

inventory_management_magento2

version

BoostMyShop

March 29, 2017

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Inventory Management for Magento2

1. Overview

Inventory Management extension for Magento2 features a full Warehouse Management System in Magento, bringing the following features :

- Multiple warehouses support
- Stock movement support
- Warning & ideal stock levels support
- Mass stock Editor, Stock Helper
- Stock reservation for pending orders

2. Installation

First Installation

To install a boostmyshop magento2 extension on your platform, process the following steps :

- Download zip archive from your boostmyshop customer account
- Upload files on your server : once uploaded, module must be in directory `app/code/BoostMyShop/`
- Connect on your server via ssh and run the following commands :

```
php bin/magento setup:upgrade
rm -rf var/generation
php bin/magento module:enable BoostMyShop_AdvancedStock
php bin/magento setup:di:compile
php bin/magento setup:static-content:deploy
```

The previous commands ensure the module installation, next, you must run additional commands to ensure that the DB is up to date :

```
php bin/magento bms_advancedstock:refresh_quantity_to_ship
php bin/magento bms_advancedstock:refresh_sales_history
php bin/magento bms_advancedstock:refresh_sellable_quantity
```

Once everything is done, go back in Magento, select menu system > web setup wizard, then click on the component manager button : you should see the new extension here

Upgrade

The upgrade process is exactly the same as the installation process

Disable extension

To disable an extension, select menu system > web setup wizard, then click on the component manager button Find the extension you want to disable and select "disable" in the "Actions" column

3. Concepts

This page explains the main concept for the inventory management extension.

First of all, this extension uses every existing Magento features about the inventory management, and extend them. So you can still use the settings available in the product view, under the "advanced inventory" tab.

Warehouses

The inventory management extension supports multiple warehouses : by default, after installation, one warehouse already exists. This default warehouses is technically required by the extension, can not be deleted and EVERY products created in magento will be associated to that warehouse (with a quantity of 0 by default). You can rename that first warehouse, and we do encourage you to use it as your main warehouse.

One warehouse can contain products : several information are available at the product / warehouse level :

- Physical Stock level : this is the quantity in the warehouse
- Qty to ship : this is the quantity to ship for opened sales order
- Qty available : physical quantity minus the quantity to ship
- Shelf location : location of the product in the warehouse

The best way to edit product / warehouse details is to use the mass stock editor but this information are also available in the "Inventory management" tab in the product view.

Stock movements

Each time the physical stock level changes in one warehouse, a stock movement MUST be created.

Stock movements are automatically created in some cases :

- During order shipment
- During purchase order delivery (if you use our Procurement extension)
- If you manually change the stock level in the mass stock editor, a "System" stock movement is created.

It is mandatory that the physical quantity matches to the sum of the stock movement, if not, you may experience unexpected behaviours.

So when you need to update a physical stock level (for any reason), the best practice is to go within the product view, select the "Inventory Management" tab and create the stock movement.

A stock movement is composed of the following information:

- **From**: this is the warehouse where the product comes from: it can be empty if the product comes from a warehouse that you do not manage (from a supplier for a PO receiving, or from a customer for return)
- **To** : this is the warehouse where the product goes to : it can be empty if the warehouse is out of your control (when you ship an order to a customer for instance)
- **Quantity** : the quantity to move. This quantity will be decreased for the "from" warehouse, and increased for the "target warehouse. The quantity is always positive.
- **Category** : select a category. This is for information only, it has no impact on the stock movement
- **Comment** : required, you must explain why you create the stock movement.

Sellable quantity

Magento supports the sellable quantity at the website level, so our extension fits to this design. To know the sellable quantity for one product, you must go within the product view, and select "Inventory management" tab : you have the quantity available for sale per website in the first grid "Quantity sellable per website".

The sellable quantity for one website is updated this way :

- Use every warehouses for which the "Use for sales" option is enabled in the "Warehouse routing" screen (this is configurable per website)
- Then, the system calculates the sum of the available quantity for each warehouse, and update the total sellable quantity at the website level.

This very flexible engine allows to support different scenarios :

- Sellable quantity on your website can be the sum of your warehouse + a physical store, but the sellable quantity in the store is only the quantity in the "shop" warehouse

- Sellable quantity can be the sum of your warehouse + a drop shipping warehouse
- If you create a "RMA" or "Defective" Warehouse, do NOT enable the "Use for sales" option !

Once everything is configured, inventory management will update the sellable quantity when :

- A new order is placed
- Physical quantity in one warehouse changes

Warning / Ideal stock levels

The warning & ideal stock levels are used to raise notifications when a product stock level goes low. Those levels are configurable at the warehouse level.

The concept is the following : when the quantity AVAILABLE for one product in one warehouse goes BELOW the warning stock level, then a notification is raised to reach the ideal stock level, here are some examples :

Available Qty	Warning stock level	Ideal stock level	Notification
10	15	20	Buy 10
10	5	8	Buy 0
10	15	15	Buy 5

To get a quick view about the products to reorder, use the stock helper screen.

Sales order item routing

When a new order is placed, the extension will assign a warehouse to each order item : this is the warehouse from which the product will be dispatched : this flexible engines allows to get an order dispatched from different location, depending of the stock levels in warehouses, or of the client location.

You can check or change the warehouses associated to order items in the order view (inventory tab).

The rule configuration for the warehouse routing can be defined in the "Warehouse routing" screen.

In the first versions, 2 rules are available :

- **Warehouse with stock, order by priority** : in that case, the system browse the warehouses having the "Use for shipments" option enabled, sorted by priority (1 => 9999). Then, it will use the first warehouse that has enough available stock to dispatch the order item
- **Always priority one** : in that case, order items are always assigned to the warehouse having the "Use for shipments" option enabled AND a priority of 1.

Warning

Warning : if you change that configuration, it will apply ONLY for future orders, not for existing ones.

Stock reservation

The Inventory extension includes a mechanism to reserve inventory (if available) when an order is placed, here is how it works :

- Let's consider a product P in warehouse W, with a physical quantity of 2 : at this stage the available quantity is 2. Backorders are enabled for this product
- A customer place an order with 1 product P, the order item is assigned to warehouse W. Then, the system checks if product P is available in the warehouse W: yes it is, so it reserve the product for the order, and the product available quantity becomes 1.
- Another customer places the same order, product is also reserved for this order, and the available quantity becomes 0

4. Configuration

- As backorders are enabled in magento, a third customer can purchase the same product. However, when the order is placed, the system can not find any available product, and then the quantity is NOT reserved for this third order.
- A few days after, you receive a purchase order and increase the stock to 10 : at this moment, the system looks for order pending this product, and then, reserve the product for this third order.

This way, you always know what orders are fulfillable or not, and also what quantity of your inventory is reserved for future shipment.

Note

Note : if an order is cancelled, the product is released and assigned to another pending order.

4. Configuration

Magento Configuration

The inventory management extension does not change the way magento handles inventory, but here are a few points / thoughts :

- You can still use options available in store > configuration > catalog > inventory, they are all compatible with our extension
- You can not have negative quantities anymore in Magento, as it now contains the quantity sellable, so in the worst case (for products not in stock allowing back orders), the magento quantity will be 0

Inventory management configuration

Settings are available in Stores > Configuration > Boostmyshop > Inventory Management

- **Barcode attribute** : Select here the product attribute that contains the barcode (ean or upc)

Pending Orders

- **Pending orders statuses** : Select order statuses that you consider as "opened orders" : opened orders will reserve stock (if available) and update the quantity to ship. If you change those settings, run `php bin/magento bms_advancedstock:refresh_quantity_to_ship` command line

Stock levels

- **Default value for Warning stock level** : this is the default value for the warning stock level for product that do not have a custom value.
- **Default value for Ideal stock level** : this is the default value for the ideal stock level for product that do not have a custom value.
- **Weeks for sales history range #X** : number of weeks to consider to update the sales history statistics

Front end

- **Display stocks** : If enable, a new tab is displayed in the product view on the front side, with the summary of the stock levels in the warehouses. Note : only warehouses having "Display on front" enabled are visible

Stock Discrepancies

- **Stock discrepancy report** : display the report with stock discrepancies.

5. Warehouses Management

You can create warehouses for every product container, relevant cases are :

- A building
- A shop

4. Configuration

- A supplier
- A shelf in the warehouse that contains defective products
- For products reserved (for instance for a show room, or for internal usage)

Warehouse Settings

Warehouses management is available under the "Warehouses" menu : from here, you can edit warehouse details or create a new warehouse.

You can also delete a warehouse, except the default warehouse (#1)

General tab

- **Primary** :
- **Display on front** : if enabled, the available quantity for this warehouse will be displayed on the website, in the product view (you must also enable this feature in stores > configuration > boostmyshop > inventory management > frontend)
- **Open hours** : displayed on the website
- **Address** : displayed on the website

Products tab

This tab summarizes the stock levels for products in the warehouse (please read the concept entry in this documentation to understand the different stock levels).

Note : you can export this list to a csv file, using the "Export" button above the grid.

Orders to ship

This grid displays order items to be shipped from this warehouse. Once an order is shipped, order items are removed from this grid.

Import

Use this feature to update stock levels in the warehouse, the file format specifications is explained in the tab.

Warehouse Routing

These screen is used to configure the system and decide how the warehouses are used.

There are 2 important roles for a warehouse :

- Stocks in the warehouse are available for sales on the website, and are used to calculate the sellable quantity
- Warehouse is used to dispatch order item

Both roles are configurable at the website level (store and store view levels are NOT available).

If you want to use a warehouse stock levels to sell on a website, you must enable the "Use for sales" option for the website / warehouse. Then, the quantity available for sales on the website will be the sum of the quantity available in the warehouses having "use for sales" enabled.

To select the warehouse to dispatch an order item, the configuration is a bit more complex: you must first enable the option "Use for shipments" for warehouses that can dispatch, and then configure the method and the priority :

- **Warehouse with stock, order by priority** : in that case, the system browse the warehouses having the "Use for shipments" option enabled, sorted by priority (1 => 9999). Then, it will use the first warehouse that has enough available stock to dispatch the order item
- **Always priority one** : in that case, order items are always assigned to the warehouse having the "Use for shipments" option enabled AND a priority of 1.

Here is an example of warehouses configuration. In that example, we do have 2 websites :

- Main website is your online website.
- Paris shop is a store, on the "Champs Elysees" in Paris

6. Stock Helper

Warehouse Routing

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Save

Website	Store	Shipping warehouse selection	Warehouse Default	Warehouse Dropship	Warehouse Defective	Warehouse Paris Shop
Global		Warehouse with stock, order by priority ▾	Use for sales: Yes ▾ Use for shipment: Yes ▾ Priority: 1 ▾	Use for sales: Yes ▾ Use for shipment: Yes ▾ Priority: 2 ▾	Use for sales: No ▾ Use for shipment: No ▾ Priority: 10 ▾	Use for sales: Yes ▾ Use for shipment: No ▾ Priority: 1 ▾
Main Website		<input checked="" type="checkbox"/> Use configuration from Global	<input checked="" type="checkbox"/> Use configuration from Global	<input checked="" type="checkbox"/> Use configuration from Global	<input checked="" type="checkbox"/> Use configuration from Global	<input checked="" type="checkbox"/> Use configuration from Global
Paris Shop		<input type="checkbox"/> Use configuration from Global Always priority one ▾	<input type="checkbox"/> Use configuration from Global Use for sales: No ▾ Use for shipment: No ▾ Priority: 10 ▾	<input type="checkbox"/> Use configuration from Global Use for sales: No ▾ Use for shipment: No ▾ Priority: 10 ▾	<input type="checkbox"/> Use configuration from Global Use for sales: No ▾ Use for shipment: No ▾ Priority: 10 ▾	<input type="checkbox"/> Use configuration from Global Use for sales: Yes ▾ Use for shipment: Yes ▾ Priority: 1 ▾

- For the main website, the quantity sellable is the SUM of quantity available in warehouse default, drop ship and paris shop
- For the Paris shop website, the quantity sellable is ONLY the quantity available in the paris shop website

When an order is placed on the "Paris shop" website, it is only dispatched from the "Paris shop" warehouse (it is the only one that has the "Use for sales" option enabled, and it is priority 1

When an order is placed on the main website, the systems checks if there are stocks in the default warehouse, if so it associated the default warehouse to the order item. If there is no stock in the default warehouse, then it checks the drop ship warehouse. If there is no stock at all, then the warehouse with the priority 1 will be used (default in that case)

Note : an order placed on the main website will NEVER be dispatched from the paris shop, even if we use that warehouse to calculate the sellable quantity. If the product is only available in the paris shop, you will have to transfer the stock to the default warehouse to dispatch the order.

6. Stock Helper

The stock helper is designed to help you to optimize your stock levels and update the warning & ideal stock levels.

Note

please read the "concepts" section to understand the warning & ideal stock levels

The stock helper displays the following columns :

- **sku / product** : product information. There can be several rows for the same product if it is associated to several warehouses
- **warehouse** : the warehouse
- **qty in warehouse** : the physical quantity in the warehouse
- **available quantity** : the quantity available for sales, it is equal to the physical quantity minus the quantity to ship for sales order
- **Shipped for last XX weeks** : this is the quantity of the product shipped for the last X weeks. You can configure the week ranges to use in store > configuration > boostmysshop > inventory management > sales history. The statistics are not automatically updated, a command line is available to do it (you can crontab it if you want to update statistics every days) :

7. Product view

```
php bin/magento bms_advancedstock:refresh_sales_history
```

- **warning stock level / ideal stock level** : the warning & ideal stock level for the product. By default it will use the default values (configurable in store > configuration > boostmyshop > inventory management). You can apply a custom value for one product unticking the checkbox and filling a custom value
- **Qty to order** : this is the quantity you have to order to vendor to ship pending sales order AND reach the ideal stock levels.

Note

You can export the stock helper data using the "export" button above the grid.

7. Product view

Inventory management adds a new Tab "Inventory management" in the product view :

This tab summarizes all inventory details for the current product

- **Quantity sellable per website** : this is the quantity sellable for each website. This quantity is the sum of the quantity available in the warehouse having the "Use for sales" option enabled in the warehouse routing screen.
- **Warehouses** : this is the summary of the stock levels in the different warehouses. (please read the concepts section to understand the different information)
- **Orders to ship** : this is the opened orders for the current product. You can also see from what warehouse the order will be dispatched
- **Stock movement history** : this is the list of every stock movements related to the current product
- **New stock movement** : allows to create a new stock movement (please read the concepts section to get more details about the stocks movements)

8. Order view

A new tab is available in the order view : this is the "inventory" tab.

This tab lists every order products, and give details about the dispatch :

- **Quantity to ship** : this is the quantity remaining to ship. If an order item is cancelled or refunded or shipped, it will go to 0
- **Quantity reserved** : this is the quantity reserved for this order in the warehouse (please read the concepts section to understand about the reservation process)
- **Warehouse** : warehouse from which the order item is dispatched
- **Shelf location** : product location in the warehouse
- **Qty in the warehouse** : available quantity and physical quantity for this product in the warehouse

From here, you can change the warehouse : select another warehouse in the drop down menu and click on the "save" button

9. Mass stock editor

The mass stock editor is designed to easily update inventory level and shelf location for products. It contains the following columns :

- **SKU / Product / Status** : Product information
- **Qty in the warehouse** : physical quantity in the warehouse.
- **Qty to ship** : quantity to ship in pending orders.

99. Technical resources

- **Available quantity** : physical quantity minus quantity to ship
- **Shelf location** : product location in the warehouse

To update values here, change the value in the textbox and click on the save button.

Note

if you manually change the stock level, there will discrepancy between the sum of the stock movement and the quantity stored. To avoid this problem, the extension will automatically create a stock movement to make sure that the sum of the stock movement matches to the new quantity. This stock movement will be titled "From mass stock editor"

99. Technical resources

Command lines

Inventory management comes with a few command lines. Each one can be used in console mode, using "php bin/magento cmd", where "cmd" is to be replaced with one of the command below

- **bms_advancedstock:check_stock_discrepancies** : this command runs a report to check stock errors. The report is then available in stores > configuration > boostmyshop > advanced inventory > stock discrepancies. You can also execute the command with the --fix option, then it will attempt to fix the errors
- **bms_advancedstock:fix_reservation** : this command checks if there are reservation problems (products over reserved, or sub reserved)
- **bms_advancedstock:refresh_quantity_to_ship** : this command updates the quantity to ship for warehouse products.
- **bms_advancedstock:refresh_sales_history** : refresh the sales history statistics for product. The statistics are NOT updated automatically, you must create a cron task to automate that update
- **bms_advancedstock:refresh_sellable_quantity** : this command updates the sellable quantity in magento, based on the quantity available in the warehouses