

6.9.4. Explain Inventory Calculation Dialog

Explain inventory calculation dialog is designed to show and explain Streamline's planning process for each [planning item](#). This dialog discovers the simulation modeling behind a purchase, replenishment, material requirements, and production plans generated by Streamline. It is especially useful to help understand the planning logic in the following complex cases as:

- two-echelon planning;
- material requirements planning; and
- combination of both.

First of all, we give a description of this dialog, and then [show](#) how it can be of help in particular situations using built-in examples.

Description of the dialog

To open the **Explain inventory calculation** dialog:

1. Go to the **Inventory planning** tab.
2. Set the cursor at the planning item in question.
3. Press **Ctrl + E**, or right-click with the mouse and select the **Explain calculation** command from the context menu.

The **Explain inventory calculation** dialog appears (see figure below).

Explain inventory calculation
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Item: B05465-R — Basketball 29.5 (size 7) [seasonal model]

Location:

Safety stock: 94

Debt received from lower echelon (current/max): 0 / 0, accum. 0

Debt passed to upper echelon (current/max): 0 / 124

Current time: 0.0322581 Manufacture details

Simulation horizon: 6 months

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018	Jan 1, 2019	Jan 4, 2019	Jan 12, 2019	Jan 15, 2019
Time fraction	0	0.365591	1	1.03226	1.12903	1.36559	1.48387
Events	✉	🛒	🕒	✉	⬆️	🛒	🛒
Demand forecast		197		100			
+ Manufacture forecast							
= Subperiod consumption		66	125	3	10	24	11
+ Safety stock			75	2	5	12	
Write-offs							
Orders in transition					-30		30
Debt after arrivals							
Inventory + in transition	266	200	161	158	118	94	167
+ Planned order arrivals		86				54	
= Projected inventory	266	286	161	158	118	148	167
Planned orders	86			54			

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Input / Calculated
+
-
Co-dependent
Close

This dialog is divided into two parts. The top part shows the **properties** of the currently selected planning item. The bottom part, a **table** displaying events that will happen to the item in the future based on the input data (actual events) and Streamline's simulation modeling (simulated events).

The dialog has its own **color-coding** helping you understand the math behind the **Projected inventory levels**.

Planning Item Properties

Item: B05465-R — Basketball 29.5 (size 7) [seasonal model]

Location:

Safety stock: 94

Debt received from lower echelon (current/max): 0 / 0, accum. 0

Debt passed to upper echelon (current/max): 0 / 124

Current time: 0.0322581 Manufacture details

Simulation horizon: 6 months

- **Item** shows the code and the description of the item.
- **Location** shows the code and the description (if available) of the location.
- **Safety stock** is the **calculated safety stock** for the planning item.
- **Debt received from lower echelon (current/max)** shows the **current**, **maximal**, and







accumulated safety stock debts. The **current** safety stock debt is received from the lower echelon. The **maximal** and the **accumulated** safety stock debts are calculated at the current echelon. These parameters are calculated for each planning item at each echelon in a multi-echelon model.

- **Debt passed to upper echelon (current/max)** displays the **current** and **maximal** safety stock debts that are calculated at the current echelon. The **current** safety stock is passed to the upper echelon in the multi-echelon model.
- **Current time** shows the current day as a fraction of the **data aggregation period** (longer period). Streamline determines this date as the date of the last imported **transaction**. This date is also shown in the title of the Streamline application window.
- **Simulation horizon** shows the number of periods to simulate ahead. This number is specific for each planning item and is not less than the **forecast horizon**. To get all the necessary events calculated and shown within the **Purchase plan** and **Projected inventory levels**, Streamline extends the **Forecast horizon** to a certain number of periods. This number is specific for each planning item and depends on the **Lead time** and **Order cycle** set for the planning item.

Table

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018	Jan 1, 2019	Jan 4, 2019	Jan 12, 2019	Jan 15, 2019
Time fraction	0	0.365591	1	1.03226	1.12903	1.36559	1.48387
Events	✉	🛒	🕒	✉	⬆️	🛒	📄
Demand forecast		197		100			
+ Manufacture forecast							
= Subperiod consumption		66	125	3	10	24	11
+ Safety stock			75	2	5	12	
Write-offs							
Orders in transition					-30		30
Debt after arrivals							
Inventory + in transition	266	200	161	158	118	94	167
+ Planned order arrivals		86				54	
= Projected inventory	266	286	161	158	118	148	167
Planned orders	86			54			

- Each column header of the table displays the date the particular **event** happens.
- **Time fraction** is a numerical representation of the date shown in the table header. Zero time fraction corresponds to the last date of the previous data aggregation period. It is shown in the first column of the table.
- **Events** shows events that happen along the simulation. This column is the one that breaks data aggregation periods into subperiods. Date in the table header indicates the end of the subperiod. Each event has a unique icon. Icons and the corresponding events are shown in the table below.

Icon	Event
	Placement of a replenishment , purchase , or work order recommended by Streamline (simulation).
	Arrival of the order planned by Streamline (simulation).
	Arrival of actual purchase or transfer order. You can view this order in the To receive tab of the In transition details dialog.
	Shipment of a sales order. You can view this order in the To ship tab of the In transition details dialog.
	Item write-off (simulation).
	End of the data aggregation period.

- **Demand forecast** indicates the final demand forecast for each data aggregation period. Streamline shows this value in the cell that corresponds to the first event of the period.
- **Manufacture forecast** shows the total consumption of the item (*Material* or *Intermediate*) got from the lower echelon. For example, assume we have a *Material* item which is used in two *Finished* items directly. In Streamline, relations between these items are represented by a two-echelon model, where the material is at the highest echelon and the finished products are at the lowest one. Consequently, the total demand for these two finished products is the manufacture forecast for the material.
- **Subperiod consumption** is the total of **Demand forecast** and **Manufacture forecast** brought to the subperiod time interval.

Streamline doesn't take into account the consumption for the past time period **including the current date**.

- **Safety stock** shows how the calculated safety stock is spread out along the first order cycle period. If safety stock is [determined](#) as the demand of the future periods, Streamline also shows safety stock for all the other order cycles by indicating the difference between the current and previous order cycle.
- **Write-offs** indicates how much inventory will be discarded due to the batches' shelf life within the simulation horizon. This row comes into play if inventory batches were imported, and shows the volumes of write-offs.
- **Orders in transition** shows quantities that will be shipped to customers (negative values) and received to locations (positive values) within the simulation horizon. This row pulls information from the **To receive** and **To ship** tabs of the [In transition details dialog](#). These are *actual* (not simulated) events that are going to happen.
- **Debt after arrival** indicates the [accumulated](#) safety stock debt for each subperiod.
- **Inventory + in transition**. The main purpose of this row is to calculate and display the remaining on-hand level at the end of each order cycle period. Besides these goal quantities, the row displays how the on-hand level is decreased within each order cycle. These amounts are shown at the end of each subperiod. Streamline uses a [color-coding](#) to explain how this row is calculated (see figure below). This row shows the current item **On hand** in the first column of the table.

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018
Time fraction	0	0.365591	1
Events	✉	🛒	🕒
Demand forecast		197	
+ Manufacture forecast			
= Subperiod consumption		66	125
+ Safety stock			75
Write-offs			
Orders in transition			
Debt after arrivals			
Inventory + in transition	266	200	171
+ Planned order arrivals		96	
= Projected inventory	266	296	171
Planned orders	96		

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Input / Calculated + - Co-dependent

- Planned order arrivals** shows arrivals of orders planned by Streamline. Values of this row are tightly linked to the **Planned orders** row as they indicate the arrivals of the corresponding planned orders. Streamline displays this dependency using a color-coding once you set the cursor at the non-blank cell of the **Planned orders** row (see figure below).

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018
Time fraction	0	0.365591	1
Events	✉	🛒	🕒
Demand forecast		197	
+ Manufacture forecast			
= Subperiod consumption		66	125
+ Safety stock			75
Write-offs			
Orders in transition			
Debt after arrivals			
Inventory + in transition	266	200	171
+ Planned order arrivals		96	
= Projected inventory	266	296	171
Planned orders	96		

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Input / Calculated + - Co-dependent

- Projected inventory** shows the projected inventory levels at the end of each subperiod. It is the sum of the **Inventory + in transition** and **Planned orders arrivals** (see figure below). Values of this row shown at the end of each data aggregation period make up the [Projected inventory level report](#).

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018
Time fraction	0	0.365591	1
Events	✉	🛒	🕒
Demand forecast		197	
+ Manufacture forecast			
= Subperiod consumption		66	125
+ Safety stock			75
Write-offs			
Orders in transition			
Debt after arrivals			
Inventory + in transition	266	200	171
+ Planned order arrivals		96	
= Projected inventory	266	296	171
Planned orders	96		

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Input / Calculated + - Co-dependent

- **Planned orders** shows Streamline's recommendations on **how much and when** to place a replenishment, purchase, or work order.

The first column of the table can be a little bit misleading, showing you an order placement (the email icon) on the past date. This is due to the *zero time point* which is used as a starting point to run the simulation from. Do not pay attention to the date in the header of this column. Streamline always calculates the **Planned orders** quantity for the first column on the [current date](#).

Buttons and Options

Buttons with **Up** and **Down** arrows on the right of the dialog allow navigating through the planning items.

Manufacture details option expands the table with all the items of the lower echelon which are linked to the current planning item based on the BOMs and shows the manufacture forecast for them.

Color-coding

The color-coding legend for the table is shown in the figure below.

Input / Calculated	+	-	Co-dependent
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- **Green numbers** are the inputs for the **Planned orders** and **Projected inventory** rows calculation.
- **Black numbers** are calculated values which, in turn, can also be considered as the inputs to the next level of calculations.

There are three color backgrounds for cells:

- **Green** and **Red** backgrounds indicate that the value is used with a *positive* and *negative* sign in the calculation accordingly.
- **Grey** background highlights cells which are co-dependent on each other.

Examples

The primary purpose of the **Explain inventory calculation** dialog is to explain how the [Purchase plan](#) and the [Projected inventory levels](#) are calculated. In this section, we will show how to use this dialog to get these plans for the following built-in examples:

- [Inventory Planning by Month](#)
- [Material Requirements Planning](#)
- [Two-Echelon Inventory Planning](#)

Inventory Planning by Month

To show the capabilities of the dialog, we have slightly changed the input data of the project:

- added a customer order that is to be shipped on **Jan 4 of 2019**;
- changed the default **Lead time** to **10** days for item **B05465-R** (see figure below); and
- set Streamline to take safety stock as a demand of the future month.

Item code	Description	Supplier	Model type	On hand	Days of supply	To ship	To receive	Lead time, days	Order cycle, months	Min lot
89654-T	Toaster [constan...	3850	Constant...	41	46	0	0	30	1	
VR2156 200	Vital Reds 200g ...	1012	Linear tre...	590	50	0	0	30	1	1000
VB2166 150	Vital Blue 150 g ...	1012	Linear tre...	54	38	0	0	30	1	100
L2010	Lumber [season...	3850	Seasonal ...	54	130	0	0	30	1	
H2510	Nails [seasonal ...	3850	Seasonal ...	69	11	0	0	30	1	1000
C1020	Concrete block [...	3850	Seasonal ...	15	35	0	0	30	1	
B05465-R	Basketball 29.5 (...	3850	Seasonal ...	266	43	30	30	10	1	60
565405 Beatles ...	One Style XL [ex...	4008	Seasonal ...	1456	280	0	30 to be shipped on Jan 4, 2019			100
565405 Beatles S	One Style S [exc...	4008	Seasonal ...	1181	593	0	100	30	1	100

The last modification allows **Explain inventory calculation** dialog to [show](#) safety stocks for each order cycle.

Current order quantity

Now, let's figure out, how the first planned order of **96** units is calculated - see the first cell of the **Planned orders** row in the figure below.

Item code	On hand	To ship	To receive	Lead time, days	Order cycle, months	Min lot	Rounding	Safety stock	Purchase plan				Demand forecast				Projected inventory levels				
									Dec 2018	Jan 2019	Feb 2019	Mar 2019	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Dec 2018	Jan 2019	Feb 2019	Mar 2019	
89654-T	41	0	0	30	1			27	40	27	27	27	27	27	27	27	27	15	28	28	28
VR2156 200	590	0	0	30	1	1000	20	359	1000	0	1000	0	357	358	359	360	245	887	528	1168	
VB2166 150	54	0	0	30	1	100	20	43	100	100	0	100	43	43	43	43	12	69	126	83	
L2010	54	0	0	30	1		5	12	0	0	15	25	13	11	12	13	41	30	18	20	
H2510	69	0	0	30	1	1000	50	225	1000	0	0	1000	181	202	225	205	0	805	580	375	
C1020	15	0	0	30	1			11	21	10	11	10	13	12	11	10	2	11	10	11	
B05465-R	266	30	30	10	1	60	12	94	96	60	108	180	197	100	82	91	171	131	157	246	
565405 Beatles ...	1456	0	100	30	1	100	10	99	0	0	0	0	176	162	99	160	1365	1303	1204	1044	

Explain inventory calculation

Item: B05465-R — Basketball 29.5 (size 7) [seasonal model]

Location:

Safety stock: 94

Debt received from lower echelon (current/max): 0 / 0, accum. 0

Debt passed to upper echelon (current/max): 0 / 132

Current time: 0.0322581 Manufacture details

Simulation horizon: 6 months

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018	Jan 1, 2019	Jan 4, 2019	Jan 12, 2019	Jan 15, 2019	Jan 31, 2019	Feb 1, 2019	Feb 11, 2019	Feb 28, 2019	Mar 1, 2019	
Time fraction	0	0.365591	1	1.03226	1.12903	1.36559	1.48387	2	2.03226	2.36559	3	3.03226	
Events													
Demand forecast		197		100					82			91	
+ Manufacture forecast		D(LT)		D(OC)									
= Subperiod consumption		66	125	3	10	24		11	52	3	27	52	3
+ Safety stock			75	2	5	12				-9			
Write-offs													
Orders in transition													
Debt after arrivals													
Inventory + in transition	266	200	171	168	128	104	183	131	128	101	157	154	
+ Planned order arrivals		96				60				108			
= Projected inventory	266	296	171	168	128	164	183	131	128	209	157	154	
Planned orders	96			60					108			180	

Input / Calculated + - Co-dependent

Close

To determine the quantity to order currently (current date is **Dec 1, 2018** in the example), Streamline uses the same formula as shown in the [Understanding purchase plan and projected inventory levels](#) article:

$$\text{Current order} = \text{MAX}(\text{CEILING}(\text{MAX}(0, D(OC) + \text{Safety stock} + Qty_to_ship(LT+OC) - \text{Remaining}), \text{Rounding}), \text{Min lot}), (1)$$

$$\text{Remaining} = \text{MAX}(0, \text{MAX}(0, \text{On hand}) + Qty_to_receive(LT + OC) - D(LT)).$$

Where:

- $D(OC)$ is the order cycle demand starting from the lead time. $D(OC) = 125 + 3 + 10 + 24 = 162$.

As **Lead time = 10 days** that ends up on **Dec 12, 2018** and the **Order cycle is 1 month**, we take the **Subperiod consumption demand** starting from the end of **Dec 12, 2018** to the end of **Jan 12, 2019**. Since the dialog shows the dates the particular subperiod ends, we take the sum for the four subperiods starting from **Dec 31, 2018**.

- $D(LT)$ is the demand forecast for the **Lead time** period.

$D(LT) = \text{Demand_forecast_for_period} * \text{Lead time, days} / 30 = 197 * 10 / 30 = 66$. This value is shown in the **Subperiod consumption** row on the date when the first Streamline's planned order arrives.

- $Qty_to_ship(LT + OC)$ and $Qty_to_receive(LT + OC)$ are the item quantities that are to be shipped/received within the **Lead time** plus **Order cycle** period.

As we have a shipment of 30 units that hit this interval (see figure above), $Qty\ to\ ship = 30$.

- **Rounding** = 12, **Min lot** = 60, **On hand** = 266.

Now, let's replace the parameters with the values:

Current order = $\text{MAX}(\text{CEILING}(\text{MAX}(0, 162 + 94 + 30 - 200), 12), 60) = 96$,

Remaining = $\text{MAX}(0, \text{MAX}(0, 266) + 0 - 66) = 200$.

We highlighted the values that are used in the calculation of the **Current order** quantity with positive and negative signs via green and red borders correspondingly in the figure above.

Projected inventory levels

To find out how the future on-hand levels at the end of each period are calculated, we will use two rows of the dialog table, **Inventory + in transition** and **Planned order arrivals**.

If you set the cursor at any cell of the **Inventory + in transition** row, you'll see the cells taking part in the calculation of the value. This row calculates the remaining on-hand at the end of each subperiod based on the:

- on-hand level at the end of the previous subperiod; and
- item consumption, possible write-off, safety stock debt, and in transition quantity in the currently selected subperiod (see figure below).

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018
Time fraction	0	0.365591	1
Events	✉	🛒	🕒
Demand forecast		197	
+ Manufacture forecast			
= Subperiod consumption		66	125
+ Safety stock			75
Write-offs			
Orders in transition			
Debt after arrivals			
Inventory + in transition	266	200	171
+ Planned order arrivals		96	
= Projected inventory	266	296	171
Planned orders	96		

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Input / Calculated + - Co-dependent

In other words, this row shows the on-hand remaining at the end of each subperiod, however, except for the subperiods when Streamline's planned order arrivals happen. For those subperiods, it specifies the on-hand remaining not taking into account the arrival amount. These arrivals are shown in the **Planned order arrivals** row. The resulting projected inventory levels, which is the sum of the **Inventory + in transition** and **Planned order arrivals** rows, are indicated in the **Projected inventory** row. Consequently, the amounts at the end of each data aggregation period in this row make up the **Projected inventory levels** report (see figure below).

Item code	On hand	To ship	To receive	Lead time, days	Order cycle, months	Min lot	Rounding	Safety stock	Purchase plan				Demand forecast				Projected inventory levels				
									Dec 2018	Jan 2019	Feb 2019	Mar 2019	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Dec 2018	Jan 2019	Feb 2019	Mar 2019	
89654-T	41	0	0	30	1			27	40	27	27	27	27	27	27	27	27	15	28	28	28
VR2156 200	590	0	0	30	1	1000	20	359	1000	0	1000	0	357	358	359	360	360	245	887	528	1168
VB2166 150	54	0	0	30	1	100	20	43	100	100	0	100	43	43	43	43	43	12	69	126	83
L2010	54	0	0	30	1		5	12	0	0	15	25	13	11	12	13	13	41	30	18	20
H2510	69	0	0	30	1	1000	50	225	1000	0	0	1000	181	202	225	205	205	0	805	580	375
C1020	15	0	0	30	1			11	21	10	11	10	13	12	11	10	10	2	11	10	11
B05465-R	266	30	30	10	1	60	12	94	96	60	108	180	197	100	82	91	91	171	131	157	246
565405 Beatles ...	1456	0	100	30	1	100	10	99	0	0	0	0	176	162	99	160	160	1365	1303	1204	1044

Explain inventory calculation

Item: B05465-R — Basketball 29.5 (size 7) [seasonal model]

Location:

Safety stock: 94

Debt received from lower echelon (current/max): 0 / 0, accum. 0

Debt passed to upper echelon (current/max): 0 / 132

Current time: 0.0322581 Manufacture details

Simulation horizon: 6 months

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018	Jan 1, 2019	Jan 4, 2019	Jan 12, 2019	Jan 15, 2019	Jan 31, 2019	Feb 1, 2019	Feb 11, 2019	Feb 28, 2019	Mar 1, 2019
Time fraction	0	0.365591	1	1.03226	1.12903	1.36559	1.48387	2	2.03226	2.36559	3	3.03226
Events	✉	🛒	🕒	✉	🛒	🕒	🛒	🕒	✉	🛒	🕒	✉
Demand forecast		197		100					82			91
+ Manufacture forecast												
= Subperiod consumption		66	125	3	10	24	11	52	3	27	52	3
+ Safety stock			75	2	5	12				-9		
Write-offs												
Orders in transition					-30		30					
Debt after arrivals												
Inventory + in transition	266	200	171	168	128	104	183	131	128	101	157	154
+ Planned order arrivals		96				60				108		
= Projected inventory	266	296	171	168	128	164	183	131	128	209	157	154
Planned orders	96			60					108			180

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Input / Calculated + - Co-dependent

Close

Purchase plan

In the first section of this example, we showed how Streamline calculates the **Current order quantity**. In this section, we explain how all the other order recommendations in the purchase plan are determined.

To calculate the subsequent order amounts, Streamline uses almost the same formula as formula (1):

$$\mathbf{Subsequent\ order}_i = \text{MAX}(\text{CEILING}(\text{MAX}(0, D(OC_i) + \text{Safety\ stock}_i + \text{Qty_to_ship}(OC_i) - \text{Qty_to_receive}(OC_i) - \text{Remaining}_{i-1}), \mathbf{Rounding}), \mathbf{Min\ lot}), i = 2, \dots (2)$$

where:

- i - the serial number of the order cycle period for which the quantity to order is calculated;
- $D(OC_i)$ - the demand during the i -th order cycle period;
- Safety\ stock_i - the calculated safety stock for the i -th order cycle period;
- $\text{Qty_to_ship}(OC_i)$ - the amount of inventory that a to be shipped within the i -th order cycle period;
- $\text{Qty_to_receive}(OC_i)$ - the amount of inventory that a to be received within the i -th order cycle period;
- Remaining_{i-1} - the remainig on-hand at the end of the previous ($i - 1$) order cycle period.

The values for all of these parameters can be directly found in the dialog table. The most interesting of them is the Remaining_{i-1} , $i = 2, \dots$. As we said in the description of the dialog, the purpose of the **Inventory + in transition** is to calculate these remainings. The figure below highlights the values of the parameters that are used to get the amount for the second order.

Item code	On hand	To ship	To receive	Lead time, days	Order cycle, months	Min lot	Rounding	Safety stock	Purchase plan				Demand forecast				Projected inventory levels			
									Dec 2018	Jan 2019	Feb 2019	Mar 2019	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Dec 2018	Jan 2019	Feb 2019	Mar 2019
89654-T	41	0	0	30	1			27	40	27	27	27	27	27	27	27	15	28	28	28
VR2156 200	590	0	0	30	1	1000	20	359	1000	0	1000	0	357	358	359	360	245	887	528	1168
VB2166 150	54	0	0	30	1	100	20	43	100	100	0	100	43	43	43	43	12	69	126	83
L2010	54	0	0	30	1		5	12	0	0	15	25	13	11	12	13	41	30	18	20
H2510	69	0	0	30	1	1000	50	225	1000	0	0	1000	181	202	225	205	0	805	580	375
C1020	15	0	0	30	1			11	21	10	11	10	13	12	11	10	2	11	10	11
B05465-R	266	30	30	10	1	60	12	94	96	60	108	180	197	100	82	91	171	131	157	246
565405 Beatles ...	1456	0	100	30	1	100	10	99	0	0	0	0	176	162	99	160	1365	1303	1204	1044

Explain inventory calculation

Item: B05465-R — Basketball 29.5 (size 7) [seasonal model]

Location:

Safety stock: 94

Debt received from lower echelon (current/max): 0 / 0, accum. 0

Debt passed to upper echelon (current/max): 0 / 132

Current time: 0.0322581 Manufacture details

Simulation horizon: 6 months

	Nov 30, 2018	Dec 12, 2018	Dec 31, 2018	Jan 1, 2019	Jan 4, 2019	Jan 12, 2019	Jan 15, 2019	Jan 31, 2019	Feb 1, 2019	Feb 11, 2019	Feb 28, 2019	Mar 1, 2019
Time fraction	0	0.365591	1	1.03226	1.12903	1.36559	1.48387	2	2.03226	2.36559	3	3.03226
Events												
Demand forecast		197		100					82			91
+ Manufacture forecast								D(OC)				
= Subperiod consumption		66	125	3	10	24	11	52	3	27	52	3
+ Safety stock			75	2	5	12	← Safety stock →			-9		
Write-offs							Qty to receive					
Orders in transition					-30		30					
Debt after arrivals						Remaining						
Inventory + in transition	266	200	171	168	128	104	183	131	128	101	157	154
+ Planned order arrivals		96				60				108		
= Projected inventory	266	296	171	168	128	164	183	131	128	209	157	154
Planned orders	96			60					108			180

Input / Calculated + - Co-dependent

We have intentionally set Streamline to determine safety stock as the demand for the given number of future periods (1 month in our example) to be able to show you how the order amount is calculated.

- $D(OC_2) = 11 + 52 + 3 + 27 = 93$;
- $Safety\ stock_2 = Safety\ stock_1 - 9 = 94 - 9 = 85$;

Now, let's replace the parameters with the values:

Subsequent order₂ = $MAX(CEILING(MAX(0, 93 + 85 - 30 - 104), 12), 60) = MAX(CEILING(44, 12), 60) = 60$.

This example is pretty simplified as it doesn't have imported:

- batches – the Write-offs row of the table is empty; and
- BOMs or distribution centers – Debt after arrivals row of the table is empty.

To calculate the ordered quantities correctly in these more generic cases, the formulas (1) and (2) should account for the values from the mentioned rows.

From: <https://gmdhsoftware.com/documentation-sl/> - Streamline User Guide

Permanent link: <https://gmdhsoftware.com/documentation-sl/explain-inventory-dialog>

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