

Transferring OMNIC Audit Trail Information from SQLite to SQL Server

There may be cases where a customer has been using the SQLite option for the Audit Manager database with the OMNIC Security package, and decides to move to a distributed SQL Server option. In these cases, the customer may wish to transfer the existing audit trail information from SQLite to the new SQL Server database.

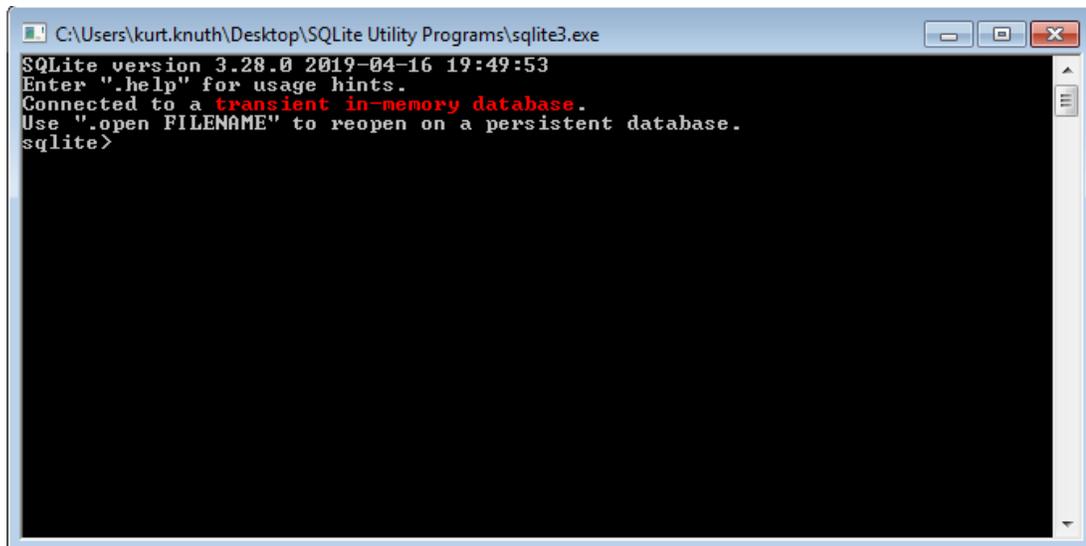
Thermo Fisher Scientific does not currently have a utility to do this transfer automatically, but it can be accomplished manually using tools from SQLite and Microsoft. This document describes the process of manually transferring the audit events.

1. The first step of this process is to export the audit trail events from the SQLite database into a comma-delimited text file (.CSV). This is accomplished by using a command line utility provided by SQLite, which can be downloaded at the following website: <https://www.sqlite.org/download.html>

Scroll down the page to the “Precompiled Binaries for Windows” section, and click on the link for the “SQLite-tools-win32-x86-3280000.zip”. This zip file contains three executable files; sqlite3.exe, sqldiff.exe, and sqlite3_analyzer.exe. Unzip the contents to a folder.

Precompiled Binaries for Windows	
sqlite-dll-win32-x86-3280000.zip (472.74 KiB)	32-bit DLL (x86) for SQLite version 3.28.0. (sha1: c2f99e749ce8b66b9da7cd793dc9b254c395f8c5)
sqlite-dll-win64-x64-3280000.zip (786.76 KiB)	64-bit DLL (x64) for SQLite version 3.28.0. (sha1: c59d10acabb1346a6426d0e54da985683157be2c)
sqlite-tools-win32-x86-3280000.zip (1.70 MiB)	A bundle of command-line tools for managing SQLite database files, including the command-line shell program, the sqldiff.exe program, and the sqlite3_analyzer.exe program. (sha1: 4063fe326243ab775a86c104fa77ac178f03976b)

2. Copy the SQLite database file from C:\ProgramData\Thermo Scientific\Audit Log\AuditManager.db to the same folder that contains the SQLite utility programs.
3. Double click the sqlite3.exe program to run the utility. This is a command line program and the window will look like the picture below.



- At the command prompt, type in the following commands one at a time, pressing the enter key after each one. This sequence of commands will open the SQLite database file, create a CSV file called “auditmanager.csv”, and then export all audit trail records from the database to the CSV file.

```
.open auditmanager.db  
.header on  
.mode csv  
.once auditmanager.csv  
Select * from AuditEvent;
```

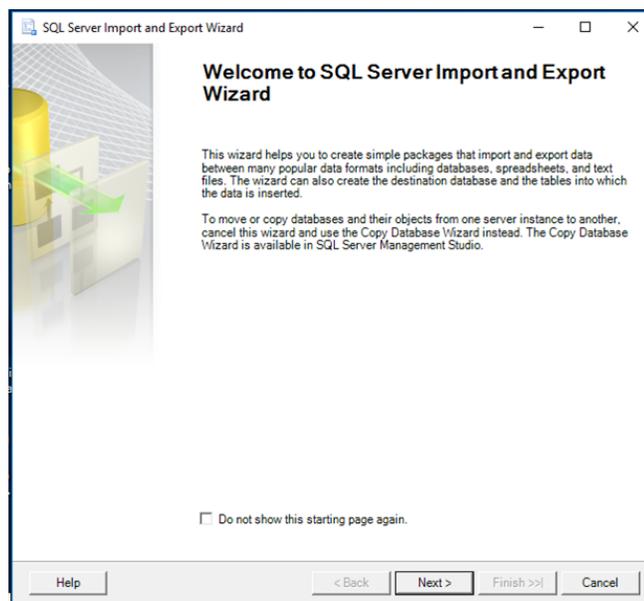
- Now that the CSV file has been created and contains all of the audit events from the SQLite database, the next step is to import this information into the SQL Server database.

NOTE: The table that contains the audit events has an ID field that contains a sequential number for each record. It is easiest to import the SQLite records into an empty database to avoid conflicts with the ID numbers.

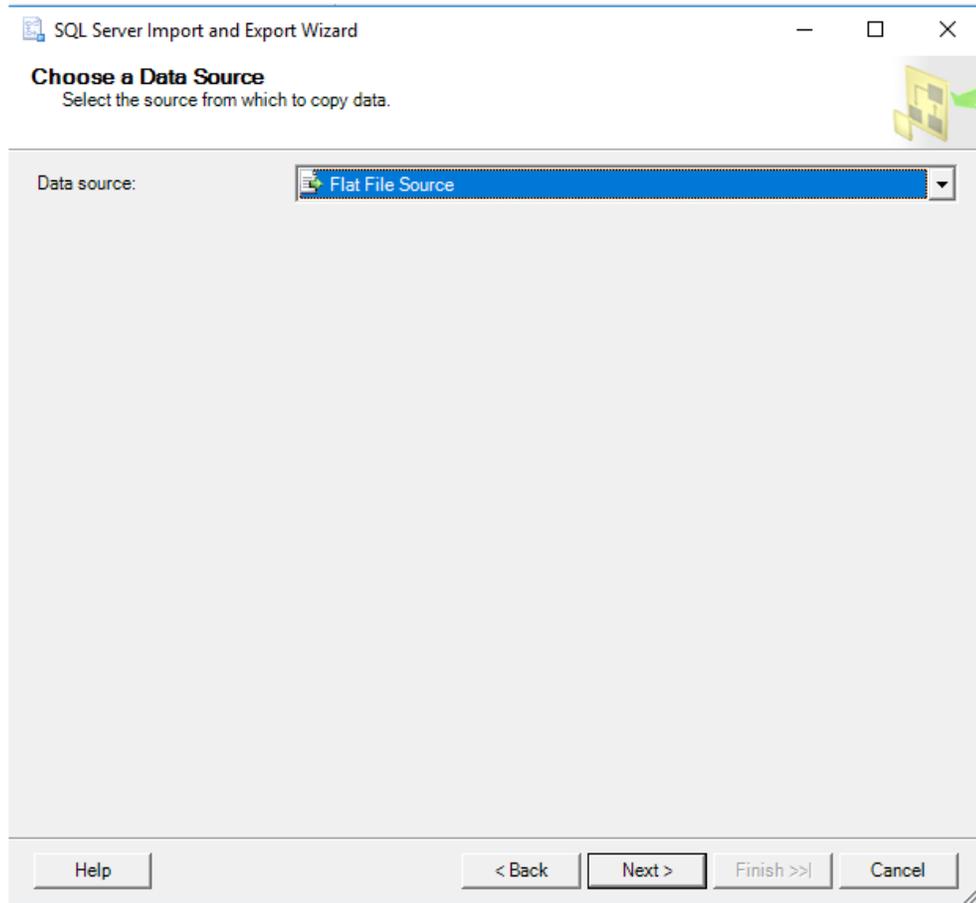
If the SQL Server database already contains audit events, there will likely be conflict of ID numbers. In cases where the SQL Server database already has audit events and these events cannot be deleted, the SQLite CSV file would need to be edited to renumber the events so that they are continuous with the last ID number already contained in the SQL Server database. For example, if there are 45 events in the SQL Server database table, the CSV file will need to be edited so that the events contained in the CSV file start with event ID 46.

It is probably easiest to accomplish this renumbering by opening the CSV file in Excel, using the autofill function to renumber the ID column, and then resave the file back to CSV. If Excel is used, make sure that the data from the other fields does not get changed and stays in the correct format (for number fields). Excel will likely change the LocalOriginOffset column to Scientific Notation. Make sure to change the formatting of this column back to Number with 0 decimal points.

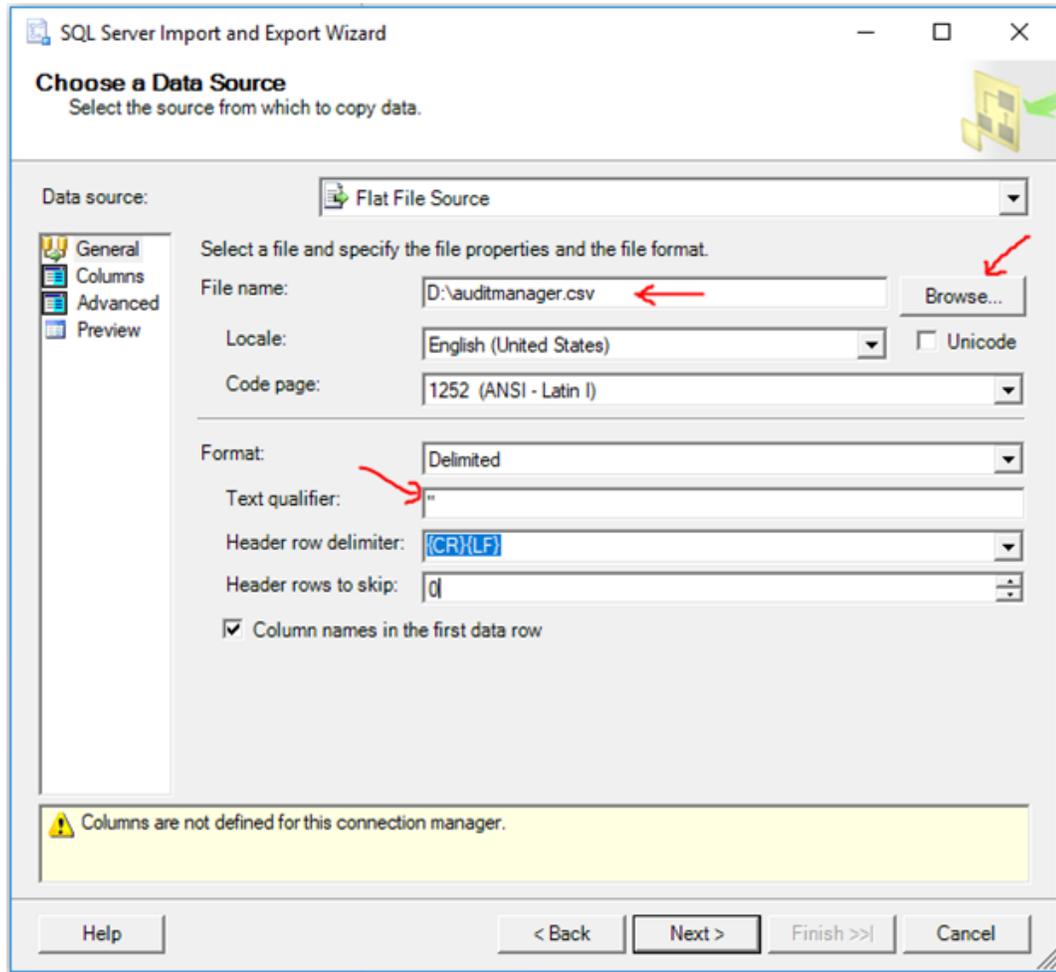
- To import the information from the CSV file into the SQL Server database, start the SQL Server Import and Export Wizard program. Click the Next button to start the process.



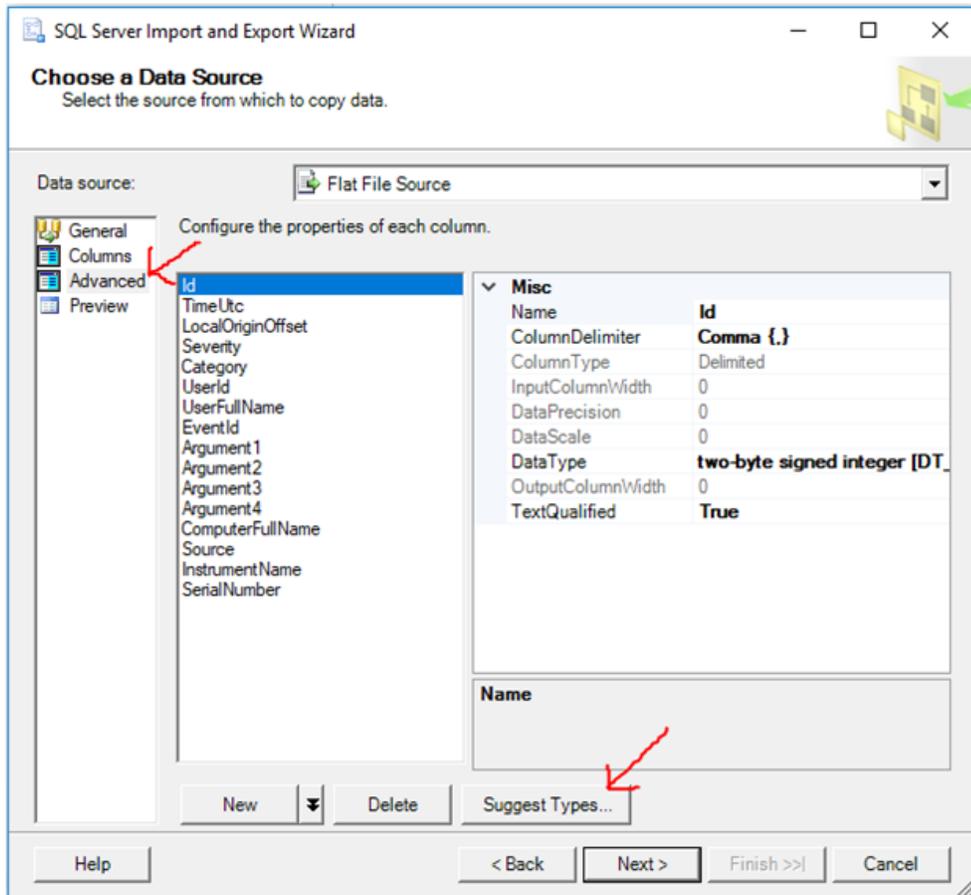
7. The first screen will ask to choose the data source. Click the drop down, choose "Flat File Source", and then click the Next button.



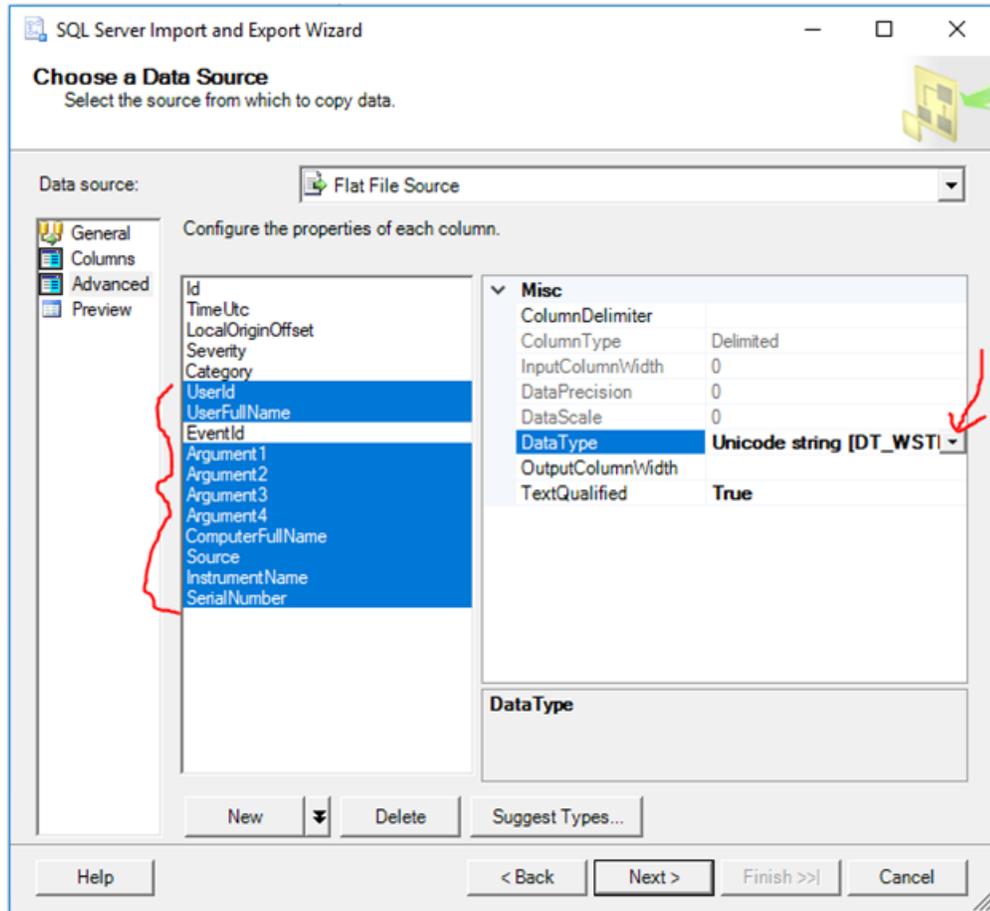
- The next screen allows you to choose the file to import. Click the Browse button to select the CSV file that contains the SQLite records. Also be sure to enter a quotation mark (") symbol in the Text Qualifier field.



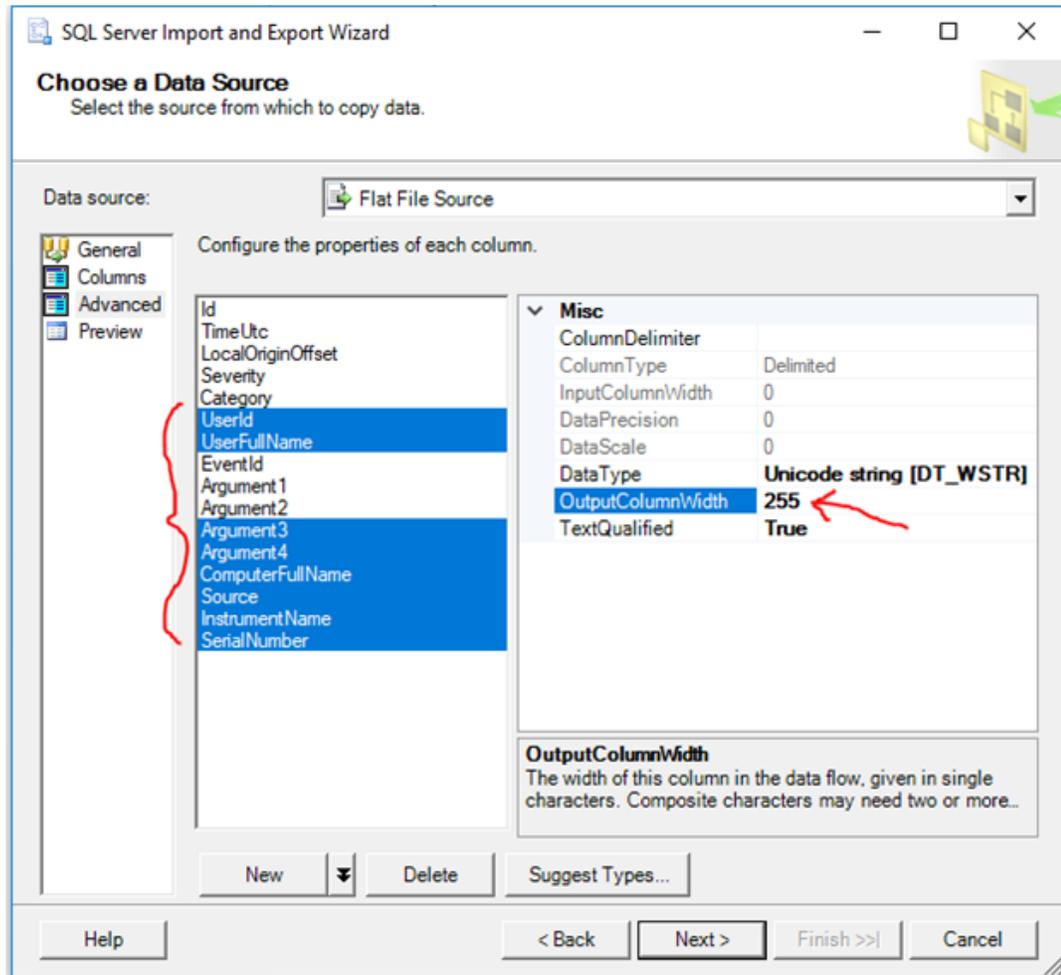
9. Before clicking Next, the field information for the source file will need to be edited. On the left side of the screen, select the Advanced item in the list. Then click the Suggest Types button at the bottom of the window. A dialog box will show, just click Ok to accept the default settings. This will scan the source file and pick a data type for each field in the file.



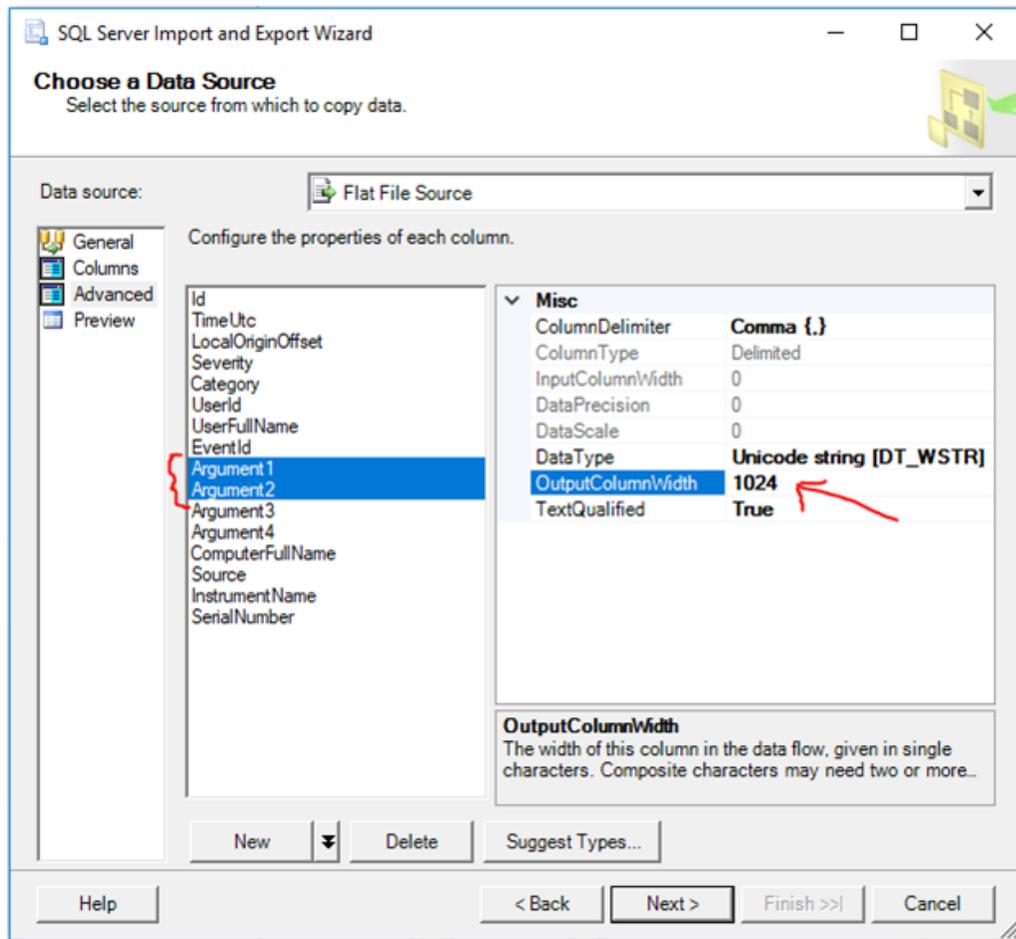
- For the text fields in the file, the data types need to be changed. In the list of field names (center box), select the fields: UserID, UserFullName, Argument1, Argument2, Argument3, ComputerFullName, Source, InstrumentName, and SerialNumber. You can hold down the Ctrl key on the keyboard to allow for multiple selections. Once these 10 fields have been selected, in the right box click the drop down for the DataType and choose "Unicode string [DT_WSTR]"



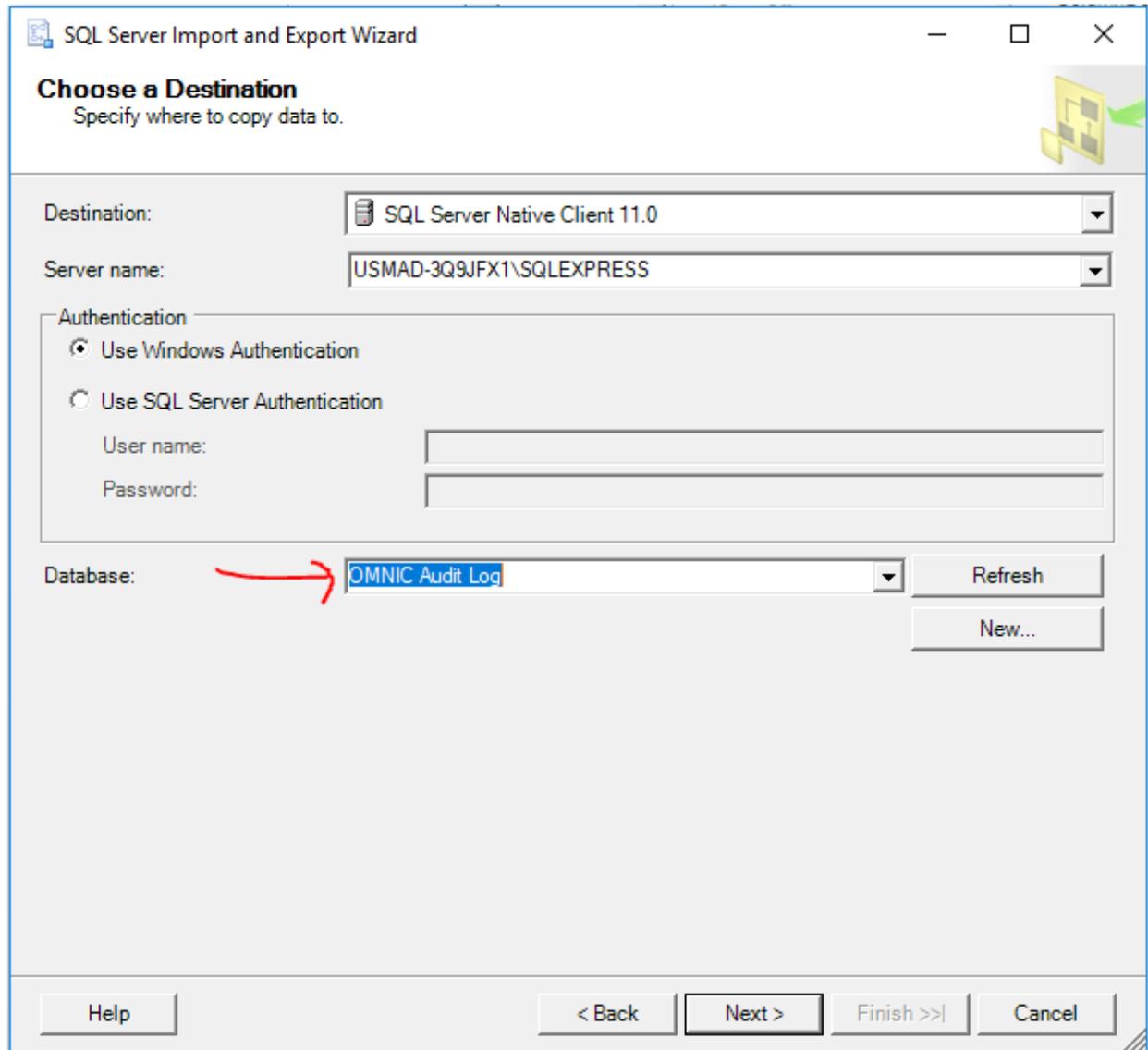
11. The OutputColumnWidth also needs to be changed for these same text fields. While holding down the Ctrl key, deselect the Argument1 and Argument2 fields by clicking on each one. To confirm the fields UserID, UserFullName, Argument3, ComputerFullName, Source, InstrumentName, and SerialNumber should now be selected. Then click into the OutputColumnWidth box on the right and enter 255.



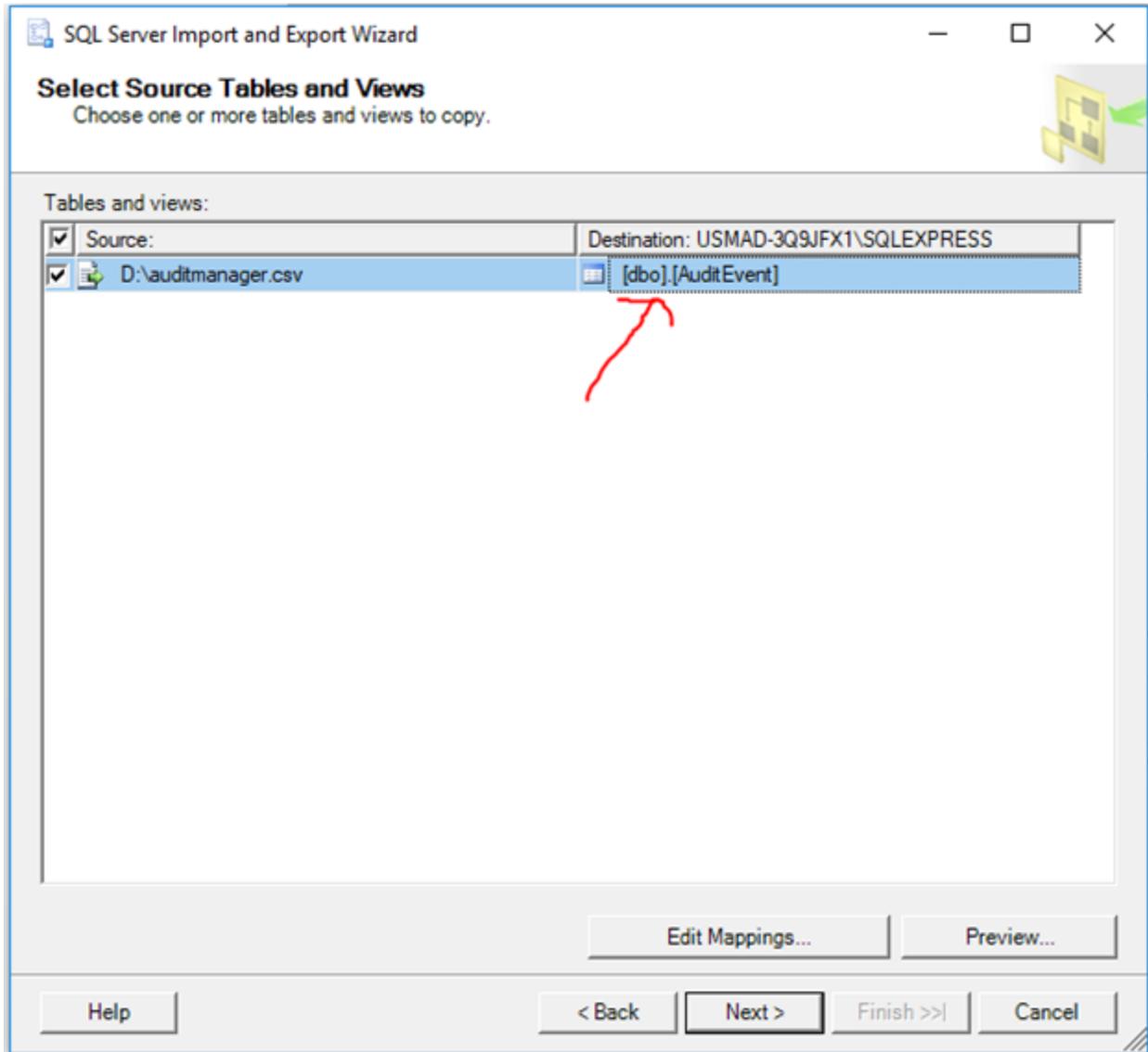
12. Now select just the Argument1 and Argument2 fields and this time enter 1024 for the OutputColumnWidth. Click the Next button at the bottom of the window to continue.



- The destination now needs to be selected. In the drop down for Destination, select the “SQL Server Native Client” item. The version number may be different depending on the version of SQL Server running. After selecting the Destination type, you may also need to select the Server Name, but that may be populated automatically. Finally, select the correct database using the drop down to choose the database that has been created for the OMNIC audit trail information. Click the Next button.



- The next screen will allow for selection of the proper destination table. Click in the field under the Destination column and then use the drop down to select the “[dbo].[AuditEvent]” table from the list. This is directing the import wizard to append the records from the CSV file to the AuditEvent table. Click the Next button.



15. The next screen shows a summary of the field names and types. Scroll down the list in the lower box and ensure that the indicator in the very left column shows all green check marks. If the wizard found a problem with the data types, it will show with an icon other than a green check mark. If there are any yellow indicators hold the cursor over the icon to get a description of the problem. A common issue is that the DataType of that field in the source file is not set correctly. If that is the case, click the Back button to return to the screen shown in Step 10 and check the DataType settings for the fields and adjust any that are incorrect. If all icons are green check marks, click the Next button.

Table:

Source	Destination
D:\auditmanager.csv	[dbo].[AuditEvent]

Data type mapping:

Source Column	Source Type	Destination Co...	Destination Ty...	Convert	On Error	On Truncat
Id	two-byte sign...	Id	bigint	<input checked="" type="checkbox"/>	Use Global	Use Global
TimeUtc	date [DT_DA...	TimeUtc	datetime	<input checked="" type="checkbox"/>	Use Global	Use Global
LocalOriginOff...	eight-byte sig...	LocalOriginOff...	bigint			
Severity	single-byte sig...	Severity	int	<input checked="" type="checkbox"/>	Use Global	Use Global
Category	single-byte sig...	Category	int	<input checked="" type="checkbox"/>	Use Global	Use Global
UserId	Unicode strin...	UserId	nvarchar			
UserFullName	Unicode strin...	UserFullName	nvarchar			

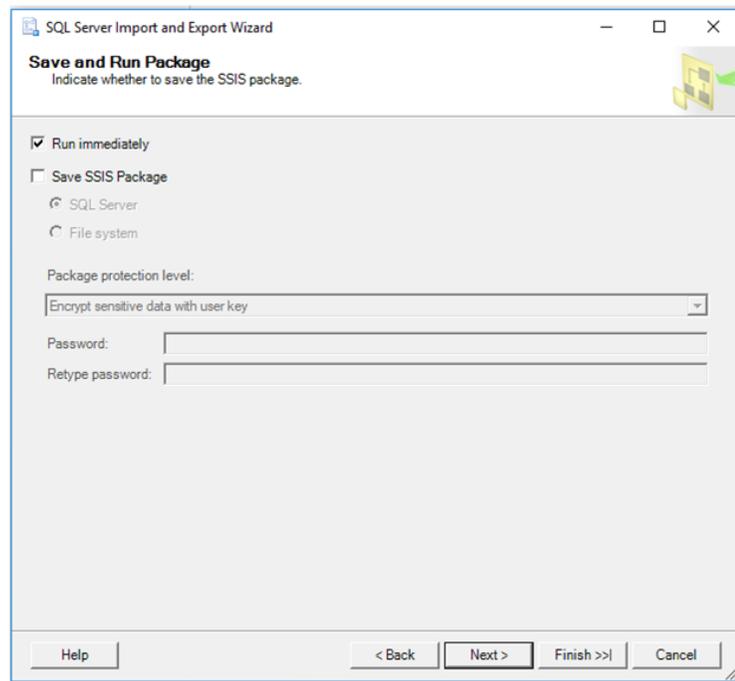
To view conversion details, double-click the row that contains the column source type to be converted.

On Error (global)

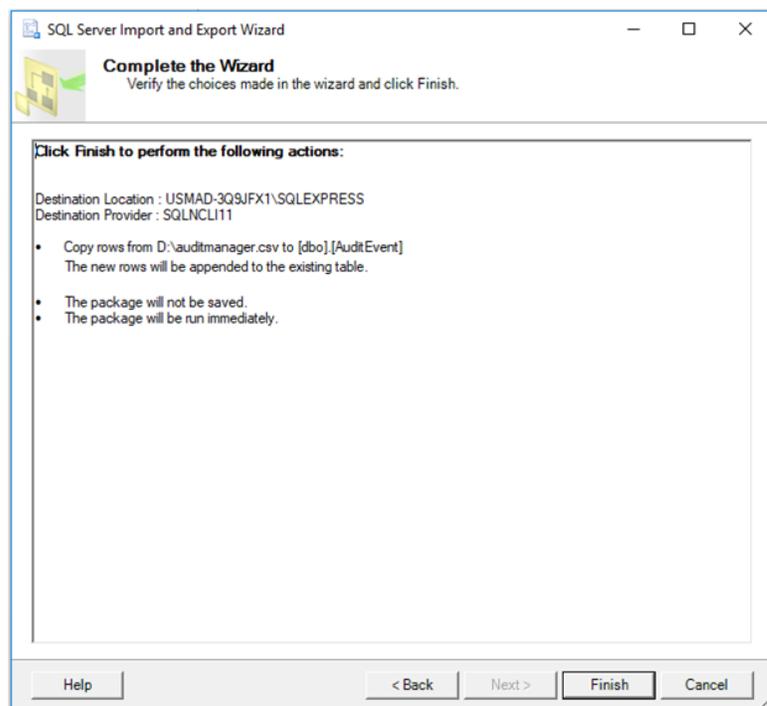
On Truncation (global)

Buttons: Help, < Back, Next >, Finish >>, Cancel

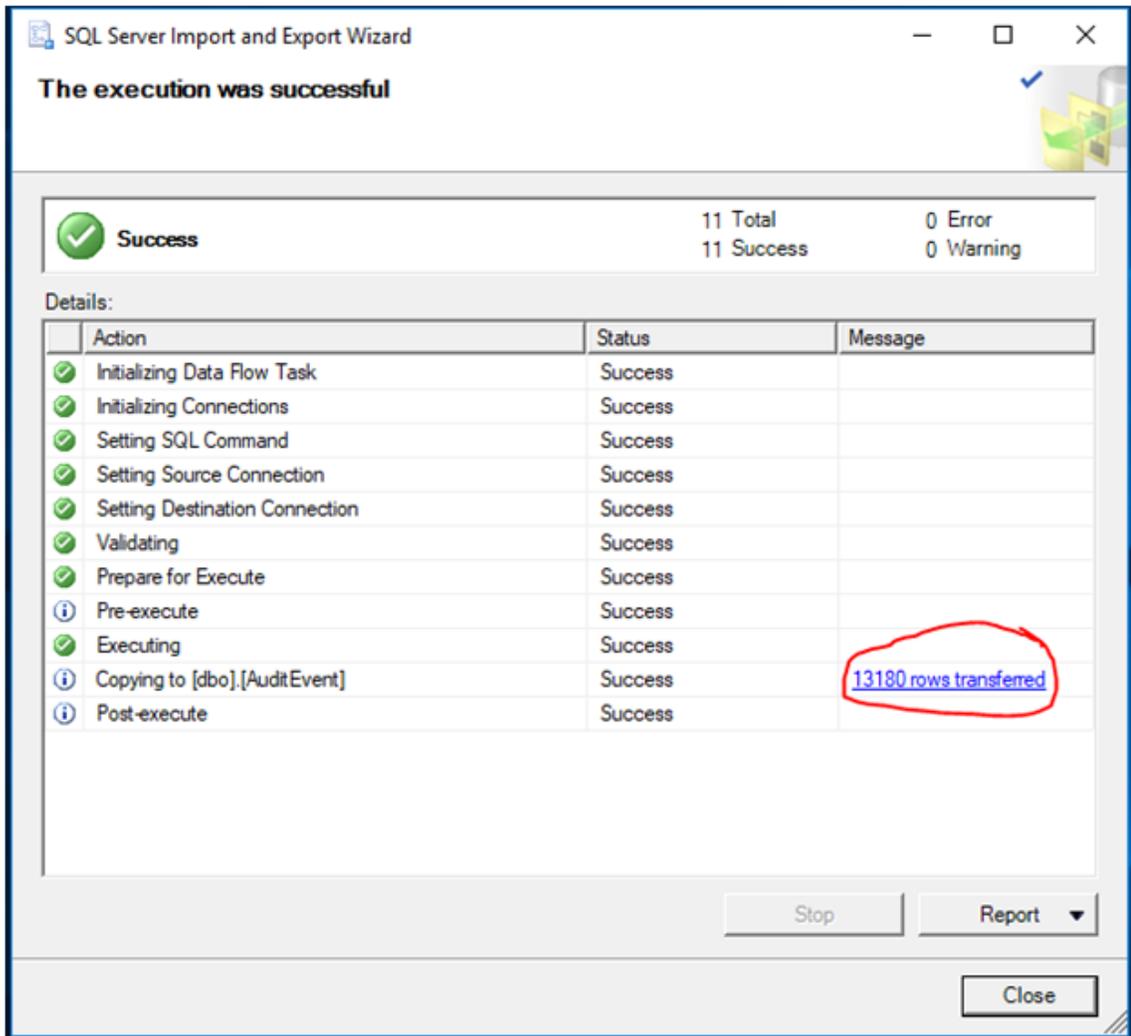
16. The next screen allows for some optional settings to be selected. Adjust the settings if desired, or just click Next to continue.



17. The final screen is a summary of the import for informational purposes. Click the Finish button to start the import of data.



18. The next screen will show the results of the import. If everything works properly, all items should show a Success in the Status column, with a message about how many records were transferred.



19. If there are problems encountered during the import, there will be one or more error indicators in the Status column and red X icon in the left column. If this happens, click the Messages link to get more details about what went wrong. If the message indicates a “truncation of data” problem, the source OutputColumnWidth settings from Steps 11 and 12 are likely not correct. If there is a message about the ID not being unique, there are probably records in the existing table that have the same ID as records in the CSV file.

