

IBP300

SAP Integrated Business Planning - Advanced Configuration

PARTICIPANT HANDBOOK
INSTRUCTOR-LED TRAINING

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Course Overview

TARGET AUDIENCE

This course is intended for the following audiences:

Business Process Architect

Business Process Owner/Team Lead/Power User

Solution Architect

User

UNIT 1

Overview of Configuration Activities in SAP Integrated Business Planning

Lesson 1

Overview

2

UNIT OBJECTIVES

Explain the usage of configuration

Overview



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Explain the usage of configuration

Notes on SAP 300 course

Using Configuration

SAP Integrated Business Planning provides extensive functions for creating, updating, and capturing information in a plan, configured using a planning model.

Sample Planning Areas

SAP IBP is delivered with sample planning areas, which can provide an excellent starting point for IBP projects and for Proof of Concepts. Of these sample areas, SAPIBP1 is the most comprehensive and widely used. The majority of expert business users, consultants, and others who are creating, changing, or extending a company planning model, will be referencing SAPIBP1 in one way or another.

Reference materials that you can access in SAP Help (Model Configuration Guide, etc.) are based, wherever possible, on the SAPIBP1 sample planning area.

Complexity Challenges

The complexity of SAPIBP1 is due to the fact that of all functionality of SAP IBP (outside of Order Based Planning), lies within it. The time profile structure of SAPIBP1, where all granularities above sub-daily are represented, in addition to the number of attributes and Key Figures, creates this complex environment. SAP IBP configurators may choose to use the pre-delivered planning area, like SAPIBP1, but reduce the number of standard key figures to come up with a leaner structure. At the same time, there may be considerations, like below, which will necessitate creating a planning area from scratch, without any reliance on standard SAP Sample.

- Necessity to plan with non-standard calendars (fiscal calendars, etc).

- Necessity to stand up a lean POC to quickly demonstrate some features or test a certain scenario.

- Necessity to deal with complex aggregation or disaggregation of key figures data, etc.

Taking into consideration the above scenarios, it is important to be aware of the process that needs to be followed to create planning areas from scratch.

Well-rounded configuration skills include: understanding of the data model, ability to use pre-delivered planning areas, adapting them to the business needs, and creating planning areas from scratch. All this must be supplemented with an understanding of the supply chain and the IT ecosystem that exists in each business.



LESSON SUMMARY

You should now be able to:

- Explain the usage of configuration

Learning Assessment

1. Of all the sample planning areas delivered with SAP IBP which one is the most widely used?

Choose the correct answer.

- ☐ **A** Order-based planning area
- ☐ **B** SAPBP1 planning area
- ☐ **C** Proof of Concept planning area

Learning Assessment - Answers

1. Of all the sample planning areas delivered with SAP IBP which one is the most widely used?

Choose the correct answer.

- ☐ **A** Order-based planning area
- ☒ **B** SAPBP1 planning area
- ☐ **C** Proof of Concept planning area

Correct. SAPIBP1 is the most comprehensive and widely used sample planning area of SAP IBP.

UNIT 2

Configuration

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UNIT OBJECTIVES

- Use configuration to model a business
- Create an attribute
- Create a simple master data type
- Create a compound master data type
- Create a time profile
- Create a planning area
- Create a planning level
- Create a key figure using an attribute
- Create a key figure
- Write a key figure calculation
- Create a version
- Create a reason code

Using Configuration to Model a Business



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Use configuration to model a business

Business Modeling Configuration

A planning model describes the structure of a plan in terms of data and calculations. It defines how data is stored, calculated, and aggregated in the system. From a technical perspective, a planning model is a collection of master data and time series data that is organized in dimensions and enhanced with specific calculations. All planning models are based on the following entities:



- Attributes

- Master data types

- Time profiles

- Planning areas

- Planning levels

- Key figures (including snapshots)

- Calculations

- Versions

- Miscellaneous additional entities such as global configuration parameters, planning operators, and reason codes

In the figure, Planning Area, we see an entity relationship diagram, which illustrates the relationship between the main configuration entities.

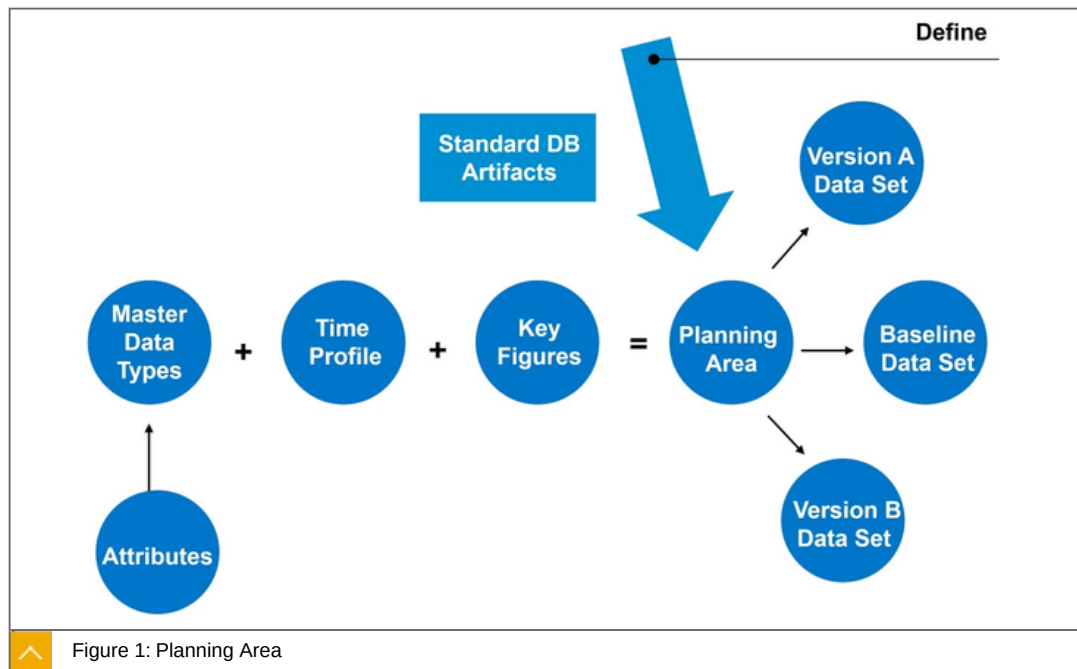


Figure 1: Planning Area

Planning Model Entities

The entities of the planning area are explained in more detail in the following table:

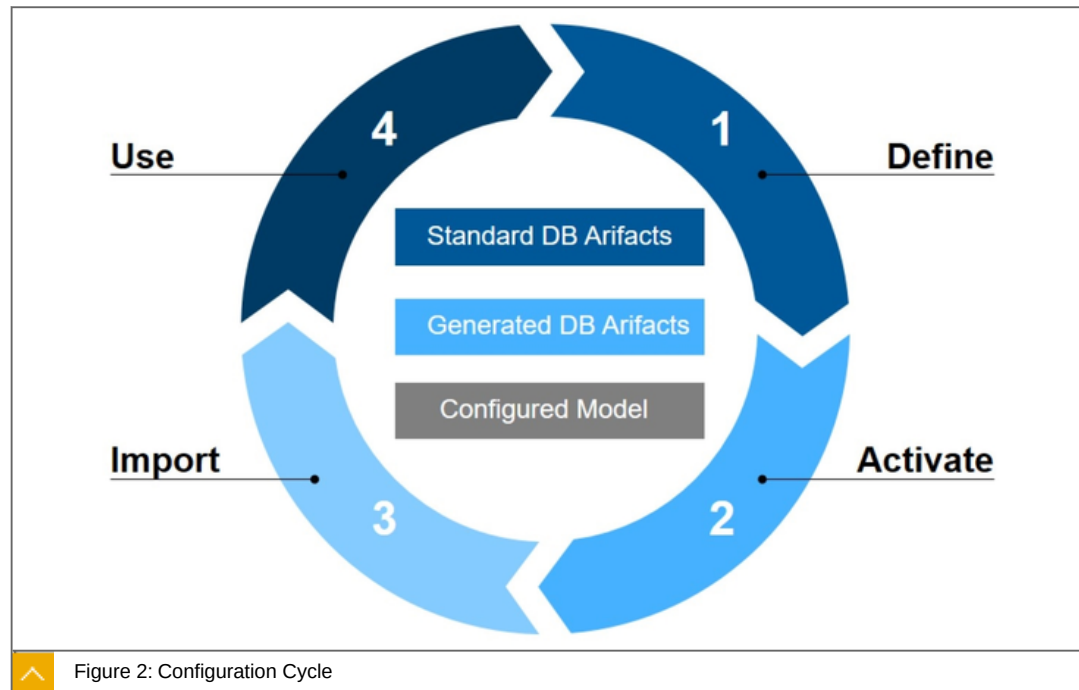
Table 1: Planning Model Entities Explained

Planning Model Entities	Explanation
Planning area Planning level Version Key figure Key figure calculation Key figure calculation input Operator for planning area	A planning area describes the structure of a plan in terms of data and calculations. It defines how data is stored, calculated, and aggregated in the system. Key Figure calculations and inputs define the structure and properties of key figures. A set of key figures is bundled under the main entity of a planning area. The planning area is often referred to as a planning model, because the key figures represent the most important constituents of a planning model.
Master data type Attribute Attribute as key figure Reference master data type Compound master data type External master data type	These entities represent categories of information. Every master data types has one or more attributes.

Planning Model Entities	Explanation
Time profile Time profile level Time profile attribute	The time profile entities are used for the time periods definition used for managing planning data.
Attribute (field description)	Attributes are elemental building blocks that describe an individual field and data type that are used in planning.
Planning operator	Planning operators are the functions that are associated with a planning area. An important example of a planning operator is the supply planning operator. In SAP Integrated Business Planning, you can model and plan an arbitrarily deep network of supply chain-related locations and production steps, using master data such as sourcing rules, resources, bills of material, and time series and data such as consensus demand, production numbers or capacities. This master data is modeled using master data types, and the time series are defined as key figures in planning.

SAP Integrated Business Planning allows you to configure and customize planning models to address your unique business requirements. The apps in the Model Configuration group application, which you can access from the launchpad, includes all of the features that enable you to configure a model from scratch and activate it. Many model entities, for example, planning areas, master data types, and time profiles, can also be copied and modified. You cannot, however, copy attributes or planning operators.

Configuration Cycle

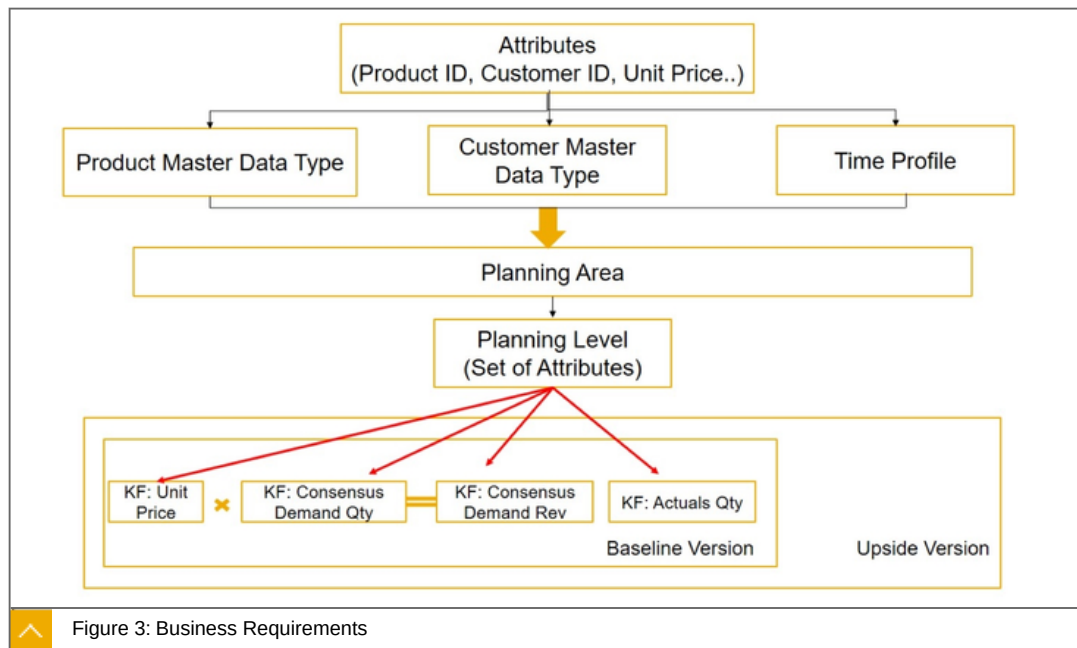


The four steps in the figure, Configuration Cycle, indicate the following activities:

1. Define the planning area.
2. Activate the planning area.
3. Import master and transaction data.
4. Use the planning area.

Business Requirements

The business requirement for our sample company which we will implement first, is the Sales Forecast Qty, determined by sales persons, and the Marketing Forecast Qty, determined by the marketing department are input (loaded) into IBP.



A meeting is held to determine the Consensus Demand Qty which is the agreed upon forecast for the next 12 months. To ensure the Consensus Demand Qty will generate sufficient revenue, we use a unit price to calculate the Consensus Demand Revenue. In addition, we would like to prepare to run a statistical forecast in the future so we want to include Actuals Qty in our planning area.



LESSON SUMMARY

You should now be able to:

- Use configuration to model a business

Unit 2

Lesson 2

Creating an Attribute



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create an attribute

Attribute

Attributes are fields that are required for planning. They are similar to InfoObjects in SAP Business Warehouse (BW) and SAP Advanced Planning and Optimization. Attributes have the following properties:



Attribute ID

Name

Description

Data Type (which includes NAVCHAR, DECIMAL, INTEGER or TIMESTAMP)

Length (which is in decimal digits depending on the data type)

Most attributes are NAVCHAR data types, which represent characteristics. They can also be numeric data types. Attributes with DECIMAL data type can be activated as key figures and have special functionality, which makes it easier to load data values. All attributes are assigned to master data types so that they can be used in a planning area.



LESSON SUMMARY

You should now be able to:

Create an attribute

Unit 2

Lesson 3

Creating a Simple Master Data Type



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create a simple master data type

Simple Master Data Type

Note the following points:



Master data types are like categories of data, for example, customer, location, product, resource, and product location categories.

A master data type can have many attributes or supporting data, for example, an attribute of the customer master data type could be the customer country or customer region.

All master data is grouped into master data types (simple and compound), which are referred to as planning objects.

In this course, we focus on simple and compound master data types.

Master Data Types

The following master data types are available:



Simple, which is one master data type, for example, product, customer, or location.

Compound, which is a combination of two or more simple master data types, for example, product location and customer product.

Reference, which is used to reference an existing master data type to prevent users from having to enter the same data more than once.

For example, the currency to master data type references the currency master data type. You cannot load data onto a reference master data type.



Virtual, which is used to create a connection between two or more master data types.

External, which is used to reference a master data type from an external source.

The master data type must be updated from a near real-time integration to an SAP HANA database. This enables a live ERP update of master data. There is no need for update jobs on this specific master data type.



LESSON SUMMARY

You should now be able to:

Create a simple master data type

Creating a Compound Master Data Type



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a compound master data type

Planning Object

A planning object is a combination of attributes or other master data types. A simple planning object is comprised of one master data type, for example, a customer or a product master data type. A compound planning object is based on a combination of simple planning objects. For example, Customer Product is based on customer and product master data types. When a key figure containing the keys product and customer ID is loaded, it checks them against the compound master data type for valid combinations.

Compound Master Data Types

Note the following about compound master data types:



- They are made up of simple master data types.

- They validate the data of the simple master data types that they are comprised of.

- They define the combinations of planning attributes that can be planned.

Typically, compound master data types are created when attributes belong to master data types. For example, market family is an attribute of the customer and product combination.

You can select additional attributes other than those that are automatically included from the compound master data types. When you select the compound master data type, a grid table is displayed on the right where you can add the master data types to be included in this compound master data type.



LESSON SUMMARY

You should now be able to:

- Create a compound master data type

Unit 2

Lesson 5

Creating a Time Profile



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a time profile

Time Profile

A time profile defines the time dimension of the planning view; it defines the various levels of time buckets in which data can be managed. The timeline is an ordered sequence of non-overlapping buckets or periods. These periods must be continuous with no gaps in the timeline, and they cannot overlap. The periods are identified by an integer and follow a linear sequential order.

The time profile itself is identified by a unique ID, which is an integer between 1 and 999999999.

All time profiles are made up of time profile levels, such as, months, quarters, and years. Each level is made up of periods which are identified by an integer and describe the start and end time of the time period. Time profiles can be customized.

The SAP Integrated Business Planning solution offers great flexibility for organizing data. Each time profile level is identified by an integer to form a sequence for each level. A sequence is required for multiple levels. Therefore, you must choose a number range that doesn't overlap with another level's sequence. The periods on different levels must form a hierarchy, and a period on a lower level can have exactly one parent at the next higher level. The exception to this rule is technical weeks. If these are used, then the normal hierarchy has an extra level with multiple parent IDs. This is used to split weeks correctly over the months. The technical weeks are split in time periods matching the monthly splits. Weeks and technical weeks are then both used as parents for days, and the months are parents for the technical weeks. This allows the system to show days aggregated to weeks, and days aggregated to correctly split months. You must specify the parent ID when uploading data.

Guidelines for Creating a Time Profile

Here are some basic guidelines to keep in mind when creating a time profile:



- Each time profile has a unique ID, and this ID is always an integer (for example, 1, 133, and 5001).

- To define a timeline, choose a Planning Horizon From value and a Planning Horizon To value.

- For time profile levels, the most granular level has an ID of 0, and the largest level has an ID of 1, progressing then to 2, 3, and so on (from the largest to smallest). For example, if a time profile is defined with the levels week, month, quarter, and year, the assignment is as follows:

- MTHIODID0: Weekly period
- MTHIODID1: Yearly period
- MTHIODID2: Quarterly period
- MTHIODID3: Monthly period

To create a time profile, you can cut time in different buckets or periods. They do not need to be the same size.

The system creates the hierarchy for you based on the time buckets you choose to model in your time profile.



LESSON SUMMARY

You should now be able to:

Create a time profile

Unit 2

Lesson 6

Creating a Planning Area



LESSON OBJECTIVES

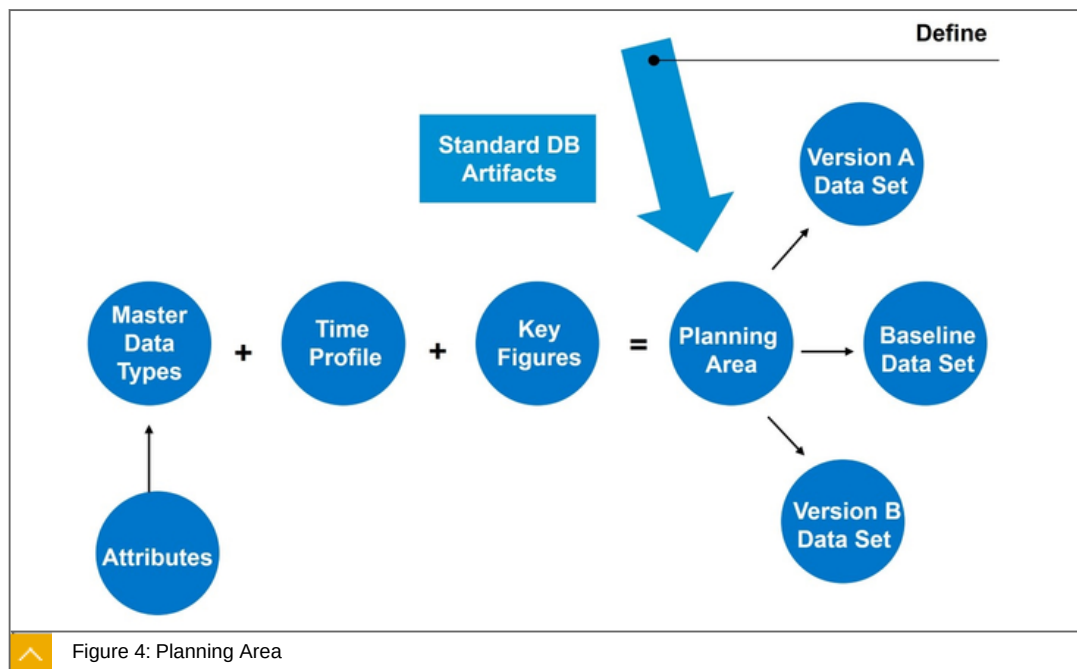
After completing this lesson, you will be able to:

Create a planning area

Planning Area

A planning area describes the structure of Integrated Business Planning and is defined by a set of configuration elements that includes attributes, time profiles, planning levels, key figures, and scenarios.

In the SAP Integrated Business Planning solution, we can generate tables to visualize information (planning views) and support the Integrated Business Planning process. Planning areas can contain many plan datasets, one actual dataset, and other various scenario datasets. The scenario datasets are used to perform what-if analysis. A company can have multiple planning areas to enable the process of Sales and Operations Planning (S&OP) in different business areas.



A planning area is comprised of the following:

ID, for example, **T##**

Description , for example, **T##** planning area

Time Profile ID, for example, **160**

- Time Profile Storage Levels, for example, Monthly or Quarterly

Planning Horizon

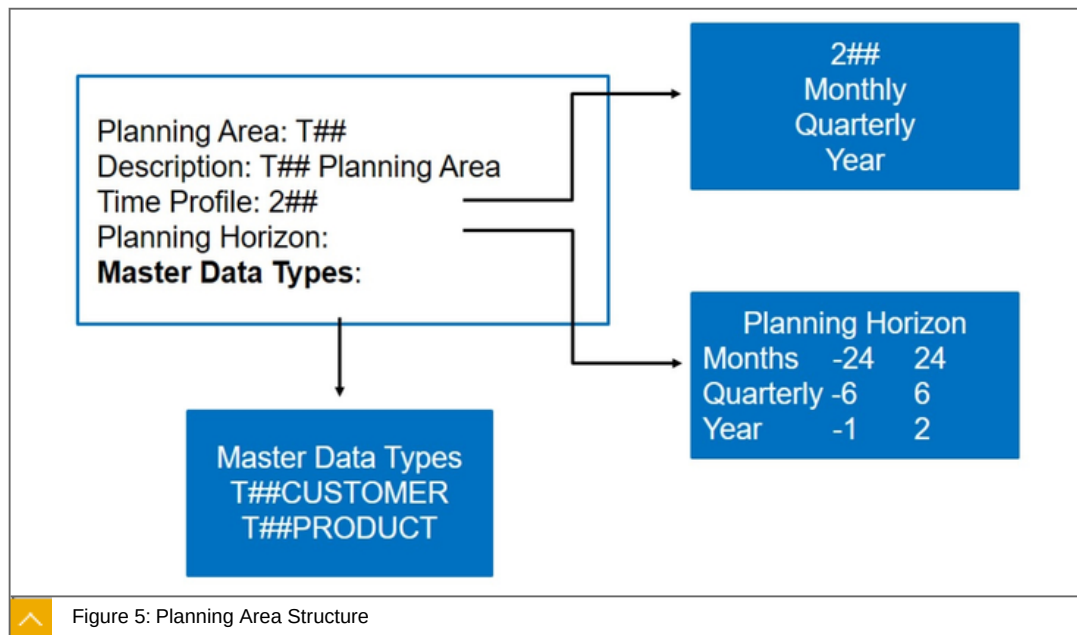
Available Attributes and the master data type that they originate from, for example:

- CUSTTYPE- CUSTOMER
- LOCTYPE- LOCATION
- PRDID- PRODUCT
- PRDDESC- PRODUCT
- MKTSGMNT - CUSTOMERPRODUCT
- CMPNTID - COMPONENT

Planning Level

Key Figures

Scenarios



This figure, Planning Area Structure, shows the general planning area structure along with data elements used in the subsequent exercise.



LESSON SUMMARY

You should now be able to:

- Create a planning area

Creating a Planning Level



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a planning level

Planning Level

A planning area can include one or more planning levels. Note the following points about planning levels:



- A planning level is based on any set of attributes, which are a function of master data types such as product, customer, or location.

- A planning level enables users to analyze and plan at different levels.

- A planning level is defined for each planning area; it is the level at which data is saved.

- A planning level sets boundaries for Integrated Business Planning, which is used to generate information tables.

A planning level can be a single master data type or a compound master data type (customer and product) level. As an example, the PRODCUST planning level is defined as product-customer and provides data analysis that is tied to both the product and also the customer or combinations of both and their attributes. For example, the DEMAND for a product could be a function of a specific customer and the type of product itself.



LESSON SUMMARY

You should now be able to:

- Create a planning level

Creating a Key Figure



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a key figure using an attribute
- Create a key figure

Methods for Creating a Key Figure

Key figures can be created in two ways:



1. Defining attributes as key figures:

Model Configuration allows the attributes of a master data type to be assigned as key figures. For example, Unit Price is an attribute of T##CUSTOMERPRODUCT. It provides a single value for a unique customer and product combination. This attribute can be defined as a key figure so that the Unit Price value is repeated across all of the planning time periods for the customer and product combination.

2. Creating new key figures:

These key figures are defined in the SAP Integrated Business Planning Model Configuration UI for a key figure planning area.

In this lesson, we look at the first type of key figure creation, defining attributes as key figures.

Key Figure

Key figures represent a series of numbers over time. Each number corresponds to a particular time period value. They are associated with a key, which is a combination of attributes from one or multiple master data objects. Key figures hold the transactional data that is stored in the database or calculated. They represent variables that are associated with attributes (master data types) and can be imported into the Integrated Business Planning system, calculated, or manually edited. Key figures can be set to be editable or not editable.

Note the following points:



Key figures are measures that hold transactional data (quantity and currency).

Key figures represent plan data, such as sales forecast, marketing forecast, consensus demand plan, projected inventory, capacity plans or actual data (for example, sales orders and shipment history).

Key figure data is associated with master data type elements. Key figures can be imported, edited, or based on calculations.

Key figures are defined at the base planning level. The base planning level is the lowest, most granular (key) planning level at which the value of a key figure is defined, for example,

MTHPRODCUST(time, product, or customer) for various key figures or MTHPRODLOC (time, product, or location).

The key figures that end users view in the planning view or in analytics are usually stored, editable, calculated, alert, snapshot, or supply planning key figures.

Types of Key Figures

There are various types of key figures:



Stored key figures:

Data is stored in this type of key figure at a defined base planning level. All of the stored key figures can be editable and are usually imported into the system, for example, Actuals Qty. Only stored key figures can be set to editable in the system.

Calculated key figures:

Values in this type of key figure are always calculated based on user defined formulas, for example, 'Revenue = Qty * Price'. Since this type of key figure is not usually stored; it cannot be set to be editable. However, in special use cases, such as defaulting a key figure value, the key figure can be set to both calculated and stored and, therefore, can also be set to editable.

Alert key figures:

These are key figures with user-defined criteria that monitor and manage execution of business plans. They can only have values of 0 or 1, meaning that the alert itself is either ON or OFF. Alerts typically check conditions on other key figures, such as TargetRev versus ConsensusRev > 10%.

Helper key figures:

- Typically used for intermediate calculation results used in a key figure or another helper key figure
- Not exposed to the user in planning views or modeling
- Can be used at REQUEST or any planning level
- Can be used to break down a large calculation into manageable subcalculations
- Usually prefixed with a H, for example, HINVENTORYTARGETQTY
- Used when you have more than three inputs at different planning levels in one calculation

Primarily used in ratio calculations, last period aggregation, cost calculations, and so on. Note that they do not have a base planning level.

Used only for calculation, meaning that they do not have the other key figure properties, such as Stored, Editable, Aggregation, or Disaggregation.

Attribute transformations:

Attributes of master data types that are assigned to a planning level can be transformed to a different value based on certain conditions. For example, period ID can be transformed to calculate lead time offset.

Attributes as key figures:

As well as creating key figures, you can assign attributes of a master data type as a key figure. For example, unit price is an attribute of `CUSTOMERPRODUCT`. It has a single value for a unique customer and product combination. This attribute can be defined as a key figure in the same way as the unit price.



LESSON SUMMARY

You should now be able to:

- Create a key figure using an attribute

- Create a key figure

Writing a Key Figure Calculation



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Write a key figure calculation

Key Figure Calculation

Once you have created a key figure, you can add calculations to it. Note the following few modeling requirements:



Any key figures that an end user is able to query from the UI must have a calculation at REQUEST level.

A calculation at REQUEST level either must be an aggregation, or must have inputs from REQUEST level only.

You can define calculations that aggregate the key figure data from a lower base planning level using an operator, such as SUM, MIN, or MAX.

You can also define calculations across key figures, for example, KF1 plus KF2.

A key figure referenced in a calculation must be specified as an input key figure for the calculation.

Calculation inputs can be marked as stored or calculated. The calculation chain for every key figure must result in a stored key figure. For example, $KF1@PL1 = KF2@PL1 \text{ plus } KF3@PL1$, key figure 2 (KF2) is a stored input key figure, and key figure 3 (KF3) is a calculated input key figure. The calculated chain for key figure 3 (KF3) must finish with a stored key figure (such as $KF3@PL1 = \text{SUM}(KF4@PL2)$, where $KF4@PL2$ is a stored key figure).

Any key figure not marked as stored forces the system to locate a calculation to determine the values of the key figure for the calculation. In this way, calculations are linked together.

Complete list of requirements is listed in the **Model Configuration Guide >> Modeling Requirements (Checks and Errors)**.

Calculation Chain

As we had just seen, at the top of key figure model is the request level and at the bottom there are datasources - stored inputs into the calculations.

The calculations defined in the Configuration app are translated into a calculation graph, which consists of different types of nodes and arcs.

The nodes of the calculation graph can have a colored background:

No background: calculated node

Green background: data source node (stored key figure values)

Purple background: calculation in focus

The arcs of the calculation graph have, for example, one of the following colors, depending on the type of the node that the arc arrow points to:

Light Blue: Aggregation

Medium Blue: Simplified Key Figure Calculations



Note:

Later in the course we will be working with some of these calculations.

Orange: Inner Join

Key Figure Calculations app allows for the visualization of Calculation Graph, Root Attributes, Filter Blocks and Where-Used Graph.

Calculation chains can get quite complex, depending on the requirements. If the chain grows to 15-20 level deep, there are likely going to be impacts to performance (including performance in Excel UI) and it will be very challenging to find and correct errors. It is a good practice to check the calculation chain and make decisions as to breaking the calculations or attempt simplification.

Filter Blocks

SAP IBP usually works with huge data volumes. It is not uncommon, for example, to see master data types that have several million data records. To manage performance, queries are typically filtered.

You can use filters in the IBP Excel Add-In (attribute-based or value-based filters) or in the Planning Filters app.

When filters are used, all attributes are filtered as early in the calculation chain as possible, ideally on the level of stored key figures.

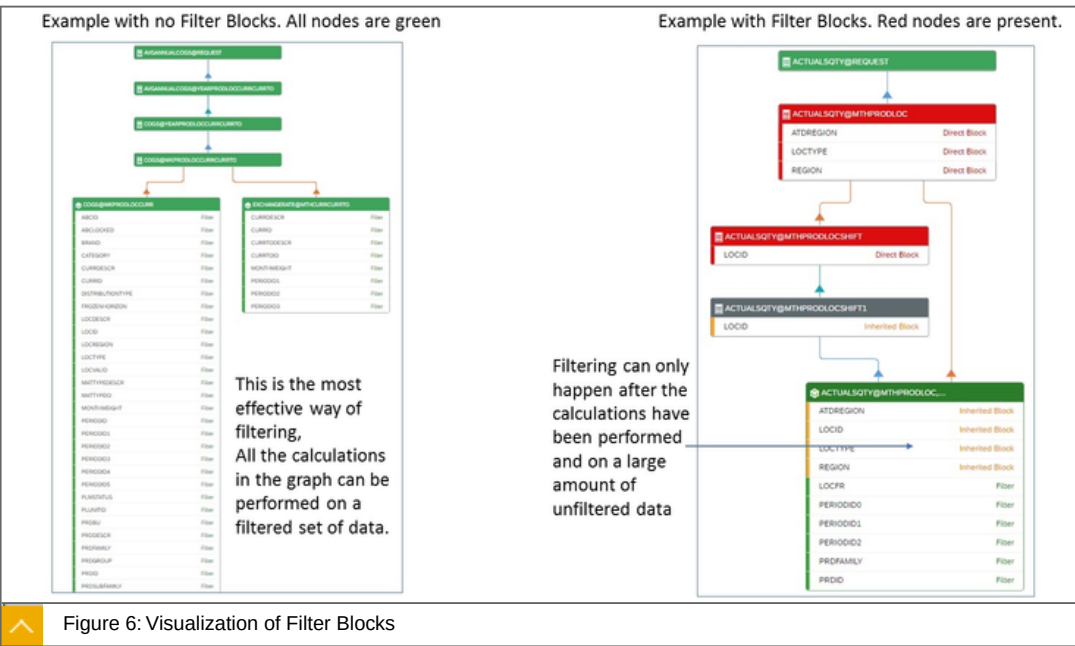
Some modeling techniques prevent filtering on the level of stored key figures by imposing filter blocks for certain attributes in certain calculations. Filter block is required for these calculations so that they provide correct results at time attribute transformation, at master data transformation and at cross-period calculations.

As we had seen in the previous concept, filter blocks are displayed in the calculation graphs, allowing to get a better understanding of how to filter more effectively and how to improve the performance of queries.

Select a planning area and a key figure, then choose **Go** to display the calculation graph.

Choose the **Filter Blocks** **Show All Attributes** tab to display attributes where filter blocks are raised, as well as attributes where filtering is possible.

To learn about the details and causes of the filter blocks, click on an attribute for which a filter block exists or display the node info.



LESSON SUMMARY

You should now be able to:

Write a key figure calculation

Unit 2

Lesson 10

Creating a Version



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create a version

Version, Simulation, and Scenario

A version is a separate set of data that consists of the key figure values assigned to the version. The base version is automatically provided by the standard system when a planning area is activated. The model administrator can define additional versions, for example, upside and downside, by assigning key figures to that version during configuration. Data can be copied from one version to another including the base version, and if required, version-specific master data can be created.

When you edit the key figure data in a planning view, you can work on one version, or you can work on multiple versions simultaneously, which allows you to easily compare and adjust key figure data.

A version is only visible in the Microsoft Excel add-in if you have view or edit permissions for one or more key figures in the specific version. You must also have view or edit permissions for one or more key figures in the base version.

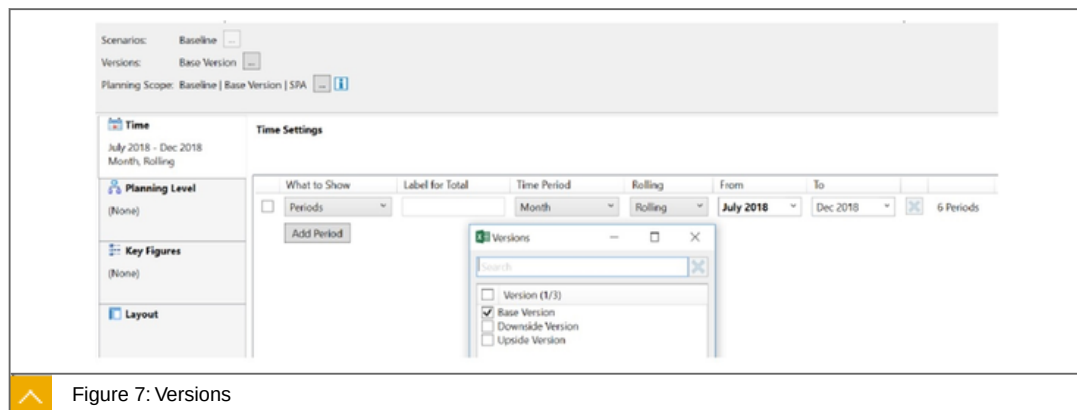


Figure 7: Versions

Base version is always selected as default. By specifically selecting other versions, the data attached to those versions is displayed in the planning view for comparison purposes, for example, if you are trying to compare what the situation would look like if there is an increase in customer demand, or a decrease in supply, or a promotion is added.

Versions Group

In the Microsoft Excel add-in, you can use the following functions in the versions group:

Manage:

You can copy key figure data from one version to another. If version-specific master data has been configured, you can also copy master data from one version to another.

Status:

You can check the status of the background job that is created when you copy master data and key figures between versions.

Schedule:

You can plan recurring jobs for version management.

Copy Functions

Manage Version allows you to copy from one version to another or delete specific key figure data based on specific attribute values and date ranges.

A version is used to manage alternate plans. They can be defined using all of the key figures in a planning area, including calculated key figures. Alternatively, subsets of the key figures can be used to define a version. A version can contain references to a base version key figure, so that it can be used in calculations within the version.

Simulation

After editing the data in your planning view in Microsoft Excel, you can simulate the effect these changes have on your view. A simulation recalculates the view to simulate a scenario with the changes applied. You can then save the changes or refresh the view to discard the changes. You can also save the changes as a user-defined scenario.

If you have multiple planning views in one workbook, a simulation in one planning view is propagated automatically to the other planning views in the same workbook without you having to save the data. The same applies to refreshing simulated data.



Note:

In the planning operator settings, the system administrator can define additional steps that are performed during simulation, for example, copying configured source key figure values to target key values before disaggregation.

Scenario

You can save changes made in the planning view as a user-defined scenario in the Microsoft Excel add-in. Simulated data is not written permanently to a database, and it is not visible to anyone else unless you share the scenario.

You can display a list of scenarios and make different settings for them by choosing the Manage option in the scenarios group. For each scenario, you can change the header data, and you can define whether the scenario is to be reset (the data is erased but the scenario is kept), promoted (the data is saved permanently to the database and the scenario is reset), deleted, or duplicated.



LESSON SUMMARY

You should now be able to:

Create a version

Unit 2

Lesson 11

Creating a Reason Code



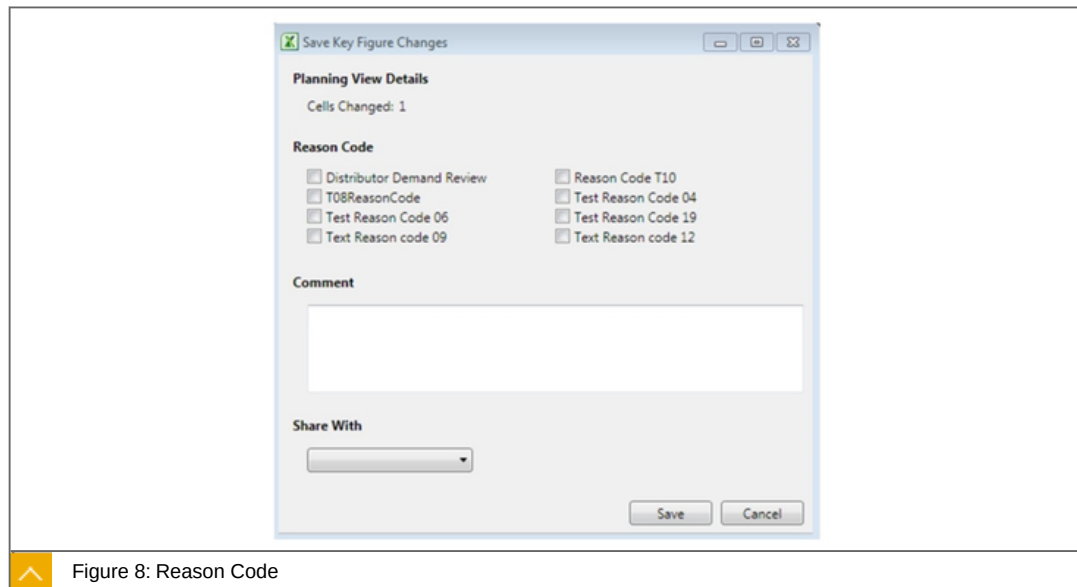
LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create a reason code

Reason Code

Reason codes are a set of tags that a user can leverage to keep track of the decisions and changes made through the Integrated Business Planning process. Reason codes are user definable; however, there are several useful ones that come with out-of-the-box SAP Integrated Business Planning. The reason codes can be linked both to SAP Jam groups (by using the share with box) and to change history (if enabled on the specific key figures).



A reason code is used to add meaning or to describe a change to data. It could serve a similar purpose to a cell note in Excel - to indicate why the change was made or who made the change to communicate with a participating group or groups via JAM collaboration.



LESSON SUMMARY

You should now be able to:

Create a reason code

Learning Assessment

1. Which of the following is an object assigned to a planning area?

Choose the correct answers.

- ☐ **A** Attributes
- ☐ **B** Characteristics
- ☐ **C** Key Figures
- ☐ **D** Scenarios

2. Which of the following are modeled using attributes?

Choose the correct answers.

- ☐ **A** Characteristics
- ☐ **B** Key Figures
- ☐ **C** Dates
- ☐ **D** Descriptions

3. Which of the following are time profile settings?

Choose the correct answers.

- ☐ **A** Time Buckets
- ☐ **B** Data Storage Horizons
- ☐ **C** Planning Horizons
- ☐ **D** Attribute Horizons

4. Which of the following are types of key figures?

Choose the correct answers.

- ☐ **A** Stored
- ☐ **B** Calculated
- ☐ **C** Attributes as Key Figures
- ☐ **D** Alert Key Figures

5. Which of the following configuration elements are included in a planning area?

Choose the correct answers.

- ☐ **A** Attributes
- ☐ **B** Time Profiles
- ☐ **C** Storage
- ☐ **D** Planning Levels
- ☐ **E** Key Figures
- ☐ **F** Versions

6. Select the two ways that key figures can be created.

Choose the correct answers.

- ☐ **A** Creating new key figures
- ☐ **B** Defining new key figures as attributes
- ☐ **C** Defining attributes as key figures

7. Provide an overview of key figures.

8. List the functions available in the versions group of the SAP IBP Microsoft Excel add-in.

Learning Assessment - Answers

1. Which of the following is an object assigned to a planning area?

Choose the correct answers.

- ☒ **A** Attributes
- ☐ **B** Characteristics
- ☒ **C** Key Figures
- ☐ **D** Scenarios

Correct. Attributes and key figures are objects assigned to a planning area.

2. Which of the following are modeled using attributes?

Choose the correct answers.

- ☒ **A** Characteristics
- ☒ **B** Key Figures
- ☒ **C** Dates
- ☒ **D** Descriptions

Correct. Characteristics, Key Figures, Dates and Descriptions can be modeled using attributes.

3. Which of the following are time profile settings?

Choose the correct answers.

- ☒ **A** Time Buckets
- ☒ **B** Data Storage Horizons
- ☐ **C** Planning Horizons
- ☐ **D** Attribute Horizons

Correct. Time Buckets and Data Storage Horizons are the time profile settings.

4. Which of the following are types of key figures?

Choose the correct answers.

- ☒ **A** Stored
- ☒ **B** Calculated
- ☒ **C** Attributes as Key Figures
- ☒ **D** Alert Key Figures

Correct. Stored, Calculated, Alert and Attributes as Key Figures are some of the key figure types.

5. Which of the following configuration elements are included in a planning area?

Choose the correct answers.

- ☒ **A** Attributes
- ☒ **B** Time Profiles
- ☐ **C** Storage
- ☒ **D** Planning Levels
- ☒ **E** Key Figures
- ☒ **F** Versions

Correct. Attributes, Time Profiles, Planning Levels, Key Figures and Versions are some of the configuration elements included in a planning area.

6. Select the two ways that key figures can be created.

Choose the correct answers.

- ☒ **A** Creating new key figures
- ☐ **B** Defining new key figures as attributes
- ☒ **C** Defining attributes as key figures

Correct. Key figures can be created by creating new key figures and defining attributes as key figures.

7. Provide an overview of key figures.

Key figures represent a series of numbers over time. Each number corresponds to a particular time period value. They are associated with a key, which is a combination of attributes from one or multiple master data objects. Key figures are sometimes also called measures and hold transactional data. They represent variables that are associated with attributes (master data types) and can be imported into the Integrated Business Planning system, calculated, or manually edited.

8. List the functions available in the versions group of the SAP IBP Microsoft Excel add-in.

Manage, status, and schedule

UNIT 3

Model Activation

Lesson 1

Activating a Planning Area

36

UNIT OBJECTIVES

Activate a planning area

Unit 3

Lesson 1

Activating a Planning Area



LESSON OBJECTIVES

After completing this lesson, you will be able to:

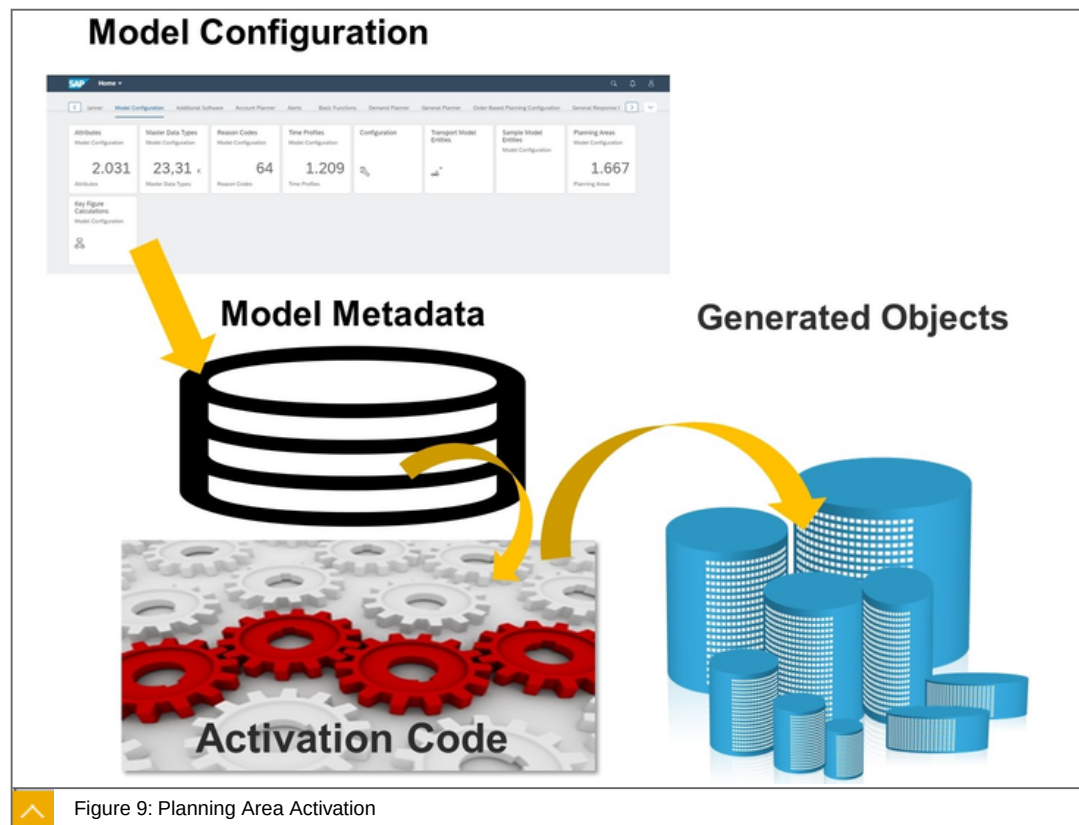
Activate a planning area

Planning Area Activation

SAP IBP offers flexible modeling. Once the specifications of a model are defined, the model must be activated. During activation we check if the planning model is in a consistent state (100+ validation checks).

All affected objects (Master Data Types, Time Profiles and Planning Areas) are activated within a single process, modifying operations are grouped together (inactive >> active state).

Activation brings the planning model from a consistent state to another consistent state.



Model Lifecycle

The following list describes the lifecycle steps of a model:



1. Define or configure a model:

In this step, master data types, time profiles, and key figures are defined.

Master data types are used for planning. Master data is grouped using the following sample master data types: product, customer, location, and resource. Attributes on the master data types are used to further describe the master data types, for example, product family, product subfamily, and customer region.

The time profile is the time dimension of the model.

Key figures are measures that hold transaction data, such as demand plan, sales forecast, and supply plan.

2. Activate the model:

In this step, the defined model is validated for integrity and the model is activated.

- Each object is validated internally for every object in scope.
- External check is processed to validate dependency starting/ending with each object in scope.
- Relationship check is processed for a set of objects, including objects in scope and dependent objects.
- If this a subsequent activation and planning area already contains data, relationship to the uploaded data will also be validated.

This involves the creation of generated objects.

3. Import:

Master data and key figure data are imported.

4. Use:

The model is now ready to be used to enable the Integrated Business Planning business process.

Activation Errors

During the process of configuring and activating your planning area, activation errors may show up in the log. These will need to be resolved before a successful activation can be achieved. In this section, we look at four common activation errors and how they can be resolved.



Figure 10: Displaying the Error Log

To display the error log, in the Planning Areas Model Configuration app, choose the Log Hyperlink icon on the Planning Areas tab. You will be connected to Application Logs app, where you can click Download Table Contents toolbar button. The log will open in Excel format.



Figure 11: Displaying the Error Log

Activation Error 1

The first activation error that we look at here is the most common error. However, it is also one of the easiest to locate and correct.



**Error! - Calculation PROMOTIONLIFTQTY@REQUEST:
PROMOTIONLIFTQTY@MTHPRODCUST must be stored or a calculation must exist.**

When the phrase that must be stored is shown in an error, it refers to the **Input Key Figures** icon in the key figure calculation. This is due to a key figure not being set as **Stored** in the Input Key Figures dialog box.



Figure 12: Resolving Error Activation 1

As the key figure was not marked as stored in the **Input Key Figures** screen area, this forces the system to locate a calculation to determine the value of the key figure. However, in this case, a calculation could not be found. Therefore, the system could not determine the values required to perform the calculation. This generally means that the stored indicator should have been marked so the system can determine the values by reading them from the SAP HANA database. It can also mean that the calculation to determine the values was inadvertently left out.

Activation Error 2

The second error type is less common, but it is still an important error to resolve. There are 2 possibilities for this:



A Key figure that is not a helper key figure does not have a calculation at REQUEST level.

A calculation at REQUEST level either must be an aggregation, or must have inputs from REQUEST level only.

Note that every key figure must have a request level calculation. The request level is the level at which the user requests the data. As we cannot predict at which level the user is going to request the data, we need to create a request level calculation.

If the only calculation that exists for the key figure is on the (for example) MTHPRODCUST level, this error will occur and the activation will fail with the activation error. Every key figure that is created directly on the **Key Figures** tab automatically has a request level calculation added by the system. To resolve this error, create a request level calculation for the key figure indicated in the error. Generally, the calculation is **SUM**, but for price or percentage key figures an **AVG** or weighted average calculation might be more accurate.

Activation Error 3

Activation Error 3 is a less common error but it can occur.

Error: Exception raised from InternalError: dberror(PreparedStatement.execute): 2048 - column store error: fail to create scenario: [34011] Inconsistent calculation model;CalculationNode (9_53) -> attributes -> calculatedAttribute (CAPDEMANDUTILPCT) -> expression:Expression is not valid: Evaluator: syntax error in expression string;expected TK_RPAREN,parsing 'fixed(IF(ISNULL("T10CAPASUPPLY") OR "T10CAPASUPPLY"=0,0,"HCAPEDEMAND"/"T10CAPASUPPLY", 12, 6))[here]' at ptime/query/plan_executor/trex_wrapper/trex_wrapper_body/trex_metadata.cc:1965

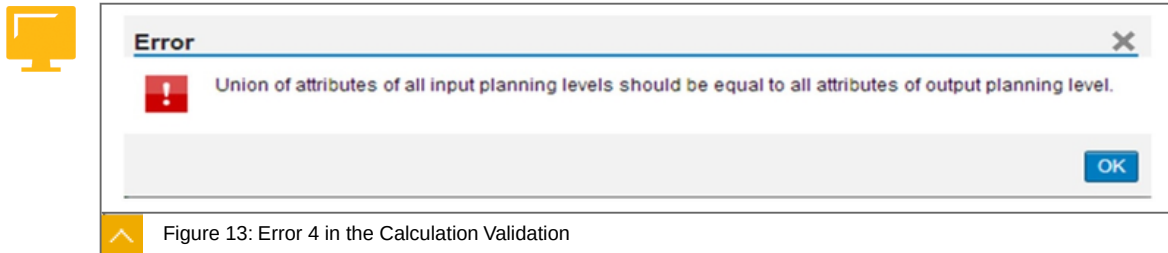
In this error, the log indicates that the expression is not valid because of a missing parenthesis, TK_RPAREN. The system provides assistance by identifying where it expected to find the missing parenthesis but was unable to by labeling that point [here] in the error message. This is not always 100% accurate as you may have entered an extra parenthesis somewhere in the calculation. The system requires a closing parenthesis to match to it.

To resolve this error, choose the Key Figures tab and select the key figure listed in the error message in the left column. Select Edit to change the key figure and then Edit in the calculation definition. Supply the missing parenthesis. When you validate the calculation, the error should no longer be present.

When you choose Validate after entering a calculation, the system will do a syntax check for the parenthesis and usually flag the error before activation. Occasionally, you can go beyond this point, in which case the error occurs during activation instead and you receive an activation error.

Activation Error 4

Activation error 4 is one of the most difficult to trace and resolve. While creating key figure calculations, the Error dialog box shown in the figure, Error 4 in the Calculation Validation, may appear.



Or, if you get past this point, the error in the error log will appear like one of the below:

-  **E - Calculation DEPENDENTDEMANDQTY@MTHPRODLOC: Output PL attr. must be a subset of the input PL attr.**
- E - Calculation DEPENDENTDEMANDQTY@MTHPRODLOCCUST: Output PL attr. must be the union of the input PL attr.**

All three errors refer to the same issue and are resolved in the same way. These errors refer to the planning level, which is where the error is located. If you look at the planning levels, this error usually means that you do not have the same number of attributes selected in the planning levels involved in the calculation.

Resolving Error Activation 4



DEPENDENTDEMANDQTY @PERPRODLOCUST = *CONSENSUSDEMANDQTY@PERPRODCUST * *CUSTOMERRATIO@PERPRODLOCUST

Master Data	Attribute Description
☐ 100-M, Q, Y 6 yr (4)	
☐ TXXCUSTOMER (3)	
☐ TXXPRODUCT (3)	
☒ PRDESCR	Product Desc
☒ PRDFAMILY	Product Family
☒ PRDID	Product ID

Master Data	Attribute Description
☐ 100-M, Q, Y 6 yr (4)	
☐ TXXCUSTOMER (3)	
☐ TXXLOCATION (2)	
☐ TXXPRODUCT (4)	
☒ PRDESCR	Product Desc
☒ PRDFAMILY	Product Family
☒ PRDID	Product ID
☒ TXXABCCODE	ABC Code

Figure 14: Resolving Error Activation 4

To resolve this error, choose the Planning Levels tab. In the left column, select the planning levels involved in the calculation. The different numbers of attributes are selected in the planning levels. For example, in the figure, the four attributes for T##PRODUCT are selected in the MTHPRODLOCUST planning level, while only three attributes are selected for T##PRODUCT in the MTHPRODCUST planning level. The system cannot match up four attributes to only three attributes in this join, so the activation fails and the error is logged. A quick scan of the numbers can help you locate the error quickly, but the error details need to be viewed to see how it can be resolved. This can be a difficult error to locate.

This error occurs most often when you make a change to a master data type by either adding or eliminating an attribute. Failure to make the identical adjustment in all planning levels that are involved in calculations with each other will cause this error.

Consistency Checks

When you start the consistency check or the activation of a planning area, the system performs checks on the planning area and on the model entities that are activated together with a planning area (planning levels, key figures, and versions).

Suppressible Errors on Consistency Checks

Recently introduced validation checks produce Errors or Warnings depending when the given system was provisioned.

Starting from SAP IBP 905, some validation checks turn to Errors or Suppressible Errors. Motivation for this is to draw your attention to some modeling that need to be changed, but also to give you time to adopt.

For certain releases, it is possible to suppress the activation errors and activate the planning area with limited scope. Logs generated by the validation check indicate what needs to be done to fully resolve the error and by when it needs to be done.

Consistency Checks for Time Profiles



The following checks are performed for time profiles:

- The definition of the time profile must be accurate.
- A description must exist for the time profile.
- A start date and an end date must be specified.
- The end date must be later than the start date.
- At least one time profile level must exist.
- All time profile levels must have a description.
- Time profile levels must form a sequence based on the period type. That is, a lower time profile level must have lower granularity than the higher ones.

For example, a time profile level with the period type “Day” must come before the one that has “Month” for period type.

- The base level of a time profile level must be a time profile level that has lower granularity.

The following checks are performed for changing time profiles:

- It is not allowed to add or delete a time profile level if the time profile is assigned to any planning areas.
- It is not allowed to remove an attribute assigned to a time profile level if the attribute is used in a planning level of an active planning area that uses the time profile.
- It is not allowed to use active deletion on a time profile that is assigned to any planning areas.
- If time periods already exist for the time profile, you cannot add an additional required attribute.

Consistency Checks for Master Data Types



The following checks are performed for all master data types:

- A name must exist for the master data type.
- The master data type must have at least one attribute.
- Except for a virtual master data type, the master data type must have at least one key attribute.
- If a description attribute is assigned to an attribute of the master data type, the description attribute must exist.

The following checks are performed for compound master data types:

- A compound master data type must have at least two components, and all components must be active.
- Virtual master data types cannot be used as a component of a compound master data type.
- A compound master data type must have all the key attributes of the component master data types set to key, and it must not have any additional key attributes.

The following checks are performed when changing master data types:

- It is not allowed to add or remove components to a compound master data type if data already exists for the master data type.
- If an additional attribute is set to key, the attribute cannot be empty in any of the master data records.
- If a key attribute is changed to a non-key attribute, the remaining key combination must have unique values for all existing master data records.

Consistency Checks for Planning Areas

The following are some of the checks that are performed for planning areas:



The planning area ID must be all uppercase.

A time profile must be assigned to the planning area.

The lowest time profile level must be used as storage time profile level.

Time horizons must be specified for each time profile level of the assigned time profile.

A planning area cannot have inactive master data types and attributes.

You must either activate the master data types and attributes used in the planning area before you activate the planning area or include them in the activation of the planning area.

The planning area must have at least one stored key figure.

If a compound master data type is assigned to a planning area, its component master data types must be assigned to the planning area as well. The attributes that are assigned to the planning area must be selected from the component master data types.

Consistency Checks for Versions

The following checks are performed for versions:



The version ID must be all uppercase.

The version ID must not be BASELINE or __BASELINE.

A version must have at least one stored key figure specified as version-specific key figure.

Consistency Checks for Planning Levels

The following checks are performed for planning levels:



The planning level ID must be all uppercase.

All attributes of a planning level must be attributes selected for the planning area.

All attributes selected for the planning area should be used in one or more planning levels.

A planning level that is used in a stored key figure must exist.

A planning level that is used as a base planning level of a stored key figure must have one or more root attributes other than the time attribute.

The time profile level of the lowest granularity must be the root attribute in a planning level.

If a planning level is used as a base planning level of a key figure, it must have exactly one time profile level set as root attribute.

Key figure data must not exist at a planning level whose root attributes have been changed.

Two planning levels that have the same root attributes (apart from the time attribute) and are used as the base planning level of one or more stored key figures must have the same set of non-root attributes.

Checks for external planning levels.

Consistency Checks for Key Figures



The following checks are some of the checks that are performed for key figures:

- The key figure ID must be all uppercase.
- A key figure and an attribute cannot share the same ID.
- An attribute used as a time-dependent key figure can have either a time reference attribute specified or one or both of the `From Period` and `To Period` fields filled out.
- For an attribute as a key figure, the value in the `To Period` field must not be sooner than the one in the `From Period` field.

The following checks are some of the checks that are performed for the calculation of key figures:

- A key figure - except for helper key figures - must have a calculation defined at REQUEST level.
- The calculation chain for every key figure must result in a stored key figure.
- There should not be a calculation that is not used in any calculation graph.
- The calculation graph must not contain circular references.
- A key figure referenced in a calculation must be specified as an input key figure for the calculation.
- An aggregation calculation must have exactly one input key figure.
- In an aggregation calculation, the attributes of the output planning level must be a subset of the attributes of the input planning levels.
- In a calculation that is not aggregation, the output planning level must contain all attributes from the input planning levels.
- A calculation must include two planning levels in its inputs at most.

- Only a planning level that has one or more root attributes can be used as the base planning level of a stored key figure.
- Data upload is possible only at a planning level that has one or more root attributes.
- SUM() calculation can be used for a key figure only if the Aggregation Mode of the key figure is set to Sum or Custom.
- Only stored key figures can be marked as stored input in a key figure calculation.
- A key figure must not reference itself on the same planning level in its calculation.
- For a key figure at a specific planning level, only one calculation must exist.

Other Consistency checks

SAP introduces other checks with the goal to streamline the IBP foundation and decrease the time it takes to activate planning areas.

Some recently introduced checks include checks for functions, such as IBP_CAGGR and IBP_LPA.



LESSON SUMMARY

You should now be able to:

Activate a planning area

Learning Assessment

1. Which of the following is the correct sequence for model configuration?

Choose the correct answer.

- ☐ **A** Activate, Load, Define, Use
- ☐ **B** Load, Activate, Define, Use
- ☐ **C** Define, Load, Activate, Use
- ☐ **D** Define, Activate, Load, Use

2. Which is the best sequence to activate your configuration objects?

Choose the correct answer.

- ☐ **A** Master Data Type, Time Profile, Planning Area
- ☐ **B** Time Profile, Key Figure, Planning Area
- ☐ **C** Time Profile, Master Data Type, Planning Area
- ☐ **D** Planning Area, Master Data Type, Time Profile

Learning Assessment - Answers

1. Which of the following is the correct sequence for model configuration?

Choose the correct answer.

- ☐ A Activate, Load, Define, Use
- ☐ B Load, Activate, Define, Use
- ☐ C Define, Load, Activate, Use
- ☒ D Define, Activate, Load, Use

Correct. Define, Activate, Load, Use is the correct sequence for model configuration.

2. Which is the best sequence to activate your configuration objects?

Choose the correct answer.

- ☐ A Master Data Type, Time Profile, Planning Area
- ☐ B Time Profile, Key Figure, Planning Area
- ☒ C Time Profile, Master Data Type, Planning Area
- ☐ D Planning Area, Master Data Type, Time Profile

Correct. The best sequence to activate your configuration objects is the following: Time Profile, Master Data Type, Planning Area.

UNIT 4

Active Object Deletion

Lesson 1

Deleting an Active Object

49

UNIT OBJECTIVES

Delete an active object

Deleting an Active Object



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Delete an active object

Active Object

Modeling objects have a key field **ACTIVE**, that can have values 'A', 'I' and 'D'.

The following list provides an explanation of the possible active object activation states:



Inactive:

This status appears before the first activation. It has an 'I' entry.

Active:

After an activation, the inactive record is converted to an Active status. Object has an 'A' entry.

Active and Inactive:

A modification on the active record creates an inactive record.

After an activation, inactive changes are overridden on the active record and a record with an Active status is created, which includes the most recent changes. Object will have both an 'A' and an 'I' entry.

Object is reactivated or reverted to active version:

Object has an 'A' entry.

Active and Delete (Pending for Deletion):

When an active record is no longer required, you perform an active deletion and it will have both an 'A' and a 'D' record in the database.

Upon activation table entry is deleted.

Types of Active Deletions



- Master data active deletion

- Planning level active deletion

- Key figure active deletion

- Planning area active deletion

Time profile and attributes

Version active deletion

Master Data Type Active Deletions

Note the following points:



If a master data type is used in planning area, it must be disassociated.

If a master data type attribute is used in a planning area, it must be disassociated.

Attributes that are assigned to a planning area can be marked for deletion. When you mark an attribute for deletion, the message shown in the figure, Master Data Type Attribute Deletion, displays and the action is allowed. Once it is activated, the attribute is removed from the planning area and planning levels.

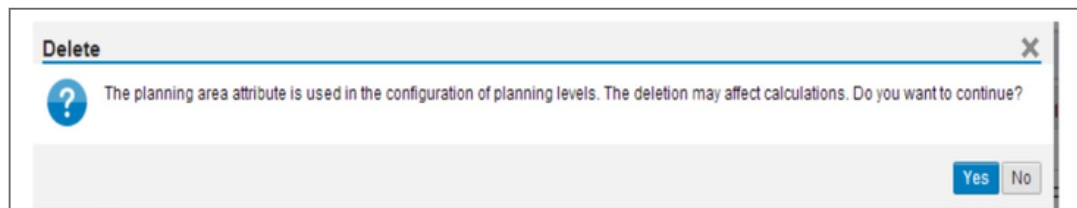


Figure 15: Master Data Type Attribute Deletion

Attributes assigned to a planning level can be marked for deletion. A planning level can only be deleted when there are no key figures associated with it.

Key Figure Active Deletion

A key figure is only allowed to be deleted when it is not used in other calculations. When a key figure is deleted, the underlying calculations and calculation inputs are also marked for deletion. A key figure can be marked for deletion by selecting the Delete option in the Key Figure configuration tab. The calculation will be grayed out Deletion and the key figure status is also changed. Key Figures that use that Key Figure in their calculation will acquire a changed status as well. The toolbar provides an option to restore the object, in case it will be decided that deletion is not going to be needed.

Once the activation occurs, the calculation is deleted.

For example, the following figure shows how the UNITPRICE key figure is marked for deletion.



T999 (T9 Planning Area) / Unit Price 9

Unit Price 9 TSUNITPRICE

Description: Base Planning Level: MTHPRODCUST Type: Key Figures: 1 Status: Pending Deletion

Characteristics Calculation Definitions Display Settings Administrative Information

Edit Allowed: Not Editable Convert Using: Business Meaning: Input/Output for T5 Forecast Consumption:

Aggregation Mode: Custom Disaggregation Mode: -

Enable Fixing Aggregated Constraint Enable Planning Notes

Calculation Definitions

Calculations Aggregated Status: Pending Deletion

$$TSUNITPRICE@REQUEST = IF(ISNULL("CONSENSUSDEMAND@REQUEST") OR "CONSENSUSDEMAND@REQUEST" = 0, 0, "CONSENSUSDEMANDREV@REQUEST" * "CONSENSUSDEMAND@REQUEST")$$

Figure 16: Key Figure Active Deletion



LESSON SUMMARY

You should now be able to:

Delete an active object

Learning Assessment

1. Which of the following are an object activation status?

Choose the correct answers.

- ☐ **A** Delete Pending
- ☐ **B** Active and Inactive
- ☐ **C** Inactive
- ☐ **D** Active
- ☐ **E** Active and Delete (Pending for Deletion)

Learning Assessment - Answers

1. Which of the following are an object activation status?

Choose the correct answers.

- ☐ **A** Delete Pending
- ☒ **B** Active and Inactive
- ☒ **C** Inactive
- ☒ **D** Active
- ☒ **E** Active and Delete (Pending for Deletion)

Correct. Active and Inactive, Inactive, Active and Active and Delete are possible object activation states.

UNIT 5

Data Integration

Lesson 1

Identifying Data Import Options

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Lesson 2

Importing Data Using the SAP Integrated Business Planning Web UI

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UNIT OBJECTIVES

Identify data import options

Import data using SAP Integrated Business Planning Web UI

Unit 5

Lesson 1

Identifying Data Import Options



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Identify data import options

Data Import Options

Data is imported and added to your planning area using the following methods:



Web UI

SAP HANA Process Integration Data Services (CPI-DS)

Extract, Transform, and Load (ETL)

Microsoft Excel UI

Smart Data Integration (SDI)

The following list describes the available data import options:

Web UI (Flat File Import):

Data can be imported in Integrated Business Planning by using files, which are uploaded using the Integrated Business Planning Web client or a Secure File Transfer Protocol (SFTP) client.

SAP CPI-DS:

This is a cloud-based data integration solution that is bundled with IBP. It enables a direct extraction from the on-premise/cloud SAP ERP and SAP Advanced Planning and Optimization systems into the IBP SAP HANA database in the cloud. CPI-DS provides out-of-the-box S&OP data integration content. The data integration content can be further tailored to a company's specific requirements.

SAP data services or any ETL tool:

Connects from a company's on-premise system to the S&OP on-demand solution. S&OP provides out-of-the-box templates for data integration with S&OP source systems. SAP supports importing from any data to any source, and it even enables homegrown systems.

Microsoft Excel UI:

A user that has the correct permissions assigned via a role can maintain and create data directly in the planning view or by choosing **Master Data** **Manage**.

SDI:

SDI provides real-time push mode to replicate sources with Change Data Capture (CDC) capability. It provides batch pull mode for all types of data sources. It also provides transactional Integrity for real-time push by listening to changes in the DBMS transaction logs and only replicating committed changes. SDI can resume processing if the replication stream is halted or disrupted, and SDI can continue to operate during a temporary absence of the SAP HANA target.



LESSON SUMMARY

You should now be able to:

- Identify data import options

Unit 5

Lesson 2

Importing Data Using the SAP Integrated Business Planning Web UI



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Import data using SAP Integrated Business Planning Web UI

Data Integration Using the Web UI

The SAP Integrated Business Planning Data Integration application provides a mechanism for importing and exporting data between on-premise systems in the customer environment and SAP Integrated Business Planning applications in the SAP Cloud environment. The figure, Importing and Exporting Data, shows the available options for importing and exporting data.

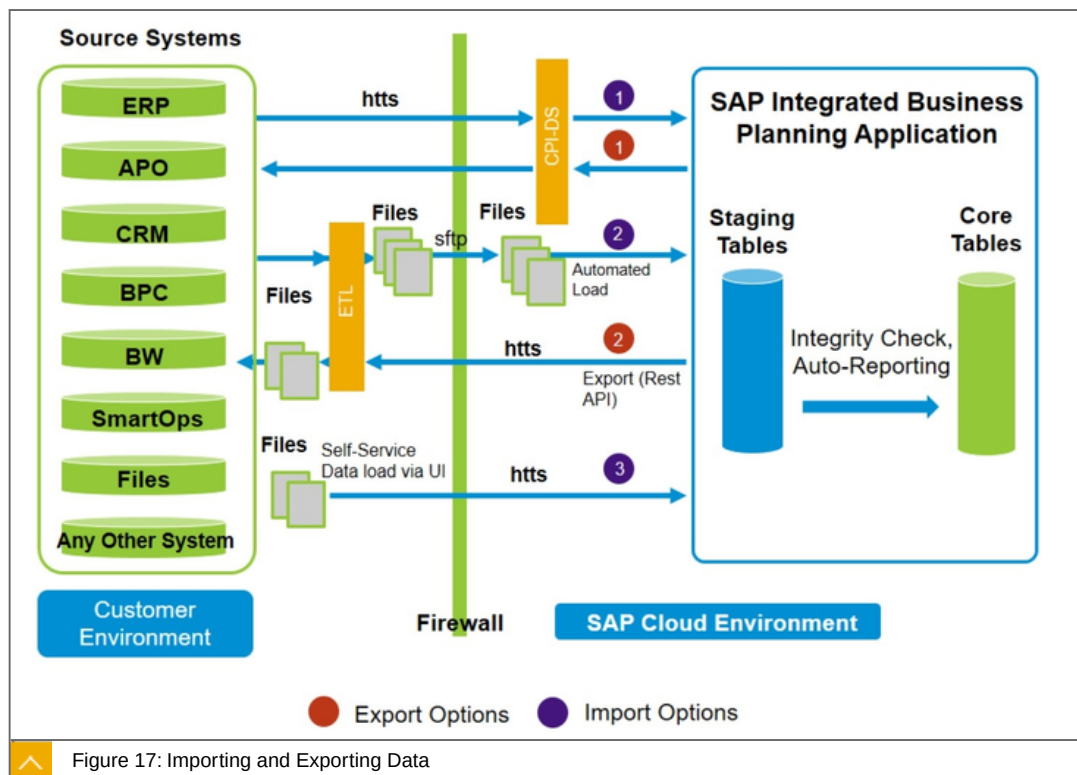


Figure 17: Importing and Exporting Data

Master and time series transaction data from the customer environment can be loaded to IBP via CPI-DS. A secure call from the CPI-DS agent is made from within the customer firewall to make the connection to the cloud-based IBP, and, after this, data transfer occurs. Data is first loaded to IBP staging tables and then to core tables. Various types of import and export are highlighted in the pink and gold circles in the figure.

Data can be imported from the on-premise system in the customer environment into the SAP Integrated Business Planning applications in the SAP Cloud environment, as shown from left to right in the figure.

Data is exported from the SAP Integrated Business Planning applications to on-premise systems, as shown from right to left in the figure, using the options described in the list:

SAP HANA Cloud Process Integration Data Services (CPI-DS):

This import option is shown as number 1 in the figure. SAP CPI-DS connects directly to on-premise systems to extract and securely pipe data from source systems to SAP Integrated Business Planning target tables using secure HTTP and HTTPS. SAP CPI-DS utilizes the available data integration function.

Self-Service Data Load Web UI:

This import option is shown as number 2 in the figure. You can import files using the self-service data integration Web UI by using the secure HTTP or HTTPS.

Data Integration Process

There are two phases in the data integration process:

1. The system reads the contents of the .csv file and loads them into a staging table, which is an intermediate storage space. Rejections can occur at this point if, for example, the system cannot parse a file.
2. The data is moved from the intermediate staging table to the application tables. Sometimes, records are rejected in this phase. When this occurs, the rejection appears as a rejection code. The system retains data load reports according to the global parameter setting.

Data Types

When you set up your SAP Integrated Business Planning system, you must create and activate time profiles, master data types, and planning areas before loading data.

Once you have set up your system, you can import the following types of data in the sequence shown, using the Data Integration application:



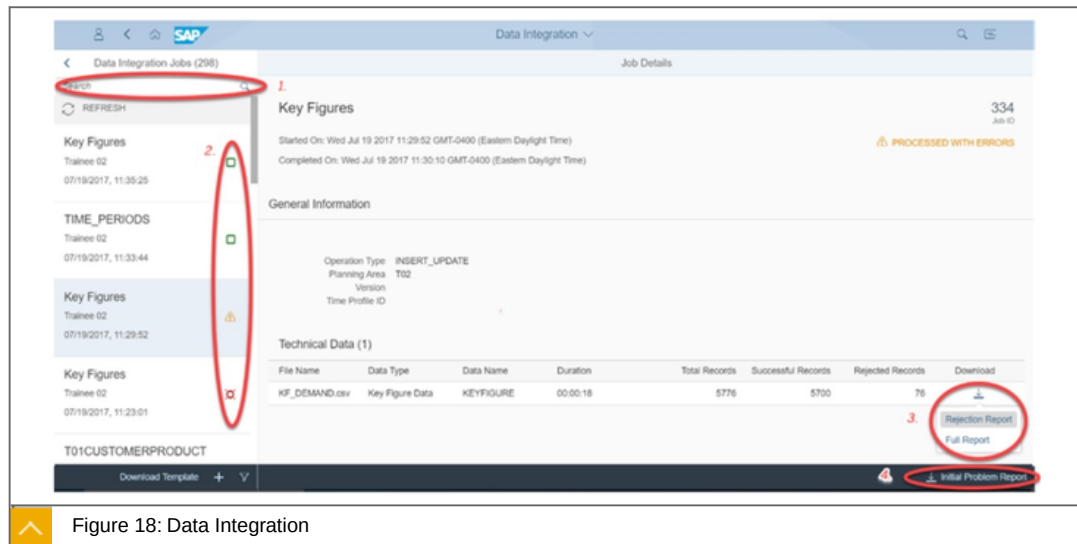
1. Time periods
2. Master data related to master data objects
3. Key figures



Note:

It is possible to load master data before the time profile, but, generally, the data should be loaded in the sequence shown to ensure a successful data load.

Log File



As shown in step 1 in the figure, Data Integration, you can filter the data import jobs on the overview screen. As shown in step 2 of the figure, the status of the job can be viewed as Success, Processed with Error(s), or Fatal Error(s). As shown in step 3 of the figure, you can download the log file for further analysis. Note the following steps:

1. Select your job in the job list on the left side of the screen. The job details are uploaded.
2. Choose the Download icon and choose a report type in the Context menu, as shown in step 3 of the figure. There are two types of report:

Full report (which gives information about each uploaded data line)

Rejection report (which lists only the rejected data lines with the description of the rejection)

**Note:**

You can download Initial Problem Report as shown in step 4 of the figure. However, it is not possible to choose a report type.

3. The selected report is downloaded and can be opened for analysis.

Troubleshooting

If a data load process job is not successful (if it does not display as green), download the rejection report.



	A	B	C	D	E	F	G	H	I	J	
1	BATCH_NAME	BATCH_ID	FILENAME	DATA_TYPE	REJECTION_CODE	REJECTION_CODE_NAME	REJECTION_DESCRIPTION	CUSTID	KEYFIGUREDATE	PROID	SF
2	Key Figures	952	KF07_EGIS_SalesFstTest.csv	KEYFIGURE	133	Missing period ID	PERIODID is missing for the KEYFIGUREDATE provided	1	2105.08.01 0:00	92576540	
3	Key Figures	952	KF07_EGIS_SalesFstTest.csv	KEYFIGURE	133	Missing period ID	PERIODID is missing for the KEYFIGUREDATE provided	1	2105.10.01 0:00	92576540	
4	Key Figures	952	KF07_EGIS_SalesFstTest.csv	KEYFIGURE	133	Missing period ID	PERIODID is missing for the KEYFIGUREDATE provided	1	2105.11.01 0:00	92576540	
5	Key Figures	952	KF07_EGIS_SalesFstTest.csv	KEYFIGURE	133	Missing period ID	PERIODID is missing for the KEYFIGUREDATE provided	1	2106.01.01 0:00	92576540	
6	Key Figures	952	KF07_EGIS_SalesFstTest.csv	KEYFIGURE	133	Missing period ID	PERIODID is missing for the KEYFIGUREDATE provided	1	2105.08.01 0:00	92576540	
7	Key Figures	952	KF07_EGIS_SalesFstTest.csv	KEYFIGURE	133	Missing period ID	PERIODID is missing for the KEYFIGUREDATE provided	1	2106.10.01 0:00	92576540	
8											

Figure 19: Troubleshooting

The rejection code name show in the figure, Troubleshooting, helps to establish why the characteristic combination is rejected.

Troubleshooting Tips

Table 2: Troubleshooting Tips

Troubleshooting Subject	Description
Comma separated fields	The headers and data in a .csv file must not contain spaces, only comma separations. For example,  Syntax SM1PRDDESCR,SM1PRDID,SM1PRDSUBFAMILY x100 Phone,x100 Phone descr,xPhone SF This is different from:  Syntax x100 Phone, x100 Phone descr, xPhone SF Note the empty space characters in front of x100 Phone descr
.CSV file format	By default, when you open a .csv file, it launches in Microsoft Excel. Check that Microsoft Excel does not change the file format. For example, if you have data that begins with a 0 and you open the .csv file in Microsoft Excel, it will remove that initial 0. When you save the file, the 0 will be permanently removed. SAP recommends that you open the .csv files with a program that does not change the format of the file. Microsoft Excel adds extra rows and 0s to the file, which will cause an error when the data load runs. To resolve this, open the file in another editor and correct the changes that Microsoft Excel has made to the file.

Troubleshooting Subject	Description
Special characters	The following special characters are not allowed in the data feeds: - Single quotes/apostrophe (') - Double quotes (") - Greater than (>) - Less than (<) - Carriage Return (CR) - Carriage Return + Line Feed (CRLF) - Empty line - Tab Note that when data is loaded into SAP Integrated Business Planning, it allows quotes in the Product Description when the description attribute is assigned to an attribute in Configuration.
Escape character	Currently, the escape character is not supported and (") cannot be used as the escape character.
Decimal formats	Decimal formats are not supported at present when you perform data loads from the Web UI. Use SAP HANA Cloud Integration (CPI-DS) or Data Services for this type of operation. For example, the European number format 1.890.200,54 EUR is not supported.
Year format	The year format must be expressed as YYYY-MM-DD.
Scientific notation	Numbers cannot be expressed in scientific notation, for example, use 0.000434343 instead of 4.34E-04
New lines	Check for new lines at the end of the file.



LESSON SUMMARY

You should now be able to:

Import data using SAP Integrated Business Planning Web UI

Learning Assessment

1. Which of the following options allow you to import data into your planning area?

Choose the correct answers.

- ☐ **A** Microsoft Excel UI
- ☐ **B** SAP Advanced Planning and Optimization-Demand Planning (APO-DP)
- ☐ **C** Web UI
- ☐ **D** SAP HANA Process Integration (CPI-DS)

2. In a new planning area, which of the following is the correct sequence for importing data?

Choose the correct answer.

- ☐ **A** Time Profile, Key Figure, Master Data
- ☐ **B** Time Profile, Master Data, Key Figure
- ☐ **C** Master Data, Time Profile, Key Figure
- ☐ **D** Master Data, Key Figure, Time Profile

Learning Assessment - Answers

1. Which of the following options allow you to import data into your planning area?

Choose the correct answers.

- ☒ **A** Microsoft Excel UI
- ☐ **B** SAP Advanced Planning and Optimization-Demand Planning (APO-DP)
- ☒ **C** Web UI
- ☒ **D** SAP HANA Process Integration (CPI-DS)

Correct. Data can be imported into the planning area using Microsoft Excel UI, Web UI and CPI-DS.

2. In a new planning area, which of the following is the correct sequence for importing data?

Choose the correct answer.

- ☐ **A** Time Profile, Key Figure, Master Data
- ☒ **B** Time Profile, Master Data, Key Figure
- ☐ **C** Master Data, Time Profile, Key Figure
- ☐ **D** Master Data, Key Figure, Time Profile

Correct. Sequence for importing data into the new planning area is Time Profile, followed by Master Data, followed by Key Figures.

UNIT 6

Planning Area Copy and Merge

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UNIT OBJECTIVES

- Perform a simple copy
- Perform New with Dependencies copy
- Perform a planning area merge
- Export planning areas
- Use SAP preferred naming conventions

Unit 6

Lesson 1

Performing a Simple Copy (Create New) of a Planning Area

LESSON OVERVIEW

In this lesson, you learn how to perform a simple copy.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Perform a simple copy

Create New (formerly Simple Copy)

SAP Integrated Business Planning offers you **Create New** and **Create New with Dependencies** options within the planning area. With the **Create New** option, the same set of master data types and the same time profile are copied from the source to the target planning area.

You cannot use the copy functions to copy forecasts, favorites, or user-defined filters.

To access the copy functions, use **Planning Areas Model Configuration** app in the **Model Configuration** group, select your planning area, choose **Copy** from the toolbar and then **Create New** or **Create New with Dependencies** as required.

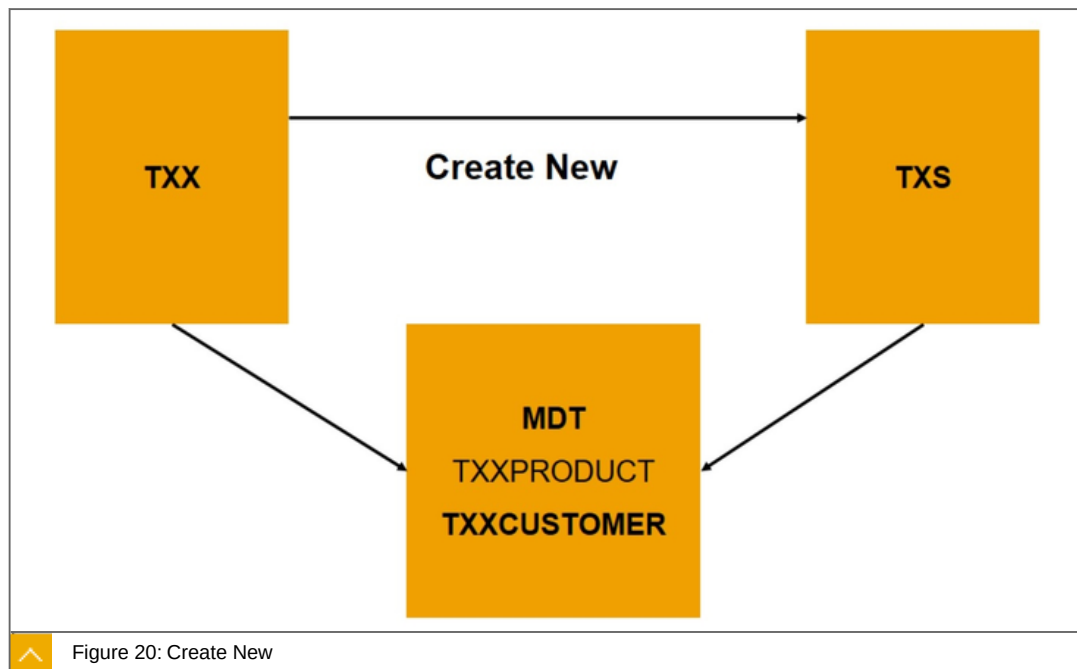


Figure 20: Create New

Additional options on the **Copy Planning Area** screen are available. Planning Areas can be merged on copy, or a target planning area can be replaced.

Planning Area

The simple copy function allows you to create a new planning area by copying the following data from the source planning area:



Planning area — time profile associations

Planning area details

Planning area — attribute associations

Planning levels associated with the planning area

Planning level — attribute associations

Key figures associated with the planning area

Versions associated with the planning area

Snapshots associated with the planning area

Planning operators

Master data types, time profiles, and attributes associated with a planning area are not copied.



LESSON SUMMARY

You should now be able to:

Perform a simple copy

Unit 6

Lesson 2

Performing New with Dependencies (Advanced) Copy of a Planning Area

LESSON OVERVIEW

In this lesson, you learn how to perform an advanced copy.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Perform New with Dependencies copy

New with Dependencies Copy

The New with Dependencies copy function allows you to copy master data types, time profiles, and attributes associated with a planning area. You can use advanced copy to copy both your own content and SAP-provided content to your work area.



Note:

Attributes are copied under the same name as those attributes in the source planning area.

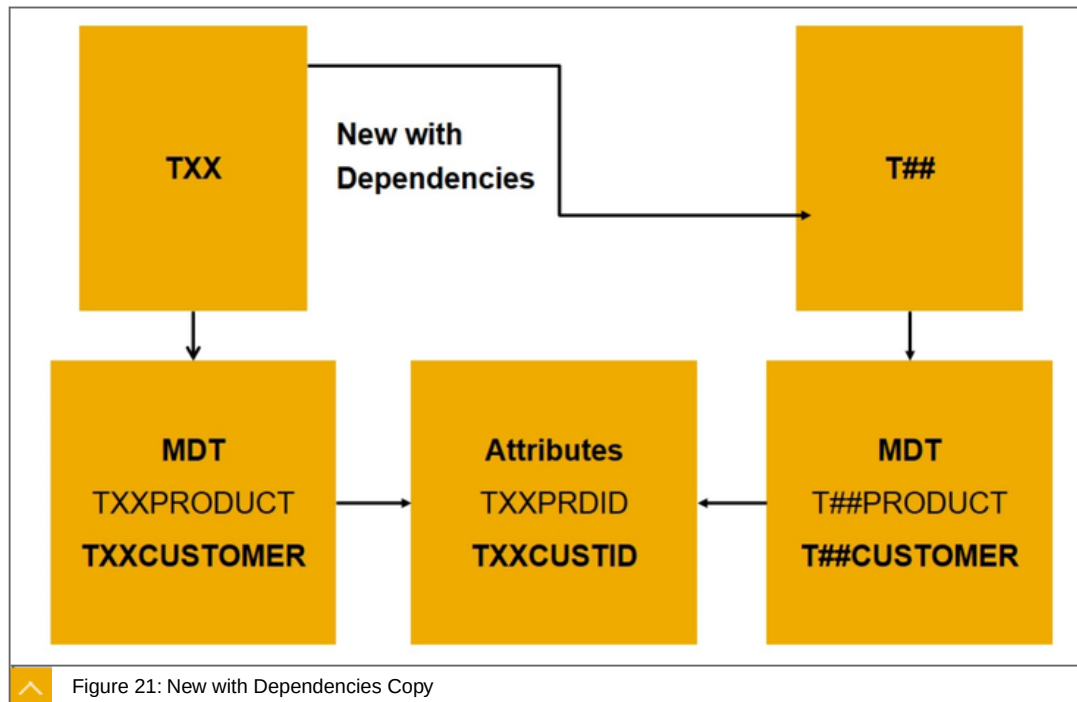


Figure 21: New with Dependencies Copy

New with Dependencies copy of a planning area creates a new planning area with new master data types, time profile as specified by user. Any changes to the source planning area such as master data type changes do not affect the new (target) planning area.

When you use advanced copy, it is also possible to filter for partial copy. In this way, you can create a copy of a planning area for selected processes.



LESSON SUMMARY

You should now be able to:

- Perform New with Dependencies copy

Performing a Planning Area Merge

LESSON OVERVIEW

In this lesson, you learn how to perform a planning area merge.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Perform a planning area merge

Merge or Replace Copy Function

In addition to create new and create new with dependencies copy options, you can do the following:



- Replace the master data type prefix

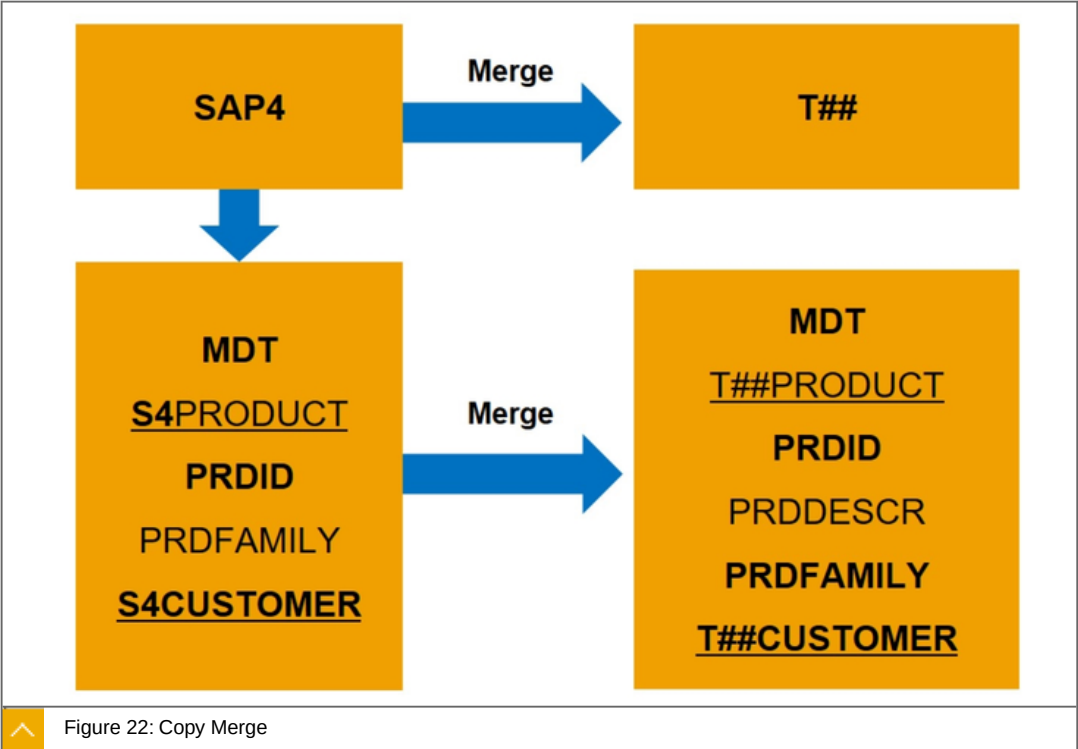
- Append a prefix to the master data type name

- Remove a prefix from the master data type name

- Copy source master data type “as is”

- Merge the source planning area with the target planning area

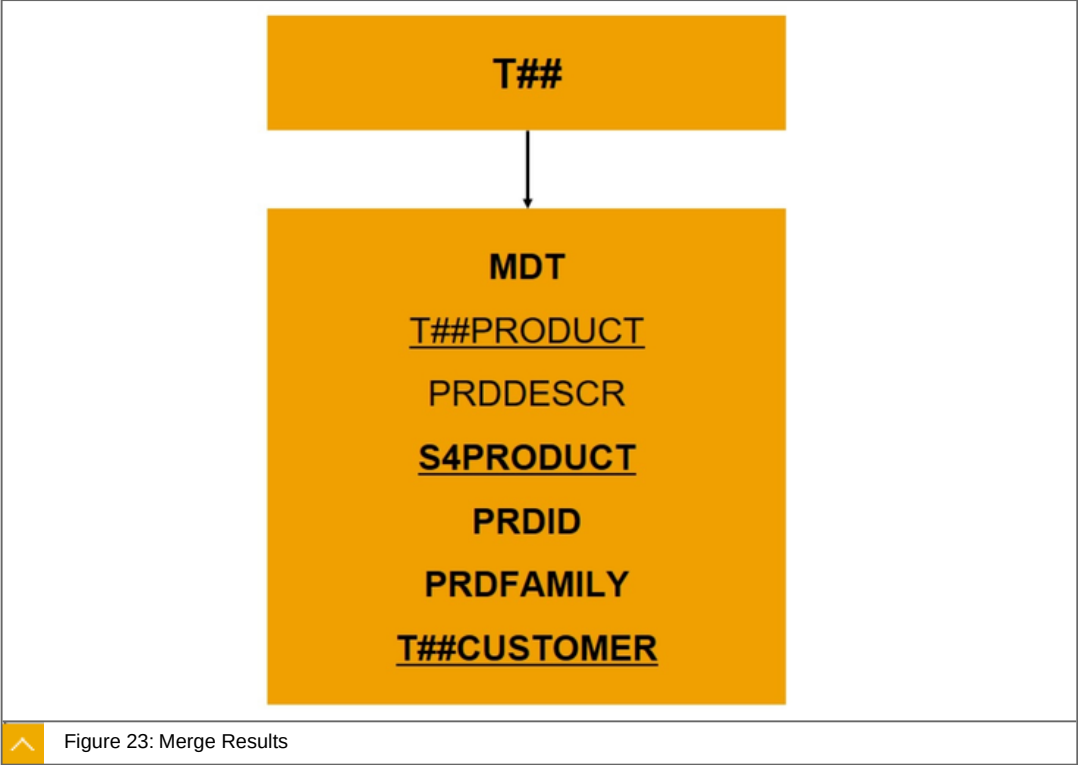
- Replace the target planning area with the source planning area



Merging two planning areas causes the deltas from the source planning area to be merged with the target planning area.

Copy Merge Results

The figure, Merge Results, shows the copy merge results.





LESSON SUMMARY

You should now be able to:

- Perform a planning area merge

Unit 6

Lesson 4

Exporting and Importing Planning Areas

LESSON OVERVIEW

In this lesson, you learn how to export planning areas.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Export planning areas

New Export/Import

Transporting planning models are based on the Change and Transport System in Application Server ABAP.

From mid- 2021 SAP will start transitioning customers to the new process of export/import.

This is a significant change, with new apps, additional features becoming available and (even) new terminology.

Additional Features Compared to the Old Process

Manual import into target system via new app Import Collection

Flexible grouping of items to be exported in one go

Transparency when import cannot be done because of newer software release in target or because its not needed (newer version is already imported)

Insight into item dependency via new app Extensibility Inventory

Notes/ comments per export which are part of the export and visible in import system

Preview of import content

Transparent import status all exported versions are shown and when and by whom import was done is recorded

Import and Export are decoupled it is possible to export often (when there is a consistent state in configuration) and only import at a time when it makes sense and only importing what is needed

Items and Extensibility Inventory App

The Extensibility Inventory app is used for checking what items are in the system and which dependencies are published.

These dependencies can be used in the creation of groups of items for export.

Be careful with “high level objects” like forecast models, copy operator profiles, etc. The dependency trees can be big.

Collections

With old tool users would pick the “main” entity and dependent objects were exported. With the new process there is going to be more control over what is exported.

Collections can contain any list of items

Only collections are exported , imported, and

Collections have versions and you can see which items in a collection are new, changed, deleted.

Once a collection is exported, you shall not move items from one collection to the other!

Only possible activity is to merge collections.

Best Practices for Using New Import/Export

Collections play an important role in development process. It is important to spend time to understand what objects have to be grouped together in a collection.

Some ideas about a list of collections are to group items by type as follows:

attributes, time profiles

master data types and planning areas one collection per planning area

forecast models, operator profiles, etc. one collection per planning area

planning filters one collection per planning area

permission filter one collection per planning area

business roles, attribute permissions

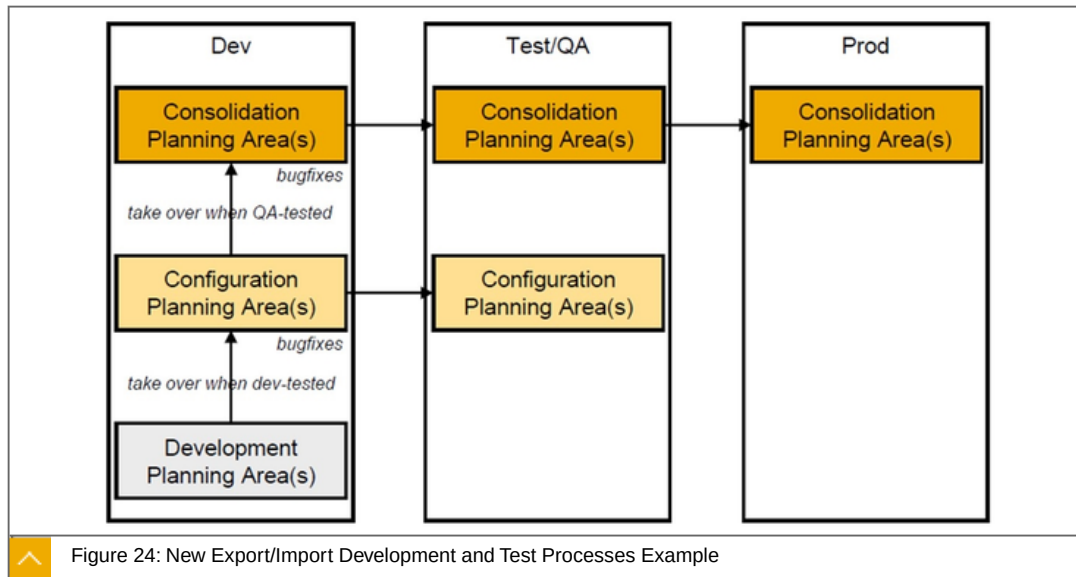
Additionally, it is suggested to build collections per organizational entity, by process, project, or project phase. For example:

On a larger SAP IBP implementation project, team members working on demand configuration stream should be using one set of collections so the team can do changes in the demand forecast models, the demand planning area, relevant operators, etc.

Teams or people working on items in the same collection have to align on export and import times.

Maintain text notes for the exports (for example, noting the date of configuration change and change request number).

Same as before, imported objects are inactive after import and activation will be needed. If importing to production system it is important to do it at a time when there are no critical processes running.



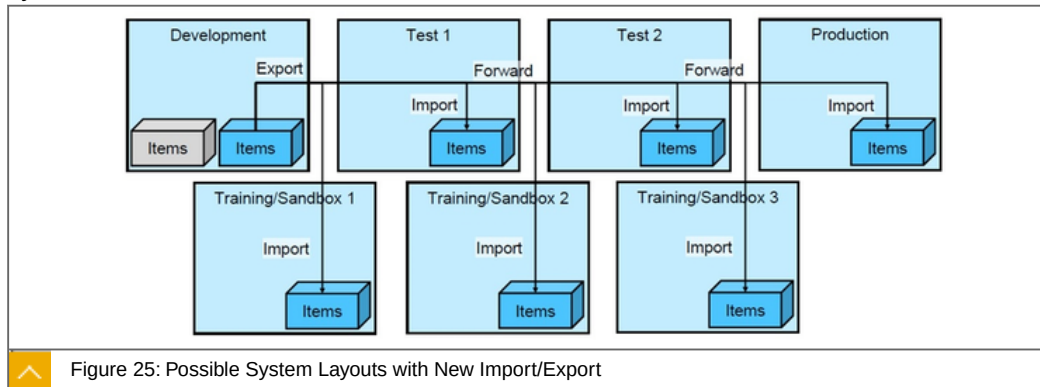
Possible System Layouts

SAP IBP configurators can choose to have a configuration planning area and maintain consolidation planning area that will be on a transport path. Additional planning areas can be used for training, testing big change requests, etc.

It is possible to create independent collections for consolidation planning area and for configuration planning area.

Import the configuration planning area only to test/QA system and allow testing there

import the consolidation planning area in test/QA and later forward to the production system



Limitations and Restrictions

It is possible to transport through the landscape multiple other entities in addition to planning areas. ABC/XYZ segmentations, statistical forecasting, S&OP Operators, Advanced Copy Operators, Analytics Charts and Realignment Projects are some of the example of entity types that are transportable.

No master or transactional data can be transported!

Only activated items can be exported.

No transport across releases or hotfix collections, but with new functionality you can export and the import is not gone.

No overwrite of first system, no overwrite of development system!

- No “restore from backup of other system” onto development can be done!
- Only restore to earlier point in time is possible for the development system.

Export can only be created in first system. Content from other systems is local and stays local!



Note:

According to mid/long term outlook upgrade of TEST will come first, DEV and PROD will come 2 weeks later, during that time DEV TEST will potentially work (depending on item type) and DEV PROD will of course work (as they will be on the same version)



LESSON SUMMARY

You should now be able to:

Export planning areas

Unit 6

Lesson 5

Using SAP Preferred Naming Conventions



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Use SAP preferred naming conventions

Naming Conventions

Naming conventions should be considered carefully.

Naming Object Rules



For attribute names, the following rules apply:

- If you are in a customer environment, where attributes have clear and unique semantics, don't use a prefix, for example, PRDID.
- If you are in a demo/test environment, where different people/teams have to work together, use a prefix, for example, SM1PRDID.

Models (master data types and planning area) should have a three-letter prefix, for example, SM1, CP1, and so on.

This is usually the company's Ticker symbol.

Master data types should start with a three-letter prefix, for example, SM1PRODUCT.

Planning areas should start with a three-letter prefix, for example, SM1.

Planning levels and key figures should not have a three-letter prefix.

Naming Object Issues



Do not use any short forms when naming master data types. For example, use CP1PRODUCT instead of PRD.

You can use short forms when defining attributes, for example, CP1PRDID, SP1CUSTID, and so on.

It is good practice to name an attribute identifier with the suffix ID. For example, SM1CUSTID is the identifying attribute of CUST.

Identify descriptions' attributes using the suffix DESCR. For example, SM1PRDDESCR is a description attribute for product.

Do not mix different synonyms for an attribute. For example, do not use PRDID, MATERIALDESC, PRODUCT, or SKU (all referring to product).

Use SM1PRDID, SM1PRDDESCR, SM1PRDFAMILY, and so on, as attributes, if the master data type is SM1PRODUCT.

Additional Naming Object Issues



Avoid situations where the master data type name is also the attribute name.

Avoid marking non-key attributes as required.

Do not use special characters, for example, underscore and space, in any ID field.

Good Practices



Key figure names should not be long. Keep names less than 25 characters in length.

Key figure ID naming should be meaningful. Use the full name or the abbreviated form as much as possible, for example, SALESFORECASTQTY. A bad example is SLFCQTY.

Key figure naming should clearly represent what is quantity versus value key figure, for example, SALESFORECASTQTY versus SALESFORECASTREV.

Descriptions of attributes and names of key figures should be short, so they are more readable in planning views.

Additional Good Practices



Use the planning level ID to clearly represent the master data types involved. For example, MTHPRODCUST represents period, product and customer.

Start all helper key figures with the prefix H.

Do not use the term SELECT anywhere. The following are bad examples: an attribute MCK1SELECT, a key figure B1SELECT, and a planning area CL1SELECT.

Avoid using time profile ID 1, as it is an SAP-delivered sample.

Do not use special characters when defining a template or favorite.



LESSON SUMMARY

You should now be able to:

Use SAP preferred naming conventions

Learning Assessment

1. What is the only object that can be exported, imported or forwarded with the new process?

Choose the correct answer.

- ☐ **A** Planning Area
- ☐ **B** Collection
- ☐ **C** Organizational Entity

Learning Assessment - Answers

1. What is the only object that can be exported, imported or forwarded with the new process?

Choose the correct answer.

- ☐ **A** Planning Area
- ☒ **B** Collection
- ☐ **C** Organizational Entity

Correct. Only collections are exported , imported, and forwarded.

UNIT 7

Key Figure Functions

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UNIT OBJECTIVES

Incorporate disaggregation methods in SAP Integrated Business Planning

Create a helper key figure

Configure and use change history

Create snapshot key figures

Unit 7

Lesson 1

Implementing Disaggregation



LESSON OBJECTIVES

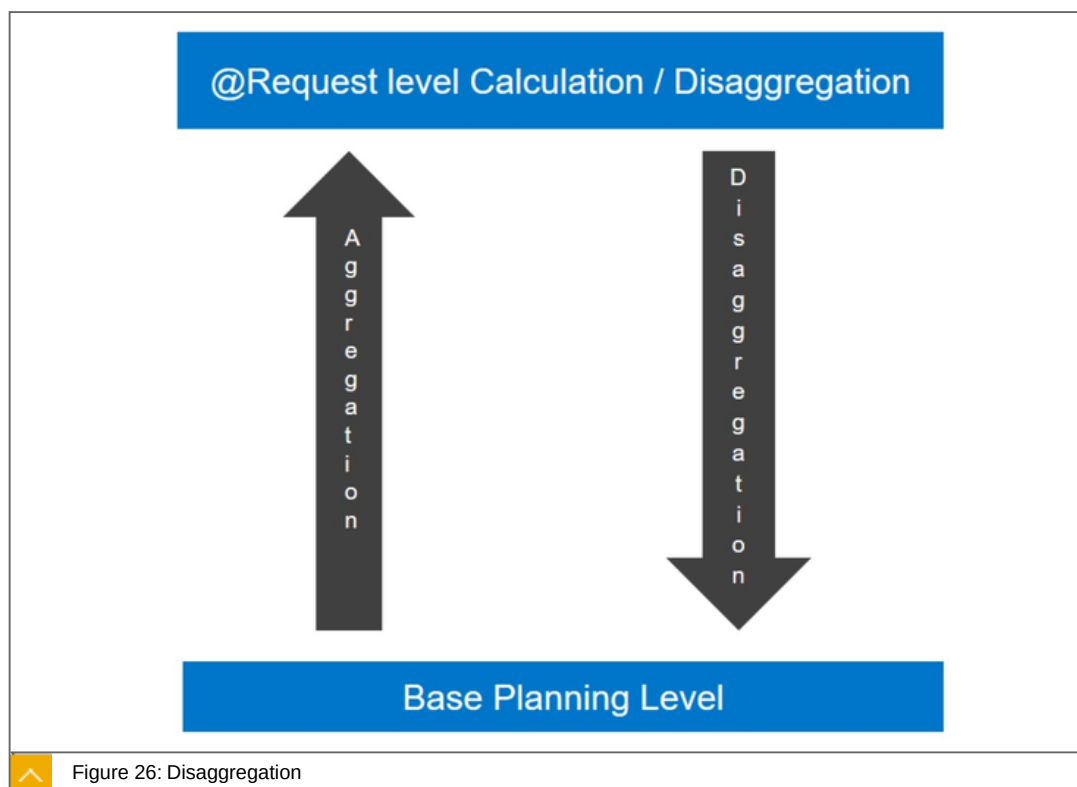
After completing this lesson, you will be able to:

Incorporate disaggregation methods in SAP Integrated Business Planning

Aggregation and Disaggregation

Aggregation is the automatic function by which key figure values on the lowest level of detail are summed at run time and displayed or planned on a high level. For example, if you display the forecasted demand for a region in the interactive planning table, you see the forecasted demand for all of the different sales channels, product families, brands, products, and customers in that region, which the system has added together.

Disaggregation is the automatic function by which a key figure value on a high level is broken down to the detailed level. For example, if you forecast demand in a particular region, the system instantly splits this number among the different sales channels, product families, brands, products, customers, and so on, in this region.



Data in IBP is always stored at the base planning level of the key figure. This is the level at which it is defined. However, the data can be viewed and modified at any higher level of the attribute hierarchy. When key figure data is modified at a higher level, rules need to be defined for disaggregation to base planning level in key figure configuration. Similarly, when key figure data is viewed at a level higher than base level, aggregation rules, such as SUM or AVG, need to be defined. Any level at which the data is requested to be viewed is called the request level.

Aggregation and disaggregation ensure a consistent planning approach throughout your organization. The sum of the details on the low level always equals the total on the high level. Key figure values are always saved at the lowest level of detail. If aggregates exist, the data is also saved on the aggregate level.

Aggregation and Disaggregation Features



All real time: a differentiator (no pre-aggregation, no hidden “batch” disaggregation)

Aggregation is very flexible (any expression, including weighted average for price, and so on)

Disaggregation for the same KF is proportional to existing values, or even split or copy down

Disaggregation from one KF to another KF is very flexible (any expression)

Configured in config UI per KF

“Custom” disaggregation for the same KF per another KF is also available

Disaggregation Methods

SAP Integrated Business Planning on the SAP HANA platform provides the flexibility to define custom disaggregation expressions. Beyond the disaggregation methods of proportional, even split and copy, you can also choose to disaggregate the values entered for the key figure with respect to a mathematical expression that you define with other attributes and key figures. You define this expression in the Disaggregation Expression field on the Key Figures tab in the Configuration UI.

Note the following points:



All of the key figures in the expression must be stored and have the same base planning level as the key figure for which the expression is defined.

All of the attributes are from the base planning level of the key figure for which the expression is defined.

The following are examples of values in a disaggregation expression:

KEYFIGURE1

KEYFIGURE1 + KEYFIGURE2

KEYFIGURE1 + ATTRIBUTE

IF(ATTRIBUTE=<value>, KEYFIGURE1,KEYFIGURE2)



LESSON SUMMARY

You should now be able to:

Incorporate disaggregation methods in SAP Integrated Business Planning

Unit 7

Lesson 2

Using Helper Key Figures



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create a helper key figure

Helper Key Figure

The following are features of helper key figures:



Typically used for intermediate calculation results used in a key figure or another helper key figure

Not exposed to the user in planning views or modeling

Can be used at REQUEST or any planning level

Can be used to break down a large calculation into manageable subcalculations

Usually prefixed with a H, for example, HINVENTORYTARGETQTY

Used when you have more than three inputs at different planning levels in one calculation

Primarily used in ratio calculations, last period aggregation, cost calculations, and so on

Note that they do not have a base planning level

Used only for calculation, meaning that they do not have the other key figure properties, such as Stored, Editable, Aggregation, or Disaggregation

The figure, Capacity Utilization Percentage, shows the following calculation: $\text{Capacity Utilization Perc @Request} = \frac{\text{Capacity Demand @Request}}{\text{Capacity Supply@Request}}$

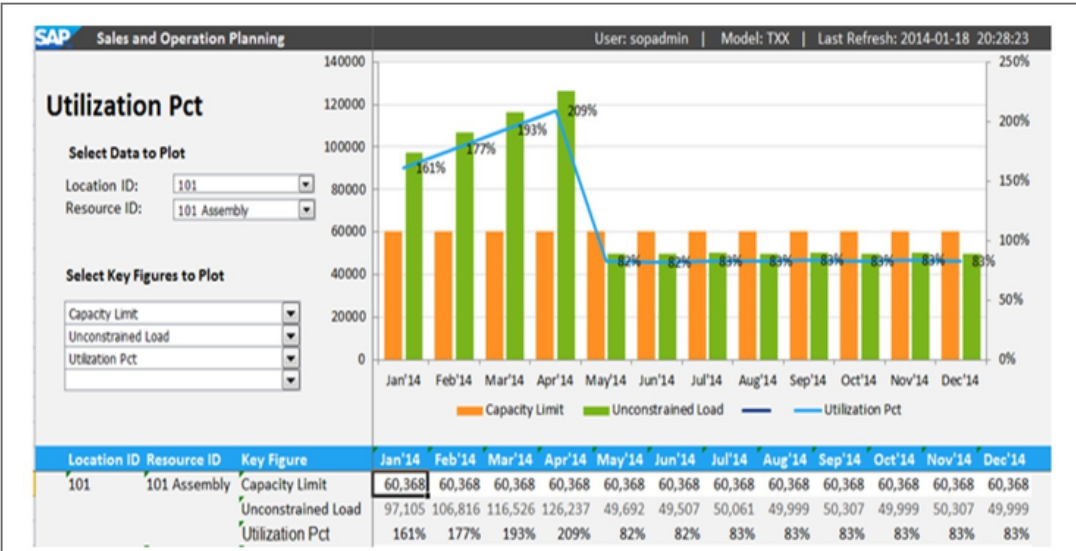


Figure 27: Capacity Utilization Percentage

Capacity Utilization Percentage is a REQUESTlevel calculation with inputs at different base planning levels: $CAPUTILPCT@REQUEST = "HCAPEDEMAND@REQUEST" / "CAPASUPPLY@REQUEST"$ HCAPEDEMAND calculates capacity demand at request level. You modify the Utilization Pct calculation to use HCAPEDEMAND.



LESSON SUMMARY

You should now be able to:

- Create a helper key figure

Configuring Change History



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Configure and use change history

Change History

The change history feature allows you to capture changes made by the following:



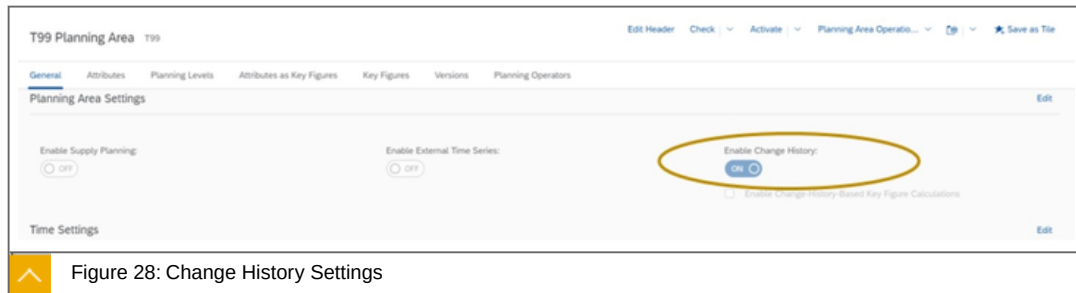
- Data load
- Microsoft Excel IBP add-in
- Statistical forecast
- Versions
- Snapshots

Data Captured



- Modified by user
- Modified date
- Modified value
- Attributes
- Key figures
- Time periods
- Reason code
- Comment

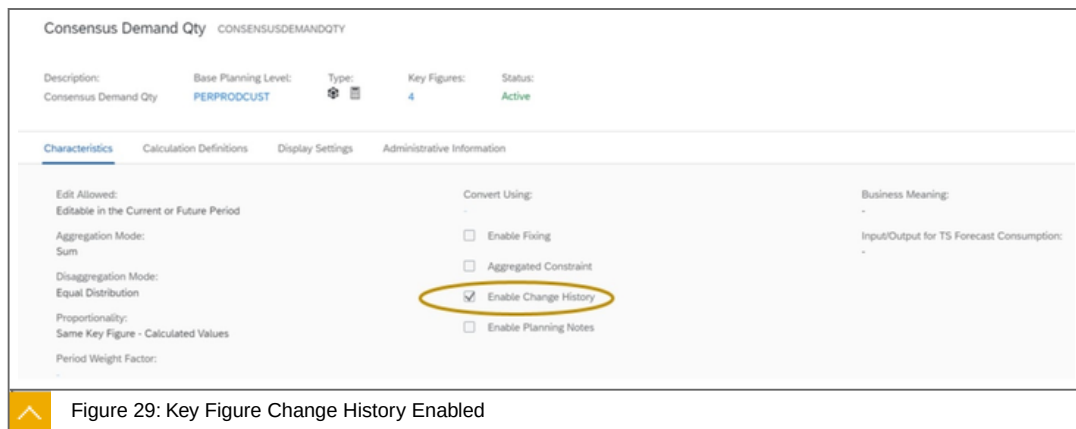
Firstly, we need to enable change history in the planning area, as shown in the figure, Change History Settings. Once that is done, you can also enable change history for master data-based key figures.



Planning area level and specific level settings are needed to enable change history. Here, the setting indicates that change history management is enabled/allowed for the planning area shown. This is a broader setting that has to be created.

Key Figure Change History Enabled

You must also enable change history for each key figure for which you want to track the change history as shown in the figure, Key Figure Change History Enabled.



In addition to the planning area level setting, the setting must be made for individual key figures. It is recommended to enable this function only for key essential data.

Changes Captured from IBP Add-In

When a change is made in the Excel UI, a reason code may be specified at the time of saving. This change, along with the reason code, is published to SAP Jam collaboration to specifically assigned groups as information, and the change history is captured.

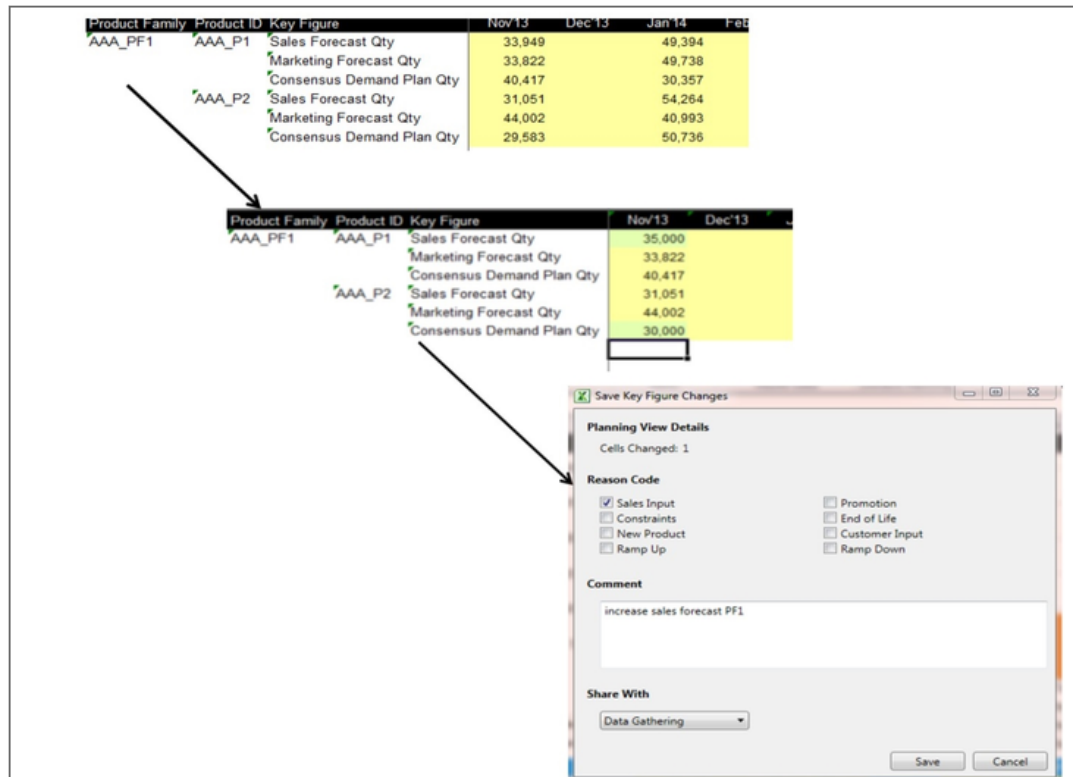


Figure 30: Changes Captured from IBP Add-In

The figure, Changes Captured From IBP Add-In, shows that in the month Nov '13, the Sales Forecast Qty was changed to 35,000 and the Consensus Demand Plan Qty was changed to 30,000. When the Save Data option is selected, the changes, including the reason code and comments, are captured if the Change History option is activated for both the Sales Forecast Qty key figure and the Consensus Demand Plan Qty key figure.

View Change History

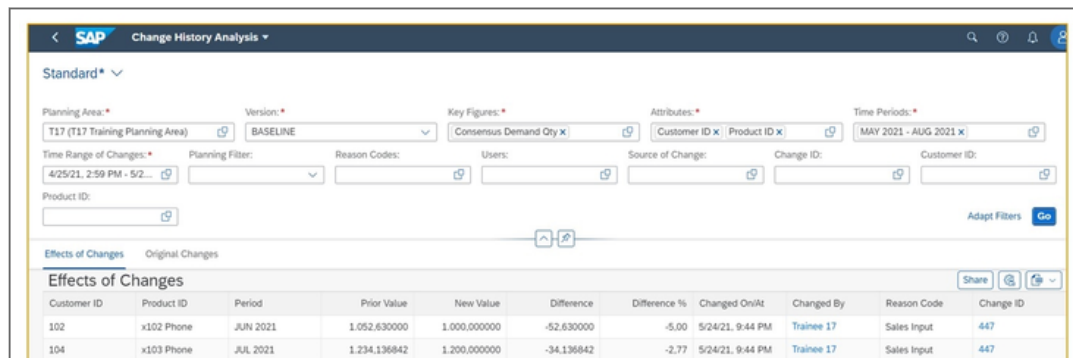


Figure 31: View Change History

The changes that were captured by selecting the Change History option can be viewed in the Web UI by logging on to the Microsoft Excel IBP add-in. You can filter by various criteria to see changes to specific key figures and dates. You can also download the change history. The change history function is only activated for planning areas that have the change history indicator set in configuration.

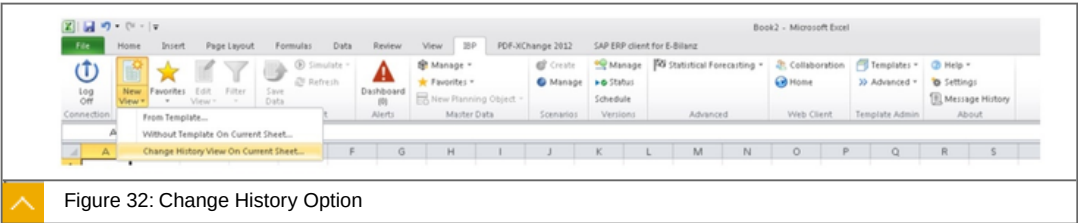


Figure 32: Change History Option



CustProduct ID	Change I.C Type of Key Figure	Q2 2016	Q3 2016	Q4 2016	Q1 2017	Q2 2017	Q3 2017	Q4 2017	Q1 2018
101 y101 Phone 201	Before								
101 y101 Phone 201	After								
103 y100 Phone 201	Before								
103 y100 Phone 201	After								
y102 Phone 201	Before								
y102 Phone 201	After								
y104 Phone 201	Before								
y104 Phone 201	After								
y103 Phone 201	Before								
y103 Phone 201	After								
y102 Phone 201	Before								
y102 Phone 201	After								
y105 Phone 201	Before								
y105 Phone 201	After								

Figure 33: Change History

Change history can be viewed within the Excel UI, as shown in the previous two figures.



LESSON SUMMARY

You should now be able to:

- Configure and use change history

Unit 7

Lesson 4

Creating Snapshot Key Figures



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create snapshot key figures

Snapshot Key Figures

During the demand review meeting, demand planners require a quick way to review and analyze how the plan has changed over time in the past and is likely to change in the future.

The plan can be a Demand Plan, Financial Plan, and so on. To evaluate how the plan has evolved over time, it is necessary to archive the plan in each S&OP planning cycle. The trigger to archive or take a snapshot can be at the end of each S&OP planning cycle or whenever the plan is finalized in the typical (Monthly) S&OP cycle.

The Key Figure snapshots or archives in S&OP can be used to create Waterfall reports.



Note:

Unlike snapshots that capture key figure values at a particular point in time, Change History tracks all changes to key figures (that are enabled for this feature), without the need for a planning operator.

There are 2 types of snapshots that can be taken in IBP

Original Snapshots

With an original snapshot, planners can capture values of specific key figures at a specific point in time. By comparing several snapshots in the planning view that were taken over time, you can see how the key figure values have evolved.

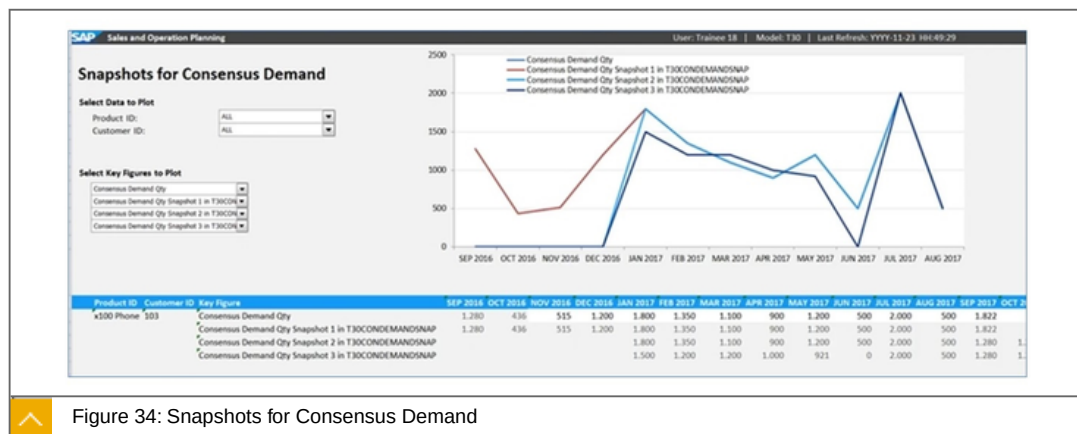


Figure 34: Snapshots for Consensus Demand

Original snapshots can be used to capture one or more key figures in one go. The key figures are captured for a fixed time range, for example, for the next 6 periods starting with the current period. Depending on the configuration, you can take up to 12 snapshots of a key figure, thereby producing a time-lapse view of your data. You can identify a snapshot key figure by a suffix (for example, SN) and a number that are added to the key figure's technical name. The most recent snapshot is numbered 1. When a new snapshot is created, the number of the previous snapshot is increased by 1.

Original Snapshots are configuration items. Each snapshot definition that the configuration expert creates is automatically assigned to the snapshot operators.

Lag-Based Snapshots

These snapshots are taken of selected planning objects with predefined lags and saved in a key figure that has Lag as a root attribute in its base planning level.

Lags represent the number of periods between the period in which forecast is created and the period for which the forecast is calculated. For example, a forecast that is calculated in week 1 for week 3 is a lag 2 forecast.

Typically lag-based snapshots are used in statistical forecasting, demand sensing and forecast error calculations. These key figures are visible in planning views.

Manage Lag-Based Snapshots app, allows users to manage settings for lag-based snapshots and create new snapshots, provided that lag-based key figures are configured for the planning area.



LESSON SUMMARY

You should now be able to:

- Create snapshot key figures

Learning Assessment

1. Which of the following SAP Advanced Planning and Optimization disaggregation methods are supported by SAP Integrated Business Planning?

Choose the correct answers.

- ☐ **A** Pro rata (same key figure stored values)
- ☐ **B** Based on another key figure
- ☐ **C** Copy the value to
- ☐ **D** With a disaggregation expression

2. Which of the following describe the uses of helper key figures?

Choose the correct answers.

- ☐ **A** To let users add additional key figures to their planning view
- ☐ **B** To store intermediate calculation results
- ☐ **C** To import data from another system
- ☐ **D** To break down complex calculations into manageable subcalculations

3. Which of the following settings are required for change history reporting in Integrated Business Planning?

Choose the correct answers.

- ☐ **A** Planning area change history enabled
- ☐ **B** Planning area master data-based key figures change history enabled
- ☐ **C** Key figure change history enabled
- ☐ **D** Master data type change history enabled

Learning Assessment - Answers

1. Which of the following SAP Advanced Planning and Optimization disaggregation methods are supported by SAP Integrated Business Planning?

Choose the correct answers.

- ☒ **A** Pro rata (same key figure stored values)
- ☒ **B** Based on another key figure
- ☒ **C** Copy the value to
- ☒ **D** With a disaggregation expression

Correct. The SAP Advanced Planning and Optimization disaggregation methods that are supported by SAP Integrated Business Planning are pro rata, based on another key figure, copy the value to and with a disaggregation expression.

2. Which of the following describe the uses of helper key figures?

Choose the correct answers.

- ☐ **A** To let users add additional key figures to their planning view
- ☒ **B** To store intermediate calculation results
- ☐ **C** To import data from another system
- ☒ **D** To break down complex calculations into manageable subcalculations

Correct. Helper key figure are used to store intermediate calculation results and to break down complex calculations.

3. Which of the following settings are required for change history reporting in Integrated Business Planning?

Choose the correct answers.

- ☒ **A** Planning area change history enabled
- ☐ **B** Planning area master data-based key figures change history enabled
- ☒ **C** Key figure change history enabled
- ☐ **D** Master data type change history enabled

Correct. Planning area change history and key figure change history are required settings for change history reporting in Integrated Business Planning.

UNIT 8

Currency Conversion

Lesson 1

Converting Currency

95

UNIT OBJECTIVES

Convert currency

Unit 8

Lesson 1

Converting Currency

LESSON OVERVIEW

In this lesson, you learn how to convert currency.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Convert currency

Currency Conversion

SAP Integrated Business Planning can convert currency on the fly, for example, when a user of the Microsoft Excel add-in or Analytics selects **Target Currency** at runtime for a key figure, such as Sales Forecast Revenue. The prerequisites for currency conversion are that exchange rates exist in the system and that a currency conversion calculation has been defined for the key figure involved.

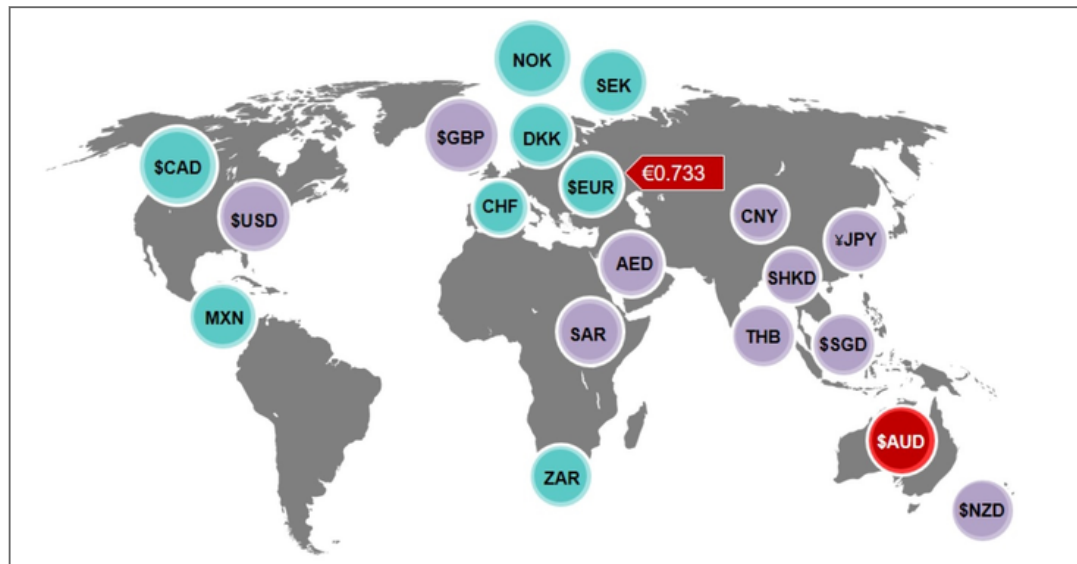


Figure 35: Currency Conversion

Multi-national companies do business in multiple currencies. There is a need to convert from one currency to another. SAP IBP has the currency conversion functionality based on configuration and loading currency exchange rates.

How Currency Conversion Works in the System

Currency conversion is configured in the system by adding currency and exchange rate attributes. The idea is to create a reference table containing the original currency (Currency ID) and the converted currency (Currency To ID), with the corresponding exchange rates included.



Table 3: Currency Conversion

Currency ID	Currency To ID	Exchange Rate
USD	EUR	0.9460
USD	JPY	113.1440
USD	AUD	1.3498
EUR	USD	1.0569
EUR	JPY	119.5890
...	...	...

When the currency attributes are added to the Planning Levels, and the Conversion Source and Conversion Target is configured, IBP is using the following calculation “behind the scenes”.



Table 4: Behind the Scenes Calculations

	January	February	March
- Behind the scenes -			
Input key figure	100	120	135
Currency ID	USD	USD	USD
Currency To ID	AUD	AUD	AUD
Exchange Rate	1.3498	1.3498	1.3498
Output key figure	134.98	161.98	182.22



LESSON SUMMARY

You should now be able to:

Convert currency

Learning Assessment

1. SAP Integrated Business Planning can convert currency in real time.
Determine whether this statement is true or false.

☐

True

☐

False

Learning Assessment - Answers

1. SAP Integrated Business Planning can convert currency in real time.
Determine whether this statement is true or false.

☒ True

☐ False

Correct. SAP Integrated Business Planning can convert currency in real time.

UNIT 9

UOM Conversion and Price Conversion

Lesson 1

Creating Time Independent Key Figures	100
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Lesson 2

Converting Units of Measure (UOM)	102
-----------------------------------	-----

Lesson 3

Converting Price	104
------------------	-----

UNIT OBJECTIVES

- Create time-independent key figures
- Convert UOM
- Convert price

Unit 9

Lesson 1

Creating Time Independent Key Figures

LESSON OVERVIEW

In this lesson, you learn how to create time-independent key figures.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create time-independent key figures

Time-Independent Key Figures

When you create and activate a key figure the system saves space in the SAP HANA database to save the data at the base planning level for the entire horizon specified in the time profile. This is true both if you activate a master data type as a key figure and if you create a key figure directly.



	Start Date					End Date
T##KF1@PerPlanLevel	100	100	100	100	100	100
KF2@PerPlanLevel	50	50	50	50	50	50
KF3@PlanLevel	200					

Figure 36: Time-Independent Key Figures

There are times when you do not need a time series of data, you only need one data value. This is especially true for values such as error measures in IBP for Demand and Unit of Measure conversion factor. We can create time-independent key figures to accommodate these values and avoid using additional database space.

Time-independent key figures are configured in a similar way to attributes as key figures, except that the key figure value is not dependent on time periods. An example of a time-independent key figure is Unit of Measure Conversion Factor. Unlike an attribute as key figure, where an attribute value is copied to all time periods in the time series for the planning combination, time-independent key figures have just one record in the time series for the planning combination.

Time-Independent Key Figure Planning Level

To create a time-independent key figure you start with the planning level. You create a time-independent planning level by not selecting any time profile attributes when you create the planning level. Instead of PERPROD we would select PROD without any time profile attributes. Now we have one value for the key figure, which is more efficient.

You can load time-independent key figures only if they have been configured as attributes as key figures. You configure them in the same way, except that the planning level contains no

time periods, for example, the base planning level for Unit of Measure Conversion Factor is PRODUOMTO. You can view and edit time-independent key figures in the Microsoft Excel add-in under Master Data Maintenance. You cannot, however, view these key figures in the Microsoft Excel planning views. We introduce this concept here but we will use this concept in the next exercise when we configure unit of measure conversion where it is applicable.

**Note:**

SAP recommends that you use time-independent key figures instead of attributes as key figures in cases where the key figure value does not vary over time and does not have to be maintained in Excel like a regular key figure. This type of key figure provides much better performance than an attribute as key figure, which stores the key figure value for all time periods.

**LESSON SUMMARY**

You should now be able to:

- Create time-independent key figures

Unit 9

Lesson 2

Converting Units of Measure (UOM)

LESSON OVERVIEW

This lesson describes UOM conversion.



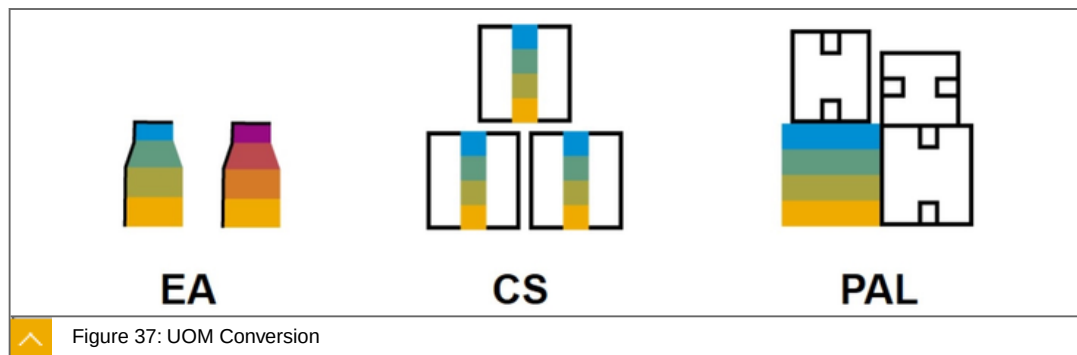
LESSON OBJECTIVES

After completing this lesson, you will be able to:

Convert UOM

UOM conversion

Model configuration for SAP Integrated Business Planning (IBP) supports unit of measure (UoM) conversion, that is, conversion of key figures from the base unit of measure to a target unit of measure using a configured conversion factor.



Members from different organizations want to display and edit data in different units of measure. Different units of measure may also be needed for reporting. UOM conversion is available in IBP with configuration and related master data.

The configuration steps necessary for unit of measure conversion are similar to those for currency conversion. However, there are some differences, as follows:

- Units of measure are not usually time-dependent.

- Unit of measure is an attribute of a master data type, such as Product.

- The planning views and analytics provide the user with the option to select the target unit of measure. The conversion is handled by IBP.

UOM Conversion for Key Figures

S&OP supports UOM conversion for converting key figures from its base UOM to target unit of measure using the configured conversion factor. Quantity Key Figures belong to this category. The configuration of UOM is similar to that of Currency Conversion. However, UOM configuration differs where they are usually not time dependent, and UOM is an attribute of

Master Data Type like Product. The Planning Views and Analytics provide the user with the option to select the target UOM and the conversion is handled by S&OP.

Model configuration for SAP Integrated Business Planning supports unit of measure (UOM) conversion, that is, conversion of key figures from the base unit of measure to a target unit of measure using a configured conversion factor. The configuration steps necessary for unit of measure conversion are similar to those for currency conversion. However, there are some differences, as follows:

- Units of measure are not usually time-dependent

- Unit of measure is an attribute of a master data type such as product

The planning views and analytics provide the user with the option to select the target unit of measure. The conversion is handled by SAP Integrated Business Planning.



LESSON SUMMARY

You should now be able to:

- Convert UOM

Unit 9

Lesson 3

Converting Price

LESSON OVERVIEW

In this lesson, you learn how to convert price.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Convert price

Price Conversion

Key figures, such as price and cost, are expressed as currency and unit of measure, for example, 10 USD and case. When a user selects the target unit of measure or target currency, the value for the price key figure changes to correspond to the user's selection.

Two Methods of Configuring Price Conversion in IBP



1. Stored key figure that can be maintained in IBP
2. Calculated key figure based on revenue and quantity, both of which are stored

Aggregations that are Possible for These Methods



Average

Weighted average based on revenue and quantity, both of which have currency and unit of measure conversions

The base planning for a price key figure, for example, `PERPRODCUSTCURR`, includes the base currency and the base unit of measure from the product master data type.



Table 5: Price Key Figure

This table shows a sample configuration for price key figures with conversions.

Key Figure Name	Price
Key Figure ID	PRICE
Base Planning Level	PERPRODCUSTCURR
Convert Using	EXCHANGERATEBYUOM



LESSON SUMMARY

You should now be able to:

Convert price

Learning Assessment

1. Quantity key figures belong to the configured conversion factor category.

Determine whether this statement is true or false.

☐ True

☐ False

2. When a user selects the target currency, the value for the price key figure does not change to correspond to the user's selection.

Determine whether this statement is true or false.

☐ True

☐ False

Learning Assessment - Answers

1. Quantity key figures belong to the configured conversion factor category.

Determine whether this statement is true or false.

☒ True

☐ False

Correct. Quantity key figures belong to the configured conversion factor category.

2. When a user selects the target currency, the value for the price key figure does not change to correspond to the user's selection.

Determine whether this statement is true or false.

☐ True

☒ False

Correct. When a user selects the target currency, the value for the price key figure changes to correspond to the user's selection.

UNIT 10

Attribute Transformations

Lesson 1

Performing Attribute Transformations

108

UNIT OBJECTIVES

Transform attribute values

Performing Attribute Transformations

LESSON OVERVIEW

In this lesson, you learn how to transform attribute values.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Transform attribute values

Attribute Transformations

SAP Integrated Business Planning (SAP IBP) supports a special type of transformation that allows you to transform the values of an attribute based on a calculation expression. These calculations were most common in displaying previous year sales in the same time period as the future forecast for comparison. Since IBP 2002, this is handled by the new formula, but there remains a few use cases for attribute transformations in SAP IBP.

- Product substitution (for example, Product ID is transformed within a certain Product Family)

- Alert Flag (for example, enabling filtering on alerts, by setting an attribute to 1, where there is an alert on a key figure)

There are a few common steps that have to be followed to create attribute transformations:

- Aggregate all attributes at the input planning level that will not be directly transformed and that are affected by the attribute transformation

- Create attribute transformation for the attributes you want to be transformed



The screenshot shows the SAP T33 Planning Area interface. The 'Key Figures' tab is selected, displaying a table of key figures. A red circle highlights the 'Key Figures' tab, and another red circle highlights the 'Attribute Transformation' option in the dropdown menu. A blue arrow points from the 'Attribute Transformation' option to the 'Attribute' field in the 'New Calculation Definition' section below.

ID	Name	Base Planning Level
ACTUALSOTY	Actuals Qty	PERPRDUCST
ACTUALSOTYOFFSET1YR	Previous Year Sales	PERPRDUCST
ACTUALSOTYOFFSETSTORED	Previous Year History (Stored)	PERPRDUCST
AGGREGATEDDEMAND	Aggregated Actuals	PERPRDUCST
CAPACONSUMPTION	Capacity Consumption	PERPRDLOCRES

Figure 38: Attribute transformation

Create a calculation to re-include the attributes (by using a key figure with necessary attributes as an additional input in the calculation)



LESSON SUMMARY

You should now be able to:

Transform attribute values

Learning Assessment

1. Name some of the use cases for attribute transformations.

Choose the correct answers.

- ☐ **A** Product Substitution
- ☐ **B** Rolling Aggregation
- ☐ **C** Alert Flag

Learning Assessment - Answers

1. Name some of the use cases for attribute transformations.

Choose the correct answers.

☒ **A** Product Substitution

☐ **B** Rolling Aggregation

☒ **C** Alert Flag

Correct. A few use cases for attribute transformations in SAP IBP are: Product substitution (for example, Product ID is transformed within a certain Product Family) and Alert Flag (for example, enabling filtering on alerts, by setting an attribute to 1, where there is an alert on a key figure).

UNIT 11

Advanced Configuration Topics

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Lesson 4

Cumulative and Rolling Aggregation	118
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Lesson 5

Configuring Split Factor Calculations	121
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UNIT OBJECTIVES

- Explain IBP Specific Functions
- Configure Period Shift
- Configure last period aggregation
- Explain Principles of Cumulative and Rolling Aggregation
- Configure split factor calculations

Unit 11

Lesson 1

Simplified Key Figure Calculations



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Explain IBP Specific Functions

IBP Specific Functions - Simplified Key Figure Calculations

For the past few releases, SAP is offering IBP specific functions that simplify modelling for common calculations.

Originally, certain modelling, specifically, cross-bucket calculations, was possible only with L-code (separate kind of language). L-code gives extra flexibility, but customers themselves can not work with it, it is done on request via the incident and if the configuration of the input key figures is changed, changes need to be done to L-code as well. Additionally, in certain situations, L-code can cause significant performance degradation.

While it will not be possible to completely eliminate the usage of L-code, as there is always be very specific complex situations, where L-code will need to be created on request, significant simplifications are now possible. For example, with rolling aggregation, when previously modelled with L-script, about 200 lines of codes were needed, where as with IBP specific function RAGGR, it is possible to have that calculation done with one statement.

Currently available simplified key figure calculations are:

Last Period Aggregation

Cumulative Aggregation

Rolling Aggregation

Dynamic Rolling Aggregation

Count Aggregation

Period Shift

Coverage

Weighted Average

SAP continues to work on simplified key figure calculation and there are a few more calculations on the roadmap for SAP Foundation.



LESSON SUMMARY

You should now be able to:

Explain IBP Specific Functions

Unit 11

Lesson 2

Configuring Period Shift



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Configure Period Shift

Period Shift in One Step

IBP_PERIODSHIFT function allows to configure period shift in one step, instead of using complicated attribute transformations.

The following are types of period shift:

Shifting by a fixed number:

Key Figure values are shifted by time periods.

Use a constant to define the number of periods by which you want to shift the input key figure.

The number has to be either a positive integer (you shift into the future) or a negative integer (you shift into the past).

The most common usage will be to shift the value of actual quantity into the future by 12 months, to enable year-over-year view.

Shifting by an attribute (attribute is a time profile attribute):

In this case, the attribute is assigned to the time profile for each period. You may consider creating an aggregation calculation on top of the IBP_PERIODSHIFT function to define how the key figure value is calculated from the multiple values of the given time buckets.

The value of the attribute has to be an integer.

Example: LAG is a time profile attribute, part of the MTHPRODLOC. It can be one value during one year and another value next year.

Shifting by an attribute (not a time profile attribute):

LEADTIME is an attribute to indicate lead times for supply planning for shifting key figures. Different products can have different lead times in terms of shipping depending on the product characteristics. For example, in a case of actual quantity shift, value can be shifted by 1 for Product, by 2 for Product 2, etc. depending on the master data.

Shifting by a key figure:

Key figure is used to define the number of periods by which you want to shift the input key figure. If you shift a key figure by another key figure, you might end up with multiple values in some of the time buckets and aggregation calculation will be required.

In case of decimals, the default rounding method is used.



LESSON SUMMARY

You should now be able to:

Configure Period Shift

Unit 11

Lesson 3

Configuring Last Period Aggregation

LESSON OVERVIEW

In this lesson, you learn how to configure last period aggregation.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Configure last period aggregation

Last Period Aggregation

Last Period Aggregation handles scenarios with key figures such as Inventory, where the value should not be aggregated when we aggregate from Months to Quarters. In this case, Last Period Aggregation takes the value of the Key Figure for the last month of the Quarter or Year.

For example, to find the value of Inventory Target Quantity for the end of a Quarter, we need to compute the value of Inventory Target Quantity at the end of the last month of the Quarter.



**Inventory Target Quantity for the end of a Quarter =
value of last month of the Quarter**

Product ID	Location ID	Key Figure	Jan'14	Feb'14	Mar'14	Apr'14	May'14	Jun'14	Jul'14	Aug'14	Sep'14
x100 Phone	101	Inventory Target Qty	1000	1000	1000	1000	1000	1000	1000	1000	1000

Product ID	Location ID	Key Figure	Q1 2014	Q2 2014	Q3 2014
x100 Phone	101	Inventory Target Qty	1000	1000	1000

Arrows indicate that the Q1 2014 value is derived from the last month of the quarter (September 2014).

- No intermediate key figures are necessary
- Use the IBP_LPA function to configure last-period aggregation in one step

Figure 39: Last Period Aggregation

Last Period Aggregation Overview

There are 2 types of Last Period Aggregation Calculations:



1. DYNAMIC AGGREGATION:

The aggregated key figure can be calculated on any time profile level since the time profile level for which aggregation takes place is defined during runtime. Use this option when the goal is to ensure flexibility at querying key figures at request level. The time aggregation will happen using last period aggregation on the requested time granularity.

- Make sure that no root time profile level is defined in the output planning level of the aggregation and in any of the calculations built on last period aggregation.
- Time profile levels must be the same in the input and output planning levels.

AGGRINVENTORY@PERPRODLOC = IBP_LPA ("INVENTORY@DAYPRODLOC")

AGGRINVENTORY@REQUEST = SUM ("AGGRINVENTORY@PERPRODLOC")

2. STATIC AGGREGATION:

Aggregation can be defined for a specific time profile level. For example; use the last period aggregation function to calculate the aggregated inventory level on a weekly basis, since all the other calculations built on this key figure are defined for technical and calendar weeks. Since both technical week and calendar week are built on day, you can use the static aggregation.

- Define a root time profile level in the output planning level.

- The root time profile level in the output planning level must be a possible parent (i.e. a broader time period) of the root time profile level in the input planning level.

AGGRINVENTORY@TWPRODLOC = IBP_LPA ("INVENTORY@DAYPRODLOC")

AGGRINVENTORY@REQUEST = SUM ("AGGRINVENTORY@TWPRODLOC")



LESSON SUMMARY

You should now be able to:

Configure last period aggregation

Unit 11

Lesson 4

Cumulative and Rolling Aggregation



LESSON OBJECTIVES

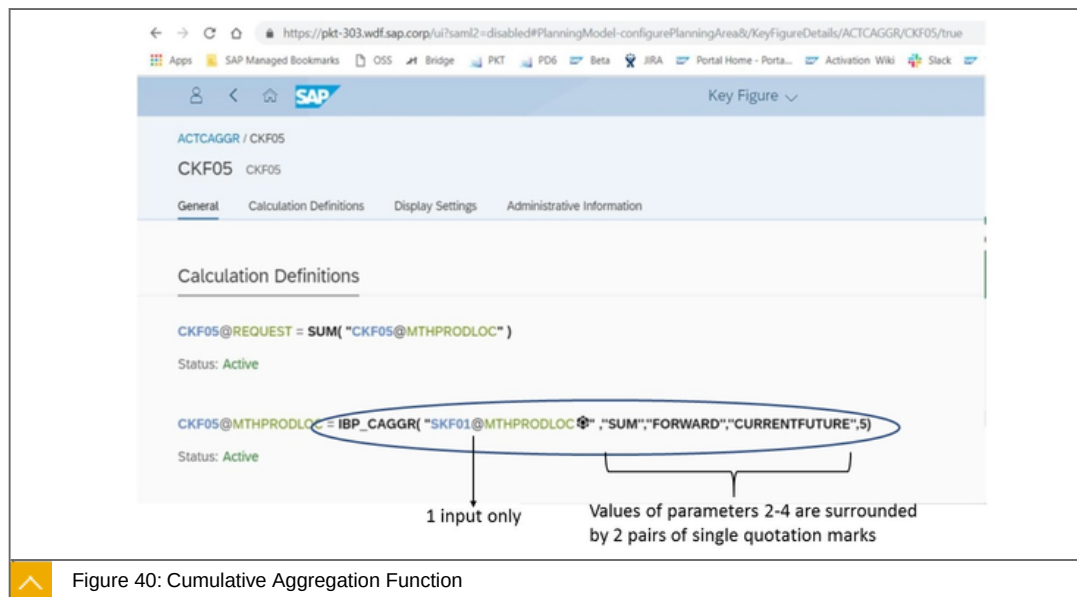
After completing this lesson, you will be able to:

Explain Principles of Cumulative and Rolling Aggregation

Cumulative Aggregation

The new cumulative aggregation function makes it easier to model typical cross-period calculations, such as projected stock, year-to-date and year-to-go calculations, or cumulative average.

You can use the IBP_CAGGR function to configure a cumulative aggregation in one step.



Cumulative aggregation represents a chain of successive aggregations across periods. As such, there are several use cases for this function.

Cumulative Aggregation with Periodical Restart

For example, you want to aggregate monthly values and need to model restart of aggregation at the start of each year, or each quarter. This is the case, when optional parameter for time profile level for restart is used, so time profile level of a year or a quarter, must be specified.

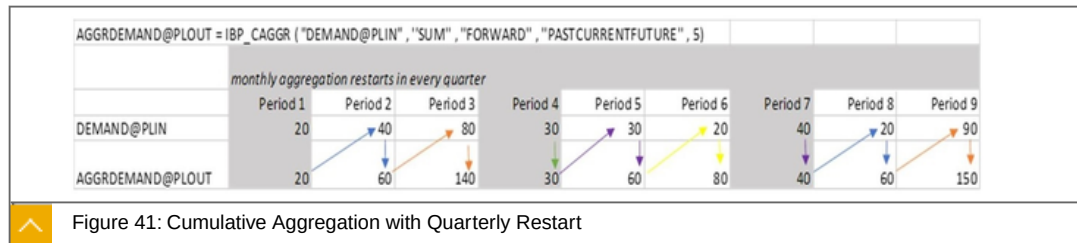


Figure 41: Cumulative Aggregation with Quarterly Restart

Projected Stock with Negative Values Carry-Over

The projected stock is the stock of a product that is expected to be available at the location at the end of a period. From the value of this key figure, you can see how the demand/stock balance develops over time and whether critical stock situations occur.

Receipts are added to the initial stock and demands are subtracted. Then projected stock is calculated as cumulative sum.

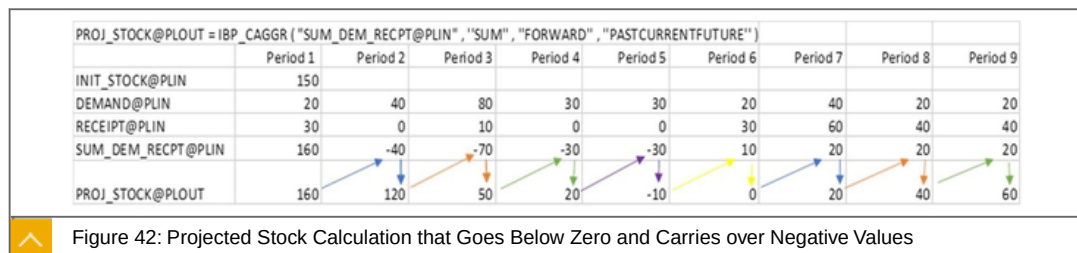


Figure 42: Projected Stock Calculation that Goes Below Zero and Carries over Negative Values

Rolling Aggregation

Rolling aggregation is used to aggregate key figures across several time periods, for a specified time window. Instead of requesting L-code to create such an aggregation, you can use the IBP_RAGGR function to configure rolling aggregation in one step.

Rolling Aggregation Function

The IBP_RAGGR function has five mandatory parameters and one optional parameter.

1. Input key figure at the input planning level (mandatory parameter)
2. Aggregation mode (mandatory parameter)

Possible values: SUM, AVG, MIN or MAX.

3. Start of rolling aggregation (mandatory parameter)

Determines the start of the time window for which rolling aggregation is calculated for the input key figure. Has to be an integer.

4. Duration of rolling aggregation (mandatory parameter)

This is a number of time periods for which the input key figure will be aggregated. It has to be a positive integer.

5. Calculation horizon (mandatory parameter)

Possible values: PAST, PASTCURRENT, PASTCURRENTFUTURE, CURRENT, CURRENTFUTURE, and FUTURE.

If you use one key figure for rolling aggregation, regardless of the horizon, use the PASTCURRENTFUTURE value for this parameter.

6. Restart of rolling aggregation (optional parameter)

For example, if you enter 6 (year), rolling aggregation will always restart at the first root time period of the next year.



LESSON SUMMARY

You should now be able to:

Explain Principles of Cumulative and Rolling Aggregation

Unit 11

Lesson 5

Configuring Split Factor Calculations

LESSON OVERVIEW

In this lesson, you learn how to configure split factors.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Configure split factor calculations

Split Factors

When a user wants to view data at a higher level of aggregation than the base planning level, the aggregate calculation defined by the Request level calculation defines how to determine the values. When data is changed at a higher level than the base planning level the disaggregation definition defines how the system calculates the values at the base planning level. When a user wants to view data at a lower level of aggregation than the base planning level the system uses split factor calculation to determine the values.

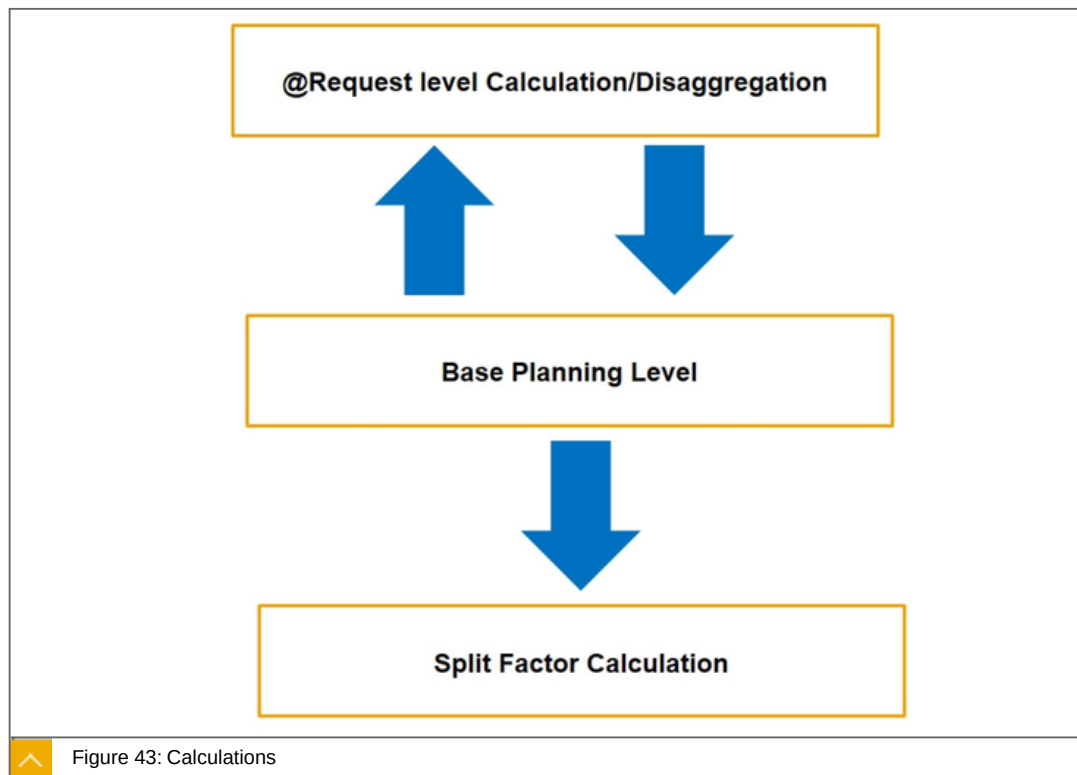


Figure 43: Calculations

SAP IBP can be configured to be displayed in multiple levels. Executives may need to see data at a more aggregate level than planners. Data is always saved at base level of a key figure.

Aggregation and disaggregation rules and planning levels control the levels at which a key figure may be displayed.

Split Factor Calculations 1

You use a split factor calculation when you want to show a key figure that is defined at an aggregated level at a lower level of granularity. You do so by splitting the value for the aggregated key figure proportionally according to the value for another key figure. Suppose that the key figure AGGDemand has a base planning level of PERPRODCUSTREGION. Your users would like to be able to view the key figure values at the PERPRODCUST level in order to compare with Sales Qty values. To determine those values at the level more detailed than the base planning level, the system needs to know how to determine those values. You need to provide the system with the proportions that you want to use to determine the values at the lower level. In this case, you determine those values based on the same proportions as Sales Qty.

Assume that the key figure AggDemand, which is defined at planning level Product/Customer Region, is to be disaggregated proportional to the Sales Qty, which is defined at planning level Product/Customer. Using split factor configuration, AggDemand, which is defined at aggregate level is available at detailed level Product/Customer based on a proportional split of Sales Qty.

The current values of Sales Qty are as seen below with HSALESFCSTAGG representing the aggregate values at the PERPRODCUSTREGION level.



HSALESFCSTAGG@PERPRODCUSTREGION	100
SALESFCSTQTY@PERPRODCUST	30
	40
	20
	10

Figure 44: Calculations 1

Split Factor Calculations 2

The proportions are calculated by the values at the PERPRODCUST level divided by the values at the aggregate level. Here we are using one period for a simple example but the calculation is done for each period.

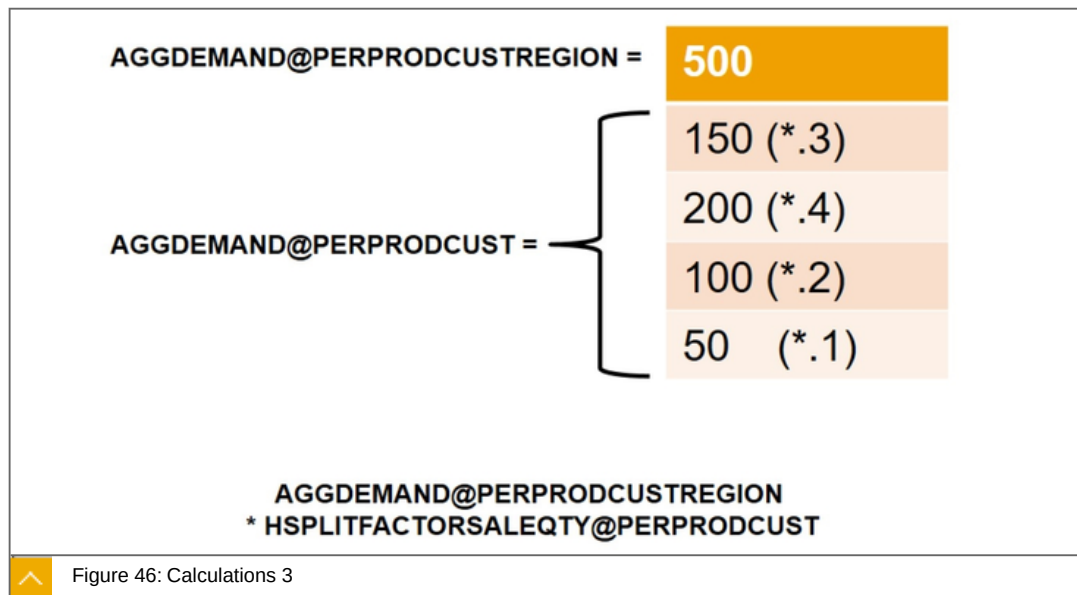


HSPLITFACTORSALEQTY@PERPRODCUST =	
SALESFCSTQTY@PERPRODCUST /	
HSALESFCSTAGG@PERPRODCUSTREGION	
	.30
	.40
	.20
	.10

Figure 45: Calculations 2

Split Factor Calculations 3

Once the split factors are determined, the AGGDEMAND values are then multiplied by the proportions to determine the AGGDEMAND values at the PERPRODCUST level.



Now we have defined how we want the system to determine the detail values of the aggregate key figure based on another key figure's values. We can also view the data at the lower level, even if the base planning level is higher than the level being view.



LESSON SUMMARY

You should now be able to:

- Configure split factor calculations

Learning Assessment

1. What is a split factor calculation used for?

Learning Assessment - Answers

1. What is a split factor calculation used for?

To show a key figure that is defined at an aggregated level at a lower level of granularity.

UNIT 12

Planning Operators and Application Jobs

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UNIT OBJECTIVES

Know the different planning operators available and their uses

Purge key figure data (PURGE)

Create a copy operator

Create a job chain

Create an ABC classification

Unit 12

Lesson 1

Planning Operator Overview



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Know the different planning operators available and their uses

Overview of Planning Operators

A Planning Operator uses an algorithm to compute large amounts of key figure data within a planning session. You can schedule a planning operator to be processed in the background.

With the new releases of IBP it is not possible to add new operators of some types (like ABC), instead separate apps now exist to specify settings, while their runs can be triggered/scheduled via application job templates functionality.

Below list of operators (relevant for time series planning) is not exhaustive, as well as, new operators continue to be added with new releases of SAP IBP.



Table 6: Planning Operators

Job Template Name	Description
ABC/XYZ Operator	You can schedule this job to execute the ABC/XYZ segmentation operator. This operator allows you to categorize the values of a set of attributes into A, B or C categories based on the values of a key figure defined on those attributes. You can use the Manage ABC/XYZ Segmentation Rules app to specify your segmentation settings.
Copy Operator (advanced)	The Advanced Copy Operator covers all features of the old copy and disaggregation operators and delivers competitive performance. It is setup using Copy Operator Profiles app.
Copy Version Operator	You can schedule this job to execute the Copy Version operator. This operator allows you to copy master data and key figures from one version of a planning area to another.
Delete Version Operator	You can schedule this job to execute the Delete Version operator. This operator allows you to delete master data and key figure values from a planning version.
Statistical Forecasting Operator	You can schedule this job to execute the Statistical Forecasting operator. This operator allows you to run forecasting based on forecasting models.

Job Template Name	Description
Job Chain	You can schedule this job to execute several individual operators and/or an application jobs in sequence. The job chain replace the group operator functionality from release 1902. A job chain stops automatically if one of the operators finishes with an error.
Inventory Optimization Operator	You can schedule this job to execute the Inventory Optimization (IO) operator. This operator allows you to run inventory optimization for a given supply chain network.
Lag-Based Snapshot	You can schedule this job to take lag-based snapshots of the input forecast for demand sensing, statistical forecasting, and inventory optimization.
Purge Jobs for deleting unused data	There are several application job templates available, in the next section of the course we describe the individually.
Create Time Periods for Time Profiles	You can schedule this job to generate the time periods for a selected time profile.
Custom Alert Notifications	You can schedule this job to trigger notifications for users or user groups who have calculated custom alerts that require their attention.
S&OP Operator	You can schedule this job to execute the S&OP Planning (SCM) operator. This operator allows you to perform supply planning across the supply chain network. Version 2 of this operator is now available with subnetwork selection by filter that offers planners an easier way to flexibly select location products that should be planned by specifying a filter criteria based on attributes of location, product, or location product
Snapshot Operator	You can schedule this job to execute the Snapshot operator. This operator allows you to perform supply planning across the supply chain network.
Realign Planning Data	Recurring realignment is now available in SAP IBP. You can schedule this job to execute the changes in your planning data that result from changes in your company's daily business such as introduction of new distribution centers, new products, and so on. You define the changes as realignment rules in the Manage Realignment Rules app.
Redo Snapshot Operator	You can schedule this job to execute the Redo Snapshot operator. This operator allows you to perform supply planning across the supply chain network.

Data Lifecycle Management

Data in SAP IBP system grows over time, and eventually unused data will be occupying valuable in-memory space.

SAP IBP database tables have the standard HANA record count limit of 2,147,384,648. If an operation tries to insert more records into an unpartitioned table, it will fail.

If data isn't used in any business planning functions, it is vital that it gets deleted regularly to avoid reaching the limit of available memory space and help prevent undesired performance degradation or operational issues.

SAP IBP offers different application jobs that can be executed to delete different kinds of data. Some of these jobs should be scheduled to run regularly, others can be run on an ad hoc basis.

Using System Monitoring app it is possible to get an idea of how many time series records and planning object records are stored for a planning area and version.

Several application job templates are available for deleting unused data. Running them carries obvious risks, if parameters that are set are incorrect. It is recommended to have a well-devised strategy as to what purge job to run and with what periodicity and first run them in simulation mode to have a preview of what is going to be deleted.

Application Job Template	Description
Purge Key Figure Data Outside Planning Area Planning Horizon	Delete all key figure data that is outside a planning area's planning horizon (as time rolls forward, planning horizon moves forward in time, as well). Along with the key figure data, it is possible to delete planning objects. This is a must run job for large-scale implementations.
Purge Change History Data	Delete historical change history records that are older than a specified period from a planning area and version.
Purge Data Import Batches	Deletes data that is used for reporting purposes on data imports and that is older than a specified period.
Purge Processes	Deletes unused process instances that are older than a specified period.
Purge Non-Conforming Data	Deleted master data, planning objects, and key figure values that have become obsolete due to changes to master data or configurational changes.
Purge Planning Area Data	Deletes master data, key figure values, and planning objects for one or multiple planning areas so you can start with a clean slate. Not to be used on production systems!
Purge Key Figure Data	Deletes all key figure data from a planning area, version, and optionally a base planning level that is older or newer than a specified period. You can also specify if you want planning objects to be deleted.
Purge Master Data	Deletes outdated or not used master data.
Delete Planning Notes	Planning notes are not automatically deleted when you delete the key figure values they

Application Job Template	Description
	belong to, so this job needs to be run to delete notes for outdated key figures data.



LESSON SUMMARY

You should now be able to:

- Know the different planning operators available and their uses

Purging Key Figure Data (PURGE)

LESSON OVERVIEW

In this lesson, you learn how to purge key figure data.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Purge key figure data (PURGE)

Purging Key Figure Data

The following list provides two methods for purging key figure data:

1. Through Version Management
2. Through the purge planning operator

Purge Key Figure Through Version Management

It is also possible to purge data by using the Microsoft Excel front end version management tool. By using this option, it is also possible to select based on specific attributes such as products or plants, or select specific key figures to be purged.

The approach is as follows:

1. Log on to the Microsoft Excel front end.
2. On the SAP IBP tab and select Manage under Versions section.
3. Choose the Delete radio button.
4. Choose the Version from which to purge data.
5. Add specific attributes, if desired to filter on, for example, a specific plant.
6. Select the date span for purging key figure data.
7. Select the specific key figures to be purged.
8. Press Next.



Figure 47: Purge Key Figure Through Version Management

Data deletion may also be done via Excel. As there is no 'undo' option, this operation should be done with caution. This can be done for a single or multiple key figures, for master data, with or without a filter for a specific version of data.



Figure 48: Purge Key Figure Through Version Management 2

Here you can select (a) key(s) for which data should be deleted.

Purge Key Figure Data (PURGE) Operator



	Start Date				End Date
TKF1@PerPlanLevel	100	100	100	100	100
Figure 49: Purge Key Figure Data					

The Purge Key Figure Data (PURGE) operator allows you to delete all key figure data that is older than a specified time period. It can be run in batch mode only. The following table summarizes the offset parameter:



Table 7: Purge Key Figure Data (PURGE) Operator

Parameter	Explanation	Mandatory or Optional
PERIOD_OFFSET	Period offset relative to the current time period. You must specify the offset as a number of time periods, based on the Storage Time Profile Level of the planning area. For example, you have a planning area for which the storage time profile level is monthly. If you set 12 as the period offset and the current period is May 2015, the operator deletes all key figure data older than May 2014.	Mandatory

When you define a PURGE operator, you must make the following mode settings:

Planning Filter: Select the ID for the filter, if you want to purge to only affect certain objects that are included in the filter.

Delete Planning Objects: Select this option if there are planning objects that don't have any associated key figure data and you want them deleted.

If all key figure values are null: Select this option for key figure data to only be deleted if all key figure values are null in the selected versions.



LESSON SUMMARY

You should now be able to:

Purge key figure data (PURGE)

Unit 12

Lesson 3

Copying and Disaggregating Key Figure Values

LESSON OVERVIEW

In this lesson, you learn how to create a copy operator.



LESSON OBJECTIVES

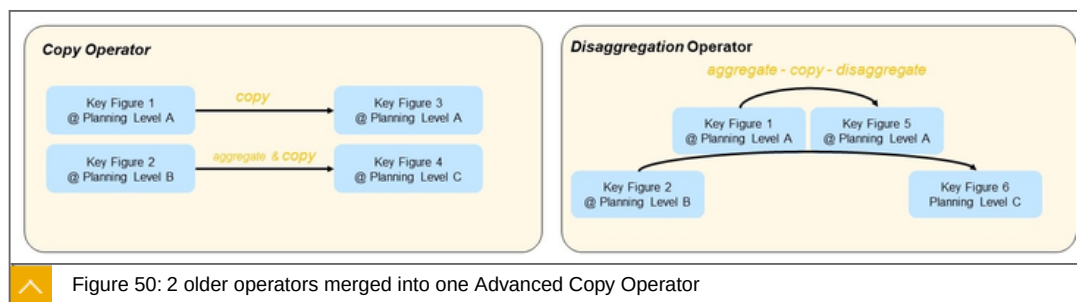
After completing this lesson, you will be able to:

- Create a copy operator

New Copy Operator

The standalone copy operator and the standalone disaggregation operators cover similar requirements and have similar functional capabilities. These were the most frequently used IBP operators and over time it became clear that this functionality needs to be streamlined. Starting IBP 2002 there is a replacement option in New Advanced Copy Operator that offers a simplified setup.

The new copy operator copies values from source to target key figures within one planning area or between two planning areas. If necessary, the source key figure values are aggregated and target key figure values are disaggregated. Multiple key figure pairs can be copied in different planning levels and processed together or sequentially.

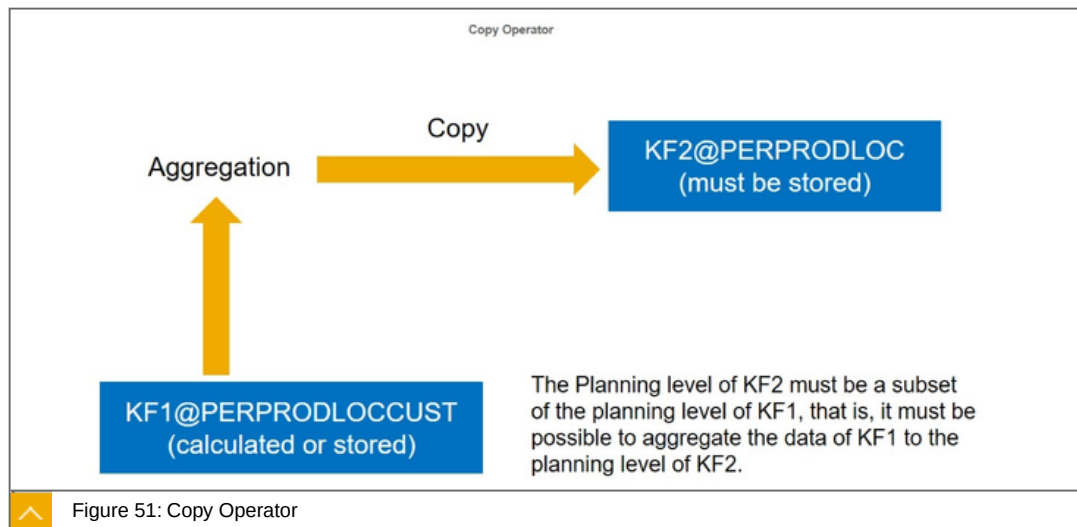


All key figures you want to copy in a particular process step can be copied with one copy operator run. In the past, multiple copy or disaggregation operator runs were often required, for example if key figures had to be copied on different levels.

The following example describes the role of the copy operator:

KF1 is a stored key figure with base planning level Prod-Loc-Cust, and KF2 is a stored key figure at Prod-Loc base planning level.

If you define COPY operator to copy KF1 to KF2, the operator calculates values of KF1 for all possible combinations of Prod-Loc and stores the result in KF2.



Note the following:



The source key figure can be calculated or stored, but the target key figure must be stored, time-dependent.

Source key figure selection is optional if **Create Missing Periods** option and/or the **Create Values** option is selected.

Target key figure selection is mandatory.

After a Source and Target Key Figure has been selected, the system defaults the **Copy Level – Attributes** and **Copy Level – Time Fields** to the lowest level on which the key figure values can be copied.

Key benefits of the new copy operator:

- ...covers all features of the existing copy and disaggregation operator (and a little more).
- ...can be used in a more flexible way.
- ...should be competitive with respect to performance.
- ...can be set up in a user-friendly way using the **Copy Operator Profiles** app.

Selection options of the new copy operator:

Selection of time is governed by settings (aka, rolling time selection and selecting by date)

Selection by attribute is also available

it is possible to use selections with selection option 'contains' and not equal', with the exception of conversion attributes, where only selection option possible is 'equal'



LESSON SUMMARY

You should now be able to:

- Create a copy operator

Creating a Job Chain

LESSON OVERVIEW

In this lesson, you learn how to create a group operator.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

- Create a job chain

Job Chain Creation

A job chain replaces the functionality of a group operator from the 1902 release.

Several individual operator and / or an application jobs can be set to run in a sequence.

Executing a sequence of operators as steps in a job chain takes up less memory than executing the same sequence in a group operator. This is because in a group operator, the changes done by an individual operator are only committed after the last operator in the group finishes.

Job Chain Creation



- Several individual operators or application jobs set to run in a sequence

- Replaces group operators

- Takes up less memory than a group operator

- Changes cannot be rolled back

- Execution stops if one operator finishes with an error

Unlike the group operator, changes that have already been committed by a job chain cannot be rolled back if one of the operators finishes with an error. If this happens, the execution of the remaining operators in the job chain stops. Because you cannot restart the chain from the operator that finished with an error, you either need to execute the job chain again, or create and run a new job chain with the operators that have not yet been executed.

A job chain stops automatically if one of the operators finishes with an error.

Create a Job Chain

Using the Application Job template, you can create a job chain.

Schedule a Job Chain

A job chain can be scheduled in the Application Jobs app or in the IBP Excel add-in.



LESSON SUMMARY

You should now be able to:

- Create a job chain

Unit 12

Lesson 5

Creating an ABC Classification

LESSON OVERVIEW

In this lesson, you learn how to create an ABC classification.



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Create an ABC classification

ABC / XYZ Classification

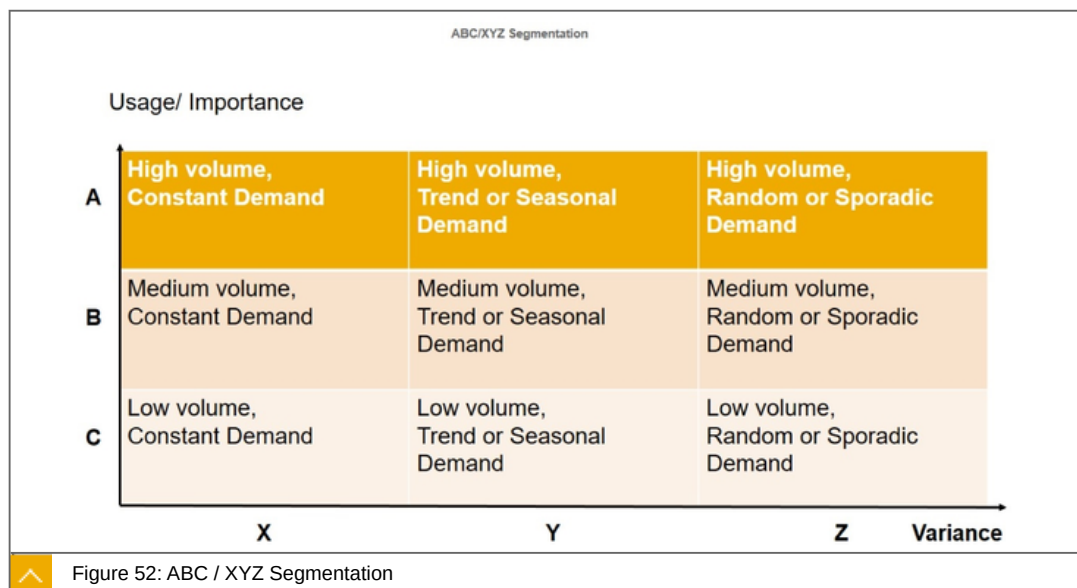
The following list provides details on ABC Segmentation methods:

ABC / XYZ Segmentation



ABC / XYZ segmentation is the method of grouping planning objects based on the values of a selected key figure. The two types of segmentation serve different purposes, as follows:

- ABC segmentation is the prioritization of planning objects based on their relative importance. For example, you might want to categorize the combinations of product and customer based on the revenue key figure.
- XYZ segmentation is the classification of planning objects based on their demand volatility.



Benefits of Segmentation



Segmentation helps you define more specific alerts and reports, and generate more accurate results for demand planning and inventory planning. For example, it allows you to do the following:

- Tailor your forecast strategy and inventory optimization to the characteristics of segments.
- Assign more appropriate forecast models to planning objects.
- Analyze forecast accuracy by product segments.
- Identify planning objects with a relatively high or low level of forecastability.
- Identify inventory items that require closer attention.
- Define alerts for specific segments only.
- View analytic charts with regards to specific segments.

The ABC segmentation methods are named in the **Manage ABC/XYZ Segmentation Rules** app.

ABC Segmentation Method Names



1. By Pareto Principle (Sorted and Cumulated %)
2. By Pareto Principle (Sorted and Cumulated Values)
3. By Number of Items (Sorted %)
4. By Number of Items (Sorted Values)

The methods calculate segmentation values in the same way as before.

ABC Segmentation Method:

You can now choose the **(5) By Segmentation Measure (Single Values)** segmentation method for ABC segmentation in the **Manage ABC/XYZ Segmentation Rules** app. If you do so, the segments are calculated based on the total value produced by each item in terms of the segmentation measure, and the sums are compared one-by-one to the predefined thresholds.

This is useful if you do not want to compare the planning objects to each other, only to the thresholds. For example, if you want to assign every product bringing more than EUR 1,000,000 revenue to segment A, you can choose this new method for your segmentation profile.

XYZ Calculation Strategies and Methods:

You can now choose between two different calculation strategies when setting the rules for XYZ segmentation: **Calculate Variation** and **Aggregate over Periods**. The main difference between the them is that **Calculate Variation** calculates variance values during the segmentation runs, while **Aggregate over Periods** works with values that were previously calculated by other tools such as the **Manage Forecast Error Calculations** app.

If you choose the **Calculate Variation** strategy, you can choose **Coefficient of Variation (CV)** or **Coefficient of Variation Squared (CV Squared)** as the calculation method. **CV Squared** is considered more convenient than **CV** for evaluating demand fluctuation.

If you choose the **Aggregate over Periods** strategy, you can choose **Minimum**, **Maximum**, **Average**, or **Sum** as the aggregation method. This calculation strategy is useful, among others, for classifying planning objects based on a forecast error measure such as

MAPE. For example, if your key figure used as a segmentation measure contains a previously calculated forecast error and you want to assign every product with a 3-month rolling forecast error of less than 20% to X, you can choose this new strategy in your segmentation profile with the aggregation method Average.

Time-Independent Key Figures As Segmentation Measures:

You can now choose time-independent key figures as segmentation measures in ABC and XYZ segmentation. This is useful if you want to use a measure that is different for each planning object, but the same for each time period. Usually, it is a single value that can be recalculated or updated regularly by another process. For example, MAPE and the inventory turnover rate are time-independent properties that can be used using key figures as segmentation measures.



The screenshot displays the 'Segmentation_ABC_XYZ' configuration window. It includes tabs for 'General', 'ABC Segmentation', and 'XYZ Segmentation'. The 'ABC Segmentation' tab is active, showing various configuration fields. Key settings include: Target Attribute for Segmentation Results set to 'ABC Code (ABCID)', Segmentation Measure set to 'Actuals Revenue (ACTUALSREV)', Base Planning Level set to 'Currency ID - Customer ID - Location ID - Product ID', Calculation Level set to 'Product ID', Periodicity set to 'Monthly', Time Scope set to 'Past', Calculation Horizon set to '12 Months', Segmentation Method set to '(5) By Segmentation Measure (Single Values)', and Currency set to 'EUR'. A timeline slider at the bottom indicates a range from -24 Months to Now.

Figure 53: Settings for ABC Classification

Calculation Methods for ABC Segmentation:

Example Method: (5) By Segmentation Measure Single Values

The segments are calculated based on the total value produced by each item in terms of the segmentation measure, and the sums are compared one-by-one to the predefined thresholds.



	SUM of Time Series Data	Class
Prod 10	51550	A
Prod 6	19391	A
Prod 9	14557	A
Prod 7	9766	B
Prod 8	8167	B
Prod 3	6361	B
Prod 4	6066	B
Prod 2	3345	C
Prod 5	541	C
Prod 1	100	C
Total	119844	

Thresholds

A	> 10000
B	> 5000
C	< 5000

The segments are calculated based on the total value produced by each item in terms of the segmentation measure, and the sums are compared one-by-one to the predefined thresholds.

Figure 54: Example – By Segmentation Measure (Single Values)



Segmentation Profile ABC_Segmentation

General ABC Segmentation XYZ Segmentation

Key Attributes of the Target Master Data Type: Product ID

*Segmentation Measure: Requested Qty (REQQTY)

Base Planning Level: Customer ID - Location ID - Product ID - Sales Order - Sales Order Item - Schedule Line Number

*Calculation Level: Product ID

*Periodicity: Daily

*Time Scope: Past Future Past and Future

*Calculation Horizon: 365 Days

Offset for Calculation Horizon: 5 Days

*Calculation Strategy: Calculate Variation Aggregate over Periods

*Calculation Method: Coefficient of Variation (CV)

*Segmentation Method: By Thresholds

Consider Results of Time Series Analysis: ☐

Unit of Measure To ID: ALL

XYZ Segments (3)

Name	Thresholds
X	0.25
Y	0.5
Z	No Maximum Value

Figure 55: Settings for XYZ Segmentation

Calculate Variation and Aggregate over Periods:

The main difference between the two methods is that **Calculate Variation** calculates variance values during the segmentation runs, while **Aggregate over Periods** works with values that were previously calculated by other tools such as the **Manage Forecast Error Calculations** app.



	1	2	3	4	5	6	7	8	9	10	CV	Classification by CV	CV of cleansed TS	Classification by cleansed CV
Prod 1	300	400	500	600	700	800	900	1000	1100	1200	0.383	Y	0.001	X
Prod 2	100	150	200	500	100	150	200	500	100	150	0.682	Y	0.020	X
Prod 3	10	15	25	27	35	47	67	70	78	85	0.566	Y	0.030	X
Prod 4	667	252	548	655	705	98	966	172	522	272	0.543	Y	0.543	Y
Prod 5	853	278	354	370	754	188	814	357	97	77	0.666	Y	0.666	Y
Prod 6	891	121	726	886	302	167	994	273	591	721	0.545	Y	0.545	Y
Prod 7	860	294	120	958	456	12	177	229	318	205	0.816	Y	0.816	Y
Prod 8	635	795	157	818	527	802	878	5	359	461	0.522	Y	0.522	Y
Prod 9	113	485	570	411	378	705	150	175	465	492	0.466	Y	0.466	Y
Prod 10	8000	9000	7000	8500	8600	8700	8800	8600	7800	5600	0.123	X	0.123	X

Figure 56: Calculate Variation – Example with Time Series Analysis

Thresholds

X: 0.3

Y: 0.7



LESSON SUMMARY

You should now be able to:

- Create an ABC classification

Learning Assessment

1. What is the definition of the Planning Operator?

2. What is the function of ABC classification?

Learning Assessment - Answers

1. What is the definition of the Planning Operator?

Planning Operator uses an algorithm to compute large amounts of key figure data within a planning session.

2. What is the function of ABC classification?

ABC classification is an analytical method used to classify objects based on a particular measure.

UNIT 13

Supply Review

Lesson 1

Using Supply Calculations to Understand Planning Levels

146

Lesson 2

Setting up an Alert in a Favorite

151

UNIT OBJECTIVES

Use supply calculations to understand planning levels

Set up an alert in a favorite

Unit 13

Lesson 1

Using Supply Calculations to Understand Planning Levels



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Use supply calculations to understand planning levels

Supply Calculations and Planning Levels

Here we will use a simple supply calculation to help us understand planning levels. The business requirement is to identify the overloads of resources but only for the finished goods in our simple supply chain.

First, let's review. What is interesting in our Demand plan? We created the configuration to get something that drives the revenue and also drives capacity. If you answered Consensus Demand Qty, you are right. We can import both the Sales and Marketing Forecast Quantities in order to reach a consensus. It is the Consensus Demand Qty that drives the revenue and also consumes the capacity, as we need this to produce.



The one thing we are interested in and the reason we created this Planning Area.

KEY FIGURES	MONTH	MONTH
Sales Forecast Qty	100	100
Marketing Forecast Qty	95	105
Consensus Demand Qty	105	110
Unit Price	100	100
Consensus Demand Revenue	10500	11000

The planning level of Consensus Demand Qty is PERPRODCUST

Figure 57: Consensus Demand Qty

Capacity Overload Alert

What are we interested in on the supply side? We could say many things but ultimately we want the system to locate the capacity overloads so we don't have to go looking for them. It is much more efficient in finding them than we are. Therefore, the one thing we are interested in is the Capacity Overload Alert which will tell us when and where the overloads occur.



Figure 58: Capacity Overload Alert

PERPRODCUST to PERLOCRES

We know what we have and we know what we want, now we just need a clear path to get from one to the other. We can't just jump from PERPRODCUST to PERLOCRES, we need a configuration path to get there. In order to plan correctly we need to start at the end.

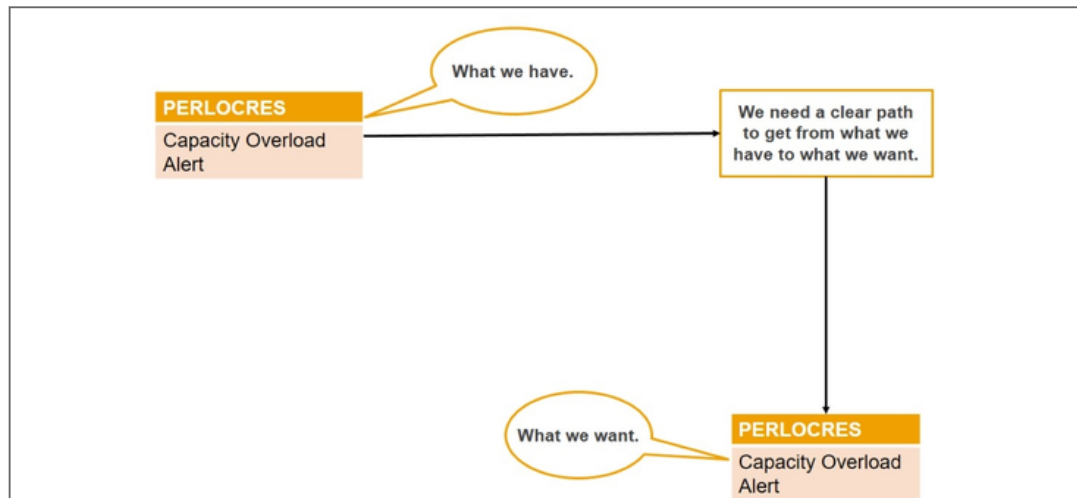
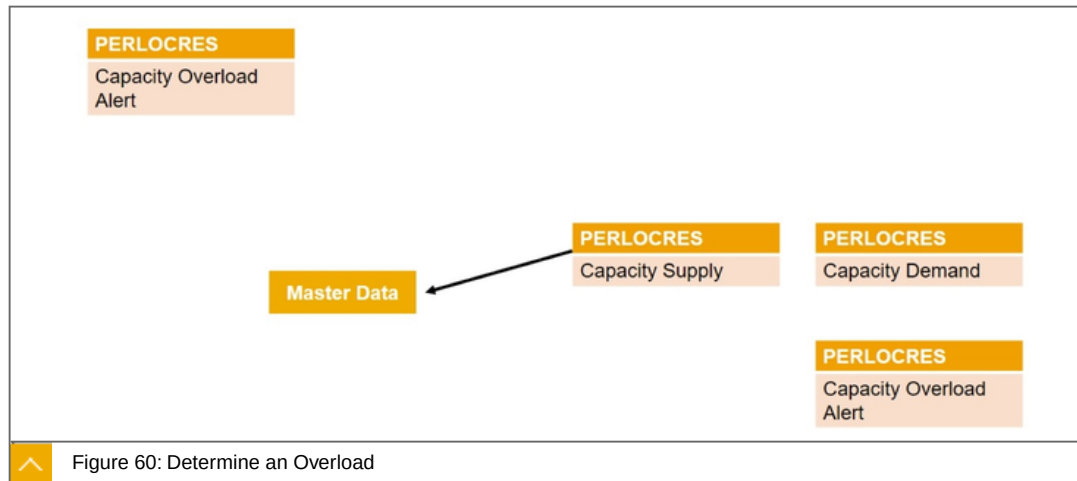


Figure 59: PERPRODCUST to PERLOCRES

Determine an Overload

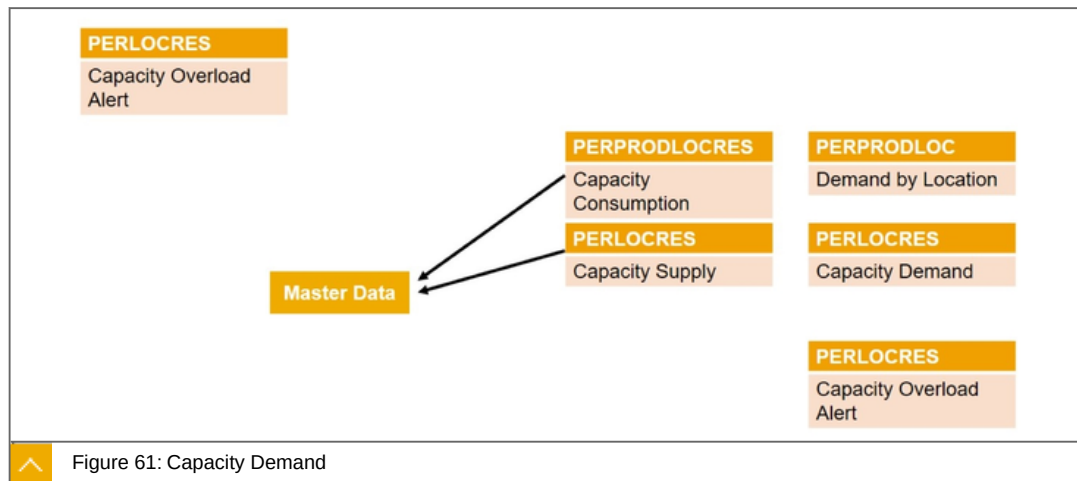
We can plan backwards from the end, the Capacity Overload Alert. What do we need to know to determine if there is an overload? I need to know how much capacity we have (Capacity Supply) and how much capacity we need (Capacity Demand). If the Capacity Demand is larger than the Capacity Supply then we have an overload in that period.



Capacity Demand

The next question is where does Capacity Supply come from? On the ECC side it is stored in the work center, therefore we can say that it comes from master data. If it comes from master data then it is something that we can load so we will deal with that later. The other important question is what is the planning level of each of these? Both of these will have planning level PERLOCRES the same as the Capacity Overload Alert.

Where does Capacity Demand come from? It is calculated from the demand at the location and the capacity consumption. We also need to identify the planning levels of these. Since each product can consume a different amount of time on the resource the planning level must be PERPRODLOCRES. The Demand by Location is the total demand that is to be produced on the resource regardless from which customer it originated. That means that the planning level of Demand by Location is PERPRODLOC summed across Customers.

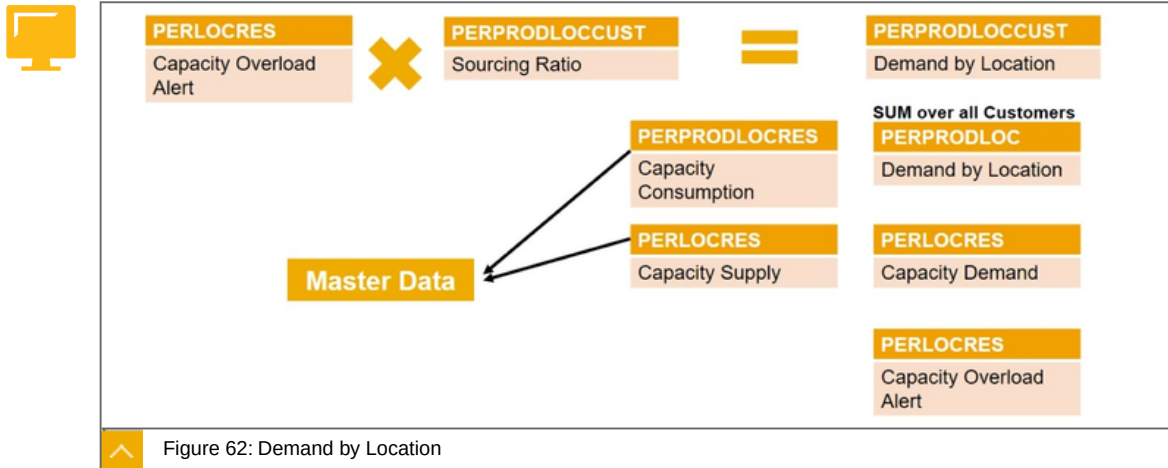


Demand by Location

The next step is to determine where Capacity Consumption comes from. In ECC it is stored in the routing as time on the resource so it also comes from master data and we will handle that later.

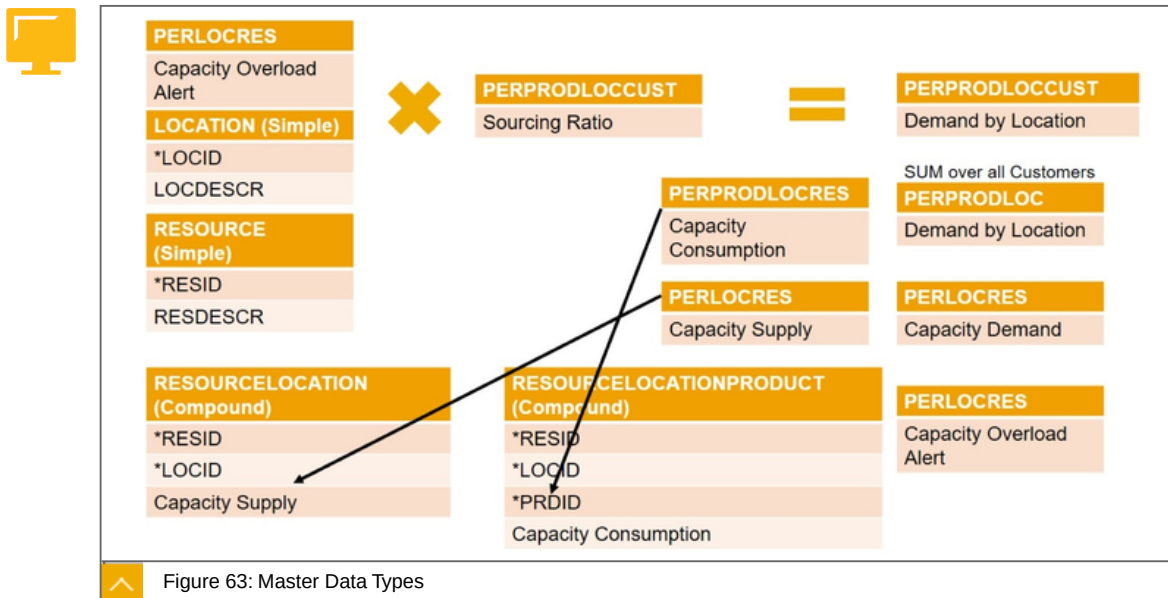
Where does Demand by Location come from? It is calculated as the percentage of Consensus Demand that will be provided by this location. Therefore, we need to include this calculation as well and the final step is to take the Consensus Demand Qty* Sourcing Ratio to determine

the portion of demand that is supplied by this location. We use a sourcing ratio here just in case we have multiple sources but in the case of a single source the ratio could be 1.



Master Data Types

Once we get the path drawn, it becomes obvious which key figures are needed, as they are listed on the path. It is also obvious which planning levels are needed. Master Data Types that are needed for this calculation were loaded at the beginning of the course.



Finally, since both Capacity Supply and Capacity Consumption are rather constant over time they become ideal candidates for attributes defined as key figures and we will create compound master data types to handle this. As attributes are defined as key figures, we can choose to handle them as master data and load one value for each location resource combination. This will be replicated to every period or we can choose to handle them as key figures, once we get CPI-DS data load setup and load a value for each period. For testing, handling them as master data is preferable and much less work to create a data file.



LESSON SUMMARY

You should now be able to:

Use supply calculations to understand planning levels

Unit 13

Lesson 2

Setting up an Alert in a Favorite



LESSON OBJECTIVES

After completing this lesson, you will be able to:

Set up an alert in a favorite

Planning View Alert

Alerts are triggered by exceptions between key figures, for example, the Capacity Overload Alert triggers if the Capacity Demand is greater than the Capacity Limit. On the SAP IBP ribbon in Microsoft Excel **Alerts** section contains information on the number of alerts with at least one exception. You can also view alerts on the SAP Fiori launchpad home page and open the associated favorite planning view from the alert to look at different options to resolve the exception that raised the alert.

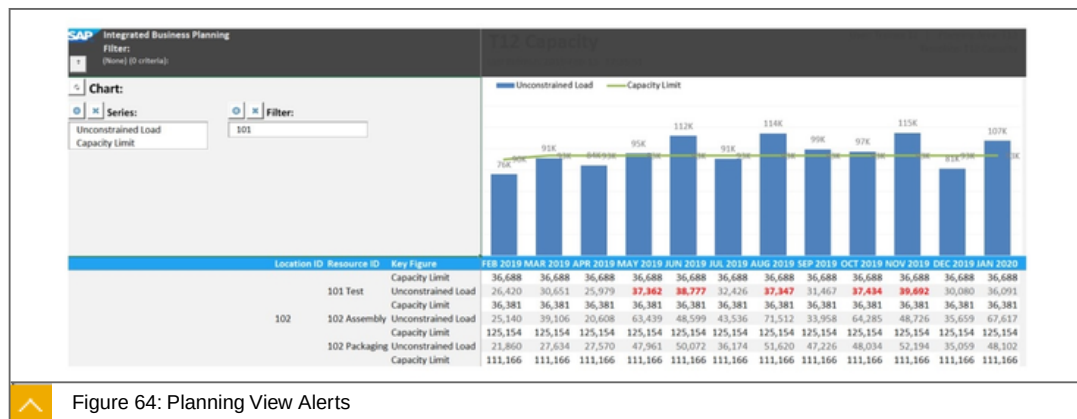


Figure 64: Planning View Alerts

Alert situations can be highlighted to the user by changing the font color of the data in an alert situation. This can be managed in different ways including via conditional formatting using the EPMFormatingsheet.

There are currently two types of alerts available in SAP Integrated Business Planning: key figure configured alerts and user-defined custom alerts. We will focus on the key figure configured alerts in this lesson and custom alerts will be covered in more detail in another Integrated Business Planning lesson.

As a brief note on the custom alert functionality, custom alerts are end-user configured alerts, which are available on the SAP Fiori launchpad home page. The user can create an alert definition for a combination of rules, which determine if an alert should exist, the time period for determination, and the level of aggregation for the determination. The alert definition also defines which data should be shown within the alert, such as other key figures (metrics) and charts. A custom alert subscription allows the user to filter the attributes to be used for the alerts. Custom alerts are visible on the SAP Fiori launchpad home page in the Custom Alert screen area.

Types of Alerts



Key figure configured alerts

- Created in configuration with a special key figure
- Added to a favorite in planning view

Custom user-defined alerts

- Defined by users
- Do not need configuration or activation

Adding an Alert to a Favorite

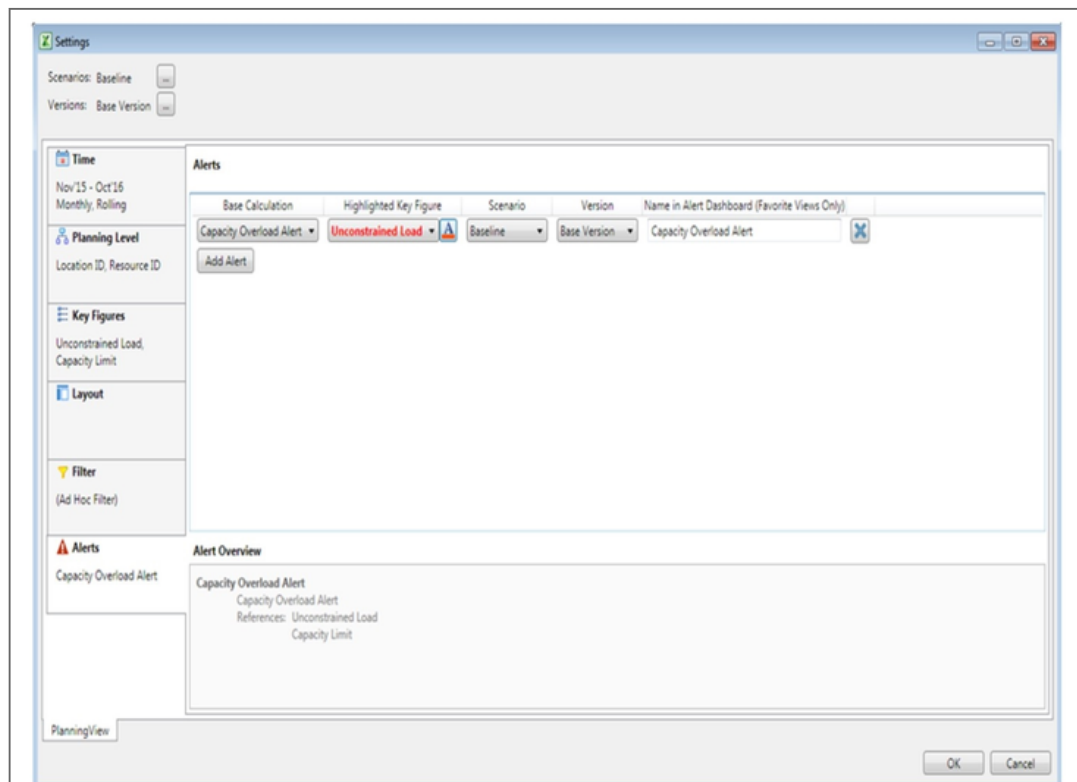


Figure 65: Add An Alert To A Favorite

Alert formatting can be done in the Excel planning view using the Alerts section on the left in Edit Planning View.



LESSON SUMMARY

You should now be able to:

Set up an alert in a favorite

Learning Assessment

1. Which of the following are attributes of alert key figures?

Choose the correct answers.

- ☐ **A** Binary Values
- ☐ **B** Calculated
- ☐ **C** Stored
- ☐ **D** Editable in the current and future

Learning Assessment - Answers

1. Which of the following are attributes of alert key figures?

Choose the correct answers.

- ☒ **A** Binary Values
- ☒ **B** Calculated
- ☐ **C** Stored
- ☐ **D** Editable in the current and future

Correct. Alert key figures are calculated and have binary values.

UNIT 14

Comparing Versions and Scenarios

Lesson 1

Creating and Comparing Versions and Scenarios

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UNIT OBJECTIVES

Create and compare scenarios

Unit 14

Lesson 1

Creating and Comparing Versions and Scenarios

LESSON OVERVIEW

In this lesson, you learn how to create and compare scenarios.



LESSON OBJECTIVES

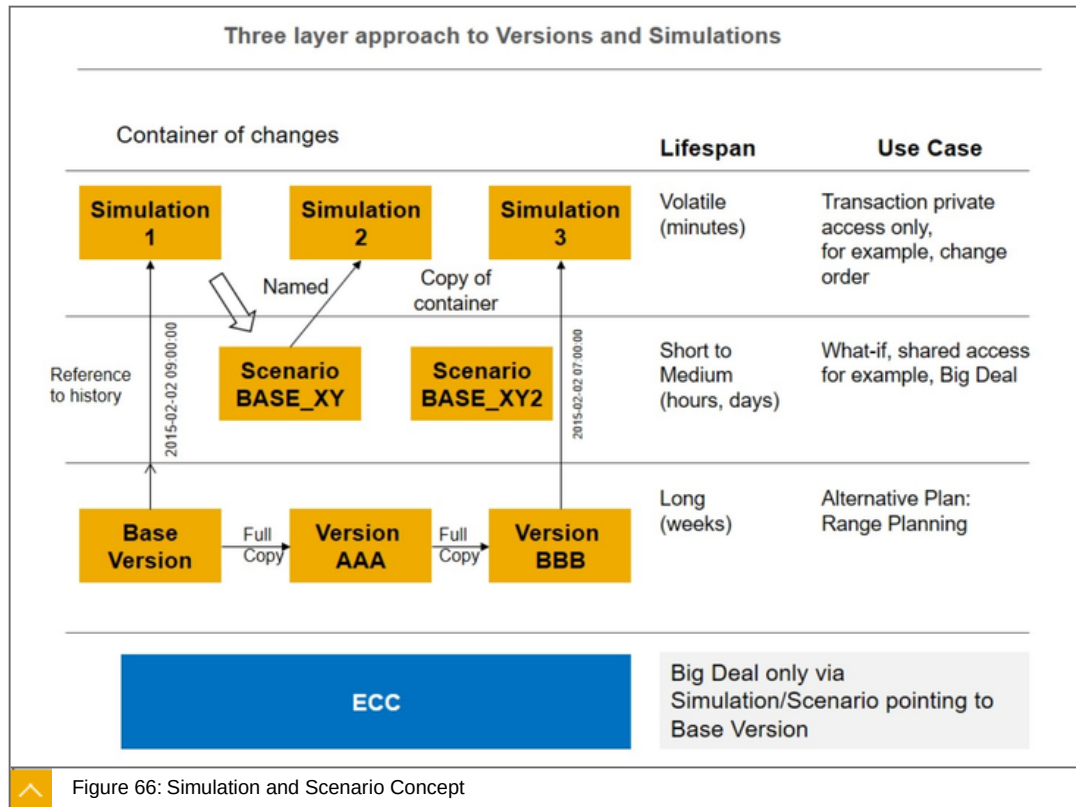
After completing this lesson, you will be able to:

- Create and compare scenarios

Simulation and Scenario Concept

It is possible to work with different variants of data in IBP. There is a three layer approach to changes from the integrated data sources, such as ECC.

There will always be a Base Version, connected to the external data source. From this Base Version, you can make a series of other Versions to which you can copy data. Simulations are made on top of Versions once some data has been changes and the Simulate action has been run. In Simulations it is possible to see the effect of changes, for example, large tenders, forecast shifts, machine maintenance, and so on. Once a Simulation is saved, it becomes a Scenario Scenarios can then be shared between users. Scenarios are managed through the Scenario section in the Microsoft Excel UI.



In IBP it is possible to have several 'what-if' sets of data. This could be version of data or a scenario with the same version. After a scenario is worked to satisfaction, scenario data may be 'promoted' to base or active version. In addition simulation of results is also possible. This does not save data but shows the user what results of a change or running an operator may change data. Simulated data can then be saved as needed.

Version Planning and Simulation



Table 8: Version Planning, Simulation, and Scenario Comparison

Version Planning	Simulation	Scenario
Multi-User	Single User	Multi-User (Share)
Over long periods of time	While Planning view is open	Over long periods of time
Administrator creates in configuration	Planners in IBP Excel UI	Planners in IBP Excel UI
On entire dataset	On entire dataset	On entire dataset
For Version-Enabled Key Figures	For all Key Figures, any time	For all Key Figures
For Analytics and Planning views	Only in Planning views	For Analytics and Planning views
Comparison	Currently, no comparison	Comparison
Version-specific Master Data	No Master Data changes	Uses Master Data of baseline only, not scenario-specific

A version is a plan that consists of a set of key figures. The base version is provided in the standard system. The model administrator can define additional versions (for example, upside and downside) by copying the base version, and if required, they can create version-specific master data.

Versions are separate sets of data, which are created in configuration. Users with proper permissions can use version for planning.

Using the version planning and simulation functions in SAP Integrated Business Planning, you can do the following:



Define alternate plans for your entire business in scalable way*

Copy values from baseline to versions, and versions to baseline easily

For multiple users in real time at aggregate and detailed levels

Track assumptions and changes to versions*

Include simulation-mode for all plans*

Compare versions in real time*

* Product Differentiations

Product Overview: Version Planning and Simulation

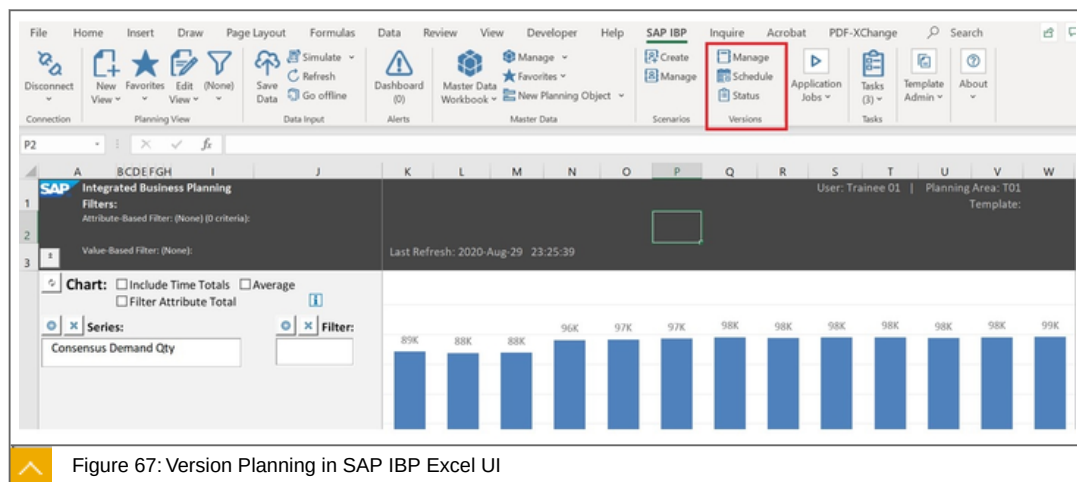


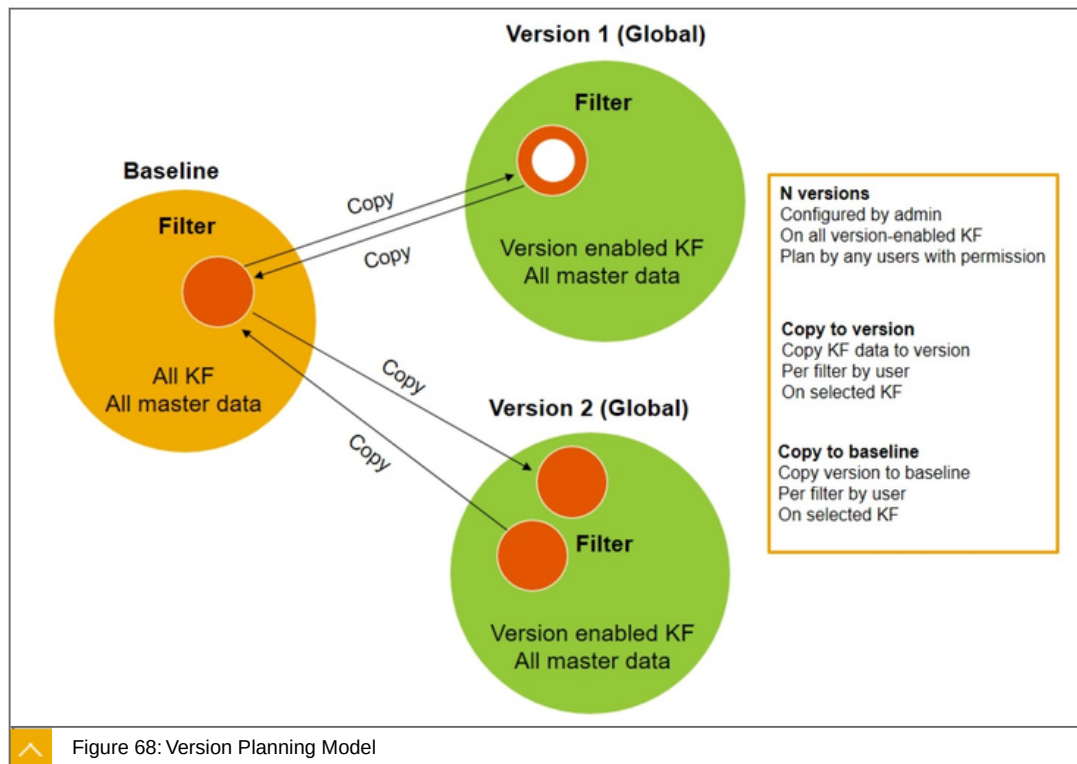
Figure 67: Version Planning in SAP IBP Excel UI

Data can be copied from one version to another via Excel from the Version group in the IBP menu bar. Caution should be used when performing version related tasks.

Version Planning Model

Versions come with functionality to merge and replace data between versions. You can also remove the data in a version. Each of these functions can be restricted to certain attributes values and key figures, and need not be all the data in the entire version.

When you edit the key figure data in a planning view, you can work on one version, or you can work on multiple versions simultaneously, which allows you to compare and adjust key figure data easily.



In the IBP Excel add-in, you can use the following functions in the Versions group:

Manage:

You can copy key figures from one version to another. If version-specific master data has been configured, you can also copy master data from one version to another.

Note that copying a version is not possible if the planning area has daily time buckets.

The following copy functions are available:

Copy: Update existing data and insert new data

Delete: Remove all selected data from the source version (no target version required)

Status:

You can check the status of the background job that is created when you copy master data and key figures between versions.

Schedule:

You can plan recurring jobs for version management.



LESSON SUMMARY

You should now be able to:

Create and compare scenarios

Learning Assessment

1. The version planning and simulation functions in SAP Integrated Business Planning allow you to compare versions in real time.

Determine whether this statement is true or false.

- ☐ True
- ☐ False

Learning Assessment - Answers

1. The version planning and simulation functions in SAP Integrated Business Planning allow you to compare versions in real time.

Determine whether this statement is true or false.

☒ True

☐ False

Correct. The version planning and simulation functions in SAP Integrated Business Planning allow you to compare versions in real time.