Drill Through Guide

Axiom Software

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axiom software

Contents

Overview

Using the *drill through* feature, you can drill a particular row of data in a file to see the sub-GL detail or transactional data associated with that value. For example, you can drill through a sales value in a report to see the detailed sales transactions associated with that value.

Drill-through drilling requires setup before it is available for use in your files. The following setup activities are required:

- The desired sub-GL or transactional data must be imported into Axiom Software. Drill through cannot be used to return data that is stored in outside systems.
- Drill-through definitions must be defined in Axiom Software to identify the mapping relationships between the source data (the data that you want to be able to drill) and the target data.

Once drill-through definitions have been created, you can drill in any Axiom file that queries the specified source data and where the file meets the drill-through requirements. While any Axiom file is eligible for drill-through, certain design considerations should be applied during the file setup to provide the most useful and intuitive drilling experience for users.

Importing data for drill through

In order to drill through data in an Axiom file, the desired sub-GL or transactional data must be imported into the Axiom Software database using an import package. Drill through cannot be used to access data stored in an outside system.

The detailed data can be held in any Axiom data table, using any name and any format. The drill-through feature does not enforce any restrictions about how the detailed data is stored—all of the mapping information between the source data and the target detailed data is defined in the drill-through definition.

For more information on creating an import package, see Axiom Planning Help: System administration > Importing data. Once the import is created, you can run the import as needed, or schedule it for automated execution.

Setting up drill-through definitions

If you want users to be able to "drill through" the data in one table to the detailed sub-GL data in another table, then you must set up drill-through definitions.

A drill-through definition does the following:

- Specifies the target table that holds the detailed data
- Specifies the number of drilling periods (columns) for the definition
- Defines the filters to determine the appropriate data to return when drilling a specific period
- Maps the drilling periods to one or more column sequences in data tables

For example, if a report is displaying actuals data from the GL2018 table, you want users to be able to "drill through" to the transactions data held in the GLDetail table. To do this, you need to set up a drill-through definition for the GLDetail table that maps the data in that table to the appropriate columns in the GL2018 table.

About drill-through definitions

Drill-through definitions map the data in a specified target table to a column sequence in another data table. This allows users to "drill through" column data in the data table to the detailed data in the target table.

For example, imagine a report that displays actuals data from the GL2018 table. The user wants to see the detailed transactional data for the January 2018 value (column M1 from the GL2018 table). When the user selects to drill through that value, Axiom Software needs to know:

What table contains the associated detailed data for this value?

For example, you may have a table named GLDetail that holds the detailed transactional data for current year's actuals. Axiom Software needs to know that when you drill through data in the GL2018 table, the target table for this drill is GLDetail.

You may have one table that always holds the detailed data for the current year, or you may have multiple tables to hold detailed data per year (for example, GLDetail2018, GLDetail2017). You may also have multiple tables to hold different types of detailed data (for example, GLDetail, APDetail, RevDetail).

What filter needs to be applied to the target table to result in the associated detailed data for this value?

For actuals data and planning data, time is represented in the data table by using *column sequences*. For example, the GL2018 table may have a column sequence of M1-M12, representing 12 months of actuals data (aliases CYA1-CYA12).

However, data tables that hold detailed data typically define time as a "dimension," using a key column such as YearMo (year and month of the data). In order to drill from an actuals / plan data table to a detailed data table, Axiom Software needs to be able to map each column in the column sequence to the appropriate keys of the YearMo column.

For example, the first column of the sequence, M1, corresponds to YearMo values of 201801. This is represented as a filter applied to the detailed table: `YearMo=201801`.

Components of a drill-through definition

Each drill-through definition consists of the following:

- The number of periods (columns) in the definition. This determines the number of filters to define, and the valid column sequences that you can map to. If you want to map to a 12 column sequence, then the definition must be 12 columns.
- The target table for the definition. This is the table that data will be queried from when drilling through data.
- The column filters to be applied when drilling. These column filters will be matched up to the column sequences when drilling. For example, the first column in the sequence matches up with the first column filter, and so on.
- The column sequences to define the source data eligible for drilling. In most cases each drill-through definition will be associated with only one column sequence. For example, if the target table GLDetail contains transaction data for the current year, then it will probably only map to the sequence M1-M2 of the GL2018 table. However, if it makes sense for other sequences in the same table or in other tables to map to the same set of data, then you can do so.
- The columns of the target table to display when drilling.

Requirements of the target table

There are no specific requirements for the structure of the target table, though typically this table will share certain key columns with the source tables for the mapped sequences, such as Acct and Dept.

What determines a valid drill-through context has more to do with the setup of the current report rather than the structure of the source and target tables. When a drill through is initiated from a report, a filter is applied to the drill-through table that includes the following:

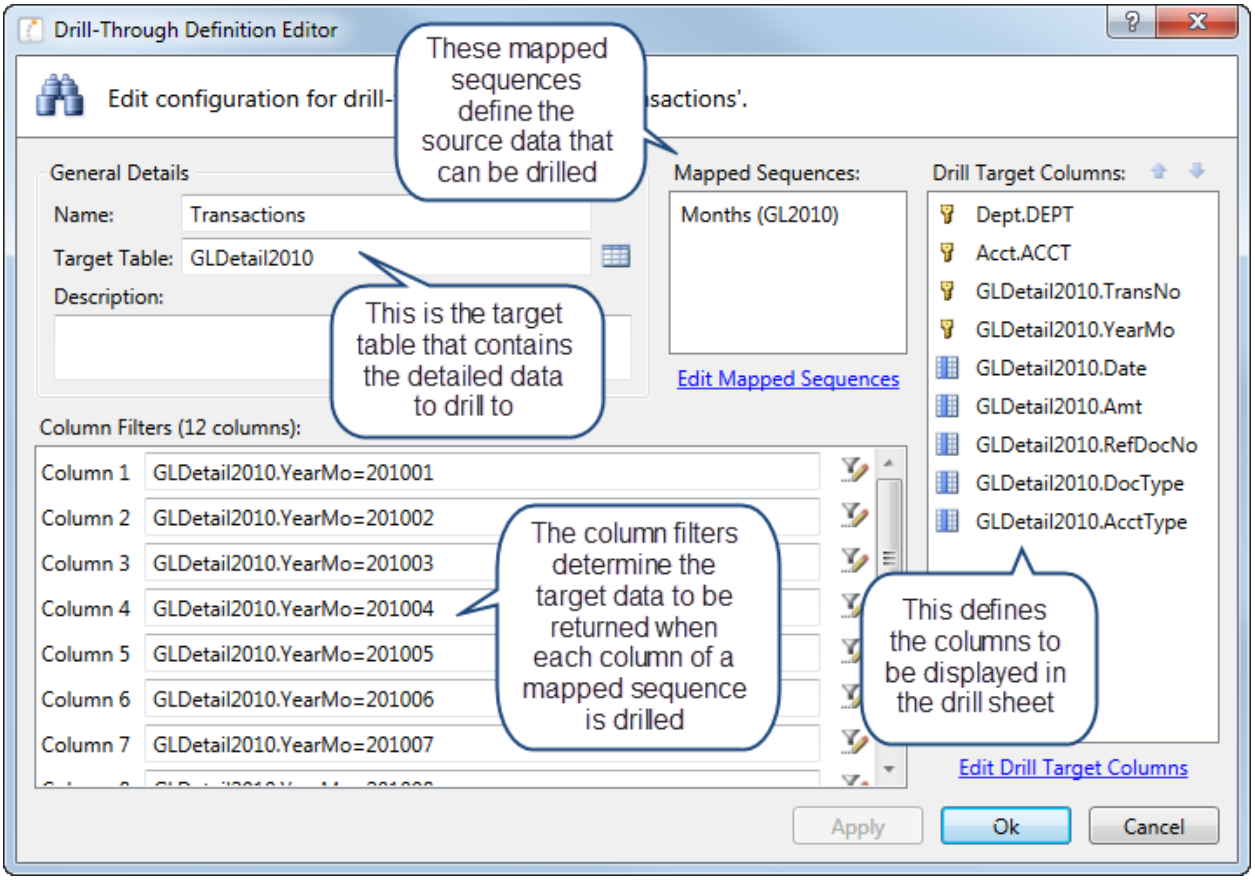
- The dimensionality of the current row being drilled (determined by the sum by of the Axiom query or the filter for the GetData function)
- Any sheet filters defined for the sheet

- Any filters applied to the Axiom query, such as the data filter or column filters (if drilling an Axiom query)

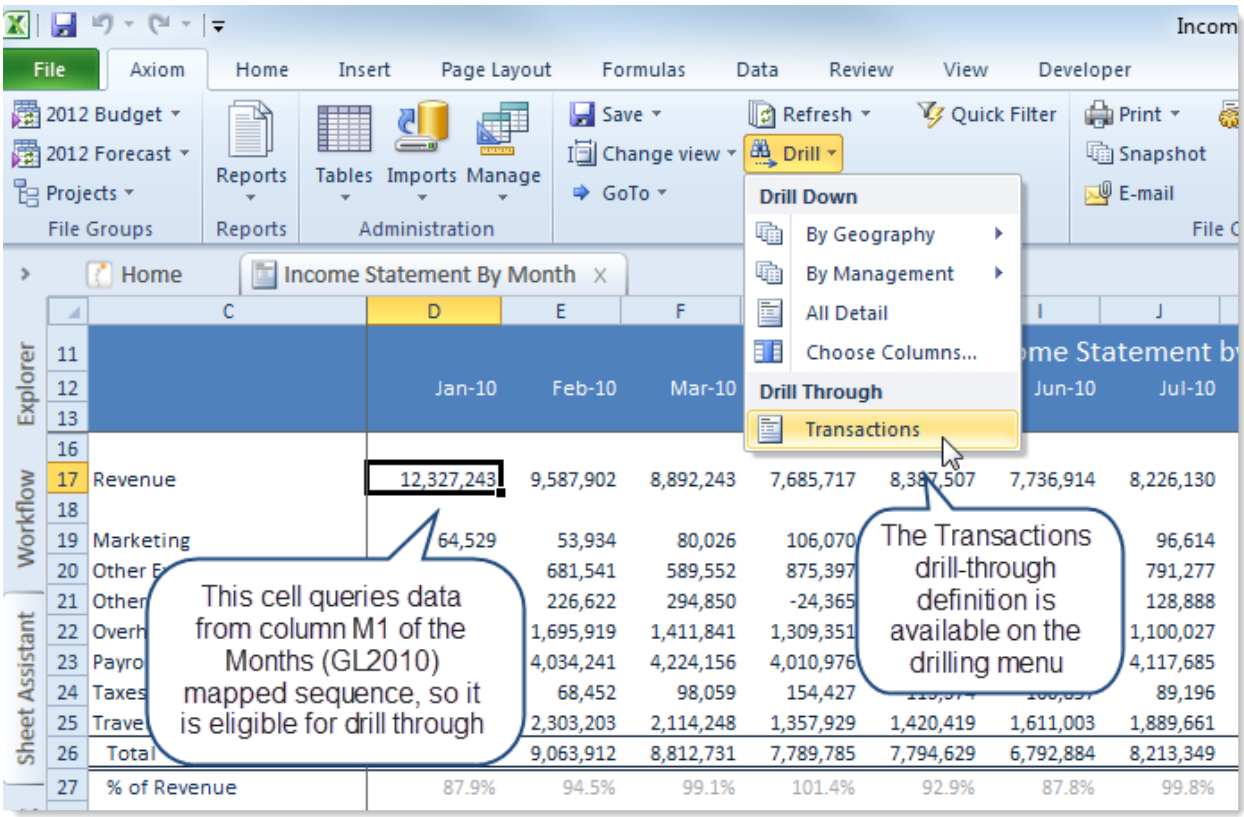
If any of these areas use columns that cannot be applied as filters to the target table, then the drill will fail with an invalid filter context. Therefore, the more similarities between the source and target tables (especially having common key columns with lookups), the greater the likelihood that the current dimensionality and filters applied in the report will apply to the target table. However it is also possible that the source and target tables could share only one common column, and as long as the dimensionality and filters of the report only use that common column, the drill-through context will be valid.

Drill-through example

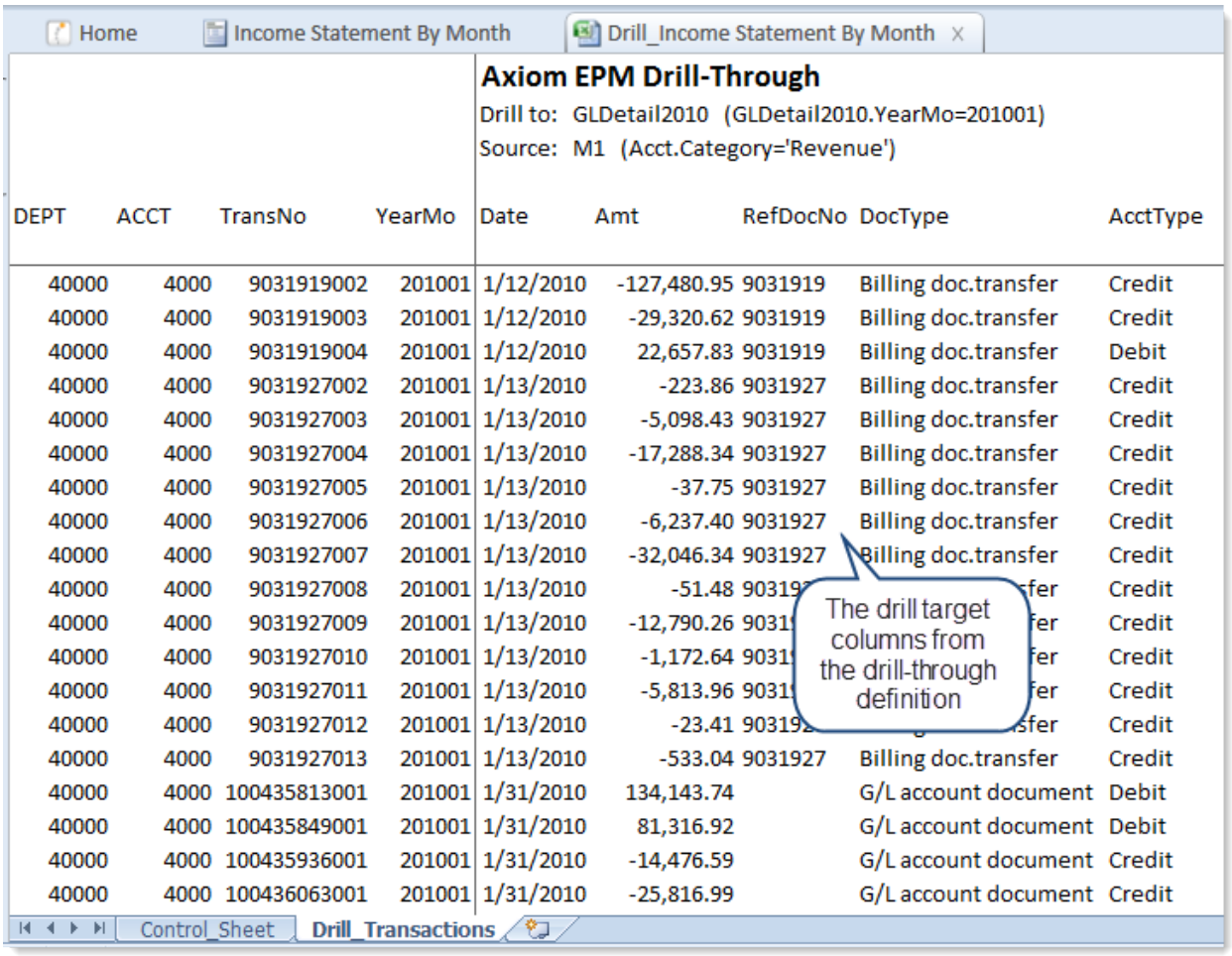
The following shows an example drill-through definition, an example file eligible to be drilled, and the example drill-through results.



Example drill-through definition



Example report to be drilled



Example resulting drill sheet

Managing drill-through definitions

If you want to enable drill-through drilling in Axiom files, then you must define a drill-through definition for each target table / source sequence that you want to be able to drill.

You can create, edit, and delete drill-through definitions by using the **Drill-Through Manager**. Only administrators or users with the **Administer Tables** security permission can access this dialog.

Adding a drill-through definition

New drill-through definitions can be added at any time. Users can drill through data for the associated sequence as soon as the definition has been saved.

Before you can create a drill-through definition, the following components must already be in place:

- The desired target table must already be created in the database.
- The desired source table must already be created in the database, and the columns that you want to drill must be part of a column sequence defined on that table. In most cases, these column sequences already exist for other purposes (such as for calculated fields), so you do not need to create them specially for drill-through definitions. If you do need to create a new sequence, see Axiom Planning Help: System administration > Tables > Column sequences.

Only administrators and users with the **Administer Tables** permission can add a drill-through definition.

To create a new drill-through definition:

1. On the **Axiom** tab, in the **Administration** group, click **Tables > Table Administration > Drill-Through Manager**.
2. In the **Drill-Through Manager** dialog, click **New** +.
3. In the **Number of Columns** dialog, type the number of columns for this drill-through definition, and then click **OK**.

   This number must correspond to the number of columns in the sequences that you want to map to. For example, if this definition is intended to allow users to drill CYA data (current year actuals), and that sequence is 12 columns, then the definition must have 12 columns.

   NOTE: Once you specify the number of columns for the definition, it cannot be changed.

   The **Drill-Through Definition Editor** opens.
4. In the **General Details** section, complete the following items:

Item	Description
Name	The name of the drill-through definition. This name will display to users on the **Drill** menu, so it should be brief and intuitive. For example, if the definition defines a drill to transaction-level detail, the name could be "Transactions" or "Transaction Detail".
Target Table	The name of the table that provides the drill-through data. For example, actuals data may be stored in a table named GL2018, and you want to be able to drill that table to the transaction data held in the GLDetail table. In this case GLDetail is the target table.
Description	Optional. A description for the drill-through definition. The description only displays in the Drill-Through Manager.

5. In the **Mapped Sequences** section, specify the associated column sequences for this definition. These sequences define the columns that users can drill in Axiom files.

NOTE: Although this section allows you to specify multiple sequences, in most cases each drill-through definition will only have one selected sequence. Each drill-through definition has one set of column filters to determine the appropriate drill data in the target table, so if you do specify multiple sequences, they must be able to use the same column filters. This will only apply in certain rare cases.

a. Click **Edit Mapped Sequences**.

b. In the **Select Sequences** dialog, add the column sequences that you want to map to this definition.

   For example, if this drill-through definition is to enable drilling on actuals data from the GL2018 table, you would select the 12-month sequence defined for that table (most likely named "M" or "Months").

   To find the desired column sequences, you can filter the list by typing into the filter box, or you can change the view to display tables by table name, table type, or folder.

   This dialog displays any table that has a column sequence that matches the number of columns for the drill-through definition. For example, if the drill-through definition has 12 columns, you can select any column sequence that has 12 literal columns or 12 effective columns.

   "Effective columns" takes into account the start period of the sequence. For example, if the sequence has 6 columns but the start period is 7, that sequence has 12 effective columns because the sequence covers periods 7-12. When you drill on the "first" column of the sequence, it will return data based on the column 7 filter in the drill definition.

   You can select multiple sequences, but each sequence must be able to use the same column filter to determine the appropriate drill data in the target table.

c. Click **OK** to return to the **Drill-Through Definition Editor**.

6. In the **Column Filters** section, specify the drill filter to associate with each column in the mapped sequence.

   This is the filter to apply to the target table when drilling on a column from the mapped sequence. For example, if you are drilling on column 1 of the mapped sequence (M1 or CYA1), the filter to apply to the target table would be something like: `YearMo=201801`.

   You must specify a filter for each column. You can type the filter into the filter box, or you can use the filter wizard  .

   IMPORTANT: The column filters determine the data that will be returned when performing "drill-through" drilling. It is important that the column filters correspond appropriately to the columns in the mapped sequences, or else drill results will not be as you expect.

7. In the **Drill Target Columns** section, specify the columns that you want to display on the drill sheet.

a. Click **Edit Drill Target Columns**.

b. In the **Select Columns** dialog, add the columns that you want to display on the drill sheet.

   You can select any column from the target table, and any column from a lookup table for the target table. For example, if the target table is GLDetail and uses key columns of DEPT and ACCT, then you can select any column from the GLDetail table, the DEPT table, and the ACCT table.

c. Click **OK** to return to the **Drill-Through Definition Editor**.

d. In the **Drill Target Columns** list, change the order of columns as desired.

   Columns will display in drill sheets in the order listed here. To move a column, select the column in the list and then use the arrows to move it up or down.

8. Click **OK** to save the definition.

Users can drill-through using the definition as soon as it is saved.

Cloning an existing drill-through definition

You can clone an existing drill-through definition to create a new definition, instead of creating the definition from scratch. Only administrators and users with the **Administer Tables** permission can clone a drill-through definition.

To clone a drill-through definition:

1. On the **Axiom** tab, in the **Administration** group, click **Tables > Table Administration > Drill-Through Manager**.
2. In the **Drill-Through Manager** dialog, select the definition that you want to clone, and then click **Clone**.

   The **Drill-Through Definition Editor** dialog opens, containing a copy of the cloned definition.
3. Edit the settings as desired for the new definition, and then click **OK**.

   For more information on the available settings, see Drill-through definition properties.

Editing a drill-through definition

Drill-through definitions can be edited at any time. Changes take effect immediately, meaning that any new drills initiated after the changes are saved will use the new settings.

NOTE: The number of columns for a drill-through definition cannot be changed. All other properties can be edited.

Only administrators and users with the **Administer Tables** permission can edit a drill-through definition.

To edit a drill-through definition:

1. On the **Axiom** tab, in the **Administration** group, click **Tables > Table Administration > Drill-Through Manager**.

2. In the **Drill-Through Manager** dialog, select the definition that you want to edit, and then click **Edit**.
3. In the **Drill-Through Definition Editor** dialog, edit the definition settings as desired.

   For more information on the available settings, see Drill-through definition properties.

   If you change the target table for the definition:

   - Any columns in the **Drill Target Columns** section will be cleared. You must select new columns that relate to the new target table.
   - Column filters are retained and validated against the new table. If the column filter is not valid in the context of the new table, the filters are highlighted in red and must be changed.
4. Click **Apply** or **OK** to save your changes.

Deleting a drill-through definition

You can delete a drill-through definition at any time. If the definition is deleted, that drill-through path will no longer be available to users in Axiom files.

Only administrators and users with the **Administer Tables** permission can delete a drill-through definition.

To delete a drill-through definition:

1. On the **Axiom** tab, in the **Administration** group, click **Tables > Table Administration > Drill-Through Manager**.
2. In the **Drill-Through Manager** dialog, select the definition that you want to delete, and then click **Delete**.
3. At the confirmation prompt, click **Yes**.

The drill-through definition is deleted.

Drill-through definition properties

The following properties are available for drill-through definitions in the **Drill-Through Definition Editor** dialog.

General Details

This section defines the basic details for the drill-through definition.

Item	Description
Name	The name of the drill-through definition. This name will display on the drill menu, so it should be brief and intuitive. For example, if the definition defines a drill to transaction-level detail, the name could be "Transactions" or "Transaction Detail".
Target Table	The name of the table that provides the drill-through data. You can select any data table. For example, actuals data may be stored in a table named GL2018, and you want to be able to drill that table to the transaction data held in the GLDetail table. In this case GLDetail is the target table. If you change the target table for an existing definition: • Any columns in the **Drill Target Columns** section will be cleared. You must select new columns that relate to the new target table. • Column filters are retained and validated against the new table. If the column filter is not valid in the context of the new table, the filters are highlighted in red and must be changed.
Description	Optional. A description for the drill-through definition. The description only displays in the Drill-Through Manager.

Mapped Sequences

This section specifies the column sequences that are mapped to this drill-through definition. These are the columns that users will be able to drill in Axiom files.

NOTE: Although this section allows you to specify multiple sequences, in most cases each drill-through definition will only have one selected sequence. Each drill-through definition has one set of column filters to determine the appropriate drill data in the target table, so if you do specify multiple sequences, they must be able to use the same column filters. This will only apply in certain rare cases.

To add or remove a sequence, click **Edit Mapped Sequences** to open the **Select Sequences** dialog. This dialog displays any table that has a column sequence that matches the number of columns for the drill-through definition. For example, if the drill-through definition has 12 columns, you can select any column sequence that has 12 literal columns or 12 effective columns.

"Effective columns" takes into account the start period of the sequence. For example, if the sequence has 6 columns but the start period is 7, the sequence has 12 effective columns because the sequence covers

periods 7-12. When you drill on the "first" column of the sequence, it will return data based on the column 7 filter in the drill definition.

To find the desired column sequence, you can filter the list by typing into the filter box, or you can change the view to display tables by table, table type, or folder.

Column Filters

This section defines the drill filters to associate with each column in the mapped sequence.

This filter is applied to the target table when drilling on a column from the mapped sequence. If you drill the first column of the sequence, the filter specified for Column 1 is applied to the drill query. For example, if the mapped sequence is "Months" from table GL2018 (columns M1-M12), then the filter that you want applied when column M1 is drilled is something like `YearMo=201801`.

You must specify a filter for each column. You can type the filter into the filter box, or you can use the filter wizard  .

IMPORTANT: The column filters determine the data that will be returned when performing "drill-through" drilling. It is important that the column filters correspond appropriately to the columns in the mapped sequences, or else drill results will not be as you expect.

Drill Target Columns

This section defines the columns to be displayed on the drill sheet when this drill is executed.

To add or remove a column, click **Edit Drill Target Columns** to open the **Select Columns** dialog.

You can select any column from the target table, and any column from a lookup table for the target table. For example, if the target table is GLDetail and uses key columns of DEPT and ACCT, then you can select any column from the GLDetail table, the DEPT table, and the ACCT table.

Columns will display in drill sheets in the order listed in the **Drill Target Columns** list. To move a column, select the column in the list and then use the arrows to move it up or down.

Setting up files for drill through

Once drill-through definitions have been created, any file that queries the specified source data and that meets the drill-through file requirements can be drilled. This section explains the file configurations that support drill through, explains how drilling data is returned, and discusses design considerations to help you achieve an optimal drill through experience for users.

Drill-through requirements

This topic explains the requirements to "drill through" the data in an Axiom file. Plan files and reports support drill-through drilling.

NOTE: You do not need to add a Drilling Control Sheet to a file in order to use the drill through features. The Drilling Control Sheet is only for the custom drilling feature.

General drilling requirements

In all cases, the sheet must meet the following requirements in order for drilling to be available:

- The sheet must be defined on the Control Sheet.
- The **Enable Drilling** option must be **On** for the sheet. This is the default setting.

If the sheet is not defined on the Control Sheet, or if Enable Drilling is Off, then the Drill button will be disabled even if drillable content exists on the sheet.

Data that can be drilled

The following data values are eligible for drill-through drilling:

- Cells that contain a value from a column in a sequence that belongs to a drill-through definition. The value can come from an Axiom query or a GetData function. The query can use the literal column name or an alias.

  NOTE: Calculated fields cannot be drilled, even if the calculated field uses a sequence that belongs to a drill-through definition. The value must come directly from the literal column.

- If the value came from an Axiom query, then the query must be enabled on the Control Sheet in order to drill it, and **Drillable** must be set to **On**.
- Any filter applied to the value—such as the Data Filter for an Axiom query, or a Sheet Filter—must also be applicable to the target table.

Data that cannot be drilled

The following data configurations are not eligible for drill-through drilling:

- Horizontal Axiom queries.
- Axiom queries where the primary table is a system table (such as Axiom.Aliases).
- GetData functions that are nested within a larger formula. The formula must be simply `=GetData (arguments)`, or else the value is not eligible for drilling.

Design considerations for drill-through drilling

The following design considerations and special behaviors apply when drilling through data in an Axiom file. For more information on how the drill sheet itself is created, see How the "drill-through" drill sheet is created.

Drilling behavior with alternate aggregations

Use of alternate aggregations on an Axiom query or a GetData function have no impact on whether a cell is eligible for drill through, and no impact on the results of that drill. If the source column is eligible for

drill through, the drill will be performed regardless of the aggregation setting.

Drilling behavior with data conversions

If data conversion is enabled for the Axiom query or the GetData function, the conversion does not apply to the drill through data. Data will be presented as it was entered in the target detail table.

Drilling behavior for certain Axiom query configurations

Note the following drilling behavior with certain Axiom query configurations:

Configuration	Drilling Behavior
Nested Axiom queries	You can drill through a value from a nested Axiom query. A nested Axiom query is where the in-sheet calc method of one query is used to build out a second "child" query. The drill context will be derived based on the Axiom query where your cursor is currently located. For example, if AQ1 builds out multiple data ranges for AQ2, and your cursor is in an AQ2 data range, then the drill context will be determined based on AQ2. In most cases, this setup will result in values that are eligible for drill-through drilling as you would expect.
Parallel Axiom queries	You can drill through a value from a parallel Axiom query. A parallel Axiom query is where multiple Axiom queries update the same set of rows. The AQ# tags for each query are on the same row. In this case, you can only drill through values from the query that is listed first on the Control Sheet. For example, if AQ1 and AQ2 update the same set of rows, then only those values that come from AQ1 can be drilled. If your cursor is on a value from AQ2, Axiom Software tries to derive the data column using the AQ1 settings. Since no data column is present in the AQ1 settings, the value is not eligible for drilling. **NOTE:** If the first query context is invalid for drilling (for example, if AQ1 is disabled, or if it has no content in the field definition row), then Axiom Software will attempt to drill on the next relevant query—in this example, AQ2.
Multiple-row field definition	Multiple-row field definitions are not supported for use with drill-through drilling.

Drilling behavior for "mixed" report configurations

A "mixed" report configuration is one where GetData functions are used within an Axiom query. In this case, the GetData functions are eligible for drill-through as if they were stand-alone GetData functions. All normal drill-down requirements for GetData functions apply.

Axiom Software evaluates the Axiom query for drill-down eligibility first. Because no database column is present in the field definition row for this context, the Axiom query is determined to be ineligible for drill

down. Since the parent Axiom query is ineligible, the GetData function becomes the primary drill down context and can be drilled if otherwise eligible.

How the "drill-through" drill sheet is created

When you initiate a drill through, Axiom Software creates a new, temporary file that contains a drill sheet with the drilling results.

Drill data

On the drill sheet, the drill data is returned by creating an Axiom query. Axiom Software creates the query as follows:

- The primary table for the query is the target table from the drill-through definition.
- A field definition row is created that contains the drill target columns from the drill-through definition.
- A data filter is applied to the query, based on the following:
  - The column filter in the drill-through definition that corresponds to the column being drilled in the source file. The column being drilled is determined from either the field definition row (if drilling an Axiom query) or the column parameter of the GetData function.

    For example, if you are drilling a value from the CYA1 column, and the drill-through definition has a column 1 filter of `YearMo=201101`, that filter is applied to the drill query.
  - The dimensionality of the row being drilled in the source file. The row dimensionality is determined from either the data control column (if drilling an Axiom query) or the filter parameter of the GetData function.

    For example, if you are drilling a value that displays revenue account data, the filter `Acct.Category='Revenue'` is applied to the drill query.
- Any filters applied to the original value are also applied to the drill query. This includes:
  - Any sheet filters on the original sheet.
  - If drilling an Axiom query, the data filter for the original Axiom query.
  - If drilling an Axiom query, any column filter defined on the field definition for the value being drilled.

Headers

Headers are created on the drill sheet as follows:

- The top of the sheet contains a header that identifies the sheet as a drill-through sheet, and identifies the following:
  - **Drill to**: The target table and the column filter applied to the data, both derived from the drill-through definition.
  - **Source**: The source dimensionality of the value from the original report.
- Each column of the drill data is labeled with the column name.

Freeze panes

Freeze panes are set on the drill sheet to the left and top of the first non-key column.

The key columns included and their locations depend on the drill target column order set in the drill-through definition. Typically, key columns are displayed first, in the left-hand side of the sheet, followed by the data columns. Panes are frozen after the last key column displayed in the left-hand side of the sheet.

If no key columns are displayed to the left (meaning, the first column displayed is a non-key data column), then no frozen panes are set.

Subtotals

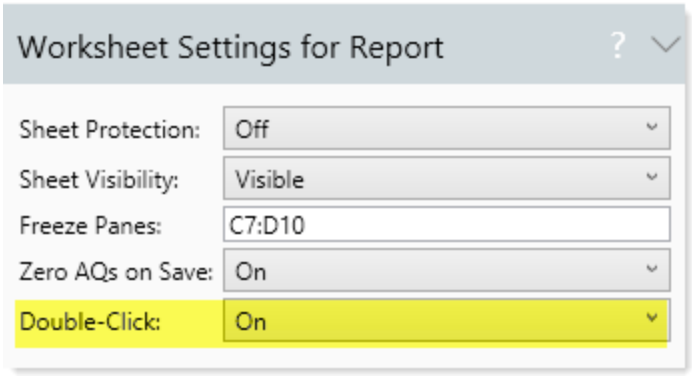
Subtotals are placed in the drill sheet, below the drill data, but only for decimal and numeric columns. Integer columns (all types) are not subtotaled, as they may contain descriptive data (such as a transaction ID number) instead of amounts. If you want data to be subtotaled automatically in the drill sheet, it must be a Numeric column.

Enabling double-click drilling

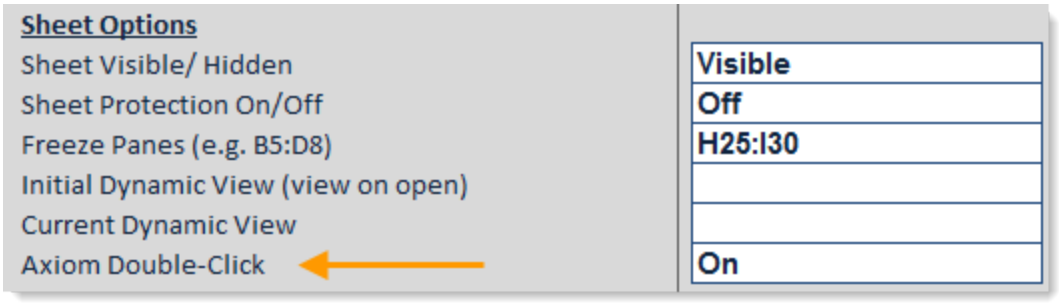
If you want users to be able to drill values in a spreadsheet Axiom file by double-clicking, you must enable double-click drilling for the file. Otherwise, users can initiate drills by using the **Drill** menu in the **File Options** group of the Axiom ribbon tab.

To enable double-click drilling for drill down or drill through, you must enable the **Axiom Double-Click** option for the file.

- On the Sheet Assistant, this setting is located in the **Worksheet Settings** section:



- In the Control Sheet, the setting is located in the **Sheet Options** section:



To enable double-click drilling for custom drilling, you must enable the option **Double-click to drill** on the Drilling Control Sheet.

When a user double-clicks a row or cell in the file, drilling options are performed as follows:

- If custom drilling is defined for the file and **Double-click to drill** is enabled for it, the custom drill will be performed. Depending on the custom drill configuration, the drill may occur with no further input, or the user may need to select drilling options.
- Otherwise, if **Axiom Double-Click** is enabled, then a dialog opens to display the available drill down and drill through options.

NOTE: Axiom Software supports several different actions that may be initiated by double-clicking. When you double-click on a cell, if multiple double-click actions could apply to this context, then the action performed is evaluated based on priority. For more information, see Axiom Planning Help: Reference > Double-click priority.

Performing a drill through

You can perform a drill through in any file that queries the source data from a drill-through definition, and where the file configuration meets the drill-through requirements.

To drill through the data in an Axiom file:

1. Place your cursor in the cell that contains the value you want to drill.
2. On the **Axiom** tab, in the **File Options** group, click **Drill**, and then select the desired drill from the **Drill Through** sub-menu.

   If **Drill Through** is not listed on the menu, then the selected cell is not eligible for drill through. Check to make sure that your cursor is in the appropriate cell.

A temporary file opens, named `Drill_Filename.xlsx`. This file contains a drill sheet named **Drill_** ***DrillLevel***, that shows the results of the selected drill. The top of the drill sheet displays your current drill context.

Double-click drilling

If Axiom double-click actions are enabled for the sheet, then you can drill a data value by double-clicking it. In this case, a dialog opens, listing the drilling options for the current selection. Select the desired drill level and then click **OK**.