

MySQL for Excel

Abstract

This is the MySQL for Excel Reference Manual. It documents MySQL for Excel 1.3 through 1.3.6. Much of the documentation also applies to the previous 1.2 series.

For notes detailing the changes in each release, see the [MySQL for Excel Release Notes](#).

For legal information, see the [Legal Notices](#).

For help with using MySQL, please visit either the [MySQL Forums](#) or [MySQL Mailing Lists](#), where you can discuss your issues with other MySQL users.

For additional documentation on MySQL products, including translations of the documentation into other languages, and downloadable versions in variety of formats, including HTML and PDF formats, see the [MySQL Documentation Library](#).

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Table of Contents

1 Introduction	1
2 Installation	3
3 Configuration	5
3.1 MySQL Connections in Excel	5
3.2 New Schema Creation in Excel	8
3.3 Global Options and Preferences	9
4 Edit MySQL Data in Excel	15
5 Import MySQL Data into Excel	19
5.1 Choosing Columns To Import	19
5.2 Importing a Table or View	19
5.3 Importing a Procedure	20
5.4 Import: Advanced Options	21
5.5 Adding Summary Fields	25
5.6 Creating PivotTables	27
6 Append Excel Data into MySQL	37
7 Export Excel Data into MySQL	41
8 What Is New In MySQL for Excel	45
8.1 What Is New In MySQL for Excel 1.3	45
8.2 What Is New In MySQL for Excel 1.2	45
9 MySQL for Excel Frequently Asked Questions	47

Chapter 1 Introduction

MySQL for Excel is an add-in that enables you to browse MySQL schemas, tables, views, and procedures from within Microsoft Excel. With MySQL for Excel, you can perform the following operations:

- Import MySQL data into Excel.
- Export Excel data to MySQL as a new table or append data to an existing table.
- Modify MySQL data directly from within Excel.

External Resources That Supplement the Documentation

- **Release Notes:** for notes detailing the changes in each release of MySQL for Excel, see [MySQL for Excel Release Notes](#).
- **Support Forum:** visit the [MySQL for Excel forum](#) for additional MySQL for Excel help and support.
- **Video Introduction:** for a short introductory to MySQL for Excel video, see [Video: MySQL for Excel Introduction](#) on the official MySQL YouTube channel.
- **Developer Blog:** developers of MySQL for Excel post related blog posts on the official [MySQL on Windows Blog](#).

Chapter 2 Installation

MySQL for Excel is a 32-bit add-in for Microsoft Excel, which you can install with MySQL Installer for Windows. MySQL for Excel does not run on OS X or macOS.

MySQL for Excel can interact with MySQL Workbench to simplify the management of MySQL connections when both MySQL client tools are installed. MySQL Workbench is not required to perform database operations from MySQL for Excel.

MySQL for Excel Requirements

- .NET Framework 4.0 (Client or Full Profile).
- Microsoft Office Excel 2007 or later, for Microsoft Windows.
- Visual Studio 2010 Tools for Office Runtime. MySQL Installer may install this for you.



Note

This requirement is different than *Office Developer Tools for Visual Studio*, which is not a substitute.

- An available MySQL server connection.

MySQL for Excel Download and Install

There are two download options available for installing MySQL for Excel:

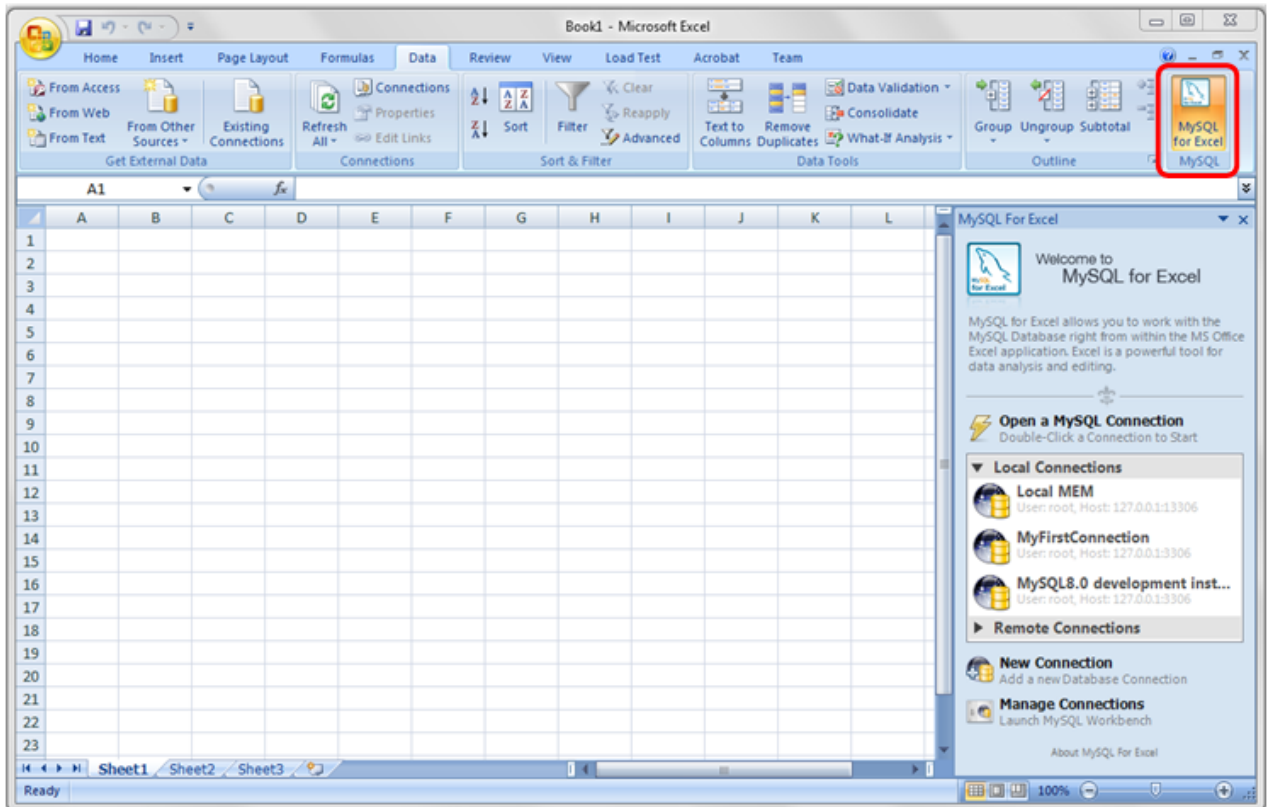
- **Standalone:** Download and execute the [MySQL for Excel standalone MSI](#) file. With this option, you must ensure that all MySQL for Excel requirements are met before executing the MSI file.
- **MySQL Installer:** Download and execute the [MySQL Installer MSI](#) file. This option is recommended because, in addition to managing all MySQL client applications for Windows, MySQL Installer evaluates the installation requirements on your computer for you.
 - When MySQL Installer is installed for the first time: Use the [Developer](#), [Client Only](#), or [Full](#) setup types to install MySQL for Excel together with other MySQL applications. Use the [Custom](#) setup type to install MySQL for Excel alone.
 - When MySQL Installer is already installed: Use the [Add](#) operation to install MySQL for Excel.

For additional installation and usage instructions, see [Installing MySQL on Microsoft Windows Using MySQL Installer](#).

Open MySQL for Excel

MySQL for Excel is loaded and executed by selecting the **Data** menu tab in Excel, and then clicking the **MySQL for Excel** button from the ribbon. This button opens the MySQL for Excel task pane from which you can select options and operations. Initially, MySQL for Excel displays connection information, as shown in the following figure.

Figure 2.1 MySQL for Excel Button and Task Pane



Chapter 3 Configuration

Table of Contents

3.1 MySQL Connections in Excel	5
3.2 New Schema Creation in Excel	8
3.3 Global Options and Preferences	9

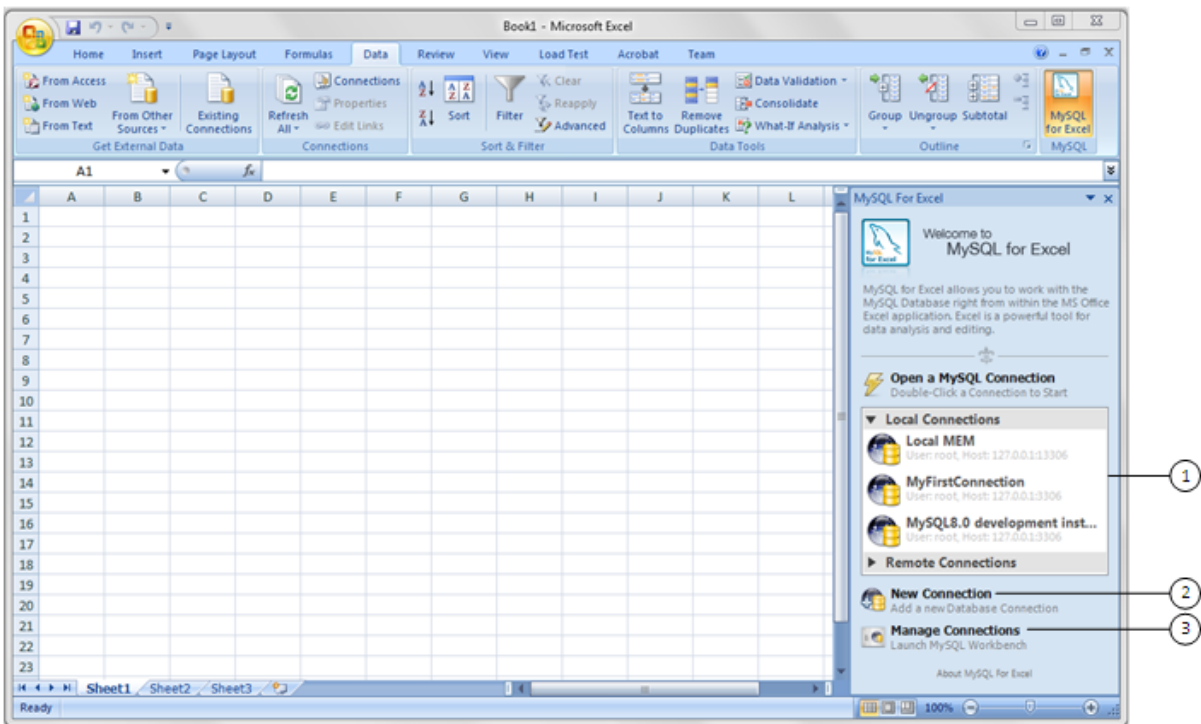
This section describes how to configure new connections to local or remote MySQL servers from within Microsoft Excel and how to manage your existing connections from Excel or with the help of MySQL Workbench (if installed). It further describes how to create and configure a new schema (or database) from Excel.

MySQL for Excel options that apply to all connections, SQL queries, and edit sessions are explained in this section.

3.1 MySQL Connections in Excel

MySQL for Excel provides several options to create and manage MySQL connections. You must open a connection to a MySQL server before you can configure global options, add a new schema, or perform operations that move data between Excel worksheets and MySQL tables. By default, the MySQL for Excel task pane displays connection actions when it opens.

Figure 3.1 MySQL for Excel: MySQL Connections



Description of MySQL for Excel Connection Elements

1. Existing local and remote MySQL server connections. Double-click a connection from the list to activate it. The MySQL server associated with the connection must be started on the local or remote host before you can open the connection. You can delete, edit, and refresh existing connections from this list.

2. **New Connection** opens a connection dialog in which you can define and test a new connection. For instructions, see [Adding MySQL Connections](#).
3. **Manage Connections** launches MySQL Workbench if it is installed on the local host.

MySQL for Excel shares its MySQL connections with MySQL Workbench, although it is optional to have MySQL Workbench installed. Creating and editing MySQL connections in either application will edit the MySQL connection information for both applications.

Adding MySQL Connections

You can use MySQL for Excel or MySQL Workbench to add new MySQL connections.

From the MySQL for Excel task pane, click **New Connection** to open the new connection dialog as demonstrated in the figure that follows.

Figure 3.2 MySQL for Excel: Add a New MySQL Connection Dialog

The screenshot shows the 'MySQL Instance Connection' dialog box. It includes the following fields and options:

- Connection Name:** My New Connection Name (with tooltip: Type a name for the connection)
- Connection Method:** Standard (TCP/IP) (with tooltip: Method to use to connect to the RDBMS)
- Connection Status:** ? Unknown
- Parameters:**
 - Hostname:** localhost (with tooltip: Name or IP address of the server host - TCP/IP port.)
 - Port:** 3306
 - Username:** example (with tooltip: Name of the user to connect with.)
 - Password:** [masked] (with tooltip: The user's password, stored in a secured vault.)
 - Default Schema:** sakila (with tooltip: The default schema, leave blank to select it later.)
- Advanced:**
 - ☐ Use ANSI quotes to quote identifiers. (with tooltip: If enabled this option overwrites the server side settings.)
 - ☐ Use compression protocol. (with tooltip: Select this option for WAN connections)
- Buttons:** Test Connection, Cancel, OK

Fill out the connection details, click **Test Connection** to confirm the MySQL connection is valid, and click **OK** to save the new connection.

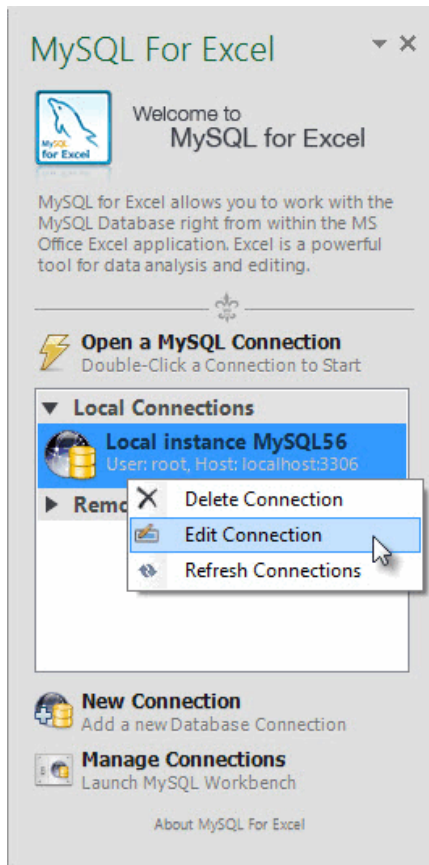
Editing MySQL Connections

You can use MySQL for Excel or MySQL Workbench to edit existing MySQL connections.

Editing MySQL Connections in MySQL for Excel

To edit a MySQL connection, right-click the connection you want to modify and select **Edit Connection** from the context menu.

Figure 3.3 MySQL for Excel: Choosing a MySQL Connection to Edit



The MySQL connection edit dialog is similar to the edit dialog in MySQL Workbench. Configure the changes and click **OK** to save your changes:

Figure 3.4 MySQL for Excel: Editing a MySQL Connection

Editing MySQL Connections in MySQL Workbench

Optionally, you can edit your MySQL for Excel MySQL connections using MySQL Workbench. To do this, open MySQL Workbench, edit a MySQL connection, and then refresh the connection list in MySQL for Excel.

For information about editing MySQL connections in MySQL Workbench, see [Connections in MySQL Workbench](#).

Deleting MySQL Connections

MySQL connections can be deleted from MySQL for Excel or MySQL Workbench.



Note

MySQL connections cannot be deleted if MySQL Workbench is open. To remove connections, you must first close MySQL Workbench.

To delete an edit or import connection from MySQL for Excel to a particular Excel worksheet, click **Options, Manage Stored Import and Edit Connection**, check the desired worksheets, and then click **Apply** to execute the delete action.

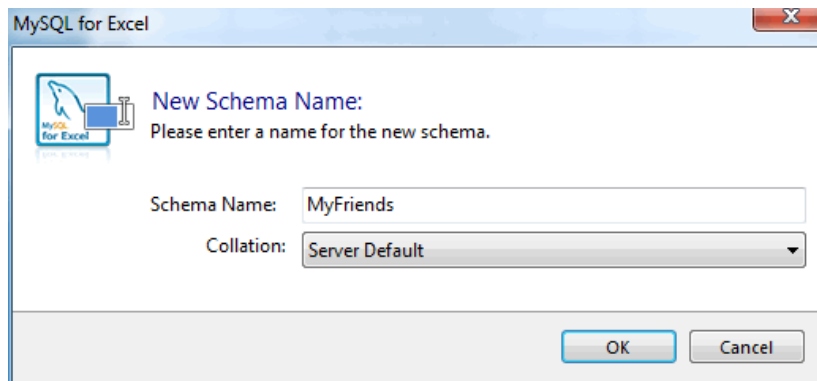
3.2 New Schema Creation in Excel

A schema contains database objects, such as tables, views, and procedures. You can add a new and empty MySQL schema directly from the MySQL for Excel task pane and then export data from your Excel worksheet to the new schema in MySQL.

To add an empty MySQL schema

1. Start Excel, select the **Data** menu tab, and then click **MySQL for Excel** to open the MySQL for Excel task pane.
2. From the **Open a MySQL Connection** area in the task pane, double-click an existing local or remote connection to display the available database schemas.
3. Click **Create New Schema** to open the following dialog.
 - In the **Schema Name** field, type the name of the new schema and then select a collation from the list or keep the server default collation.
 - When you click **OK**, the new schema appears in the list of schemas.

Figure 3.5 MySQL for Excel: Create a New Schema



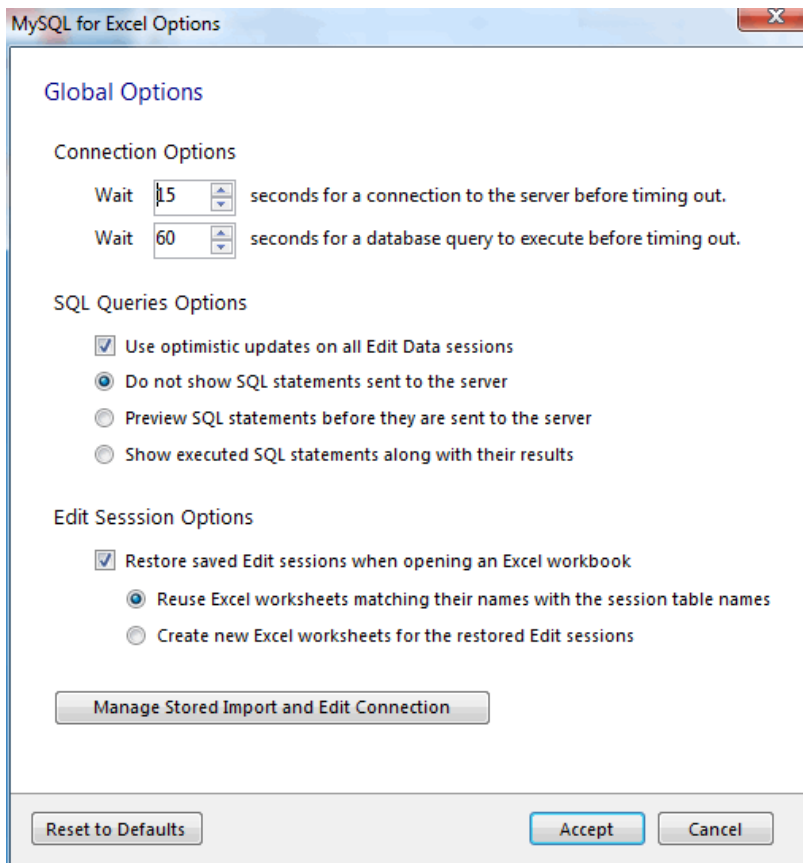
3.3 Global Options and Preferences

Each operation, such as **Import MySQL Data**, has its own set of options. This section describes the options that apply to all connections, SQL queries, and edit sessions.

Option buttons include:

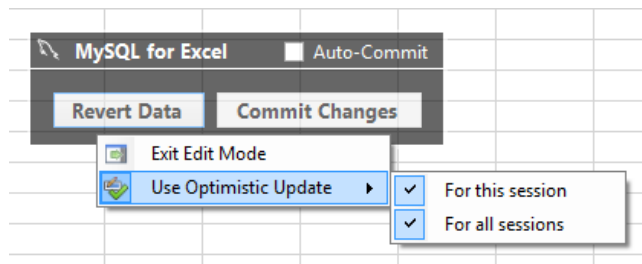
- **Accept:** Saves option changes to your host and preserves these changes across all sessions and future Excel instances.
- **Reset to Defaults:** Resets all option values in the current options window to their default settings. Click **Accept** to save the changes.

A set of global options affect the entire add-in, as described here.

Figure 3.6 The MySQL for Excel Configuration: Global Options

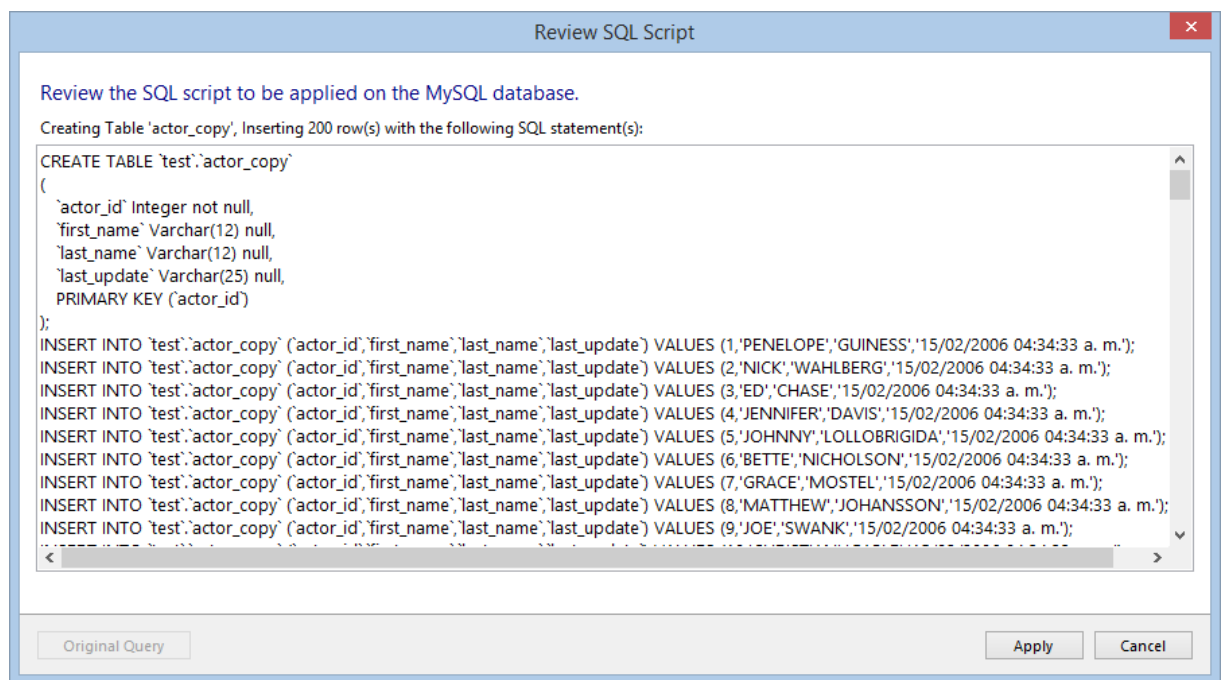
- Connection Options:
 - **Wait [] seconds for a connection to the server before timing out.** Defaults to 15.
 - **Wait [] seconds for a database query to execute before timing out.** Defaults to 60.
- SQL Queries Options:
 - **Use optimistic updates on all Edit Data sessions.** This option helps prevent unintentional data overwrite, in that it checks for external edits before committing your changes. For example, between the time you loaded the data into Excel, made changes in Excel, and committed, a different user could have edited the same cells elsewhere in MySQL using MySQL Workbench or some other means. The optimistic updates feature checks for these changes, and notifies you accordingly.

Optimistic updates can also be configured at runtime for all Edit Sessions, or for a specific edit session by right-clicking the **Edit Session** floating dialog and choosing the desired **Use Optimistic Update** option, as demonstrated below:

Figure 3.7 Optimistic Updates: Configuring at Runtime

This option is enabled by default.

- **Do not show SQL statements sent to the server:** When enabled, SQL statements are now displayed, and only their results are displayed in the information dialog. Enabled by default.
- **Preview SQL statements before they are sent to the server:** When enabled, it adds an extra step to the Create Schema, Export Data, Append Data and Edit Data operations before a statement is committed to the server. It displays the Review SQL Script dialog, as shown below for an export-data operation:

Figure 3.8 The MySQL for Excel configuration: Preview Option

From here you can modify the SQL statements before they are executed, which also enables the **Original Query** button. If clicked, it will revert all modifications to the script to restore the SQL to its original form (when the dialog was first opened).

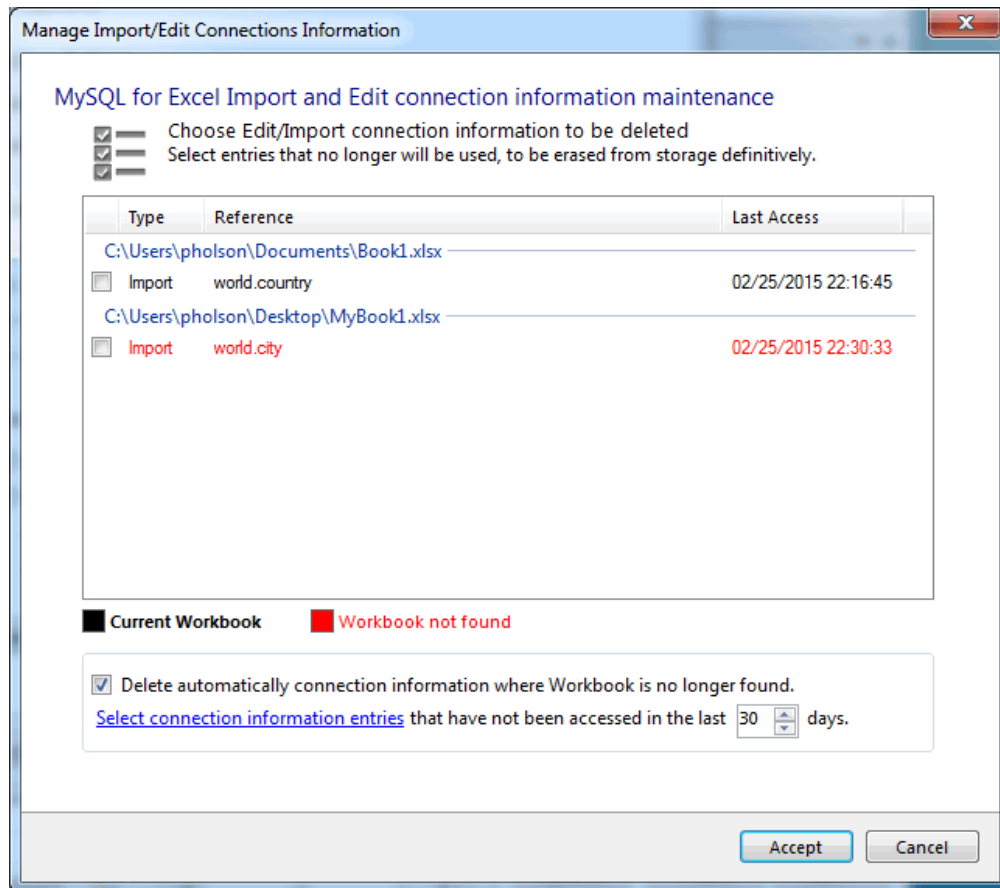
This option is disabled by default.

- **Show executed SQL statements along with their results:** When enabled, SQL statements are first executed and then the information dialog includes both the results and the executed statements. This is helpful when reviewing the recently executed queries when comparing the results.

This option is disabled by default.

- Edit Session Options:
 - **Preview MySQL table data before an Edit Data session is opened:** Enabled by default.
 - **Restore saved Edit sessions when opening an Excel workbook:** Enabled by default.
 - **Reuse Excel worksheets matching their names with the session table names:** Enabled by default.
 - **Create new Excel worksheets for the restored Edit sessions:** Disabled by default.
- **Manage Stored Import and Edit Connections:** See a list of saved Excel files with linked MySQL connections.

Figure 3.9 MySQL for Excel: Manage Stored MySQL Connections



This lists the connected Excel worksheets that are known to MySQL for Excel. From here you can view these connections, and optionally delete them. By default, clicking **Apply** will delete connections to missing worksheets but this behavior is configurable. Additionally, clicking the *Select connection information entries* link checks (selects for deletion) books that you have not accessed for n days, where n defaults to 30.



Note

This option was added in MySQL for Excel 1.3.0



Note

The options to automatically delete missing connections, or delete connections not accessed for n days, were added in MySQL for Excel 1.3.4.

For additional information about managing MySQL connections using MySQL for Excel, see [Section 3.1, “MySQL Connections in Excel”](#).

Chapter 4 Edit MySQL Data in Excel

MySQL for Excel enables you to load and edit MySQL table data directly from a Microsoft Excel worksheet. Changes are committed immediately if the **Auto-Commit** option is enabled in the pop-up menu; otherwise, you can use the **Revert Data** or **Commit Changes** operations in the same pop-up menu to revert or commit data changes in MySQL tables.

To edit MySQL table data from an Excel worksheet

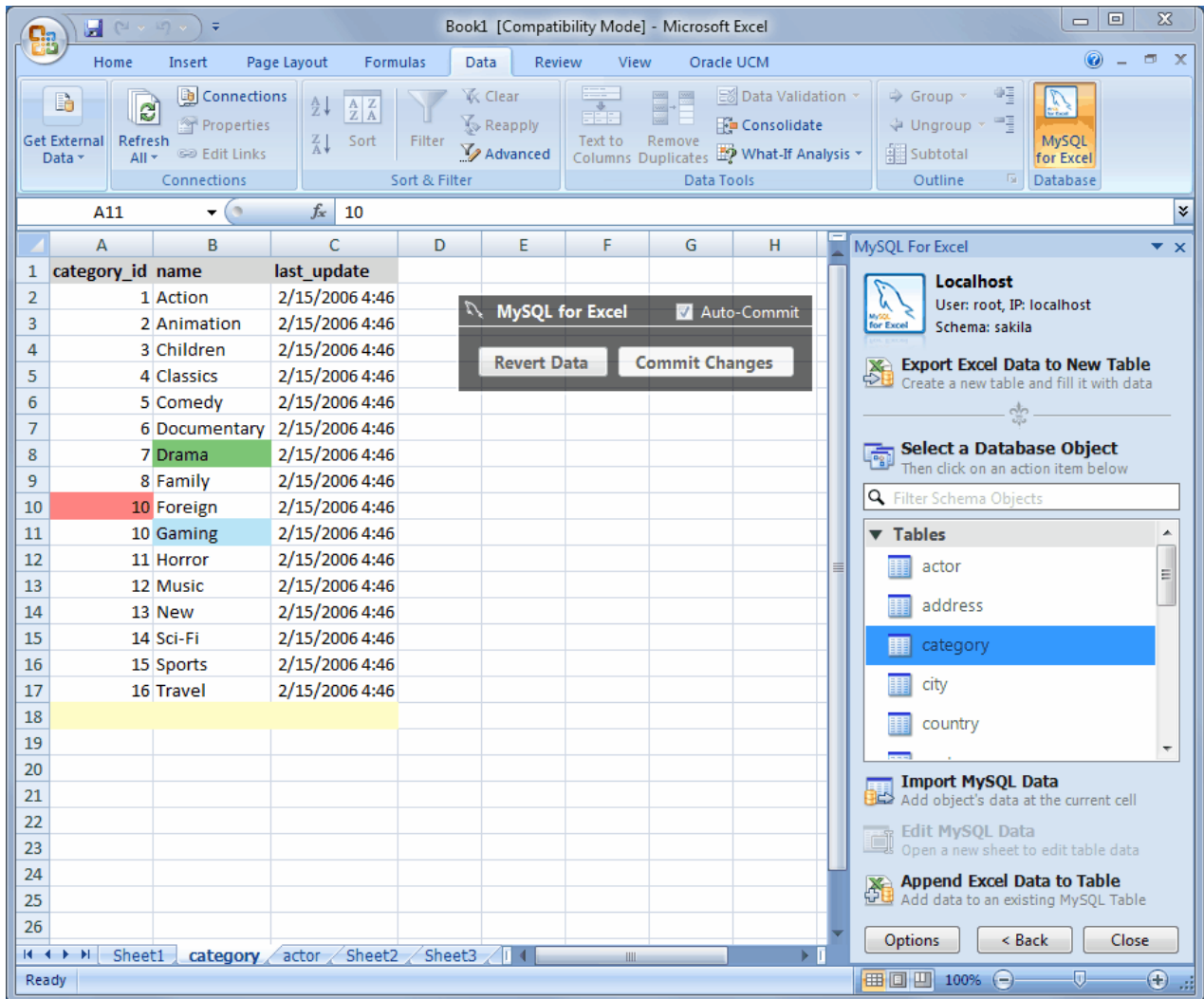
1. Start Excel, select the **Data** menu tab, and then click **MySQL for Excel** to open the MySQL for Excel task pane.
2. From the **Open a MySQL Connection** area in the task pane, double-click an existing local or remote connection to display the available database schemas.
3. Select a schema from the list and click **Next** to display all database objects in the schema (tables, views, and procedures).
4. Select the table with data to edit and then click **Edit MySQL Data**. A preview window displays the selected data and provides an option to specify the number of rows to preview.
5. Click **OK** to import all rows from the table into a new worksheet with the same name as the MySQL table and to enable edit mode. For additional information about the importing operation, see [Chapter 5, Import MySQL Data into Excel](#).

Edit mode actions:

- To stop edit mode, right-click the pop-up menu and select **Exit Edit Mode**.
- To resume edit mode, click a cell with data.
- To move the pop-up menu, hold down the right mouse button and drag the menu.

The following example shows the `category` table of the `sakila` schema sample in edit mode. The background color represents the status of each cell. There are four distinct colors that are used while editing table data and two helper colors. For details, see the key of cell colors in edit mode following this example.

Figure 4.1 Editing table data with MySQL for Excel



In the previous example:

- The green Drama cell was changed and then committed.
- The blue Gaming cell was changed but not committed.
- Finally, **Auto-Commit** was enabled before changing the value 9 to 10 in row 10 of the category_id column, which generated an error because this commit would have added a duplicate value as primary key.

Table 4.1 Key of cell colors in edit mode

Color	Description
White	Default color for all cells. This is either the original data, or the data after Refresh from DB is clicked.
Green	Cells that were committed with success.
Blue	Cells that were modified but have not yet been committed.

Color	Description
Red	Cells that generated an error when a commit was attempted. An error dialog is also displayed while the commit is attempted.
Orange	Cells that had a commit attempted, but the commit failed due to detected changes from external sources. For example, a different user made a change to a field after it was imported into Excel. This is a feature of Optimistic Updates .
Yellow	Cells that accept new data. Data entered here is inserted into the MySQL table.

Chapter 5 Import MySQL Data into Excel

Table of Contents

5.1 Choosing Columns To Import	19
5.2 Importing a Table or View	19
5.3 Importing a Procedure	20
5.4 Import: Advanced Options	21
5.5 Adding Summary Fields	25
5.6 Creating PivotTables	27

Data can be imported from MySQL into a Microsoft Excel worksheet by using the **Import MySQL Data** option after selecting either a table, view, or procedure to import.

To import MySQL data into an Excel worksheet

1. Start Excel, select the **Data** menu tab, and then click **MySQL for Excel** to open the MySQL for Excel task pane.
2. From the **Open a MySQL Connection** area in the task pane, double-click an existing local or remote connection to display the available database schemas.
3. Select a schema from the list and click **Next** to display all database objects in the schema (tables, views, and procedures).
4. Select the table, view, or procedure with data to import and then click **Import MySQL Data**. A preview window displays the selected data and provides **Options** and **Advanced Options** to be used during the import operation.

For a description of each import option, see [Section 5.2, “Importing a Table or View”](#) or [Section 5.3, “Importing a Procedure”](#).

For a description of each advanced option, see [Figure 5.2, “Importing table data with MySQL for Excel: Advanced options”](#).

5. Click **Import** to finish the operation.

5.1 Choosing Columns To Import

By default, all columns are selected and will be imported. Specific columns may be selected (or unselected) using the standard Microsoft Windows method of either **Control** + [Mouse click](#) to toggle the selection of individual columns, or **Shift** + [Mouse click](#) to select a range of columns.

The background color of a column shows the status of each column. The color white means that the column has been selected, and therefore it will be imported. Conversely, a gray background means that the column will not be imported.

Right-clicking anywhere in the preview grid opens a context-menu with either a [Select None](#) or [Select All](#) option, depending on the current status.

5.2 Importing a Table or View

The dialog while importing a table or view includes the following options:

- **Include Column Names as Headers:** Enabled by default, this inserts the column names at the top of the Microsoft Excel worksheet as a "headers" row.
- **Limit to ___ Rows and Start with Row ___:** Disabled by default, this limits the range of imported data. The [Limit to](#) option defaults to 1, and defines the number of rows to import. The [Start with Row](#) option defaults to 1 (the first row), and defines where the import begins. Each option has a maximum value of COUNT(rows) in the table.
- **Create a PivotTable with the imported data:** Disabled by default. For usage instructions, see [Section 5.6, "Creating PivotTables"](#)
- **Add Summary Fields:** Disabled by default, this option adds a summary field to each column. For additional information, see [Section 5.5, "Adding Summary Fields"](#).

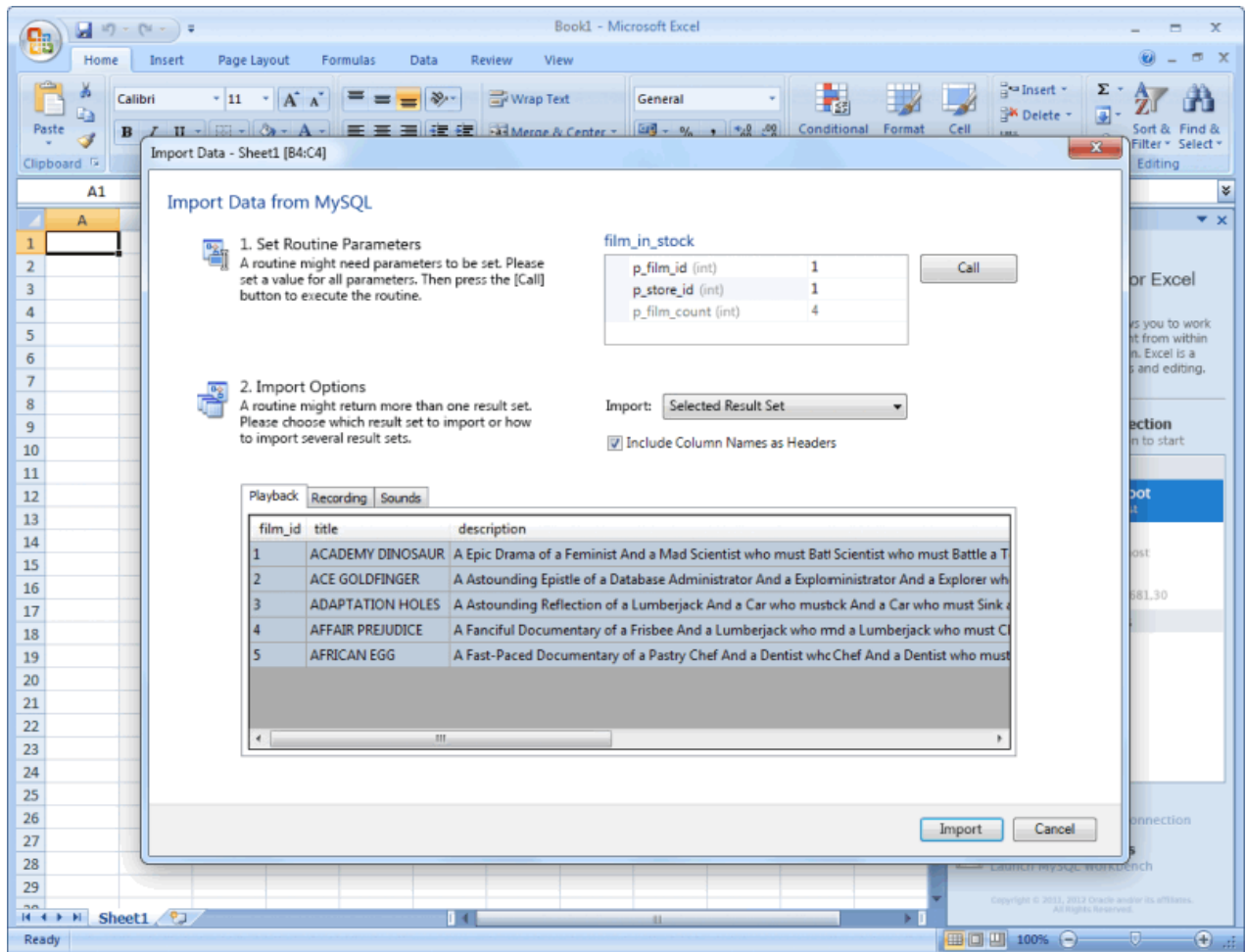
5.3 Importing a Procedure

Importing a procedure displays a similar option dialog, but with the following options:

- **Include Column Names as Headers:** Enabled by default, this will insert the column names at the top of the Excel worksheet as a "headers" row.
- **Import:** Because a procedure might return multiple result sets, the import options include:
 - **Selected Result Set:** Imports the selected tab sheet. This is the default behavior.
 - **All Result Sets - Arranged Horizontally:** Imports all result sets into the Excel Worksheet horizontally, and inserts one empty column between each result set.
 - **All Result Sets - Arranged Vertically:** Imports all result sets into the Excel Worksheet vertically, and inserts one empty row between each result set.

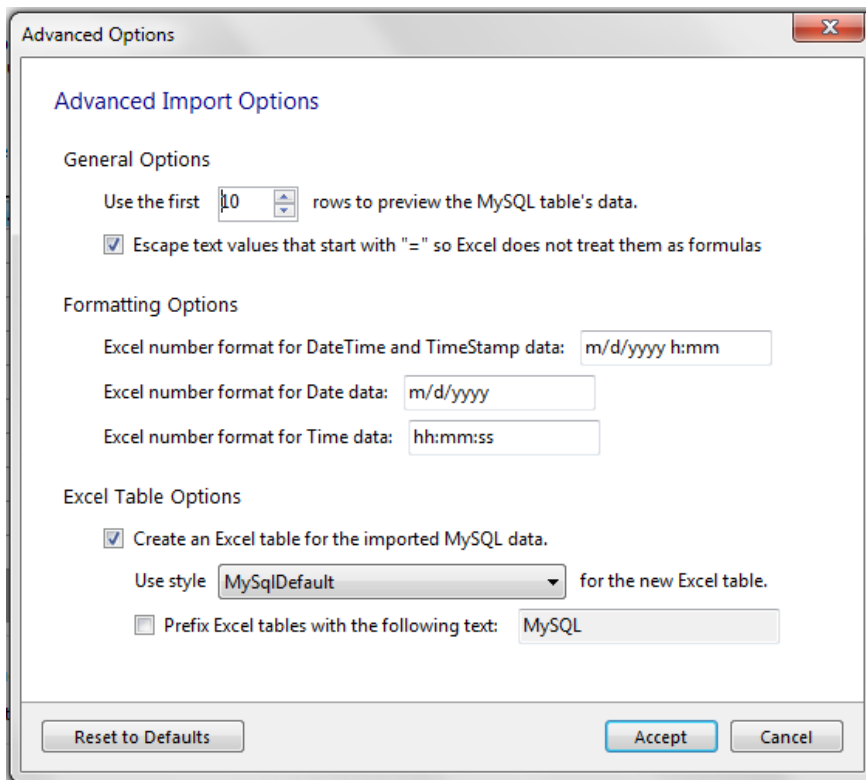
For example, a dialog like the following is displayed after importing a procedure and pressing the **Call** button to invoke the stored procedure:

Figure 5.1 Importing called stored procedure data with MySQL for Excel



5.4 Import: Advanced Options

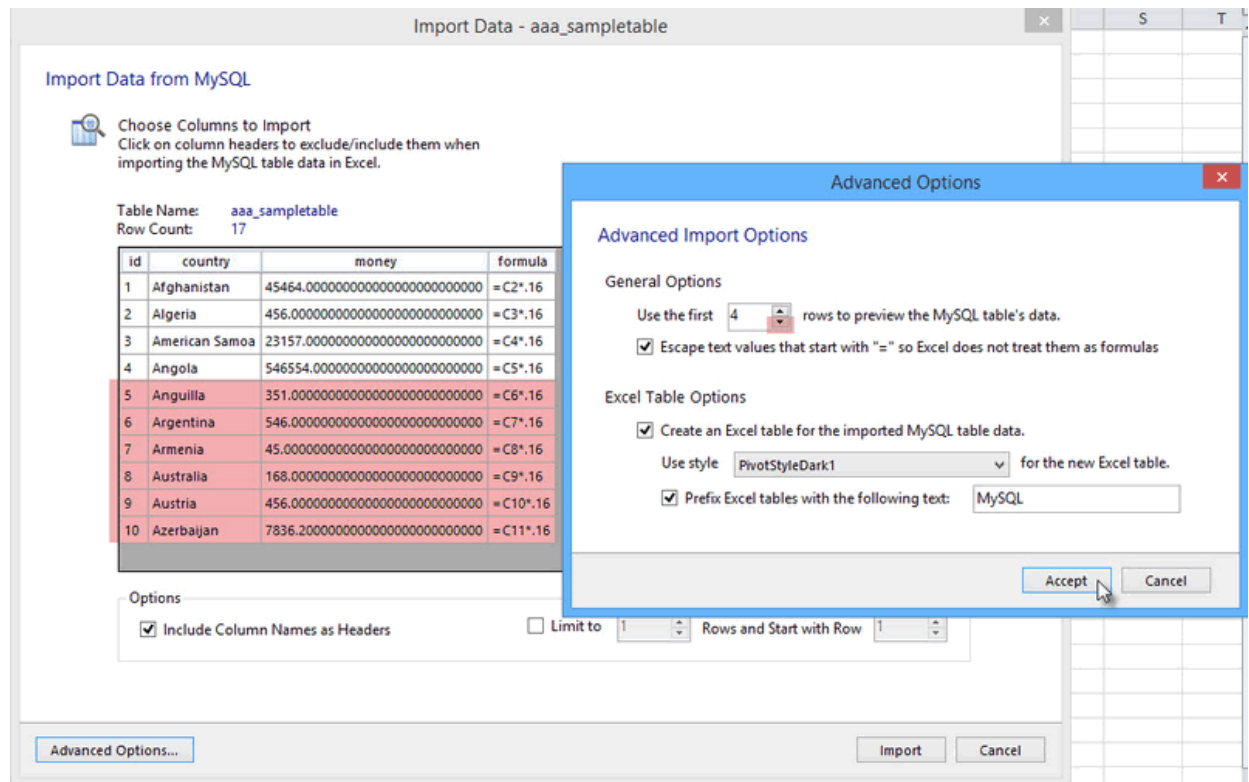
Advanced options enable you to manage the way MySQL for Excel imports data from MySQL tables, views, or procedures. Use **Reset to Defaults** to restore the original option selections and values.

Figure 5.2 Importing table data with MySQL for Excel: Advanced options

General Options

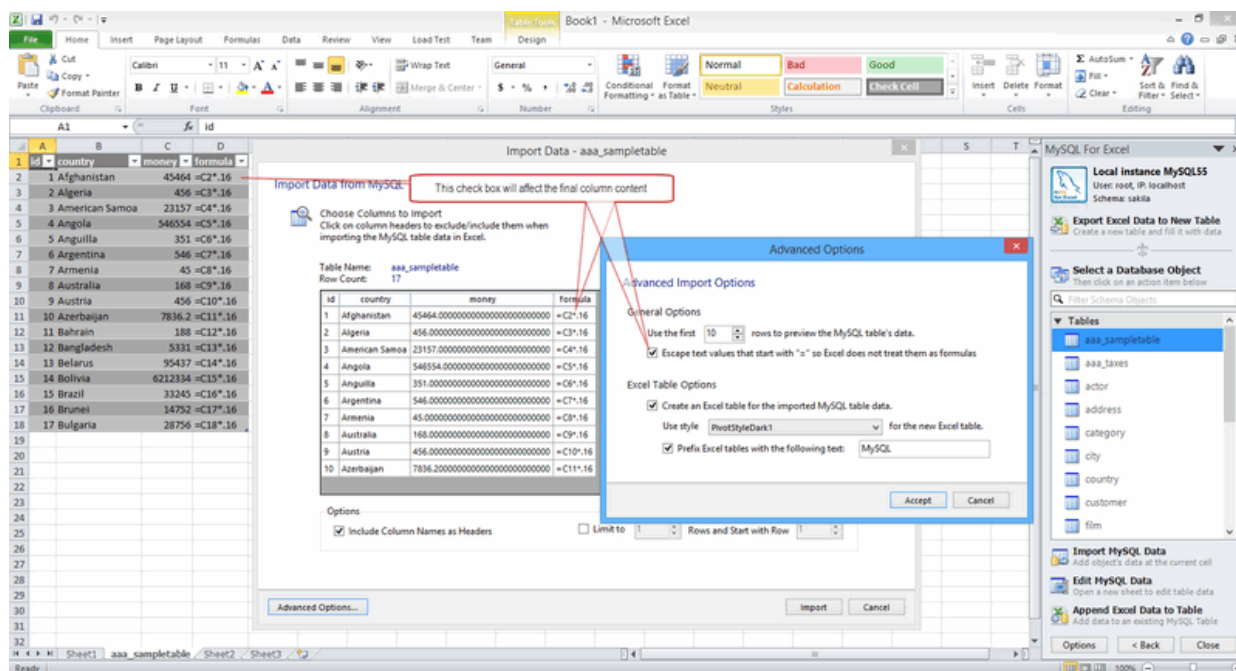
- **Use the first [10] rows to preview the MySQL tables data.** This option affects the preview step in the import process and defaults to 10.

Figure 5.3 MySQL for Excel: Preview



- **Escape text values that start with "=" so Excel does not treat them as formulas, and is enabled by default.** This option may not reflect any differences in the preview because it is only applied after the data is imported into the Excel worksheet.

Figure 5.4 MySQL for Excel: Escape "=" (formulas)



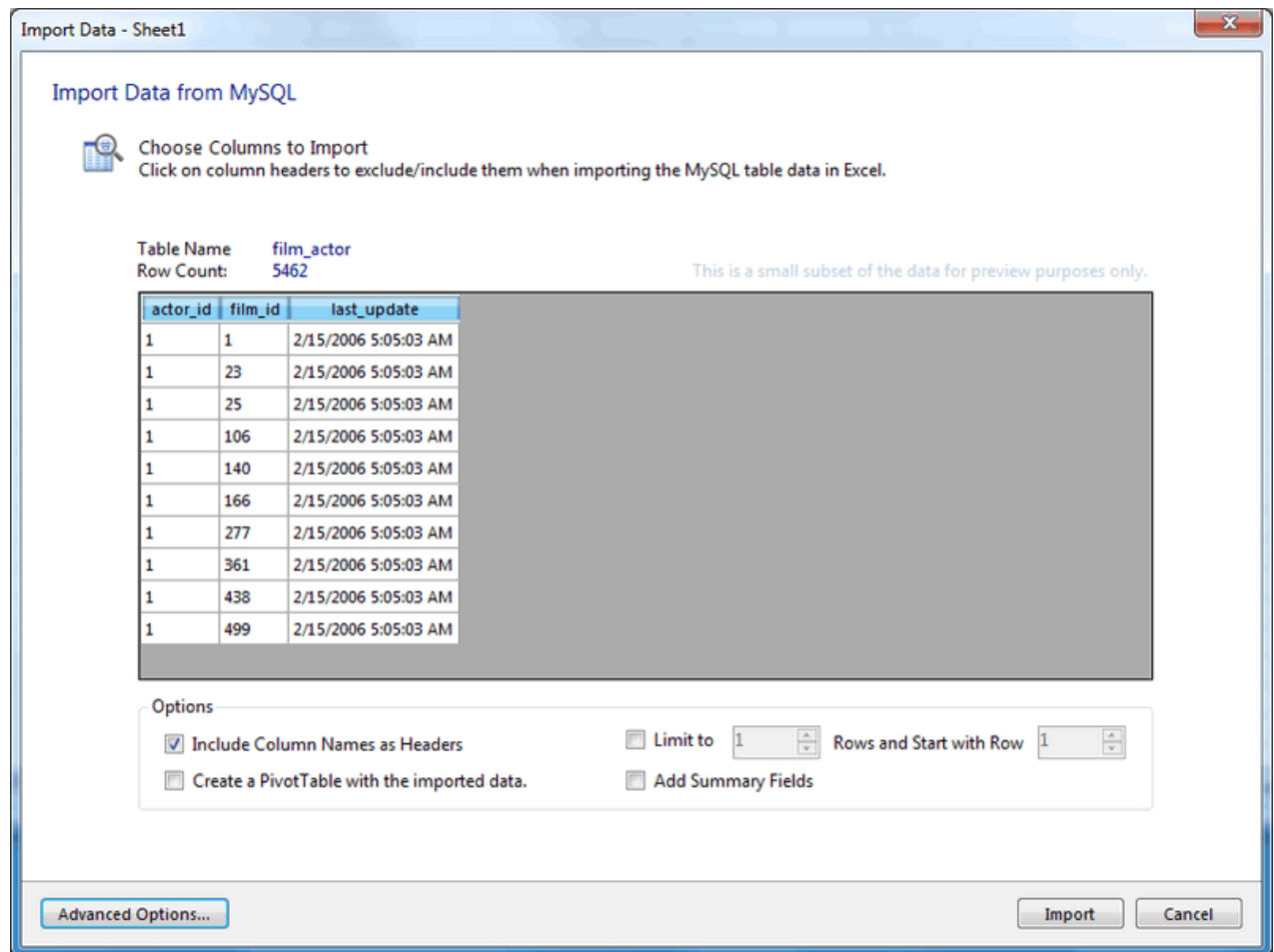
Formatting Options

- Excel number format for DateTime and Timestamp data: `[m/d/yyyy h:mm]`
- Excel number format for Date data: `[m/d/yyyy]`
- Excel number format for Time data: `[hh:mm:ss]`

Excel Table Options

- **Create an Excel table for the imported MySQL table data.** Enabled by default and has the following settings:
 - Use style `[]` for the new Excel table. Defaults to `MySQLDefault`.
 - Prefix Excel tables with the following text: `_____`. Disabled by default.

Importing a table displays a dialog similar to the following:

Figure 5.5 Importing table data with MySQL for Excel

5.5 Adding Summary Fields

Summary fields are calculated fields added to the last row of each column in the imported MySQL table. The drop-down list for each summary field in the resulting worksheet includes functions such as Average, Sum, Min, and Max.

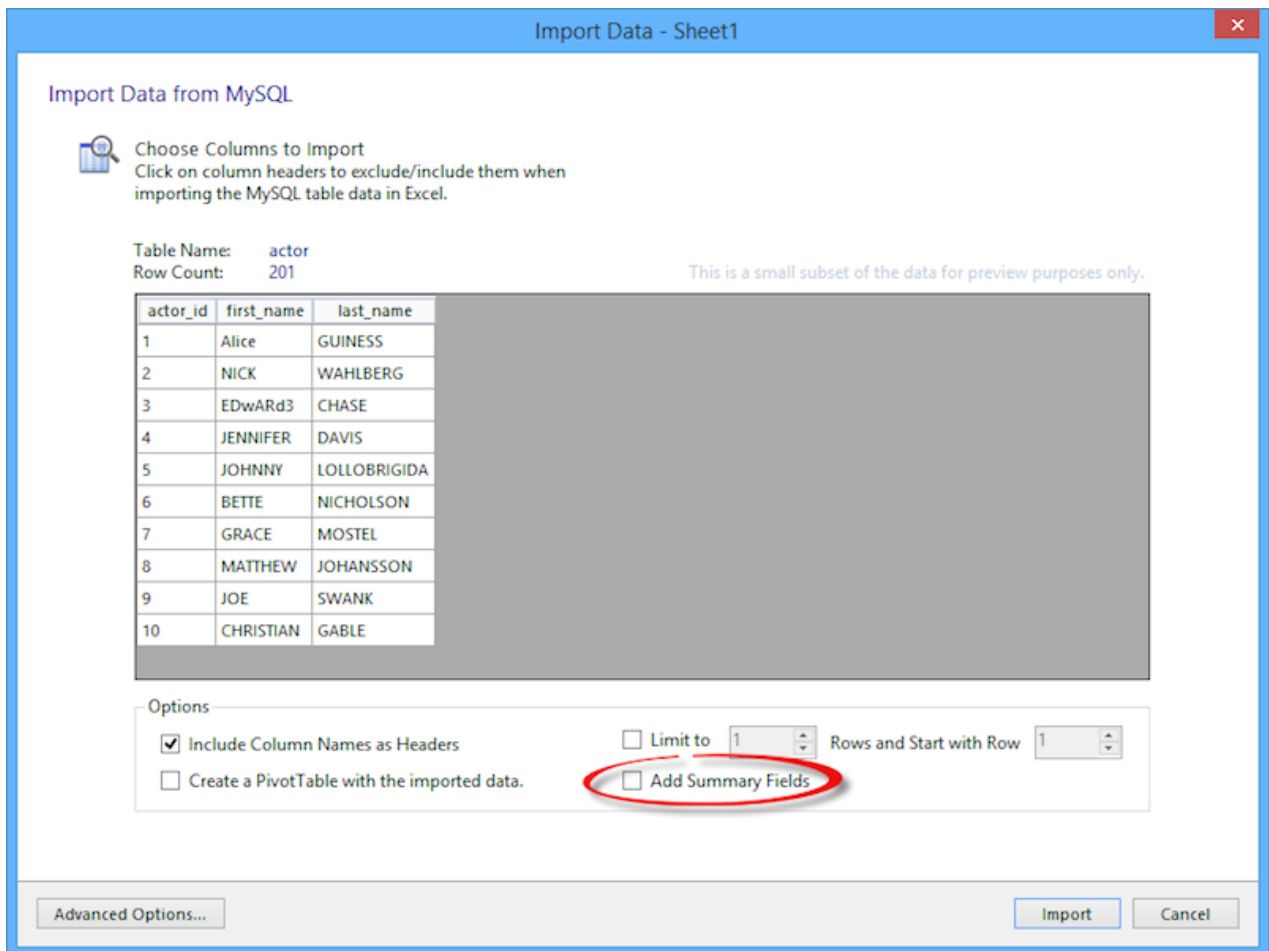


Note

This feature was added in MySQL for Excel 1.3.0.

The **Add Summary Fields** option (disabled by default) is listed on the import dialog:

Figure 5.6 The 'Add Summary Fields' option



Enabling this option adds a row of summary fields for the appropriate columns in your imported data. Notice the newly created row on the bottom:

Figure 5.7 The new 'Add Summary Fields': the new row

	A	B	C	D
570	4569	999	1	2/15/2006 05:09
571	4570	999	1	2/15/2006 05:09
572	4571	999	2	2/15/2006 05:09
573	4572	999	2	2/15/2006 05:09
574	4573	999	2	2/15/2006 05:09
575	4574	1000	1	2/15/2006 05:09
576	4575	1000	1	2/15/2006 05:09
577	4576	1000	1	2/15/2006 05:09
578	4577	1000	1	2/15/2006 05:09
579	4578	1000	2	2/15/2006 05:09
580	4579	1000	2	2/15/2006 05:09
581	4580	1000	2	2/15/2006 05:09
582	4581	1000	2	2/15/2006 05:09
583	4581			

Select the row to reveal a down arrow, and click it to display a set of summary options:

Figure 5.8 The 'Add Summary Fields' row: choices

4581	4580	1000	2	2/15/2006 05:09
4582	4581	1000	2	2/15/2006 05:09
4583	4581			
4584				
4585				
4586				
4587				
4588				
4589				
4590				

For example, choosing **Sum**:

Figure 5.9 The 'Add Summary Fields' row: sum example

6892
None
Average
Count
Count Numbers
Max
Min
Sum
StdDev
Var
More Functions.

Adjust each summary field accordingly.

5.6 Creating PivotTables

A PivotTable can be created from imported MySQL tables, views, stored procedures, or the entire Excel Data Model.



Note

This feature was added in MySQL for Excel 1.3.0.


An Excel PivotTable report summarizes and provides a visual representation of data in many different ways. It is a native Excel feature. For instructions on how to use PivotTables, see the documentation provided by Microsoft.

The following example shows a simple use case where an empty PivotTable is created from an imported MySQL table. This example uses the film table of the sakila database. To create the PivotTable, select the film table from the task pane and then click **Import MySQL Data**. In the **Import Data** dialog, select the **Create a PivotTable** check box and click **OK** to execute the operation.

Figure 5.10 Option: Create a PivotTable with the imported data

Import Data - Sheet1

Import Data from MySQL



Choose Columns to Import

Click on column headers to exclude/include them when importing the MySQL table data in Excel.

Table Name: film

Row Count: 1000

This is a small subset of the data for preview purposes only.

film_id	title	description	release_year	language_id	original_language_id	rental_du
1	ACADEMY DINOSAUR	A Epic Drama of a Feminist And a M...	2006	1		6
2	ACE GOLDFINGER	A Astounding Epistle of a Database...	2006	1		3
3	ADAPTATION HOLES	A Astounding Reflection of a Lumb...	2006	1		7
4	AFFAIR PREJUDICE	A Fanciful Documentary of a Frisbe...	2006	1		5
5	AFRICAN EGG	A Fast-Paced Documentary of a Past...	2006	1		6
6	AGENT TRUMAN	A Intrepid Panorama of a Robot An...	2006	1		3
7	AIRPLANE SIERRA	A Touching Saga of a Hunter And a...	2006	1		6
8	AIRPORT POLLOCK	A Epic Tale of a Moose And a Girl w...	2006	1		6
9	ALABAMA DEVIL	A Thoughtful Panorama of a Datab...	2006	1		3
10	ALADDIN CALENDAR	A Action-Packed Tale of a Man And ...	2006	1		6

Options

☒ Include Column Names as Headers
 ☐ Limit to 1 Rows and Start with Row 1

☒ Create a PivotTable with the imported data.
 ☐ Add Summary Fields

Advanced Options...

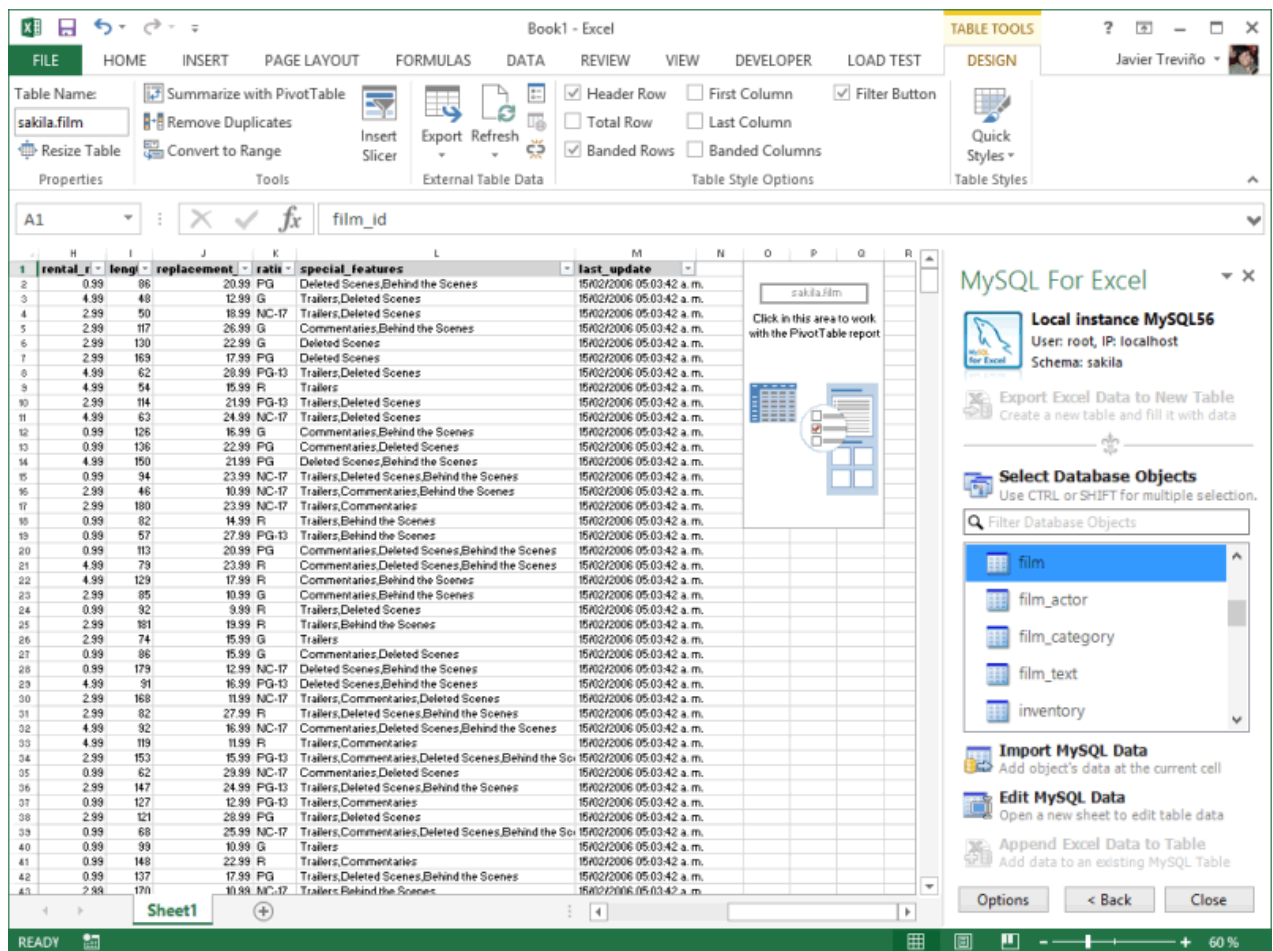
Import

Cancel

When the **Create a PivotTable with the imported data** option is checked, an empty PivotTable (or a PivotTable placeholder) is inserted just to the right of the imported data. The PivotTable name follows the same naming rules used for Excel tables created from the imported data, but PivotTables can be created with or without enabling the **Create an Excel table for the imported MySQL data** advanced option. That means a PivotTable can be created from an imported Excel range (if the aforementioned advanced option is off), or from an imported Excel table (if the option is on).

Click **Import** to dump the film table data to an active Excel worksheet, and this also creates a PivotTable for that data.

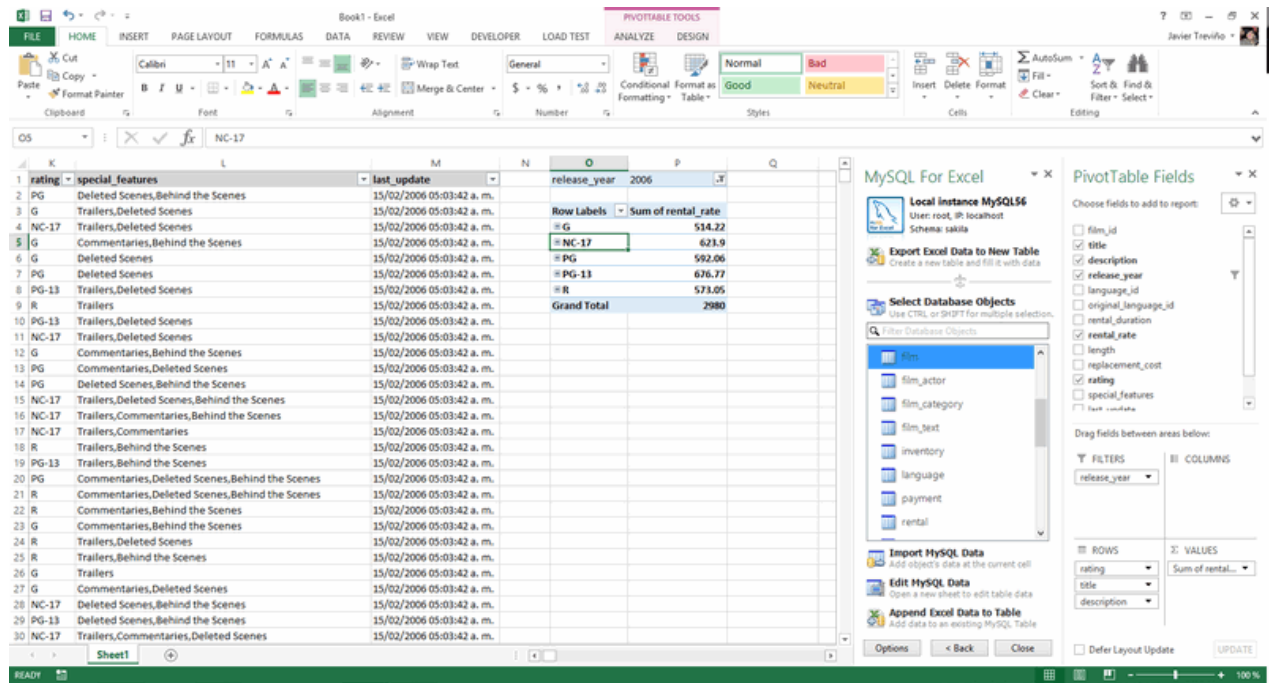
Figure 5.11 PivotTable Example: Empty PivotTable



Clicking the PivotTable opens a PivotTable Fields window next to the MySQL for Excel task pane, and from here you can select fields you want to summarize in the PivotTable report. Drag and drop fields from the list to any of the FILTERS, COLUMNS, ROWS, or VALUES areas, depending on the visualizations you want in the report. The report is completely dynamic, meaning that you can change the views by moving fields around the areas until you see the visualization you need for your PivotTable report.

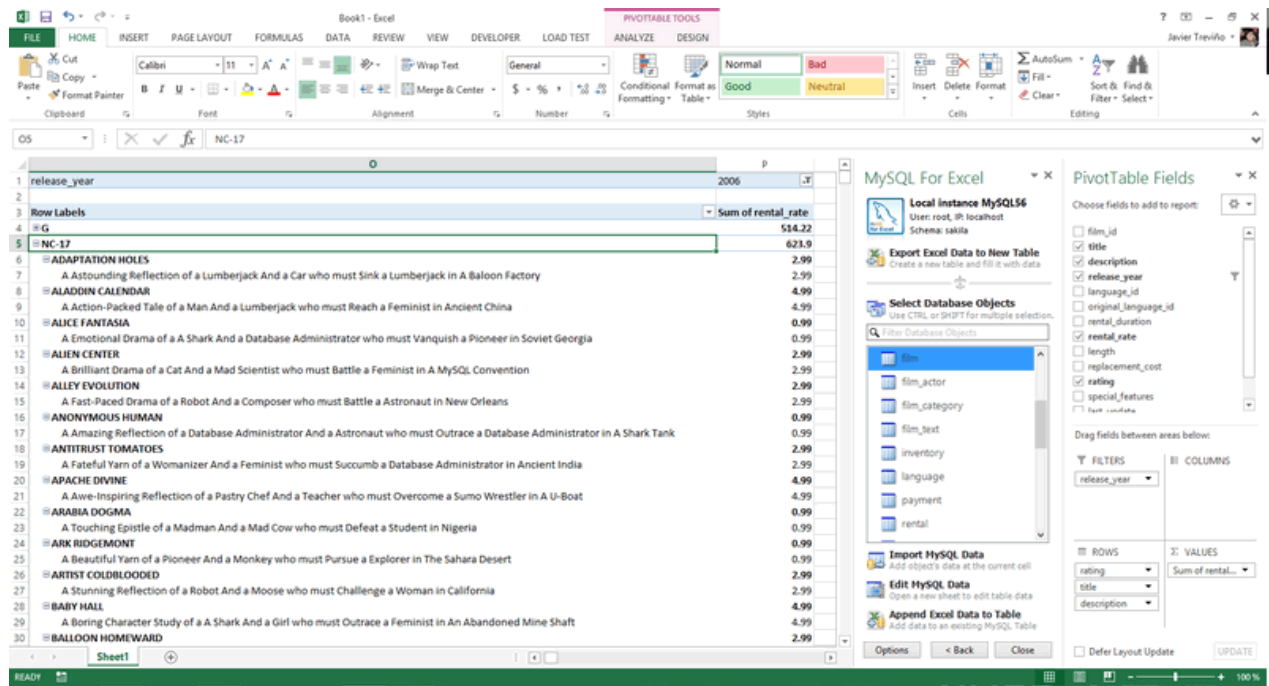
Below is an example PivotTable report using the sakila.film table imported in the previous example. This report includes a filter by release_year and it summarizes the rental_rate values while also grouping the data by values in the rating column.

Figure 5.12 PivotTable Example: Film Ratings



Expanding one of the groups reveals its values from the title and description columns.

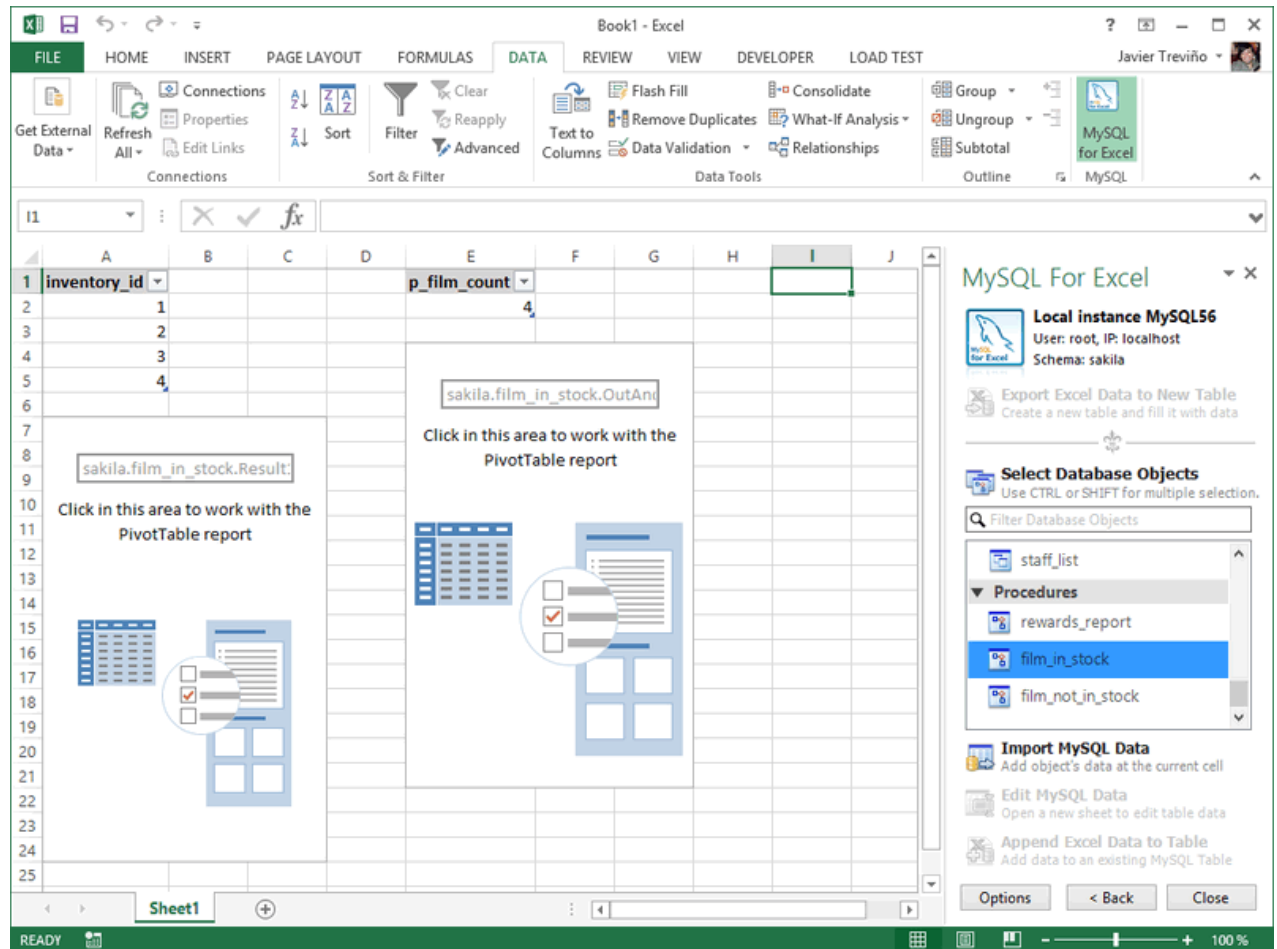
Figure 5.13 PivotTable Example: Expanded Group



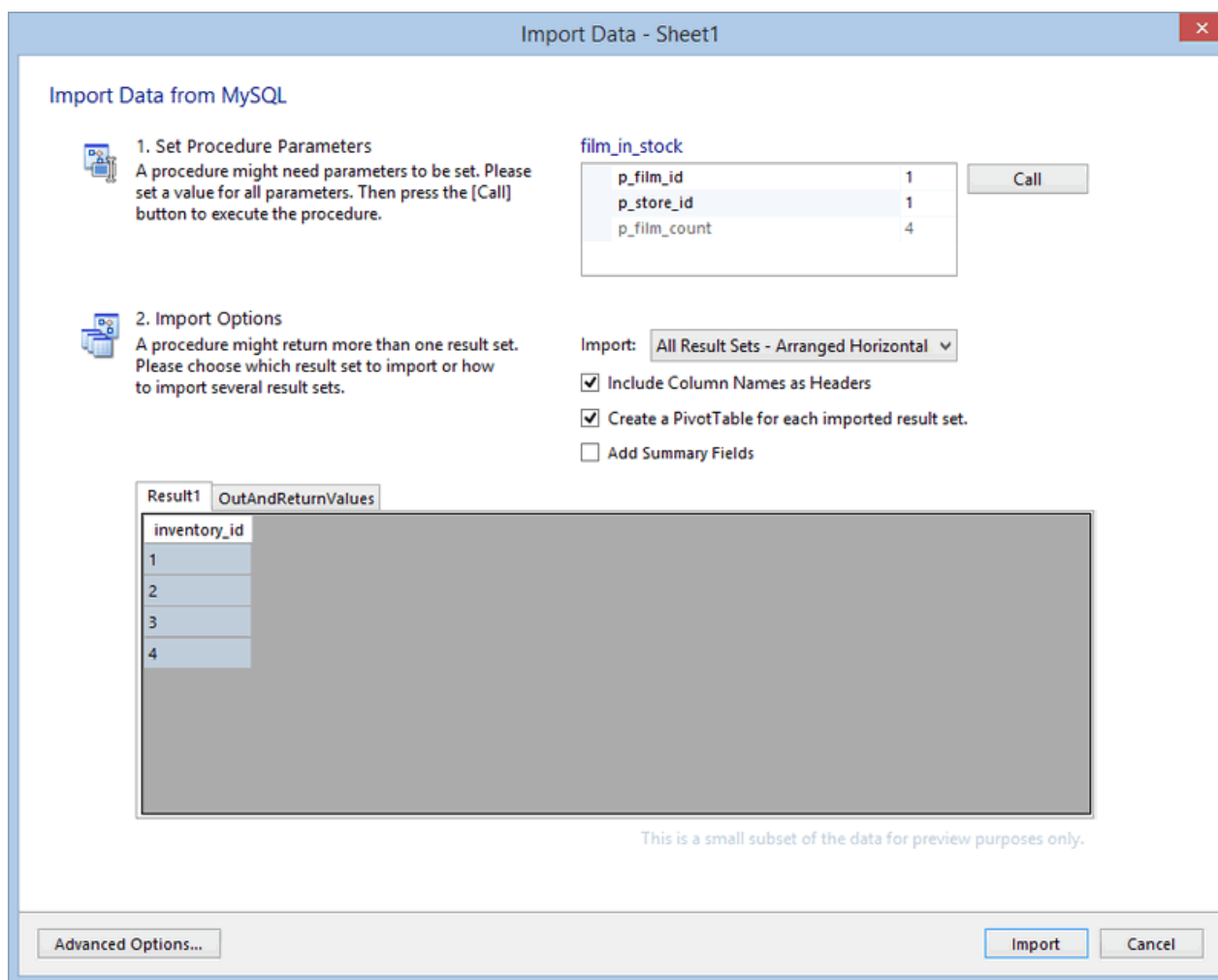
The same operation can be performed with data coming from a MySQL view or stored procedures. One difference for stored procedures enables you to create a PivotTable for each of the imported result sets returned by the procedure call.

In the following example, the film_in_stock stored procedure is selected and its input parameter values are configured. When the procedure is called, it returns one result set (Result1) and the OutAndReturnValues table (always present if the procedure has output parameters or a return value).

Figure 5.14 PivotTable Example: Stored Procedure



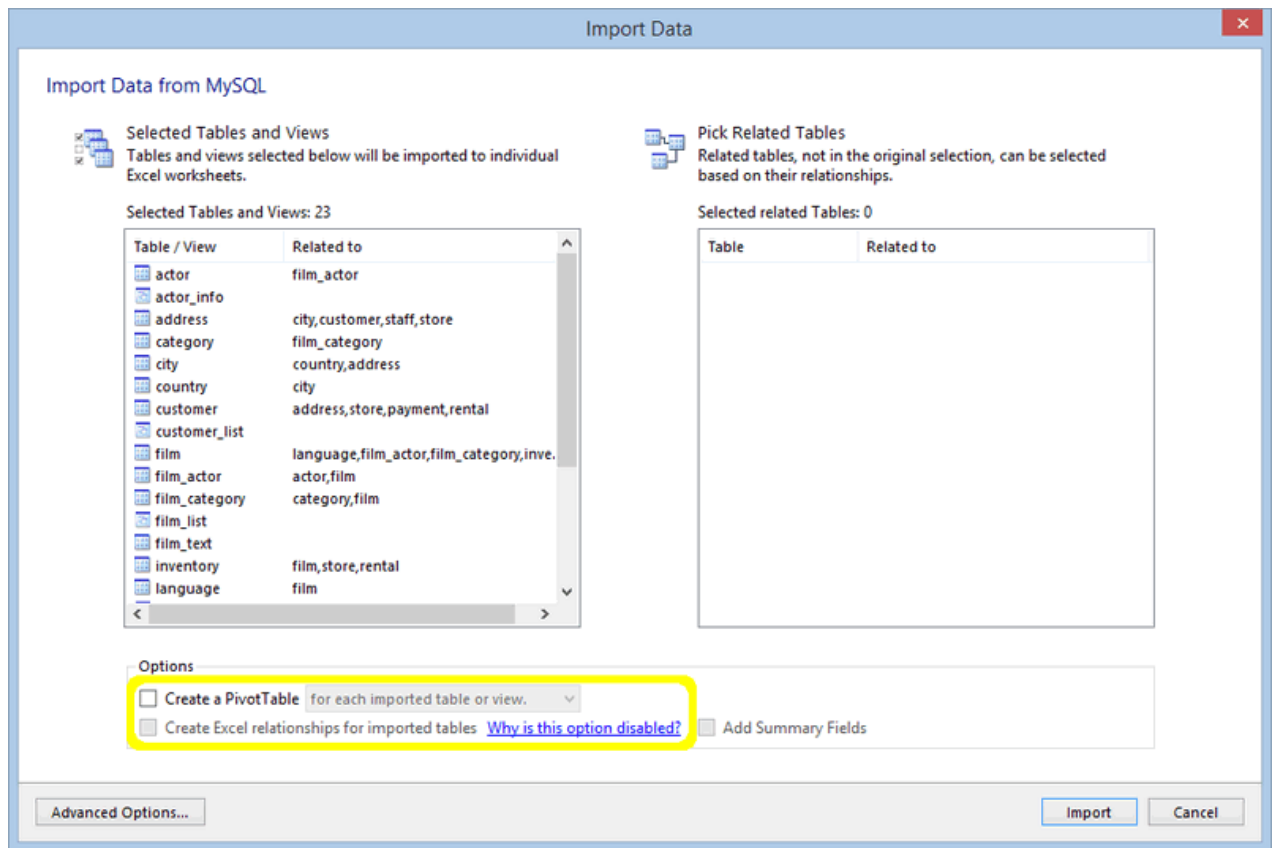
In this example, the **All Result Sets - Arranged Horizontally** option was selected. Because the **Create a PivotTable with the imported data** option was also checked, a PivotTable was created for each returned result set.

Figure 5.15 PivotTable Example: Arranged Horizontal

An important use case for PivotTables is when we create it for multiple related tables as typically a single table does not contain all of the data needed by a PivotTables report. You can create a single PivotTable tied to the data in the current Excel Data Model that contains fields from several related tables. That way you can use the data in a single report for an entire MySQL schema if needed. However, you can only do this in Excel 2013 (and later) where the Excel Data Model is available.

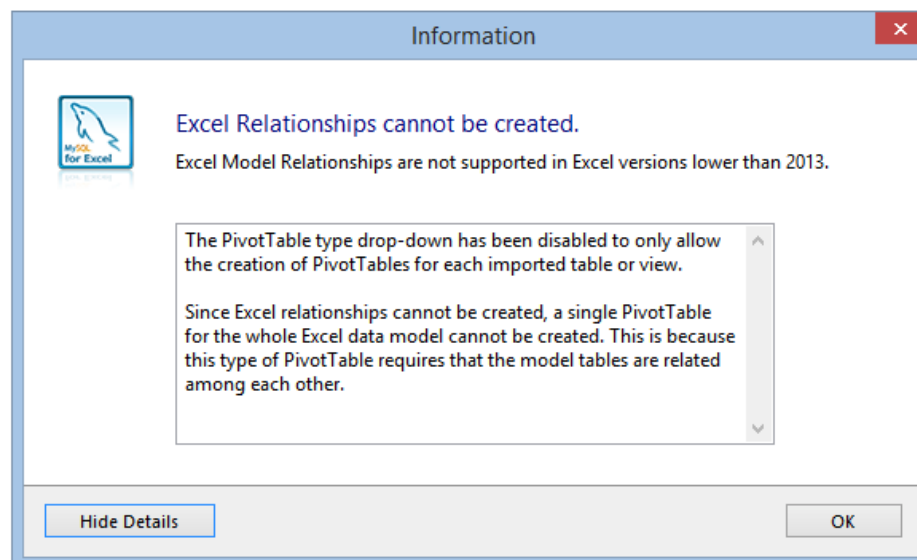
In Excel versions before Excel 2013, only a PivotTable for each imported table or view can be created. This is because a single PivotTable for the entire Excel Data Model requires that the tables are related to each other. If Excel relationships cannot be created, then this type of PivotTable cannot be created. So in these cases, the Import Data dialog looks like the following sample screenshot:

Figure 5.16 Disabled 'Create Excel relationships' option before Excel 2013



Clicking **Why is this option disabled?** displays an information dialog with an explanation of the disabled controls.

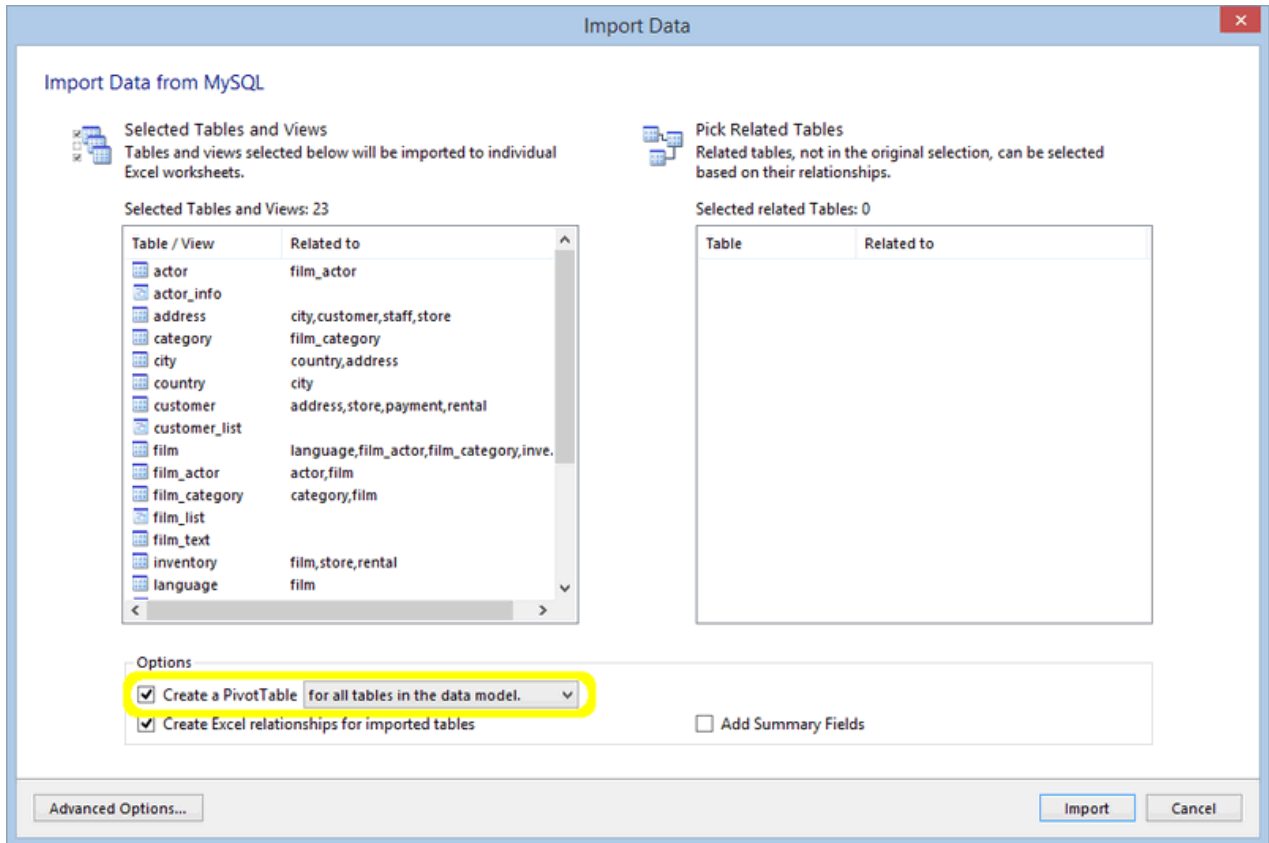
Figure 5.17 Disabled 'Create Excel relationships' option description



Our next example uses all tables in our schema. You can manually choose each table or use **Control + A** in the database objects list to select them all. When clicking **Import Multiple Tables and Views**, the

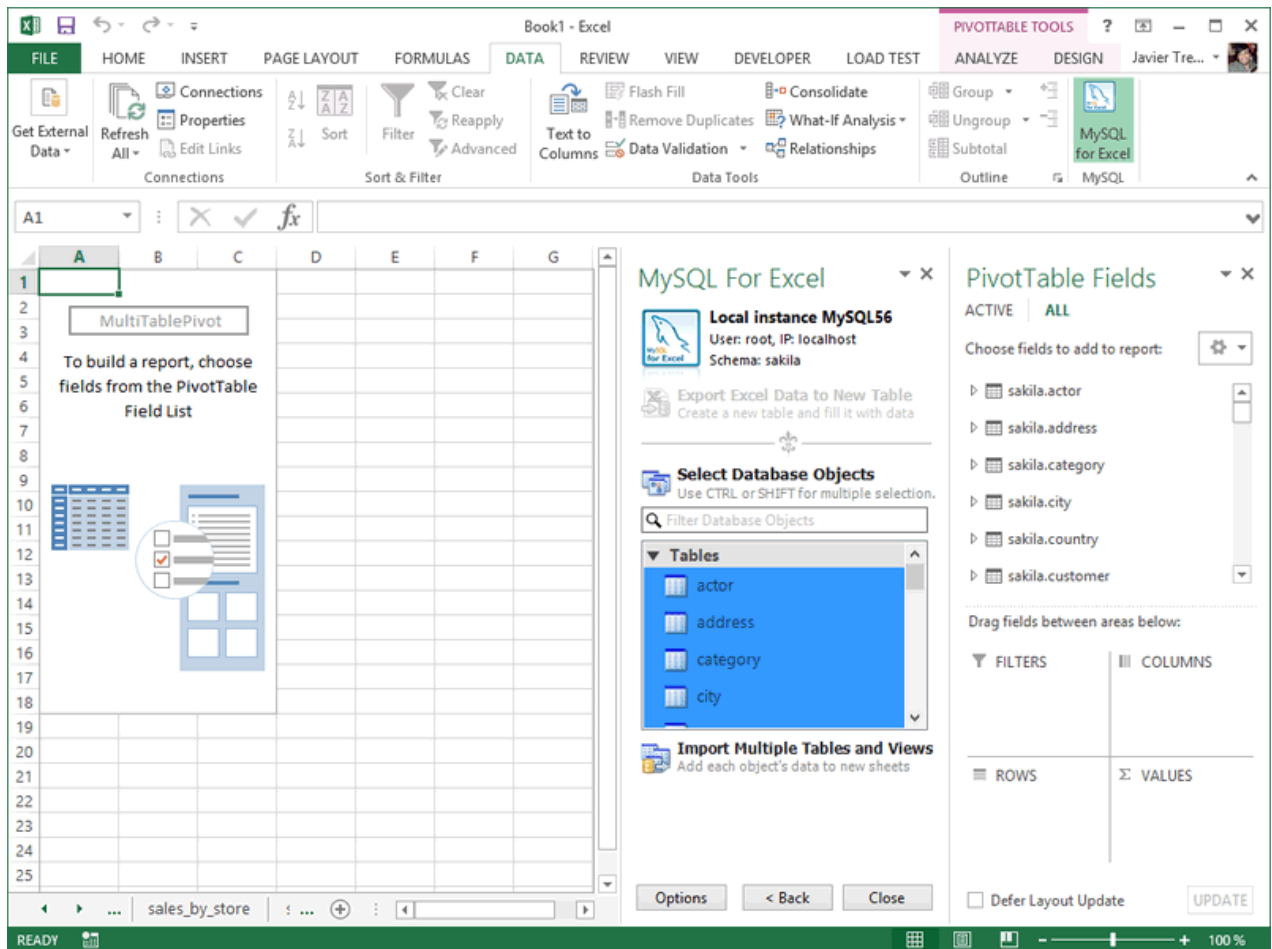
Import Data dialog appears as shown below. We need to check the **Create a PivotTable** option, which by default its drop-down is set to **for all the tables in the data model**. Keep that value.

Figure 5.18 Importing All Tables and Views

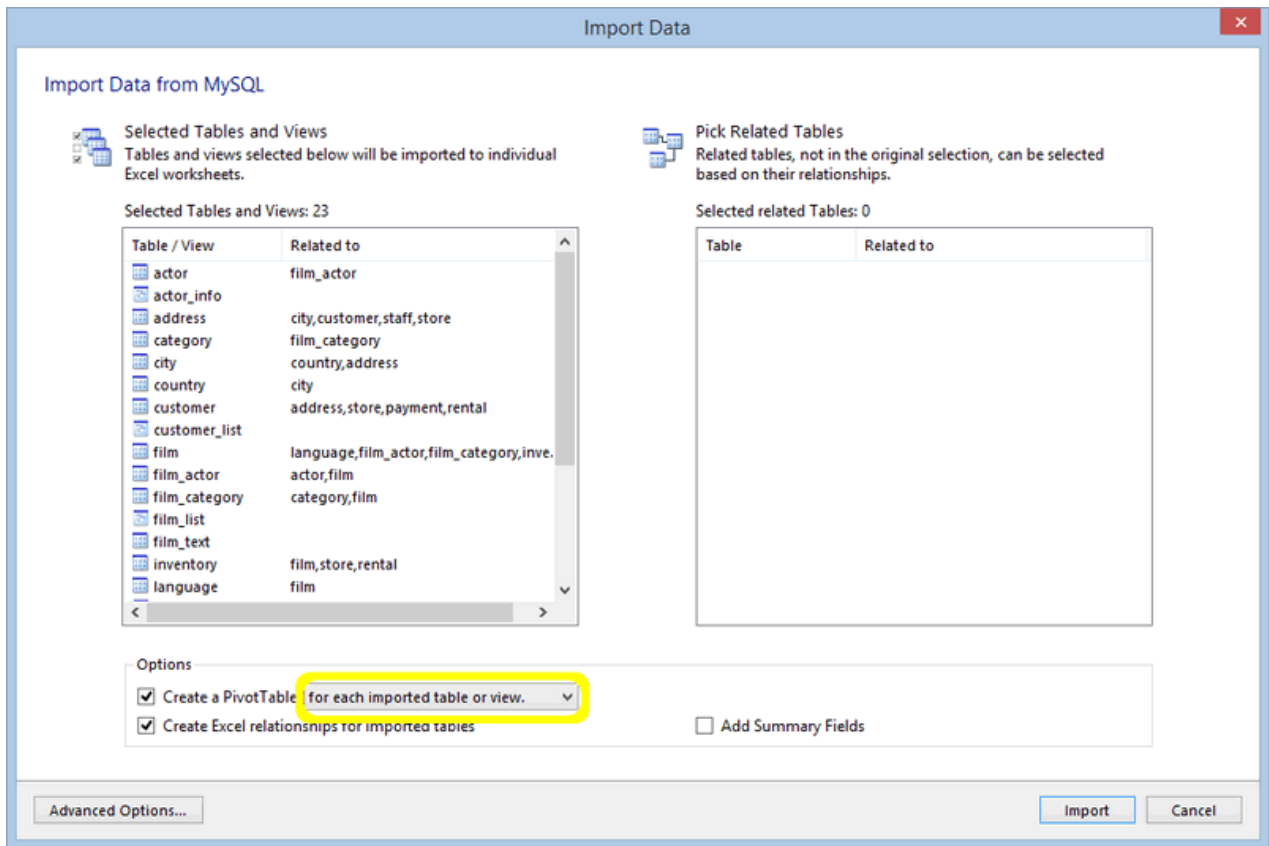


When clicking **Import**, the data in all of the selected tables is imported to Excel, its Data Model and Excel relationships are created, and a new worksheet is created that contains a PivotTable with all of the tables that were imported. This is demonstrated in the screenshot below, and notice that all tables are listed in the **PivotTable Fields** window.

Figure 5.19 Importing All Tables and Views: Listing



You can also configure the **Create a PivotTable** drop-down list for each imported table or view, which in turn will create a PivotTable for each of the imported tables or views, as opposed to creating a single PivotTable for all of them.

Figure 5.20 Importing Each Imported Table or View

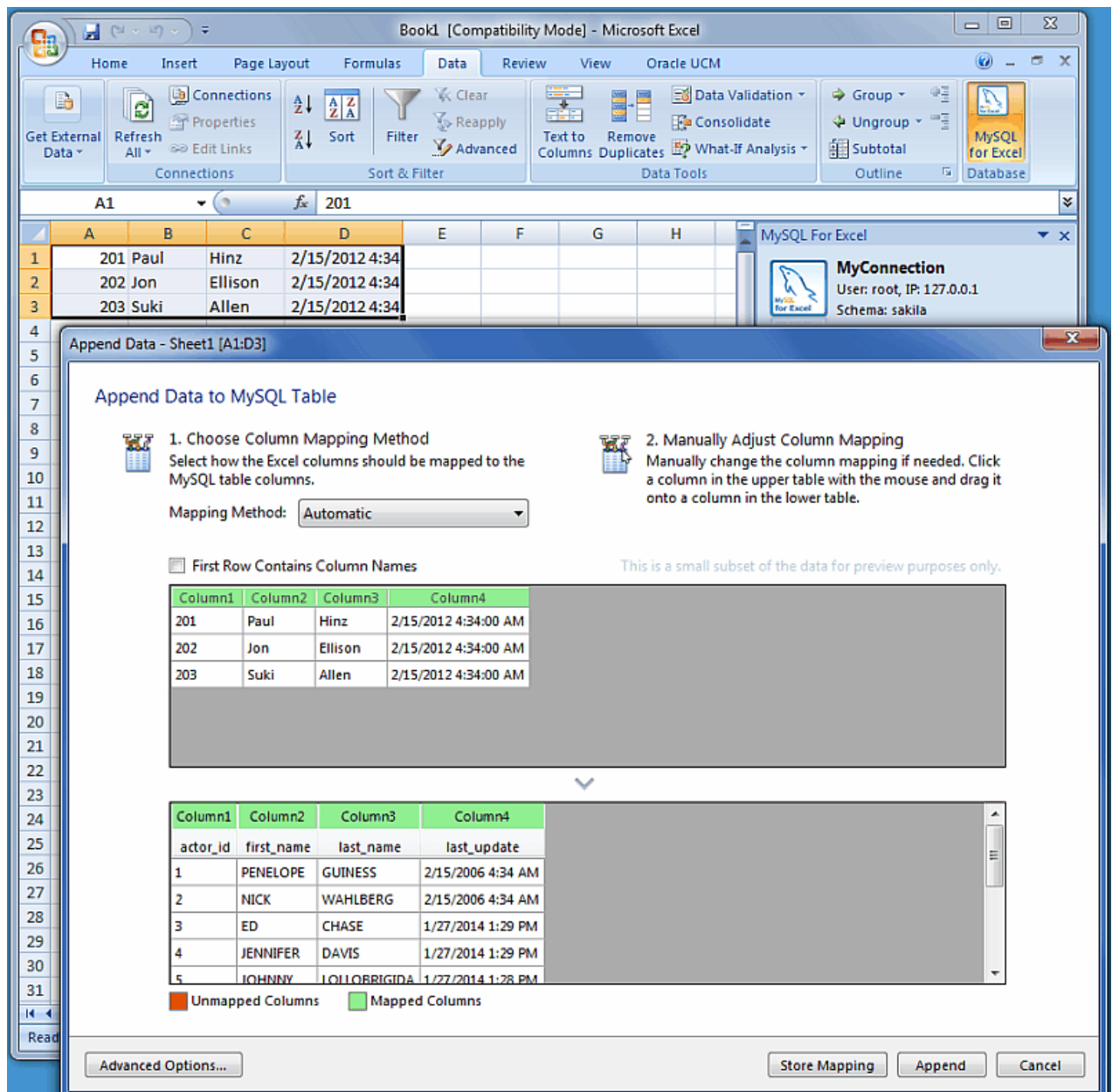
Chapter 6 Append Excel Data into MySQL

Data from a Microsoft Excel worksheet can be appended to a MySQL database table by using the **Append Excel MySQL Data to Table** option.

Column Mappings

Mapping the Excel columns to the MySQL columns can be executed automatically (default), manually, or by using a stored mapping routine. An automatic mapping routine is the default, and can be tweaked if every column cannot be matched automatically. The following figure shows two columns of Excel data and the preview dialog after choosing **Append Excel Data to Table**.

Figure 6.1 Appending Excel data to MySQL (Automatic mapping)



General Mapping Information

It is common to tweak the column mappings. A few notes about the manual mapping process:

- Manual mapping is performed by dragging a column from the upper source grid (Excel worksheet) and dropping it into the lower target column MySQL table grid. Click anywhere within the column to initiate this dragging routine.
- The color of the header field for each column defines the current mapping status of the column. The colors include:
 - **Green:** A source column is mapped to a target column.
 - **Red:** A target column is not mapped.
 - **Gray:** A source column is not mapped.
- A source column may be mapped to multiple target columns, although this action generates a warning dialog.
- Right-clicking a target column shows a context menu with options to either **Remove Column Mapping** for a single column, or to **Clear All Mappings** for all columns. Dragging a target column outside of the grid removes the mapping.

Mapping Methods

The three mapping methods are described below:

- **Automatic:** The automatic mapping method attempts to match the Excel source column names with the MySQL target table column names. It is then possible to manually tweak the mapping afterwards.

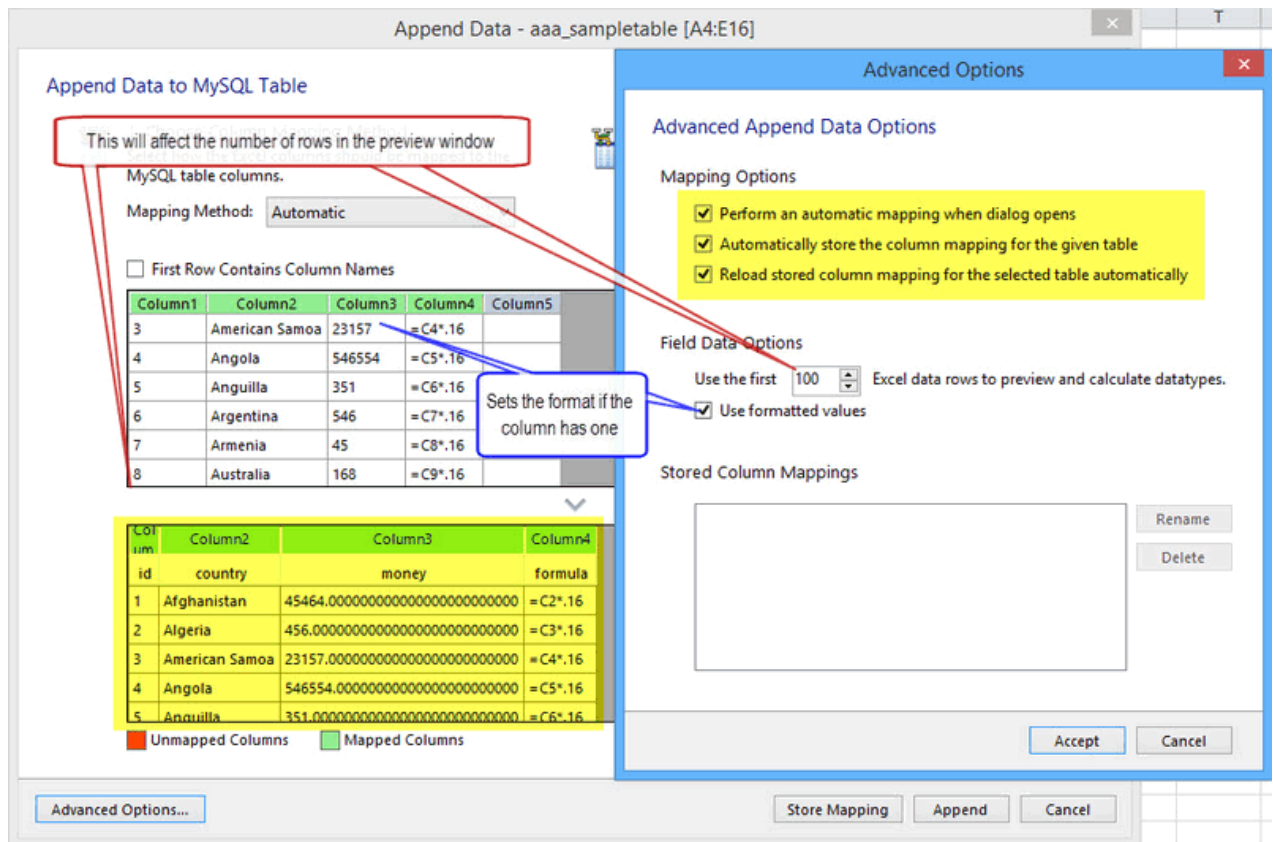
If the automatic process finds zero columns to match, then a simple 1 to 1 matching routine is attempted. Meaning, SourceColumn #1 to TargetColumn #1, SourceColumn #2 to TargetColumn #2, and so on.

- **Manual:** The source column names are manually dragged (matched) with the target column names. Manual dragging can also be performed after the **Automatic** method is selected.
- **Stored:** Manual mapping styles may be saved using the **Store Mapping** button, which will also prompt for a name and then save it using a "*name* (dbname.tablename)" naming scheme. The saved mapping style will then be available alongside the **Automatic** and **Manual** options.

Stored mappings may be deleted or renamed within the **Advanced Options** dialog.

Append: Advanced Options

There are several advanced options that are configured and stored between sessions for each Excel user. The advanced options are:

Figure 6.2 Appending Excel data to MySQL (Advanced Options)

The advanced **Mapping Options**:

- **Perform an automatic mapping when dialog opens:** Automatically attempt to map the target and source when the **Append Data** dialog is opened. This feature is enabled by default.
- **Automatically store the column mapping for the given table:** Stores each mapping routine after executing the **Append** operation. The mapping routine is saved using the "tablenameMapping (dbname.tablename)" format. This may also be performed manually using the **Store Mapping** button. It is enabled by default, and this feature was added in MySQL for Excel 1.1.0.
- **Reload stored column mapping for the selected table automatically:** If a stored mapping routine exists that matches all column names in the source grid with the target grid, then it is automatically be loaded. This is enabled by default, and this feature was added in MySQL for Excel 1.1.0.

The advanced **Field Data Options**:

- **Use the first 100** (default) Excel data rows to preview and calculate data types. This determines the number of rows that the preview displays, and the values that affect the automatic mapping feature.
- **Use formatted values:** The data from Excel is treated as **Text**, **Double**, or **Date**. This is enabled by default. When disabled, data is never treated as a **Date** type, so for example, this means that a date would be represented as a number.

The advanced **SQL Queries Options**:

- `Disable table indexes to speed-up rows insertion`: This option is disabled by default, since you must make sure that if unique indexes are present, that the data mapped to that column does not contain duplicate data. This option was added in MySQL for Excel 1.2.1.

The **Stored Column Mappings** is a list of saved column mappings that were saved with the "Automatically store the column mapping for the given table" feature, or manually with the **Store Mapping** option.

Chapter 7 Export Excel Data into MySQL

Data from a Microsoft Excel worksheet can be exported to a new MySQL database table within an existing schema. For instructions on how to add a new schema from MySQL for Excel, see [Section 3.2, “New Schema Creation in Excel”](#).

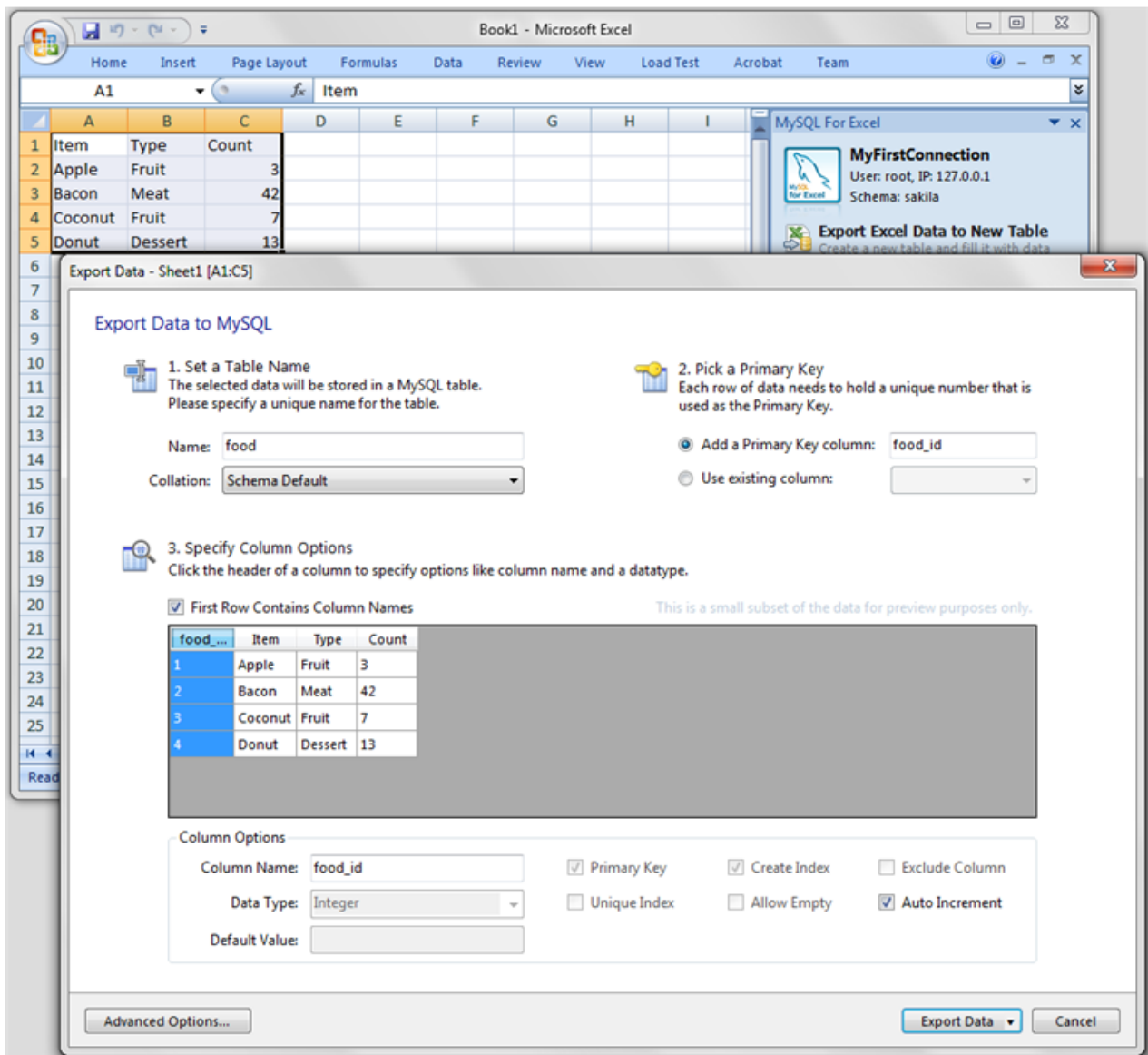
To export Excel worksheet data to a MySQL table

1. Start Excel, select the **Data** menu tab, and then click **MySQL for Excel** to open the MySQL for Excel task pane.
2. From the **Open a MySQL Connection** area in the task pane, double-click an existing local or remote connection to display the available database schemas.
3. Select a schema from the list and click **Next** to display all database objects in the schema (tables, views, and procedures).
4. Select the cells in the Excel worksheet to export and then click **Export Excel Data to New Table**. A preview window displays the selected data and provides **Column Options** and **Advanced Options** to be used during the export operation.
5. In the Export Data to MySQL dialog, do the following:
 - a. Specify whether the first row in the preview should be used as the column name. This option is selected by default.

The **First Row Contains Column Names** check box controls the data type for columns either by defaulting the type to a suitable one for rows 2-*n* (if checked) or to one suitable for rows 1-*n* (if unchecked).

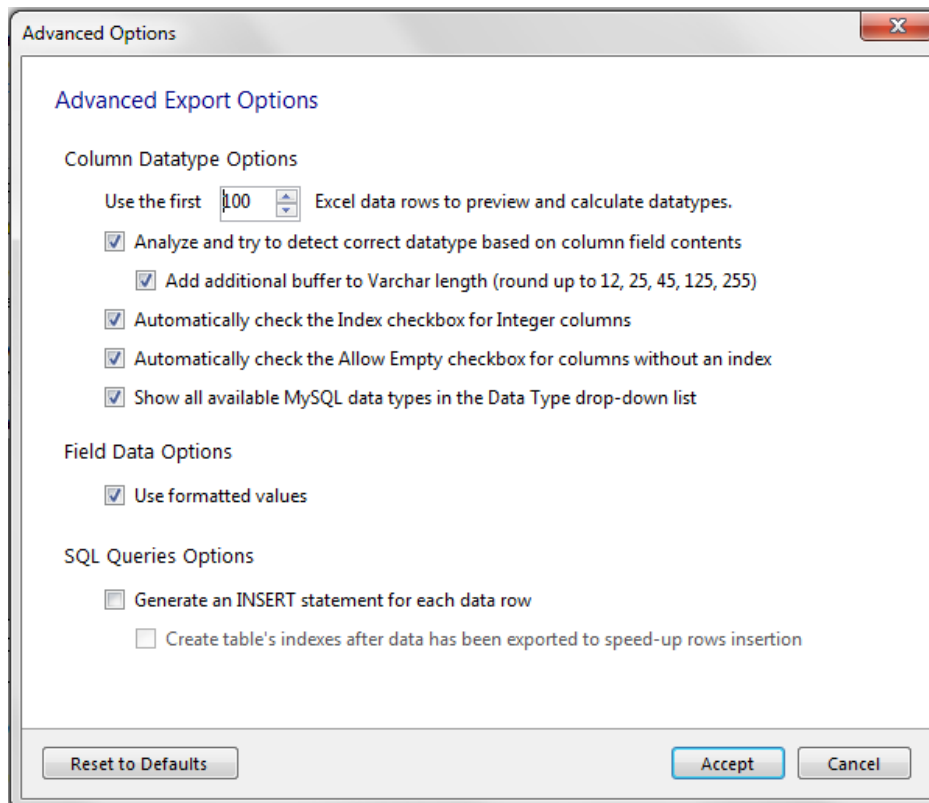
- b. Type a unique table name and select the collation to use for the new table.
- c. Choose or create a primary key column for the new table.
- d. Select each column and apply the appropriate options and option values.
- e. Click **Export Data** to create the new table with data.

Figure 7.1 Exporting Excel data to MySQL



Edit: Advanced Options

Advanced options enable you to manage the way MySQL for Excel exports data from worksheets to MySQL tables. Use **Reset to Defaults** to restore the original option selections and values.

Figure 7.2 Exporting Excel data to MySQL (Advanced Options)

Column Datatype Options

- **Use the first 100 (default) Excel data rows to preview and calculate datatypes:** This determines the number of rows that the preview displays and the values that affect the automatic mapping feature.
- **Analyze and try to detect correct datatype based on column field contents:** Attempts to analyze the data and determine the data type for the column. The column type is defined as `VARCHAR` if it contains multiple types.
- **Add additional buffer to VARCHAR length (round up to 12, 25, 45, 125, 255):** When the data type is automatically detected and is set to `VARCHAR`, then it calculates the maximum length for all rows within the column, and rounds up the maximum length to one of the defined lengths above.

If disabled, then the `VARCHAR` length is set to the length of the longest entry in the Excel worksheet.

- **Automatically check the Index checkbox for Integer columns:** If enabled (default), columns with an Integer data type will have the **Create Index** option enabled by default.
- **Automatically check the Allow Empty checkbox for columns without an index:** If enabled (default), columns without the **Create Index** check box selected will automatically enable the **Allow Empty** configuration option.
- **Show all available MySQL data types in the Data Type drop-down list:** By default, only the most commonly used data types are displayed. Enable (disabled by default) this setting to see a list of all MySQL data types.

**Note**

This option was added in MySQL for Excel 1.3.0

Field Data Options

- **Use formatted values:** When enabled (default), the data from Excel is treated as [Text](#), [Double](#), or [Date](#). When disabled, data is never treated as a [Date](#) type, so for example this means that a date would be represented as a number.

Other Options

- **Generate an INSERT statement for each data row:** This option is disabled by default.
- **Create table's secondary indexes after data has been exported to speed-up rows insertion:** This saves disk I/O for bulk inserts (thousands of rows) because re-indexing will not happen every time a row is inserted, but only once at the end of the data insertion. This option is enabled by default.

**Note**

This option was added in MySQL for Excel 1.2.1.

**Note**

The following option was [Removed](#) in MySQL for Excel 1.2.1. Now, the default behavior is to always remove empty columns from the calculations.

Remove columns that contain no data, otherwise flag them as "Excluded": If enabled, columns without data in Excel are removed and not shown in the preview window. If disabled (default), these columns will exist but have the **Exclude Column** option checked.

Additional Notes

- Entering "0" into a date column.

Entering the value "0" into an Excel date column will convert the value to "12/30/1899" in MySQL. This is because Excel first translates the value to the minimum date in Excel, which is "1/0/1900", because dates are internally stored in Excel as numbers (the days that have passed since "1/0/1900". However, because "1/0/1900" is not a valid date, the committed value to MySQL will change to "12/30/1899" because the .NET MySQL connector automatically converts "1/0/1900" to "12/30/1899", which is the closest valid date.

Chapter 8 What Is New In MySQL for Excel

Table of Contents

8.1 What Is New In MySQL for Excel 1.3	45
8.2 What Is New In MySQL for Excel 1.2	45

This section summarizes how MySQL for Excel progressed with each minor and major release.

8.1 What Is New In MySQL for Excel 1.3

Most of the new features added to MySQL for Excel 1.3.x involve improvements to the **Data Import** functionality.

- You can now refresh imported data from the source MySQL database by clicking **Refresh** from the context-menu, or **Refresh All** from the navigation menu. These check for changes in the source MySQL database and update your imported MySQL data accordingly.

Use case: A colleague sends you a MySQL Excel worksheet with data exported from a MySQL database. You open the file several days later, and worry that the data is outdated so you click **Refresh**.

- A new **Refresh To Defaults** button was added to the options pages. It changes each option to the default value, and you then confirm (or cancel) the application of these changes.
- Enabling the new **Add Summary Fields for Numeric Columns** option adds a summary field to the end of each numeric column in Excel. From here, you choose the desired function for the column, such as total or average.
- You may now import data from multiple objects in a single operation. Use **Control** or **Shift** to select multiple objects (tables and/or views) from the MySQL for Excel task pane, and click **Import** to open the new dialog for selecting additional objects that have direct relationships to the objects you selected. Each object opens in its own Worksheet.

From this new dialog, you may also generate a **Relationships** model in Excel. This functionality requires Excel 2013 or higher, or Excel 2010 with the PowerPivot add-in.

- A new **Create a PivotTable with the Imported Data** option was added. This creates a Pivot Table in Excel.
- All options now have descriptive tooltips. Hover over an option/preference to view helpful information about its use.
- You may now specify a collation for created schemas. The collation type defaults to "Server Default." These statements can be reviewed before execution.
- All MySQL data types are now available when performing **Data Export** operations. By default, only the most commonly used data types are listed, which was only behavior in previous versions of MySQL for Excel. You may still type in a type instead of selecting it.

8.2 What Is New In MySQL for Excel 1.2

- **Edit Connections:** MySQL connections can now be edited from within the MySQL for Excel plugin by right-clicking and choosing **Edit Connection**. Before, these connections could only be edited with MySQL Workbench.

- **Optimistic Updates:** Previously, only "Pessimistic Updates" were used, which means that pressing **Commit Changes** would overwrite changes performed outside of MySQL for Excel for the edited cells.

Both options remain available today, and optimistic updates are enabled by default. This update type can be set either as a preference, or toggled per session.

- The **Append Data** dialog will now notify you of incompatible types (with visual warnings) when mapping source Excel columns to target MySQL columns.

If a mismatch is discovered, then the column in the source grid that contains the mapped Excel data turns red, and selecting this column displays a warning with text explaining that the source data is not suitable for the mapped target column's data type.

- New preview preferences allow you to enable one of the following three options:
 - **Preview SQL statements before they are sent to the Server:** View (and optionally) edit the MySQL UPDATE/INSERT statements before they are committed.
 - **Show executed SQL statements along with the results:** View the statements after they are committed, which is the current behavior.
 - **Do not show the MySQL statements:** Only show summary information, such as number of affected rows, and not MySQL statements. This is enabled by default.
- **Create Table:** The **Data Export** feature now has the option to only create the table without inserting the data.

To execute, toggle the **Export Data** button to **Create Table**, and then click.

- The selected schema name is now displayed on top of the MySQL for Excel Database Object Selection window.
- The **Advanced Options** dialogs opened from the Import, Export and Append Data windows now immediately apply the option changes, when before the **Advanced Options** dialog had to be reopened before the changes could be previewed.
- **Edit Data** sessions can now be saved: Using the new **Edit Session** preferences, these sessions were automatically closed after closing an Excel workbook. This data, such as the Workbench connection ID, MySQL schema, and MySQL table name, can now be preserved if the Excel workbook is saved to disk, and available when the Excel workbook is reopened.
- Excel tables are automatically created for any data imported from MySQL to an Excel worksheet, with a name like "Schema.DB-Object-name". The DB object name can be a MySQL table, view, or stored procedure. Options for this feature are listed under **Import Data, Advanced Options**. The newly created Excel tables can be referenced for data analysis in Pivot Tables or reports.

Chapter 9 MySQL for Excel Frequently Asked Questions

Questions

- **9.1:** When I'm using Excel to edit data from a live MySQL database, will my changes overwrite changes made by other users? For example, maybe they used MySQL Workbench to edit the same data at the same time.
- **9.2:** I installed the MySQL for Excel plugin, but can't find it in Microsoft Excel. How do I start it?
- **9.3:** I click on **Edit Data** and after importing the table data into Excel, I can't sort or move columns around. How can I do that?
- **9.4:** When editing a MySQL table's data, the Excel worksheet where the data is dumped is protected. How can unprotect it?
- **9.5:** The MySQL Workbench connections that use SSH tunneling appear grayed out (disabled) in MySQL for Excel. How can I use a SSH connection?

Questions and Answers

9.1: When I'm using Excel to edit data from a live MySQL database, will my changes overwrite changes made by other users? For example, maybe they used MySQL Workbench to edit the same data at the same time.

The [optimistic updates](#) feature checks for external edits and notifies you of their existence before committing any changes. If an external edit is discovered, you can then choose whether or not to overwrite their changes. This option is enabled by default and can be disabled (to use pessimistic updates). Disabling this option means external changes will always be overwritten. In other words, the choice is yours.

9.2: I installed the MySQL for Excel plugin, but can't find it in Microsoft Excel. How do I start it?

The MySQL for Excel plugin is automatically added to Microsoft Excel's data menu when it is installed. Look for the MySQL for Excel icon, by default it will be listed on the right side of the main menu.

If it's not there, then you might have to reinstall the plugin. But before doing so, first check if it's listed under "Add/Remove Programs" in Microsoft Windows. If not, then it has not been installed. Next, check the Excel Add-Ins list. For Office 2007 this is found by clicking the Office logo in Excel (top left corner), click **Excel Options**, then select **Add-Ins**. Is MySQL for Excel listed as a COM Add-in? If so, then consider filing a bug report (bugs.mysql.com), or attempt to reinstall the plugin.

9.3: I click on Edit Data and after importing the table data into Excel, I can't sort or move columns around. How can I do that?

In order to maintain the mapping of rows and columns in the Excel Worksheet against the rows and columns in the MySQL table, no alteration is permitted on the worksheet (i.e. sorting, deleting rows, deleting columns). If you need to alter the data there you can do that by right-clicking the **Edit Data** window and selecting **Exit Edit Mode**.

9.4: When editing a MySQL table's data, the Excel worksheet where the data is dumped is protected. How can unprotect it?

The Excel worksheet is protected to not allow alterations to the order of rows and columns. The password used for the protection is a GUID auto-generated at runtime so that the protection is not violated in any way. If you wish to unprotect the worksheet to manipulate your data, you can do that by right-clicking the **Edit Data** window and selecting **Exit Edit Mode**.

9.5: The MySQL Workbench connections that use SSH tunneling appear grayed out (disabled) in MySQL for Excel. How can I use a SSH connection?

This is a known limitation of MySQL for Excel. MySQL for Excel uses MySQL Connector/NET to connect and communicate with MySQL databases. Connector/NET does not have SSH support, so the behavior will change if Connector/NET supports it in the future.