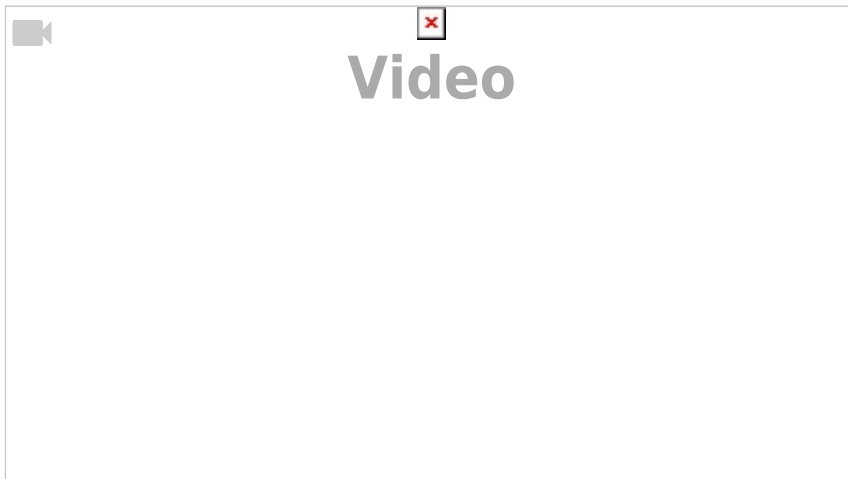# 5. 3PL invoicing

1. Configurations for the 3PL invoicing

Before starting the 3PL invoicing flow, go through the following steps:

1.1. Create business partners

Because a 3PL partner can be a customer and a vendor at the same time, in order to handle 3PL partners, create multiple business partner master records for one 3PL partner.

- Customer: Create a customer master record for sales deliveries.
- Vendor: Create a vendor master record for goods receipt PO's.
- Invoicing customer: Create a customer master record for 3PL invoices.

For the 3PL invoicing process, link the customer(s) to the vendor and the vendor(s) to the invoicing customer.

The vendor has to be entered into the Linked Business Partner field under the Produmex tab in the 'Business Partners Master Data' window of the customer.

Similarly, the invoicing customer has to be entered into the Linked Business Partner field of the vendor.

The linking mechanism allows to link multiple customers to the same vendor and multiple vendors to the same invoicing customer.

1.2. Set an owner to the item

To define the ownership of an item, use the 'Preferred vendor' field under the 'Purchasing Data' tab in the 'Item Master Data' window. Because in this field only vendor type business partners can be selected, add the Vendor partner.

> It is not possible to set more than one owner to an item. That is why you must add a new item for each owner even though it is the same item.

1.3. Set the 3PL price(s) to the item

Open the Item Master Data window. Under the Produmex tab, go to the 3PL tab. At this tab the item's 3PL prices can be defined.

The 3PL inbound price will be used when the price calculation is based on the inbound item quantity. The 3PL outbound price will be used when the price calculation is based on the outbound item quantity.

For further information about the 3PL prices see: 3.1.3. Produmex 3PL Tab

1.4. Set the 3PL extension parameters

Set the 3PL extension parameters at the 3PL controller.
For further information about the settings in the 3PL invoicing controller click here.

1.5. Create 3PL item(s)

Create 3PL invoicing item(s) for the 3PL service. The 3PL invoicing items cannot be inventory items. The 3PL invoice will be created based on these item(s) and will only contain 3PL invoicing items.

1.6. Define a 3PL item to the 3PL price calculation

Open the 'Organizational Structure' window from the Produmex module. At the company level, go to the '3PL Invoicing' tab. Select a 3PL price calculation type, and choose a 3PL item to assign to it from the list. Only non-inventory items will be displayed in the 3PL item list. After assigning a 3PL item, check the 'Is active?' box.

For further information about 3PL price calculation types see: 5.1.11. 3PL invoicing

Additional settings for the *Storage bin location usage per location type* price calculation:

1.7. Create location types

Add location types at the Produmex Location Types window.
For further information about the location types see: 3.2.3.28. Location types (PMX_LOTY)

1.8. Set the location type

Set the location type for the bins where items are stored during the 3PL process. Location types are used when the price calculation is based on the storage bin location usage.

2. 3PL invoicing process

When activating the "3PL Invoicing" menu, the "3PL invoicing selection criteria" form opens. There, you can select an invoicing period type and an invoicing period according to the selected period type. Invoicing period types:

- Weekly: from the dropdown menu, select the year and the week. By default the previous week will be displayed.
- Monthly: from the dropdown menu, select the year and the month. By default the previous month will be displayed.
- Ad-hoc: define the period by entering dates the "date from" and the "date to" fields.

Note: It is possible to select a period which not ended yet, but a warning window will pop up after clicking on the 'Generate Invoices' button.

Then you can load 3PL invoicing customers that still need to be invoiced for the selected period. These are the customers who meet both of the following conditions:

- are the linked partner of another business partner
- have no A/R invoice or draft document with the "3PL Period" user-defined field set to the first date of the selected period

Select a 3PL invoicing partner from the list. When none of the partners is selected, the system will generate an invoice for each partner on the list. Different generation types can be selected:

- Add mode: the invoice can be modified manually before being added
- Draft: the invoice can be saved as a draft
- Create: the invoice will be created immediately

The 3PL invoices consist of a certain amount of prices, in separate lines, all calculated differently. The created 3PL invoice is linked to the invoicing period by the '3PL Period' UDF. This UDF contains the starting date of the invoicing period. Business partners who already have an invoice for the same starting invoicing date will not be listed in the 3PL invoicing selection criteria window.

2.1. Inbound document count

The quantity is the number of goods receipt PO's with the Doc Date included in the invoicing period. The unit price is the invoicing item's price, for the price list of the invoicing customer.

2.2. Inbound line count

The quantity is the total number of goods receipt PO lines belonging to goods receipt PO's with the Doc Date included in the invoicing period.
The unit price is the invoicing item's price, for the price list of the invoicing customer.

2.3. Inbound item quantity

For each goods receipt PO line, a price is calculated that is equal to the item's 3PL inbound price (which can be set up on the Produmex tab of the item master data) multiplied by the received quantity (in inventory UoM). The inbound item quantity price is the total of all these prices for ¬all goods receipt PO's in the invoicing period.
On the 3PL invoice, the quantity for that item is always 1, and the total price is set as unit price.

2.4. Outbound document count

The quantity is the number of sales deliveries with the Doc Date included in the invoicing period. The unit price is the invoicing item's price, for the price list of the invoicing customer.

2.5. Outbound line count

The quantity is the total number of delivery lines belonging to sales deliveries with the Doc Date included in the invoicing period.
The unit price is the invoicing item's price, for the price list of the invoicing customer.

2.6. Outbound item quantity

For each sales delivery line, a price is calculated that is equal to the item's 3PL outbound price (which can be set up on the Produmex tab of the item master data) multiplied by the delivered quantity (in inventory UoM). The outbound item quantity price is the total of all these prices for ¬all sales deliveries in the invoicing period.

On the 3PL invoice, the quantity for that item is always 1, and the total price is set as unit price.

2.7. Storage bin location usage per location type

For each location type for which active 3PL settings have been defined, the algorithm calculates the bin location usage of each supplier's stocks on this location type, day per day. The stock level of every day is calculated from the current inventory and the inventory history.

For each day, the algorithm calculates the list of locations that should be invoiced for storage of the supplier's items:

- If 'Daily used number of locations' is active, then all bin locations that have contained any item of the supplier will be added to the list
- If 'Daily final stock' is active, then all bin locations that contain any item of the supplier will be added to the list

The storage price of each bin location is defined in the price list of the item linked to its location type, and the total storage price for the day is the sum of the bin location prices. If a bin location has no location type, then its price is zero.

If the shortest invoiceable duration is 'Week' or 'Month', then if a location is used on any day of the week/month, it is considered as used during the whole week/month, and its daily storage price is then multiplied by the corresponding number of days.

On the 3PL invoice, one separate line is added for each location type that takes part into the calculation.