Budget to Actual Database Automation Support System (B.A.D.A.S.S.)

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User manual

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# Fundamentals

## Overview

Before getting into the actual use of the Budget System, it is important to understand the fundamental structure of the system itself. The system was built around the dimensions that define Rackspace’s organizational structure. Those dimensions are Company, Location, Business Unit, Department, and Team. Two further dimensions, P&L line (derivative of the General Ledger Account field) and Product, are used to identify where across the P&L each revenue or expense value will flow.

## Workbook Dimensions

The basis for the Rackspace forecasting process revolves around FinOps Templates (FinOps being short for “Finance Operations”) where each template tracks some sub-segment of the broader company. Each of these templates (Excel workbooks) may be directly related to one budget owner in the business or a collection of multiple workbooks may roll up together to create a comprehensive budget for a budget owner. This system is capable of handling either situation, but with that flexibility comes the need to be cognizant of what dimensions are included in the many FinOps templates. Overlapping of dimensions between workbooks can create confusion between FinOps analysts, as budget dollars in the overlapping dimensions would be seen by both groups; missing dimensions to which Actuals have been coded understates both revenues and expenses that should be relevant to a budget owner, thus skewing his or her perception of their performance. Every FinOps analyst must be aware of these issues to accurately produce, manage, and analyze the budgets.

Each workbook’s included dimensions are defined upon their creation by the FinOps analyst, are stored in the database to enforce the required restrictions during forecasting and to reference when refreshing the P&Ls, and may be updated from within the workbooks themselves. These dimensions are selected as lists of members from each required dimension (the five organizational dimensions as well as the Product dimension). As a result of those independent selections, Budget and Actuals data will be included in the P&Ls based on any permutation of the individual lists. This can best be seen through a small example. Important to note: every amount must be coded to **one** member of ***every*** dimension, for both Actuals as well as for the Budget scenarios; keep this in mind while reading the example and while working in the templates themselves.

For this example, assume there are only three dimensions: Company, Business Unit, and Department. Also assume a workbook is created with the members from those dimensions as listed below:

|  |  |  |
| --- | --- | --- |
| **Company** | **Business Unit** | **Department** |
| *Rackspace US* | *Americas* | *Sales General* |
|  | *Applications* | *Executive* |
|  |  | *Inbound Sales* |

With the above dimension lists, the following six possible combinations exist:

|  |  |  |
| --- | --- | --- |
| **Company** | **Business Unit** | **Department** |
| *Rackspace US* | *Americas* | *Sales General* |
| *Rackspace US* | *Americas* | *Executive* |
| *Rackspace US* | *Americas* | *Inbound Sales* |
| *Rackspace US* | *Applications* | *Sales General* |
| *Rackspace US* | *Applications* | *Executive* |
| *Rackspace US* | *Applications* | *Inbound Sales* |

Any Budget or Actuals data that falls within the above list will show up in the P&L of this example’s workbook. Suppose that another FinOps analyst simultaneously maintains a separate FinOps template with the dimension list below:

|  |  |  |
| --- | --- | --- |
| **Company** | **Business Unit** | **Department** |
| *Rackspace US* | *Applications* | *Mail Product Engineering* |
|  |  | *Tech Support* |
|  |  | *Executive* |

In the case of this second workbook, all possible combinations may be found by simply extending the Company value, *Rackspace US*, and Business Unit value, *Applications*, down alongside each listed Department, for a total of three possible combinations. Notice that one of those combinations {*Rackspace US*, *Applications*, *Executive*} exists in both workbooks from this example. This highlights one of the potential issues stated earlier in this section: overlapping of dimensions across workbooks.

The FinOps owner of the first workbook may only care about the *Executive* Department within the *Americas* Business Unit, while the *Executive* Department values that fall within the *Applications* Business Unit are relevant only to the second workbook. An additional feature in the Budget System, the Slicers implementing the Cost Center Hierarchies, is useful here (though the Local P&L will still include the “shared” Actuals values in both workbooks for the overlapping dimensions) and will be covered later in this user manual. An alternative solution would be for the FinOps owner of the first workbook (that included *Americas* in its Business Unit dimension) to remove *Executive* from its Department list and create an additional workbook that has the dimensions {*Rackspace US*, *Americas*, *Executive*}. This alternate solution may be more of a hassle to go through, thus the use of the Cost Center Hierarchies may be preferred; as long as the FinOps analysts for each workbook are aware of this overlap in dimensions, keeping the overlap in place and filtering by Cost Center is acceptable.

## Creating New Workbooks

While new workbooks may be created by any Finance analyst, the process should take place in agreement with the overall FinOps group and the new workbook’s dimensions must be selected keeping in mind the discussion from the previous section.

New workbooks can be created from the BG3 - Template.xlsm file located on Filepoint Finance. To create a workbook, open the file as read-only and choose from the dropdown whether the new workbook will be scoped to the US, International, or Both. This will open a new tab for selecting the desired workbook dimensions. Double-click each of the headers to open a form that allows you to select every member to be included in the workbook. For every dimension, the option to Include All is also available; selecting this option will include every possible member for that dimension when refreshing the P&L or for forecasting purposes. Workbook dimensions with this option selected will also automatically include any new member values added to the dimension as the organization grows.

Once all dimensions have been selected, the next step is to choose what file type to create. Two file types exist in the Budget System: forecasting and rollup. A forecasting file is one in which new budget data is allowed to be pushed into the database. A rollup file simply allows analysts to view a refreshable, database-linked P&L. To create a forecasting file, click the “Create Workbook” button; alternatively, click “Create Rollup File” to create a rollup-only workbook. After one of these has been pressed, the user will be prompted to provide a name for the new workbook (names must be unique across all workbooks in the system). The BG3 - Template.xlsm macros will then push the create request to the database and perform all actions necessary to build out the new file.

# Forecasting

## Overview

In this section, the basic steps in the forecasting process related to the Budget System will be covered. Within each forecasting FinOps template are three forecasting tabs: Headcount, Expenses, and Revenue. Although there are specific nuances to each tab, they are all structured around the same dimensions discussed previously. All six dimensions (Company, Location, Business Unit, Department, Team, and Product) are required for every value that is pushed to the database and this requirement is enforced by both the workbooks themselves as well as the database.

As this dimensional requirement is shared across the forecasting tabs, one of the core features that is shared among those tabs is the ability to choose a default member for each dimension. That is, by selecting a member in the default row (row 5 or 6 depending upon the tab), the FinOps analyst does not need to select a member for any of the rows below, unless the row needs to be coded to a dimension that is different from the chosen default. This can be useful if, for example, a FinOps template has hundreds of rows of data on the Headcount tab that all will be coded to the same Company or Business Unit dimensions; here the analyst may select a default value in row 5 for those dimensions and do not need to select individual values for each row.

When setting a default dimension value, the analyst can always override that default by selecting a value for any particular row where an override is necessary. For example, if an analyst has set the default Business Unit to *Americas* on the Expenses tab but needs to budget an amount of Overtime expense to the *Applications* Business Unit, the analyst may simply select *Applications* in the Business Unit column for just that row and the amounts budgeted on that entire row will be coded to *Applications* (assuming both Business Units are available in the workbook’s dimensions).

Another shared piece of functionality across the tabs is the need to “activate” a row for budgeting purposes. For application efficiency, the Excel workbook only uploads rows of data to the database that are 100% complete, i.e., rows where all dimensions are selected and where additionally required fields are filled in. On the Expenses and Revenue tabs, the P&L Line Item field must be selected for a row to be activated and included in the database push; for the Headcount tab, the Job Title field triggers this.

In addition to the regular dimensional requirements, a requirement of valid division mappings must be met for each row. Division mapping is a list of Business Unit/Department combinations that is managed by the FP&A analysts and must be kept up to date to reflect the forward-looking organizational structure. These mappings also are the basis for the mapping of costs to the various sections of the P&L, e.g., Cost of Revenue (COR) versus General and Administrative (G&A). If an invalid combination of Business Unit/Department exists when attempting to upload data, the database will refuse the entire upload attempt and provide an error message that an invalid combination exists.

Dealing with foreign currency also is an issue shared across the forecasting process. On the Inputs tab, two currency settings are able to be selected: Output Currency and Forecast Currency. The Output Currency is the currency in which the Detailed and Collapsed P&Ls are to be viewed. Every time the P&L is refreshed, the database will convert all data into the selected Output Currency. Similarly, the Forecast Currency is the currency in which the *entire* workbook is set to forecast its revenues and expenses, i.e., every dollar amount that is forecast by a workbook in which its Forecast Currency is set to USD will be stored in the database as a USD amount, which can be converted to any other currency. Additionally, setting the Forecast Currency will also drive the currency in which the Master Assumptions amounts will be downloaded locally (to ensure the Local P&L and Detailed P&L can tie).

## Headcount

As most of Rackspace’s operating expenses are directly related to people costs, the early steps in the budget process involve forecasting future headcount at a granular level and calculating the direct related costs, e.g., salaries, bonuses, retirement, insurance, etc. The Budget System is set up to automate much of this, based largely upon the old budgeting process.

The starting point for each reforecast is the current headcount. This data is downloaded from the HR system and uploaded by FP&A into the Budget System. To find current headcount relevant to each FinOps template, the Forecast Info.xlsm file (to be covered in more detail later) may be useful. In this file, click the “Begin” button then click “Select Workbook” in the Total Headcount section of the Headcount tab; from there, select a workbook name and press “Select” to download a table that reflects the current headcount, as it stands in the Budget System database. This table is designed to be easily copied into the FinOps templates, first copy the dimensions and job titles into the Incremental Headcount section on the Headcount tab, then copy the starting headcount amounts into the desired month column of that same section. Any adjustments that need to be made to reflect known upcoming internal transfers, or other related changes to current headcount, must be communicated to FP&A to have those changes made in the database. After a starting headcount number has been added to the template, forecasting of headcount net adds and attrition must be done through a combination of discussion with the business partners and analysis of the balance of future talent needs of the group versus overall company costs.

Following the forecast of total headcount, it may be necessary to fill in Cap Rates (capitalization rates) for relevant headcount records. Certain roles involve work on projects where the cost of the Racker’s salary may be capitalized, rather than expensed in the period, based upon the amount of time that Racker spends on capitalized projects. As with regular headcount, understanding what the cap rates will be for particular roles going forward must be determined through discussions with the business partners to identify the projects their teams will be working on. Those discussions, coupled with the historical data related to how much of each Racker’s time has been capitalized, are key to forecasting future cap rates.

Once current and forecast headcount has been filled in, along with the related capitalization rates, the Headcount tab should be complete. However, it is very common that Rackers may be mapped to incorrect dimensions or job titles, resulting in missing average salary data and other related automatic calculations. In these cases, it is recommended to first dig into the Master Assumptions data within the workbook (on the Assumptions tab) to determine whether that data is there but mapped to an incorrect dimension. Another possible disconnect may simply be an out-of-date refresh of Master Assumptions, which can be easily rectified by refreshing it: on the Inputs tab, click the “Settings” button then click “Refresh Master Assumptions.” Another possible reason for missing salaries can be caused by an out-of-date workbook dimension list; in these cases, it may be necessary to update the workbook dimensions via the settings user form (Workbook tab, click “Update Dimensions”). If after completing these steps the average salary data is still missing or differences continue to exist between the Local and Detailed P&Ls (discussed later on), then it is necessary to meet with FP&A to dig into details of the Headcount assumptions to identify where differences exist.

## Expenses

The most complex forecasting tab is certainly the Expenses tab. This is due to the built-in forecasting methods using Excel formulas that are hard to follow without some introductory discussion. At its simplest, analysts may choose to select dimensions and P&L line items for each row and forecast everything through linking to external forecasting workbooks via the Manual Adjustments section. Alternatively, analysts could take advantage of the built-in forecast methods by using them as a baseline and adjusting specific values as needed through Manual Adjustments.

In addition to the same dimension fields found on the other forecasting tabs, the Expenses tab contains other fields for each row as well as settings scoped to the entire worksheet. For the rows, there are three extra input fields: Method, Months, and Forecast Rate. The Method column allows analysts to choose from the four built-in forecast methods – % of Revenue, Per Head, Per Total Heads, and Total Method – as well as Manual. Leaving this value blank effectively sets the method to Manual, as making manual adjustments to any values is always possible with any selected method.

The Months field is used for the calculation of the Historical Rate for most of the non-manual forecast methods. When a method is selected for an Expense row, the Historical Rate will be calculated based on the dimensions for the row (using default dimensions when applicable) and other settings on the sheet, including the row’s Months input value. This value determines how many months backward in the Actuals the calculation should look, e.g., if the Method is set to % of Revenue and the Months field is set to 4, the Historical Rate will be calculated as an average of the preceding *four* months’ expense as a percent of revenue for that line (details about each method’s calculation will be covered later). The Actuals date at which the calculation will “start” looking backward is based upon the date value in cell C5 on the Inputs tab. By default, this is set to the most recent month with Actuals data, as set in the Budget Database, but can be overridden via the input cell above (cell C1).

The Forecast Rate field is the driving value for the monthly forecast amounts, dependent upon the selected Method. For example, if an analyst set a row to use the % of Revenue method with a Forecast Rate of 0.5%, the workbook would automatically forecast for each month an expense amount equal to the month’s revenue multiplied by 0.5%. As is always the case, the amount that is automatically forecast can be adjusted for known or expected anomalies in the forecast period.

There are a few settings that affect the sheet as a whole, two of which are related to the revenue numbers that are pulled in as the basis for some calculations. First, monthly revenue for the Actuals is, by default, pulled in as what Actual revenue was for the dimensions included in each workbook. For some groups, it may be necessary to calculate % of Revenue expenses using a more broadly scoped Revenue base. In these situations, the Expenses sheet Actual Revenue setting (cell H1) can be switched to “Inputs Tab,” in which the revenue will be pulled over from the manually-input data from the Inputs tab. For Forecast calculations, a similar setting for Forecast Revenue also exists. Its options include the four revenue scenarios – Live Revenue, High, Medium, and Low – as well as the same “Inputs Tab” option available for Actuals. When selecting one of the four Revenue scenarios as the Forecast Revenue option, the revenue row for forecast months is calculated as a SUMIFS of the Revenue tab, summing only revenue rows that match the selected Revenue scenario.

One of the most complex features on the Expenses tab is the Calculation Relevance setting. At a high level, its purpose is to allow an analyst to disregard a particular dimension when calculating historical or forecast amounts and is useful since every data point in the system needs to be coded to a dimension and slight differences between historical dimensions and budget dimensions may make the built-in forecast methods less usable. In row 5 of the Expenses tab is the input for each dimension’s Calculation Relevance settings, with inputs being a “Y” or “N,” short for Yes or No; if left blank, the calculations will assume the same as choosing “Y” for that dimension. For a deeper understanding of this feature, a simplified example will be used. Assume 6 records of data exist, with the following dimensions:

|  |  |  |
| --- | --- | --- |
| **Company** | **Business Unit** | **Department** |
| *Rackspace US* | *Product* | *Tech Support* |
| *Rackspace US* | *Product* | *Executive* |
| *Rackspace US* | *Product* | *System Ops* |
| *Rackspace US* | *Applications* | *Tech Support* |
| *Rackspace US* | *Applications* | *Executive* |
| *Rackspace US* | *Applications* | *Sharepoint* |

Assuming a setting of “Y” for each dimension:

* {*Rackspace US*, *Product*, *Tech Support*} will only match the 1st row
* {*Rackspace US*, *Applications*, *Executive*} will only match the 5th row
* {*Rackspace US*, *Americas*, *Tech Support*} will match none of the rows

Assuming Department set to “N” and the other two set to “Y”:

* {*Rackspace US*, *Product*, *Tech Support*} will only match rows 1 through 3
* {*Rackspace US*, *Applications*, *Executive*} will only match rows 4 through 6
* {*Rackspace US*, *Americas*, *Tech Support*} will match none of the rows

Assuming Business Unit set to “N” and the other two set to “Y”:

* {*Rackspace US*, *Product*, *Tech Support*} will only match rows 1 and 4
* {*Rackspace US*, *Applications*, *Executive*} will only match rows 2 and 5
* {*Rackspace US*, *Americas*, *Tech Support*} will only match rows 1 and 4

Understanding the calculations performed by each built-in forecast method is important when using the model to ensure correct application of the methods. The following four paragraphs take a deeper dive into each of the four methods.

The first method, % of Revenue, is relatively self-explanatory. The revenue the calculation is based on for each month is shown in row 5 under each month column. This is pulled from either the Revenue tab or the Inputs tab, based on the setting in cell H2 of the Expenses tab. The forecast amount for each row is a multiple of that revenue number and the row’s Forecast Rate value, in column E.

The next method, Per Head, contains some nuances worth explaining. A more detailed description of this method is: dollar amount per record-relevant sum of headcount. Like the previous method, it is a simple multiple of the input Forecast Rate and the related Headcount, but the Headcount included depends upon the row’s dimension values and the Expense tab’s Calculation Relevance settings. This calculation method only sums up heads, from the Total Headcount section of the Headcount tab, that have matching dimension members, but will also disregard dimensions based on the Calculation Relevance setting discussed above.

The third method, Per Total Heads, is similar to the Per Head method, but uses the workbook total Headcount each month, rather than summing based on the dimension values. That is, this method calculates each month’s forecast amount as a multiple of the Forecast Rate and the Total Headcount for each month (found in row 6 and is a simple SUM of the Total Headcount section of the Headcount tab). This method is recommended over the Per Head method, for simplicity, but the prior method is included for cases where FinOps templates are structured to include multiple “logical” groups of Rackers.

Finally, the Total Method is a simple dollar amount that is forecast for each month, i.e., the Forecast Rate is the amount that the workbook uses as each month’s value. This can be manually adjusted.

## Revenue

Unlike the Expenses tab, the Revenue tab contains no built-in forecasting functionality, largely due to the fact that reliable revenue forecasts require much greater detail than exists in the Budget System and the accuracy of the revenue forecast is more important as it drives many decisions around where to focus future expenditures. Using the Revenue tab roughly imitates the functionality of the Manual Adjustments section of the Expenses tab: links and hard coded numbers are able to be directly typed into the upload section. As with the other forecasting tabs, the Revenue tab requires inputs for all dimensions as well as a P&L line item. An additional input that is needed for each row is the revenue scenario, Live Revenue, High, Medium, or Low.

## Pushing Updates

Being a database application, the data that is forecast in the FinOps templates must be pushed into the database for validation and to be accessible to other analysts. Once the data has been properly forecast on each of the forecasting tabs, updating the database is simple: navigate to the Inputs tab and click “Push All Updates.” If any errors do occur, be sure to look over the Checklist - FinOps Templates.docx file for help.

## Viewing the P&Ls

To view how the forecast data rolls up into a P&L, there are three tabs that contain P&Ls. The first to check is the Local P&L tab, where the P&L is calculated as a summation of data that exists in the FinOps template itself. This tab uses all the forecast data that has been input, as well as the local download of Master Assumptions, to calculate the values in the P&L. Alternatively, the Collapsed P&L and Detailed P&L tabs both summarize forecast data as calculated by the database and stored locally in the FinOps templates behind a Pivot Table. These last two P&Ls will only reflect what has been pushed to the database and needs to be refreshed to reflect those changes, but contains all the detail necessary for the special drilling functionality and makes use of the slicers.

Since differences may exist between the local and database-connected P&Ls due to timing of data refreshes, the Local P&L defaults to highlight differences that exist between its P&L and the Detailed P&L. These differences may be caused by an out of date copy of Master Assumptions in the template, changes made locally that have not yet been pushed to the database, other workbooks’ data showing up in the database-connected P&Ls, or other reasons. For help on how to identify the causes of these differences can be found in the Checklist - FinOps Templates.docx file.

# Scenarios

## Overview

The Budget System is capable of maintaining a variety of different budget scenarios as well the historical Actual view for comparison against the budgets. There are three main types of budget scenarios: live forecast, revenue, and frozen. Each of these will be described briefly below.

## Live Forecast

The Live Forecast scenario, simply named “Forecast” in the database, is the scenario that reflects the most current forecast data in the database, linking to the most up-to-date Master Assumptions. All non-revenue changes pushed from the FinOps templates will directly overwrite the data in this scenario.

## Revenue Scenarios

Similar to the above Forecast scenario, the Revenue scenarios are always the most current revenue being forecast and changes pushed to the database will only apply changes to these scenarios. There are four different Revenue scenarios: Live Revenue, High, Medium, and Low. The additional scenarios are included primarily for flexibility in viewing the P&Ls, allowing the analysts to quickly switch between them and view how those differences will impact the full P&L.

## Frozen Scenarios

Unlike the other forecast scenarios, all frozen scenarios are permanently locked from future edits, so pushing changes to the database will never impact any frozen scenario. These scenarios are created and controlled by FP&A. The scenario to use when creating Budget to Actual reports should be communicated to the analysts from FP&A as updates are made. Reference the Checklist - FinOps Templates.docx file for instructions on how to include additional frozen scenarios in the Collapsed and Detailed P&Ls. As the data contained in the Budget System is rather small and the process for creating them is trivial, it is recommended to create frozen scenarios frequently and deactivate unused scenarios as new scenarios for the same period are created.