BI360 - Planning
User Guide

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1 Introduction

BI360 *Planning* is an Excel-based data entry tool and a component of the BI360 Suite from Solver, Inc. that is typically used for budgeting and forecasting. *Planning* can be used to store data entered directly into an Excel cell(s) and back to the Warehouse or with the assistance of the *Planning* data entry window. The data entry window assists users with data spreading, line item details, comparative analysis and several other input helpers.

1.1 Who should read this manual

This manual is designed for all BI360 users, from administrators to end-users. Administrators may be responsible for tasks such as configuring the *Planning* templates and creating and managing Assignments. End users may be responsible for inputting data through the use of the *Planning* data entry window.

1.2 What is included in this manual

This manual is designed to give an in-depth understanding of how to use the features of BI360 *Planning.* The manual is divided in the following parts:

1. Overview: Introduction to BI360 *Planning.*
2. Configuration: Explanation of how to setup and configure *Planning*, such as setting up input templates and creating Assignments.
3. Using *Planning*: Explanation of how to use the *Planning* data entry window, such as spreading data, entering line item details, and taking forms offline.

1.3 Symbols and conventions

This manual uses the following symbols to make specific types of information stand out.

Symbol	Description
	The sunlight symbol indicates helpful tips, shortcuts, and suggestions.
	The warning symbol indicates situations we recommend to be aware of when completing tasks. Typically, this includes cautions about completing steps in their proper order or important reminders about how other information in BI360 may be affected.

1.4 Installation

Please consult the BI360 *Installation Guide* for details on installing the *Planning* add-in. the *Installation Guide* can be found at http://support.solverusa.com/. Once logged into the Solver support site, click on the Downloads from the Solver Support site header. Under Current Versions will be a link to the installation documentation.

ERP systems used by the organization must be integrated into the BI360 *Data Warehouse* so that *Planning* can access the proper data. Some of the integration methods include the following:

- Direct import via the *Data Warehouse Manager* Import wizard.
- Automated SQL Server Integration Services (SSIS).
- Manual entry (useful when certain dimensions do not exist in the source system).

Prior to using *Planning*, consult a Solver Consultant to determine the best method of the ETL process.

Users must have access to the following locations. This is required because necessary configuration and storage files are found in these locations.

Windows XP [1]	Windows Vista/7/Server 2008[1]
C:\Documents and Settings\All Users\Application Data\Solver BI360\Planning	C:\ProgramData\SolverBI360\Planning
C:\Documents and Settings\UserName\Application Data	C:\Users\Username\AppData

Notes:

1. *All OS versions*

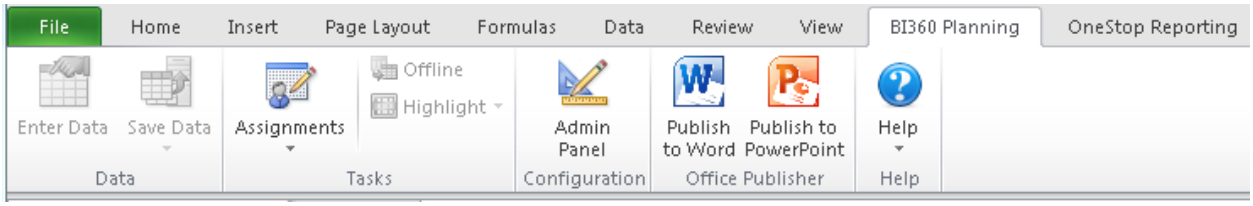
"UserName" refers to the user login in with Windows authentication

2 Planning Overview

BI360 *Planning* consists of an Excel ribbon, Assignment Task Pane, and a *Planning* data entry window; each of which is detailed below. All administrative and user sub-menus are accessible from the *Planning* ribbon.

2.1 Excel Ribbon

The BI360 *Planning* ribbon consists of the following tab groups (from left to right on the ribbon)



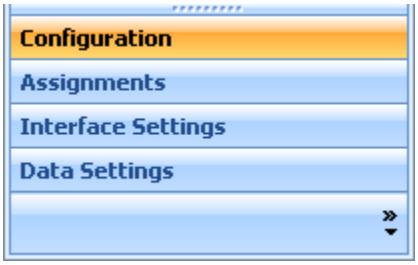
1. Data
    a. **Enter Data**: Opens the *Planning* data entry window for spreading, comments, line-item details, comparative analysis and more.
    b. **Save Data**: Saves data for the current Excel sheet or the entire workbook.
2. Tasks
    a. **Assignments**: Opens a task pane on the left side of the Excel screen where the end-users can locate workbooks (e.g. a budget file) assigned to them by an administrator
    b. **Assignment -> Change default connection**: Allows the user to select the database with Assignment information. Moreover, users can override the report connection by using the '**Advanced option'.**
    c. **Offline**: Active on a static Excel sheet. The user can click **Offline** to continue working on the input for (including Line Item Details). Once the user is connected to the database, they can click on the **Online** button and then **Save Data** to the database. This feature embeds all line item details into the Excel sheet. The user may continue to use *Planning* except for the saving to the database. Please reference Deployment for more details on how to use Offline/Online feature.
    d. **Highlight**: When triggered, this feature will highlight rows that contain line item details.
3. Configuration:
    a. **Admin Panel**: Opens a task pane where the administrator can create and change the settings for the workbook. The settings are related to how the Excel workbook writes data to the *Data Warehouse* and displays information in the *Planning* data entry window.

4. Office Publisher: (optional component to convert Excel worksheets to Word/PowerPoint)
    a. **Publish to Word**: this option enables users to create tags to create Word documents based on the Excel worksheets. See the *Office Publisher User Guide* for more details.
    b. **Publish to PowerPoint**: This option enables users to create tags to create PowerPoint presentation based on Excel worksheets. See the *Office Publisher User Guide* for more details
5. Help
    a. **Help**: Connect to the Solver Support site where you can login to download software, templates, documents and watch tutorial videos.
    b. **About**: Displays the version of *Planning* that is currently running as well as Solver contact information.

The following will describe the features found in each tab group.

2.1.1 Admin Panel

Once the **Admin Panel** is opened, users will have four options:



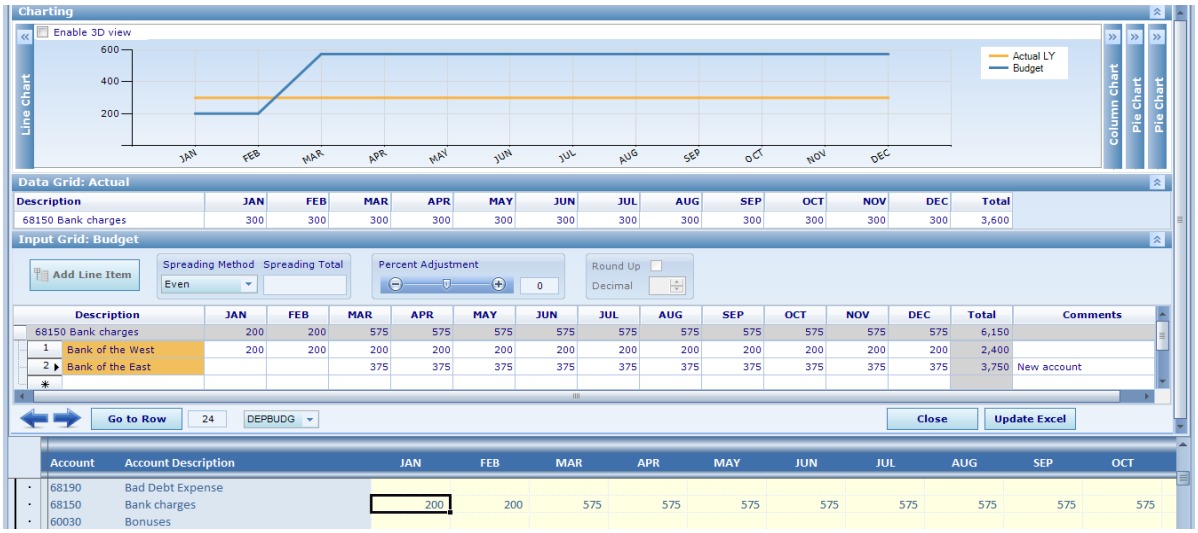
1. Configuration: The configuration screen contains general *Planning* settings. This includes Storage Settings, Line Item Description Entry and Sync Settings.
2. Assignments: Administrator can set up links to the Excel workbooks and supporting documentation that they want end users to see when users click **Assignment** in the *Planning* ribbon.
3. Interface Settings: Administrators can configure how the *Planning* data entry window displays information. Also, optional features may be enabled and disabled here; such as comparative analysis, charting and the Line Item Details feature.
4. Data Settings. Administrators can configure a *Reporting* template to become a *Planning* template. Administrators map fields found on the Excel sheet that are required in order to store data back to the *Data Warehouse* database.

2.1.2 Planning Data Entry Window

The *Planning* data entry window (see image below) is an optional way of entering data into Excel. The window is accessible by clicking on **Enter Data.** Users may

type their information directly into Excel or they may enter data directly with the use of the *Planning* data entry window. The data is saved back only to the Excel workbook after input and not to the database. Users must select **Save Data** to save data back to the database. When designing input templates based on amonthly input format, the *Planning* data entry window is a powerful tool for the following:

1. Automatic spreading of numbers across many cells in Excel. Many spreading rules are available, including rules that can use prior year's actual data or seasonal trends as a base.
2. Input of text comments at the row or line item detail level.
3. Input of multiple rows of line item details below a single row in Excel (e.g. the user can list many business trips that automatically will roll up to a single travel expense row in Excel).
4. Automatic charting of the current row in Excel and comparison to another row with historical data.



2.1.3 Assignments

The Assignment feature within *Planning* enables Administrators to create assignments for end-users to complete. The assignments are typically the *Planning* template used for inputting budget and forecast figures. Assignments may also include references to most other file types, such as Word, PDF and web links. Assignments may be organized into folders of multiple-levels to create a workflow for users to follow.

Below is a list of some of the features available through the Assignments feature:

1. Easy access to Excel files and documentation.
2. Users can view deadlines for each assignment
3. Assignments may be displayed to certain users only.

4. Data storage is locked depending on the assignment status.
5. Users may view general instructions related to each assignment.

3. Configuring BI360 Planning

Planning requires minimal configuration to set up and use. The configuration is retained within the Excel workbook as the hidden tabs *Data Settings* and *Interface Settings,* as well as in several tables in the Data Warehouse database. Moreover, line item details and storage settings are stored in an XML file. It is important to note that numerical values and comments of the line item details are the only data values stored back into the database. Spread methods and percentage adjustments are not stored in the *Data Warehouse* and will not be available for viewing after saving the data.

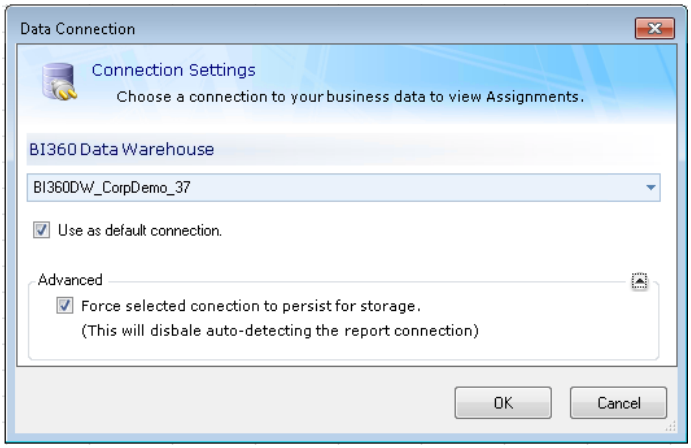
The following will guide users through making a connection, accessing the Admin Panel and configuring an Assignment

3.1 Connection Settings

The first step in using BI360 *Planning* is to create a connection to the database. Once the connection is created, all configuration settings for Assignments and storage settings will be saved back to various tables within the SQL database and also in the hidden sheets of the file.

If a *Planning* template is opened, the connection associated with it will be inherited when *Planning* is opened. This connection will also be used when accessing Assignments or the Admin Panel

If an end-user opens a blank Excel sheet and select **Assignments**, the end-user will be prompted for a connection.

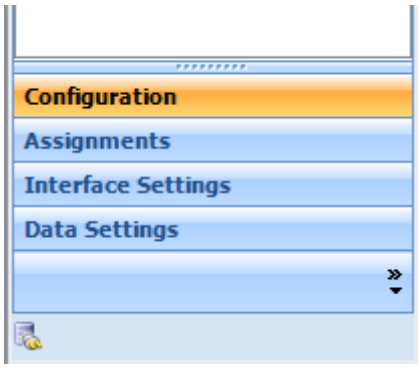


The dropdown arrow will populate all available connections that have been configured in BI360 *Reporting*. If the connection should be the default connection

for the Assignment information, then the **Use as default connection** option should be check marked. Otherwise this window will be prompted every time the user clicks on **Assignment.**

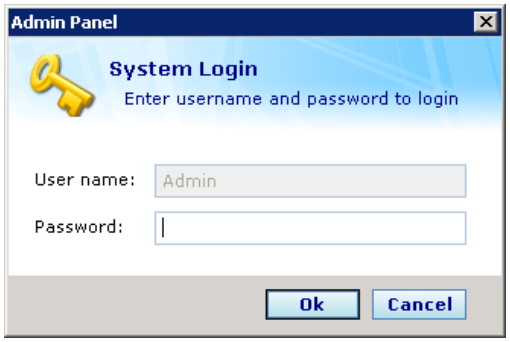
Users may also override the *Reporting* connection setting within *Planning.* This may be necessary if one report is used to write back to multiple databases. Often times, the database containing the Assignment information is the same as the database BI360 *Planning* is writing back to. However, in special cases where the Assignment information is located on a different database, users may change the connection by clicking the arrow below the Assignment button on the BI360 *Planning* ribbon and selecting **Change default connection.**

If the Administrator chooses to override the inherited report connection for storage, the **Advanced** feature may be used. The connection selected in the dropdown box will always be the connection used to store the data. The database used for storage will always be displayed at the bottom of the Admin panel, as show in the image below.



3.2 Admin Panel

Once a connection to the database has been established, Administrators may access the Admin Panel. Users will be prompted for credentials upon clicking the **Admin Panel**, which is the same password used for the OSR *Administration Tool* and *Reporting*.



As previously mentioned, the Admin Panel has four core features available to the user: Configuration, Assignments, Interface Settings and Data Settings. The rest of this section will explain the functionality of each feature.

3.2.1 Configuration

The Admin Panel configuration menu has three options that cover general settings within *Planning*.

3.2.1.1 Storage Settings

After the user selects Storage Settings, a new window will be displayed. From this window, user may configure the storage method for each sheet. Note that the Sheet selection dropdown box only populates sheet names that contain a configured data grid.

There are two storage settings:

1. Store Changes: *Planning* is designed to track input changes and dependent calculations within a single data grid. *Planning* keeps track of each change by storing the cell location within memory. This setting will help enhance performance when storing data by limiting the data stored back to the Data Warehouse.
2. Force Storage: In certain scenarios, a budge template may be designed such that the input cell is not part of the same data grid where dependent calculations are located. For instance, if two grids may be configured on different sheets, where one grid may store detail data to an optional module and the other grid may store summary data to the GL module. If the detail input updates the calculations located in the summary grid, *Planning* will not track the changes. In this case, the **Fore Storage** option will be required. Force store will store all cells within all *Planning grids located on the worksheet.*

Note: Since this is the default setting, there is no need to change and save the setting unless Store Changes is required.

Planning has 6 flags stored in the sheet. They can be found in Row 1, columns 256-261. The following describes the functions of each flag.

Column #	Description
256	This flag is used for determining whether the Line Item Details (LID'S) should be refreshed from Database or from the XML. When saving the data to database i.e. Save Current Sheet/Workbook the flag is updated to '0' and upon selecting Update Excel the flag is updated to '1'. When refreshing the LIDs we check the flag to determine whether we have to get the LIDS from the database or from XML.
257	When management comments are updated the flag in this cell is set to 1. When we save the data we check if the flag in this cell is '1' only then we save the Management comments. **This feature has been deprecated in version 3.6 and newer.**
258	When Approval status is updated, the flag in this cell is set to 1. When we save the data we check if the flag in this cell is '1' and only then do we update the Approval status in the database. **This feature has been deprecated in version 3.6 and newer.**
259	This flag is used for enabling/disabling the Save button. In case of Store changes when any of the cells are edited this flag is set to '1' and the save button is set to Enabled.
260	This flag is used to clear the in-memory edited cells changes. In case of store changes the edited cells data is stored in the memory, however when a report is re-executed (without saving the data), the edited cells records need to be cleared from the memory.
261	This flag was added to ensure that the LIDS are fetched only once for an active grid. The first time when the LIDs are refreshed for an active grid the flag is set to 1, later whenever the LIDs are required it is read from the in-memory and not read from DB or XML again.

3.2.1.2 Line Item Description Entry

Line item descriptions may be entered into the *Planning* window. The Line Item Description menu will enable preset global line item descriptions to be available for

all users. To enter new line item descriptions, click **Add.** Add as many entries as are desired and click **Close** when done.

To delete an item, click on the item to delete and click **Delete.**

Please note: the line item descriptions are configured for the Planning template and will be visible to all users using Line Item Details with that specific template.

3.2.1.3 Sync Settings

Sync Settings is used to update the Data and Interface Setting with in the Data Warehouse database. This is primarily used when a template is created in one database and then required to be used in a different BI360 database. For example, if a *Planning* template is created in a development environment and then migrated to a production environment, the Sync Settings option should be selected within the production environment before deploying the template to users. Sync Settings may also be used when upgrading the *Planning* application from a previous version.

3.2.2 Assignments

The Assignments feature within *Planning* enables administrators to create assignments for end-users to complete. The Assignments are typically an Excel input workbook to enter budget and forecast figures. Assignment may also include references to most other file types such as Word, PDF's, web links etc. The Assignments may be organized into folder of multiple levels to create a workflow of users to follow.

Below is a list of some of the features available through the Assignments feature

- Easy access to Excel files and documentation.
- Users can view deadlines for each assignment.
- Assignments may be displayed only to certain users.
- Data storage is locked depending on the assignment status.
- Users may view general instructions related to each assignment.
- The administrator(s) may specify which parameters to capture when the user submits an assignment

3.2.2.1 Assignment Configurations

1. Assignments configured without tracked parameters (Enable Assignment Submission not checked) have the following capabilities
    a. May be assigned to users
    b. Will not have a start/end date. These assignments will always be visible until the Administrator closes or deletes the assignment.
    c. End users will not be able to submit the assignment for approval.

2. Assignments configured with tracked parameters (Enable Assignment Submission checked) have the following capabilities.
    a. Specify parameters and users to each file.
    b. Specify a start and end date.
    c. End users can "submit" assignments.
    d. Administrators can view the status of the assignment (discussed in detail below)

Enable Workflow is a feature that is currently in development.

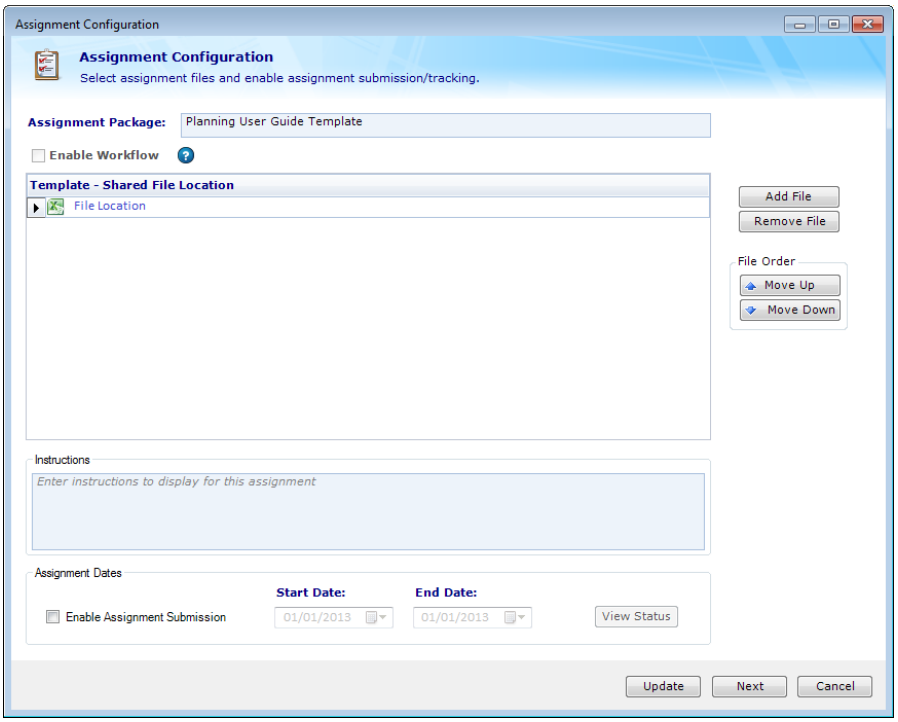
Published sheets may not be used with assignment submission.

Please note: When tracking a period, the period being tracked is based on the period(s) rendered in the report. This needs to be considered when reports are using a last year all or other functions that may render different periods than what the report is ran for.

The first part of this section will go over the Assignment Configuration interface. The rest of this section will cover the steps to configure Assignments in the two methods mentioned above along with detailing the administrative and end-user interfaces.

3.2.2.2 Assignment Configuration Interface

The Assignment configuration interface is simple and easy to use. The main page of the configuration is shown below.



The following describes the features displayed in this window.

1. **Assignment Package**: a user-defined name for the assignment package. This name will be displayed in the End-user interface. Multiple assignment packages with multiple templates may be loaded into one Parent Assignment.
2. **Enable Workflow**: This option will be available for users that have purchased the BI360 *Workflow* add-in. This feature will be available in future versions of BI360 *Planning*.
3. **Add File**: Select this to open a browser window that will allow users to specify a file(s) to be added to the Assignment Package. As long as the appropriate programs are installed, the user may create links to most file types.

Note that the files should be located on a shared drive. If the file is located on a local machine, the Assignment file will not open unless the exact same file location exists on the end-user's computer.

4. **Remove File**: Select this option to remove the selected file from the assignment package.
5. **File Order** (Move Up/Move Down): After multiple files have been selected, Administrators may move the files around to the desired order for end-users.
6. **Instructions**: this is a text field that administrators may use to communicate specific instruction to the end-users.

7. Assignment Dates:
    a. **Enable Assignment Submission**: Selecting this option will allow administrators to track parameters assigned to specific users. Any parameters, such as Period or Department may be assigned to a specific user(s).

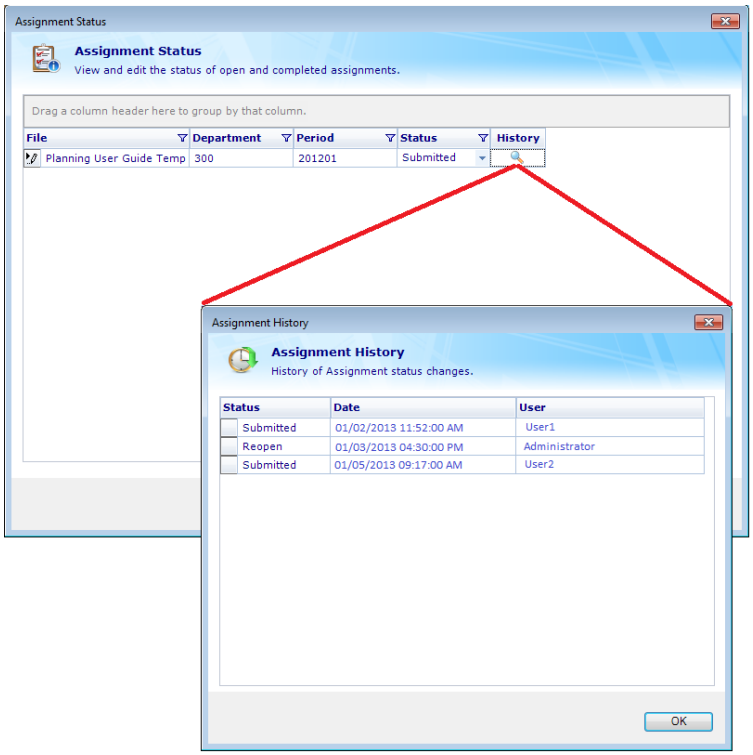
       This is not a mandatory field and administrators may continue on in the assignment configuration without selecting this option.

       Enabling (checking) this feature removes any previously configured user assignment

    b. **Start/End Dates**: Once "Enable Assignment Submission" is selected, this feature becomes available. Administrators may specify a specific start and end date for the assignment.
    c. **View Status**: This option allows administrators to see the status of each assignment. Depending on the progress of the assignment, one of the following statuses will be shown:
        i. Not started: The end user has not opened the assignment.
        ii. Opened: an end-user has opened the assignment but has not saved data and/or submitted the assignment.
        iii. Submitted: An end-user has added data figures and has "submitted" it.
        iv. Reopened: An administrator has come in and made the assignment available for edits after it has been submitted.
        v. Closed: the assignment has passed its end date or has been closed by an administrator.

Moreover, the status column within the Assignment Status window allows the administrator to reopen or close a submitted assignment. Simply select the dropdown arrow associated with the file to be change and select the desired option. The History lookup feature allows administrators to track the actions performed on the assignment, such as whom and when the assignment was submitted, reopened or closed.



8. Update: If a previously configured assignment needs minor changes, such as changing the name of the Assignment Package, users may make the change and select **Update** to save the changes without moving through the rest of the Assignment Configuration menu.

3.2.2.3 Assignments without Tracked Parameters

Assignments may be used as a central location for users to access the templates assigned to them. The following will guide users through the process of configuring Assignments in this manner.

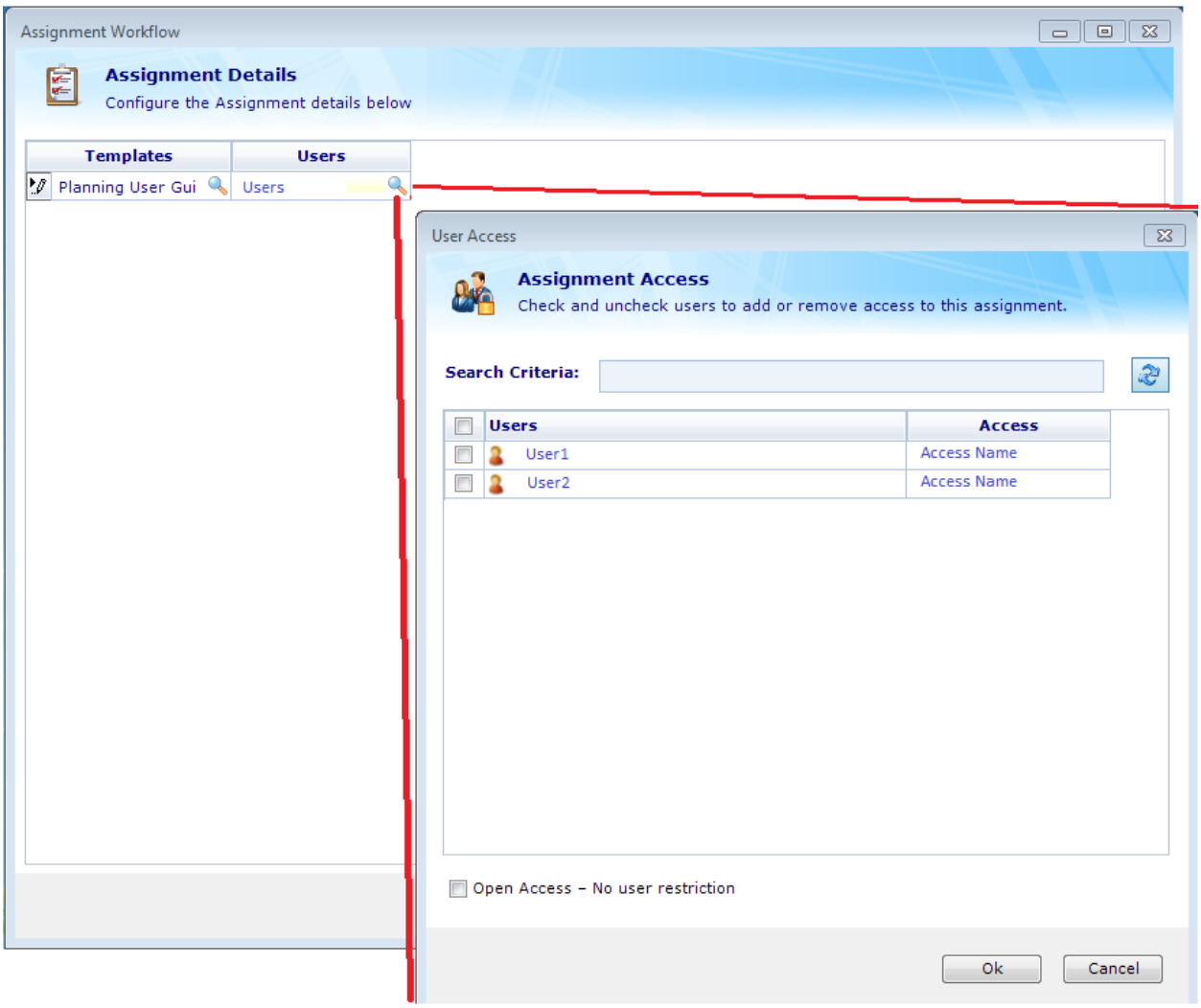
Upgrading Assignments from Planning v3.5 to v3.6/3.7

There were many changes made to assignments from v3.5 to v3.6/3.7. To ensure that assignments would work immediately after upgrading from *Planning* v3.5, a couple features had to be reset. These features include resetting the start/end dates and also the removal of the assignment submission. However, user assignments to the files are retained during the upgrade.

Creating an Assignment

After configuring and adding the file(s) to the Assignment Package, click **Next.** On the Assignment Details page, the administrator may select the template(s) from the Template lookup icon. All templates that were added on the previous page will be displayed here. After selecting the templates, the administrator must select at least one user. To do this, simply click the User lookup icon. The users displayed here are based on the users added through the *Administration Tool*. Administrators may select individual user, all the users on the user lookup at the moment or open access. Simply select the user to be assigned to the template and select **Ok.**

Administrators may select all users that the moment by selecting the checkbox in column header. This differs from "Open Access" because "Open Access" will grant access to any user that is added through the *Administration Tool*. By selecting the checkbox in the column header, administrator is only adding the users that are currently populated in the list and new users will not have access to the file.



As previously mentioned, after the assignment package is created, the administrator may go in and make changes to the Assignment Package name, files, file order and instructions and click **Update.** The administrator does not need to proceed to the Assignment Details page to save the changes.

3.2.2.4 Assignments with Tracked Parameters

The second option for Assignments is to use tracked parameters. This feature allows administrators to control the parameters that an end-user may save data to. Based on the report design, one or multiple parameters will be available.

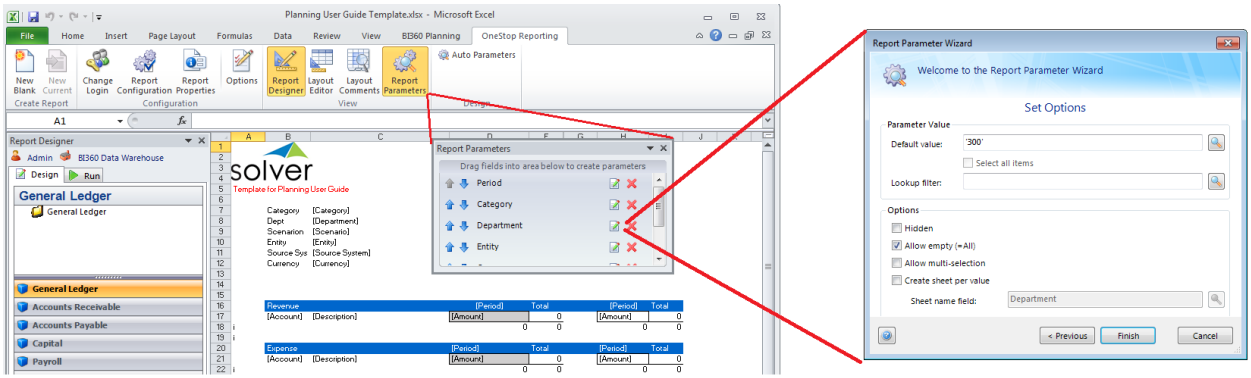
The first part of this section will describe how to configure a parameter in the *Reporting* template so that it may be used in the tracked parameters feature. The second part of this section will discuss how to configure assignments with tracked parameters.

Please note: When tracking a period, the period being tracked is based on the period(s) rendered in the report. This needs to be considered when reports are using a last year all or other functions that may render different periods than what the report is ran for.

Configuring a parameter to be used as a tracked parameter

In order for a template to be used with tracked parameters, it must have "allow multi-parameter selection" deselected. By default, Period is configured in this manner. This is a necessary requirement because in order to track parameters, the user must be able to select and run a template for one parameter only.

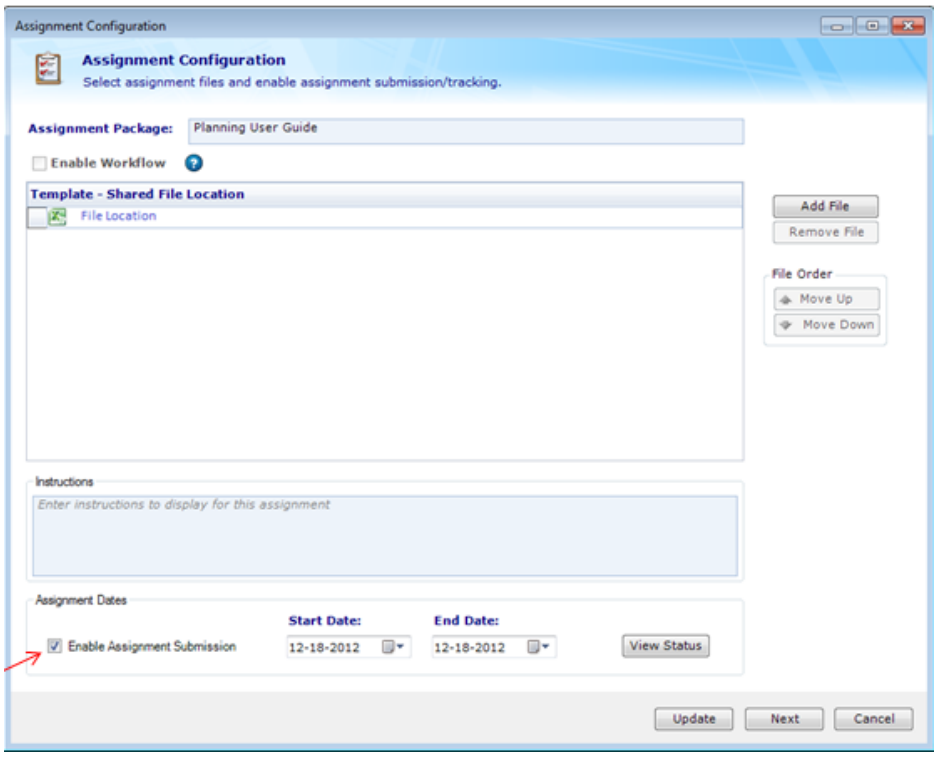
To check whether or not a parameter is configured in this manner, open the Report Parameters icon in the *Reporting* ribbon. In the configuration window that appears, proceed to the third page where users will see an "Options" section. One of the fields in this section is "Allow multi-selection". By default, all parameters besides Period will have this enabled. Deselect this option if the parameter is to be used as a tracked parameter. The flowchart below depicts the steps.



The template is now ready to be used as a tracked parameter file with Department and Period as the parameter options.

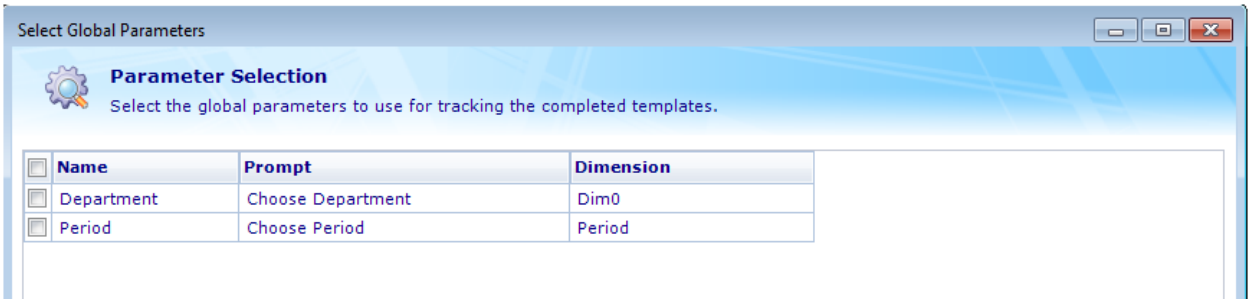
Creating an Assignment with Tracked Parameters

On the first page of the Assignment Configuration wizard, complete the necessary information and select "Enable Assignment Submission". If the administrator desires to convert a previously created assignment to an assignment with tracked parameter, the administrator only needs to select "Enable Assignment Submission" on the assignment. There is no need to recreate the assignment.

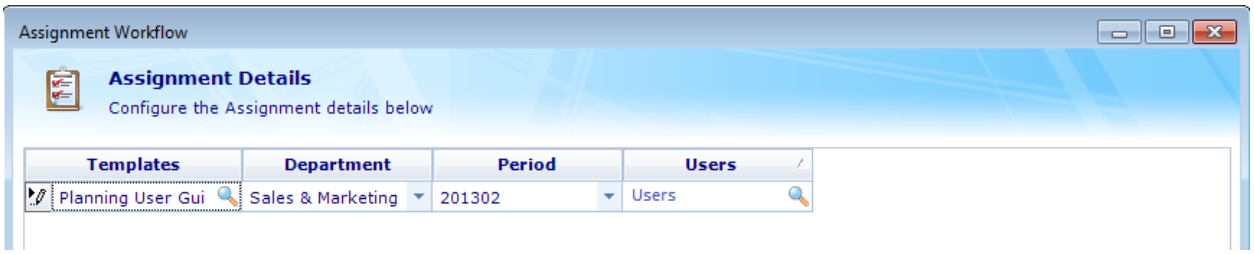


After the necessary information is completed, proceed to the next page of the assignment configuration. A list of all parameters configured in the above mentioned manner will appear.

There must be at least one "shared parameter" amongst multiple reports in the Assignment Package. Individually, the reports may have different parameters with "allow multi-selection" unchecked, but the wizard will only display the parameter(s) that are shared amongst all the reports.

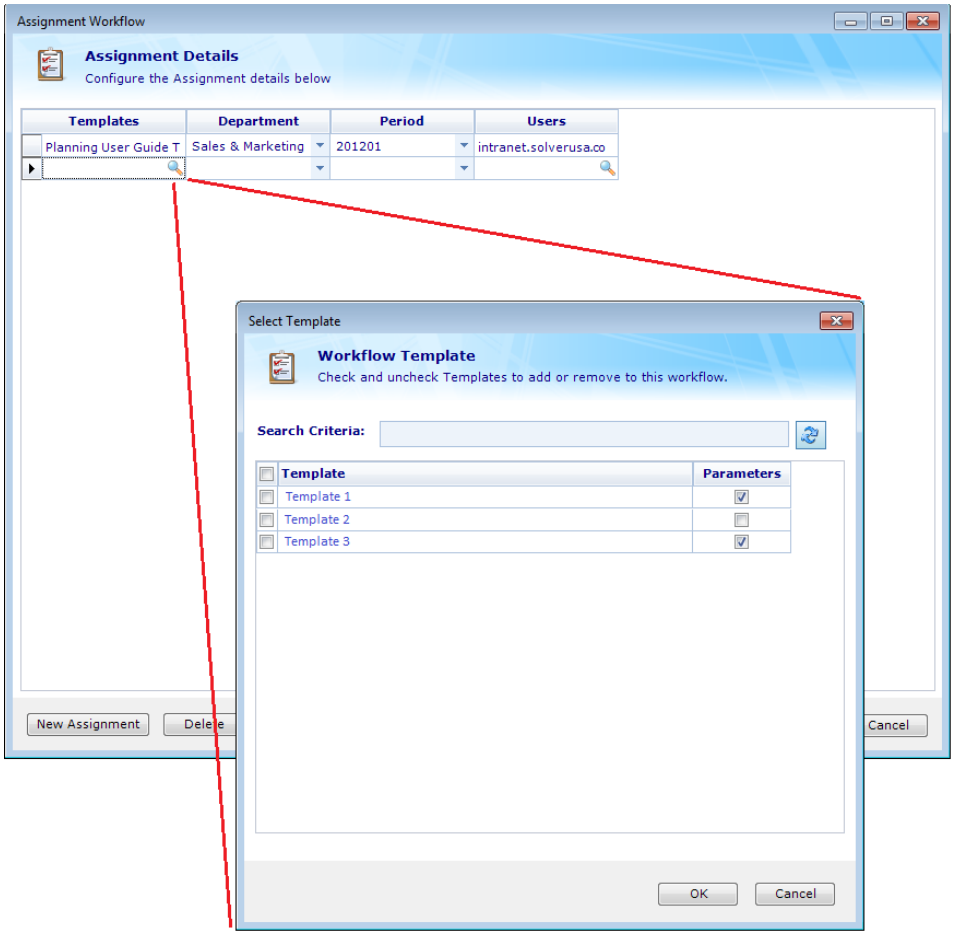


After selecting at least one parameter, continue on to the next page when files and parameters may be assigned to users.



Administrators may also select the template multiple times and select different parameters to different users by clicking **New Assignment** at the bottom of the page. After creating the assignments, select **Ok** to complete the configuration.

It is important to note that only templates with a checkmark in the Parameters column may be used. As previously mentioned, when multiple templates are added to one Assignment Package, they must share at least one parameter. In the screenshot below, "Template 1" and "Template 3" share similar parameters. "Template 2" does not share the parameters, so is therefore not checked and may not be used.



3.2.2.5 End User Assignment Interface

After the Assignments have been configured, end-users may access the Assignments that have been assigned to them and/or set to "Open Access".

Note that the end-user must have the proper access to the SQL database. The appropriate rights are included as part of the SODS_User role.

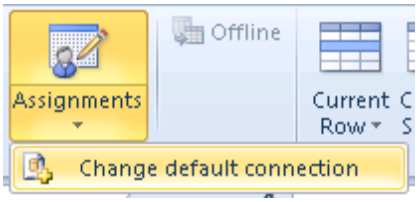
Connection

To access the assignments, users may click on the **Assignments** button in the BI360 *Planning* ribbon. If a default connection has not been configured, then the user will be prompted with a window to select the connection settings.

Note that the Assignment feature does not inherit the report connection.

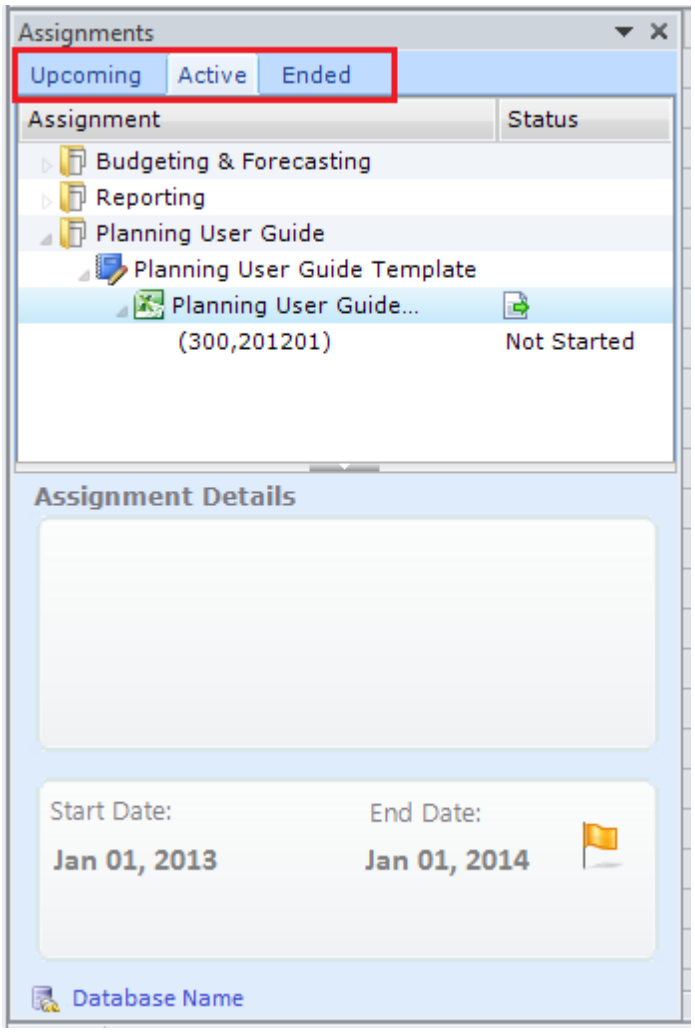
The connections available have been configured in the BI360 *Reporting.* If the selected connection should be the *Default Assignment Connection,* place a checkmark in the box next to *Use as Default Connection.*

If the default connection needs to be modified, users can select the dropdown box in the *Assignment* button in the BI360 *Planning* ribbon and the Connection settings screen will be displayed. Then, users may change the default connection.



General Interface

Once the user opens the Assignment pane, they will see three tabs: Upcoming, Active and Ended. The assignments will be sorted into the three tabs based on the Start/End Dates specified by the administrator. Assignments with Enable Assignment Submission unchecked will be "Active".

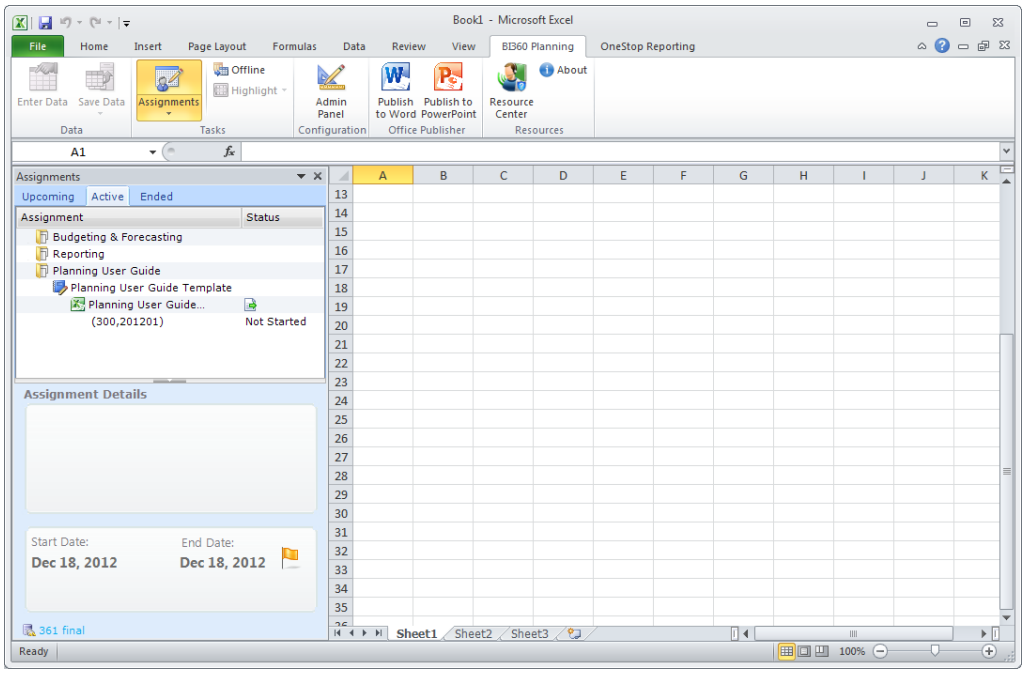


The end user assignment interface will only populate the assignments assigned to that user based on their login. Information such as assignment instructions, start/end dates and the status will also be displayed if specified by the administrator. The definitions of each status type were previously mentioned.

With Enable Assignment Submission selected, there are two flags to be aware of. Depending on the current compute date and the start/end date of the assignment, users may see version notification flags in the data section. Below is a table describing the meaning of each flag.

Flag	Location	Message
	Next to *Start Date*	The assignment will be active in more than five days.
	Next to *End Date*	The assignment end date has passed.
	Next to *Start Date*	The assignment will be active in less than five days.
	Next to *End Date*	The assignment will end in less than five days.

Within the end-user Assignment window, the assignments will appear with the selected tracked parameters showing. The assignment is now ready to be used and submitted.



Note: there is no approval process associated with the tracked parameters feature.

Planning Settings

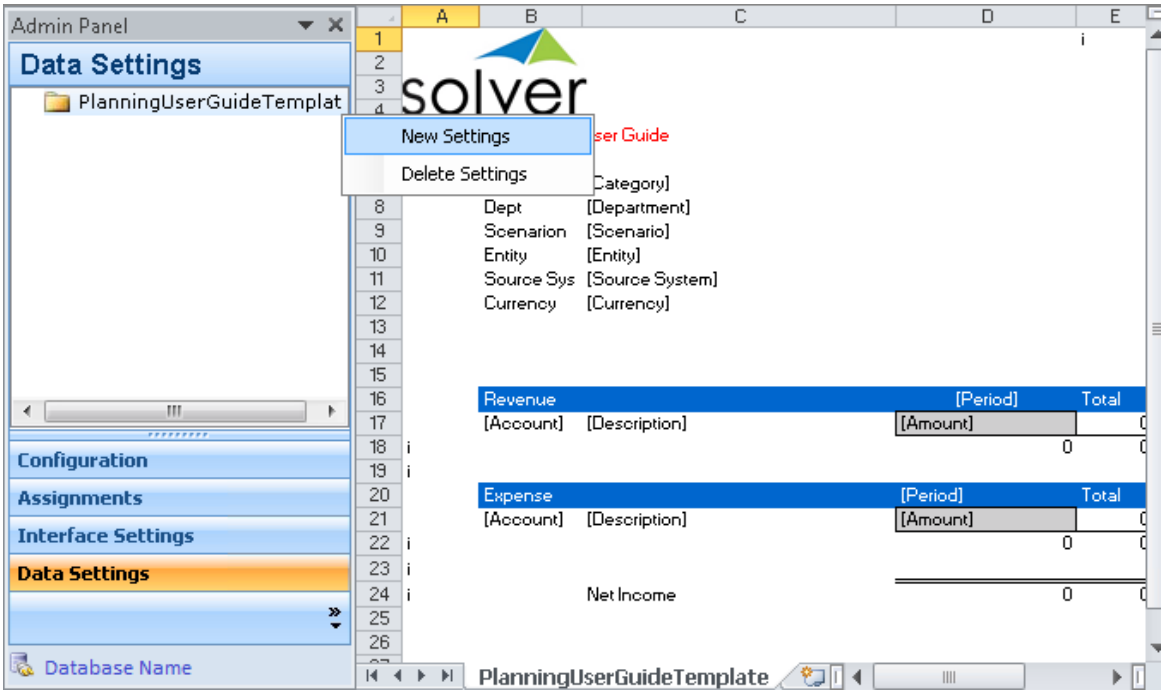
The BI360 "Planning Settings' is a combination of the Data and Interface settings. Together, these two settings help identify the parameters to write data back to and also the look of the *Planning* window.

3.2.3 Data Settings

The Data Settings menu allows administrators to define the dimensions and the data to be stored back to the warehouse. The Data Settings may contain one or several data grids. A data grid is defined as a single section of data to be stored back to the BI360 *Data Warehouse*. The storage cells within the data grid can be broken up by total columns and rows or other non-storage columns and rows.

While multiple data grids may be configured on a single worksheet, it is important to plan the design of the template to limit the number of grids per worksheet to avoid potential performance issues.

Data settings are configure for each Excel worksheet and is represented in the menu below. Each sheet will be represented at the folder level and the data grid for each sheet may be displayed by expanding the contents of the folder.



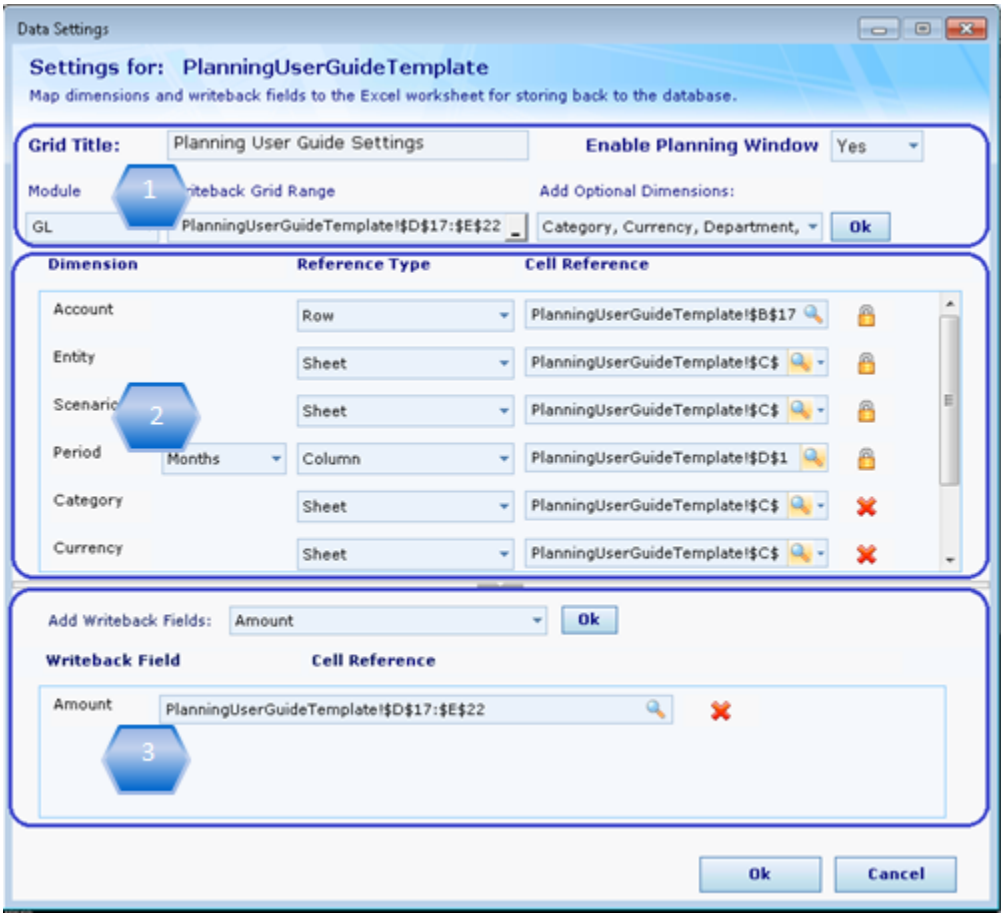
The Data Settings window contains three sections

1. Data grid header information
2. Dimension mapping – map dimensions references to Excel cells
3. Write back field mapping – map storage fields to Excel cells

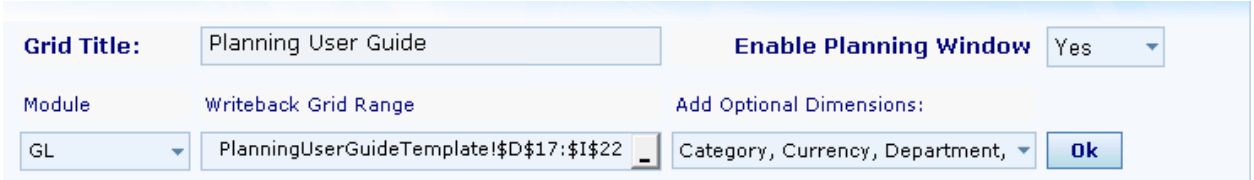
It is recommended to be in Design mode when accessing and configuring the *Planning* Settings.

When creating *Planning* settings, be aware that the template(s) may have been created with hidden/minimized cells. Remember to take these into account while configuring the settings.

In the following examples, many cell references are shown. It is important to note that depending on the purpose of the individual template(s), the cell references may not be structured in the same way that the following examples demonstrate.



Data Grid Header

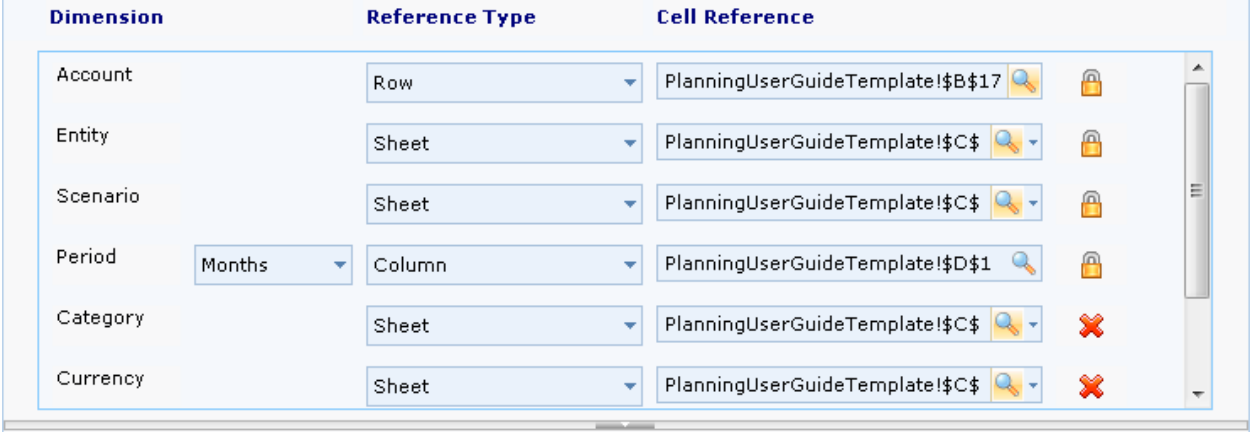


The top section of the Data settings window contains the worksheet name, the grid title of the current grid and whether or not the *Planning* window will be enabled for the current data grid. Moreover, general settings for the Data Grid can be configured such as Module, Grid Range and Optional Dimensions

1. Grid Title: A user friendly name given to describe the specific Data Grid. When creating the grid title, consider being very specific of the name chosen if there will be multiple grids on the same worksheet.
2. Enable *Planning* Window: used to determine if the *Planning* Data Entry window will be used. This would typically be disabled if the budget model was designed for direct input into the Excel worksheet rather than using the *Planning* window. When the *Planning* window box is set to Yes, the Interface settings will need to be configured (see Interface Settings section for more details)
3. Module: the module dropdown will display the available modules as configured with the Data Warehouse Manager. Once the module is selected, the dimensions set as mandatory will show in the dimension list within section two
4. Data Grid Range: The Data Grid range is the Excel cell range that contains the data input or calculated value that need to be stored back to the Data Warehouse. The range should include all values, comments and user defined fields specified for that grid. The grid range can contain multiple Data Storage Fields which may be broken up to different areas of the Data Grid. Users need to remember to include the ignore syntax (i) for rows that may contain data that should not be stored back into the Data Warehouse database. To specify the range, click the lookup icon and select the Excel range.
5. Add Optional Dimensions: the option dimensions are dimensions related to the module but not seat as mandatory with the Data Warehouse Manager. To select the dimension, click on the dropdown and select the optional dimensions to be written back to. Once selected, click **Ok** to add them into the mapping range. Any dimension, as long as it is enabled for the module, will be available for write back.

Dimension Mapping

This section defines the dimension mapping to the Excel template. The dimension mapping section will show all mandatory and optional dimensions available for the specific data grid. Mandatory dimensions are specified in the Data Warehouse and optional dimensions were enabled by the user (described above).



There are two fields that need to be filled out as part of the dimension mapping:

1. Reference type: The Reference Type designates how the dimension is referenced within the Excel template. *Planning* has default references, for each dimension. It is important to double check these references to make sure they are configured correctly for the particular input for. There are three possible options
    a. Sheet: if a dimension is designated as *Sheet*, it means that the dimension member/code is used for **ALL** storage fields within the data grid. A common global dimension is *Scenario*. In many cases when storing values for a budget, the entire data grid will use the same scenario (i.e. Budget2012)

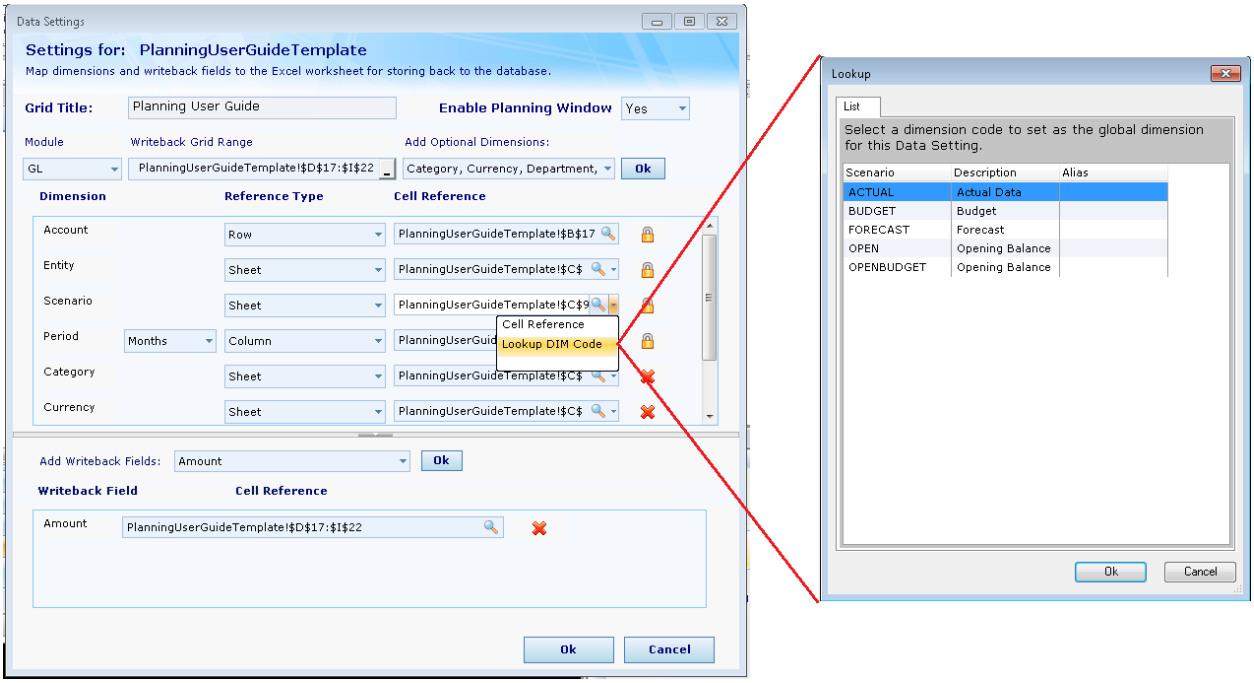
It is recommended to build reports that will use as many Sheet parameters as possible as this will speed up the data write back performance.

    b. Row: If *Row* is selected, it means that the dimension is unique to the row. For example, if the Excel template has an expanding row for *Account* dimension, it assumes that the account will differ for each row when the template is executed. In this case, *Planning* will check each row in the data grid when referencing the dimension.
    c. Column: If *Column* is selected, it means that the dimension is unique to each column. For example, if the Excel template has an expending column for the *Period* dimension, *Planning* will check each column in the data grid when referencing the *Period* dimension.
2. Cell Reference: Within the Cell Reference, there are three methods to referencing a dimension. Users may reference a cell(s) manually, type in the dimension code or use the lookup feature.
    a. Reference the Excel cell in which the dimension code may be found. This is the most common method and enables dynamic references depending on how the template has been designed. When referencing

dimensions that are within an expanding row or column, it is important to always reference one row/column beyond the end of the expanding group (similar to configuring the *Data Grid Range*).

For example, if the Account is expanding, than in the cell reference users will have to select the cell where the Account entry is and one more cell down.

b. Manually enter the dimension member directly into the *Planning* reference box. This would be used as a static reference that would never change. Users may also use the dropdown found next to the lookup icon to select **Lookup DIM code**. Upon selecting this option, all dimension codes that have been added to the Data Warehouse database will populate and may be selected.



c. Users may also use the lookup feature to select cells. Upon clicking the lookup icon users may drag-and-select the cells where references are located on the Excel sheet.

Remember to include the ignore syntax (i) on the appropriate rows/columns to be ignored by *Planning.*

Write back Field Mapping

The Write Back Field section is used to reference each storage field to the Excel worksheet.

By default, the *Amount* field is the only storage field shown. Addition fields may be added by clicking the *Add Write back Fields* drop down to view available write back fields. Available storage fields include system default value fields along with comment fields and user defined attribute fields specific to each module.

To reference a storage field, simply click the lookup icon and reference the cell(s) for the specific storage field. As with the dimension and data grid reference, if an expanding row or column is used, the storage cell reference should extend one row and/or column beyond the expanding group.

Note that BI360 *Planning* has a limit of 20 storage fields for each data grid. If more than 20 storage fields are used, separate data grids must be used.

In addition, there are built in validations to ensure that users will not run into errors when storing data. The following rules must be met in order to be able to save the Data Settings.

1. Cell references cannot be in column A or row 1.
2. A minimum of a 2x2 matrix must be referenced in the Write back Grid Range.
3. Dimension Mapping:
    a. If the Reference Type is set to Sheet, only one cell may be referenced.
    b. If the Reference Type is set to Row, only cells in one column may be referenced.
    c. If the Reference Type is set to Column, only cells in one row may be referenced.
4. Storage Field:
    a. If a single column or row is selected, then it cannot have an ignore syntax.
    b. The cell reference may not be outside of the Write back Grid range.

3.2.4 Interface Settings

The Interface Settings wizard is used to configure the *Planning Data Entry* window. The Interface Settings screen is only available for data grids that have the Enable *Planning* Window set to 'Yes'.

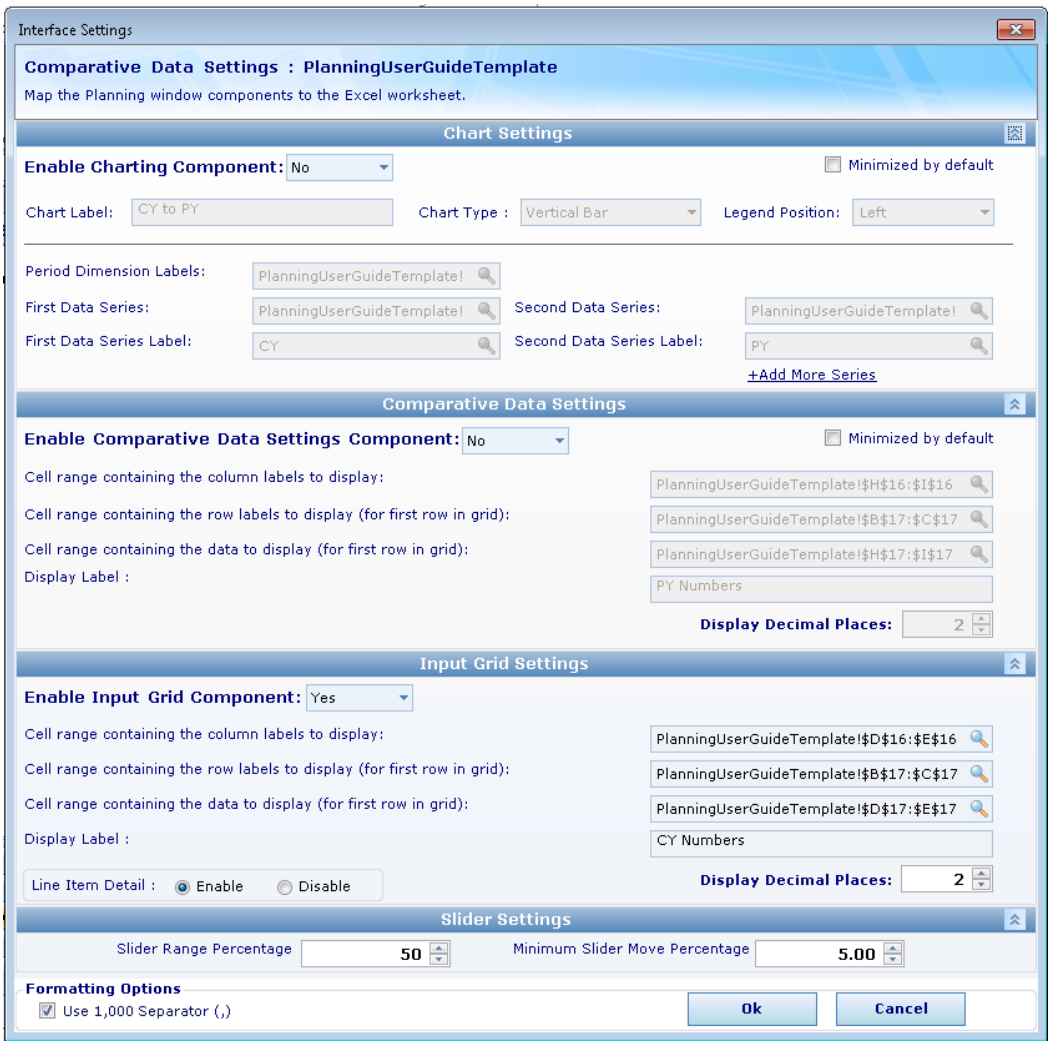
The *Planning* window is built to work with templates configured using monthly data.

To view the Interface Settings, click on the Interface Settings option within the Admin Panel. Expand on the sheet that Data Settings were previously configured for and double-click the Data Settings name to open the Interface Settings window (users may also right-click and select **View Settings**).

The Interface Settings window has four sections. Each section may be set to 'Enabled' to determine the features to be used within the *Planning* window.

1. Chart Settings
2. Comparative Data Settings
3. Input Grid Settings
4. Slider Properties

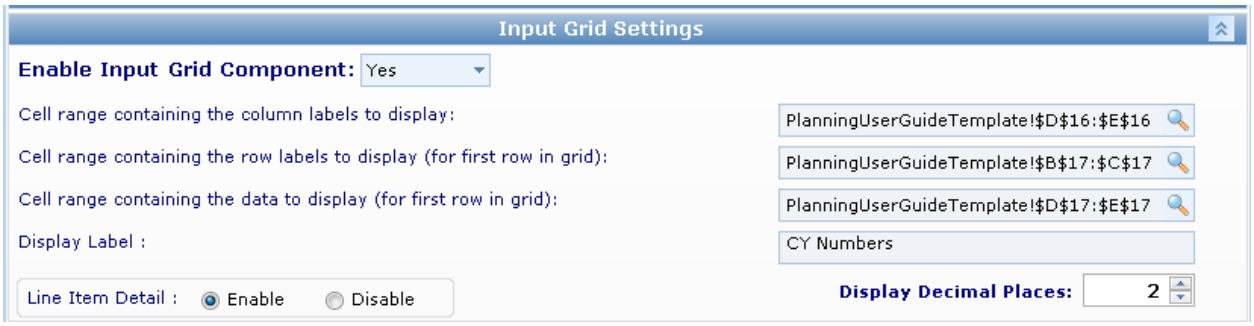
The following will guide users through each section in the order of importance.



The above screenshot displays the Interface Settings interface. The settings configured here will directly affect the *Planning* Data Entry Window.

3.2.4.1 Input Grid Settings

The Input Grid Settings section refers to the data entry section of the Excel template. By default this section is set to Enabled (visible). To hide this section, click on the dropdown box and select **No.** There are six parts to this section to correctly configure the grid settings.

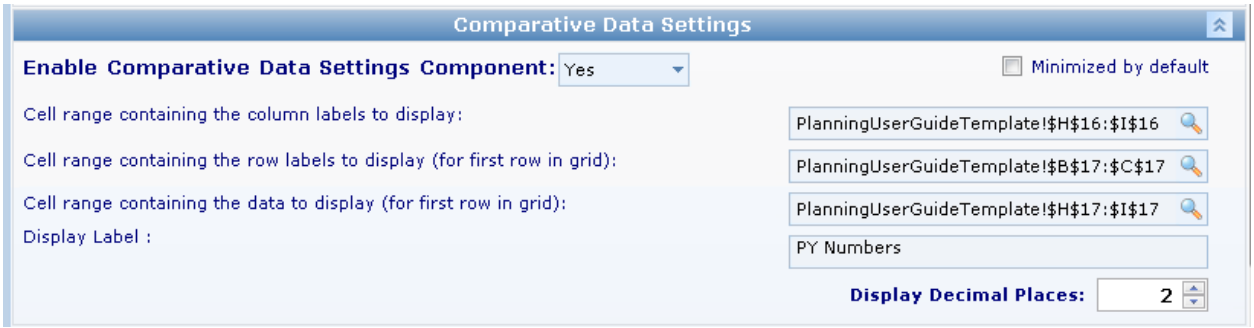


1. Cell range containing the column labels to display: this typically refers to the period (month) labels in the Excel template. By default, the Interface Settings will point to the period code configured in the Data Settings menu.
2. Cell range containing the row labels to display (for first row in grid): this refers to the description used for each row in the *Planning* window. This sometimes may consist of just the account code or perhaps the account code and description. Reference the label by clicking the lookup button and pointing to the cell range desired. Only the first row in the data grid is required to be referenced.
3. Cell range containing the data to display (For first row in grid) this is the cell(s) containing the input data. This information should be populated by default. Only the first row in the data grid is required to be referenced.
4. Display label: the display label is a user defined sub-title given to the input grid and will be displayed within the *Planning* window.
5. Line item detail: setting this option to **Enabled** allows users to enter detailed budget numbers that automatically roll up to the cell level in Excel. If the option is disabled, users may still enter in data using the *Planning* window.
6. Display decimals: select the number of decimal places to show within the *Planning* window. By default, this option is set to zero.

3.2.4.2 Comparative Data Settings

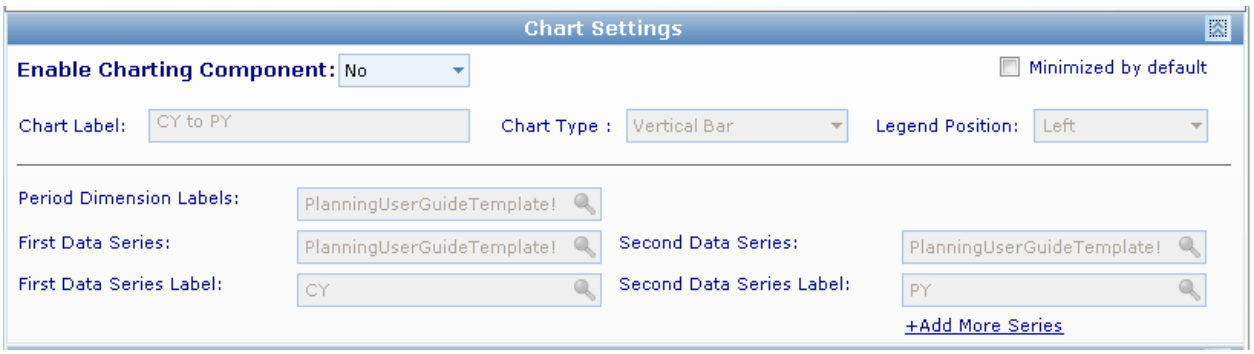
This section most often refers to Actual Data or other comparative data within the Excel worksheet. The configuration options are almost identical to the Input Grid Settings above except there is no line item detail section. If this section is enabled, all information should be completed.

The 'Minimized by Default' option, allows users to enable the feature but have it minimized when opening the *Planning* window. Since a vast amount of information is displayed within the *Planning* window, sometimes it may be desired to not see everything when opening the *Planning* window.



3.4.2.3 Charting Settings

The purpose of the charts is to provide the users with a dynamic chart that graphically displays the number from each Excel row, actively comparing Budget vs. Actual (or comparative data). By default, the Charting Settings are disabled.



1. Chart Label: the text entered here will be displayed as the title of the chart.
2. Chart type: a sidebar section in the *Planning* window containing the available chart types. The default is a Line graph, but the chart types may be changed by the user at run-time. Available chart types are line, spline, and stacked line, column and data grid.
3. Legend position: a dropdown box selection that specifies where the legend should be presented with the *Planning* window. The default is left, but right, bottom and top are also available.
4. Period Dimension Labels: The x-axis usually represents the Period dimension. By default, *Planning* will reference the Period reference in the Data Settings. This may be changed to utilize friendly period format if the report has been configured in that manner.
5. First data series: the first data series usually represents the budget/input data. By default, *Planning* will reference the first row of cells configured belonging to the Data Grid in the Data Settings. The range should match the Period Dimension Label above.

4. Deployment

There are several ways to deploy the Excel templates depending on what works best within the organization and the preferred processes. The following will discuss some typical deployment options

4.1 Place Excel File(s) on a Shared File Server

Placing the Excel file on a network server or SharePoint allows administrators to control the template versions accessible by users. It also offers a single location where administrators may use the Assignments feature to point to file(s). In this manner, end users may open the template directly or access it through the assignments feature. Depending on the license that the user is assigned to, the report will open in Report Designer or Player mode. In either case, the user will have full *Planning* functionality to save data back to the database.

4.2 Distribute Excel Templates by Email

Administrators may also send an email to end-users with the Excel template attached. The users may then save the template locally and open and execute the template. If the end-users are not connected to the network where the BI360 *Data Warehouse* is located, they may send the executed template with the entered numbers back to the administrator who may then save the data back to the database. This is commonly referred to as an Offline Template.

4.3 Using Published/Offline Templates

Administrators may choose to send the templates offline as well. Sending a form "offline" disconnects it from the database and prevents data write back to the database until the form is brought back online. Users may also opt for the feature if the wish to share Published workbooks amongst one another. By embedding and XML file, which contains the line item details, within the Excel file, the offline template may be shared amongst users either by email or through a shared drive.

Both online and distributed users must have the *Planning* application installed on their computer in order to use the features. Once installed,

It is important not to tamper with or remove the XML file that is located on the local machine.

Published templates may not be shared amongst users unless the form is set to "offline" mode first. As noted before, the "Save Data" and "Assignments" icons are inactive in Offline mode.

The BI360 *Planning* license accommodates two types of users (as defined on the license order form)

1. Online users

2. Distributed users

Distributed users differ from normal (online) users in that a distributed license is used for users who do not need the *Reporting* component installed (Designer/Players). This simply means that the distributed user must be provided with an executed published template which the users may then use to enter and save data back to the database. The user will not be able to rerun the report to verify that the data has been successfully saved back to the database.

There are typically two scenarios in which the distributed user may receive the published templates:

1. An online user publishes the *Planning* template, saves the template, sets it to "Offline" mode and emails or places the file in a shared drive for a distributed user(s) to access.
2. The *Planning* template is generated and emailed or sent to a shared drive from the Report Publisher applications.

4.3.1 Example Workflow of an Offline Template

The following will demonstrate how to use offline templates. This example assumes that a working *Planning* template has been made and is storing back to the database as desired.

1. An administrator or power-user publishes a form to a shared folder or by email.
2. User A (who is mapped to the SQL server and is a SODS_User) opens the template and enters data and saves the form. This user also changes the form to "Offline".
    a. Once the form is taken "Offline", users may change the file name without issues.
3. Users A/B/C/D all work together to adjust the numbers as desired until the budgeting process is complete.
4. User A brings the form to "online" mode and "Saves Data" back to the database.

5. Input Template Design Tips

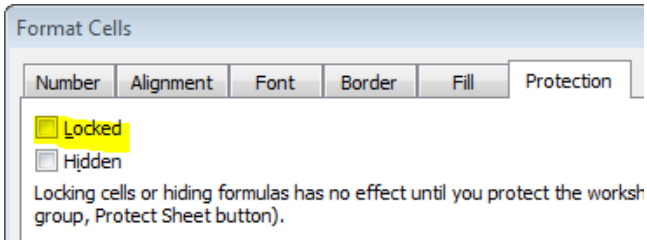
5.1 General

1. Keep in mind the purpose of the template is data input. The smaller the template and workbook, the better the performance will be when retrieving and storing data.
2. Avoid the pitfall of using the *Planning* templates and Reports. Reports should be designed and deployed in separate workbooks.
3. It is recommended that "originals" of all templates are kept. Edits to templates should be done on a renamed file (i.e. v1, v2 etc.).
4. It is required to leave Column A and Row 1 free of data. To force *Planning* to ignore columns or rows, place an 'I' in the row 1 or column A to be ignored.
5. Sheets with *Planning* settings should never be copied from one workbook to another.
6. It is recommended to Protect the worksheet and/or workbook to prevent end-users from making changes to the form. Since parameters located on the sheet are referenced in the *Planning* settings, it is a best practice to prevent users from editing the entries found in these cells. Please see the Security section for more details.
7. To help users identify write back cells, it is recommended to use a fill color on the cell(s). In the following screenshots, a light yellow grey color is used to represent write back cells.
8. Assignment files, discussed later, should be saved to a shared folder that uses a universal naming convention (UNC).
9. When possible, design single tab *Planning* workbooks. This will ensure optimal performance.
10. The *Planning* write back feature requires that every Excel cell intended for write back should have at least one column and one row dimension. For instance, it is typical to design a template with Periods in the columns and Accounts down the rows. This forms an intersection for the storage cells.
11. Worksheet names cannot contain any special characters. BI360 *Planning* will only accept alpha-numeric characters in the sheet name.
12. If the worksheet name needs to be changed after creating the *Planning* settings, then users must right-click the worksheet to be renamed and select **Rename**. This is a required step because the *Planning* settings need to be updated. Users cannot rename a sheet by double-clicking the sheet.
13. Always use the Category field when creating templates intended to use the Line Item Detail feature. This feature will store data to the 'LID' category. The excel template should be configured with the Category such as 'MAIN' in the Report Designer and also referenced in the *Planning* settings. This will avoid displaying duplicate data within the reports.

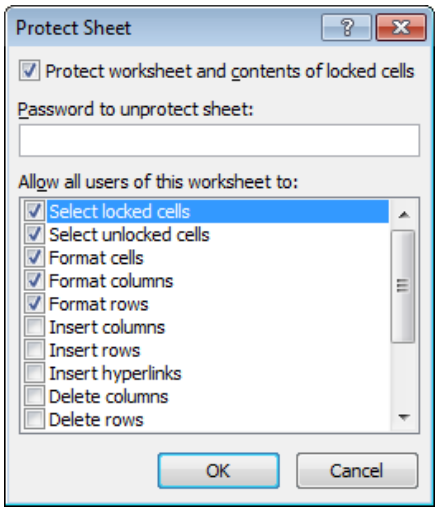
14. All attributes on a single transaction should be saved on the same form on a single row. As an example, storing Value 1 and Value 2 should be done on the same row to ensure proper storing.
15. There are two storage types. Please review the storage settings section to determine which storage method is best for the template.
16. When using Line Item Details, it is recommended to specify shared dimensions as a Sheet reference type rather than a Row or Column reference type. This is because *Planning* builds LID queries based on the global dimensions for performance reasons. As an example, if *Entity* is the only dimension defined as a global dimension, then all LIDs from the reference *Entity* will be returned from the database. However, if more dimensions such as *Scenario*, *Category*, *Department* and other optional dimensions are specified, the query will be executed more efficiently.
17. When designing a template with monthly periods. It is a best practice to use the Period dimension. However, when designing a template with daily periods, it is a best practice to use the Data dimension. This is so that the monthly period is in the format YYYYMM, whereas the daily period is in the format MM/DD/YYYY.

5.2 Security

1. **Protecting the worksheet**: Input templates may be locked to prevent users from making changes using Excel's *Protect Worksheet* option. *Planning* creates special flags in certain cells, it is important to ensure the Locked flag for row 1 in excel is unchecked. Because the executed report may dynamically create columns, it is sometimes difficult to pinpoint the exact. Columns to unlock, which is why unlocking the entire first row will ensure the cells remain unlocked. Moreover, users may hide row 1 so that changers are less likely to be made to the flagged cells.



The typical settings when locking a sheet are as follows.



If a worksheet or workbook is protected, it is important to remember to also set the password on the Report Properties Protection tab. See more details in the Report Designer User Guide.

2. Protecting the workbook: in addition to the flag stored in row 1 columns 256-261, *Planning* also creates two hidden tabs (Interface and DataSettings). When protecting the entire Excel workbook, it is important to ensure that these three tabs are not locked.
3. Encrypt with a Password: This is an Excel option. *Planning* uses an external file reader to view and store the data entered into the Excel workbook. *Planning* supports password protected Excel files.

4. File and folder read/write permissions: If the Excel file or the folder that contains the Excel file is set to read-only for the user (most common on server environments), *Planning* will be able to write back to the database properly. In this way, end-users cannot make unwanted changes to the *Planning* form.

5.3 Formats

1. **Dimension codes with leading zeros**: By default, Excel will cut off leading zeros of cell information. If the dimension code contains a leading zero, e.g. '00101' *Planning* will see this as 101 and will result in an error. To resolve this issue, simply insert a parenthesis before and after the OSR function. For instance, =(OSRGET("d_Account","Code"))
2. **Ignore rows and columns**: When using totals or other columns and rows in the middle of a Data Grid, it is important to remember to enter an 'I' in column A and row 1 to flag *Planning* to skip these columns and rows. Also note that no other data should be entered in column A and row 1throughout the entire worksheet. The ignore syntax (i) is not case sensitive.
3. **Planning reference dimensions**: It is always a good practice to create a hidden row section on the top part of the worksheet to store the dimension codes referenced in the *Planning* settings. These often include the *Entity*, *Department*, *Scenario* and other 'Sheet" reference type codes used for storing data back to the Data Warehouse. Doing this will avoid the potential of users inadvertently changing these important storage parameters, especially if the worksheet is not protected.

5.4 Using Fiscal Year versus Calendar Year

Dependent on the organization, the fiscal year may not start in January of every year. The fiscal year start period may be set to a month other than January when a database is first created in Data Warehouse Manager. The *Planning* settings will read the period referenced in the Excel sheet and store data based on that period's calendar date.

6. Using BI360 Planning

In this section, the *Planning* end-user usage will be covered. This section assumes the Data Warehouse connection has been created in a BI360 *Reporting* module and the templates and Assignments have already been set up.

Examples in this section are based on the BI360 Data Warehouse Corporate Demo Model available on the Solver Support website.

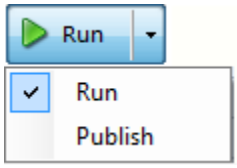
As previously mentioned, there are two ways to access a *Planning* template. Users may have direct access to a file location where the file is located or an administrator may choose to link the file through the Assignments feature. Please reference the End-User Assignment Interface section for detailed information on how to view the assignments assigned to the individual end user.

6.1 Executing a BI360 Planning Template

When a BI360 *Reporting* file is opened from the Assignments panel, depending on the user's license, the Report Designer or Report Player interface will be launched.

There are two options to run the template.

1. Run: Normal execution of a template. The template will be dynamics so that users may re-run the report to see the updated values.
2. Publish: Only done if the template is intended to be used in offline mode.



6.2 Entering Data

There are two methods for entering data in to the Excel templates. Data may be directly entered into the Excel sheet or data may be inputted through the use of the *Planning* Data Entry Window. If the administrator decides to disable the *Planning* Data Entry Window, the Enter Data button will be disabled in the *Planning* ribbon.

6.2.1 Entering Data Directly Into Excel

For input templates designed for Excel input only, users will enter all of their data directly into the Excel worksheet. Depending on how the templates are designed, input cell may be designated a certain color. Excel formulas may be entered into input cells but on the value will be retained. E.g. If the cell contains the formula '=100+100' and the form is stared and re-executed, the form will show 200 in the cell.

6.2.2 Entering Data Using the Planning Window

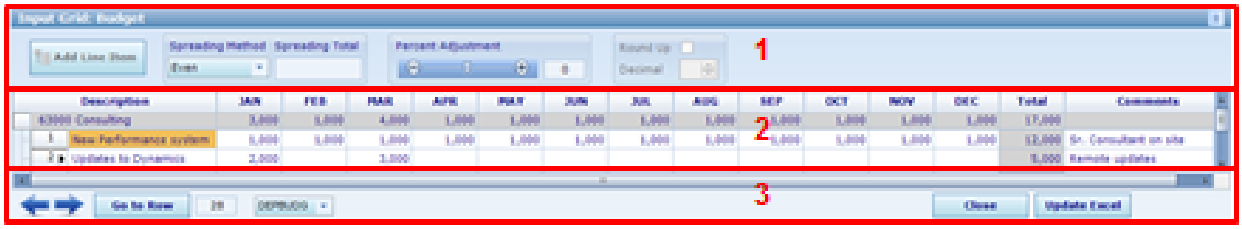
The *Planning* data Entry Window assists users with spreading data over 12 months, entering Line Item Details (LID) as well as comparing Actuals to other data. It also includes a graphical component to easily visualize comparative data as it is entered, such as Budget vs. Actual.

After executing the template, to open the *Planning* window,

1. Select a cell that is within the Data Grid.
2. Click **Enter Data** within the *Planning* ribbon.
3. Depending on the interface settings, the *Planning* window will open and display the configured grid(s).

The *Planning* window is designed to handle spreading and line items for any number of months (12, 18 and 24 months). Within the input section of the *Planning* window, there are three primary sections.

1. Action Section: contains a button to enable Line Item Details, spreading options, percentage adjustments and rounding capabilities. The administrator has the ability to enable or disable the Line Item details feature from within the Interface Settings.
2. Input Section: This section contains the summary row data, Line Item Details and comments. Most fields in this section are editable and will be stored to the database.
3. Footer Section: This section contains navigation controls as well as buttons to close the *Planning* Window and a button to update the data in Excel with the values from the *Planning* window.

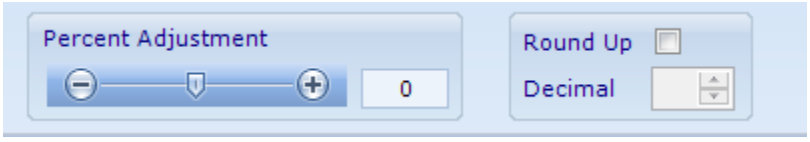


Any values entered into the input section will be considered as the true value. Formatting masks are not applied when considering the precision. Users may adjust the precision by modifying the decimal place option in the Interface Settings.

6.2.2.1 Summary Data Entry

Summary data is the account level data specific to the row in Excel. This may also be referred to as Row level entries. There are two options available to create/enter the data within the summary line.

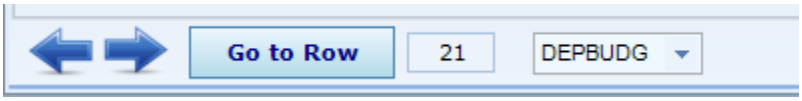
1. Enter the data directly into the cells.
2. Use the spreading methods to create the data
    a. Even: By default, Even spreading is selected. This option will spread the value entered into the *Spreading Total* evenly across the number of months being budgeted. For example: entering 12,000 into the Spreading total box will result in $1,000 for each of the 12 months.
    b. Historical Average: This feature is available if Comparative Data Settings are configured. This option uses the comparative data to average the monthly historical value and inserts it into the Budget line for the current row. This is calculated as the total for the year divided by the number of months show. This number is entered into each month of the current row being budgeted.
    c. Copy History: this is an exact copy of what currently is shown in the comparison section. This option is only available when the comparison data pane has been configured.
    d. Trend Based: This option requires an input into the Spreading Total box. The values are calculated by determining the weighted percentage for each month in the history (comparison) section multiplied by the spreading total. E.g. (Jan/year total)*(Spreading amount). This option is only available when the comparison data pane has been configured.
    e. Quarterly Spread: this option will spread the Spreading total value into the first period of each quarter. Thus, the month that each quarter begins on will have the Spreading Total value divided by the number of quarters that exists in the *Planning* template design.
3. Adjust Values: Summary and Line Item Detail values may be adjusted using the Percentage Adjustment and /or Rounding functions within the *Planning* window.
    a. Percent Adjustment: summary and Line Item Details may be adjusted by changing the percentage +/- or manually entering values into the text box. To adjust the values, first click either on the summary row or the line item row to adjust the values for the entire row. The percentage increment is set by the administrator in the Interface Settings and by default is set to 5%. Additionally, the minimum and maximum percentage changes are set by the administrator.



The percentage change is not stored in the database. Once the template is closed and reopened, only the values will be visible, not

the adjustment percentage.

b. Rounding: The rounding function may be used when the administrator sets the decimals to more than one place. There is an option to round the summary data up or to round to a specific decimal, similar to the Excel rounding functionality. The rounding function does not apply to the Line Item Detail row, only the summary row. Excel rounding may also be used once the data is copied into the sheet.
c. Navigation: *Planning* has several methods to navigate around the input template. When the *Planning* window is first opened, the row that is currently in focus is displayed within the window. For instance, if the mouse cursor is currently on row 10 in the Excel worksheet, than that row will be displayed within the *Planning* window. If no cell or row is selected within the Excel data grid section when *Planning* is opened, a prompt will request that the user select a cell within the data grid.



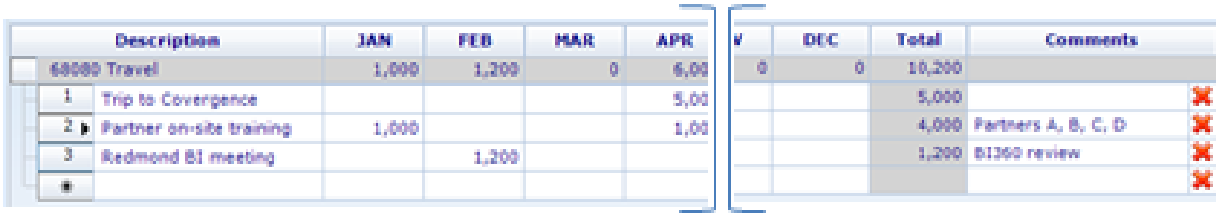
Once the *Planning* window is opened, users may navigate throughout the rows within the data grid by using the left and right arrows or by using the *Go to Row* feature. If there are multiple data grids on the same worksheet, the grids may be changed by clicking the dropdown box to the right of the row number.

For each row, there is a comment field available for entering text related to that row. This information is not directly loaded into Excel but is stored to the database and is available for reporting using the Comment2 field in the transaction table.

6.2.2.2 Line Item Detail Entry

When enabled, Line Item Details may be entered one level below the summary row. For instance, it is common to store LIDs for the Travel account within the General Ledger. These details are typically specific travel information which rolls up into the Travel GL account. Each summary row may have an unlimited number of LIDs.

To enter LIDs, click the **Add Line Item** button. This action will add a row below the summary line. Once enabled, the summary row will changed to a locked state (indicated by a grey fill color), so that no entry may be created at the summary row. Each line item entered will automatically roll up to the summary row. Each line item has three attributes:



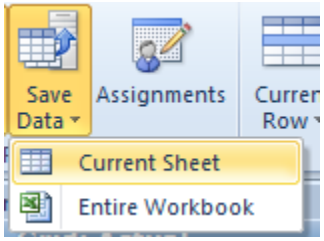
1. Description: Enter a short description for the Line Item Detail this information is not directly loaded into Excel, but is stored to the database and is available for reporting using the Row Description field in the transaction table.
2. Monthly Input: Values may be entered directly into each month or using the Spreading Total option. The summary row values will be updated on the Excel workbook, but not the underlying Line Item Detail values.
3. Comments: the comment field is used to enter additional details regarding either the summary row or the line item detail row. The information is not directly loaded into Excel but is stored in the database and is available for reporting using the Comment2 field in the transaction table.

6.3 Updating Excel from the Planning Window

Once the Summary and/or Line Item Details are entered and adjusted in the *Planning* window, the data needs to be written back to the Excel sheet. To update Excel, simply click on the **Update Excel** button. The values will be transferred to the current row within the Excel template. Note that the comments and line item descriptions are not saved to the template but are saved back to the Data Warehouse database for reporting.

6.4 Saving Data

Saving data back to the Data Warehouse manager is done by clicking the **Save Data** found within the *Planning* ribbon. There are two options when saving data, Current Sheet and Entire Workbook. Depending on how many Data Grids have been configured, one of the options may be disabled.



In BI360 *Planning*, there is an option configured by the administrator for each template which designates the template to track and store only changes or force storage of all data within the configured data grids. The saving option can be modified in the *Storage Settings* function found in the *Configuration* tab of the

Administration Panel. When the *Store Changes* option is configured, *Planning* will store the cells that have changed since the last time the sheet was stored. This includes cells containing calculations in the same data grid as well as cells that have been deleted. Once the template is re-executed the tracked cells is reset.

Planning cannot prevent users from re-executing the template before storing any changes. In the event the template is re-execute without storing, all changes will be lost.

It is important to note that if an Excel template is storing data to more than one transaction table (e.g. GL and HR), which means at least two *data grids* have been configured, the track changes function will not track calculated cells in the second *data grid* if data input occurs only on the first grid. In this case the Force Storage option is most likely enabled, which means all data within the *data grids* will be stored each time the sheet or workbook is stored to the warehouse. An example in the corporate demo model shows that data is entered into and stored for the HR model in one data grid, the second *data grid* contains only calculations which store data to the GL module based on entry on the first grid. Since the calculations occur on a different grid than the input, the Force Storage option was required in the configuration of the template.

Furthermore, if the user desires to utilize the auto-macro from Report Designer, data storage can be performed by using the following macro in the *This Workbook* level:

```
Sub OSR_ReportComplete()

Dim addin As Office.COMAddIn

Dim automationObject As Object
Set addin = Application.COMAddIns("Planning.Connect")

Set automationObject = addin.Object

Application.ScreenUpdating = True

Application.ActiveWorkbook.CustomDocumentProperties.Item("ReportGenerated").Va
lue = True

'Save Current Sheet

automationObject.SaveSheet

'Save Entire Workbook

automationObject.SaveWorkbook

End Sub
```

6.5 Degenerate Dimensions

Users may also write back to a degenerate dimension. A degenerate dimension is defined as a dimension that does not have a table associated to it. Two examples of this in BI360 Planning are TransactionID and EntityCorr. These two entries can be found as columns in the fact tables of the BI360 database but do not have dimension tables associated with them.

The advantage of a degenerative dimension is that it can be useful in grouping transactions made on the fact table. However, since there are no dimension codes associated to the dimension, users may save back any "code" to the database.

If a degenerative dimension is need in a company's implementation, please reference the Solver Knowledgebase article KB248.

7. Exercises

The sample exercise will walk users through creating a simple *Revenue* & *Expense Planning* template. The template will expand the natural accounts on the rows and 12 months across for the budget. Additionally, the template will include last year's actual data for comparison purposes. The second part of the exercise will cover configuring the *Planning Data Setting*, *Interface Setting,* and *Assignments*. Finally, the exercise will cover entering data directly in Excel and as well as spreading values and entering *Line Item Details* using the *Planning Data Entry Window*.

The following exercises will use Excel 2010, Reporting v3.7 and Planning and Data Warehouse Manager v3.7. The data and dimensions are based on the Corporate Demo model. It is assumed that all products, as well as the BI360 Data Warehouse Integration Package, have been installed. It further assumes that the user has been granted access to the database. The instructions in this exercise assume that there is a basic understanding of how reports are created within the BI360 Report Designer.

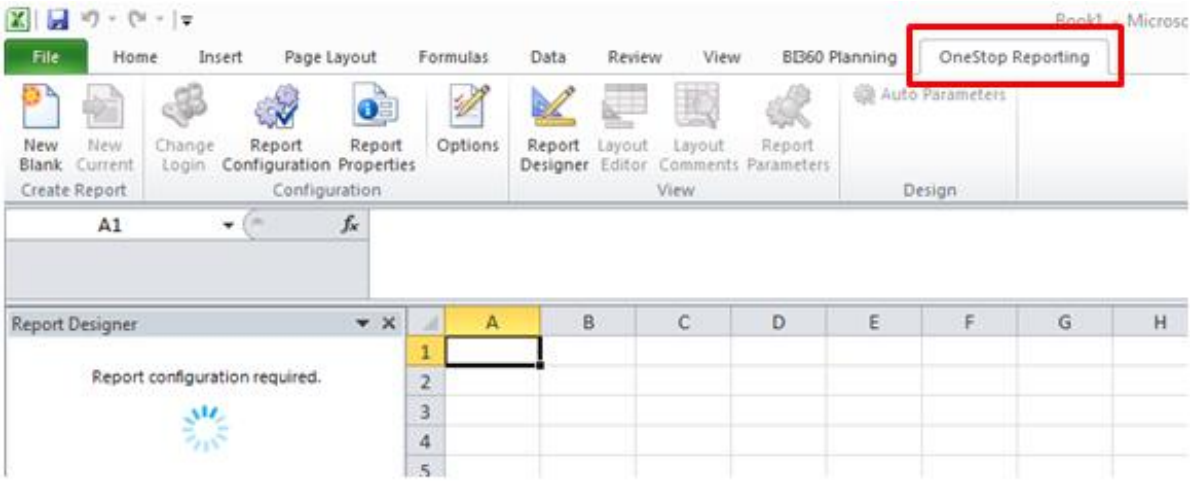
7.1 Designing the Planning Template

This exercise will cover:

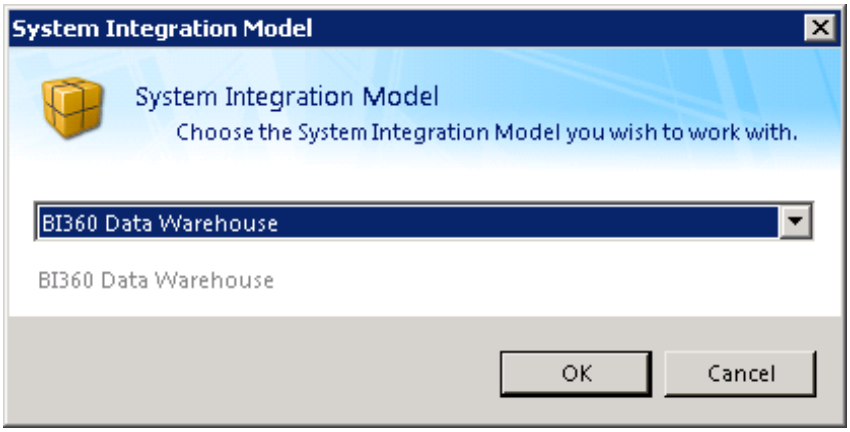
1. Creating the connection.
2. Designing a Simple revenue & Expense budget Template.
3. Setting up the Planning Settings including the ignore syntax.

7.1.1 Creating the Connection

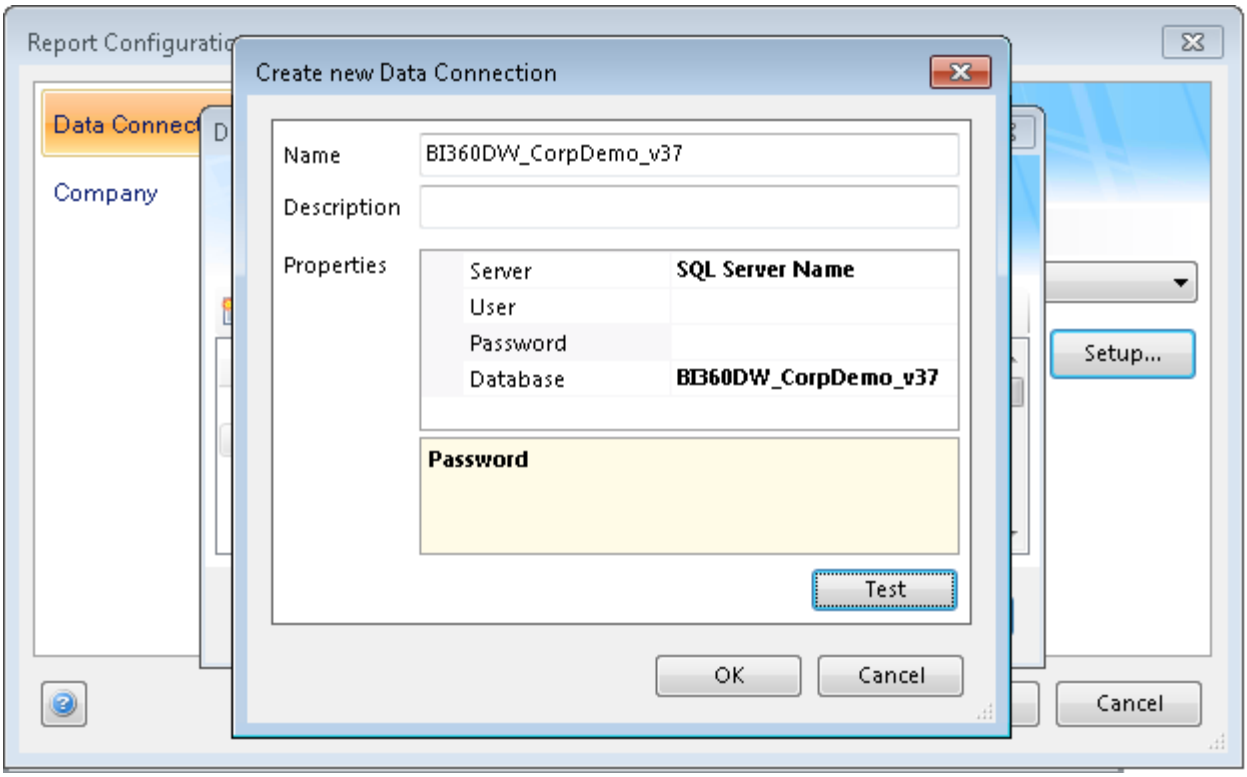
1. Start by opening Excel and Selecting the OneStop *Reporting* tab on the Excel ribbon. Next, click **New Current** button to configure the Report Designer connection.



2. Select BI360 Data Warehouse in the System Integration model prompt.



3. On the Report Configuration prompt, select **Data Connection** on the left side. Then select the BI360 Corporate Demo Model (*Note that the connection name may be different).* If the connection to the demo model has not been configured, create one by clicking **Setup** button to create the connection.
    a. If prompted for an Admin password, enter "admin".
    b. On the Data Connection window, click **New**.
    c. Complete all applicable fields (*Note that if Windows Authentication is used; leave the User and Password blank. If SQL Authentication is used, enter the appropriate User and Password.*
    d. Click **Test** and the OK to continue if the test is successful.
    e. Ensure the new connection is selected and close the connection screens.



Note the Report Designer and *Planning* share the same connection settings. Connections cannot be configured from the BI360 *Planning* ribbon so users must configure the proper connection through the OneStop *Reporting* ribbon.

7.2.2 Creating the Planning Template

When designing a *Planning* template, it is always best to spend time understanding the primary goals of the template. Since the template should always be dynamic, it is important to also think through the parameters required to drive the template. For instance, typical parameters for a *Planning* template include *Entity*, *Department*, *Period* and *Scenario*. However, the parameters should be specific to the goals and ensure that dimension selections that may change over time are not hard-coded in the design.

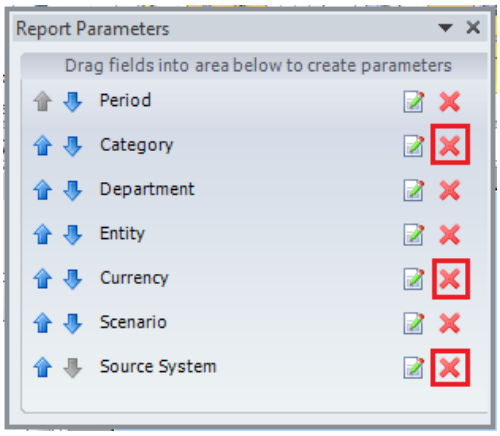
For this exercise, six parameters will be created to drive the template execution.

1. Category
2. Department
3. Scenario
4. Entity
5. Source System
6. Currency

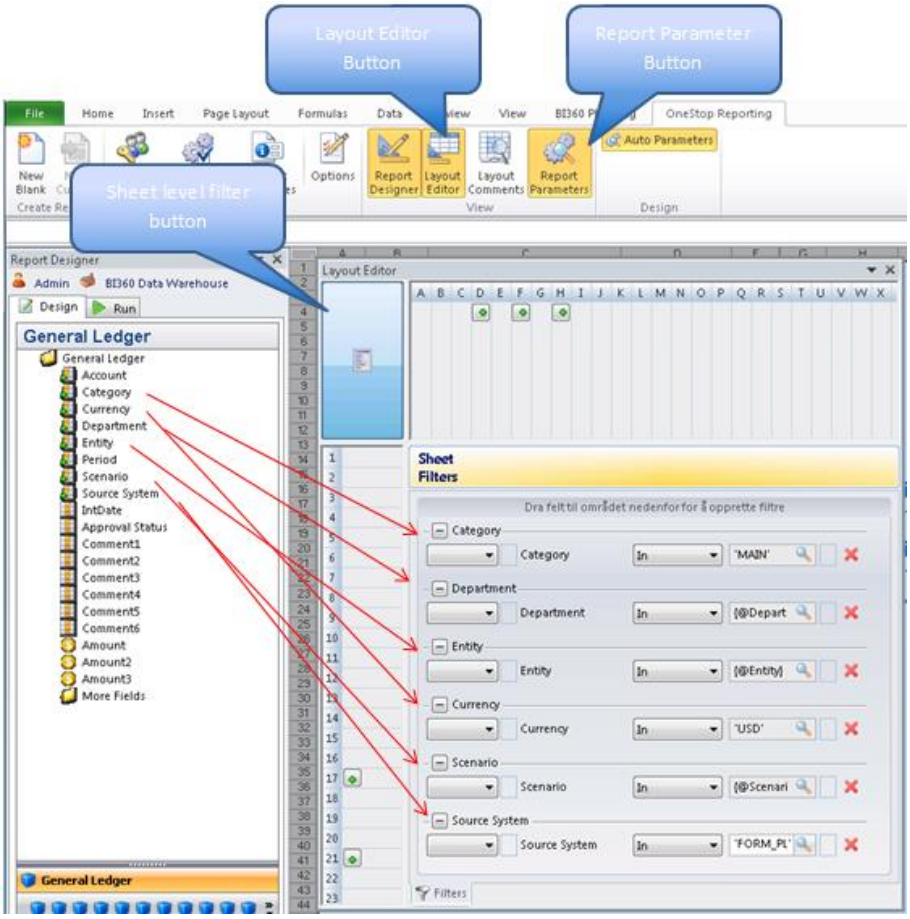
Start by changing the Excel sheet name from Sheet1 to DeptBudget and **Save** the Excel file as Departmental Budget.

1. From the Report Designer pane, click on the **General Ledger** option to ensure the General Ledger dimension and field selections are showing within the pane.
2. Click on the **OneStop *Reporting*** ribbon and select **Layout Editor** to make sure that the Layout Editor is open.
3. To select the entire worksheet, select the upper left sheet selection with in the Layout Editor.
4. Drag and Drop the following dimensions into the worksheet level of the Layout Editor Filter to create the parameter prompts and to set the dimension references for the entire worksheet
    a. Category Dimension
        i. Click on the lookup icon and select the code 'MAIN'
    b. Department Dimension
    c. Scenario Dimension
    d. *Entity* Dimension
    e. Source System Dimension
        i. Click on the lookup icon and select the code 'FORM_PL'
    f. Currency Dimension
        i. Click on the lookup icon and select the code 'USD'

    Since Category and Source System have been set to a static filter, both parameters may be deleted by accessing the report parameters window from the OneStop *Reporting* ribbon.



The results should match the screenshot below.

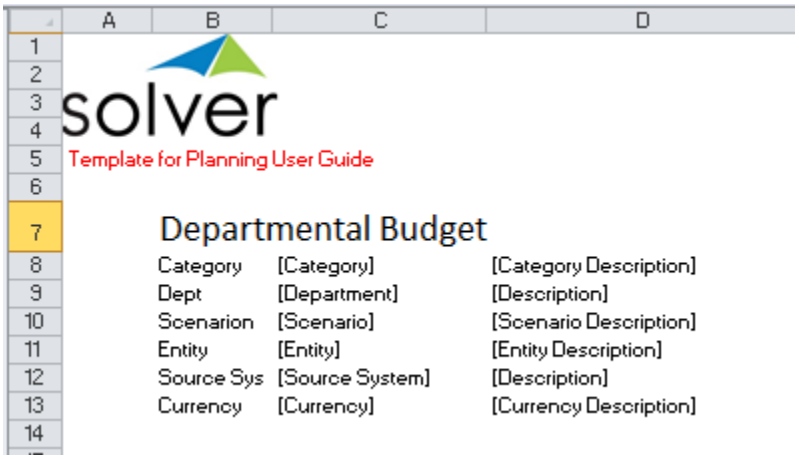


5. To test the parameters, click **Run** from the Report Designer pane. Test by clicking the lookup icon for each parameter.
6. To create headers for the report, drag the dimension attributes into the worksheet. Insert the following texts or dimensions into the cells mentioned in the following chart.

Cell	Type In	Drag In
B7	Category	N/A
B8	Dept	N/A
B9	Scenario	N/A
B10	Entity	N/A
B11	Source Sys	N/A
B12	Currency	N/A
C7	N/A	Category
C8	N/A	Department
C8	N/A	Scenario
C10	N/A	Entity
C11	N/A	Source System
C12	N/A	Currency

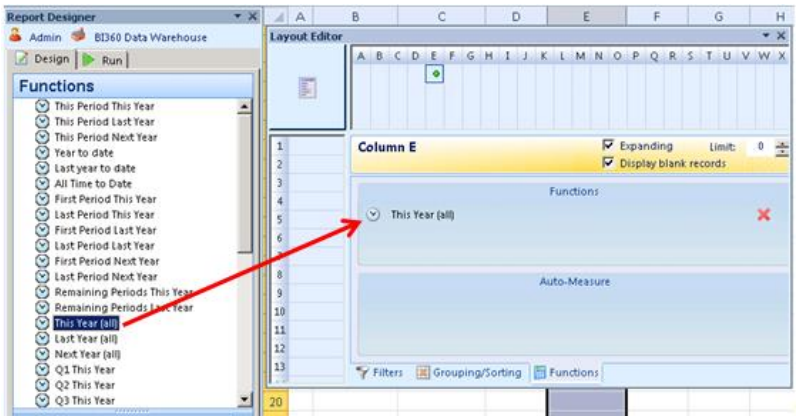
D7	N/A	Category Description
D8	N/A	Description
D9	N/A	Scenario Description
D10	N/A	Entity Description
D11	N/A	Description
D12	N/A	Currency Description

The worksheet should look like the image below. Note that row 1 and column A were kept empty so that the ignore syntax may be placed there later on in the exercise.

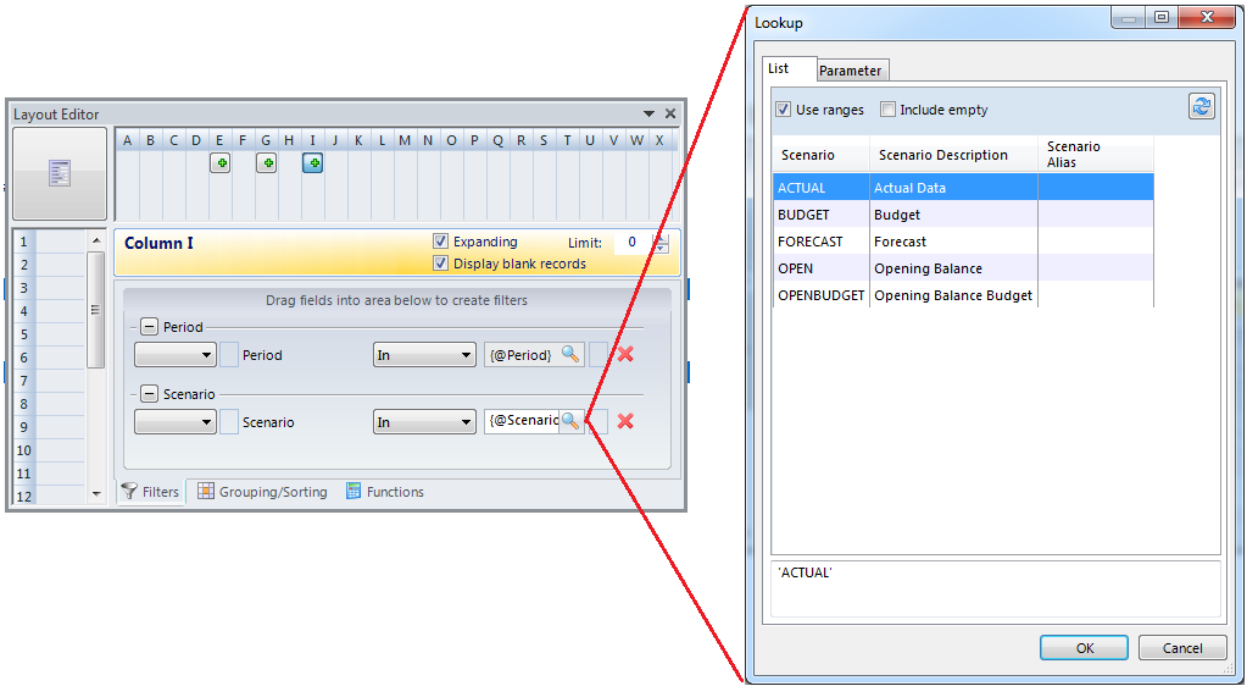


Company logos and other conditional formatting may also be applied.

7. To create the monthly budget columns
    a. Drag in the PeriodStart from the Period dimension into cell E17.
    b. Select **Create a New Selection Group on the Column** from the prompt.
    c. Right-click in cell E17 and change the format properties to the custom format MMM-YYY and center the text within the cell.
    d. Open the Layout Editor and click on the expanding group on column E.
        i. Drag in the Period dimension from the Designer pan in to the Filter tab of the Layout Editor. This will automatically create the Period parameter
        ii. Click on the Functions tab on the Layout Editor. From the Designer pane, click on **Functions** and drag the function 'This Year (all)' into the Functions tab.

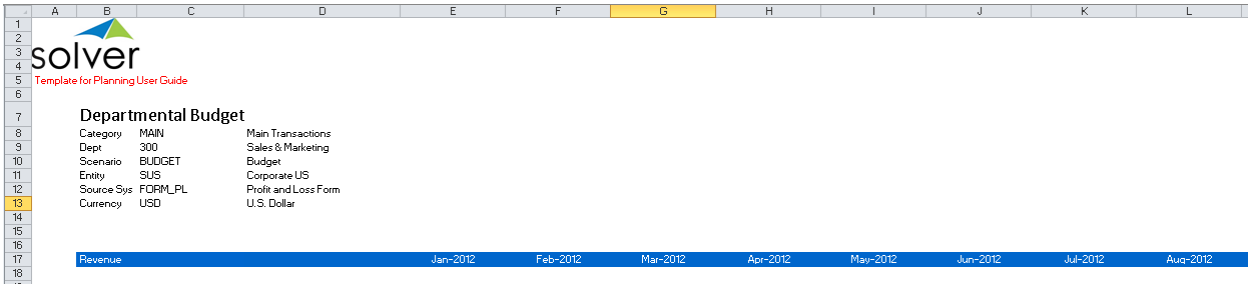


8. Type in the row header 'Revenue' into cell B17.
9. This report will be comparing the year the report is being ran for to the previous year Actuals. To bring in the previous year data, drag PeriodStart into cell I17. Similar to above, from Functions menu, drag in 'Last Year All' into the Functions tab.
10. Highlight the Expanding Group icon for Column I in the Layout Editor, drag in Scenario into the Filter. In the lookup, select **List** and select "Actuals". By applying this filter, all entries in the selected expanding group will refer to "Actual" data.

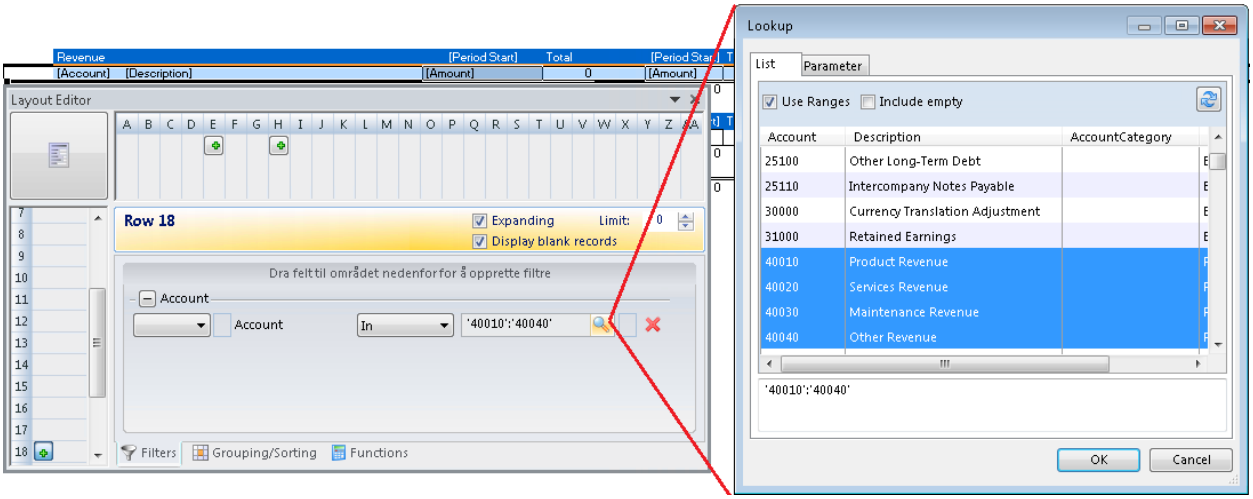


11. Test the form by going into the **Run** tab selecting a Period (i.e. "201201'). Because of the 'This year (all)', the report will populate all periods that belong to 2012. Scrolling to the right some more, the period year will be

populated as well. As mentioned above, custom formatting may be applied such as a fill and text color.



12. To add the Revenue Accounts to the template
    a. Drag in the Account dimension into cell B18. Select **Create a New Selection Group on the Row** from the prompt.
    b. Drag in the Description attribute from the Account dimension into cell C18.
    c. Open the **Layout Editor** and click on the expanding group for row 18.
    d. Click the lookup icon and select the revenue accounts 40010 – 40040 and click **Ok**.
    e. In addition, check the box next to **Display blank records** to always show all accounts.

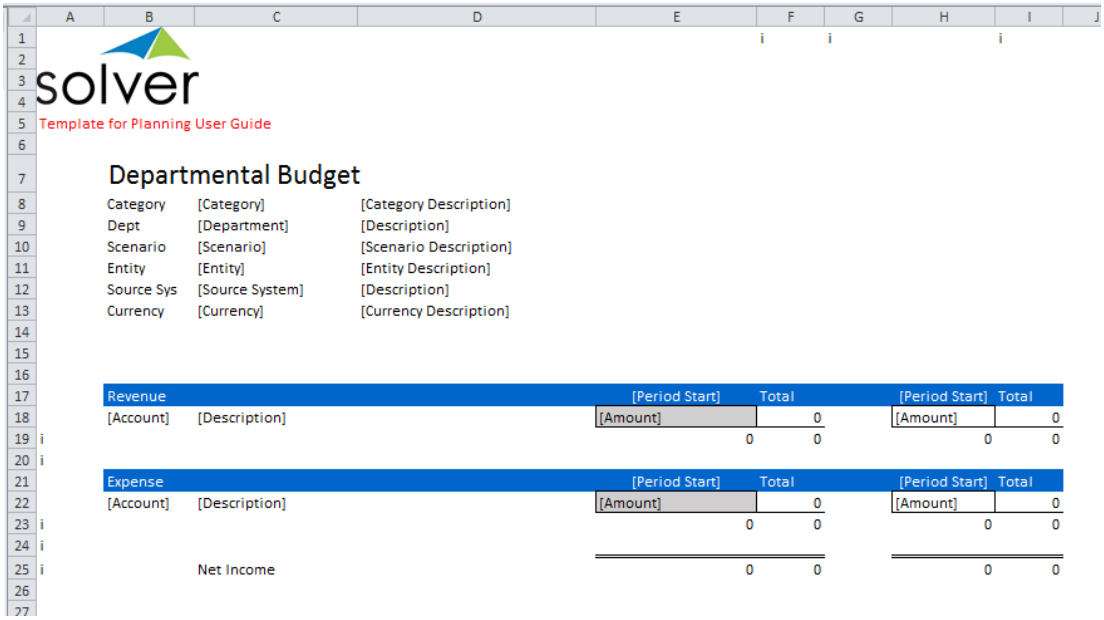


13. To add the value corresponding to each account, drag in **Amount** from the Report Designer pane into cell E18 and H18.
14. To add a Year Total column, type in 'Total' for F17 and i17. To add the total calculation, right click in cell F18. In the menu, select One-Stop reporting and select **Create SUM for F18 (Amount)**. Repeat for cell i18
15. Add a row sub-total by typing in "Total Revenue' into cell D19. To add the total calculation, right click in cell E19. In the menu, select **OneStop**

Reporting and select **Create SUM for E18 (Amount).** Repeat for cell F19, H19 and I19

16. Next, following Step 10, Expense accounts will be added. Users may select Rows 18 and 19 and copy and paste them into Row 22 and 23. Change the Account filter to grab the Expense Accounts, 60010:68200. Apply the OSR Reporting -> create SUM for function to cells F22, E23 and F23.
17. Type in 'Net Income' into cell C25 and type in '=E19-E23' into cell E25 and '=F19-F23'. Repeat for cells H25 and I25
18. Finally add the "ignore" syntax to the following cells: F1, G1, I1, A19, A20, A23, A24 and A25. As previously mentioned, the ignore syntax tells *Planning* to ignore information found in these cells although they may exist in the Data Grid Write Back Range.

The finished report should look as follows.



7.2 Configuring the Planning Settings

This exercise will cover:

1. Configure the Data Settings for the input section.
2. Configure the Interface Settings for the *Planning* Data Entry Window.

The Data and Interface Settings (*Planning* Settings) are required to define how the data should be stored within the Data Warehouse. The Data Settings is used to map the dimensions and data to the storage fields within the Data Warehouse while the Interface Settings (optional) is used to map the *Planning* window. Templates may contain several Data Settings configurations depending on the complexity of the input template; however the template in the above exercise will be configured with

only one setting. As an example, a Payroll template may store the main employee data to the Payroll module within the Data Warehouse and the summary General Ledger data to the GL module with the Data Warehouse.

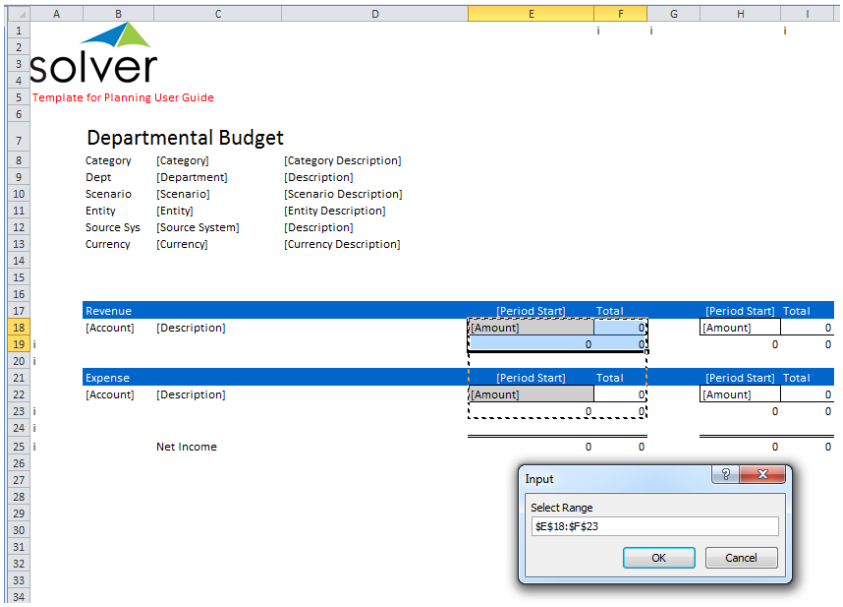
Although not required, there is improved performance while configuring the *Planning* Settings if the Layout Editor is closed.

7.2.1 Configuring the Data Settings

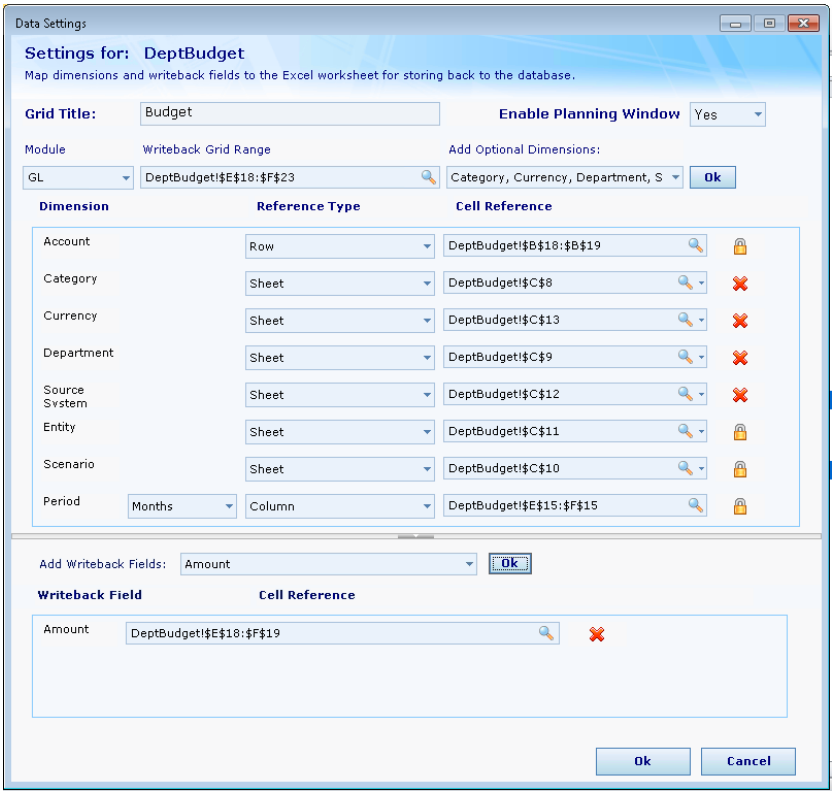
The following will guide users through creating the Data Settings for the template previously created. If it has not been done already, please save the template.

1. Start by clicking on the BI360 *Planning* ribbon and clicking the **Admin Panel**. Users will be prompted for a password. The default password is "admin" but it may be changed from within the OneStop Reporting Administration Tool.
2. Click on **Data Settings** menu and right click on the sheet where the template exists and select **New Settings**.
3. Now configure the Data Settings in the window that has been appeared
    a. Start by entering a Grid Title: Budget
    b. Select **Yes** for Enable *Planning* Window. The interface settings will be configured later in this exercise.
    c. Select the GL from the Module dropdown box.
    d. Click the lookup button for the data grid range. Select the range which includes all input areas and one column and one row beyond the last input area. (This is required because the template is using expanding groups)

       In this example, there is an expanding group for the Periods in Column E and two expanding groups for the Accounts on rows 18 and 22. Thus, the Data range in this case is E18:F23.

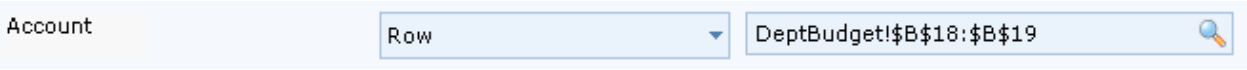


e. On the Add Optional Dimensions dropdown, click the checkmark box for: *Category, Currency, Department and Source System.*

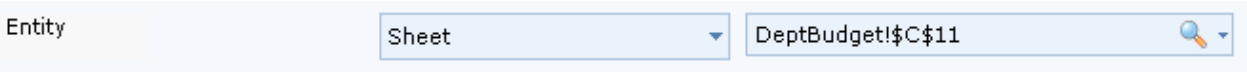


1. Account: in the example template, the Accounts are unique to each row. For the Account *Reference Type* click on the dropdown and select **Row**. This means the Accounts may be different for each row (within the expanding groups). To select

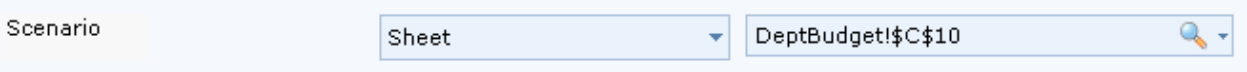
the Cell reference, click on the lookup button and select the entire account range related to the account code in the template. This should include the same start and end rows associated with the Data range, but for the column containing the Account codes.



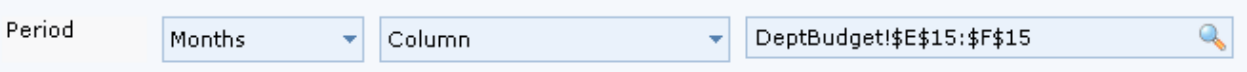
2. Entity: the entity is a global parameter in this example since it applies to the entire template. Set the *Reference Type* as Sheet and select the single cell in which the Entity code will be displayed in the generated input form.



3. Scenario: the scenario is a global parameter in this example since it applies to the entire template. Set the *Reference Type* as Sheet and select the single cell in which the Scenario code will be displayed in the generated input form.

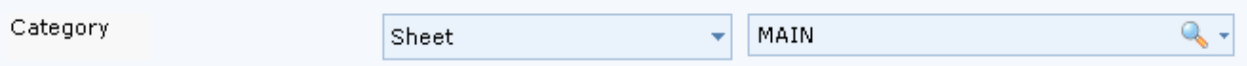


4. Period: The Period dimension expands over 12 columns to display January through December. Change the Reference Type to Column because the periods are unique for each column. This example uses an expanding group to accomplish the full year display; the reference should be set to cover the cells in which the Period code will exist along with one additional column. The standard Period format in BI360 Data Warehouse is in YYYYMM.

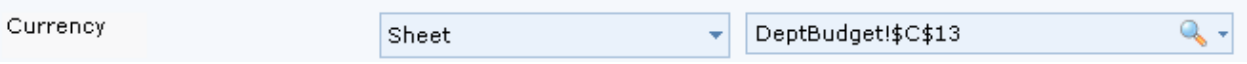


5. Category: The category will be used in this example because of the use of Line Item Details. By default, *Planning* will store all Line Item Details to the category LID within the Data Warehouse. As A best practice, to avoid showing duplicate values, all budget input data should be stored to a different

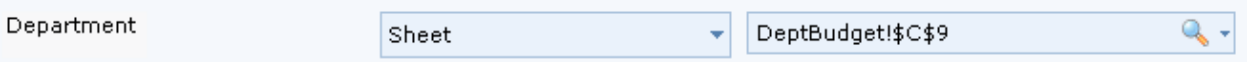
category other than LID. In this example, the category used will be MAIN (note: This could be any category). *Planning* allows direct, hard-coded entries within the reference section. Since the Category reference will never change, MAIN can be typed directly into the Reference Cell.



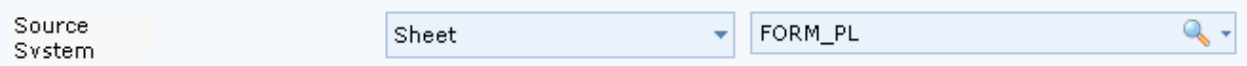
6. Currency: The Currency is a global parameter in this example since it applies to the entire template. Set the Reference Type to Sheet and select the single cell in which the Currency Code will be displayed in the generated input form.



7. Department: The Department is a global parameter in this example since it applies to the entire template. Set the Reference Type as Sheet and select the single cell in which the Department Code will be displayed in the generated input form.



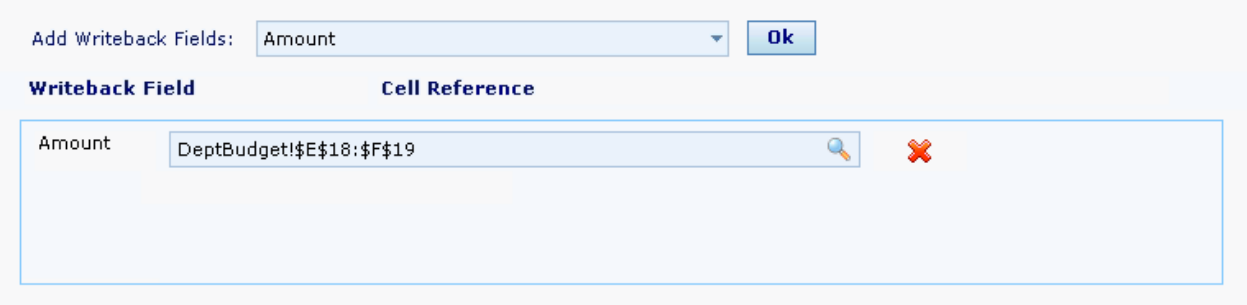
8. Source System: The Source System is a hardcoded filter set at the sheet level. In this example, Source System is hardcoded to FORM_PL.



f. Write Back Field Mapping: Write back field mappings are the input or calculation fields which should be stored back to the Data Warehouse.

   In this example, a single storage field, Amount (Value1) is being used. The Amount field is a label which was given to the Value1 field with the Data Warehouse Manager Application. Other Amount, comments and User Defined Fields (UDF) are available to store back to the Data Warehouse depending on the design of the input template.

By Default the Value1 field is selected for storage. This reference is based on the Data Grid range selection. For this example, no addition entries are required.



In order to save the Data Settings within the Excel template as well as store the settings in the Data Warehouse, click **Ok** at the bottom of the Data Settings Window.

Saving the Data Settings will perform the following tasks:

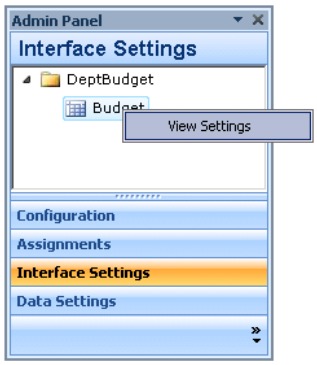
1. Save the settings to the hidden tab labeled: Data Settings
2. Create Excel Named ranges for the referenced cells. Use the Name Manager under the Excel Formulas tab to view the named ranges created.
3. Store the setting to the BI360 Data Warehouse.

7.2.2 Configuring the Interface Settings

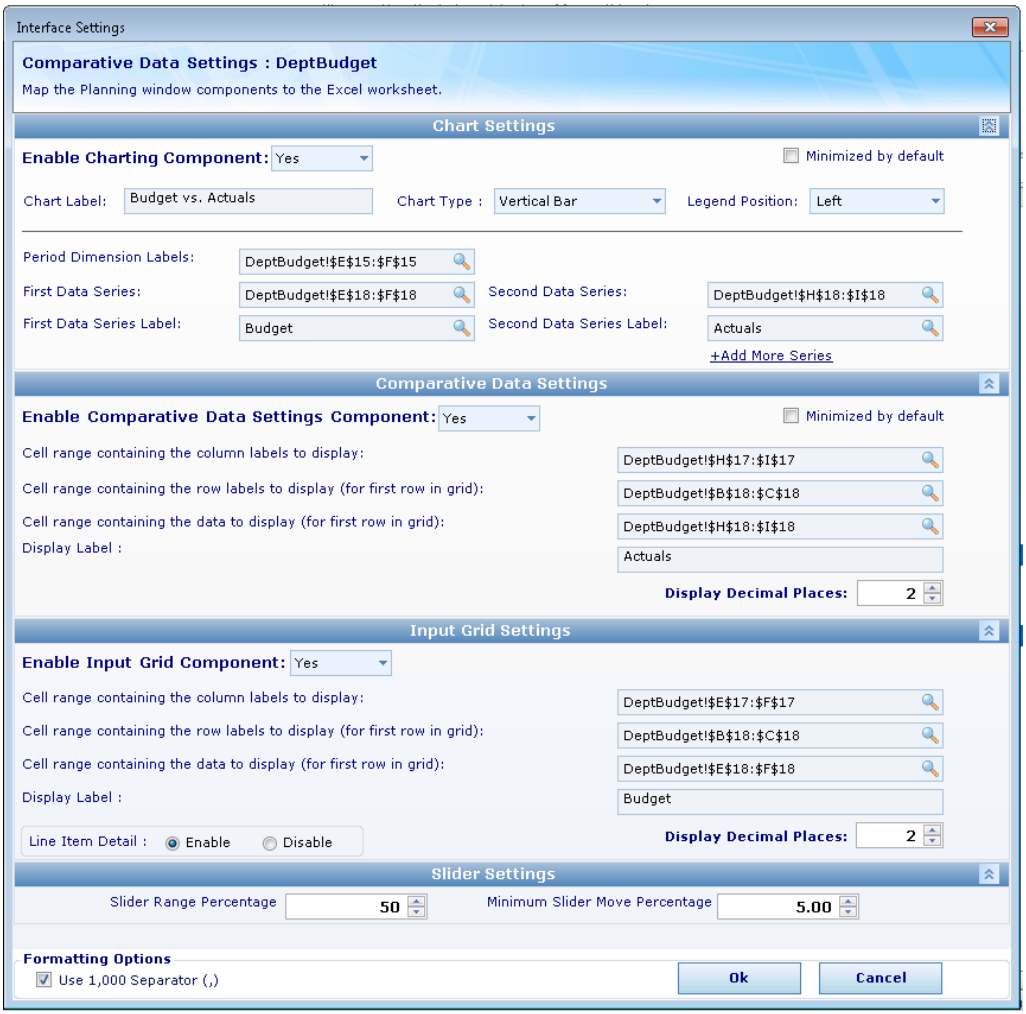
In this example, we will continue to build off the above template and configure the Interface Settings. As previously mentioned, the Interface Settings allow users to customize the look and feel of the *Planning* Data Entry window. This window is optional and was enabled by selecting **Yes** in the Data Settings configuration.

To begin:

1. Select **Interface Settings** from the Admin Panel.
2. Expand on the DeptBudget folder to view the available configured Data Settings. Right-click on the **Budget** grid and select View Settings.



3. In this example, the Charting, Comparative and Input Settings will be configured to show the various capabilities of *Planning*.



7.2.2.1 Charting Component

Charts may be used to visually show comparisons or trends between the Budget/Input data and Actual/comparative data. By default, this option is not enabled. Once enabled, the user may customize the following.

1. Chart Label: The label will be displayed in the chart header in the *Planning* window. Enter the text 'Budget vs. Actuals'.
2. Chart Type: There are many chart types for users to choose from. The available options are Vertical and Line. The default is Vertical Bar and will be left as is for this exercise.
3. Legend Position: The legend for the chart may be positioned to different parts of the screen. The default is Left and will be left as is for this example.

4. Period Dimension Label: This is typically the Periods (Months) reference. The default, taken from the Data Settings should be correct. To change the location, simply browse the Excel file and select a different Period range.
5. First Data Series: The first data series is typically the budget input data. Confirm the default cell reference is correct. In this example it should be cells E18:F18. Use the lookup button to make the selection.
6. First data Series Label: This is the label to show to end users. This typically describes the type of data used as the first series. In this example, the budget data is used. Therefore type in 'Budget' into the textbox.
7. Second Data Series: the second data series is typically a reference to the actual/comparative data cell range. Click the lookup box and reference cells H18:I18
8. Second Data Series Label: This is the display name for the second data set. This typically describes the type of data used as the second series. Therefore, type in Actuals into the textbox.

Users may choose to have this option minimized upon initial load. Because of screen size, it may be desired to have the Charting Component but not load it by default. In this case, select Minimized by default. In this example, we will not be using this feature.

7.2.2.2 Comparative Data Setting Component

The next section references the actual or historical data in the Excel worksheet.

The Comparative Data Settings is disabled by default. This component will be enabled for this example, so from the drop down, select "Yes".

The following are customizable:

1. Cell range containing the column labels to display: use the lookup button to select the Period column labels for the actual data. Please select H17:I17.
2. Cell range containing the row labels to display (for first row in grid): this is the row label description. Typically this is the Account Code or the Account Code and Description. Select the range B18:C10.
3. Cell range containing the data to display (for first row in grid): This is a reference to the comparative data to display in the *Planning* Window. Typically the Amount cell should be referenced. Since the row is expanding, remember to select on cell over. In this case, select H18:I18.
4. Display label: This is the description users will see for this section. Type in 'Actuals' directly into the text box.

Users may choose to have this option minimized upon initial load. Because of screen size, it may be desired to have the Comparative Data Component but not

load it by default. In this case, select Minimized by default. In this example, we will not be using this feature.

7.2.2.3 Input grid Component

The input grid section is the main section used within BI360 *Planning*. This section is used to reference input cells and is required for spreading input values as well as entering Line Item Details.

The following are customizable:

1. Cell range containing the column labels to display: By default, this input is populated with the Period referenced in the Data Settings. However, if a more user-friendly label was created in the report design, use the lookup to reference those cells. In this example, select cells E17:F17 if they are not selected already.
2. Cell range containing the row labels to display (for first row in grid): this is the row label description. Typically this is the Account Code or Account Code and Description. Select the range B18:C18.
3. Cell range containing the data to display (for first row in grid): By default, this input is populated with the Amount referenced in the Write back Range in the Data settings. If the referenced amount is incorrect, then use the lookup to select the correct cells. In this example, make sure cells E18:F18 are selected.
4. Display Label: this is the description users will see for this section. Type 'Budget' directly into the textbox.
5. Line Item Detail: To enable the Line Item Details section of the *Planning* window, select the **Enable** radio button.
6. Display Decimal Places: The default is 0; however this may be changed to the desired precision.

Additionally, users may add a "separator" to their values if they desire. This feature will be used in this example and should be checked.

After completing: Click **Ok** to save the settings. Saving the settings does the following:

1. Saves the settings to the hidden tab: Interface
2. Creates Excel Named ranges for the referenced cells. Use the Name Manager under the Excel formulas tab to view the named ranges created.
3. Store the settings to the BI360 Data Warehouse

This completes the configuration steps required to use *Planning*.

7.3 Entering Data Using the Planning Data Entry Window

This exercise will cover how to:

1. Enter data directly into Excel and store back to the Data Warehouse.
2. Enter and adjust data in the *Planning* Window.
3. Navigate around the *Planning* template from the *Planning* Window.
4. Create Line item Details within the *Planning* Window and store the data back to the Data Warehouse

Now that the template has been created, it is time to test it. Before beginning ensure the template is saved.

7.3.1 Entering and Saving Data Directly into Excel

1. The template should populate after running it for the following parameters.
    a. Entity: 'SUS'
    b. Department: '300'
    c. Scenario: 'Budget'
    d. Period: 201201
2. The first row should be the revenue account 40010. Note that all Excel functionality is available such as dragging values across the column and/or row.
3. After inputting data, select **Save Data** found in the BI360 *Planning* ribbon.
4. After the storage has completed, re-run the report to verify the data has stored.

7.3.2 Using the Planning Window

Three sections have been configured to be displayed when the user enters the *Planning* window. Each option may be minimized by select the "Collapse" icon in the header of each component. Additionally, as noted before these sections may be set to "Minimized by default" so that they are collapsed upon initial loading of the *Planning* window.

1. Click in the Jan cell for account 60010 – Salaries and select the **Enter Data** button from the BI360 *Planning* ribbon.
2. Enter data directly into the cells displayed in the Input Grid and click **Update Excel** to move the data into Excel.
3. Using the arrows, navigate to the next account. The Account information is displayed in the Window. By default, Even "Spreading Total" is selected. In the Spreading Total textbox, type in **12000**. The spreading total value will be evenly spread out to the number of Periods shown. In this case, 1000 will populate into each period. Click **Update Excel** to move these values into Excel.

4. Using the arrows again, move to the next row. In the Spreading total textbox, type in 12000 again. This time, use the Percent Adjustment to adjust the Spreading Total value by the Percent Adjustment. By default, Percentage Adjustment adjusts in increments of 5% and can adjust the total value by up to 50%. The incremental and total Percent Adjustments may be customized in the Interface Settings window.

   After adjusting the value, click **Update Excel.**

There are many more features available such as rounding (when decimals are used) and other spreading methods. The other spread methods are only available in Comparative Settings are configured. If Comparative Settings are not configured, users will only see the Even spread option.

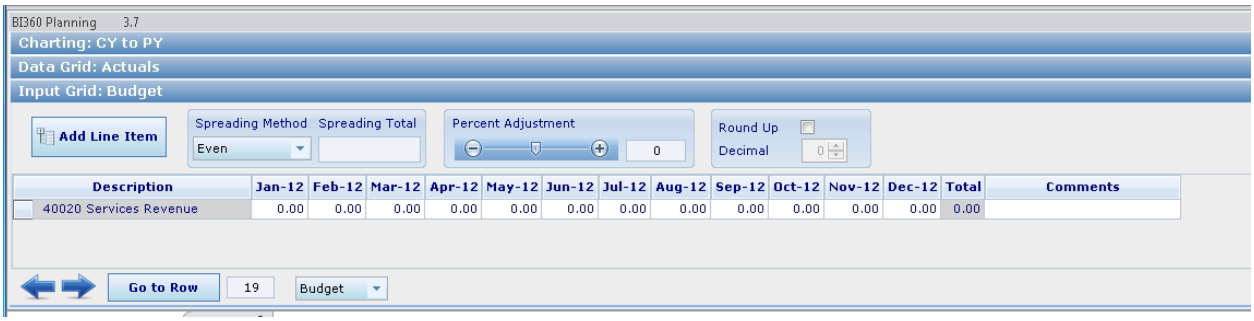
Three rows of data have been inputted into the *Planning* window. It is not necessary to click the **Save Data** option after each row of data is entered, but similar to making changes in any document, it is recommended to **Save Data** often.

Re-run the report to verify that the data was saved successfully.

7.3.3 Creating Line Item Details

Within the *Planning* Window, users may also create Line Item Details (LIDs) to create a more detailed budget. In this example, LIDs will be added to account 40020.

After clicking into the cell and opening the *Planning* window, select **Add Line Item**. This will add a new line below the account. In this example, 3 LIDs will be added.



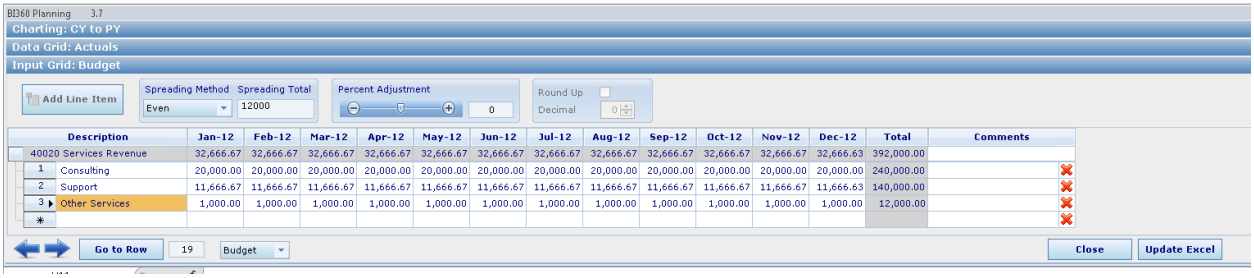
In this example, the Charting and Data Grid components have been minimized. All of the features that have been enabled, such as decimal places, separators and Line Item Details are active within the window.

To add a line item detail, click **Add Line Item**. A new row will appear below.

1. Add a user friendly description, in this case "Consulting".

2. Add some data figures into the Spreading Total box. Notice, that the entered figure is spread evenly across all twelve months.
3. Repeat again, this time adding a LID for "Support". Again, entered a figure into the Spreading Total box and notice that it will be divided evenly into the twelve months.
4. Add one more LID, "Other Services" and add some data figures.

Once complete, you will have three LIDs that are summarized into the 40020 account. Click **Update Excel**.



After Update is complete, simply click **Save Data** and the transactions will be saved. Re-run the report to verify they have been added successfully.

8. Appendix

8.1 Glossary

Assignments: These are folders in the Assignment Task Pane in *Planning*. Each Assignment folder can contain a number of Excel files (e.g. budget models) that the end—users can open directly from within Excel.

BI360-*Planning:* an Excel-based data entry tool and a component of the BI360 product suite from Solver, Inc. that is typically used for budgeting and forecasting

BI360-*Reporting:* is an Excel-based report writer that is part of the BI360 product suite from Solver, Inc.

BI360-*Data Warehouse:* is the data warehouse that is part of the BI360 product suite from Solver, Inc.

Data: grid: A data grid is any data (numbers) area of the Excel model that is going to be saved to the database as transactions and that relates to the same set of Excel rows and columns. For example, in a departmental expense form, the data typically relates to account numbers on the rows and months/periods on the columns.

Table Name	Description
DataSetting_Dimension	Dimension cell references
DataSetting_Grid	Grid cell references
DataSetting_StorageField	Storage field cell references
InterfaceSetting	Planning "Enter Data" window settings.
Sim_WorkbookDetails	Workbook template Id