Critical manufacturing
an ASM PT company

Plan

11.0

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Plan

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A **Plan** is the central entity for the attainment of an production need. A **Plan** represents a matrix of quantities indexed by:

- A manufacturing unit (**Product** or **Product Group**) called Plan Item.
- A set of time periods called Time Frames.

This matrix will be associated to a Critical Manufacturing MES Plan Item level (**Area**, **Facility**, **Site** or **Enterprise**) and the **Plan** is used to hold the definitions and actual quantities that are planned to be produced on a specific manufacturing level and within a given time frame.

This document will guide you through the required configurations and set up for the **Plan** functionality.

> **Note**
>
> The **Plan** entity is not directly related to any other plan; namely, the **Inspection Plan**, **Maintenance Plan**, and **Sampling Plan** entities.

Overview

The **Plan** entity is intended to fulfil a specific production demand and can be used at different practical levels.

> **Note**
>
> **Plan** is used for a different type of planning from the **Schedule** entity. **Plan** is used to assign quantities or volumes to specific time frames and is used at different planning levels. **Schedule** is used to assign start and end dates to jobs at the Detailed Scheduling level.

In Critical Manufacturing MES, **Plan** is a structure that represents any production plan at any level, which is relevant to MES, in the form of production volumes for a certain manufacturing unit or specified item(s) and for a specified horizon.

Its purpose is to validate or track and to compare the plan volumes with the actual volumes recorded in MES.

Main objectives of **Plan**:

- Track if the volumes are being kept.
- Allow importing Planned Volumes from an external system - commercial planning solution or through Master Data Package loading.

> **Note**
>
> There is currently no underlying engine that allows finite capacity planning at all levels supported by the **Plan** entity. Therefore, **Plan** information must be filled in by the user via the GUI or Master Data Package from an Excel sheet or by integrating with an external commercial planning solution.

Setting up a Plan

To have a functioning **Plan**, you have to set up other Critical Manufacturing MES entities as shown in the following table:

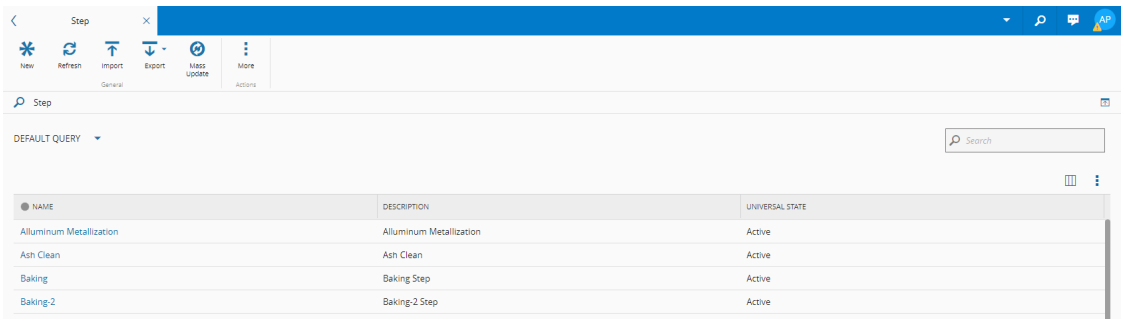
Step Number	Step	Description
1	**Enable Is Plan Counting Step**	For any **Step** you intend to use as a counting step for the actual volumes, and you can use as many as you need, the **Is Plan Counting Step** configuration must be active.
2	**Create a Calendar**	Has to have calendar days generated.

Table: Steps to set up the Plan-related entities

The next sub-sections will cover the required configuration steps in more detail.

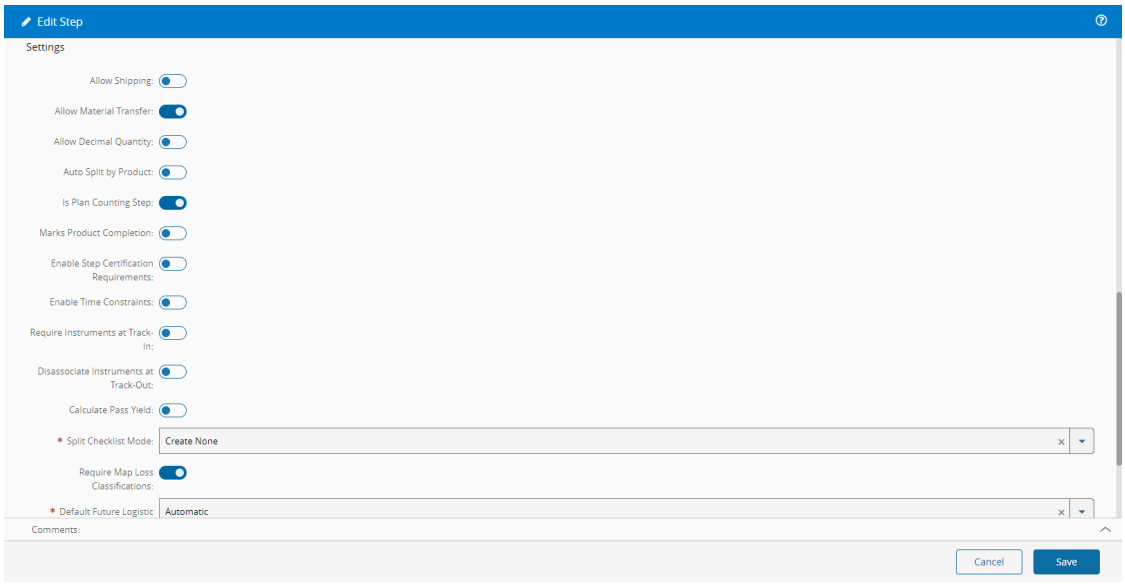
Step 1: Step

1. Select the **Step** you intend to use:



2. Select **Edit** on the top ribbon:

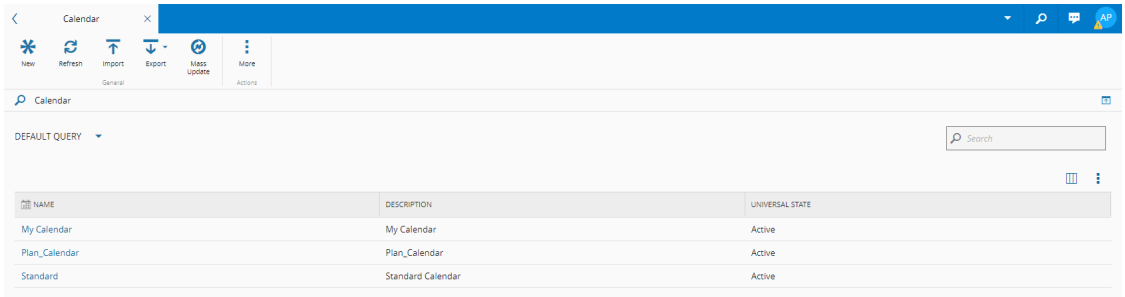
3. Go to **Settings** and enable Is Plan Counting Step:



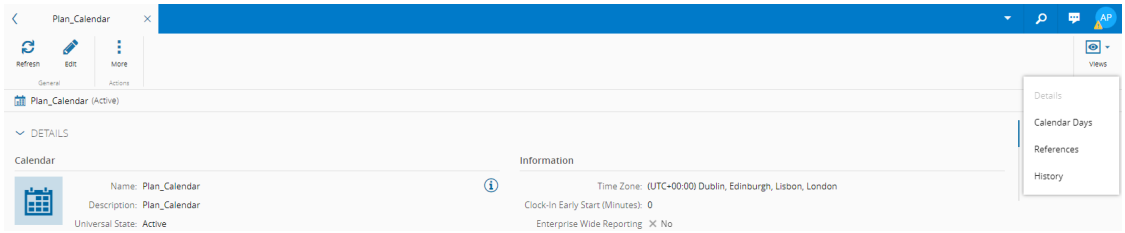
4. Select **Save**.

Step 2: Calendar

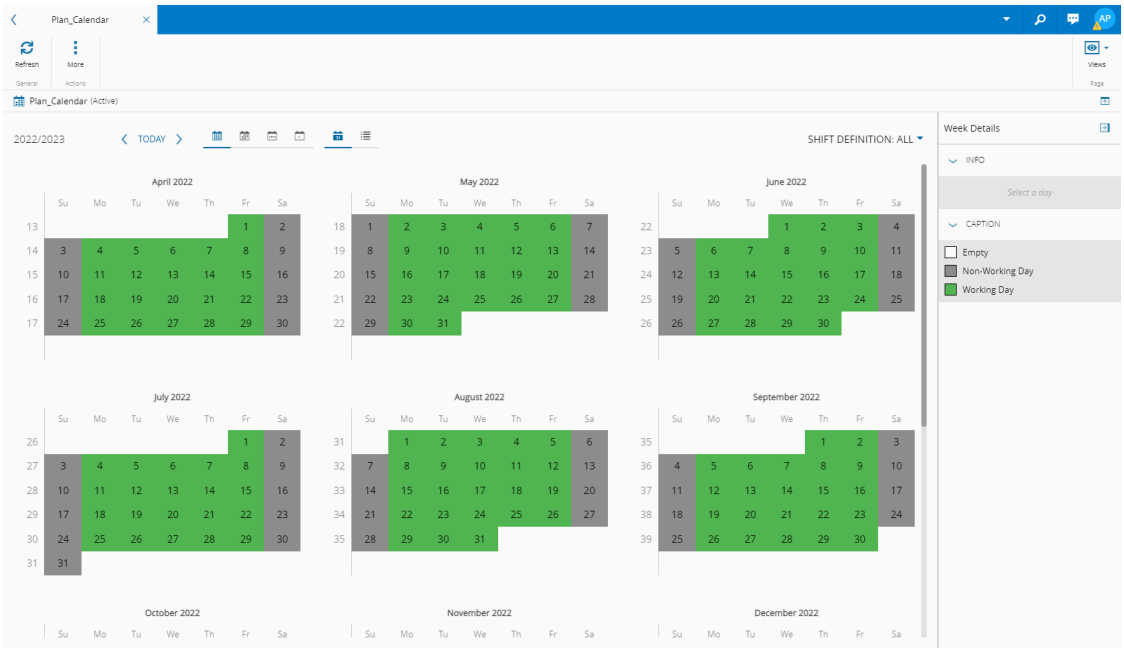
1. Select the **Calendar** you intend to use:



2. In **Views**, select Calendar Days:



3. Make sure you have calendar days generated:

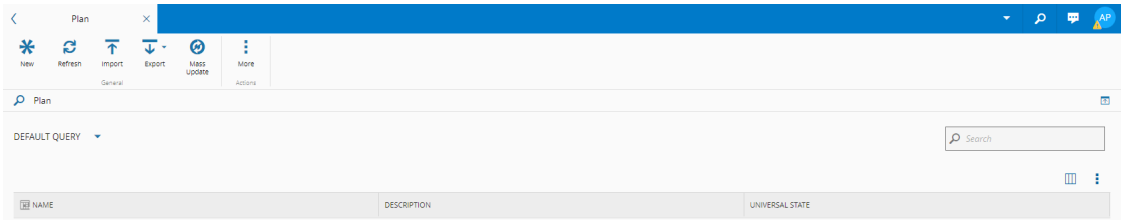


Using Plan

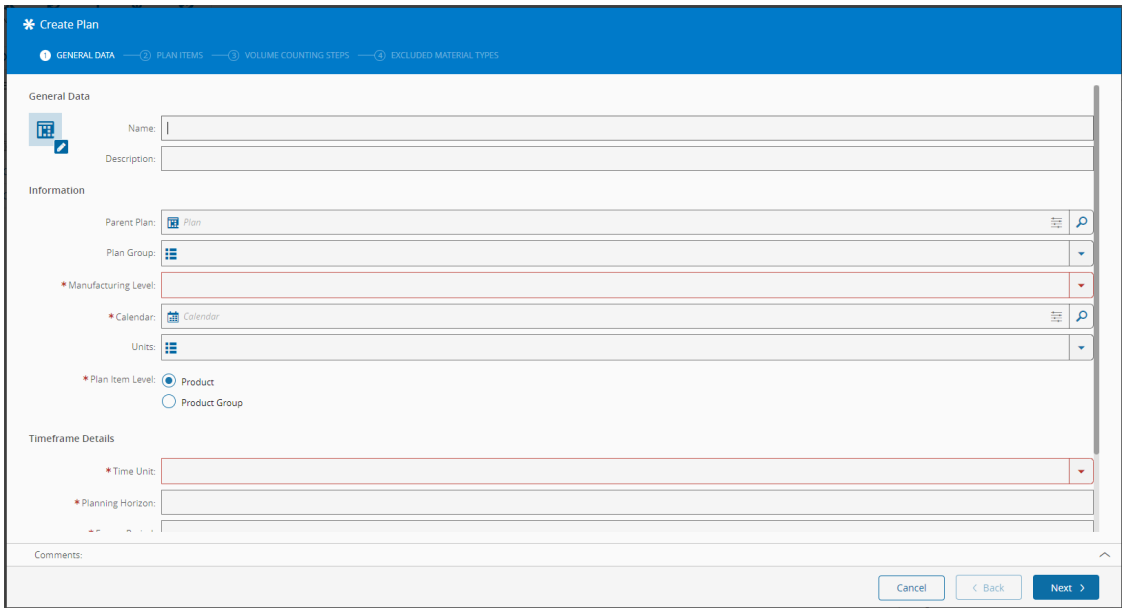
After setting up the required configurations mentioned above, the **Plan** functionality can be used, as described in the next sections.

Create Plan

1. Create your plan:



2. To establish a hierarchy and have all you need to define **Plan** values in detail, complete all fields and wizard steps accordingly, and keep the information below in mind:

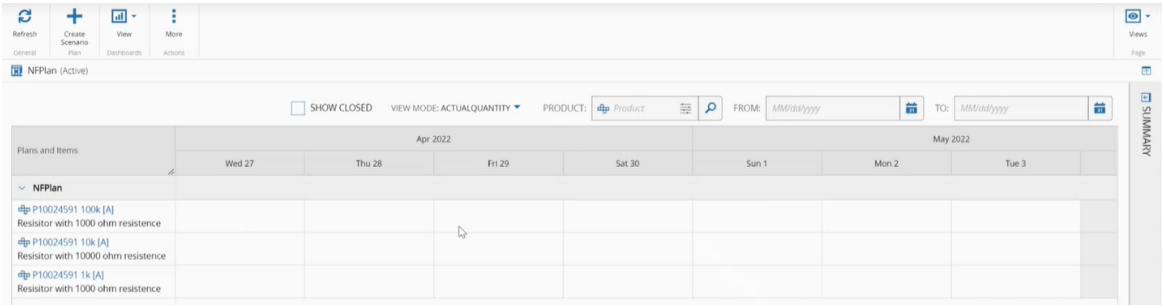


3. **General Data** and **Plan Items** wizard steps:
    - complete the Parent Plan field with an already existing plan.
    - complete the Plan Group field with a lookup value, which can be used to classify Plans at the same level and that refer to the same overall process.
    - select the Plan Item Level accordingly - Product/Product Group.
    - establish the scope and horizon.
    - establish the Frozen Period, which will prevent changes to the initial values.
    - select the Sub-Plan Synchronization Mode, which automatically defines the terms of breaking down targets.
4. **Volume Counting Steps** and **Excluded Material Types** wizard steps:
    - define how actual plan values will be counted.
    - define the **Step** for counting so when a material reaches it the actual values/volumes will be updated with the quantity of that material.
    - it is possible to have multiple counting steps.
    - establish additional precision by defining a Flow Path or Logical Flow Path.
    - specify material types of materials you do not want to count or exclude.
5. At the end select **Create**.

> **Note**
>
> For more information, see Plan.

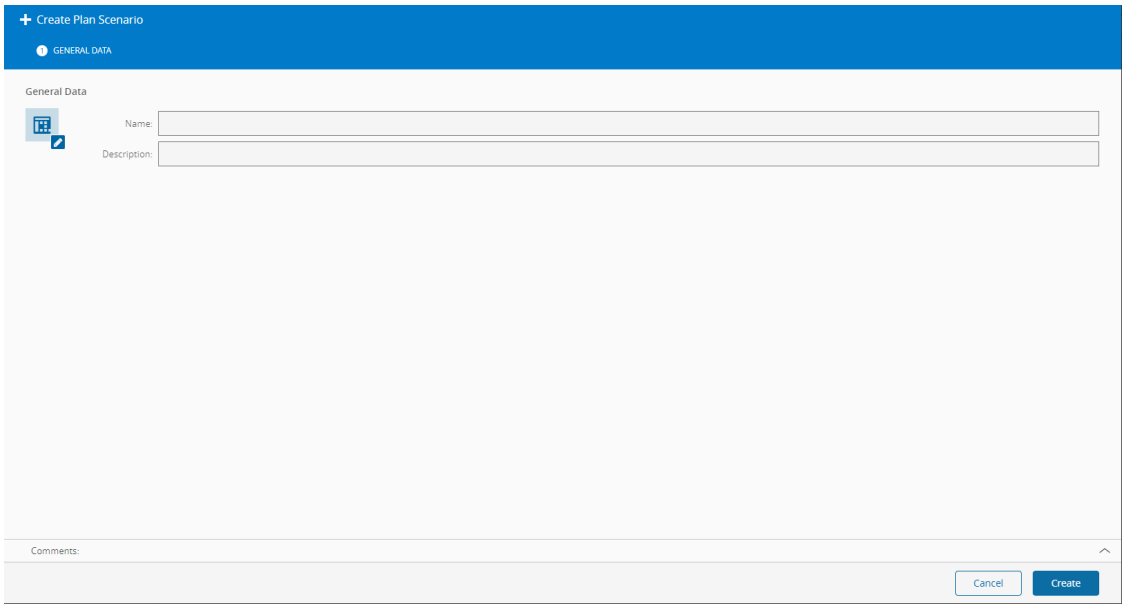
Create Scenario

When your **Plan** is created for the first time (this example uses: Area, and Product, and Day), it is empty:

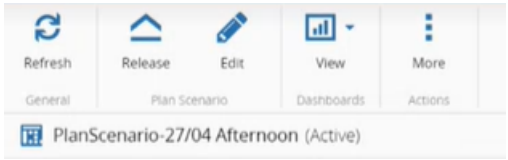


For it to have values you need to create a Plan Scenario. Your **Plan** will then be updated based on the Plan Scenario, which is a set of Planned Volumes created at a certain moment in time. Follow the steps below to create your Plan Scenario:

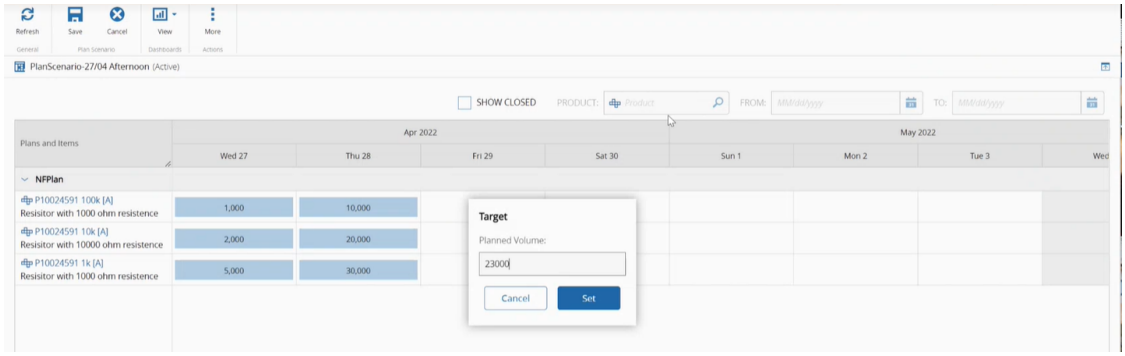
1. Select **Create Scenario** on the top ribbon.
2. Provide a Name, optionally, a Description, and select **Create**.



3. Select **Edit** on the top ribbon:

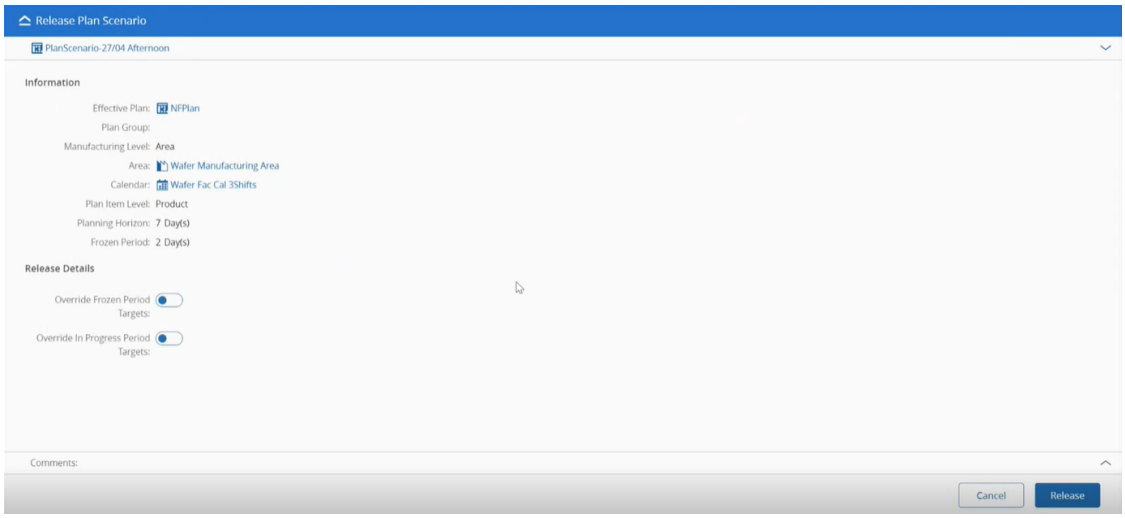


4. Start completing your **Plan** with your planned targets:

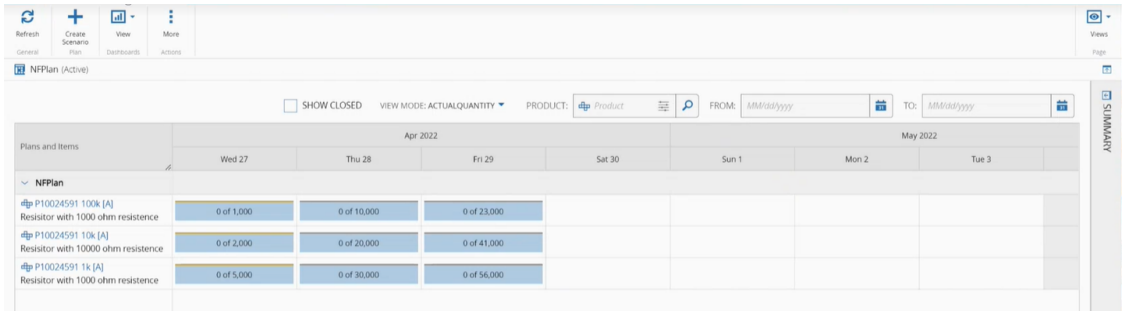


> **Note**
>
> These steps done via the GUI can also be achieved by using Master Data Package or API if it is integrated with an external system.

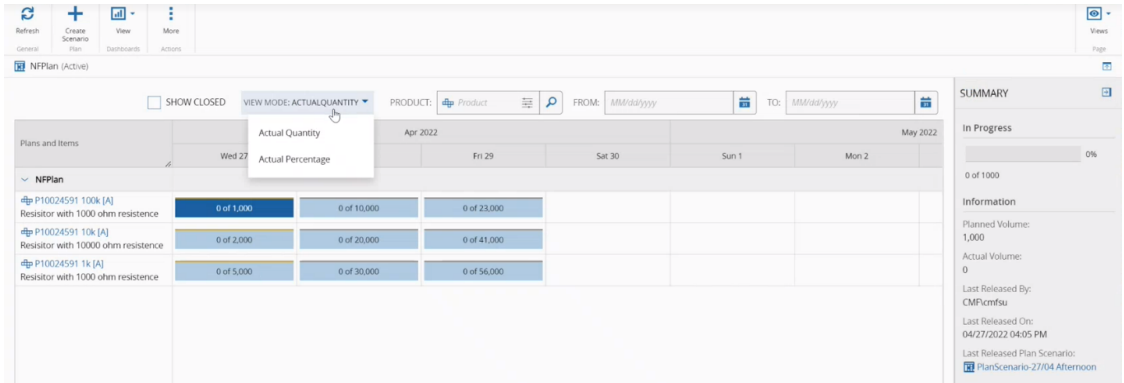
5. At the end, select **Save** on the top ribbon.
6. Select **Release** on the top ribbon, confirm the page information and select **Release** for your plan to take effect:



7. Plan values are displayed as 0 of X, this is, there are currently no actual plan values because no **Material** has been processed:



> **Note**
>
> There are two possible view modes, **Actual Quantity** | **Actual Percentage**, and if you select a plan time frame item, a **Summary** view is displayed on the right:



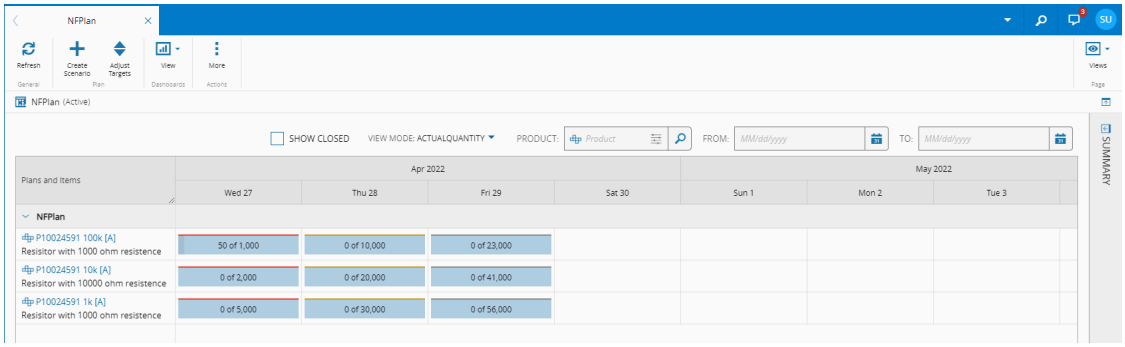
8. From your **Plan** go to **Views**, followed by **Details**.
9. Select **Volume Counting Steps**, open the **Step** and place your **Material** in the **Step**.

Process Material

1. The **Plan** will be updated with the actual quantities whenever the **Material** is moved to a Plan Counting Step, if:
   - it matches the Product or Product Group of a Plan Item.
   - its Units match the Units of the **Plan**, if defined.
   - its Material Type does not match any of the Excluded Material Types of the **Plan**.

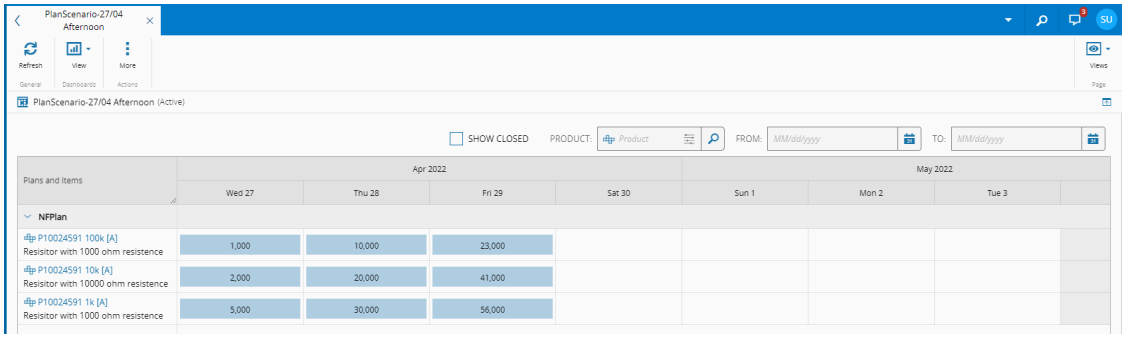
   In which case, the **Plan** will be updated with its quantity.

> **Note**
>
> If no Unit is defined, the Primary Quantity of the **Material** will be considered; if it is defined, the Primary or Secondary Quantity will be used, depending on which of the Units of the **Material** match it.



> **Note**
>
> The most recent data can also be accessed in the **Summary** view.

2. To see what the Planned Values were when a certain Plan Scenario was released, access the **Plan Scenarios** section and open the intended scenario:



Plan Item State

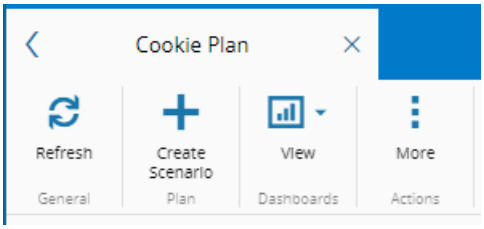
The color shown at the top of each time frame item indicates its execution state as described below:

Color	Execution State

Color	Execution State
Red	Target not Reached
Green	Target Reached
Dark Green	Target Overachieved
Yellow	In Progress
Gray	Frozen (Within the Frozen Period)
Blue	Planned (With a Planned Target Value)

Plan Status Overview Dashboard

A Dashboards View button is available on the top ribbon:



This dashboard shows a summary of the most recent time frames:

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