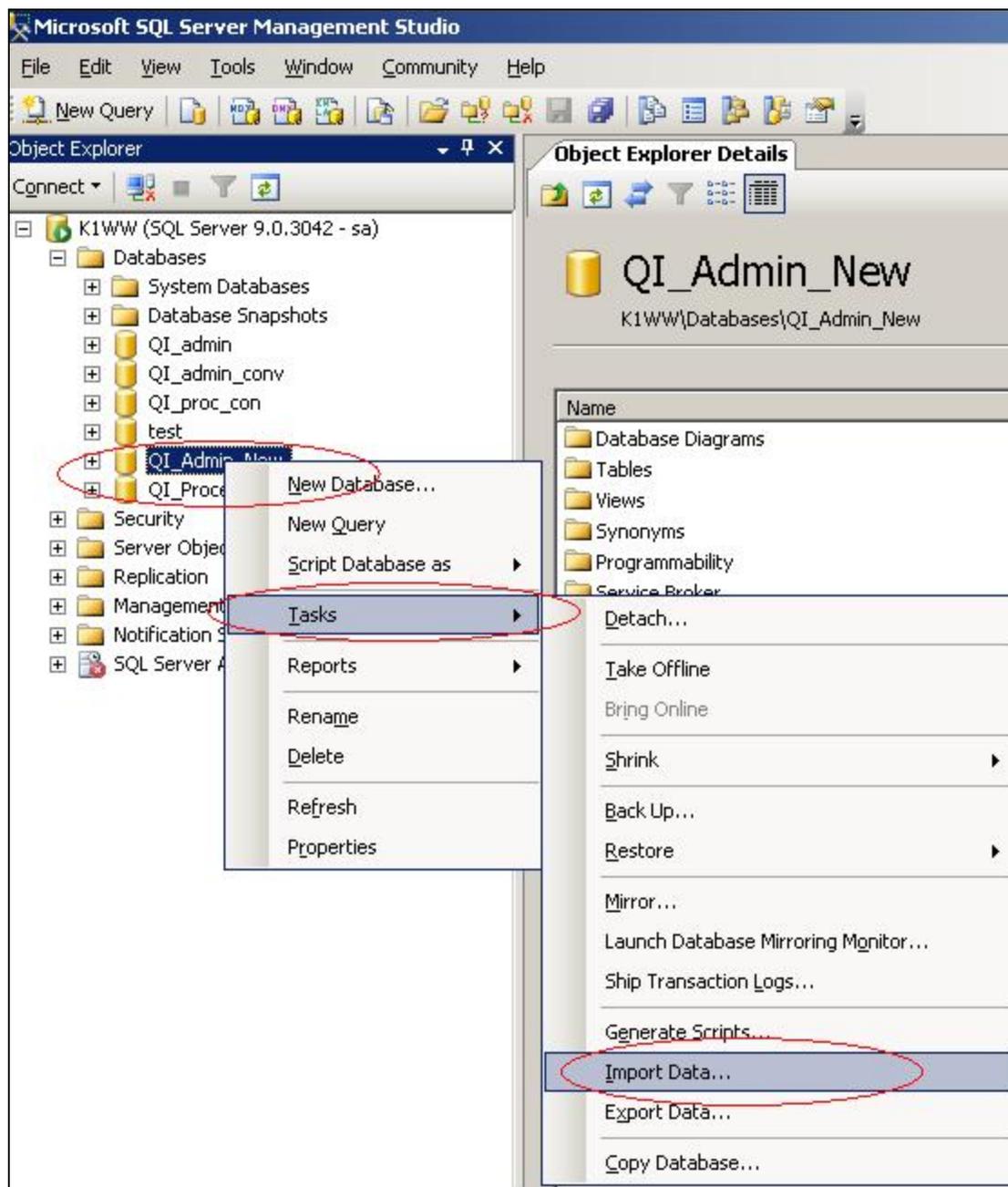


FIGURE 2: TASKS/IMPORT DATA

2. Choose **Microsoft Access** as the Data Source provider and **QIAdmin80.mdb** as the Source database file name, then click **Next** (Figure 3 below).

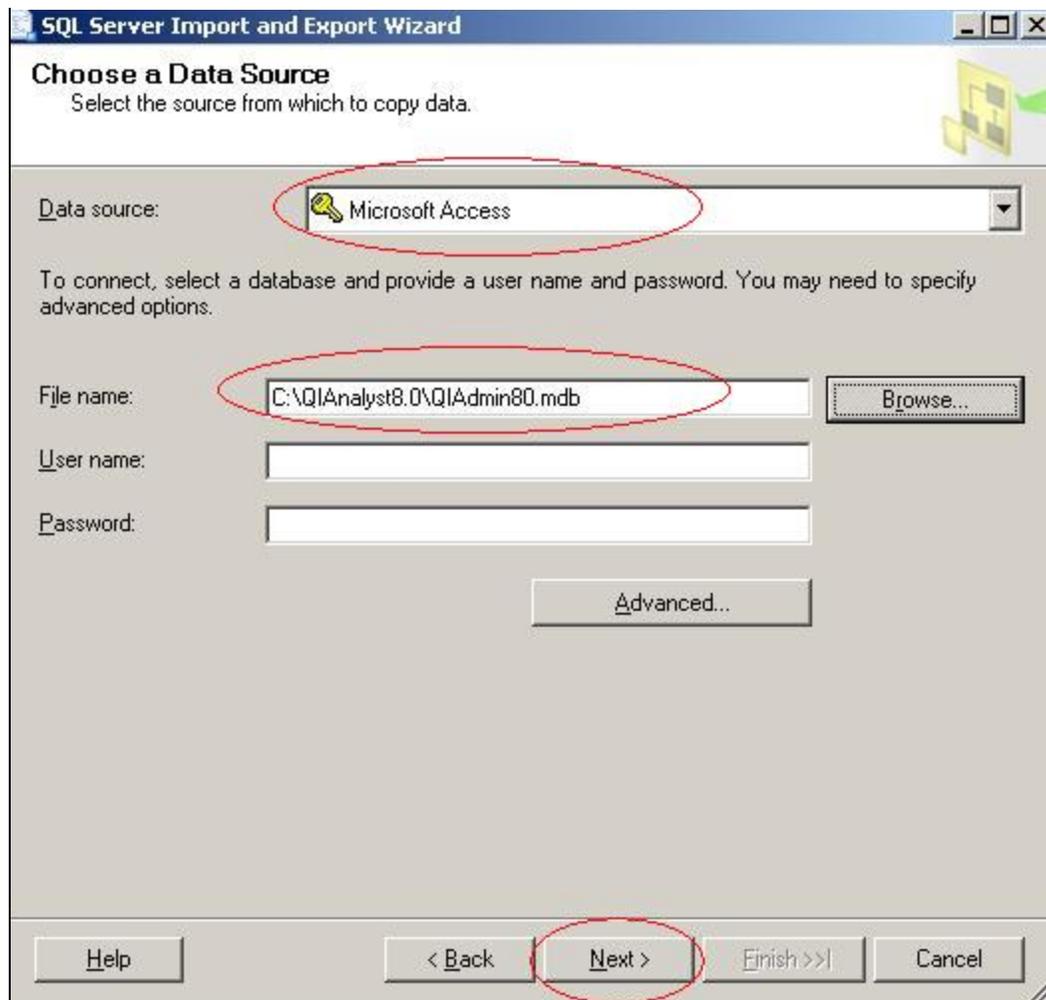


FIGURE 3: SELECT QIADMIN80.MDB AS DATA SOURCE

3. Choose **SQL Native Client** as the Destination provider and **QI\_Admin\_New** as the destination Database, then click **Next** (Figure 4 below).

You can also use **Microsoft OLEDB provider for SQL Server** as the provider.

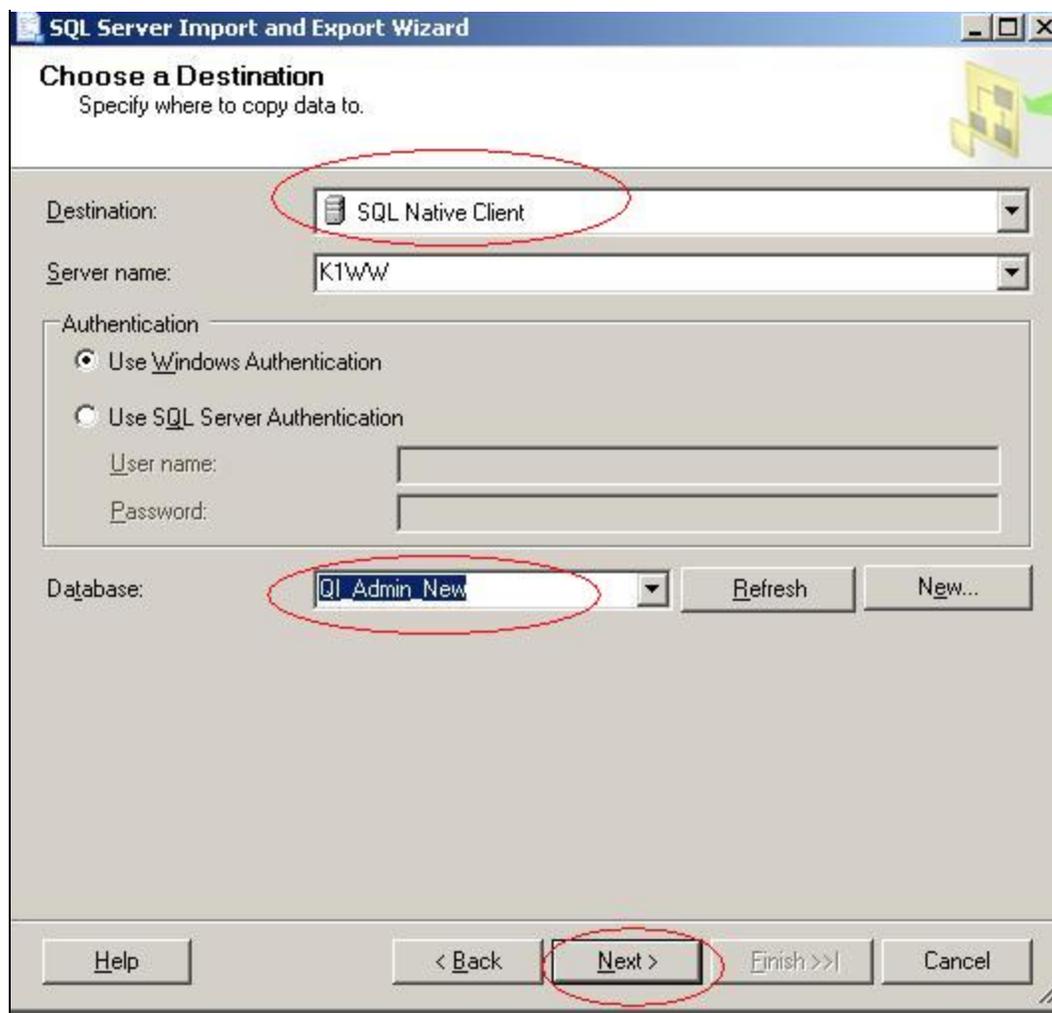


FIGURE 4: SELECT QI\_ADMIN\_NEW AS DESTINATION DATABASE

4. Select **Copy Data from one or more tables or views**, and then click **Next** (Figure 5 below).

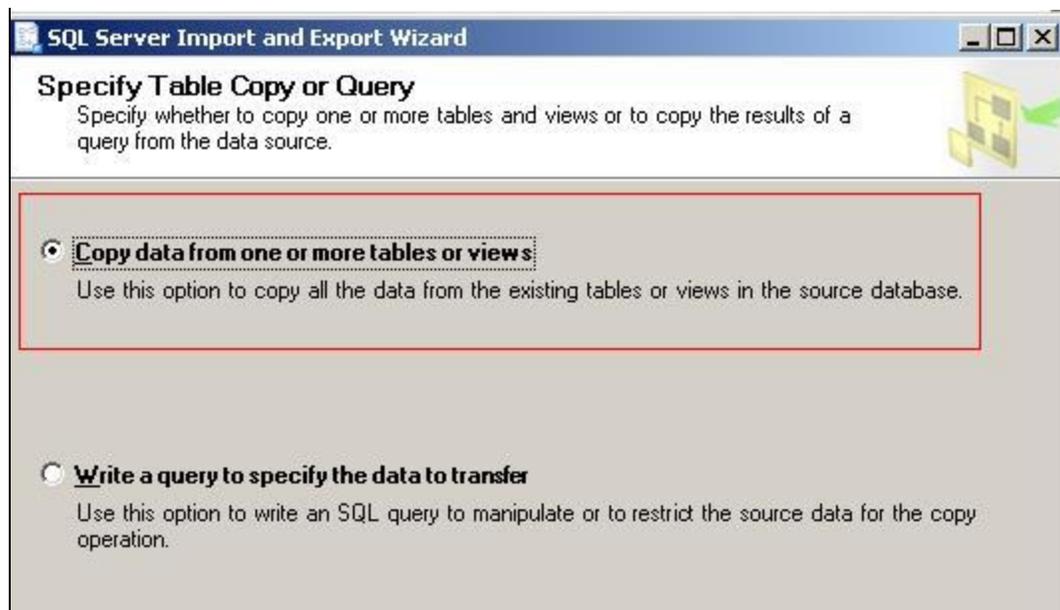
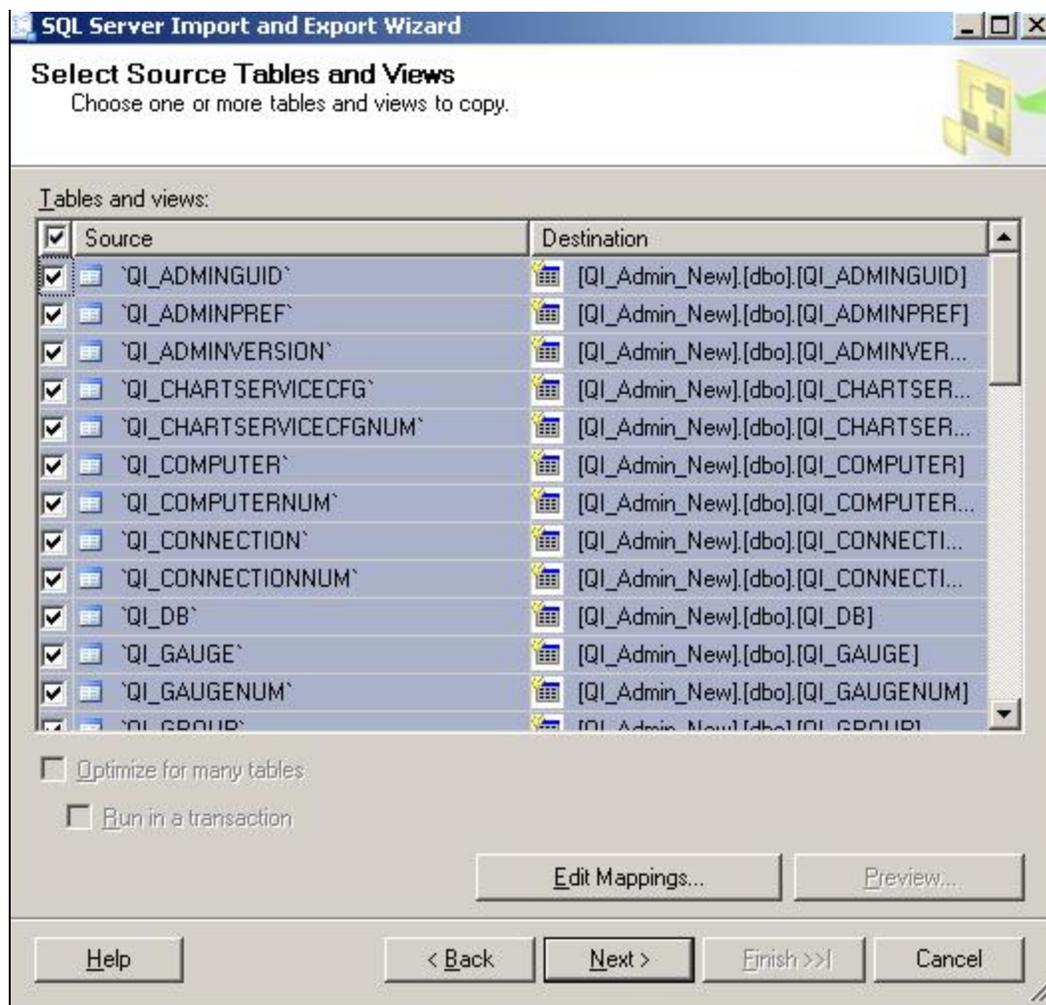


FIGURE 5: COPY DATA FROM ONE OR MORE TABLES OR VIEWS OPTION

5. Select all the tables in the **QIAdmin80.mdb** access database (Figure 6 below).



**FIGURE 6: SELECT ALL QI TABLES**

During the import process, make the required data type changes (from nvarchar to Image) on the **Properties** column for each of the following QI tables.

- QI\_DB
- QI\_TEMPLATEPROP
- QI\_WINDOWPROPS

6. Select the table and click **Edit Mappings**.
7. Change the Properties Source Type Column from **nvarchar** to **Image** (Figure 7 below). Repeat the same procedure for the remaining tables.

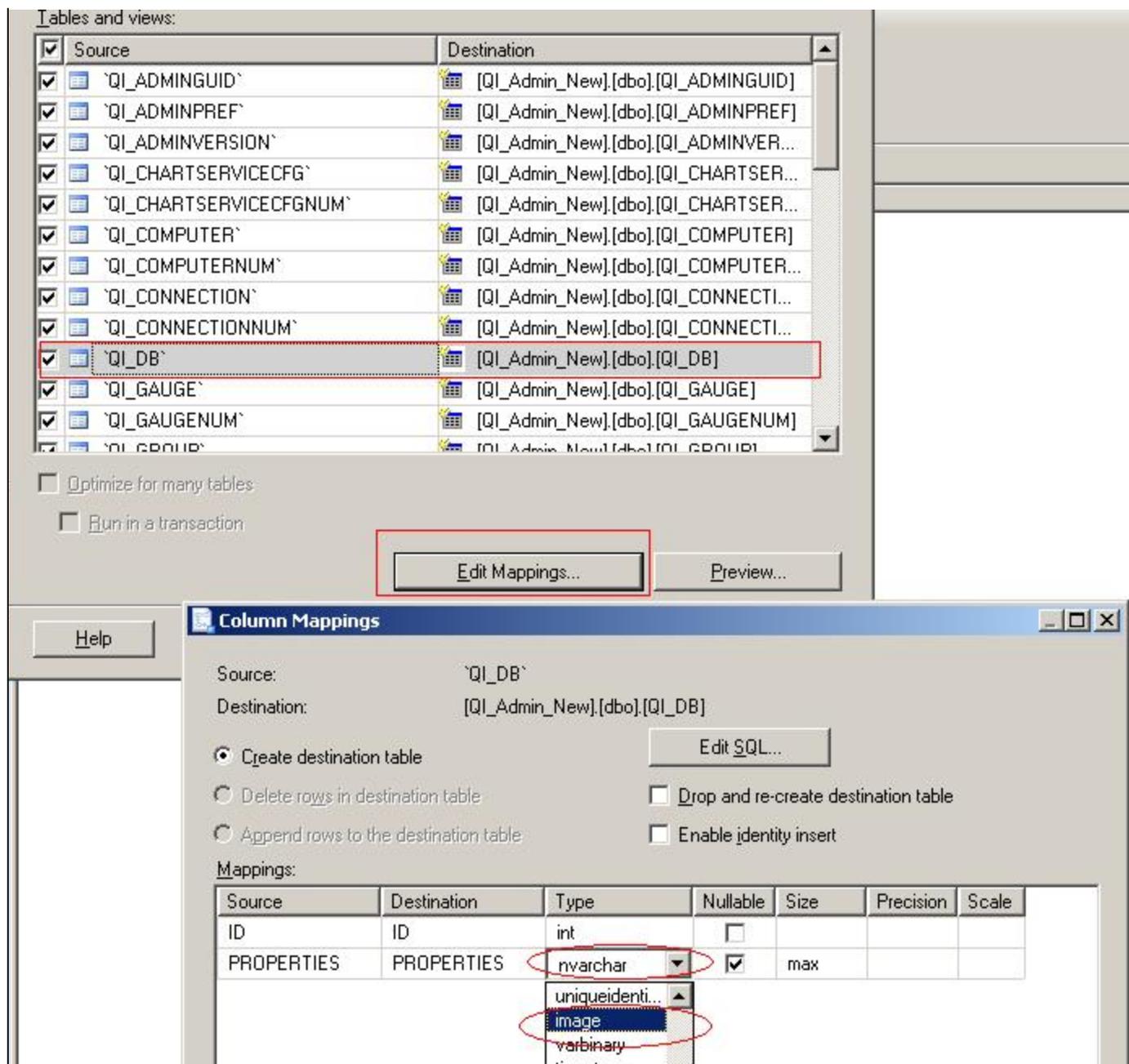


FIGURE 7: CHANGE TYPE FROM NVARCHAR TO IMAGE

8. Click **Next** to complete the import process (Figure 8 below).

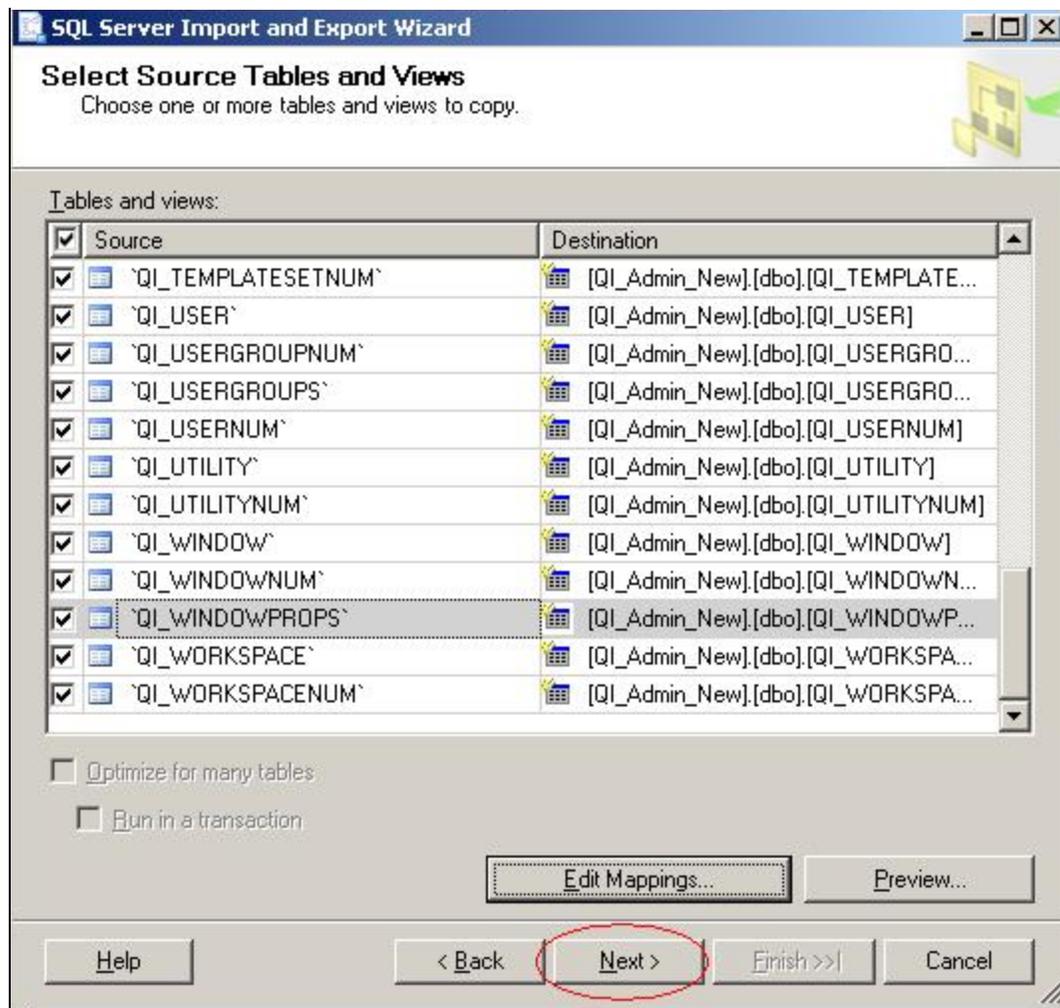


FIGURE 8: CLICK NEXT TO COMPLETE

9. Click **Execute Immediately**, then click **Next** (Figure 9 below).

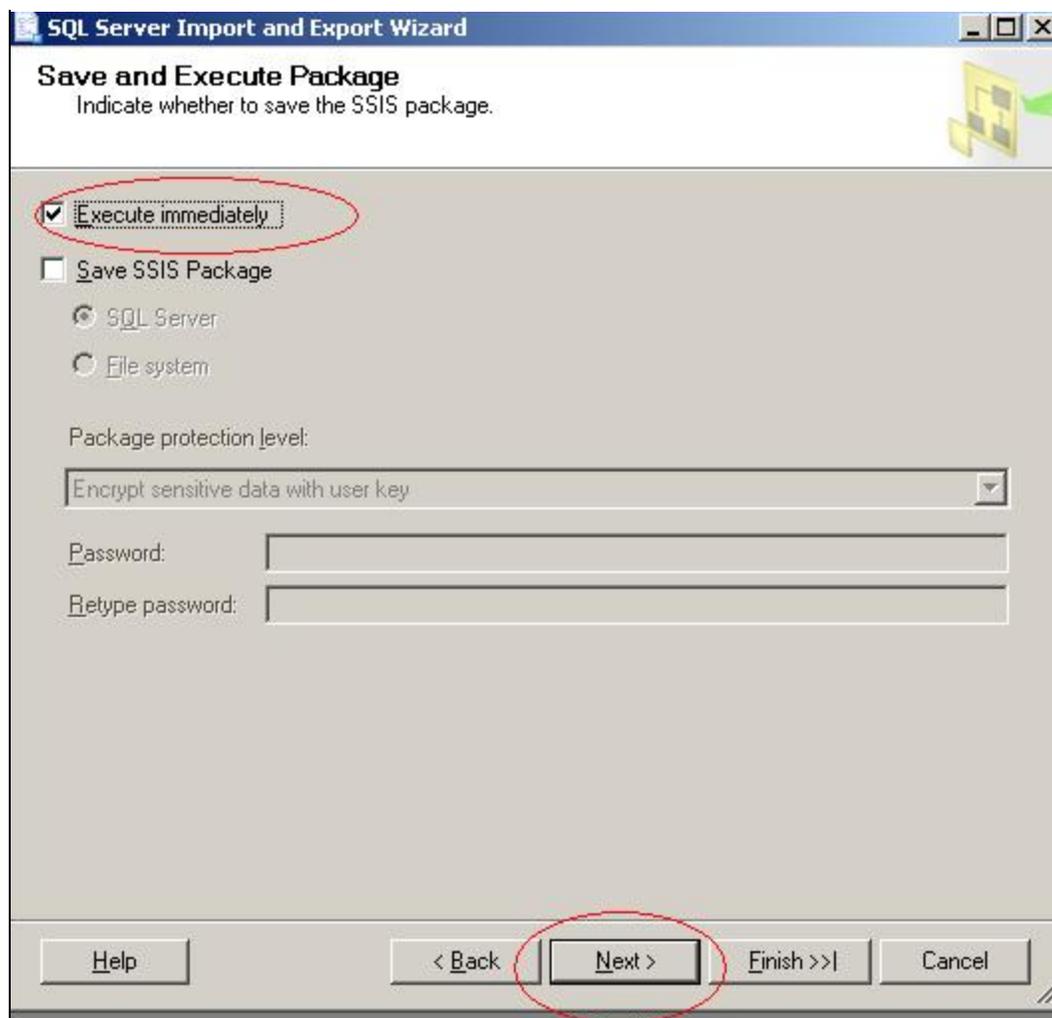
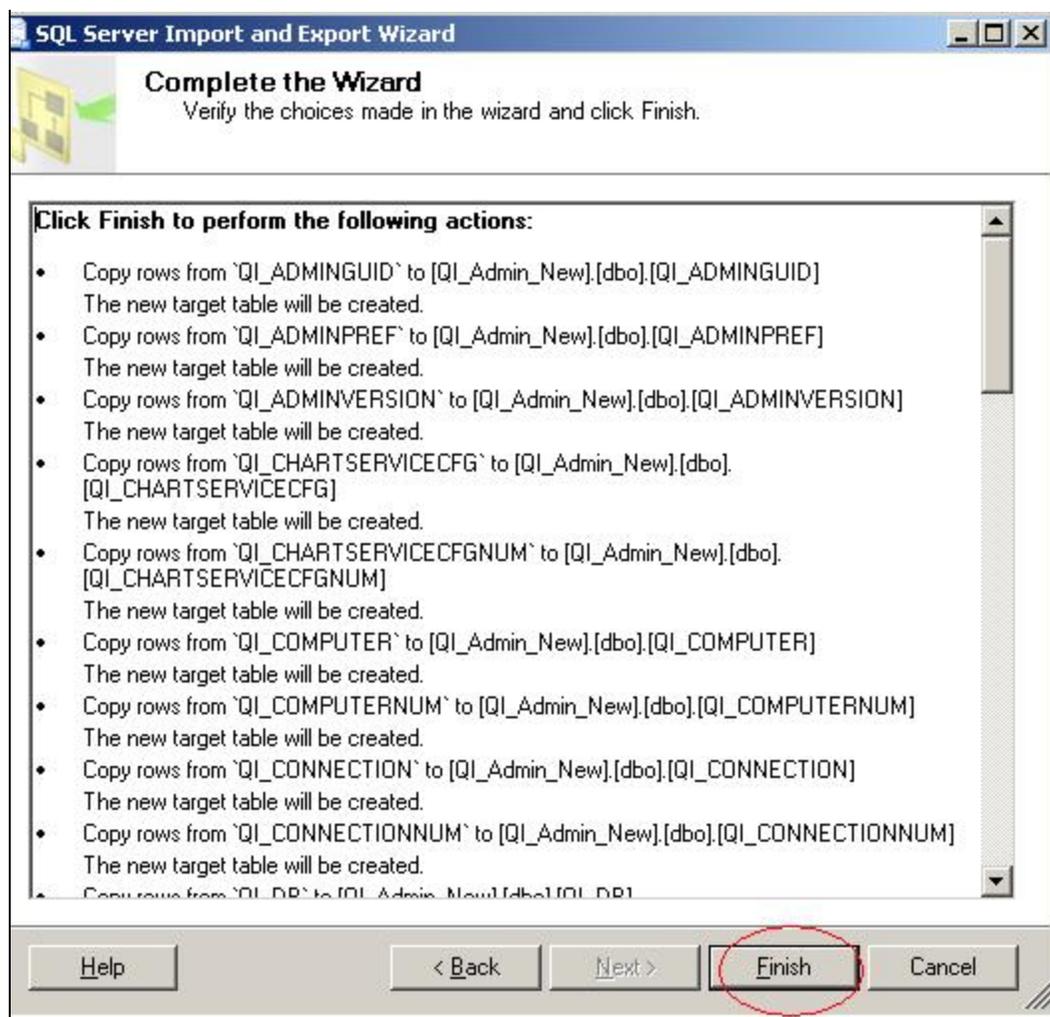


FIGURE 9: EXECUTE IMMEDIATELY

10. Click **Finish** (Figure 10 below).



**FIGURE 10: FINISH THE IMPORT**

11. Make sure there are no error messages, and the **Status** column shows **Success** for all the Action items. Click **Close** (Figure 11 below).

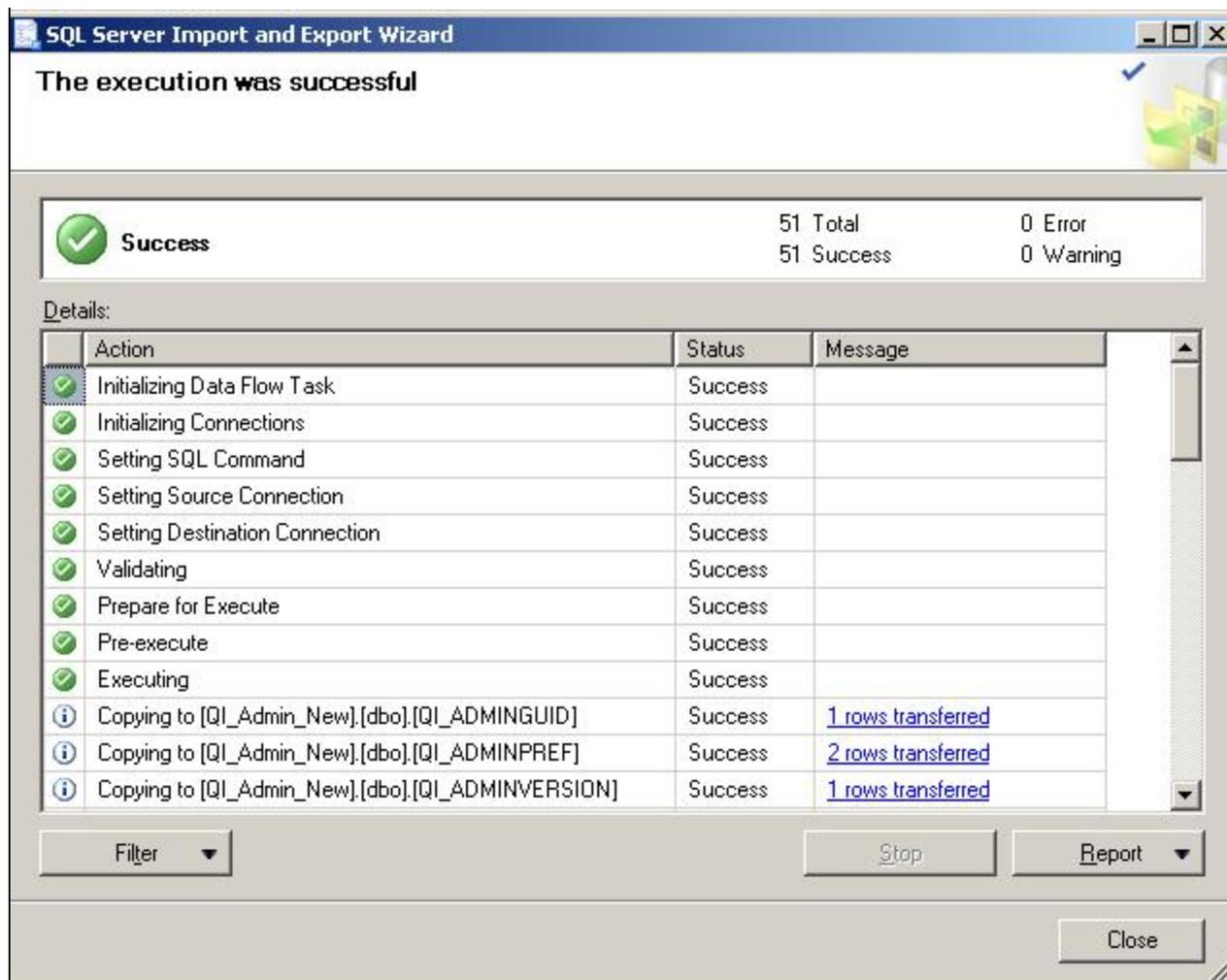


FIGURE 11: CHECK IMPORT STATUS FOR ERRORS

## Convert the Process Database

Use Data Transformation Services to Import Data from **Sampledb80.qia** to **QI\_Process\_New**.

- Change the existing .qia extension to .mdb. In this example, the Data Source is now **sample80.mdb**.
- Follow the same procedure as in the above section to convert your QI Process database to SQL Server database.
- Note the following exceptions:
  - From the import wizard, choose **Microsoft Access** as the Data Source provider and **sampledb80.mdb** as the Source database file name , then click **Next** (Figure 12 below).

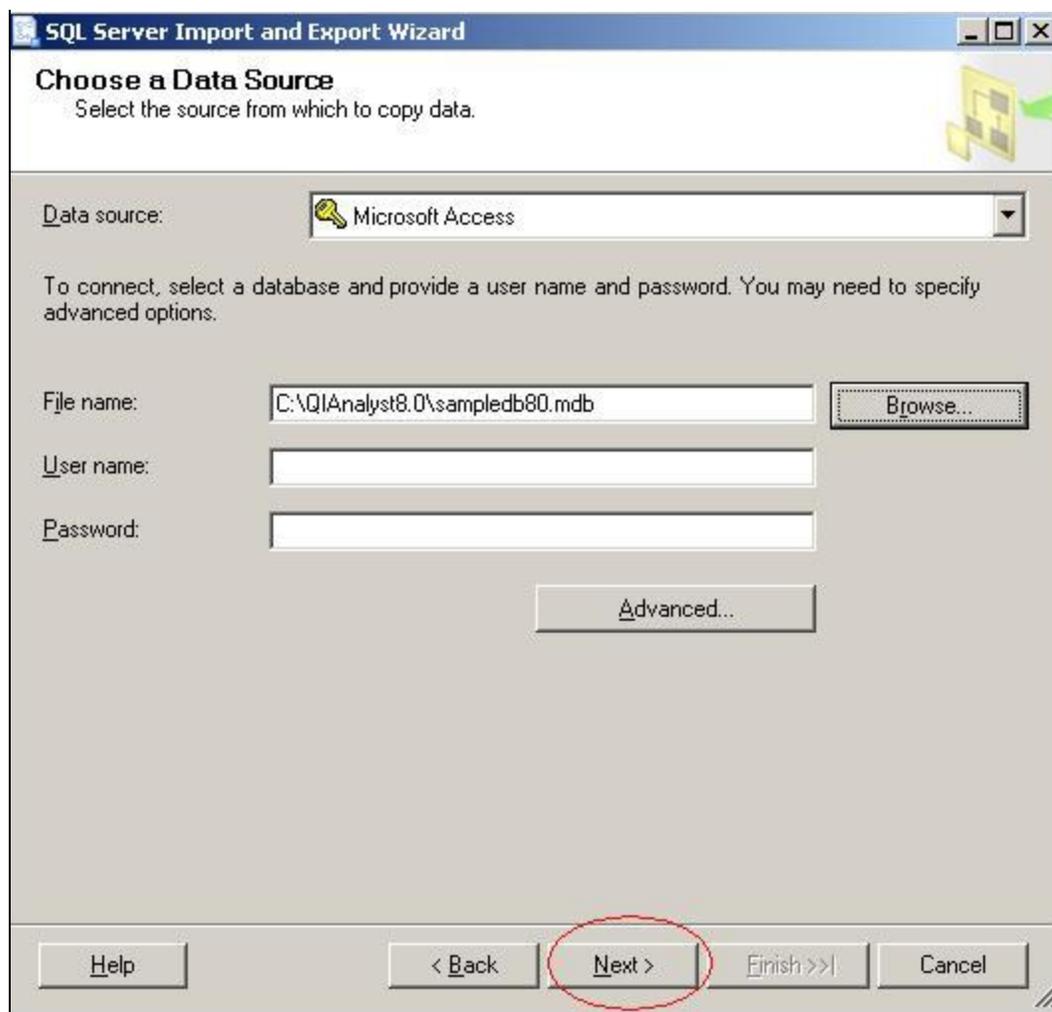


Figure 12: select sampledb80.mdb as data source

- Choose **SQL Native Client** as the Destination provider and **QI\_Process\_New** as the destination Database, then click **Next**. Alternatively, you can use **Microsoft OLEDB provider for SQL Server** as the provider.

- During the import process, make the required data type changes (from **nvarchar** to **Image**) on the **Properties** column on each of the below QI tables.

- QI\_ALARMFILTER
- QI\_ALARMPROPS
- QI\_DATATABLEPROP
- QI\_DEASSISTPROPS
- QI\_DICTFORMULA

An example of one of the tables is shown in Figure 13 (below). Complete the import process.

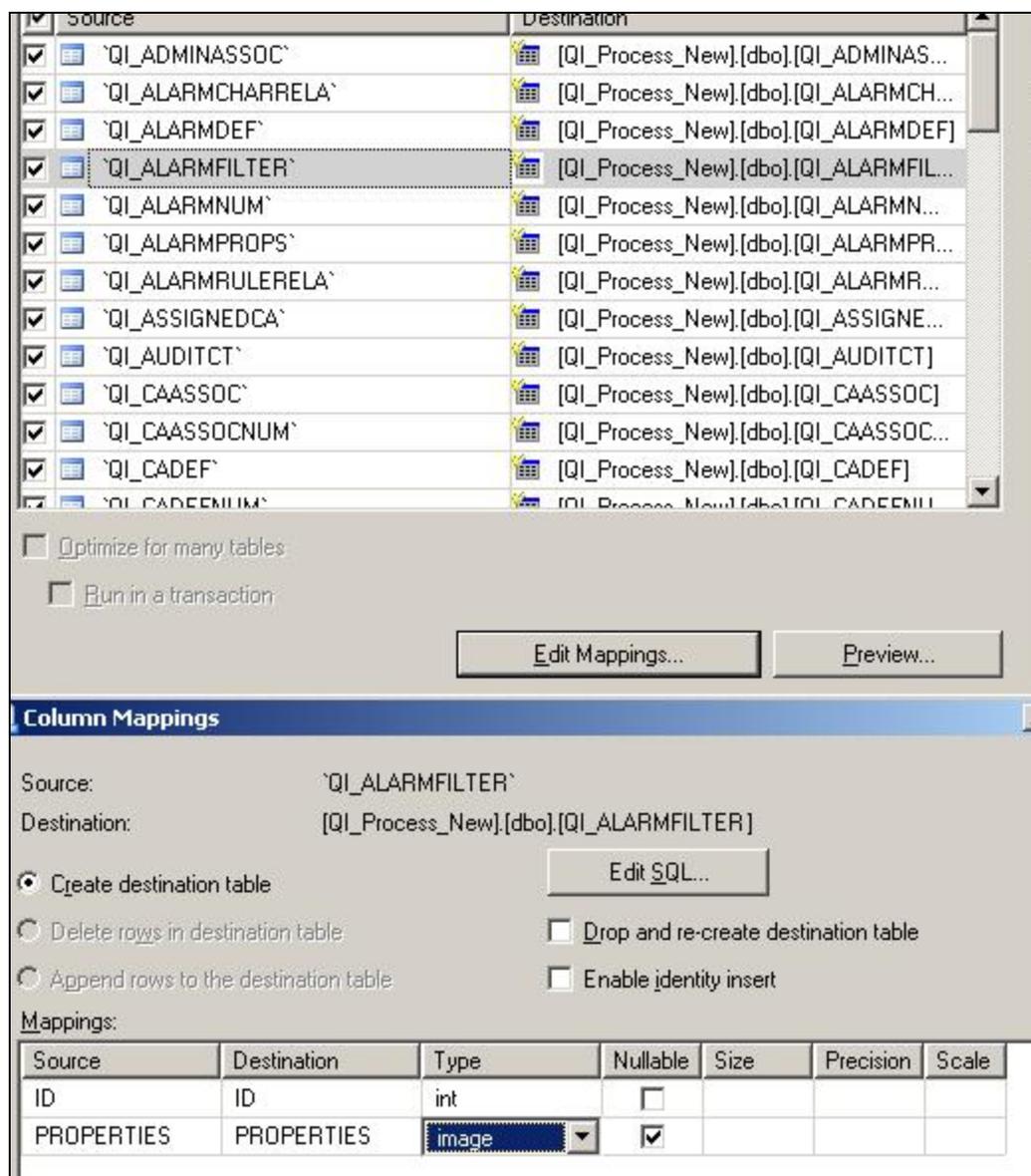


FIGURE 13: CHANGE THE DATA TYPE FROM NVARCHAR TO IMAGE

- Make sure there are no error messages, and the Status Column shows Success for all the Action items, and then click **Close** (Figure 14 below).

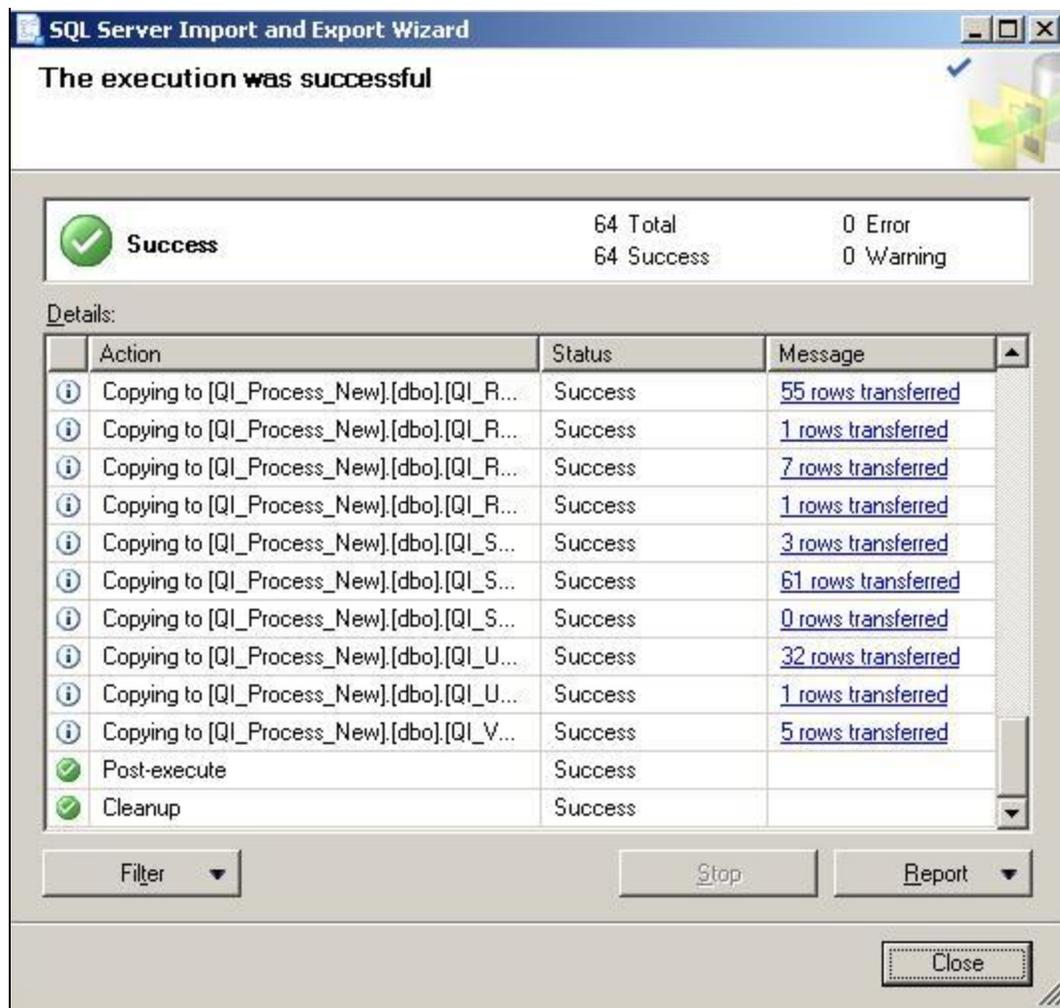


FIGURE 14: CHECK THE IMPORT STATUS FOR ERRORS

Use [Tech Note 565 Connecting to Migrated QI Analyst Databases](#) to point QI Controller/QI Workstation to the newly-converted SQL QI databases. **This step is critical.** If you do not do this, your QI Analyst application will continue pointing to the MS Access QI databases.

## Notes

In our testing we have seen data type conversion problems if SQL Server 2008 is used. The recommendation is to use SQL 2005 for the conversion. If you must have your databases in SQL 2008, you can do the following:

1. Do the conversion using SQL 2005.
2. Then make a back up of those SQL 2005 QI databases.
3. Restore them on SQL 2008.

4. Then use TN 565.

## Fixing the Problem Associated with the Migration of QI Analyst 4.2 SQL Database (previously converted from Microsoft Access) to QI Analyst 8.0 SQL Database Using the QI V4.2-V8.0 Migration Utility

The following error pops up when migrating a QI Analyst 4.2 SQL database (previously converted from Microsoft Access) to QI Analyst 8.0.



FIGURE 15: INVALID SOURCE ERROR

The error can be fixed by changing data type of a few QIA columns from **nvarchar** to **image**. This task must be done on both the QI 4.2 **SQL Admin** and **SQL Process** databases.

The procedure is same as described in the Data Transformation sections (above) with the following exceptions.

Let us assume your existing **QI 4.2** SQL Admin database name is **QI42Admin** and the Process database name is **QI42Process**.

1. **Create New databases in SQL Server**. These will serve as the destination databases.
2. **Change the column data type in Admin database tables**.

**Note:** Here the Source Provider should be selected as **SQL Native Client** and the source database should be **QI42Admin**.

3. **Change the column data type in Process database tables**.

**Note:** Here the Source Provider is **SQL Native Client** and the source database should be **QI42Process**.

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