MySQL for Excel Guide

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Abstract

This document describes MySQL for Excel, which enables you to work with a MySQL database from within Microsoft Excel.

For release notes detailing the changes in each release of MySQL for Excel. see MySQL for Excel Release Notes.

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Preface and Legal Notices

This document describes MySQL for Excel, which enables you to work with a MySQL database from within Microsoft Excel.

Legal Notices

Chapter 1 Introduction

MySQL for Excel enables you to work with a MySQL database from within Microsoft Excel. MySQL data can be imported into Excel, Excel data can be exported into MySQL as a new table or appended to a current table, and MySQL for Excel enables you to edit the MySQL data directly from within Excel.

Visit the MySQL for Excel forum for additional MySQL for Excel help and support.

For release notes detailing the changes in each release of MySQL for Excel, see MySQL for Excel Release Notes.

Chapter 2 Installing and Configuring

MySQL for Excel is a product for Microsoft Windows, and it is installed with MySQL Installer. And typically you will not be required to install or configure additional tools to use MySQL for Excel.

> **Note**
>
> To install, download and execute the MySQL Installer. Select the MySQL for Excel product and then proceed with the installation. See the MySQL Installer manual for additional details.

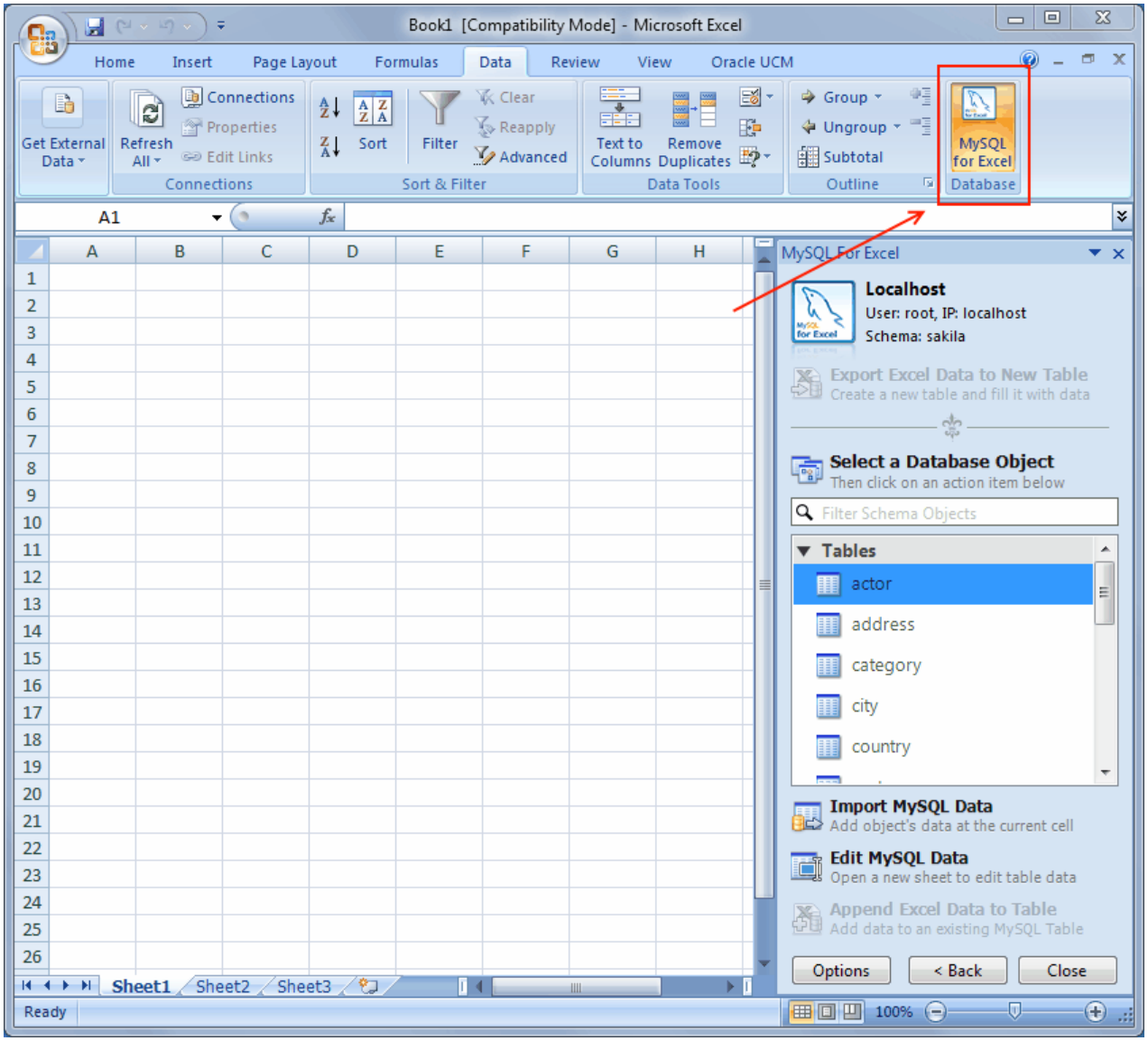
MySQL for Excel Requirements

The MySQL Installer installation process will check if these requirements are met, or notify you if further action is required before proceeding with the installation.

- .NET Framework 4.0 (Client or Full Profile).
- Microsoft Office Excel 2007 or greater, for Microsoft Windows.
- Visual Studio Tools for Office 4.0, and MySQL Installer may install this for you.
- An available MySQL Server connection.

MySQL for Excel is loaded and executed by selecting the Data menu tab in Excel, and then choosing the "MySQL for Excel" Database icon. This opens a new Excel sidebar with the available MySQL for Excel options. The navigation bar with the MySQL for Excel icon is shown in the following screenshot:

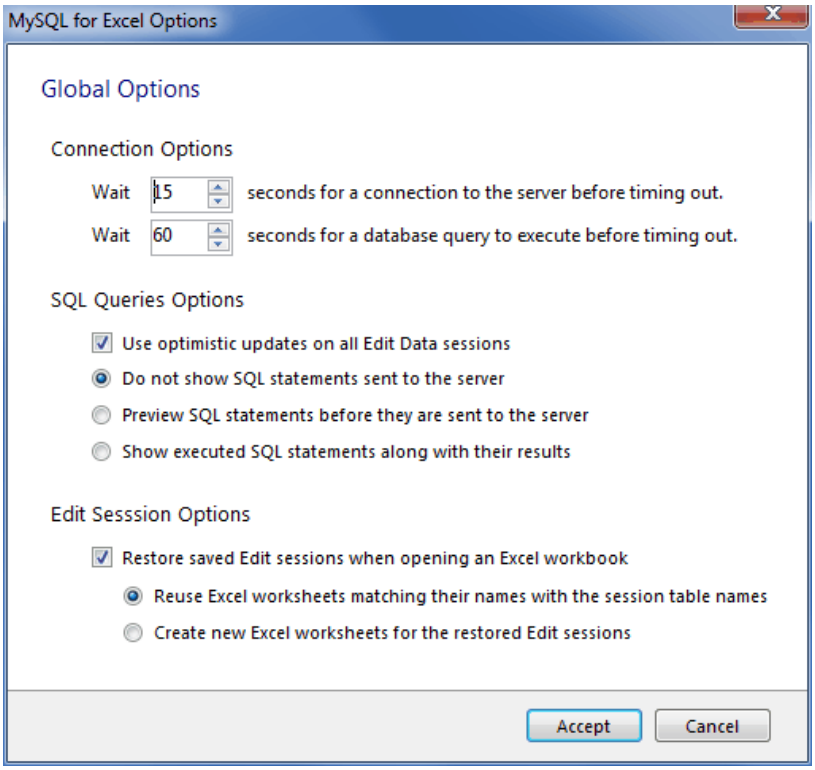
Figure 2.1 The MySQL for Excel navigation bar



Configuration

While each action, such as **Import MySQL Data**, has its own set of options, this section describes the global options that affect the entire plugin.

Figure 2.2 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. Enabled by default.
  - ( ) Do not show SQL statements sent to the server. Enabled by default.
  - ( ) Preview SQL statements before they are sent to the server. Disabled by default.
  - ( ) Show executed SQL statements along with their results. Disabled by default.
- Edit Session Options:
  - [ ] 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.

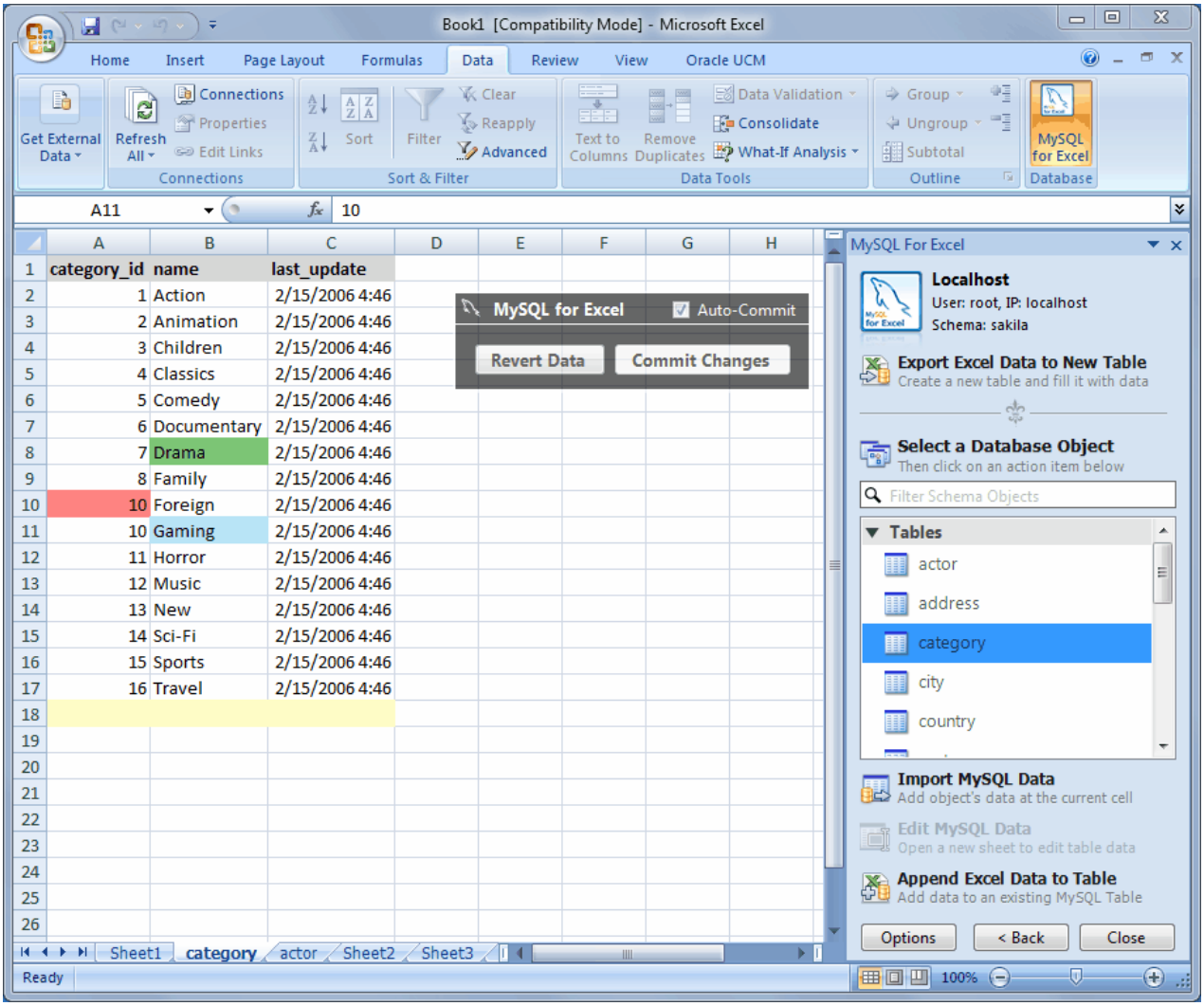
Chapter 3 Edit MySQL Data in Excel

MySQL for Excel enables you to load and edit MySQL data directly from Microsoft Excel. Changes are immediately committed if the **Auto-Commit** option is enabled, or done manually by pressing Commit Changes.

The example below uses the `category` table of the example `sakila` database, but the screen will look the same for any table. Within MySQL for Excel, **Open a MySQL Connection**, click the `sakila` schema, Next, select the `category` table, click **Edit MySQL Data**, then choose Import to import the data into a new Microsoft Excel worksheet for editing.

> **Note**
>
> For additional information about the importing procedure, see Chapter 4, *Import MySQL Data into Excel*.

Figure 3.1 Editing table data with MySQL for Excel



category_id	name	last_update
1	Action	2/15/2006 4:46
2	Animation	2/15/2006 4:46
3	Children	2/15/2006 4:46
4	Classics	2/15/2006 4:46
5	Comedy	2/15/2006 4:46
6	Documentary	2/15/2006 4:46
7	Drama	2/15/2006 4:46
8	Family	2/15/2006 4:46
10	Foreign	2/15/2006 4:46
10	Gaming	2/15/2006 4:46
11	Horror	2/15/2006 4:46
12	Music	2/15/2006 4:46
13	New	2/15/2006 4:46
14	Sci-Fi	2/15/2006 4:46
15	Sports	2/15/2006 4:46
16	Travel	2/15/2006 4:46

The background color represents the status of each cell, and there are four distinct colors that are used while editing table data:

Note

The Green and Blue colors were switched in MySQL for Excel 1.2.0.

Table 3.1 Background cell colors

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.
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.

In our example, the green "Drama" field was changed and then committed first, then the blue "Gaming" field was changed but not committed, and then **Auto-Commit** was enabled before changing the "9" to a "10" in column 10, which generated an error because this commit would have added a duplicate value as primary key.

Chapter 4 Import MySQL Data into Excel

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

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.

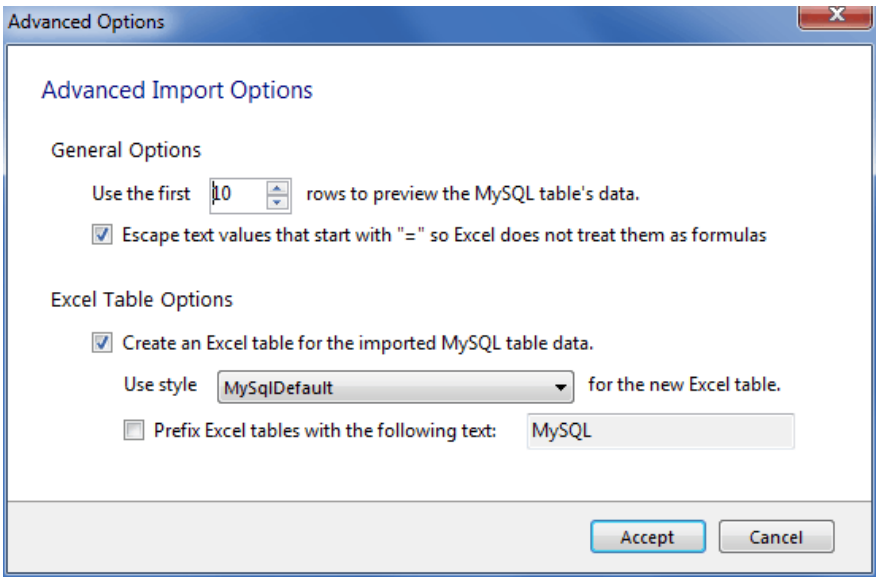
Importing a table

The dialog while importing a table includes the following options:

- **Include Column Names as Headers**: Enabled by default, this inserts the column names at the top of the Microsoft Excel spreadsheet 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.

The Advanced Options include:

Figure 4.1 Importing table data with MySQL for Excel: Advanced options



General Options:

- Use the first [ ] rows to preview the MySQL tables data. Defaults to 10.

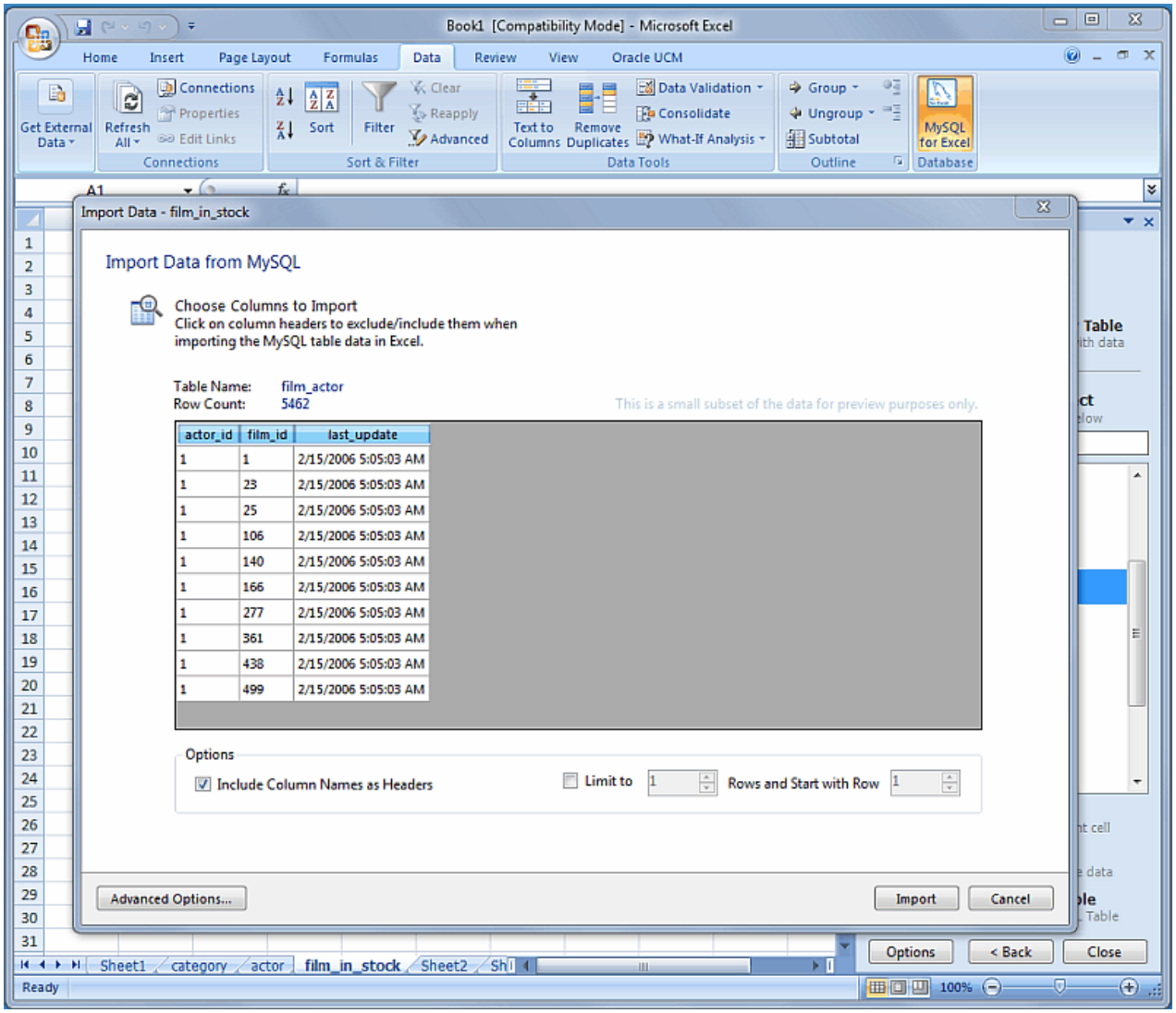
- [] Escape text values that start with "=" so Excel does not treat them as formulas. Enabled by default.

Excel Table Options:

- [] Create an Excel table for the imported MySQL table data. Enabled by default.
- 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 4.2 Importing table data with MySQL for Excel



Importing a view or procedure

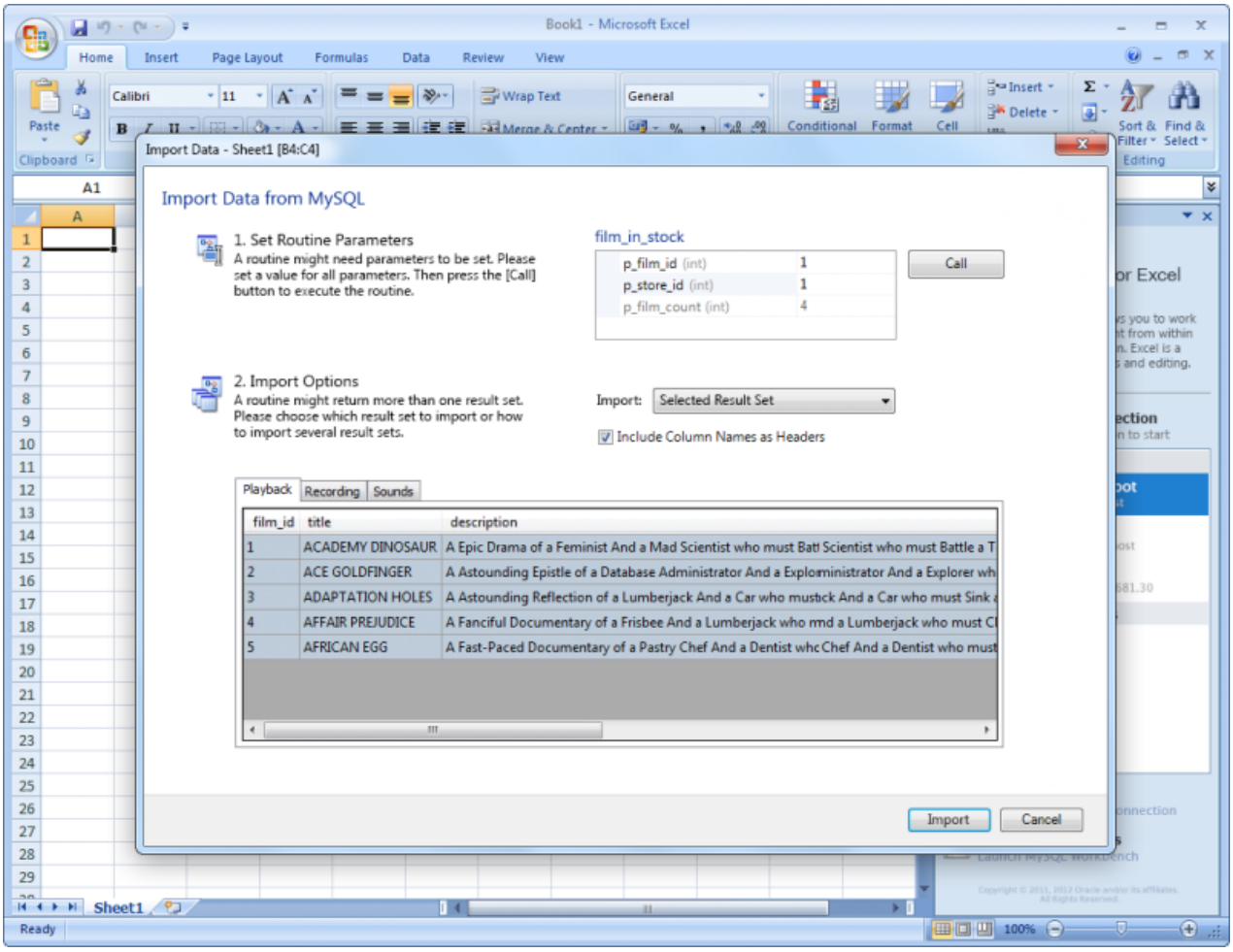
Importing a view or procedure displays a similar dialogue, but with the following options:

- **Include Column Names as Headers**: Enabled by default, this will insert the column names at the top of the Excel spreadsheet 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 dialogue like the following is displayed after importing a procedure and pressing the Call button to invoke the stored procedure:

Figure 4.3 Importing called stored procedure data with MySQL for Excel



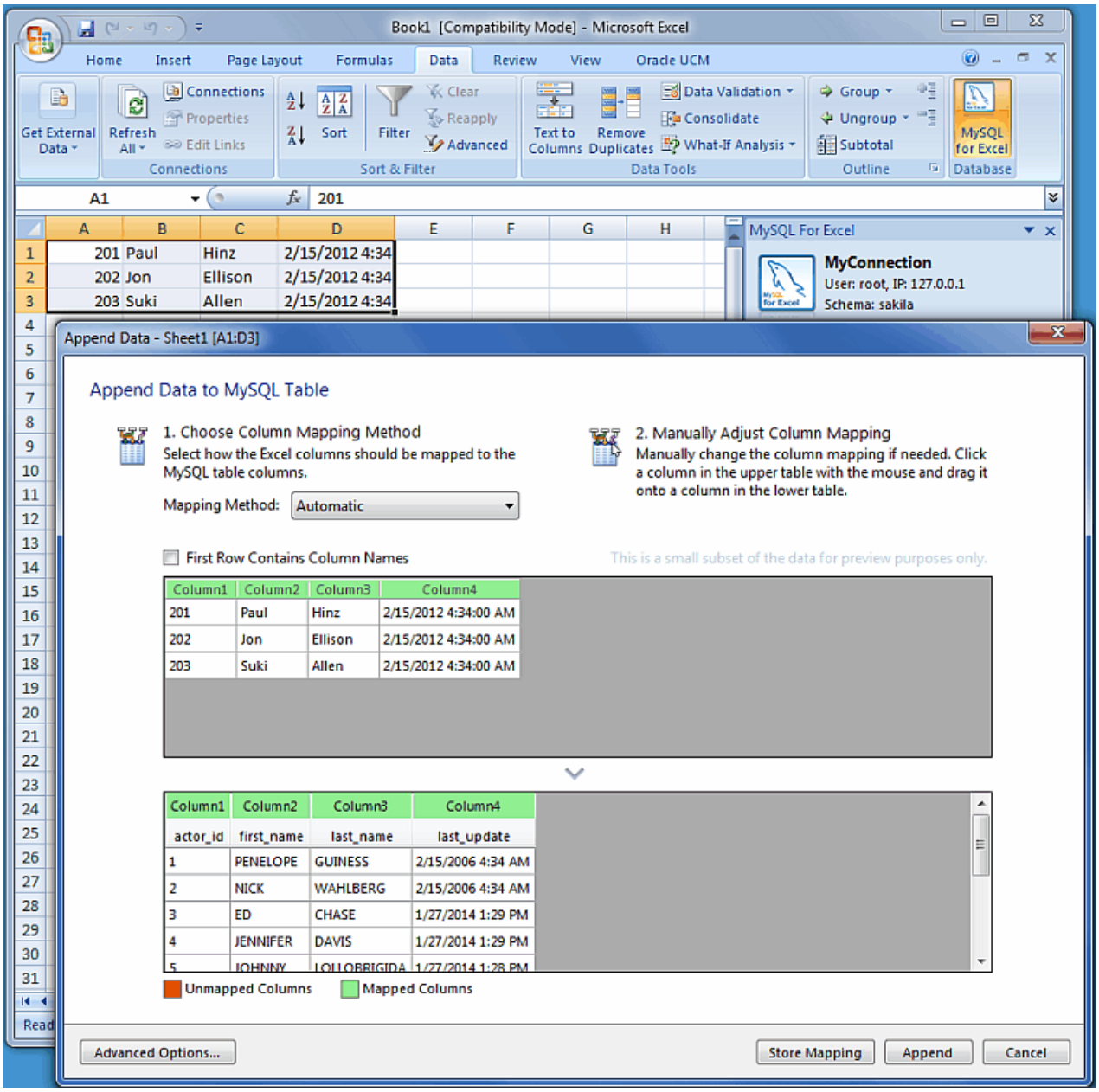
Chapter 5 Append Excel Data into MySQL

Data from a Microsoft Excel spreadsheet 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 can be tweaked if every column cannot be matched automatically. The following screenshot shows two columns of Excel data, and the preview dialog after choosing **Append Excel Data to Table**:

Figure 5.1 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 spreadsheet) 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.

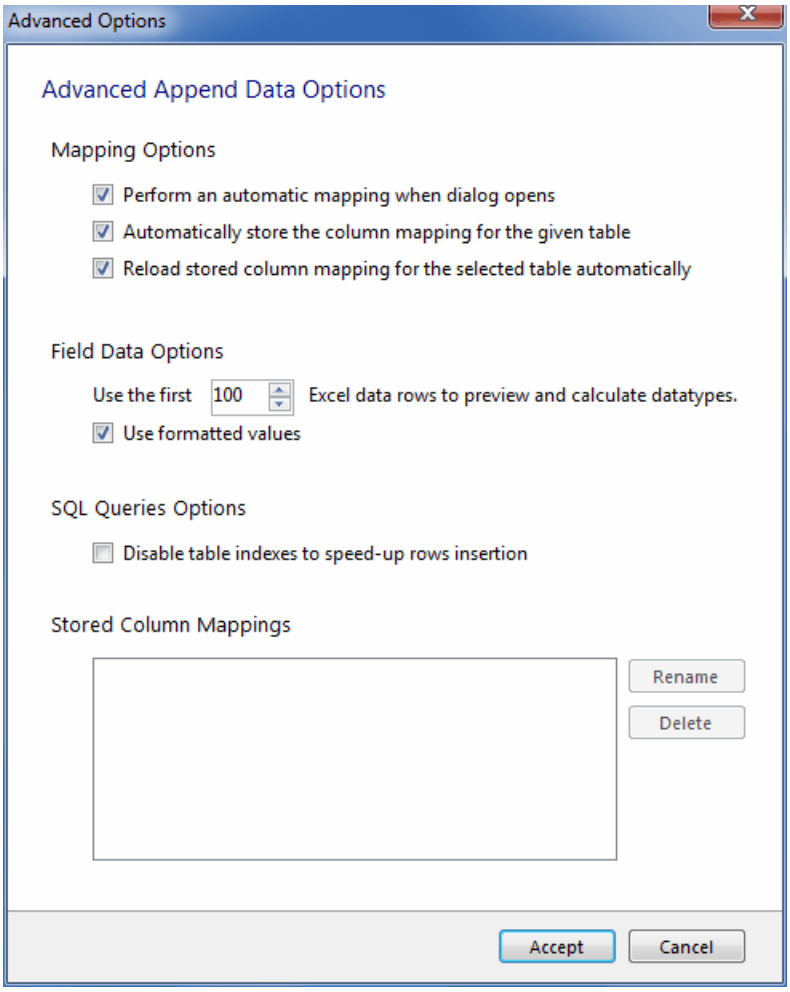
  If the automatic process finds zero columns to match, then a simple 1 to 1 matching routine is attempted. Meaning, SourceColumn #1 to TargetColumn #1, SourceColumn #2 to TargetColumn #2, and so on.
- **Manual**: The source column names are manually dragged (matched) with the target column names. Manual 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.

Advanced Options

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

Figure 5.2 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**:

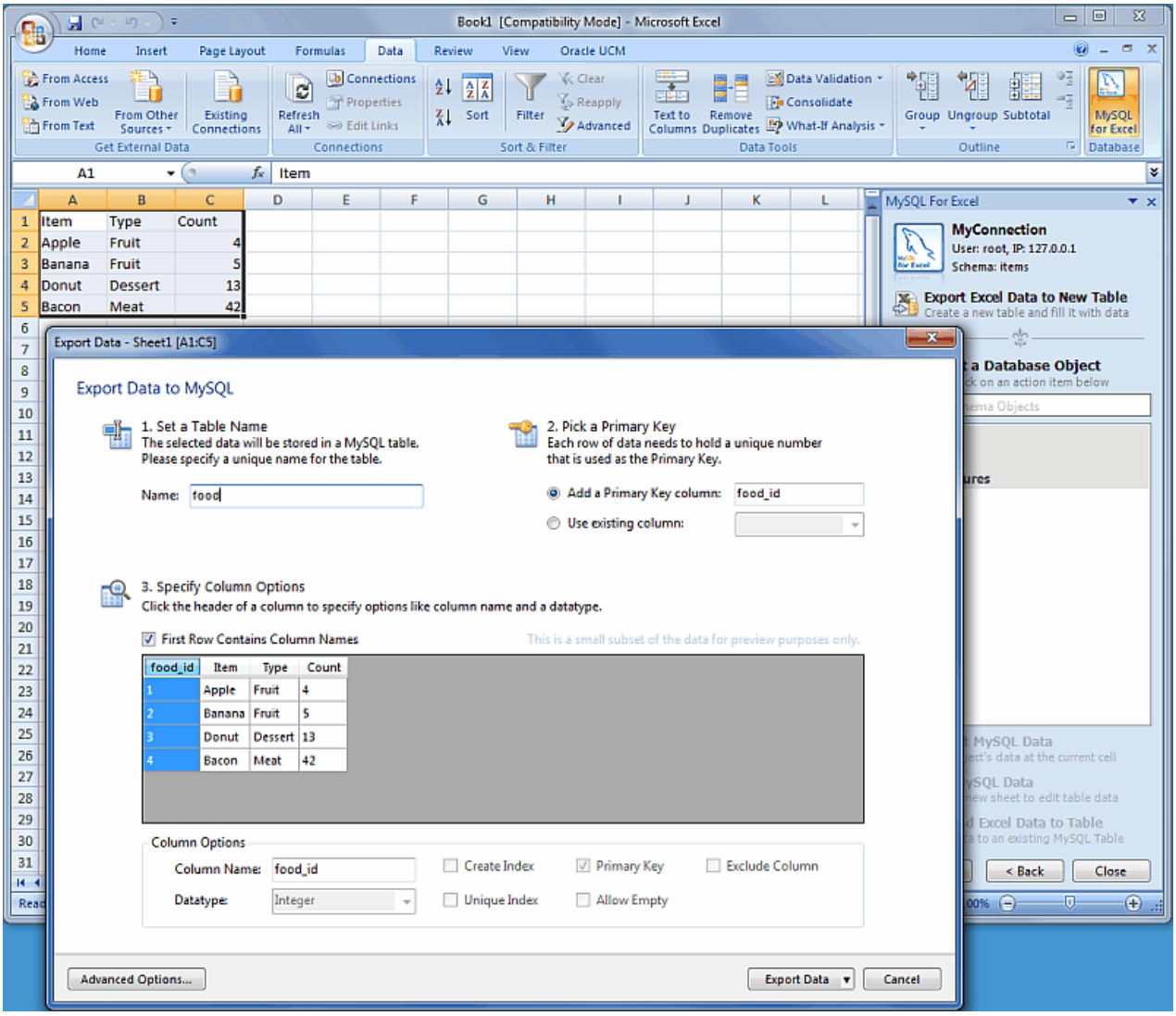
- `Disable table indexes to speed-up rows insertion`: This option is disabled by default, since you must make sure that if unique indexes are present, that the data mapped to that column does not contain duplicate data. This option was added in MySQL for Excel 1.2.1.

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 6 Export Excel Data into MySQL

Data from a Microsoft Excel spreadsheet can be exported to a new MySQL database table by using the **Export Excel Data to New Table** option. Exporting data looks like so:

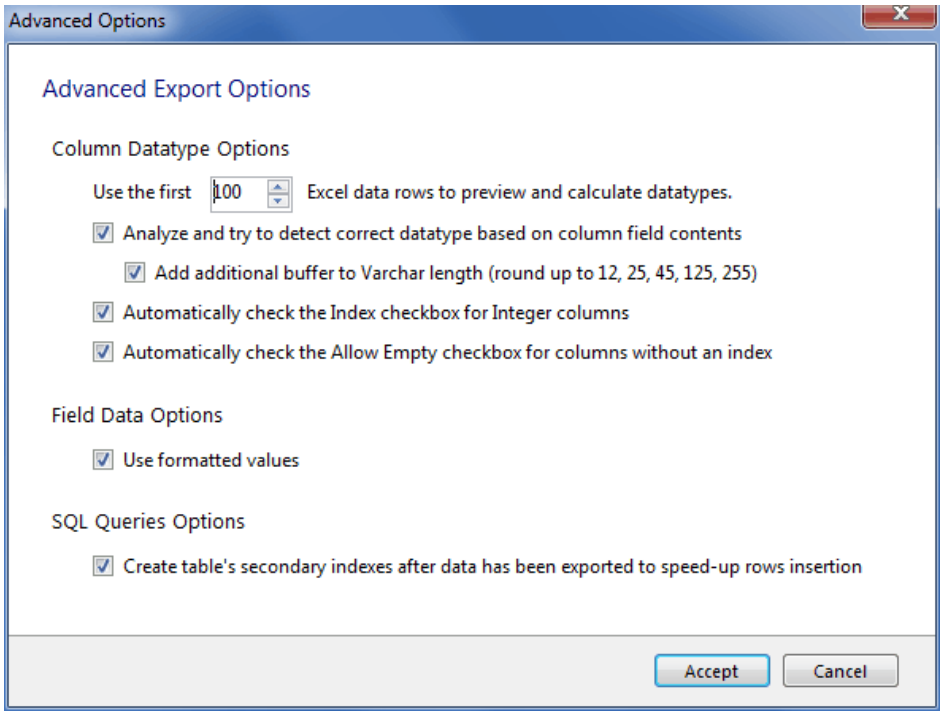
Figure 6.1 Exporting Excel data to MySQL



Advanced Export options

Several advanced options enables you to tweak the exported data. The advanced options dialog looks like so:

Figure 6.2 Exporting Excel data to MySQL (Advanced options)



- **Column Datatype 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.
  - 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 spreadsheet.
  - 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** checkbox checked will automatically enable the **Allow Empty** configuration option.
- **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**:

- 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) since reindexing 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, and was added in MySQL for Excel 1.2.1.
- Note: This 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 panel. If disabled (default), these columns will exist but have the **Exclude Column** option checked. This option was added in MySQL for Excel 1.1.0.

Appendix A Third Party Licenses

Use of any of this software is governed by the terms of the licenses that follow.