Profitbase AS

Profitbase Planner

Data Requirements

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16.11.2020	1.6	TN	Revision to chapters on Legal Entity and Department dimensions
17.02.2021	1.7	TN	Revised for Planner 4.2 (Project and Activity dimensions)

Content

1   Planner Data Requirements

This document defines the minimum dimension, report and transaction data that is required to run the Planner solution as well as optional data required depending on the Planner functionality used.

The intended audience of this document is implementation partners configuring the solution initially and establishing integrations with external sources. The reader is expected to be familiar with Planner capabilities and functionality and with basic concepts and configuration using the Profitbase InVision designer in general and configuration of dimensions in particular.

Planner is deployed with initial (demo-only) data that will make Planner functional upon deployment and that may act as examples for data that is required. This applies to all data described in this document.

Planner is self-contained with respect to dimensions and some fact data in the sense that these can be input and maintained in Planner. In practice, however, some of the dimensions and ledger transaction data will typically be imported from external sources.

Planner dimensions and currency exchange rates may be maintained in the "Dimensions and currency exchange rates" workbook:


Fact data may be maintained in the "Source fact data" workbook:

Best practice *during* an implementation- and setup-phase, is to establish dimensional and transactional data *within* Planner while at the same time identifying, developing and testing appropriate integrations in time for production start.

Associated with this document is therefore an excel template that may be used to paste dimensional and transaction data into Planner (Planner Data Requirements - import template).

Please note that dimensions use hierarchies (structures) and that these will vary from solution to solution and may therefore differ from (*add to*) the minimum content described herein.

This applies in particular to the Department dimension that will typically contain a hierarchy that consists of more levels than the default dimension deployed with Planner.
Extending a dimensions's hierarchy will involve *adding* columns and attributes to the dimensional tables (schema) and *extending* existing dimensional hierarchies. Such *structural* dimension management is done in Profitbase InVision designer:
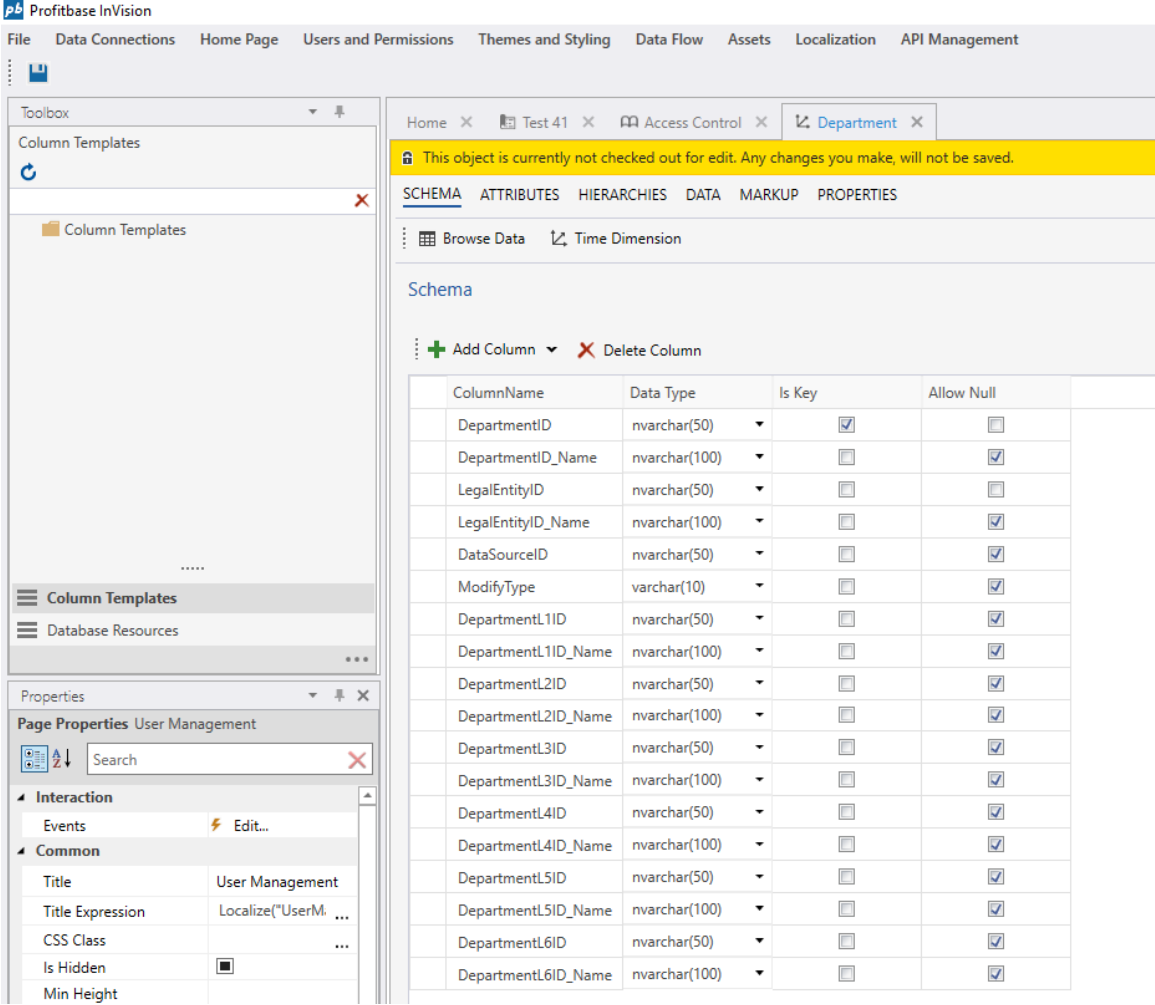
2   Minimum data requirements

The following are the *minimum* data requirements and limits the use of *input* modules to the Account, CapEx and Loan modules only. For use of other modules, please refer to Optional data requirements – depending on functionality used

Required (minimum) dimensions are:

- Legal Entity dimension – this is the formal company structure.

  This structure also needs to include entities that is used for elimination when intercompany transactions occurr and one want to record intercompany transactions.

The Legal Entity dimension is typically imported from an external source.

- Department dimension – this is the structure within each Legal Entity used for providing forecast and budget input and get actual accounting transactions.

  The department structure must contain the Legal Entity level and thus the LegalEntityID column.

  All transactions must contain Legal Entity and Department.

  The Department dimension is typically imported from an external source.

- Account dimension – this is the structure that is used to determine the type of transactions relative to a finance fiscal regime.

  Planner requires a common (corporate) account dimension for all companies in the solution.

  The Account dimension is typically imported from an external source.

- Report Setup – setup of one or more reports containing report lines that map to ranges of accounts. The report setup is maintained in Planner.

  The Budget and Forecast input models are initiated from a P&L summary workbooks (Budget and Forecast respectively) that make use of a report named INPUT.

  This report does exist when Planner is deployed, but must be adapted to each customer's needs and the report lines that the INPUT report comprises of must be mapped to ranges of the customer's account dimension.

  In addition to the INPUT report, other reports exist and is used for reporting purposes (Finance Reports workbook). They should also be adapted and mapped to ranges of the customer's account dimension.

- Currency dimension – define the currencies used.

  The Currency dimension is typically maintained in the solution.

- Time dimension – contains calendar with days, months and years

  The time dimension is generated within the solution.

Required Transaction (fact) data:

- Ledger fact - Actual (and other historic datasets if relevant) finance accounting transaction from general ledger.

  Note that ledger fact data is not a pre-requisite per se, as input to forecast and budget account modules can be made without any historical data present simply by adding input rows manually for the relevant departments and accounts.

Ledger fact data may be introduced post production start. In most cases, however, ledger data is included at or before production start.

Ledger fact data is typically imported on a regular basis from an external source.

- [Currency Exchange rates](#).

Exchange rates for historic data should be the same as the ERP system.

2.1 Legal Entity Dimension

The following information content is required:

#	Column name	Description	Mandatory / Optional	Comment
1	LegalEntityID	ID for the Legal entity	M	Primary Key Company Code
2	LegalEntityID_Name	Name of legal entity	M	
4	FunctionalCurrencyID	Home currency for this Legal Entity	M	
5	OperationTypeID	Type of legal entity (Main | Elimination)	M	
6	DefaultDepartmentID	Default department used for situations where a department is not normally given, such as opening balances	O	
7	LegalEntityL3ID	ID for hierarchical level 3	M*	See comment on hierarchy below
8	LegalEntityL3ID_Name	Name for hierarchical level 3	M*	See comment on hierarchy below

9	LegalEntityL2ID	ID for hierarchical level 2	M*	See comment on hierarchy below
10	LegalEntityL2ID_Name	Name for hierarchical level 2	M*	See comment on hierarchy below
11	LegalEntityL1ID	ID for hierarchical level 1	M*	See comment on hierarchy below
12	LegalEntityL1ID_Name	Name for hierarchical level 1	M*	See comment on hierarchy below

* Must be filled in, but can be padded as explained in [Legal entity dimension hierarchy](#).

It is important that Legal Entity IDs of the dimensions corresponds to the IDs used for actual general ledger data.

For details on how to switch from the Planner-internal source to an external source, please refer to [Legal Entity dimension](#).

2.1.1   Legal entity dimension hierarchy

The legal entity dimension hiearchy by default consists of 4 levels, including the actual legal entity, in the following order:

- Hierarchy level 1
- Hierarchy level 2
- Hierarchy level 3
- Legal entity

This is reflected in the positioning of the columns from left (lowest level, i.e. Legal entity) to right (highest level, i.e. Hierarchy level 1).

Note that all levels must be filled in, but padding - that is repeating - levels from one level to the next should be used if the actual hiearchy does not contain all levels, as showin in the example below:

In the example, Legal entity Profitways is padded - repeated - to Hierarchy levels 3 and 2. This

means that Planner renders the hierarchy skipping Hiearchy levels 3 and 2 so that when expanding level 1, the legal entity level is displayed as shown in the left margin where Profitways holding (Hierarchy level 1) expands directly to Profitways (Legal entity).

The number of hierarchical level can be changed, but has to be done using the Profitbase InVision designer.

2.2   Department Dimension

The following describes the minimum data required for the Department dimension, representing the Legal Entity and Department levels.

In practice, the Department dimension will typically contain *additional* hierarchical levels and thus additional columns.

| #	Column name	Description	Mandatory / Optional	Comment
1	DepartmentID	Department identifier	M	Primary key
2	DepartmentID_Name	Name for department	M	
3	DepartmentL6ID	ID for hierarchical level 6	M*	See comment on hierarchy below
4	DepartmentL6ID_Name	Name for hierarchical level 6	M*	See comment on hierarchy below
5	DepartmentL5ID	ID for hierarchical level 5	M*	See comment on hierarchy below
6	DepartmentL5ID_Name	Name for hierarchical level 5	M*	See comment on hierarchy below
7	DepartmentL4ID	ID for hierarchical level 4	M*	See comment on hierarchy below
8	DepartmentL4ID_Name	Name for hierarchical level 4	M*	See comment on hierarchy below

9	LegalEntityID	ID of the legal entity	M	All departments must be tagged with their legal entity id.
10	LegalEntityID_Name	Name of the legal entity	M	See comment on hierarchy below
11	DepartmentL3ID	ID for hierarchical level 3	M*	See comment on hierarchy below
12	DepartmentL3ID_Name	Name for hierarchical level 3	M*	See comment on hierarchy below
13	DepartmentL2ID	ID for hierarchical level 2	M*	See comment on hierarchy below
14	DepartmentL2ID_Name	Name for hierarchical level 2	M*	See comment on hierarchy below
15	DepartmentL1ID	ID for hierarchical level 1	M*	See comment on hierarchy below
16	DepartmentL1ID_Name	Name for hierarchical level 1	M*	See comment on hierarchy below

* Must be filled in, but can be padded as explained in Department dimension hierarchy.

Please note that the LegalEntityIDs should be different from the DepartmentIDs. If such cases of equality exist, the best practice would be to prefix the source DepartmentIDs with LegalEntityID before making use of them in Planner. For example, if both a LegalEntityID and a DepartmentID equals 'pro', best practice would be to rename the DepartmentID to 'pro.pro' thus making it unique.

It is important that DepartmentIDs of the dimension corresponds to the IDs used for actual general ledger data.

There may be cases where the Department dimension consists of members where a legal entity's functional currency cannot be established, for example a country level or similar.

In order to associate a currency with such members, those may be added to the "CurrencyReportID" setting in the Finance Settings workbook:
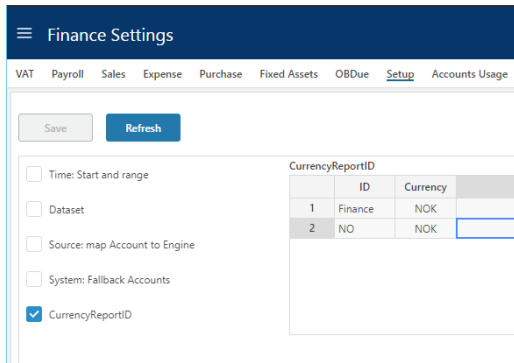
Example (ref. image above): assume that the department dimension contains a member "NO" that is not associated with a legal entity. To associate this member to the reporting currency NOK, this association can be done as shown in row #2 in the above image. When selecting this member in the Budget and Forecast workbooks amounts will be converted to NOK.

For details on how to switch from the Planner-internal source to an external source, please refer to Department dimension.

2.2.1 Department dimension hierarchy

The department dimension hiearchy by default consists of 8 levels, including the actual department and the legal entity, in the following order:

- Hierarchy level 1
- Hierarchy level 2
- Hierarchy level 3
- Legal entity
- Hierarchy level 4
- Hierarchy level 5
- Hierarchy level 6
- Department

This is reflected in the positioning of the columns from left (lowest level, i.e. Department) to right (highest level, i.e. Hierarchy level 1).

Note that all levels must be filled in, but padding - that is repeating - levels from one level to the next level up should be used if the actual hiearchy does not contain all levels, as showin in the example below so long as the department level contains actual departments and the legal entity level contains actual legal entities.

In the example, department Stavanger is padded - repeated - to Hierarchy levels 6 and 5. This means that Planner renders the hierarchy skipping Hiearchy levels 5 and 6 so that when expanding level 4, the department level is displayed as shown in the left margin where Norway (Hierarchy level 4) expands directly to Stavanger (Department).

The same applies to Legal entity that is padded - repeated - to Hierarchy level 3 and 2 so that when expanding Hierarchy level 1 (Profitways holding), the legal entity level is displayed (Profitways).

The number of hierarchical level can be changed, but has to be done using the Profitbase InVision designer. Legal entity does not have to be a level in the hierarchy, but it has to be present in the table and filled in.

2.3   Account Dimension

#	Column name	Description	Mandatory / Optional	Comment
1	AccountID	ID of the Account	M	
2	AccountID_Name	Description for the Account	M	
3	AccountID_Name_NO	Description for the Account in Norwegian	O	
4	AccountID_Name_EN	Description for the Account in English	O	
6	SignFactor	Tells the sign for the transaction. E.g. expenses recorded as positive	M	

		number gives SignFactor 1 while sales recorded as negative numbers gives SignFactor -1		
7	AccTypeID	Grouping account for Profit&Loss and Balance	M	Profit&Loss type = PL Balance type = BAL
8	AllowInput	True/false Marks the accounts that will be allowed for forecast and budget input	M	
9	AccountGroupL1ID	ID for hierarchical level 1 (highest level)	M	See comment on hierarchy below
10	AccountGroupL1ID_Name	Description for hierarchical level 1 (highest level)	M	See comment on hierarchy below
11	AccountGroupL1ID_Name_EN	Description for hierarchical level 1 in English	O	
12	AccountGroupL1ID	Description for hierarchical level 1 in Norwegian	O	
13	AccountGroupL2ID	ID for hierarchical level 2	M	See comment on hierarchy below
14	AccountGroupL2ID_Name	Description for hierarchical level 2	M	See comment on hierarchy below
15	AccountGroupL2ID_Name_EN	Description for hierarchical level 2 in English	O	
16	AccountGroupL2ID_Name_NO	Description for hierarchical level 2 in Norwegian	O	
17	AccountGroupL3ID	ID for hierarchical level 3 (level above account)	M	See comment on hierarchy below

18	AccountGroupL3ID_Name	Description for hierarchical level 3 (level above account)	M	See comment on hierarchy below
19	AccountGroupL3ID_Name_EN	Description for hierarchical level 3 in English	O	
20	AccountGroupL3ID_Name_NO	Description for hierarchical level 3 in Norwegian	O	

It is important that AccountIDs of the dimension corresponds to the IDs used for actual general ledger data.

Planner requires a common (corporate) account dimension for all companies.

For details on how to switch from the Planner-internal source to an external source, please refer to Account dimension.

2.3.1 Account dimension hierarchy

The account dimension hierarchy is used for defining Finance settings and not for reporting (see Report setup for details on reporting dimensions).

When defining settings that relate to account, dimensional levels may be selected using the socalled high level or ranked input selector:

This ability to select higher dimensional levels enables fewer settings to be made that cater for all underlying accounts. When designing this hierarchy, the main consideration should therefore be the granularity most suitable for defining finance settings.

The account hierarchy consists by default of 3 levels, L1, L2 and L3 of which L1 is the highest level and L3 is the lowest level, immediately above the account level.

2.4   Report setup

The Reports defined in the report setup are used for reporting in Planner.

The report setup is maintained in Planner in the Report Setup workbook.

Any number of reports can be created containing any number of report lines that will *either*:

1. Map to a range of account (ref. column "IncludeAccountsExp")
    o Ranges of accounts are specified comma-separated, for example 3000-3005, 3011-3014 that evaluates to:
       ▪ 3000, 3001, 3002, 3003, 3004, 3005, 3011, 3012, 3013 and 3014

Or

2. Calculate across other report lines (ref. column "Formula")
    o Formulae are specified as arithmentic operations addition (+), subtraction (-), multiplication (*), division (/) between ReportLineIDs, for example IP010 + IP020 that evaluates to:
       ▪ The result of report line id IP010 added to the result of report line id IP020

       Use of normal paranthesis () follow the general rule of paranthesis in arithmetic.

2.4.1   The INPUT report

Reserved for the Budget and Forecast Workbooks and acts as a summary and launch site for these.

The INPUT report should always be present and set up to map the customer's account dimension.

Note that for the INPUT report, no one account should map to more than one report line.

2.5 Sign factor

Sign factor is relevant in two scenarios

1. *Account* sign factor: a sign factor of -1 tied to an account will:
   o Switch the sign of any historical data
   o Switch the sign of any input data

   This would typically apply to income accounts booked with a credit sign that one would like to see and input as a positive amount in an input form.

2. *Report line* sign factor: a report line nets a range of accounts or is a calculation of other report lines.
   The report line sign factor indicates whether this net amount should be presented "as is" (sign factor +1) or with the opposite sign (sign factor -1) in this particular report. Note that any report lines that act as calculations of other report lines will perform that calculation based on the values displayed, i.e. after the sign factor has been applied.

2.6 Ledger fact - Actual and other historical transaction datasets

The table below defines the data required for finance general ledger actual data or other datasets such as financial goals or last official financial forecast.

There is no input solution for ledger fact data in Planner, an integration will have to be set up to load data from an external source, ref Ledger fact.

Please note that the ledger fact table contains a number of dimension columns, identified below. For any dimensional column, if used, there id used in the fact transaction must have corresponding id (member) in the dimension.

For example: a transaction marked with AccountID = 3000 will only make so long as the Account dimension contains a member with ID = 3000.

The following are the mandatory fact columns.

#	Column name	Description	Mandatory / Optional	Comment
1	AccountID	ID *corresponding to* an item in the Account *dimension*	M	
2	SYS_DatasetID	Identifier of the transaction dataset, valid values: (Actual | BudgetHist | ForecastHist)	M	
3	LegalEntityID	ID *corresponding to* an item in the Legal Entity *dimension*	M	Company Code
4	DepartmentID	ID *corresponding to* an item in the Department *dimension*	M	
5	TransTypeID	Identifies if the transaction is an opening balance (=0) transaction, a regular transaction (=1) or an elimination transaction (=3), allocation transactions (=4), etc.	M	This "tagging" of transactions is done so that the sum of all give the most complete picture.
6	CurrencyForeignID	Currency code for transactions; e.g. 'NOK', 'SEK', 'EUR', 'USD', 'DKK'.	M	
7	AmountForeign	Transactions amount using at least 2 decimals.	M	The AmountForeign will be converted to the legal entity's functional currency (home currency) in Planner if needed. I.e. transactions for any given legal entity may hold different currencies so long as valid currency exchange rates to and from alle relevant currencies exist in Planner.
8	Transdate	Transaction or booking date.	M	

#	Column name	Description	Mandatory / Optional	Comment
9	AccTypeID	Classify transaction on account to be 'PL' for profit/loss, 'BAL' for balance transactions. Anything else will not be included in the financial results but may be used for reporting purposes.	M	

In addition to the mandatory information described above, the following dimensional information is optional but may be desirable to include depending on the Planner functionality used and the ability to connect ledger information to these dimensions:

#	Column name	Description	Mandatory / Optional	Comment
1	ProductID	ID *corresponding to* an item in the Product *dimension*	O	
2	MarketID	ID *corresponding to* an item in the Market *dimension*	O	
3	SupplierID	ID *corresponding to* an item in the Supplier *dimension*	O	
4	EmployeeID	ID *corresponding to* an item in the employee *dimension*	O	
5	Dim1	ID *corresponding to* an item in the free *dimension* #1 (Dim1)	O	
6	Dim2	ID *corresponding to* an item in the free *dimension* #2 (Dim2)	O	
7	Dim3	ID *corresponding to* an item in the free *dimension* #3 (Dim3)	O	

8	Dim4	ID *corresponding to* an item in the free *dimension* #4 (Dim4)	O	
9	ProjectID	ID *corresponding to* an item in the Project dimension	O	Available from Planner v4.2
10	ActivityID	ID *corresponding to* an item in the Activity dimension	O	Available from Planner v4.2

For details on how to connect an external source, please refer to Ledger fact.

2.7   Currency Exchange Rates

The *historical* rates are by default fetched from an external source maintained by Profitbase using the operation "Import and Reprocess Exchange Rates"

The following currencies are currently handled (additional currencies may be added by contacting Profitbase):

	CurrencyID	CurrencyToID
1	AUD	NOK
2	BGN	NOK
3	BRL	NOK
4	CAD	NOK
5	CHF	NOK
6	CNY	NOK
7	DKK	NOK
8	EUR	NOK
9	GBP	NOK
10	HKD	NOK
11	IDR	NOK
12	INR	NOK
13	JPY	NOK
14	MXN	NOK
15	MYR	NOK
16	NOK	NOK
17	NZD	NOK
18	PHP	NOK
19	PLN	NOK
20	RUB	NOK
21	SEK	NOK
22	SGD	NOK
23	THB	NOK
24	USD	NOK
25	ZAR	NOK

Future exchange rates are managed in the Planner solution and does not require an external source:

Note that when adding new rates to currency *codes* ("Currency" field in image above) that do not exist already, these currency codes are automatically added to the currency dimension.

If *historical* rates are to be fetched from a *customer specific external* source, the following information is required and the steps involved to switch sources from the default source is described in Currency Exchange rates:

#	Column name	Description	Mandatory / Optional	Comment
1	CurrentyID	ID for the currency. 3-letter currency code.	M	
2	ToCurrencyID	Base currency for the exchange rates	M	
2	ExchangeRateDate	'Actual' or 'Budget'	M	
3	DayAverageValue		M	Company Code
4	MonthlyAverageValue		M	
5	MonthlyClosingValue		M	

2.8   Time dimension

The time dimension is generated within Planner from the "Finance Settings" workbook:

The "Start Date" is established automatically based on the start date of the Budget and Forecast processes respectively.

The "Time: Start and length" is selected from a drop down list of pre-defined options and reflects the planning horizons supported:

Select the option that corresponds to the situation at hand.

The time dimension is automatically re-generated when the forecast is rolled forward and when a new budget year is created.

3   Optional data requirements – depending on functionality used

This section is relevant if the following modules are to be used:

- Personnel
- Sales by GM
- Sales Forecast
- CapEx

Optional dimensions are:

- Product – mandatory in the Sales modules
- Market – mandatory in the Sales modules
- Supplier – optional in the Sales modules
- Asset Group – optional in the CapEx module
- Dim1..Dim4 – optional in several modules
- Employee – mandatory in the Personnel modules

Optional fact data are:

- Personnel fact – current personnel facts such as FTE and monthly salary
- Sales forecast fact – historic data for measures such as Sales Quantity, etc.

3.1   Dimension data

The following applies to the Product, Market, Supplier, Employee, Dim1..Dim4, Asset Group and (from version 4.2) Project and Activity optional dimensions:

The dimensions are by default maintained in the "Dimensions and Currency Exchange rates" workbook in their respective workbook pages:

To maintain this, add data rows manually as required or paste from the relevant excel template, click the "Save" button followed by the "Publish" button.

Please note that deleting dimension members for which input data exists will render those input rows without descriptions but will not affect any input.

The dimensions are by default set up with a group level –
columns XYZGroup/XYZGroup_Name for XYZ dimension – this renders as a group level the dimension hierarchy.

#	Column name	Description	Mandatory / Optional	Comment
1	XYZID	The XYZ dimension ID	M	Primary key
2	XYZID_Name	The XYZ dimension ID name	M	
3	XYZGroup	ID for The group level	M	
4	XYZGroup _Name	Name for the Group lkevel	M	

For details on how to switch from the Planner-internal source to an external source, please refer to All optional dimensions.

3.2   Personnel fact

The fact source data contain current FTE and monthly salary data per department/employee combinations:

Note that the personnel modules have a number of optional dimensions and columns that may be included or not. The fact format displayed will display the optional dimensions and columns included with their chosen headings ("Bonus", "Overtime", etc in the image above).

| #	Column name	Description	Mandatory / Optional	Comment

1	Departm.	The department ID	M	Primary key
2	Employee	The employee ID	M	Primary key
3	ProjectID	The project ID	O	Available from Planner v4.2. If no value is provided, the default value # is set
4	ActivityID	The activityID	O	Available from Planner v4.2. If no value is provided, the default value # is set
5	Dim1ID	The dim 1 ID	O	Available from Planner v4.2. If no value is provided, the default value # is set
6	Dim1ID	The dim 2 ID	O	Available from Planner v4.2. If no value is provided, the default value # is set
7	Dim1ID	The dim 3 ID	O	Available from Planner v4.2. If no value is provided, the default value # is set
8	Dim1ID	The dim 4 ID	O	Available from Planner v4.2. If no value is provided, the default value # is set
9	Current FTE	The current FTE position of the employee at the given department.	M	
10	Current monthly salary	The current monthly salary for a full time FTE for the employee at the given department.	M	
11	Bonus		O	
12	Overtime		O	

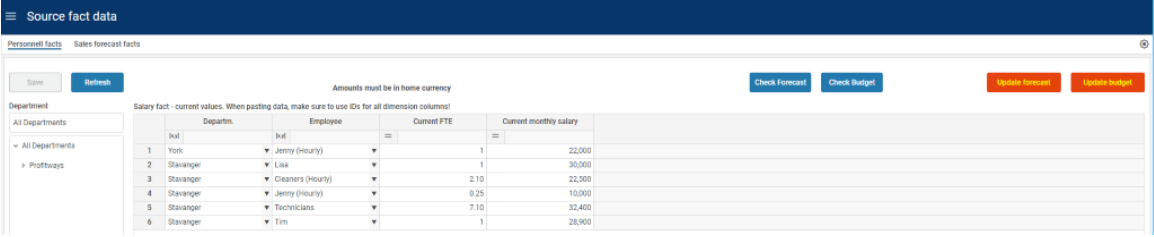| 13	Misc1		O	
14	Misc2		O	
15	Misc3		O	
16	Misc4		O	
17	Misc5		O	

Add new rows as needed or paste selection from the "Personnel fact" excel template. When pasting data, make sure to paste dimension **ids**. A dropdown will evaluate the id against the corresponding dimension and render the dimension **description**. If no description is rendered, just the id, this indicates that the id does not exist in the dimension.

Dimension combinations found in the source and not in the input module will automatically be processed into the module on forecast rollover.

To check which combinations will be processed into the budget and forecast modules respectively, click the "Check Budget"/"Check Forecast" buttons. Revise data as appropriate and keep the source fact data current.
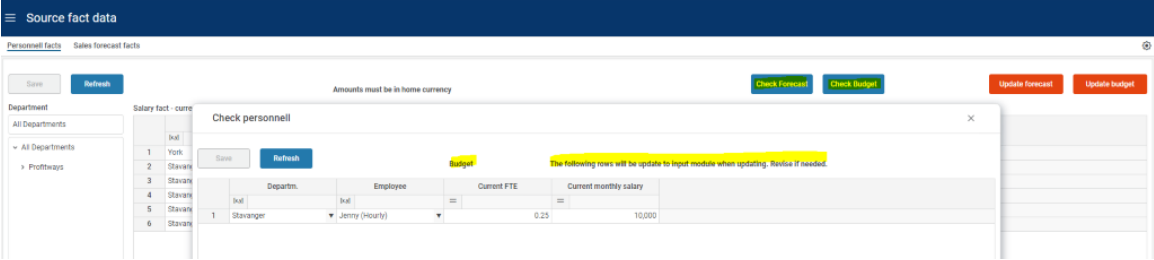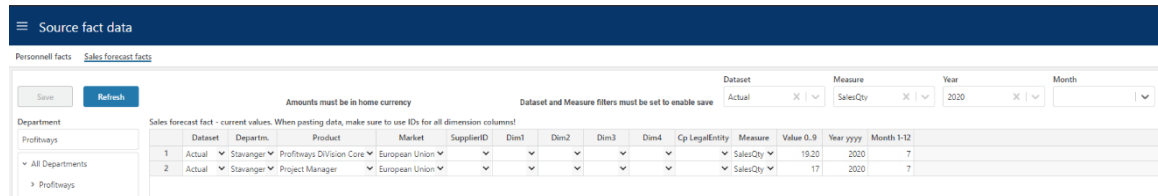

Modules can be updated manually by clicking the "Update forecast"/"Update budget" buttons:

For details on how to switch from the Planner-internal source to an external source, please refer to Personnel fact.

3.3   Sales forecast fact

A simple input tool for maintaining historical data is available in the "Source Fact Data" workbook

Select a value in the "Dataset" and "Measure" filter at the top and click the "Refresh" button to enable the save button.

Add new rows as needed or paste selection from the "Sales forecast fact" excel template.

When pasting data, make sure to paste dimension **ids**. A dropdown will evaluate the id against the corresponding dimension and render the dimension **description**. If no description is rendered, just the id, this indicates that the id does not exist in the dimension.

#	Column name	Description	Mandatory / Optional	Comment
1	DepartmentID	The department ID	M	Primary key
2	ProductID	The product id	M	Primary key
3	MarketID	The market id	M	Primary key
4	SupplierID	The supplier id	O	If no value is provided, the default value # is set
5	ProjectID	The project id	O	Available from Planner v4.2. If no value is provided, the default value # is set
6	ActivityID	The activity id	O	Available from Planner v4.2. If no value is provided, the default value # is set
7	Dim1	The frem dimension #1 id	O	If no value is provided, the default value # is set

8	Dim2	The frem dimension #2 id	O	If no value is provided, the default value # is set
9	Dim3	The frem dimension #3 id	O	If no value is provided, the default value # is set
10	Dim4	The frem dimension #4 id	O	If no value is provided, the default value # is set
11	CPLegalEntityID	Counterpart legal entity id	O	If no value is provided, the default value # is set
12	SystemModelAccountID	The measure id	M	
13	Value	The value (amount, quantity, percentage, etc depending on the nature of the measure)	M	Numeric. Any amounts to be provided I the home currency of the legal entity that the departmentid belongs to. Value will default to 0 if no value is provided.
14	Year		M	4-digit year, for example 2020.
15	Month		M	Month number, 1-12

Dimension combinations found in the source and not in the input module for either the last 12 months actuals or any of the (optional) historical reference columns, will automatically be processed into the module on forecast rollover.

The module can also be updated manually by clicking the "Apply…" button in the "Sales Forecast Setup" page of the "Sales Forecast Setup" workbook.

For details on how to switch from the Planner-internal source to an external source, please refer to Sales Forecast fact.

4   Integration

Seen from Planner, the integration is done at the *database level*, implying that any external data that is to be imported must exist in a staging database accessible from Planner.

Integration from the actual external source to the staging database will vary is out of scope for this document.

4.1　Switching from a Planner-internal source to an external source

Profitbase Planner is by default set up to be self-served with data and as such dimensions can be maintained in Planner. However in many cases it is preferred to use external source for e.g. accounts.

The general pattern used to switch to enable reading from external source:

1. Edit the SQL select statement in script called "Merge External <name> Dimension".

2. Under Operation Administration edit the appropriate dataflow to enable the first step.

See details below on the different dimension.

4.1.1　Legal Entity dimension

To import legal entities from an external source you have to do the following:

1. Modify the SQL script "Merge External LegalEntity Dimension" to read from your source (see original script below):

```
 5     /
 6     /*
 7     ** External source for LegalEntity dimension
 8     */
 9     with
10     LegalEntityExternal
11     AS (
12         --
13         -- Edit below to read from another source
14         --
15         SELECT   cast(s.[LegalEntityID] as nvarchar(50)) as LegalEntityID              -- Mandatory
16                 ,cast(s.[LegalEntityID_Name] as nvarchar(100)) as LegalEntityID_Name    -- Mandatory
17                 ,cast(s.[CurrencyFunctionalID] as nvarchar(50)) as CurrencyFunctionalID -- Mandatory 3-character currency code
18                 ,cast(s.[OperationTypeID] as nvarchar(50)) as OperationTypeID           -- Mandatory One of values: 'Main', 'Elimination'
19                 ,cast(s.[DefaultDepartmentID] as nvarchar(50)) as DefaultDepartmentID   -- Mandatory
20                 ,cast(s.[LegalEntityL1ID] as nvarchar(50)) as LegalEntityL1ID           -- Mandatory
21                 ,cast(s.[LegalEntityL1ID_Name] as nvarchar(100)) as LegalEntityL1ID_Name -- Mandatory
22                 ,cast(s.[LegalEntityL2ID] as nvarchar(50)) as LegalEntityL2ID           -- Mandatory
23                 ,cast(s.[LegalEntityL2ID_Name] as nvarchar(100)) LegalEntityL2ID_Name   -- Mandatory
24                 ,cast(s.[LegalEntityL3ID] as nvarchar(50)) as LegalEntityL3ID           -- Mandatory
25                 ,cast(s.[LegalEntityL3ID_Name] as nvarchar(100)) LegalEntityL3ID_Name   -- Mandatory
26                 ,'Import' as ModifyType
27                 ,'External' as DataSourceID
28
29         from @Object[LegalEntityDimOrigSrc,Store].DbObjectName s -- Demo SQL source to be changed for external loading
30         -- From [server],[databasename].[schema].[tablename] s
31     ) ,
32     /*
```

2. In "Operation Administration" you edit the "Reload LegalEntity Dimension". Enable the first step to read from external source (that was modified above) and disable the second step which is now obsolete (but will not do any damage).

Note that if you need to make further changes to the dimension such as creating a larger hierarchy, you have to use the Profitbase InVision Designer to create the additional columns and define the hierarchy for dimension. Concerning the import you have to modify and extend the script to import more columns.

4.1.2 Department dimension

To import departments from external source you have to do the following:

1. Modify the SQL script "Merge External Department Dimension" to read from you source table:

```
 9  */
10  /*
11  ** External source for Department dimension
12  */
13  with
14  DepartmentExternal
15  AS (
16      --
17      -- Edit below to read from another source
18      --
19      SELECT   cast(s.[DepartmentID] as nvarchar(50)) as DepartmentID                 -- Mandatory
20             ,cast(s.[DepartmentID_Name] as nvarchar(100)) as DepartmentID_Name       -- Mandatory
21             ,cast(s.[LegalEntityID] as nvarchar(50)) as LegalEntityID                -- Mandatory
22             ,cast(s.[LegalEntityID_Name] as nvarchar(100)) as LegalEntityID_Name     -- Mandatory
23             ,cast(s.[DepartmentL1ID] as nvarchar(50)) as DepartmentL1ID              -- Mandatory
24             ,cast(s.[DepartmentL1ID_Name] as nvarchar(100)) as DepartmentL1ID_Name   -- Mandatory
25             ,cast(s.[DepartmentL2ID] as nvarchar(50)) as DepartmentL2ID              -- Mandatory
26             ,cast(s.[DepartmentL2ID_Name] as nvarchar(100)) as DepartmentL2ID_Name   -- Mandatory
27             ,cast(s.[DepartmentL3ID] as nvarchar(50)) as DepartmentL3ID              -- Mandatory
28             ,cast(s.[DepartmentL3ID_Name] as nvarchar(100)) as DepartmentL3ID_Name   -- Mandatory
29             ,cast(s.[DepartmentL4ID] as nvarchar(50)) as DepartmentL4ID              -- Mandatory
30             ,cast(s.[DepartmentL4ID_Name] as nvarchar(100)) as DepartmentL4ID_Name   -- Mandatory
31             ,cast(s.[DepartmentL5ID] as nvarchar(50)) as DepartmentL5ID              -- Mandatory
32             ,cast(s.[DepartmentL5ID_Name] as nvarchar(100)) as DepartmentL5ID_Name   -- Mandatory
33             ,cast(s.[DepartmentL6ID] as nvarchar(50)) as DepartmentL6ID              -- Mandatory
34             ,cast(s.[DepartmentL6ID_Name] as nvarchar(100)) as DepartmentL6ID_Name   -- Mandatory
35             ,'Import' as ModifyType
36             ,'External' as DataSourceID
37
38      from @Object[DepartmentDimOrigSrc,Store].DbObjectName s -- Demo SQL source to be changed for external loading
39      -- From [server],[databasename].[schema].[tablename] s
40  ) ,
```

2. In "Operation Administration" you edit the "Reload LegalEntity Dimension". Enable the first step to read from external source (that was modified above) and disable the second step which is not obsolete (but will not do any damage).

4.1.3 Account dimension

To set up an import from an external dimension source for accounts you have to do the following:

1. Edit the select statement under AccountExternal item in script called "Merge External Account Dimension". Make sure to deliver all columns read from the table and change the FROM-table to your source.

```
/*
** External source for Account dimension
*/
AccountExternal
AS (
    --
    -- Edit below to read from another source
    --
    SELECT  cast(s.[AccountID] as nvarchar(50)) as AccountID                    -- Mandatory
            ,cast(s.[AccountID_Name] as nvarchar(100)) as AccountID_Name        -- Mandatory
            ,cast(s.[AllowInput] as bit) as AllowInput                          -- Mandatory
            ,cast(s.[SignFactor] as decimal(18,2)) as SignFactor                -- Mandatory
            ,coalesce(
                    cast(s.AccTypeId as nvarchar(50))
                    , case when left(ltrim(rtrim(s.AccountID)),1) in ('1','2') then 'BAL' else 'PL' end -- Default is assuming Norwegian accounting plan
                    )                   as AccTypeID                            -- Mandatory
            ,cast(s.[AccountID_Name_EN] as nvarchar(100)) as AccountID_Name_EN  -- Optional
            ,cast(s.[AccountID_Name_NO] as nvarchar(100)) as AccountID_Name_NO  -- Optional
            /* Hierarchy information below, by default 3 levels where L1 is the highest level */
            ,cast(Isnull(s.[AccountGroupL1ID],substring(s.[AccountID],1,1)) as nvarchar(50)) as AccountGroupL1ID              -- Mandatory, default to first character of AccountID
            ,cast(Isnull(s.[AccountGroupL1ID_Name],substring(s.[AccountID],1,1)) as nvarchar(100)) as AccountGroupL1ID_Name -- Mandatory, defaults to first character of AccountID
            ,cast(s.[AccountGroupL1ID_Name_EN] as nvarchar(100)) as AccountGroupL1ID_Name_EN         -- Optional
            ,cast(s.[AccountGroupL1ID_Name_NO] as nvarchar(100)) as AccountGroupL1ID_Name_NO         -- Optional
            ,cast(Isnull(s.[AccountGroupL2ID],substring(s.[AccountID],1,2)) as nvarchar(50)) as AccountGroupL2ID              -- Mandatory, defaults to first 2 characters of AccountID
            ,cast(Isnull(s.[AccountGroupL2ID_Name],substring(s.[AccountID],1,2)) as nvarchar(100)) as AccountGroupL2ID_Name -- Mandatory, defaults to first 2 characters of AccountID
            ,cast(s.[AccountGroupL2ID_Name_EN] as nvarchar(100)) as AccountGroupL2ID_Name_EN         -- Optional
            ,cast(s.[AccountGroupL2ID_Name_NO] as nvarchar(100)) as AccountGroupL2ID_Name_NO         -- Optional
            ,cast(Isnull(s.[AccountGroupL3ID],substring(s.[AccountID],1,3)) as nvarchar(50)) as AccountGroupL3ID              -- Mandatory, defaults to first 3 characters of AccountID
            ,cast(Isnull(s.[AccountGroupL3ID_Name],substring(s.[AccountID],1,3)) as nvarchar(100)) as AccountGroupL3ID_Name -- Mandatory, defaults to first 3 characters of AccountID
            ,cast(s.[AccountGroupL3ID_Name_EN] as nvarchar(100)) as AccountGroupL3ID_Name_EN         -- Optional
            ,cast(s.[AccountGroupL3ID_Name_NO] as nvarchar(100)) as AccountGroupL3ID_Name_NO         -- Optional
            ,'External' as DataSourceID

    from @Object[AccountDimOrigSrc,Store].DbObjectName s -- Demo SQL source to be changed for external loading
    -- From [server],[databasename].[schema].[tablename] s
) ,
/*
```

2. Under Operation Administration edit the dataflow: "Account(s) Added Update Full" and enable the first step (circled in picture below). This will read from external source, merge content with accounts edited and update Account dimension.

   Note that when reading from external source the second step is not needed but will not make any difference since this step use the updated edit table from previous step to update Account dimension.

Profitbase Planner Data Requirements

4.1.4 Ledger fact

In order to establish an external integration, edit the script "ReloadExternalpbTransdataHistory" using the Profitbase InVision designer:
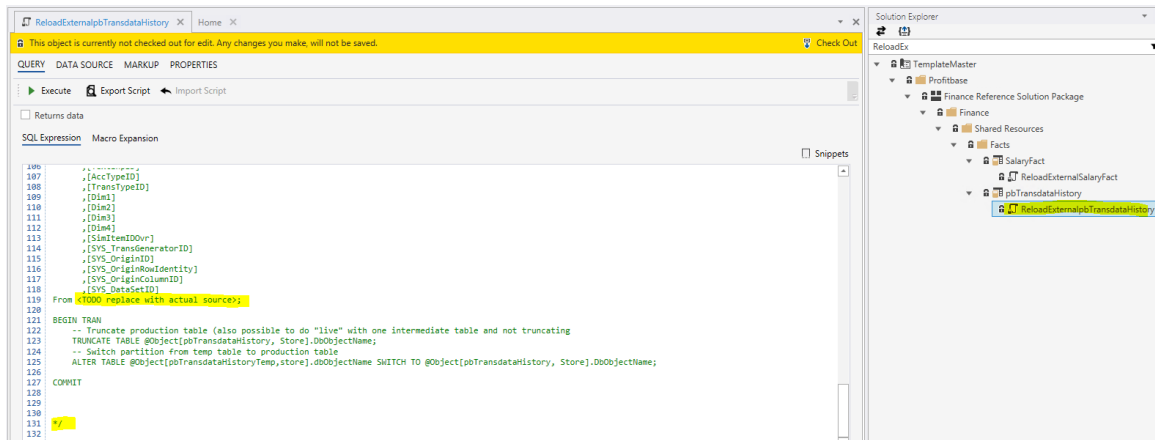
Please note that the time resolution used in Planner is month. **Any ledger data should thus be aggregated correspondingly at or before the import to Planner.**

This script is by default commented out (not active) and an external integration involves mapping to the external source and uncommenting (making active) the script.

Having done so, the Operation "Reload Historical Fact Data" will pick up this change as it already runs the script and thus update the solution, ref.:
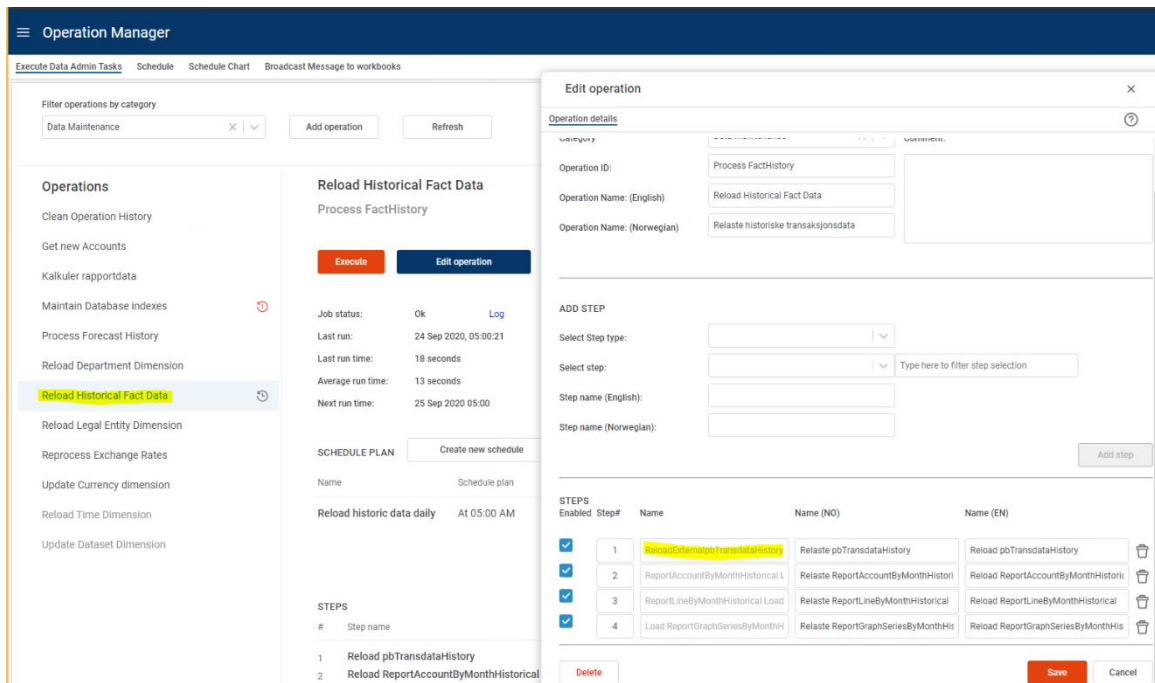
4.1.5 Currency Exchange rates

Currency Exchange rates in Profitbase Planner by default is based on imported historical rates that is used when doing currency conversion on actual. These rates are imported from a Profitbase data table that provide official daily rates from the European Central Bank.

Future currency conversion rates are by default managed in Planner in the table shown below:

Note that this list of Currency is also used to update the Currency dimension (i.e. the list of available currencies).

Imported future rates is imported to the table above and tagged with a "IsImported" flag. This way you will not overwrite manual added entries, and you can manually override imported entries.

You can also provide your own currencies by making adjustment when setting up the solution. To set up the solution using another source for historical and future currencies you must du the following:

1. From the Profitbase InVision Designer you must adjust the SQL query to fetch from you source. Edit script called: "Reload CX from External Source"

```
/*
** Modify the following SQL to read from other source
**
** Note that the example below only imports actual historical rates because Planner by default is set up to manage future exchange rates in planner
*/
select  [CurrencyID]            -- Mandatory the exchange rate converted to from CurrencyID; 3-character code
        ,[CurrencyToID]         -- Mandatory base currencyand must be the same across all exchange rates
        ,'Actual' as [DataSetID] -- Mandatory dataset which must be one of 'Actual', 'Forecast' and 'Budget' for Planner
        ,[FromDate]             -- Mandatory Date; exchange rate will stay the same from this date and until a new date is given
        ,[Value]                -- Mandatory value for exchange rate; decimal(18,4). 4 decimals
        ,null as [High]         -- Optional high rate to be used for simulation
        ,null as [Low]          -- Optional low rate to be used for simulation
        ,[Comments]             -- Free text
    -- Change the table below
    from @Object[Currency Exchange Rate Historical, Setting].DBObjectName

    where [FromDate] between @StartDate and @EndDate    -- Avoid loading exchange rates outside of historic and plan time window as defined by Time dimension
    and [CurrencyToID] = 'NOK'   -- Important to ensure that base currency is the same
    ;
---- end of edit
```

2. In "Operation Administration" edit the "Import and Reprocess Exchange Rates" operation and enable step 1 and disable step 2 ("Copy Local Currency Exchange Rate Data").

Edit operation ✕

Operation details ⑦

OPERATION

Category	Data Maintenance ✕ ∨
Operation ID:	ExchangeRates
Operation Name: (English)	Import and Reprocess Exchange Rates
Operation Name: (Norwegian)	Importer og rekalkuler valutakurser

Comment:

Also on Publish button under Finance Operation

To import from your own external source, you need to configure the query and enable the first step and disable the second step.

ADD STEP

Select Step type:	∨
Select step:	∨ Type here to filter step selection
Step name (English):	
Step name (Norwegian):	

Add step

STEPS

Enabled	Step#	Name	Name (NO)	Name (EN)	
☑	1	Reload CX from External Source	Importer rater fra ekstern kilde	Import Rates from External Source	🗑
☐	2	Copy Local Currency Exchange Rat	Importer historiske rater fra Europeiske	Import historical European Cantral Ban	🗑
☑	3	GenerateExchangeRatesDaily	Kalkuler daglige valutakurser for alle da	Process daily exchange rates for all da	🗑
☑	4	GenerateExchangeRatesMonthly	Kalkuler snitt- og sluttkurs hver måned	Process Monthly Average and Closing	🗑
☑	5	Update Currency Dimension	Oppdater valutadimensjonen (og filter f	Update Currency Dimension and hence	🗑

Delete   Save   Cancel

Import is to the "CurrencyExchangeRate Source" table defined as follows:

- CurrencyID (nvarchar(50)) – 3-character currency code. This is the rate to convert to base currency. Default here is NOK.
- CurrencyToID (nvarchar(50)) – 3-character currency code. This is the rate for base currency – default NOK.
- DatasetID (nvarchar(50)) – this is the dataset which can be on of the following values: '*' (all datasets), 'Actual', 'Forecast', 'Budget'.
- FromDate – the date the rate is valid from
- Value – decimal(18,4) is the exchange rate as the factor you use to convert from CurrencyID to CurrencyToID. Default this is the rate to convert to NOK.
- High, Low – decimal(18,4) is the high and low rate. These are optional and only relevant for simulation.
- Comments (nvarchar(200)) – optional text string
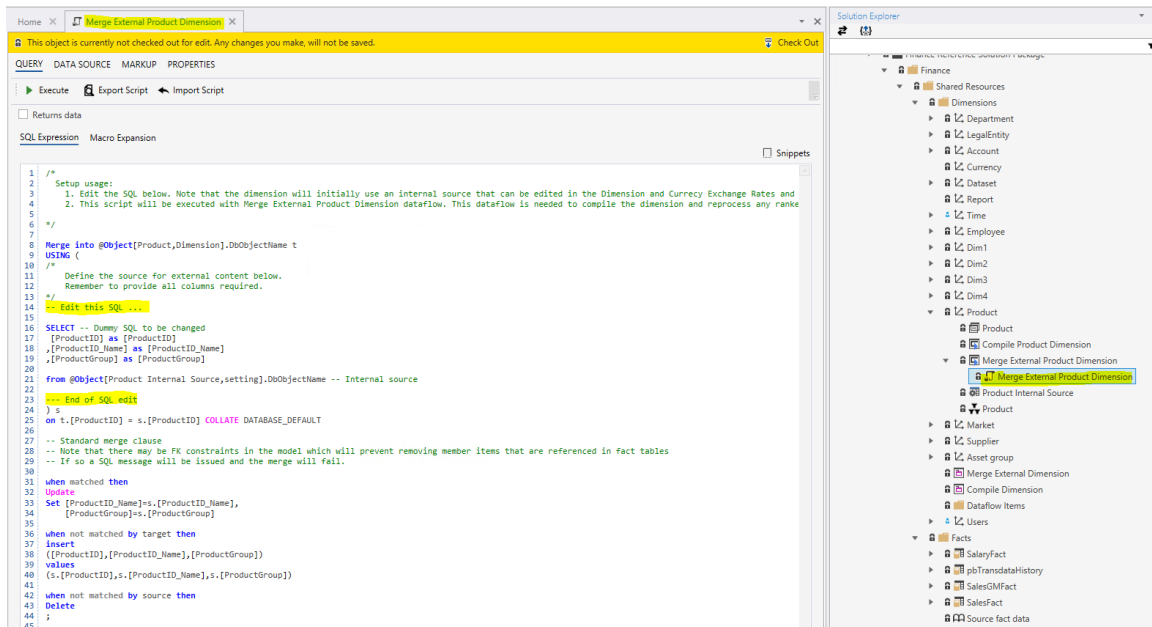
4.1.6 All optional dimensions

Optional dimensions are:

1. Project (from Planner v4.2)
2. Activity (from Planner v4.2)
3. Product
4. Market
5. Supplier
6. Employee
7. Dim1..Dim4

To switch from the internal source to an external source, edit the "Merge External *XYZ* Dimension" script found under the dimension in question in the Profitbase InVision designer.

The example shows the script "Merge External *Product* Dimension" script:

The source part of the script, that by default is the *internal* source exposed in the Dimensions and Currency Exchange Rates workbook, must be replaced with the *external* source.

Consider to *hide* the dimension's page in the the Dimensions and Currency Exchange Rates workbook to avoid any confusion as the dimension is no longer maintained in Planner but sourced externally.

Consider also to create an operation that will fetch the external source and compile the dimension. This operation is created in the "Operations Manager" workbook and should consist of the following two steps:

1. Merge External *XYZ* Dimension (type SQL script)
2. Compile *XYZ* Dimension (type DataFlow)

Using Product as an example:

The operation can be executed manually and/or scheduled at certain intervals.

4.1.7 Personnel fact

In order to establish an external integration, edit the script "ReloadExternalSalaryFact" using the Profitbase InVision designer:
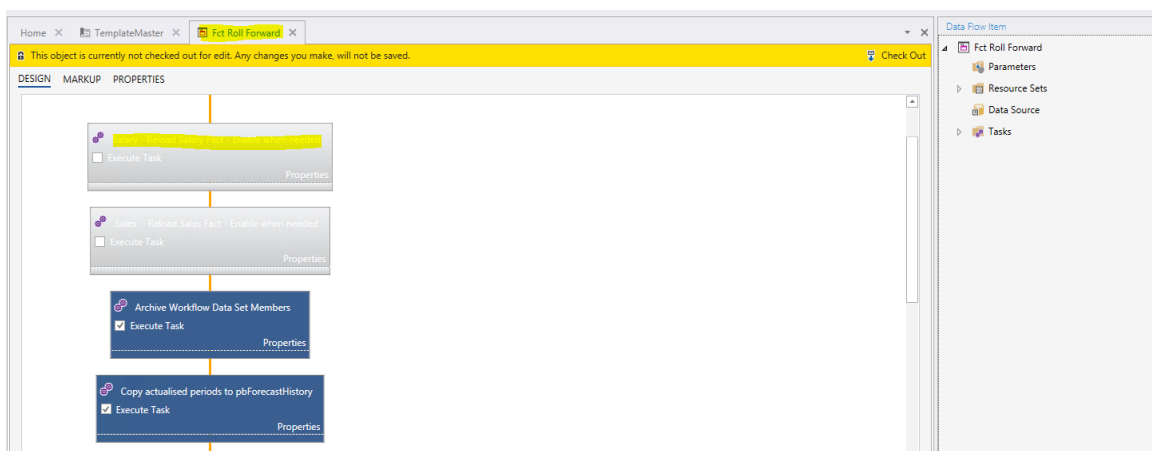
This script is by default commented out (not active) and an external integration involves mapping to the external source and uncommenting (making active) the script.

Consider creating an operation in the "Operation Manager" workbook that executes this script (type "Script"). An operation can executed directly from the workbook and/or scheduled at certain intervals.

Consider to *hide* the fact table's page in the "Source Fact Data" workbook to avoid any confusion as the fact table is no longer maintained in Planner but sourced externally.

The Personnel fact table is not reloaded by default when rolling forward the forecast as it is maintained locally in Planner. Having switched to an external source, an automatic reload of the table may be desirable before rolling forward. This has to be done in the Profitbase InVision designer by enabling the following step in the "Fct Roll Forward" data flow item:

4.1.8 Sales Forecast fact

In order to establish an external integration, edit the script "ReloadExternalSalesFact" using the Profitbase InVision designer:

This script is by default commented out (not active) and an external integration involves mapping to the external source and uncommenting (making active) the script.

Consider creating an operation in the "Operation Manager" workbook that executes this script (type "Script"). An operation can executed directly from the workbook and/or scheduled at certain intervals.

Consider to *hide* the fact table's page in the "Source Fact Data" and "SalesForecastSetup" workbooks to avoid any confusion as the fact table is no longer maintained in Planner but sourced externally.

The Sales forecast fact table is not reloaded by default when rolling forward the forecast as it is maintained locally in Planner. Having switched to an external source, an automatic reload of the table may be desirable before rolling forward. This has to be done in the Profitbase InVision designer by enabling the following step in the "Fct Roll Forward" data flow item:
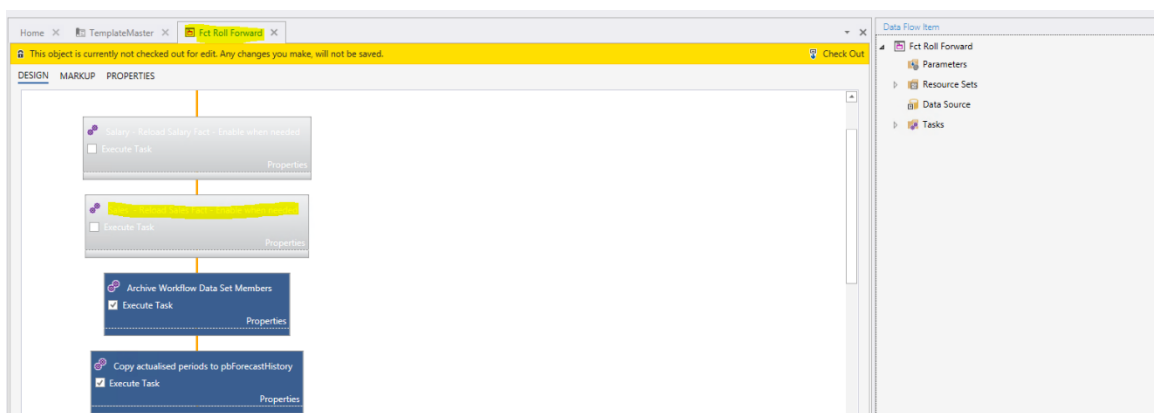
5   Switching from demo to customer's data

Planner comes with a full set of demo data at deployment.

During the implementation phase a switch from demo to customer data should take place. This applies to dimension data as well as fact and input data.

This switch involves:

1. Empty the solution for demo data

Please note that this step involves data deletion and should therefore never be executed in a live production system.

2. Input or import customer's data
3. Re-initialize Planner

5.1 Empty the solution for demo data

Please note that this step involves data deletion and should therefore never be executed in a live production system.

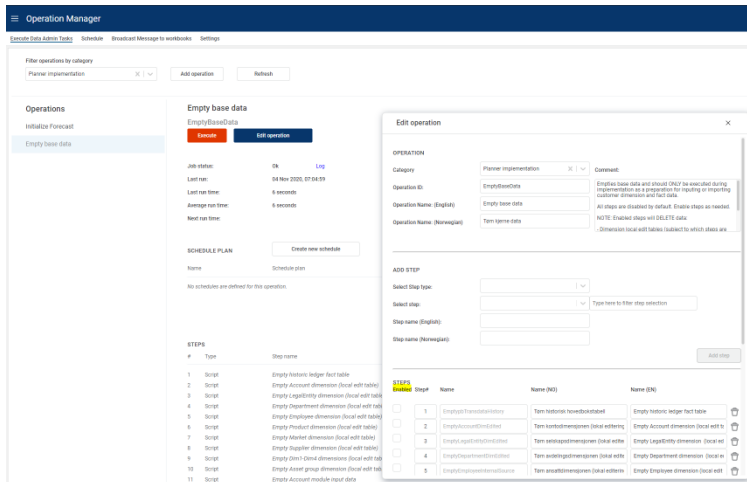Ih the Operation Manager workbook, select the Settings page and enable the "Planner implementation" category:

In the Operation Manager workbook, select the "Execute Data Admin Tasks" page. Select the "Planner implementation" category and the "Empty base data" operation:

This operation contains multiple steps that are by default disabled.

Click the "Edit operation" button that opens the "Edit operation" dialogue and enable steps as needed:

Scroll to the bottom of the "Edit opetaion" dialogue and click Save.

Execute the "Empty base data" operation by clicking the Execute button.

The "Planner implementation" category should not be visible after go live.

## 5.2   Input or import customer's data

Depending on the strategy chosen, input directly in the Planner-internal source or importing from an external source(s), fill Planner with customer's data.

5.3   Re-initialize Planner

Once the customer's data is in, re-initialize Planner.
This involves:
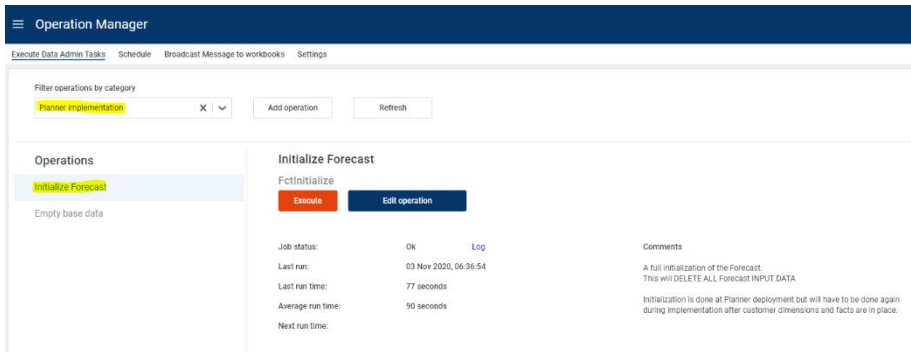
1. Reload historical fact data

    In the Operation Manager workbook, select the "Reload historical fact data" operation in the "Data Maintenance" category of operations:
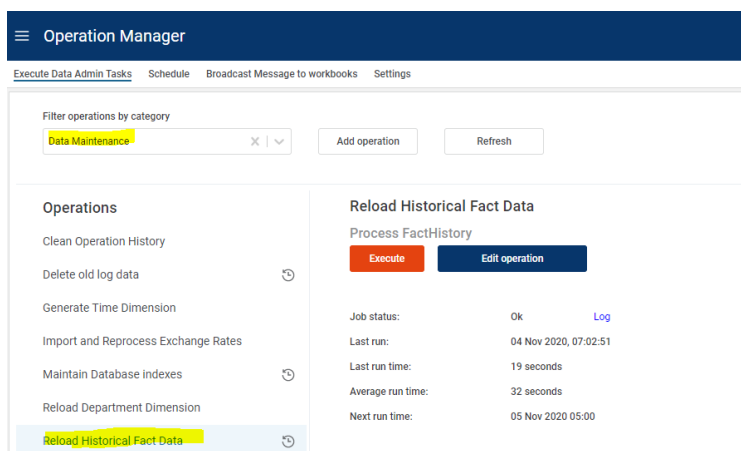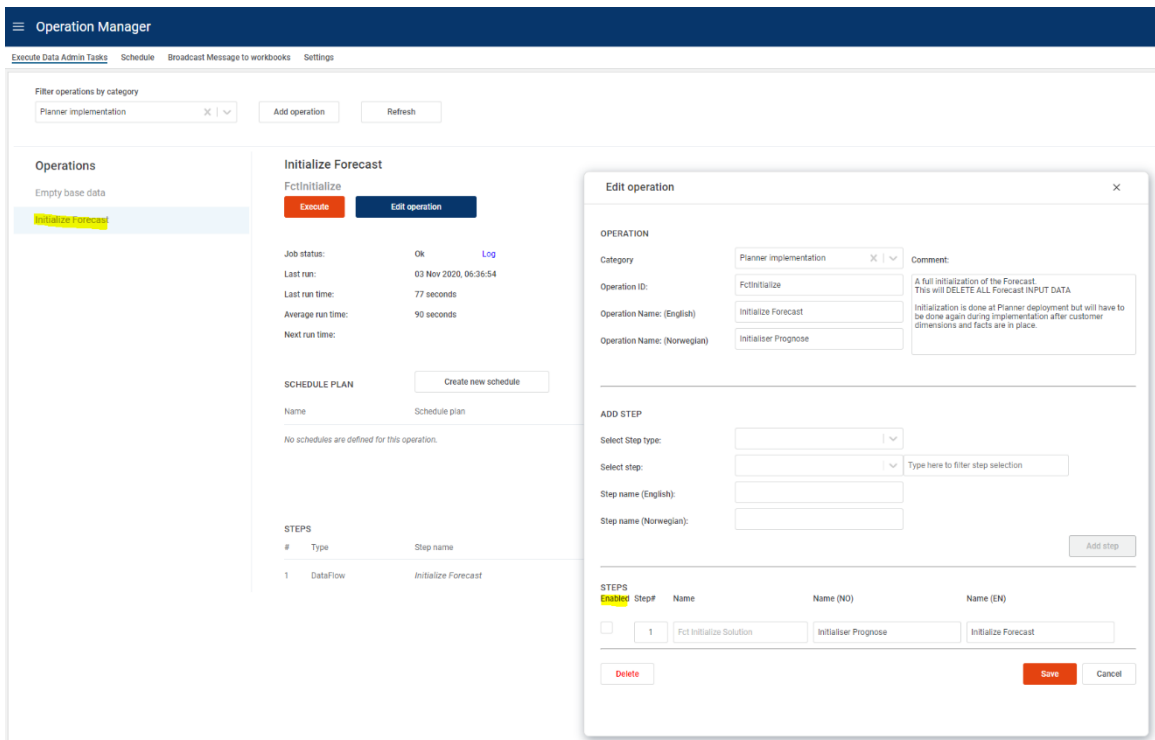

    Click the "Execute" button.

2. Initialize forecast (if relevant to the solution)

In the Operation Manager workbook, select the "Initialize Forecast" operation in the "Planner implementation" category:

Click the "Edit operation" button and enable the step:

Click "Save" in the "Edit operation" dialogue.

Click the "Execute" button to execute the initialization of the forecast.

3. Create new budget (if relevant to the solution)

In the Input Settings and Administration workbook, select the "Budget Admin" page.

Set the budget start date and click the "Start New Budget Period" button:

Profitbase Planner Data Requirements

Budget Settings   Forecast Settings   Payroll Settings   Budget Admin   Forecast Admin   Setup   ⑦ ⚙

New Budget Period   Current Period: 202101 - 202112   [Check And Set Historic Refs.] [Start New Budget Period]

Start Date:
01/01/2021   📅   Before starting a new budget period starting at 2021-01-01 check and set historic reference dates by clicking the Check and Set Historic References button.

                                              NOTE: The start new budget period operation will archive current input data and then delete/load all input data stores.