

# End-User Course

## Inventory and Order Management

# Inventory Replenishment 2025 R1

Revision: 4/17/2025

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# Copyright

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# How to Use This Course

This course introduces you to the Acumatica ERP replenishment functionality based on a set of examples that illustrate replenishment processes in a midsize company. The course consists of lessons that guide you step by step through the examples and explanations of the process flow in Acumatica ERP.

## What Is in This Guide

The guide includes the *Company Story* topic, implementation activities, process activities, and the *Additional Materials* topics. The *Company Story* topic explains the organizational structure of the company preconfigured in the *U100* dataset, as well as the company's business processes and requirements. The primary content of the guide is configuration lessons and process lessons. The *Additional Materials* topics provide an example of replenishment parameter calculation and settings needed for the configuration of replenishment.

Each implementation activity of the course is dedicated to a particular implementation scenario and consists of steps that you complete.

Each process activity of the course is dedicated to a particular user scenario and consists of processing steps that you complete.



The activities are independent and can be completed in any order.

## Which Training Environment You Should Use

All lessons of the course should be completed in an instance of Acumatica ERP 2025 R1 with the *U100* training dataset preloaded; this dataset provides the predefined settings and entities you will need as you complete the activities of this course.

You or your system administrator should prepare an instance of Acumatica ERP 2025 R1, as described in the *How to Create a Tenant with the U100 Dataset* section below.

## What Is in a Configuration Lesson

A *configuration lesson*—that is, a lesson dedicated to the configuration of system settings and entities—provides a brief overview of the required system configuration and a description of other settings that could affect the configuration workflow.

Each configuration lesson includes at least one implementation activity that you have to complete in your Acumatica ERP instance to configure the core system settings or to prepare system entities.

## What Is in a Process Lesson

A *process lesson*—that is, a lesson dedicated to the performing of a particular business process—includes a brief user scenario and a description of the process workflow. It can also include process diagrams that illustrate the user scenario supported by this process. The lesson also provides a brief overview of the settings that need to be specified and the entities that need to be prepared in the system before you start to perform this business process.

Each process lesson includes at least one process activity that you have to complete in your Acumatica ERP instance to learn how to perform the described business process.

## What Is in Additional Materials

In the *Additional Materials* part of the guide, you can find the example of replenishment parameter calculation and implementation checklists related to the processes and scenarios covered in the corresponding lessons of the guide.

## What the Documentation Resources Are

The complete Acumatica ERP documentation is available on <https://help.acumatica.com/> and is included in the Acumatica ERP instance. While viewing any form used in the course, you can click the **Open Help** button in the top pane of the Acumatica ERP screen to bring up a form-specific Help menu; you can use the links on this menu to quickly access form-related information and activities and to open a reference topic with detailed descriptions of the form elements.

## How to Create a Tenant with the U100 Dataset

Before you complete this course, you need to add a tenant with the *U100* dataset to an existing Acumatica ERP instance. You will then prepare the tenant for completing the activities. To complete this preparation, perform the following instructions:

1. Go to [Amazon Storage](#).
2. Open the folder that corresponds to the version of your Acumatica ERP instance.
3. In this folder, open the **Snapshots** folder and download the *u100.zip* file.
4. Launch the Acumatica ERP instance and sign in.
5. Open the [Tenants](#) (SM203520) form and click **Add New Record** on the form toolbar.
6. In the **Login Name** box, type the name to be used for the tenant.
7. On the form toolbar, click **Save**.



When you create a system tenant, you may be signed out after its creation, depending on how many non-System tenants your Acumatica ERP instance already had:

- If you started with one non-System tenant (to which you are signed in) and you create a new one, the system signs you out to switch from single-tenant mode to multitenant mode.
- If the instance had multiple non-System tenants and you create another, it is already in multitenant mode. Instead of being signed out, you wait until the system completes the operation and then proceed.

8. On the **Snapshots** tab, click **Import Snapshot**.
9. In the **Upload Snapshot Package** dialog box, select the *u100.zip* file, which you have downloaded, and click **Upload**.

The system uploads the snapshot and lists it on the **Snapshots** tab of the [Tenants](#) form.

10. Open the [Apply Updates](#) (SM203510) form and click **Schedule Lockout**.
11. In the **Schedule Lockout** dialog box, click **OK**.
12. Open the [Tenants](#) form again.
13. On the form toolbar, click **Restore Snapshot**.
14. If the **Warning** dialog box appears, click **Yes**.
15. In the **Restore Snapshot** dialog box, make sure that the correct snapshot package is being uploaded and click **OK**. The system will restore the snapshot and sign you out.
16. Sign in to the tenant that you have just created.

17. Open the [Apply Updates](#) form again.
18. On the form toolbar, click **Stop Lockout**.

## Which Credentials You Should Use

You complete all the lessons of this course by using the *parker* username and the *123* password.

## Which License You Should Use

For the educational purposes of this course, you use Acumatica ERP under the trial license, which does not require activation and provides all available features. For the production use of this functionality, you have to activate the license your organization has purchased. Each particular feature may be subject to additional licensing; please consult the Acumatica ERP licensing policy for details.

# Company Story

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This topic explains the organizational structure and operational activity of the company you will work with during this training.

## Company Structure

The SweetLife Fruits & Jams company is a midsize company located in New York City. The company consists of the following branches:

- SweetLife Head Office and Wholesale Center: This branch of the company consists of a jam factory and a large warehouse where the company stores fruit (purchased from wholesale vendors) and the jam it produces. Warehouse workers perform warehouse operations by using barcode scanners or mobile devices with barcode scanning support.
- SweetLife Store: This branch has a retail shop with a small warehouse to which the goods to be sold are distributed from the company's main warehouse. This branch is also planning on selling goods via a website created on an e-commerce platform to accept orders online. The e-commerce integration project is underway.
- SweetLife Service and Equipment Sales Center: This branch is a service center with a small warehouse where juicers are stored. This branch assembles, sells, installs, and services juicers, in addition to training customers' employees to operate juicers.

## Operational Activity

The company has been operating starting in the 01-2024 financial period. In November 2024, the company started using Acumatica ERP as an ERP and CRM system and migrated all data of the main office and retail store to Acumatica ERP. The equipment center began its operations in 01-2025 in response to the company's growth.

The base currency of the company and its subsidiaries is the US dollar (USD). All amounts in documents and reports are expressed in US dollars unless otherwise indicated.

## SweetLife Company Sales and Services

Each SweetLife company's branch has its own business processes, as follows:

- SweetLife Head Office and Wholesale Center: In this branch, jams and fruit are sold to wholesale customers, such as restaurants and cafes. The company also conducts home canning training at the customer's location and webinars on the company's website.
- SweetLife Store: In the store, retail customers purchase fresh fruit, berries, and jams, or pick up the goods they have ordered on the website. Some of the goods listed in the website catalog are not stored in the retail warehouse, such as tropical fruits (which are purchased on demand) and tea (which is drop-shipped from a third-party vendor).
- SweetLife Service and Equipment Sales Center: This branch assembles juicers, sells juicers, provides training on equipment use, and offers equipment installation, including site review and maintenance services. The branch performs short-term service provision.

The company has local and international customers. The ordered items are delivered by drivers using the company's own vehicle. Customers can pay for orders by using various payment methods (cash, checks, or credit cards).

## Company Purchases

The company purchases fruits and spices from large fruit vendors for sale and for jam production. For producing jams and packing jams and fruits, the company purchases jars, labels, and paper bags from various vendors. For

the internal needs of the main office and store, the company purchases stationery (printing paper, pens, and pencils), computers, and computer accessories from various vendors.

The company also purchases juicers and juicer parts from large juicer vendors, and it either purchases the installation service for the juicers or provides the installation service on its own, depending on the complexity of the installation.

# Lesson 1: Configuring Replenishment for Stock Items

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This lesson describes the minimum configuration of the replenishment functionality that is required for Acumatica ERP users to replenish stock items, including replenishment methods, and a demand forecast model for calculation of the demand for a specific future period. In this lesson, you will configure replenishment for a stock item and calculate and apply replenishment for the reordering of a stock item in a particular warehouse.

## Configuration of Replenishment: General Information

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You can configure inventory replenishment in Acumatica ERP when a basic company has been configured in the system. This configuration includes enabling the required features and specifying the required settings to be used in the system for the replenishment functionality.

In a production environment, before you configure replenishment, you perform broader Acumatica ERP implementation, which includes enabling features and specifying the basic settings to configure the general ledger, cash management, accounts payable, accounts receivable, and order management with inventory.

You can configure automatic replenishment for stock items at a single warehouse or at multiple warehouses. If particular warehouses will be used only for sales, you can configure the system so that these warehouses will be replenished from the distribution centers. They are the warehouses to which purchases are received.

## Learning Objectives

In this lesson, you will do the following:

- Become familiar with the general steps involved in workflow of replenishment configuration
- Learn about replenishment classes and sources
- Develop an understanding of the tasks that must be performed for automated calculation of replenishment parameters
- Become familiar with replenishment methods and their parameters
- Learn about the Acumatica ERP *Moving Average* demand forecast model
- Configure replenishment for a stock item in a particular warehouse
- Set up the calculation of replenishment parameters for a stock item that requires replenishment in a particular warehouse

## Applicable Scenarios

You may need to configure replenishment in the following cases:

- Users need to start using the replenishment functionality.
- Your company has historical purchasing and sales data, including the time it takes your vendors to supply goods. You need to automatically calculate replenishment parameters based on this data to optimize the replenishment of stock and to purchase stock items at the right time when a certain level of stock still remains.
- Your company's sales are affected by high and low seasons, and you need to automatically adjust the replenishment of stock based on the season.

## Replenishment in Acumatica ERP

The replenishment functionality in Acumatica ERP gives you the ability to maintain the needed level of stock at warehouses by purchasing the appropriate quantity of stock items from vendors or by transferring that quantity

from other warehouses to the needed warehouses. The functionality that supports replenishment is available if the *Inventory Replenishment* feature and one or both of the following features are enabled on the [Enable/Disable Features](#) (CS100000) form:

- *Multiple Warehouse Locations* if your company uses multiple warehouse locations
- *Multiple Warehouses* if your company replenishes inventory through transfers

Replenishment for stock items is performed on a per-warehouse basis. If your company has a single warehouse, it purchases inventory to replenish the stock directly in this warehouse. If your company uses multiple warehouses, you can consolidate purchase orders created for replenishment in the needed warehouses, receive purchased items in a distribution center (a source warehouse), and then transfer the purchased quantities from this distribution center to the destination warehouses. Also, you can replenish stock items by transferring them from a warehouse where they are available to a warehouse where they are needed.

Acumatica ERP supports replenishment at a fixed quantity and replenishment between the minimum and maximum quantities. To maintain the stock level of an inventory item at a warehouse between particular minimum and maximum quantities, you can manually enter estimates of replenishment parameters for each stock item. Some examples of replenishment parameters are safety stock, maximum quantity, and reorder point. Instead of manually entering estimates, you can use a demand forecast model to automatically calculate replenishment parameters based on sales statistics and perform replenishment for a specific future period based on historical sales data. For details, see [Configuration of Replenishment: Replenishment Methods](#) and [Configuration of Replenishment: Demand Forecast Model](#).



In Acumatica ERP, only basic replenishment functionality is implemented. If complex replenishment is needed, we recommend that you use ISV solutions instead of basic functionality.

## General Steps of the Replenishment Configuration

To configure replenishment, you perform the following general steps:

1. You create replenishment classes. On the [Replenishment Classes](#) (IN208800) form, you create a replenishment class for each type of replenishment source that you will use. For details, see [Configuration of Replenishment: Classes and Sources of Replenishment](#).
2. Optional: You create seasonalities. On the [Replenishment Seasonality](#) (IN206600) form, you create the seasonalities that are used for the automatic calculation of replenishment parameters to normalize the replenishment quantity in accordance with high and low sales seasons. For details, see [Configuration of Replenishment: Demand Forecast Model](#).
3. You specify the default replenishment class for each warehouse that is involved in replenishment. On the [Warehouses](#) (IN204000) form, in the **Replenishment Class** box, you specify the replenishment class that the system will use by default for the warehouse.  
If on the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form, multiple rows with replenishment settings have been added, and any replenishment settings were updated for the stock item, the same replenishment settings will be inserted for the combination of the item and the warehouse (that is, the warehouse that has the same replenishment class as the stock item) on the [Item Warehouse Details](#) (IN204500) form and thus will be used for preparing replenishment calculation. These settings include replenishment class, seasonality, source, method, safety stock, reorder point, maximum quantity, transfer ERQ, and demand forecast model.
4. You specify the default replenishment settings for each item class whose items will be replenished. On the **Inventory Planning** tab of the [Item Classes](#) (IN201000) form, you specify the replenishment settings that the system will use by default if an item is created on the [Stock Items](#) form and this class is selected. If you want to configure automated calculation of replenishment parameters, see [Configuration of Replenishment: Replenishment Methods](#) and [Configuration of Replenishment: Demand Forecast Model](#).
5. You update the replenishment settings for each existing stock item for which replenishment will be performed. On the **Inventory Planning** tab of the [Stock Items](#) form, you make the needed adjustments to the replenishment settings that the system has copied from the selected item class. For details about the

automatic calculation of replenishment parameters, see [Configuration of Replenishment: Replenishment Methods](#) and [Configuration of Replenishment: Demand Forecast Model](#).



If after the creation of the stock item, you update the replenishment settings of the item class specified for it, the new settings of the item class will not be copied to the stock item. If you want the same changes to be made to an existing stock item, you need to manually change the replenishment settings of the stock item on the [Stock Items](#) form.

6. Optional: You calculate the replenishment parameters for a stock item that requires replenishment in a particular warehouse. On the [Calculate Replenishment Parameters](#) (IN508500) form, you compute the average daily sales and average lead time, and then you calculate the following parameters used in automated replenishment: **Max. Qty.**, **Reorder Point**, and **Safety Stock**.
7. Optional: You apply the calculated replenishment parameters used in automated replenishment to a particular item–warehouse pair. On the [Apply Replenishment Parameters](#) (IN509500) form, you review the parameter values suggested by the forecast and update the corresponding settings with the suggested (that is, calculated) ones.
8. Optional: You specify the vendors from which the item has been or can be purchased and the replenishment parameters for the item on the **Vendors** tab of the [Stock Items](#) form. Also, you make sure that the default vendor for the item is selected on this tab (that is, the **Default** check box is selected in the row of the vendor). This vendor will be used to replenish the stock of the inventory item unless you select another preferred vendor for the item at a specific warehouse on the [Item Warehouse Details](#) form (see the following step).
9. Optional: You adjust the replenishment settings for item–warehouse pairs. If multiple warehouses are used in your system and items are stocked in multiple warehouses, on the **Inventory Planning** tab of the [Item Warehouse Details](#) form, you can review and adjust the replenishment parameters to be used for the particular item at the selected warehouse. In the **Preferred Vendor** box of this tab, you can specify the preferred vendor for the item–warehouse pair.

## Processing of Replenishment Requests

In Acumatica ERP, a replenishment request is an internal record that the system creates when you process the stock items on the [Prepare Replenishment](#) (IN508000) form. The prepared replenishment requests can then be processed as follows, depending on how you replenish stock items:

- You replenish stock items through purchases: On the [Create Purchase Orders](#) (PO505000) form, you can create purchase orders for selected requests with the *Purchase* replenishment source.
- You replenish stock items through transfers: On the [Create Transfer Orders](#) (SO509000) form, you can create transfer orders for selected requests with the *Transfer* replenishment source.
- You replenish stock items through a distribution center: On the [Create Transfer Orders](#) form, you can create transfer orders for selected requests with the *Purchase* replenishment source and the replenishment warehouse defined on the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form or the **Inventory Planning** tab of the [Item Warehouse Details](#) (IN204500) form.

When the replenishment is configured, and you have processed records on the [Prepare Replenishment](#) form, depending on the replenishment source, you can do either (or both) of the following:

- Generate purchase orders based on requests on the [Create Purchase Orders](#) form. For details, see [Replenishing Inventory Through Purchases](#).
- Generate transfer orders based on requests on the [Create Transfer Orders](#) form. For details, see [Replenishing Inventory Through Transfers](#) and [Replenishing Inventory Through a Distribution Center](#).

On the [Prepare Replenishment](#) form, the quantity to process is calculated in the base unit of measure (UOM). On the [Create Purchase Orders](#) and [Create Transfer Orders](#) forms, the quantity specified in the **Quantity** column is recalculated in the purchase UOM and displayed in the **UOM** column. For example, if ten stock items should be purchased in one box, then the quantity of ten UOMs is converted to one box to be purchased.

## Specification of Vendors for a Stock Item

The **Vendors** tab of the [Stock Items](#) (IN202500) form contains a list of the vendors from which the selected item has been or can be purchased, along with the settings of the item if it is purchased from the vendor. On this tab, you can specify the following vendor-specific replenishment settings for the stock item:

- **Lead Time (Days):** The lead time required to ship the item from the vendor location to the warehouse.
- **Add. Lead Time (Days):** The additional lead time required to ship the item from the vendor location to the warehouse.
- **Lot Size:** The lot size in which the item can be purchased from this vendor. If you specify a value, the system rounds up the order quantity for the *Min./Max.* replenishment method to the next integer that is divisible by the lot size and rounded up.
- **Min. Order Freq. (Days):** The minimum order frequency (the minimum number of days between two successive orders).
- **Min. Order Qty.:** The minimum order quantity.
- **Max. Order Qty.:** The maximum order quantity.
- **EOQ:** The economic order quantity.

## Configuration of Replenishment: Classes and Sources of Replenishment

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As an early step of configuring replenishment, you must create at least one replenishment class for each type of replenishment source that you will use. You will then specify replenishment classes for other entities you create during configuration.

### Creation of a Replenishment Class

You create replenishment classes by using the [Replenishment Classes](#) (IN208800) form; for each class, you specify its name, description, and replenishment source.

As the replenishment source, you can select one of the following options:

- *Drop-Shipment:* No actual replenishment is performed for the item because it is sent directly from the vendor to the customer. When you add the item to a sales order on the [Sales Orders](#) (SO301000) form, the system automatically selects the **Mark for PO** check box so that a purchase order of the *Drop-Ship* type can be created for the item. This option is available only if the *Drop Shipments* feature is enabled on the [Enable/Disable Features](#) (CS100000) form.
- *Manufacturing:* The item will be manufactured to replenish its stock. The [Inventory Planning Display](#) (AM400000) form shows stock items with this replenishment source for which production orders should be created.
- *None:* No replenishment is required. This option could be used, for example, for a warehouse that is closing its operations or if ISV integration is used.
- *Purchase:* Stock of the item will be replenished by purchase orders for the vendor when it is determined by the replenishment settings and in the quantities calculated based on the replenishment settings. By default, the default vendor specified on the **Vendors** tab of the [Stock Items](#) (IN202500) form will be used in a purchase order, but you can select another vendor on the [Item Warehouse Details](#) (IN204500) or [Prepare Replenishment](#) (IN508000) form. If replenishment of a stock item should be performed by purchasing directly from a vendor to a warehouse, on the **Inventory Planning** tab of the [Stock Items](#) form, you leave the **Replenishment Warehouse** box empty.
- *Purchase to Order:* No actual replenishment is performed for the stock item. When you add this stock item to a sales order, the system automatically selects the **Mark for PO** check box so that a purchase order of the

*Normal* type can be created for this item. This option is available only if the *Sales Order to Purchase Order Link* feature is enabled on the [Enable/Disable Features](#) form.

- *Transfer:* For stock replenishment in a warehouse, the items will be transferred from a source warehouse. This option is available only if the *Multiple Warehouses* feature is enabled on the [Enable/Disable Features](#) form.



If you want to configure automatic calculation of replenishment parameters, you must use only replenishment classes with the *Purchase* or *Transfer* replenishment source. For details, see [Configuration of Replenishment: Replenishment Methods](#) and [Configuration of Replenishment: Demand Forecast Model](#).

## Use of Replenishment Classes

You can specify a replenishment class for the following:

- Any warehouse: You specify the replenishment class in the Summary area of the [Warehouses](#) (IN204000) form. If the class is not empty, the system copies this class to the [Item Warehouse Details](#) (IN204500) form for the item–warehouse pair.
- Any item class: On the **Inventory Planning** tab of the [Item Classes](#) (IN201000) form, you can create a list of replenishment classes that apply by default to stock items of the item class. Also, for each replenishment class, you can specify the demand forecasting model and the settings to be used in automatic replenishment.
- Any stock item: On the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form, the system populates the table with the replenishment classes and settings that were specified for the selected item class. The class settings can be overridden.
- Any item–warehouse pair: On the **Inventory Planning** tab of the [Item Warehouse Details](#) form, you select a replenishment class. By default, the settings that were specified for the class on the **Inventory Planning** tab of the [Warehouses](#) form are inserted. If on the [Warehouses](#) form the class is empty, the system copies this class from the [Stock Items](#) form. You can override most of these settings by selecting the **Override Replenishment Settings** check box.

## Configuration of Replenishment: Replenishment Methods

Replenishment methods are used to calculate the replenishment quantity. Acumatica ERP supports replenishment at a fixed quantity and replenishment between the minimum and maximum quantities.

The **Inventory Planning** tab of the [Stock Items](#) (IN202500) form has a row for each replenishment class to be used to replenish the stock of the item. Each row holds the settings associated with that class, including the replenishment method and the replenishment source. The default option in the **Method** column is *None*, which indicates that no replenishment will be performed. In each row, you specify either of the following replenishment methods to be used for the item with the source selected in the row:

- *Min./Max.:* You use this method to keep the stock level of an item at a particular warehouse between the specified minimum and maximum quantities. If you are using the *Moving Average* demand forecast model, the system calculates the demand for a specific future period based on historical sales data. For details, see the following section and [Configuration of Replenishment: Demand Forecast Model](#).
- *Fixed Reorder Qty.:* You use this method to replenish the stock of an item with a fixed quantity each time it falls below the reorder point. For details, see the [Item Replenishment with a Fixed Quantity](#) section below.

The system uses the specified method to calculate the quantities required to replenish the stock of the item, based on the replenishment parameters that are defined on the **Inventory Planning** tab of the [Item Warehouse Details](#) (IN204500) form.

## Item Replenishment Within the Specified Quantity Range

When you select the *Min./Max.* method in a row of the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form, you specify the following settings in the row:

- **Max. Qty.:** The maximum stock quantity for the item that should be at the warehouse.
- **Safety Stock:** The additional stock of the item that is maintained to avoid stockouts. You should specify a safety stock value if there are fluctuations in demand and supply. Because safety stock is not used in replenishment calculation for this method, you can add the maximum quantity of the safety stock to the **Max. Qty.** column and the reorder point quantity to the **Reorder Point** column if you want to increase the reorder point to the safety stock level.
- **Reorder Point:** With this method, the system uses the reorder point quantity rather than a minimum quantity. If the available stock is below this level, you should replenish your stock to avoid stockouts. You calculate a reorder point with safety stock by multiplying the daily average usage of stock by the lead time (the time when the product is being shipped from the vendor location to your company) and adding the amount of safety stock that you keep.

The **Max. Qty.**, **Safety Stock**, and **Reorder Point** settings are copied from the [Stock Items](#) form to the [Item Warehouse Details](#) (IN204500) form. For the calculation of replenishment quantity, the system uses these quantities from the [Item Warehouse Details](#) form. You can review and change these quantities before the calculation of the replenishment quantity for a stock item.

On the [Prepare Replenishment](#) (IN508000) form, the system uses the following formula to calculate the replenishment quantity in the **Qty. To Process** column for a stock item.

```
Qty. to Process = Max. Qty. - (Qty. on Hand - Qty. on Location Not Available + Qty. on Supply + (Replenishment Qty. - Qty. on Demand))
```

The formula includes the following quantities:

- **Max. Quantity:** The maximum quantity that is specified in the **Max. Qty.** box on the **Inventory Planning** tab (**Replenishment Parameters** section) of the [Item Warehouse Details](#) form.



The system uses the quantity for calculation from the [Item Warehouse Details](#) form, though these quantities are also specified for each row on the **Inventory Planning** tab of the [Stock Items](#) form.

- **Qty. on Hand:** The quantity on hand, which is specified in the **On Hand** box (Summary area) of the [Inventory Allocation Details](#) (IN402000) form.
- **Qty. on Location Not Available:** The quantity on location that is not available, which is specified in the **On Loc. Not Available** box (Summary area) of the [Inventory Allocation Details](#) form.
- **Qty. on Supply:** The quantity on supply, which is calculated based on the following plan types that are listed on the **Qty by Plan Type** tab (**Addition** table) of the [Inventory Allocation Details](#) form: *Purchase Prepared, Purchase Orders, PO Receipts, In-Transit, IN Receipts, and Kit Assembly Supply*.
- **Replenishment Qty.:** The quantity that is replanned, which is specified in the row with the stock item in the **Replenishment Qty.** column of the table on the [Prepare Replenishment](#) form.
- **Qty. on Demand:** The quantity on demand, which is calculated as follows:
  - **Hard Demand Only:** The demand is calculated as follows:

```
Qty. SO Allocated + Qty. SO Shipped + Qty. SO Back-Ordered
```

This quantity is calculated based on the following plan types, which are listed on the **Qty by Plan Type** tab of the [Inventory Allocation Details](#) form (**Deduction** table): *SO Allocated, SO Shipped, and SO Back-Ordered*.

- *Item Class Settings:* The demand is calculated based on the availability calculation rule specified for this item class on the **General** tab of the [Item Classes](#) form.

The current stock level of a particular item is reflected by the **Available** setting in the Summary area of the [Inventory Allocation Details](#) form. If the system detects that this level has reached or fallen below the reorder point (which is specified in the **Reorder Point** box on the [Item Warehouse Details](#) form), it calculates the quantity required to replenish the item stock according to the formula for the calculation of the quantity in the **Qty. To Process** column on the [Prepare Replenishment](#) form.

## Replenishment Calculation with the Min./Max. Method

On the [Purchase Orders](#) (PO301000) form, the quantities specified in a purchase order may differ from those specified in the corresponding replenishment requests on the [Create Purchase Orders](#) (PO505000) form. The final replenishment quantity for a stock item in a purchase order is calculated based on the settings on the [Prepare Replenishment](#) (IN508000) form for the vendor that will fulfill the replenishment, and the value in the **Qty. to Process** column for a table row is calculated as follows:

- If the requested quantity is less than the minimum order quantity specified in the **Min. Order Qty.** box on the **Vendors** tab of the [Stock Items](#) (IN202500) form, the system uses the minimum order quantity.
- If the requested quantity exceeds the maximum order quantity specified in the **Max. Order Qty.** box on the **Vendors** tab of the [Stock Items](#) form, the system uses the maximum order quantity.
- If the requested quantity is not divisible by the lot size specified in the **Lot Size** box on the **Vendors** tab of the [Stock Items](#) form, this quantity is rounded up to the next integer, and that number of lots is ordered.

## Item Replenishment with a Fixed Quantity

You specify the *Fixed Reorder Qty* method for an item when you want to replenish the stock of the item with a fixed quantity each time it falls below the reorder point. To use this method for the replenishment of a stock item, on the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form, you select the *Fixed Reorder Qty* option in the **Method** column. Then you specify the following parameters:

- Fixed quantity that may be either economic order quantity or economic reorder quantity:
  - If the replenishment source of the row is *Purchase*, we recommend that you use as the fixed quantity the economic order quantity (EOQ) determined by warehouse specialists for the item by estimating the cost of ordering the item from a particular vendor. For each vendor from which the stock item can be purchased, the **EOQ** setting is specified on the [Vendor Inventory](#) (PO201000) form. You can view the EOQ values specified for all vendors of the item on the **Vendors** tab of the [Stock Items](#) form. The EOQ quantity is equal to the specified vendor's EOQ for the stock item once this quantity determines that the available quantity reaches or is lower than the reorder point.
  - If the replenishment source of the row is *Transfer*, we recommend that you use the economic reorder quantity (ERQ) specified for transfers that involve this stock item. This value represents the level of inventory that minimizes the total transfer costs. The ERQ is specified in the **Transfer ERQ** column on the **Inventory Planning** tab of the [Item Classes](#) (IN201000) and [Stock Items](#) forms. You can override the default value of the **Transfer ERQ** box on the [Item Warehouse Details](#) (IN204500) form. The ERQ quantity is equal to the specified transfer ERQ for the item once this quantity determines that the available quantity reaches or is lower than the reorder point.
- Safety stock specified on the [Stock Items](#) form in the **Safety Stock** column of the **Inventory Planning** tab: This is the additional stock of the item maintained to avoid stockouts. The safety stock is required if there are fluctuations in demand and supply.
- Reorder point specified on the [Stock Items](#) form in the **Reorder Point** column of the **Inventory Planning** tab: For the *Fixed Reorder Qty* method, the reorder point is specified as the safety stock plus the quantity that may be required during the lead time.

With the *Fixed Reorder Qty* method, on the [Prepare Replenishment](#) (IN508000) form, the system updates the **Qty. to Process** setting for the stock items listed on the form. Based on this quantity, a request for replenishment (for

a quantity that is equal to the specified vendor's EOQ or the transfer ERQ) can be generated through the [Prepare Replenishment](#) form.

## Configuration of Replenishment: Demand Forecast Model

Replenishing the stock in time and in the proper quantities helps your business to retain customers while reducing storage costs. To keep adequate stock of key items, you may need to predict the future demand of these items.

In Acumatica ERP, you can specify the *Moving Average* demand forecast model in the settings of an item to provide the ability to predict its demand.

### Setup of the Forecast Model to Predict Demand

In Acumatica ERP, you can use the moving average demand forecast model, to calculate the demand for a specific future period based on historical sales data for recent consecutive periods. This demand forecast model works well for items with specific trends in sales or with stable sales that are not subject to random significant fluctuations. If you use the model for these items, you can reduce carrying costs, avoid stockouts, minimize excess or obsolete inventory, and improve cash flow. For other items, you will generally not use a demand forecast model.

You can specify the moving average model at the following levels:

- At the item class level on the **Inventory Planning** tab of the [Item Classes](#) (IN201000) form: On this tab, you can create a list of replenishment classes that are used by default for new stock items of the item class. For each replenishment class, you can specify the settings to be used in automatic replenishment, including selecting *Moving Average* as the **Demand Forecast Model**. A new stock item of this item class inherits the demand forecast model selected for each replenishment class, but you can override the item class settings at the stock item level.
- At the stock item level on the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form. For any replenishment class listed in the table, you can leave the **Demand Forecast Model** setting that was specified for the item class or change it for the item.



The default option in the **Demand Forecast Model** column on the [Item Classes](#) and [Stock Items](#) forms is *None*, which means that you can change the following replenishment settings only manually: **Transfer ERQ**, **Safety Stock**, and **Reorder Point**.

When you select *Moving Average* as the **Demand Forecast Model** of replenishment on either form, you also specify the following settings:

- Forecast Period Type:** The type of time period to be used for the selection of historical data and calculation of the demand. The following options are available: *Quarter*, *Month*, *Week*, and *Day*.
- Periods to Analyze:** The number of periods of historical data of the specified type to be used for calculation.
- Service Level:** The service level, whose default value is 84%. The service level is the expected probability of not hitting a stockout during the next replenishment cycle; thus, it is also the probability of not losing sales, expressed as a percentage.

In the calculation of the **Safety Stock** setting on the [Stock Items](#) form, the system uses the inverse of the normalized service level expressed as a percentage. It uses this formula:  $\text{NORMS\_INV}(\text{Service Level})$ . With this formula, for a service level of 84%, the safety stock value is 1 and for a service level of 50%, the safety stock is 0.



We recommend that you set the **Service Level** setting to 84% to avoid an increasing or decreasing coefficient when the **Safety Stock** setting is calculated. A higher service level yields a higher **Safety Stock** quantity.

- Seasonality:** The seasonality, which can be used to normalize the replenishment quantity to accommodate high and low sales seasons. For details, see the *Use of Seasonality Settings for Forecasting* section below.

- **Launch Date:** The date that starts the time period when the specified replenishment settings will be in effect.

## Use of the Forecast Model to Predict Demand

The *Moving Average* forecast model uses the data available for the specified number of past periods to forecast demand for the period immediately following the last period whose data is used in forecasting. If you select a month as the forecast period and want to perform a forecast on the 15th day of the current month, the data from the first 15 days of the month will not be used for forecasting; only data from full periods is used. The system calculates the daily demand for the nearest future period based on daily sales in all days during the specified number of prior periods.

As the actual data for the last forecast period becomes available, you can forecast the demand for the next period by using the data of the previous periods shifted by one period. This method normalizes the data; the more time periods to calculate the average demand are used, the more regular the data become.

On the [Item Warehouse Details](#) (IN204500) form, **Lead Time Average** is calculated for each combination of stock item and preferred vendor based on all purchase orders of this vendor in the system. For details, see the formula in the following section. The average lead time is computed as the average difference (on all purchase orders) between the following dates:

- The date when the purchase order line is requested: This date is the **Requested** date on the **Details** tab of the [Purchase Orders](#) (PO301000) form.
- The date of the receipt that includes this item: This date is in the **Date** box of the Summary area of the [Purchase Receipts](#) (PO302000) form.

## Automatic Calculation of Replenishment Parameters

By using the calculated average daily demand (daily sales), average lead time, and their standard deviation values, the system computes the reorder point and safety stock used in automated replenishment. The reorder point is calculated according to the following formula.

```
Reorder Point = (Average Daily Demand) * (Average Lead Time) + (Safety Stock)
```

To account for possible fluctuations in demand, which is based on daily sales, the system calculates the safety stock. The following formula is used for this calculation.

```
Safety Stock = NORMSINV(Service Level) *
              SQRT((Average Lead Time * STDEV(Daily Demand))^2 + (Average Daily
Demand * STDEV(Lead Time))^2)
```

The parameters used in these formulas are the following:

- **Average Daily Demand** is the average daily sales, calculated as the item quantity on all historical data of sales orders in all the time periods used to analyze the data divided by the number of days. The system includes all of the following documents in its sales order calculation: the quantity of sales orders, the quantity of sales order returns with a negative sign, the quantity of transfer orders, and the quantity of kit assembly components.
- **STDEV(Daily Demand)** is the standard deviation of daily sales quantity from the average quantity.
- **Average Lead Time** is the average lead time (in days). This time is calculated by using the following formula.

```
Average Lead Time = SUM(Purchase Receipt Date - PO Line Requested Date) / (Number of
Purchase Receipt Lines)
```

The average lead time of an item–warehouse pair is specified in the **Lead Time Average** box of the **Inventory Planning** tab of the [Item Warehouse Details](#) (IN204500) form. When the system calculates this

lead time for the item in the warehouse, the **Preferred Vendor** (which is also specified on this tab) and the applicable replenishment source may affect the calculation as follows:

- If a preferred vendor is specified for the item (or the vendor on the [Item Warehouse Details](#) form was overridden), the average lead time is calculated just for this vendor's documents.
- If no preferred vendor is specified for the item–warehouse pair, the system calculates the average lead time for all the purchase orders created for this item.
- If **Transfer** is selected in the **Replenishment Source** box of the tab, the average lead time is set to the **Transfer Lead Time** value specified on the **Inventory Planning** tab of the [Item Classes](#) (IN201000) form for an item class of a stock item.
- If there is no historical data for the preferred vendor, the system does not use the formula above to compute the average lead time. It instead copies the **Vendor Lead Time (Days)** value on the **Inventory Planning** tab to the **Lead Time Average** box on that tab.

**Number of Purchase Receipt Lines** is the number of purchase receipt lines for which lead time is calculated.

- **STDEV (Lead Time)** is the standard deviation of the lead time (in days) from the average value.
- **NORMSINV (Service Level)** is the service factor, which is calculated based on the service level specified as a percentage.

The service level is used to optimize the safety stock level. Generally, the service level is specified only for item classes, but it can be specified for each item and for each warehouse if needed.

Calculation of the daily demand forecast depends on whether the launch date is specified in the **Launch Date** box on the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form as follows:

- If the box is empty, the calculation period starts on the date of the first sale of an item (if this date belongs to the current calculation period).
- If a launch date is specified, the calculation period starts on the launch date and is rounded to the selected forecast period (such as a week or month).



For correct calculation of the demand forecast, we recommend that you specify the launch date in the **Launch Date** box of the [Stock Items](#) form and select the beginning date of the forecast period close to the launch date.

When the system has calculated replenishment parameters for stock items on the [Calculate Replenishment Parameters](#) (IN508500) form, you apply these parameters to stock items on the [Apply Replenishment Parameters](#) (IN509500) form. When the calculated replenishment parameters for stock items have been processed, the maximum stock quantity (**Max. Qty.**) is set to be equal to the **Reorder Point** quantity. Depending on your company's business processes, you may need to optimize the quantity of items in stock, taking into account the time and expenses for delivery of stock items to your warehouses. You can manually change the maximum stock quantity on the [Item Warehouse Details](#) form for an item–warehouse pair.

For an example of the calculation of the replenishment parameters for the moving average model, see [Configuration of Replenishment: Example of Parameter Calculation](#).

## Use of Seasonality Settings for Forecasting

The sales of some products follow certain cycles or patterns. For example, the peak of ski sales is in winter. These patterns in sales can be described as seasonality. A set of seasonality settings is a list of low and high seasons with a factor assigned to each season. The factor reflects how sales decrease or increase in each of these specific seasons, as compared to average sales volumes calculated over all time. You can determine the seasons for particular products or groups of products with similar sales behavior and corresponding factors by analyzing sales data spanning multiple financial years.

You define the settings of each seasonality on the [Replenishment Seasonality](#) (IN206600) form. The seasons for one seasonality should not intersect. When you select the start and end dates for each period, these dates should belong to one year.



We strongly recommend that you configure replenishment seasonality for only one year.

For date ranges not included in any season, the factor is 1.0 by default. A low season for groups of products may span multiple financial periods or be contained in a single financial period.

The system uses seasonality settings for forecasting as follows:

1. Normalizes the historical data available for the specified seasons. The sales volumes for each day of a season are divided by the appropriate seasonality factor to calculate the sales quantities as though it were a normal season.
2. Calculates the average daily sales quantity based on the historical data of the specified number of periods. For seasons within the specified periods, the system uses the normalized data.



The standard deviation for the daily demand is calculated for actual sales data, not for normalized data.

## Update of Replenishment Parameters Using Forecast-Based Values

To calculate and use the updated replenishment parameters based on values from the forecast, you perform the following general steps:

1. On the *Calculate Replenishment Parameters* (IN508500) form, you compute the average daily sales and average lead time, and then calculate the following parameters, which are used in automated replenishment: **Max. Qty.**, **Reorder Point**, and **Safety Stock**.
2. On the *Apply Replenishment Parameters* (IN509500) form, you review the calculated parameter values that are based on the forecast. You can then replace the old values of replenishment parameters with the calculated ones or manually adjust the calculated parameters.
3. On the *Prepare Replenishment* (IN508000) form, you review the stock items that need to be replenished and calculate replenishment quantities for these items.
4. On the *Create Purchase Orders* (IN505000) form, you generate purchase orders for items requiring replenishment.

## Configuration of Replenishment: To Configure Replenishment for an Item–Warehouse Pair

In the following implementation activity, you will configure replenishment for an item–warehouse pair in Acumatica ERP.

### Story

Suppose that the SweetLife Service and Equipment Sales Center branch of SweetLife Fruits & Jams company provides repair services and stores the required spare parts for juicers. The branch orders these spare parts directly from vendors and stores them in the *EQUIPHOUSE* warehouse.

Acting as purchasing manager Matt Parker, you need to configure the replenishment functionality to regularly restock the spare parts that the company uses for juicer maintenance and repair. The branch should have no more than 70 juicing screens in the *EQUIPHOUSE* warehouse, and purchasing managers should order juicing screens when 30 items or fewer are left in stock. You also need to review the settings that the system will use to calculate the replenishment of the juicing screens in the *EQUIPHOUSE* warehouse.

## Configuration Overview

In the *U100* dataset, the following tasks have been performed to support this activity:

- The following features have been enabled on the *Enable/Disable Features* (CS100000) form in the *Inventory and Order Management* group of features:
  - *Inventory Replenishment*
  - *Multiple Warehouse Locations*
- The basic configuration of order management with inventory has been performed, as described in *Order Management with Inventory*.
- On the *Warehouses* (IN204000) form, the *EQUIPHOUSE* warehouse in the SweetLife Service and Equipment Sales Center branch has been created.
- On the *Item Classes* (IN201000) form, the *JCRSPRPRT* (juicer spare parts) item class has been created for juicer spare parts.

## Process Overview

In this activity, you will do the following:

1. On the *Replenishment Classes* (IN208800) form, create the *SPAREPART* replenishment class, which is used to optimize the purchasing of juicer spare parts.
2. On the *Warehouses* (IN204000) form, specify the replenishment class for the *EQUIPHOUSE* warehouse.
3. On the *Item Classes* (IN201000) form, specify the replenishment settings for the *JCRSPRPRT* item class.
4. On the *Stock Items* (IN202500) form, create the *JSCREEN* stock item of the *JCRSPRPRT* item class.
5. On the *Prepare Replenishment* (IN508000) form, process the *JSCREEN* stock item.

## System Preparation

Before you start configuring replenishment through purchases for an item–warehouse pair, you should launch the Acumatica ERP website and sign in to a company with the *U100* dataset preloaded. You should sign in as purchasing manager Matt Parker by using the *parker* username and the *123* password.

### Step 1: Creating the Replenishment Class

To create the *SPAREPART* replenishment class, do the following:

1. On the *Replenishment Classes* (IN208800) form, add a new record.
2. In the **Class ID** box, type *SPAREPART*.
3. In the **Description** box, type Replenishment class for the purchase of juicer spare parts.
4. In the **Replenishment Source** box, select *Purchase*.

With this setting, the demand for creation of purchase orders that include the items may be calculated on the *Prepare Replenishment* (IN508000) form in the quantities that are calculated based on the replenishment settings.

5. On the form toolbar, click **Save**.

## Step 2: Specifying the Replenishment Class for the Warehouse

To specify the replenishment class for the *EQUIPHOUSE* warehouse, where spare parts for juicers are stocked, do the following:

1. On the [Warehouses](#) (IN204000) form, open the *EQUIPHOUSE* record.
2. In the **Replenishment Class** box of the Summary area, select *SPAREPART*.



The system uses the replenishment class specified for a warehouse to replenish a stock item at a warehouse where the item is stocked. It also shows this class in the **Replenishment Class** box on the [Item Warehouse Details](#) (IN204500) form.

3. On the form toolbar, click **Save**.

## Step 3: Specifying Replenishment Settings for the Item Class

Suppose that you need to add some new spare parts of the *JCRSPRPRT* (juicer spare parts) item class for juicers to your inventory stock. You plan to replenish these stock items. Thus, you need to specify replenishment settings for the item class so that the system copies these settings to each newly created stock item of the class.

To specify replenishment settings for the *JCRSPRPRT* item class, do the following:

1. On the [Item Classes](#) (IN201000) form, open the *JCRSPRPRT* item class.
2. On the **Inventory Planning** tab, in the **Demand Calculation** box, make sure that *Item Class Settings* is specified.

With this setting, the demand for juicer spare parts will be calculated based on the availability calculation rule specified for this item class on the **General** tab of this form.

3. On the table toolbar, click **Add Row**.
4. In the row, specify the following settings:
  - **Replenishment Class ID:** *SPAREPART*
  - **Seasonality:** *NONE*
  - **Source:** *Purchase*
  - **Method:** *Min./Max.*

With this method, the stock level of inventory items of the class at the warehouse where the items are stocked will be maintained between the minimum and maximum quantities specified on the **Inventory Planning** tab of the [Stock Items](#) (IN202500) form.

5. On the form toolbar, click **Save**.

## Step 4: Creating a Stock Item of the Class

To create a stock item to represent the juicing screen, do the following:

1. On the [Stock Items](#) (IN202500) form, add a new record.
2. In the Summary area, specify the following settings:
  - **Inventory ID:** *JSCREEN*
  - **Description:** Juicing screen compatible with pro-series and commercial citrus juicers
3. On the **General** tab, in the **Item Class** box, specify *JCRSPRPRT*.

Notice that the system has inserted the default settings of the stock item based on the item class settings that you specified in the previous step on the [Item Classes](#) (IN201000) form. In the **Warehouse Defaults** section of this tab, notice that *EQUIPHOUSE* has been inserted as the default warehouse.

4. On the **Price/Cost** tab, in the **Default Price** box, specify 80.
5. On the **Vendors** tab, do the following:
  - a. On the table toolbar, click **Add Row**.
  - b. In the **Vendor ID** column, select the *SQUEEZO* vendor.
6. On the form toolbar, click **Save**.
7. On the **Inventory Planning** tab, do the following:
  - a. Notice that the system has copied the row with the replenishment settings from the *JCRSPRPRT* item class specified on the [Item Classes](#) form. It has inserted the following settings:
    - **Repl. Class:** *SPAREPART*
    - **Seasonality:** *NONE*
    - **Source:** *Purchase*
    - **Method:** *Min./Max.*
  - b. In the row, specify the following settings:
    - **Reorder Point:** 30.00  
With this setting, when the stock of the *JSCREEN* item is less than 30, the item will be listed on the [Prepare Replenishment](#) (IN508000) form.
    - **Max Qty.:** 70.00  
This is the maximum stock quantity of the *JSCREEN* item. This quantity will be used for the calculation of replenishment parameters of the stock item in the *EQUIPHOUSE* warehouse.



The system copies the **Source**, **Reorder Point**, and **Max Qty.** settings to the **Inventory Planning** tab of the [Item Warehouse Details](#) (IN204500) form, where they are inserted in the **Replenishment Source**, **Reorder Point**, and **Max Qty.** boxes and then uses these settings for the calculation of the *JSCREEN* item's replenishment quantity in the *EQUIPHOUSE* warehouse.

8. On the form toolbar, click **Save**.

## Step 5: Reviewing Stock Items Requiring Replenishment

To make sure that the *JSCREEN* stock item requires replenishment in the *EQUIPHOUSE* warehouse and review the item's settings, do the following:

1. Open the [Prepare Replenishment](#) (IN508000) form.
2. In the Selection area, specify the following settings:
  - **Warehouse:** *EQUIPHOUSE*
  - **Purchase Date:** Current date
  - **Me:** Cleared
  - **Only Suggested Items:** Selected  
With this setting, only items that require replenishment are displayed in the table.
3. In the row for the *JSCREEN* stock item, make sure that the following settings are specified (see the screenshot below):
  - **Reorder Point:** 30
  - **Max Qty.:** 70

- **Replenishment Source:** Purchase
- **Qty. To Process:** 70  
This is the quantity to be replenished in the destination warehouse.

The screenshot shows the 'Prepare Replenishment' form. At the top, there are buttons for PROCESS, PROCESS ALL, and VIEW VENDOR INVENTORY. Below these are fields for Warehouse (EQUIPHOUSE - Warehouse for Equip), Purchase Date (1/30/2025), Vendor, Item Class, Inventory ID, and Description. A checkbox for 'Only Suggested Items' is checked. The main table lists one item: EQUIPHOUSE (Inventory ID: JS SCREEN) with a description of 'Juicing screen compatible with pro-series a...', Purchase UOM (PIECE), and UOM (PIECE). The 'Qty. To Process' field is highlighted with a red border and contains the value 70.00. Other columns include Reorder Point (30.00), Max. Qty. (70.00), and Replenishment Source (Purchase).

Warehouse	Inventory ID	Description	Purchase UOM	UOM	Qty. To Process	Reorder Point	Max. Qty.	Replenishment Source
EQUIPHOUSE	JS SCREEN	Juicing screen compatible with pro-series a...	PIECE	PIECE	70.00	30.00	70.00	Purchase

**Figure: The settings on the Prepare Replenishment form**

You have reviewed the replenishment settings of the juicing screen stock item in the EQUIPHOUSE warehouse. In a production situation, you would then select the needed items and prepare replenishment requests for the selected stock items.

## Configuration of Replenishment: To Calculate and Apply Replenishment Parameters

In the following implementation activity, you will set up automatic calculation of replenishment parameters for the reordering of a stock item in a particular warehouse based on historical sales data.

### Story

Suppose that you are Matt Parker, a purchasing manager of the SweetLife Fruits & Jams company, and you want the system to calculate replenishment parameters for reordering oranges based on the historical sales of the three previous weeks. Also, winter is high season for oranges, and SweetLife sells more oranges in the winter than it does in other seasons. You need to configure the system to calculate a demand forecast based on historical sales data and seasonality settings.

### Configuration Overview

In the *U100* dataset, the following tasks have been performed to support this activity:

- The following features have been enabled on the [Enable/Disable Features](#) (CS100000) form:
  - *Inventory Replenishment*
  - *Multiple Warehouses*
- The basic configuration of order management with inventory has been performed, as described in [Order Management with Inventory](#).
- On the [Warehouses](#) (IN204000) form, the *WHOLESALE* warehouse has been created.
- On the [Stock Items](#) (IN202500) form, the *ORANGES* stock item has been created.
- Also, the dataset includes sales orders on the [Sales Orders](#) (SO301000) form and purchase orders on the [Purchase Orders](#) (PO301000) form for the previous three weeks.

## Process Overview

In this activity, you will do the following:

1. On the [Replenishment Seasonality](#) (IN206600) form, create the *HIGHSEASON* replenishment seasonality.
2. On the [Stock Items](#) (IN202500) form, specify the replenishment settings for the *ORANGES* stock item.
3. On the [Calculate Replenishment Parameters](#) (IN508500) form, calculate the replenishment parameters for the *ORANGES* stock item in the *WHOLESALE* warehouse.
4. On the [Apply Replenishment Parameters](#) (IN509500) form, apply the calculated parameters to the *ORANGES* stock item in the *WHOLESALE* warehouse.

## System Preparation

Before you start setting up the calculation of replenishment parameters, you should do the following:

1. In the info area, in the upper-right corner of the top pane of the Acumatica ERP screen, make sure that the business date in your system is set to *1/30/2025*. If a different date is displayed, click the Business Date menu button, and select *1/30/2025* on the calendar.
2. On the Company and Branch Selection menu, in the top pane of the Acumatica ERP screen, make sure the *SweetLife Head Office and Wholesale Center* branch is selected.

## Step 1: Creating the Replenishment Seasonality

To create a seasonality for SweetLife's high-purchase season for citrus fruits, do the following:

1. On the [Replenishment Seasonality](#) (IN206600) form, add a new record.
2. In the Summary area, specify the following settings:
  - **Seasonality ID:** HIGHSEASON
  - **Description:** High season for citrus fruits
  - **Calendar:** MAIN
3. On the table toolbar, click **Add Row**.
4. In the added row, specify the following setting:
  - **Active:** Selected
  - **Season Start Date:** 11/1/2024
  - **Season End Date:** 2/28/2025
  - **Factor:** 3

This factor shows the increase of sales of oranges in the high-purchase season, that is, three times increase in sales.
5. On the form toolbar, click **Save**.

## Step 2: Specifying Replenishment Settings for a Stock Item

To specify the settings that will be used to calculate replenishment parameters for oranges based on the moving average model of demand forecasting, do the following:

1. On the [Stock Items](#) (IN202500) form, open the *ORANGES* item.
2. On the **Inventory Planning** tab, in the only table row, modify the replenishment settings as follows:
  - **Seasonality:** HIGHSEASON

- **Demand Forecast Model:** Moving Average
  - **Forecast Period Type:** Week
  - **Periods to Analyze:** 3
3. In the **Service Level (%)** column, notice that 84 is specified. In Acumatica ERP, 84% is considered the optimal service level because in general, it gives a company the ability to keep a balance between opportunity costs and operation costs for inventory management. The **Safety Stock Suggested** setting on the [Apply Replenishment Parameters](#) (IN509500) form will be calculated by using the service level. For details, see [Configuration of Replenishment: Demand Forecast Model](#).
4. On the form toolbar, click **Save**.

With these settings, during the calculation of the replenishment parameters for oranges, the system will analyze the three previous weeks of historical purchase and sales data.

### Step 3: Calculating the Replenishment Parameters

To calculate replenishment parameters for oranges in the *WHOLESALE* warehouse, do the following:

1. Open the [Calculate Replenishment Parameters](#) (IN508500) form.
2. In the Selection area, specify the following settings:
  - **Forecast Date:** 1/30/2025
  - **Action:** Calculate
  - **Warehouse:** WHOLESALE
  - **Seasonality:** HIGHSEASON
3. In the table, select the unlabeled check box in the row with the *ORANGES* item.
4. On the form toolbar, click **Process**. The **Processing** dialog box opens, showing the progress and then the results. The system has calculated the replenishment parameters for oranges in the *WHOLESALE* warehouse based on the historical sales data of the three previous weeks.
5. Close the **Processing** dialog box. Notice that the row with the *ORANGES* stock item is no longer displayed in the table.

### Step 4: Applying Replenishment Parameters to the Stock Item

To apply the calculated replenishment parameters to the *ORANGES* stock item in the *WHOLESALE* warehouse and adjust these parameters, do the following:

1. On the [Apply Replenishment Parameters](#) (IN509500) form, select the *WHOLESALE* warehouse. In the only table row, review the replenishment parameters that the system has calculated for the *ORANGES* item, which should be the following:
  - **Safety Stock Suggested:** 43.12
  - **Reorder Point Suggested:** 146.94
  - **Max. Qty. Suggested:** 146.94
  - **Daily Demand Forecast:** 30.14
  - **Lead Time Average:** 3.44

This setting shows that on average, it takes 3.44 days to ship the item from the default vendor's location to the *WHOLESALE* warehouse.



The values of replenishment parameters depend on the calculation date and the purchase and sales documents that have been entered into the system. (For details, see [Configuration of Replenishment: Demand Forecast Model](#).) You may see different values if you select a different calculation date or your system has a different set of purchase and sales documents than those in the initial *U100* dataset.

2. In this row, select the check box in the unlabeled column.
3. On the form toolbar, click **Process**. The **Processing** dialog box opens, showing the progress and then the results.
4. Close the **Processing** dialog box. Notice that the row with the *ORANGES* stock item is no longer displayed in the table.
5. Open the [Item Warehouse Details](#) (IN204500) form.
6. In the Selection area, specify the following settings:
  - **Inventory ID:** *ORANGES*
  - **Warehouse:** *WHOLESALE*
7. In the **Replenishment Parameters** section of the **Inventory Planning** tab, make sure that the system has inserted the values it calculated for the *ORANGES* item in the *WHOLESALE* warehouse, which should be the following:
  - **Safety Stock:** 43.12
  - **Reorder Point:** 146.94
  - **Max. Qty.:** 146.94



The system sets the maximum stock quantity to the reorder point quantity. You can manually increase the maximum stock quantity if you need to optimize the quantity of items in stock while taking into account the time and expenses for delivery of stock items to your warehouses. For details, see [Configuration of Replenishment: Demand Forecast Model](#).

8. Suppose that you want to round the first two values to the nearest ten and increase the maximum stock quantity. Adjust the replenishment parameters as follows:
  - **Safety Stock:** 50
  - **Reorder Point:** 150
  - **Max Qty.:** 200
9. On the form toolbar, click **Save**.

You have calculated, applied, and adjusted the replenishment parameters for the replenishment of oranges in the high season in the *WHOLESALE* warehouse.

# Lesson 2: Replenishing Inventory Through Transfers

---

In this lesson, you will become familiar with the general settings and steps of replenishment through transfers and replenish stock by transferring an item between warehouses.

## Replenishment Through Transfers: General Information

---

The replenishment functionality in Acumatica ERP can accommodate various ways of replenishing stock items. You can maintain a particular quantity of stock items by transferring items from a warehouse where the items are available to a destination warehouse.

### Learning Objectives

In this lesson, you will do the following:

- Become familiar with the general workflow of item replenishment through transfers
- Replenish stock by transferring items between warehouses

### Applicable Scenario

You perform replenishment through transfers if your company has multiple warehouses and replenishes stock items by transferring them from another warehouse where they are available.

### Replenishment Through Transfers in Acumatica ERP

You can use the functionality of replenishment through transfers between warehouses if the *Inventory Replenishment* and *Multiple Warehouses* features are enabled on the [Enable/Disable Features](#) (CS100000) form.

On the [Prepare Replenishment](#) (IN508000) form, you can view the list of stock items that require replenishment. A stock item is listed on the form if for the item at the warehouse where the item is needed, the following settings are specified on the **Inventory Planning** tab of the [Item Warehouse Details](#) (IN204500) form:

- **Reorder Point:** The stock level that prompts the system to replenish the stock of the item at this warehouse when the available quantity is below the reorder point specified for this item at this warehouse.
- **Replenishment Source: Transfer.**

You initially specify these settings on the [Stock Items](#) (IN202500) form for a stock item. These settings are copied to the [Item Warehouse Details](#) form for each combination of the stock item and a warehouse. On this form, you can adjust the settings for the item in the warehouse where the item is stocked.

On the [Prepare Replenishment](#) form, the quantity to process is calculated in the base unit of measure (UOM). On the [Create Transfer Orders](#) (SO509000) form, the quantity specified in the **Quantity** column is recalculated in the purchase UOM and displayed in the **UOM** column. For example, if ten stock items should be transferred in one box, then the quantity of ten UOMs is converted to one box to be transferred.

For details about the configuration of replenishment and the calculation of replenishment parameters, see [Replenishment for Stock Items](#).

### General Steps of Replenishment Through Transfers

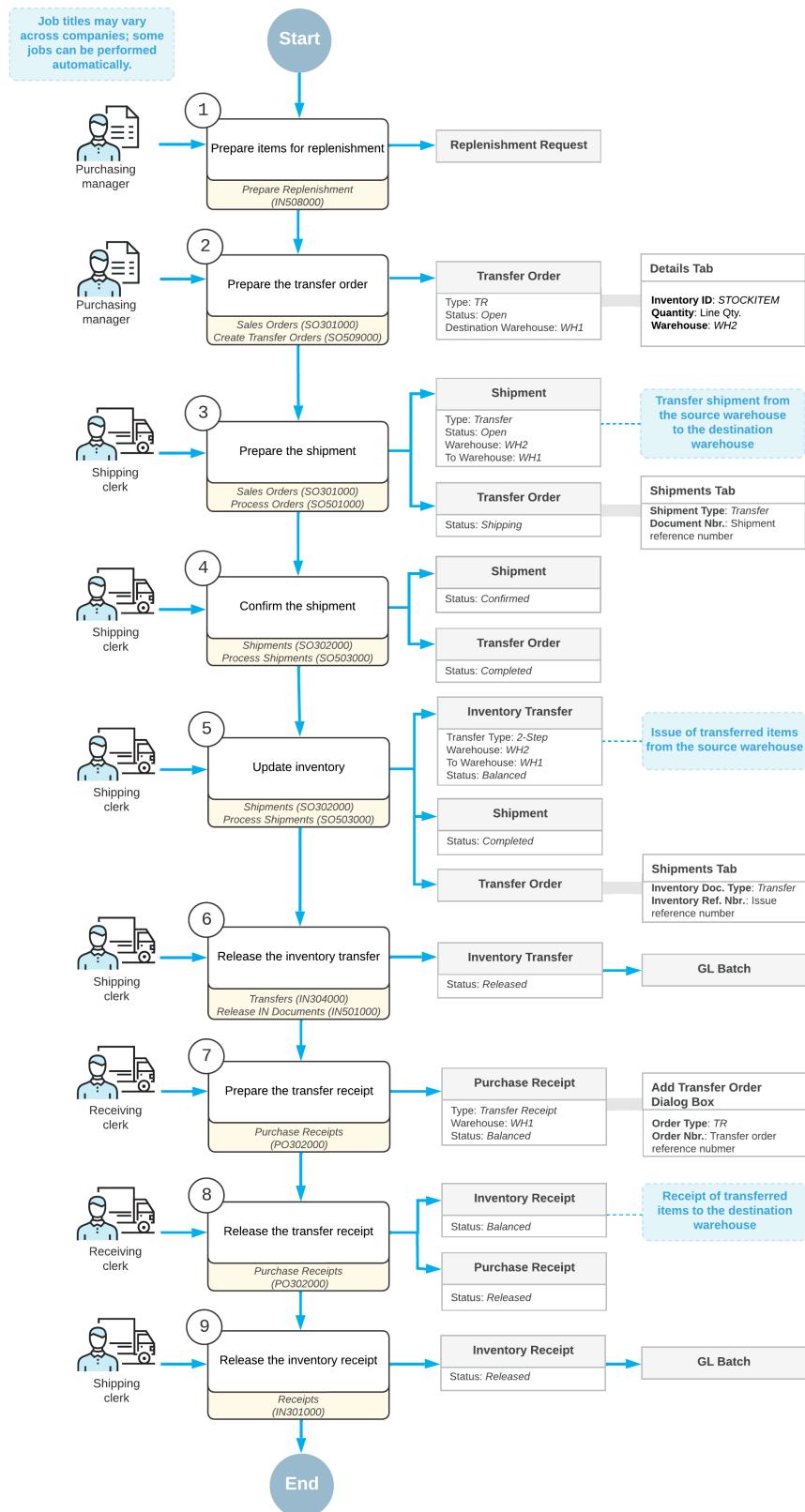
To replenish stock items by transferring them from one warehouse to another, you perform the following general steps:

1. On the [Prepare Replenishment](#) (IN508000) form, which lists the stock items that require replenishment, you process all stock items or only those you select. As a result, the system creates replenishment requests, which are internal Acumatica ERP records that are used as the basis for transfer orders. Replenishment requests for items of the *Transfer* source are listed on the [Create Transfer Orders](#) (SO509000) form.
2. You generate transfer orders requesting replenishment by using the [Create Transfer Orders](#) form. The system will generate orders of the *TR* type on the [Sales Orders](#) (SO301000) form.
3. When the stock items are shipped from the source warehouse to the destination warehouse, you create the shipment on the [Shipments](#) (SO302000) form, confirm the shipment, and update the inventory.
4. When you are receiving the items, you create purchase receipts of the *Transfer* type and release them on the [Purchase Receipts](#) (PO302000) form.

## Workflow of Replenishment Through Transfers

A general workflow of replenishment through transfers involves the steps and generated documents shown in the following diagram.

### Workflow of replenishment through transfers



## Replenishment Through Transfers: Process Activity

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The following activity demonstrates how to prepare and perform replenishment in Acumatica ERP by transferring goods between warehouses.

### Story

Suppose that you are Matt Parker, a purchasing manager of the SweetLife Fruits & Jams company. You are going to buy grapefruit for the SweetLife Store branch and refill the stock in the Retail warehouse. In this branch, replenishment is performed by transferring the needed goods from the Wholesale warehouse of the SweetLife Head Office and Wholesale Center branch to the Retail warehouse.

### Configuration Overview

In the *U100* dataset, the following tasks have been performed to support this activity:

- On the [Enable/Disable Features](#) (CS100000) form, the following features have been enabled:
  - *Multiple Warehouses*
  - *Multiple Warehouse Locations*
  - *Inventory Replenishment*
- On the [Warehouses](#) (IN204000) form, the *WHOLESALE* and *RETAIL* warehouses have been created.
- On the [Stock Items](#) (IN202500) form, the *GRAPEFRUIT* stock item has been created.
- On the [Order Types](#) (SO201000) form, the *Transfer (TR)* order type, which can be specified on the [Sales Orders](#) (SO301000) form for a transfer order, has been created.
- On the [Sales Orders](#) form, for the Cakeado customer, a sales order dated 01/25/2025 has been created for 25 pounds of grapefruit.

### Process Overview

In this activity, you will do the following:

1. On the [Stock Items](#) (IN202500) form, specify the replenishment settings of the *GRAPEFRUIT* stock item.
2. On the [Item Warehouse Details](#) (IN204500) form, review the replenishment settings of the *GRAPEFRUIT* stock item in the *RETAIL* warehouse.
3. Prepare and process the stock items that require replenishment on the [Prepare Replenishment](#) (IN508000) form.
4. Prepare and process the documents for shipping items from the *WHOLESALE* warehouse by using the [Create Transfer Orders](#) (SO509000), [Sales Orders](#) (SO301000), and [Shipments](#) (SO302000) forms.
5. Prepare and process the purchase receipt for the items in the *RETAIL* warehouse on the [Purchase Receipts](#) (PO302000) form; the corresponding inventory receipt is automatically created on the [Receipts](#) (IN301000) form and released.

### System Preparation

Before you start preparing and performing replenishment through transfers, do the following:

1. In the info area, in the upper-right corner of the top pane of the Acumatica ERP screen, make sure that the business date in your system is set to 1/30/2025. If a different date is displayed, click the Business Date menu

button and select 1/30/2025 on the calendar. For simplicity, in this activity, you will create and process all documents in the system on this business date.

2. On the Company and Branch Selection menu in the top pane of the Acumatica ERP screen, select the *SweetLife Store* branch.

## Step 1: Specifying the Replenishment Settings of a Stock Item

To specify the replenishment settings of the *GRAPEFRUIT* stock item, do the following:

1. Open the *GRAPEFRUIT* stock item on the [Stock Items](#) (IN202500) form.
2. On the **Inventory Planning** tab, in the row that has *Transfer* in the **Source** column, specify the following settings:
  - **Reorder Point:** 30
  - **Max Qty.:** 100
3. On the form toolbar, click **Save**.

## Step 2: Reviewing the Replenishment Settings of the Item-Warehouse Pair

To review the replenishment settings of the *GRAPEFRUIT* stock item in the *RETAIL* warehouse, you should do the following:

1. Open the [Item Warehouse Details](#) (IN204500) form.
2. In the Summary area, specify the following settings:
  - **Inventory ID:** *GRAPEFRUIT*
  - **Warehouse:** *RETAIL*
3. On the **Inventory Planning** tab, make sure that the following settings are specified:
  - **Override Replenishment Settings:** Cleared
  - **Seasonality:** *NONE*
  - **Replenishment Source:** *Transfer*
  - **Replenishment Method:** *Min./Max.*
  - **Replenishment Warehouse:** *WHOLESALE*
  - **Reorder Point:** 30
  - **Max. Qty.:** 100

With these settings, you replenish grapefruit in the *RETAIL* warehouse by transferring the needed quantities of the item from the *WHOLESALE* warehouse. The *GRAPEFRUIT* stock item appears in the list of items for replenishment on the [Prepare Replenishment](#) (IN508000) form when you have 30 pounds (which is the base unit of measure for this item) or less of the item in stock. The **Max Qty.** value is used for the calculation of replenishment parameters in the *RETAIL* warehouse. For details, see [Configuration of Replenishment: Replenishment Methods](#).

## Step 3: Preparing the Replenishment

To process any items in the SweetLife Store branch that require replenishment, do the following:

1. Open the [Prepare Replenishment](#) (IN508000) form.
2. In the Selection area, specify the following settings to view in the table the items pending replenishment in the SweetLife Store branch:
  - **Warehouse:** *RETAIL*
  - **Purchase Date:** 1/30/2025

- **Me:** Cleared
- **Only Suggested Items:** Selected

With this setting, only items that require replenishment are displayed on the form.

The table shows the items pending replenishment in the SweetLife Store branch (to which you are signed in).

3. In the row for the *GRAPEFRUIT* stock item, make sure that the following settings are specified:
  - **Replenishment Source:** Transfer
  - **Source Warehouse:** WHOLESALE
4. In the **Qty. to Process** column of this row, notice that 125 is shown. Because a sales order for 25 pounds of grapefruit exists in the system, the system added this quantity to the quantity to be replenished.



To view this sales order, on the *Sales Orders* (SO301000) form, open the sales order for the Cakeado customer dated 01/25/2025.

5. In the row for the *GRAPEFRUIT* stock item, select the check box in the unlabeled column.
6. On the form toolbar, click **Process**. The **Processing** dialog box opens, showing the progress and then the results of the processing. The system generates the replenishment request for the transfer, which consists of the *GRAPEFRUIT* item, and adds the request on the *Create Transfer Orders* (SO509000) form.
7. Close the **Processing** dialog box. Notice that the row with the *GRAPEFRUIT* stock item is no longer displayed in the table.

#### Step 4: Shipping the Stock Items Between the Warehouses

Now that you have prepared the replenishment request for the grapefruit, you need to prepare the documents for shipping the fruits from the *WHOLESALE* warehouse to the *RETAIL* warehouse. Do the following:

1. On the *Create Transfer Orders* (SO509000) form, in the row with *IN Replanned* in the **Plan Type** box and *GRAPEFRUIT* in the **Inventory ID** box, select the unlabeled check box.
2. On the form toolbar, click **Process**.  
The system creates a transfer order for a two-step transfer and opens the order on the *Sales Orders* (SO301000) form.
3. On the form toolbar, click **Create Shipment**.
4. In the **Specify Shipment Parameters** dialog box, which opens, make sure that the 1/30/2025 date and the *WHOLESALE* source warehouse are specified, and click **OK**. The system closes the dialog box, creates the related shipment of the *Transfer* type, and opens it on the *Shipments* (SO302000) form.
5. In the **Warehouse ID** box of the Summary area, notice that *WHOLESALE* is specified, and in the **To Warehouse** box, notice that *RETAIL* is specified. This indicates that the grapefruit will be shipped from the *WHOLESALE* warehouse to the *RETAIL* warehouse.
6. To confirm the created shipment, on the form toolbar, click **Confirm Shipment**.
7. To update the inventory of the *WHOLESALE* warehouse, on the form toolbar, click **Update IN**. The system issues the *GRAPEFRUIT* stock item from the *WHOLESALE* warehouse. On the **Orders** tab, in the **Inventory Ref. Nbr.** column, you can see the reference number of the transfer, which is also a link; you could click the link to open the transfer of the 2-Step type on the *Transfers* (IN304000) form.
8. On the *Inventory Allocation Details* (IN402000) form, in the Selection area, do the following:
  - a. In the **Inventory ID** box of the Selection area, select *GRAPEFRUIT*.
  - b. In the **Warehouse** box, select *RETAIL*.
  - c. In the **On Hand** box, note the current quantity of grapefruit on hand.
9. On the **Qty by Plan Type** tab, on the toolbar of the **Addition** table, select *All Records*.

10. In the row that has *In-Transit* in the **Plan Type** column, make sure that the quantity is 125, as shown in the following screenshot. This quantity of grapefruit is ready to be received in the *RETAIL* warehouse.

ITEM PLANS		QTY BY PLAN TYPE			Deduction	
		Quantity	Included		Quantity	Included
All Records				All Records		
Plan Type		Quantity	Included	Plan Type	Quantity	Included
Purchase Prepared		0.00	<input type="checkbox"/>	SO Booked [*]	25.00	<input checked="" type="checkbox"/>
Purchase Orders		0.00	<input type="checkbox"/>	Total Deduction	25.00	<input type="checkbox"/>
PO Receipts		0.00	<input checked="" type="checkbox"/>			
IN Receipts [*]		0.00	<input checked="" type="checkbox"/>			
In-Transit [*]		125.00	<input type="checkbox"/>			
Purchase for SO Prepared		0.00	<input type="checkbox"/>			
Purchase for SO		0.00	<input type="checkbox"/>			

Figure: The stock item in transit

## Step 5: Receiving the Stock Items in the Retail Warehouse

To create the documents to reflect the receipt of the grapefruit in the *RETAIL* warehouse, do the following:

1. On the *Purchase Receipts* (PO302000) form, add a new record.
2. In the Summary area, specify the following settings:
  - **Type:** Transfer Receipt
  - **Date:** 1/30/2025
  - **Warehouse:** RETAIL
3. On the **Details** tab, do the following:
  - a. On the table toolbar, click **Add Transfer**.
  - b. In the **Add Transfer Order** dialog box, which opens, select the check box in the unlabeled column of the only row with the transfer order that you have processed earlier in this activity.
  - c. Click **Add & Close** to close the dialog box and add the line of the transfer order to the receipt.
4. On the form toolbar, click **Release** to release the transfer receipt. The system creates and releases the inventory receipt.
5. Open the *Inventory Summary* (IN401000) form.
6. In the Selection area, specify the following settings:
  - a. **Inventory ID:** GRAPEFRUIT
  - b. **Warehouse:** RETAIL

Notice that in the **On Hand** column, the quantity is 125, as shown in the following screenshot.

Inventory Summary											TOOLS ▾
* Inventory ID:		GRAPEFRUIT - Fresh grapefi <input type="button" value=""/>		Warehouse:	RETAIL - Retail Warehouse <input type="button" value=""/>						
<input type="checkbox"/> Expand by Cost Layer Types		Location: <input type="button" value=""/>									
Warehouse	Location	Available	Available for Shipment	SO Booked	SO Allocated	SO Shipped	SO Back Ordered	Purchase Orders	On Hand	Base Unit	
> RETAIL	<UNASSIGNED>	-25.00	0.00	25.00	0.00	0.00	0.00	0.00	0.00	LB	
RETAIL	MAIN	125.00	125.00	0.00	0.00	0.00	0.00	0.00	125.00	LB	
Total:		100.00	125.00	25.00	0.00	0.00	0.00	0.00	125.00	LB	

*Figure: The stock item received in the RETAIL warehouse*

You have replenished grapefruit in the *RETAIL* warehouse.

# Lesson 3: Replenishing Inventory Through Purchases

---

In this lesson, you will become familiar with the general settings and steps of replenishment through purchases and replenish stock by purchasing an item from a vendor.

## Replenishment Through Purchases: General Information

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The replenishment functionality in Acumatica ERP can accommodate various ways of replenishing stock items. You can maintain the needed level of stock at your warehouses by purchasing the appropriate quantity of items from vendors.

### Learning Objectives

In this lesson, you will do the following:

- Become familiar with the general workflow of item replenishment through purchases
- Replenish stock by purchasing items from a vendor

### Applicable Scenario

You perform replenishment through purchases if your company needs to optimize the replenishment of stock and to purchase stock items at the right time from particular vendors when the stock is below a certain level.

### Replenishment Through Purchases in Acumatica ERP

You can use the functionality of replenishment through purchases if the *Inventory Replenishment* feature and one or both of the following features are enabled on the [Enable/Disable Features](#) (CS100000) form:

- *Multiple Warehouse Locations*
- *Multiple Warehouses*

On the [Prepare Replenishment](#) (IN508000) form, you can view the list of stock items that require replenishment. A stock item is listed on the form if for the item at a warehouse where the item is needed, the following settings are specified on the **Inventory Planning** tab of the [Item Warehouse Details](#) (IN204500) form:

- **Reorder Point:** The stock level that prompts the system to replenish the stock of the item at this warehouse when the available quantity is below the reorder point specified for this item at this warehouse.
- **Replenishment Source: Purchase.**

On the [Prepare Replenishment](#) form, the quantity to process is calculated in the base unit of measure (UOM). On the [Create Purchase Orders](#) (PO505000) form, the quantity specified in the **Quantity** column is recalculated in the purchase UOM and displayed in the **UOM** column. For example, if ten stock items should be purchased in one box, then the quantity of ten UOMs is converted to one box to be purchased.

For details about the configuration of replenishment and the calculation of replenishment parameters, see [Replenishment for Stock Items](#).

### General Steps of Replenishment Through Purchases

To replenish stock items by purchasing them from a vendor, you perform the following general steps:

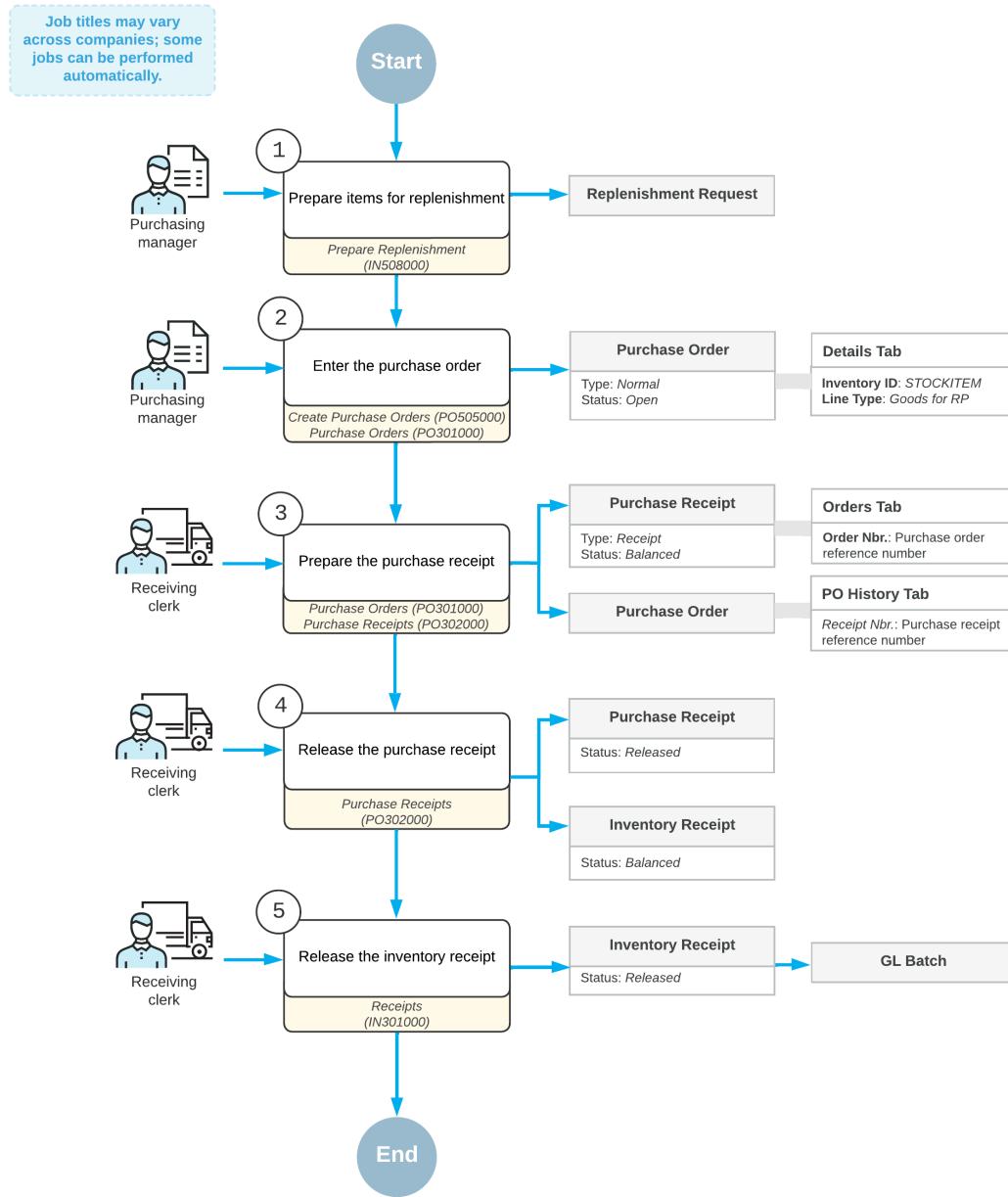
1. On the [Prepare Replenishment](#) (IN508000) form, which lists the stock items that require replenishment, you process all stock items or only those you select.

2. You create the needed purchase orders for all the stock items to be purchased from vendors by using the [Create Purchase Orders](#) (PO505000) form. You can work with each purchase order on the [Purchase Orders](#) (PO301000) form.
3. You create and release the following documents to reflect the receipt of the purchased items:
  - The purchase receipt on the [Purchase Receipts](#) (PO302000) form
  - The inventory receipt on the [Receipts](#) (IN301000) form

## Workflow of Replenishment Through Purchases

A general workflow of replenishment through purchases involves the steps and generated documents shown in the following diagram.

## Workflow of replenishment through purchases



## Replenishment Through Purchases: Process Activity

The following activity demonstrates how to prepare and perform a replenishment by purchasing the required quantity of goods from a vendor.

### Story

Suppose that you are Matt Parker, a purchasing manager of the SweetLife Fruits & Jams company. As part of your everyday routine, you buy fruits, including kiwis, in the SweetLife Head Office and Wholesale Center branch and refill stock. This branch orders fruit directly from vendors. It is time to buy kiwis when you have 50 pounds or less

of the item in the available stock. You need to specify replenishment settings for the item and replenish the item in the Wholesale warehouse.

You replenish kiwis in the *WHOLESALE* warehouse by purchasing the stock item from a vendor. The *KIWIS* stock item appears in the list of items for replenishment on the *Prepare Replenishment* (IN508000) form when you have 50 pounds (which is the base unit of measure for this item) or less of the item in the available stock.

## Configuration Overview

In the *U100* dataset, the following tasks have been performed to support this activity:

- On the *Enable/Disable Features* (CS100000) form, the following features have been enabled:
  - *Multiple Warehouses*
  - *Inventory Replenishment*
- On the *Replenishment Classes* (IN208800) form, the *PURCHASE* replenishment class has been created.
- On the *Warehouses* (IN204000) form, the *WHOLESALE* warehouse has been created.
- On the *Stock Items* (IN202500) form, the *KIWIS* stock item has been created.

## Process Overview

In this activity, you will do the following:

1. On the *Stock Items* (IN202500) form, specify the replenishment and vendor settings of the *KIWIS* stock item.
2. On the *Item Warehouse Details* (IN204500) form, review the replenishment settings of the *KIWIS* stock item in the *WHOLESALE* warehouse.
3. On the *Prepare Replenishment* (IN508000) form, prepare and process the stock items that require replenishment.
4. On the *Create Purchase Orders* (PO505000) form, prepare a purchase order for the vendor. On the *Purchase Orders* (PO301000) form, you will take it off hold and send it to the vendor.
5. On the *Purchase Receipts* (PO302000) form, prepare and process the purchase receipt for the items; the corresponding inventory receipt is automatically created on the *Receipts* (IN301000) form and released.

## System Preparation

Before you start preparing and performing replenishment through purchases, you should do the following:

1. In the info area, in the upper-right corner of the top pane of the Acumatica ERP screen, make sure that the business date in your system is set to *1/30/2025*. If a different date is displayed, click the Business Date menu button and select *1/30/2025* on the calendar. For simplicity, in this activity, you will create and process all documents in the system on this business date.
2. On the Company and Branch Selection menu, in the top pane of the Acumatica ERP screen, select the *SweetLife Head Office and Wholesale Center* branch.

## Step 1: Specifying the Replenishment and Vendor Settings of the Stock Item

To specify the replenishment and vendor settings of the *KIWIS* stock item, do the following:

1. Open the *KIWIS* stock item on the *Stock Items* (IN202500) form.
2. Go the **Vendors** tab. Notice that there is one row for the *ALLFRUITS* vendor.
3. In the **Lot Size** column, type 15.

4. On the **Inventory Planning** tab, in the row that has *Purchase* in the **Source** column, specify the following settings:
  - **Reorder Point:** 50
  - **Max Qty.:** 140
5. On the form toolbar, click **Save**.

## Step 2: Reviewing the Replenishment Settings of the Item-Warehouse Pair

To review the replenishment settings of the *KIWIS* stock item in the *WHOLESALE* warehouse, do the following:

1. Open the [Item Warehouse Details](#) (IN204500) form.
2. In the Summary area, specify the following settings:
  - **Inventory ID:** KIWIS
  - **Warehouse:** WHOLESALE
3. On the **Inventory Planning** tab, make sure that the following settings have been specified:
  - **Override Replenishment Settings:** Cleared
  - **Seasonality:** NONE
  - **Replenishment Source:** Purchase
  - **Replenishment Method:** Min./Max.
  - **Replenishment Warehouse:** Not selected
  - **Reorder Point:** 50
  - **Max Qty.:** 140

With these settings, you replenish kiwis in the *WHOLESALE* warehouse by purchasing the stock item from a vendor. The *KIWIS* stock item appears in the list of items for replenishment on the [Prepare Replenishment](#) (IN508000) form when you have 50 pounds (which is the base unit of measure for this item) or less of the item in the available stock. The **Max Qty.** value is used for the calculation of replenishment parameters in the *WHOLESALE* warehouse. For details, see [Configuration of Replenishment: Replenishment Methods](#).

## Step 3: Preparing the Replenishment

Suppose that as part of your everyday routine, you need to check whether any stock items in the *SweetLife Head Office and Wholesale Center* branch require replenishment; if so, you need to process them. Do the following:

1. Open the [Prepare Replenishment](#) (IN508000) form.
2. In the Selection area, specify the following settings:
  - **Warehouse:** WHOLESALE
  - **Purchase Date:** 1/30/2025
  - **Me:** Cleared
  - **Only Suggested Items:** Selected

With this setting, only items that require replenishment are displayed in the table.

The table shows the items pending replenishment in the *SweetLife Head Office and Wholesale Center* branch.

3. In the row for the *KIWIS* stock item, make sure that the following settings are specified:
  - **Replenishment Source:** Purchase
  - **Preferred Vendor ID:** ALLFRUITS
4. In the **Qty. to Process** column of this row, notice that 150 is specified. On the **Vendors** tab of the [Stock Items](#) (IN202500) form, the *ALLFRUITS* vendor's lot size is 15, so the system has increased the quantity to be a multiple of 15.

5. In this row, select the check box in the unlabeled column.
6. On the form toolbar, click **Process**. The **Processing** dialog box opens, showing the progress and then the results of the processing. The system generates the replenishment request for the purchase, which consists of the *KIWIS* item, and adds the request to the [Create Purchase Orders](#) (PO505000) form.
7. Click **Close** to close the **Processing** dialog box.

Notice that the row for the *KIWIS* stock item is no longer displayed in the table.

Now you can create a purchase order for the 150 pounds of kiwis.

## Step 4: Creating the Purchase Order

To create the purchase order for the All Fruits Mall vendor, do the following:

1. On the [Create Purchase Orders](#) (PO505000) form, in the row with the *IN Replanned* plan type and the *KIWIS* stock item, select the check box in the unlabeled column.
2. On the form toolbar, click **Process**.

The system creates a purchase order for 150 pounds of kiwis for the *ALLFRUITS* vendor and opens the order on the [Purchase Orders](#) (PO301000) form.

3. On the form toolbar, click **Remove Hold**. The system saves the purchase order and changes its status to *Open*.

Suppose that you now send the purchase order to the All Fruits Mall vendor by email.

4. Open the [Inventory Summary](#) (IN401000) form.
5. In the Selection area, specify the following settings:
  - **Inventory ID:** *KIWIS*
  - **Warehouse:** *WHOLESALE*

Notice that in the **On Hand** column, the quantity is 0.

## Step 5: Receiving the Stock Items from the Vendor

Suppose that the All Fruits Mall vendor has delivered kiwis to your *WHOLESALE* warehouse.

To create the documents that reflect the receipt of the purchased item, do the following:

1. On the [Purchase Orders](#) (PO301000) form, open the purchase order with 150 pounds of kiwis, which you have created in the previous step.
2. On the form toolbar, click **Enter PO Receipt**. The system opens the [Purchase Receipts](#) (PO302000) form with the new purchase receipt. The receipt has the *Balanced* status and the data copied from the linked purchase order.
3. On the form toolbar, click **Release**. The system creates and releases the inventory receipt. On the **Other** tab, in the **Inventory Ref. Nbr.** column, you can view the reference number of the created inventory receipt; you could also click the reference number link to view the inventory receipt on the [Receipts](#) (IN301000) form.
4. Open the [Inventory Summary](#) (IN401000) form.
5. In the Selection area, specify the following settings:
  - **Inventory ID:** *KIWIS*
  - **Warehouse:** *WHOLESALE*

In the **On Hand** column, notice that the quantity is 150, as shown in the following screenshot.

The screenshot shows the Microsoft Dynamics 365 Inventory Summary screen. At the top, there are search and filter icons, and a 'TOOLS' dropdown. Below that, a search bar contains 'KIWIS - Fresh kiwis 1 lb' and a 'Warehouse' dropdown set to 'WHOLESALE - Wholesale W'. There is also a checkbox for 'Expand by Cost Layer Types' and a location search field. The main area displays a table of inventory items. The columns are: Warehouse, Location, Available, Available for Shipment, SO Booked, SO Allocated, SO Shipped, SO Back Ordered, Purchase Orders, On Hand, and Base Unit. A single row is visible for 'WHOLESALE MAIN', showing values: Available 150.00, Available for Shipment 150.00, SO Booked 0.00, SO Allocated 0.00, SO Shipped 0.00, SO Back Ordered 0.00, Purchase Orders 0.00, On Hand 150.00, and Base Unit LB. A red box highlights the 'On Hand' value of 150.00.

Warehouse	Location	Available	Available for Shipment	SO Booked	SO Allocated	SO Shipped	SO Back Ordered	Purchase Orders	On Hand	Base Unit
WHOLESALE	MAIN	150.00	150.00	0.00	0.00	0.00	0.00	0.00	150.00	LB
	Total:	150.00	150.00	0.00	0.00	0.00	0.00	0.00	150.00	LB

**Figure: The stock items received in the WHOLESALE warehouse**

You have replenished kiwis in the WHOLESALE warehouse.

# Lesson 4: Replenishing Inventory Through a Distribution Center

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In this lesson, you will become familiar with the general settings and steps of replenishment through a distribution center and replenish stock by transferring an item from a distribution center to the destination warehouse.

## Replenishment Through a Distribution Center: General Information

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The replenishment functionality in Acumatica ERP can accommodate various ways of replenishing stock items. You can maintain a particular quantity of stock items in a destination warehouse by purchasing items that are first received at a source warehouse and then transferred to the destination warehouse. The company may use this source warehouse as a distribution center.

### Learning Objectives

In this lesson, you will do the following:

- Become familiar with the general workflow of item replenishment through a distribution center
- Replenish stock by transferring items from a distribution center to the destination warehouse

### Applicable Scenario

You perform replenishment through a warehouse that functions as a distribution center if your company performs consolidated purchasing to this warehouse and other warehouses are replenished from the distribution center.

### Replenishment Through a Distribution Center in Acumatica ERP

You can use the functionality of replenishment through a distribution center if the *Inventory Replenishment* and *Multiple Warehouses* features are enabled on the [Enable/Disable Features](#) (CS100000) form.

In Acumatica ERP, if your company has multiple warehouses, you can configure replenishment for multiple warehouses by performing centralized purchasing to a distribution center. This distribution center is then the source warehouse for transfers to destination warehouses.

On the [Prepare Replenishment](#) (IN508000) form, you can view the list of stock items that require replenishment. A stock item is listed on the form if for the item at the warehouse where the item is needed, the following settings are specified on the **Inventory Planning** tab of the [Item Warehouse Details](#) (IN204500) form:

- **Reorder Point:** The stock level that prompts the system to replenish the stock of the item at this warehouse when the available quantity is below the reorder point specified for this item at this warehouse.
- **Replenishment Source:** *Purchase*.
- **Replenishment Warehouse:** The warehouse that functions as a distribution center.

For details about the configuration of replenishment and the calculation of replenishment parameters, see [Replenishment for Stock Items](#).

On the [Prepare Replenishment](#) form, the quantity to process is calculated in the base unit of measure (UOM). On the [Create Purchase Orders](#) (IN505000) and [Create Transfer Orders](#) (SO509000) forms, the quantity specified in the **Quantity** column is recalculated in the purchase UOM and displayed in the **UOM** column. For example, if ten stock items should be purchased in one box, then the quantity of ten UOMs is converted to one box to be purchased.

## General Steps of Replenishment Through a Distribution Center

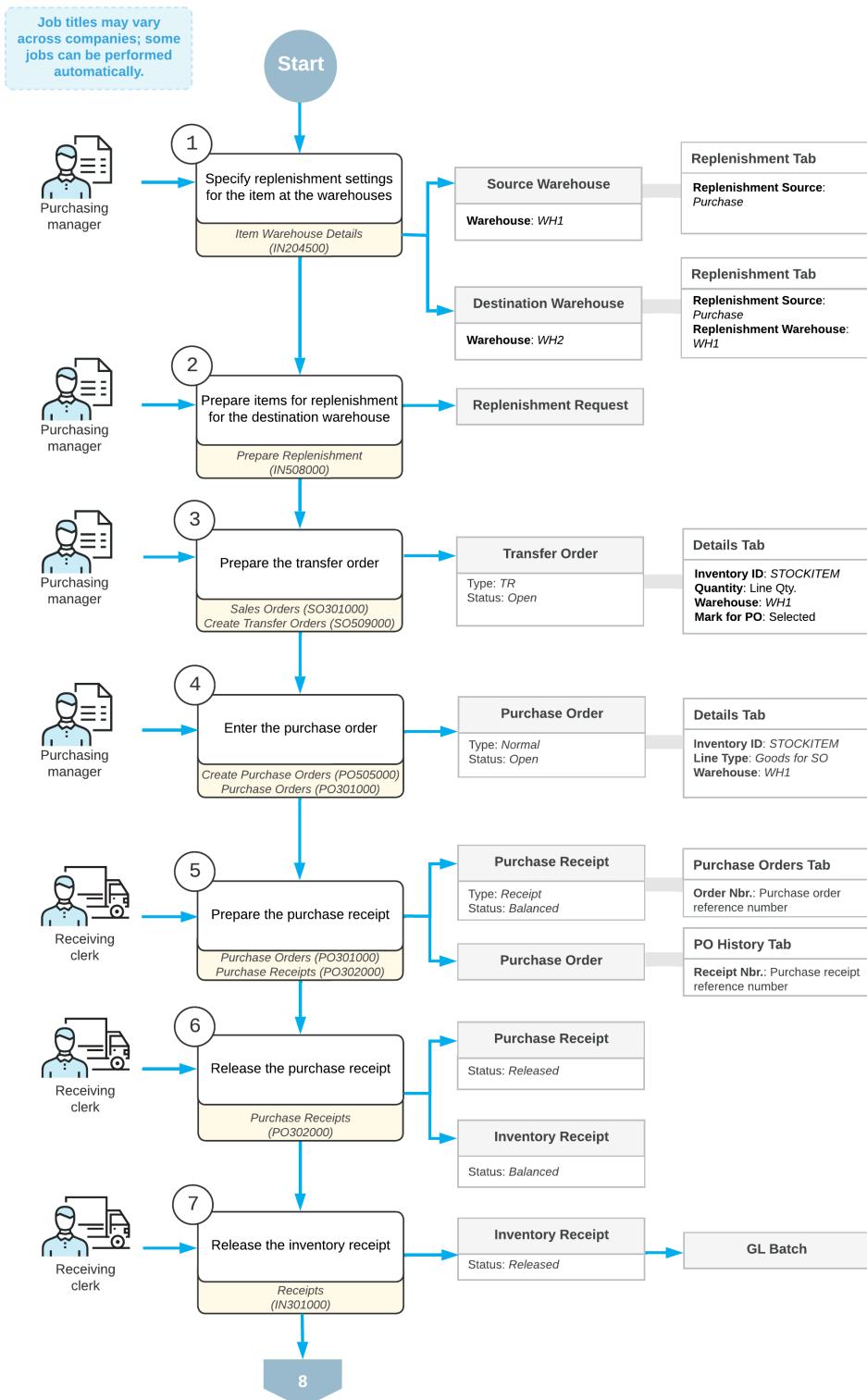
To replenish stock items by purchasing items that are first received at a distribution center and transferring the items to the destination warehouse, you perform the following general steps:

1. On the **Inventory Planning** tab of the *Item Warehouse Details* (IN204500) form, for the stock items in the distribution center, you select *Purchase* as the replenishment source; you do not specify a replenishment warehouse. For the stock items in the destination warehouses (which should be replenished through purchasing to a distribution center), you specify *Purchase* as the replenishment source and select the distribution center as the replenishment warehouse.
2. For the source warehouses, you process the needed stock items that require replenishment: On the *Prepare Replenishment* (IN508000) form, which lists the stock items that require replenishment, you process all stock items or only those you select.
3. You generate transfer orders requesting replenishment by using the *Create Transfer Orders* (SO509000) form. These orders will move the products from the replenishment warehouse to the warehouse in which you need to replenish the item. When you generate the transfer orders, for the orders of the *TR* type on the **Details** tab of the *Sales Orders* (SO301000) form, the system selects the **Mark for PO** check box for each row.
4. You generate purchase orders by using the *Create Purchase Orders* (PO505000) form. The system will create a purchase order for the source warehouse, which you can work with on the *Purchase Orders* (PO301000) form.
5. You create and release the following documents to reflect the receipt of the purchased items in the source warehouse:
  - The purchase receipt on the *Purchase Receipts* (PO302000) form
  - The inventory receipt on the *Receipts* (IN301000) form
6. By using the *Sales Orders* form as a starting point, you create the shipment from the transfer order that you have created. On the *Shipments* (SO302000) form, you confirm the shipment and update the inventory.
7. You receive the stock items in the destination warehouse as follows:
  - a. You create and release a transfer receipt on the *Purchase Receipts* form.
  - b. The system creates and releases the related inventory receipt on the *Receipts* form.

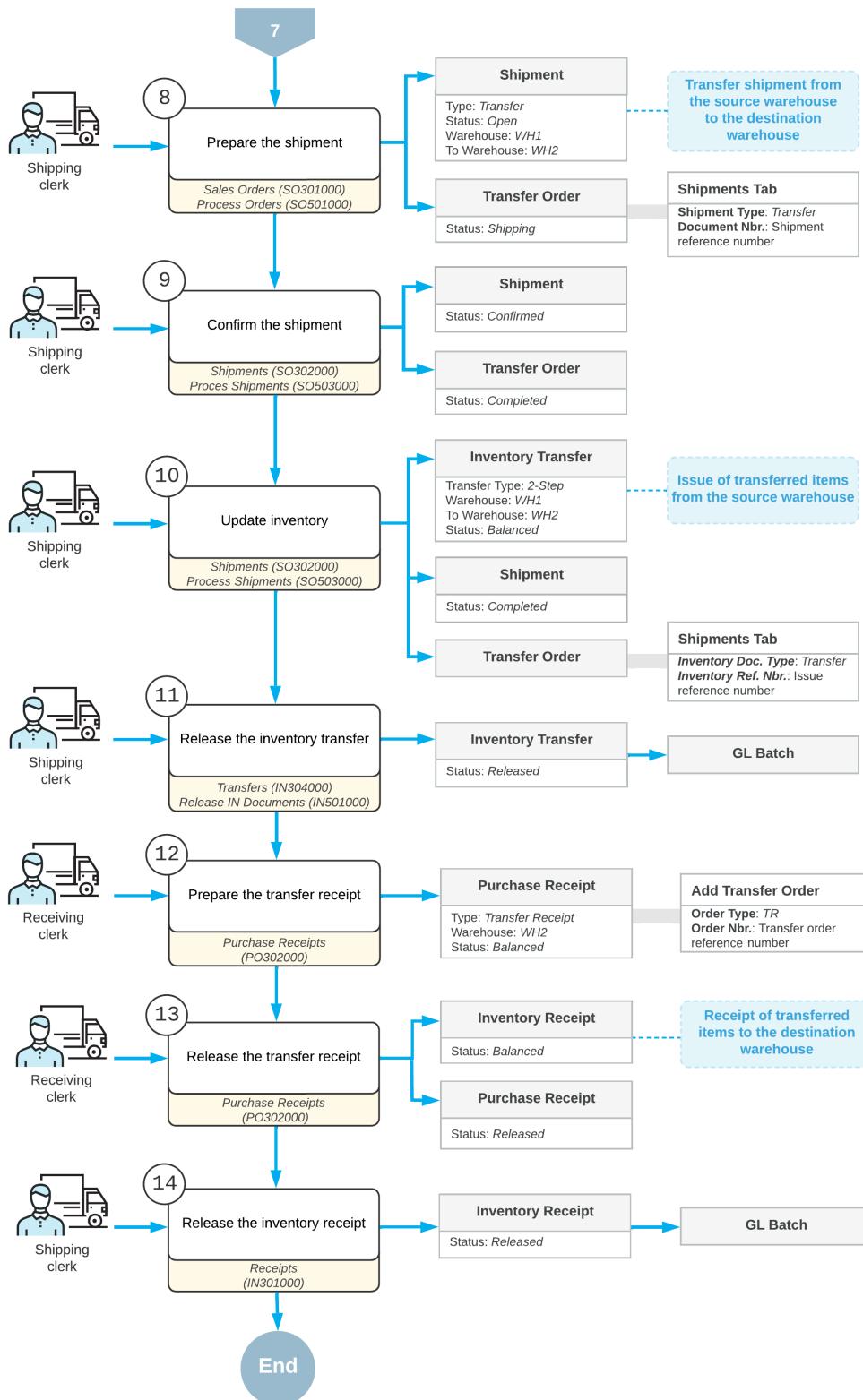
## Workflow of Replenishment Through a Distribution Center

A general workflow of replenishment by purchase through a distribution center involves the steps and generated documents shown in the following diagrams.

### Workflow of replenishment through a distribution center (part 1)



## Workflow of replenishment through a distribution center (part 2)



## Replenishment Through a Distribution Center: Process Activity

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The following activity demonstrates how to prepare and perform the replenishment of goods through a distribution center.

### Story

Suppose that you are Matt Parker, a purchasing manager at the SweetLife Fruits & Jams company. The SweetLife Store branch regularly receives small orders for mangoes from a customer. To fill your stock, you order mangoes from the Glory Fruit Case vendor by using the replenishment functionality.

In the SweetLife company, fruits are delivered to the Wholesale warehouse, which serves as a distribution center for the other warehouses. To make sure that mangoes are allocated for the Retail warehouse, you will purchase mangoes to the Wholesale warehouse and then transfer the fruits from the Wholesale warehouse to the Retail warehouse.

### Configuration Overview

In the *U100* dataset, the following tasks have been performed to support this activity:

- On the [Enable/Disable Features](#) (CS100000) form, the following features have been enabled:
  - *Multiple Warehouses*
  - *Inventory Replenishment*
- On the [Warehouses](#) (IN204000) form, the *WHOLESALE* and *RETAIL* warehouses have been created.
- On the [Stock Items](#) (IN202500) form, the *MANGOES* stock item has been created.
- On the [Order Types](#) (SO201000) form, the *Transfer (TR)* order type, which can be selected on the [Sales Orders](#) (SO301000) form for a transfer order, has been created.

### Process Overview

In this activity, you will do the following:

1. On the [Stock Items](#) (IN202500) form, specify the economic order quantity for the *MANGOES* stock item.
2. On the [Item Warehouse Details](#) (IN204500) form, review the replenishment settings of the *MANGOES* stock item in the *RETAIL* warehouse.
3. Prepare replenishment for the needed stock items in the *RETAIL* warehouse on the [Prepare Replenishment](#) (IN508000) form.
4. Prepare a transfer order on the [Create Transfer Orders](#) (SO509000) form.
5. Prepare a purchase order for the vendor to the *WHOLESALE* warehouse on the [Create Purchase Orders](#) (PO505000) form. On the [Purchase Orders](#) (PO301000) form, you will take it off hold.
6. Prepare and process the purchase receipt for the items in the *WHOLESALE* warehouse on the [Purchase Receipts](#) (PO302000) form; the corresponding inventory receipt is automatically created on the [Receipts](#) (IN301000) form and released.
7. Prepare and process the sales order on the [Sales Orders](#) (SO301000) form and the shipment on the [Shipments](#) (SO302000) form to ship items from the *WHOLESALE* warehouse to the *RETAIL* warehouse.
8. Prepare and process the purchase receipt for the items in the *RETAIL* warehouse on the [Purchase Receipts](#) form; the corresponding inventory receipt is automatically created on the [Receipts](#) form and released.

## System Preparation

Before you start preparing and performing replenishment through a distribution center, you should do the following:

1. In the info area, in the upper-right corner of the top pane of the Acumatica ERP screen, make sure that the business date in your system is set to 1/30/2025. If a different date is displayed, click the Business Date menu button and select 1/30/2025 on the calendar. For simplicity, in this activity, you will create and process all documents in the system on this business date.
2. On the Company and Branch Selection menu, in the top pane of the Acumatica ERP screen, make sure the *SweetLife Head Office and Wholesale Center* branch is selected.

## Step 1: Specifying the Economic Order Quantity for the Stock Item

To specify the economic order quantity for the *MANGOES* stock item, do the following:

1. Open the *MANGOES* stock item on the [Stock Items](#) (IN202500) form.
2. Go to the **Vendors** tab. Notice that there is one row for the *GLORYFRUIT* vendor.
3. In the **EOQ** column, type 20. You will use the economic order quantity as the fixed quantity. SweetLife's warehouse specialists have determined this quantity of the *MANGOES* item by estimating the cost of ordering mangoes from the Glory Fruit Case vendor.
4. On the form toolbar, click **Save**.

For the *MANGOES* stock item, the *Fixed Reorder Quantity* replenishment method is used in the *RETAIL* warehouse. Based on this quantity, a request for replenishment for the same quantity can be generated on the [Prepare Replenishment](#) (IN508000) form.

## Step 2: Reviewing the Replenishment Settings of the Item-Warehouse Pair

To review the replenishment settings of the *MANGOES* stock item in the *RETAIL* warehouse, do the following:

1. Open the [Item Warehouse Details](#) (IN204500) form.
2. In the Summary area, specify the following settings:
  - **Inventory ID:** *MANGOES*
  - **Warehouse:** *RETAIL*
3. On the **Inventory Planning** tab, make sure that the following settings are specified:
  - **Override Replenishment Settings:** Selected
  - **Seasonality:** *NONE*
  - **Replenishment Source:** *Purchase*
  - **Replenishment Method:** *Fixed Reorder Qty*
  - **Replenishment Warehouse:** *WHOLESALE*
  - **Reorder Point:** *10*
  - **EOQ:** *20*

With these settings, you replenish mangoes in the *RETAIL* warehouse by purchasing the item through the *WHOLESALE* warehouse. The *MANGOES* item appears in the list of items for replenishment on the [Prepare Replenishment](#) (IN508000) form when you have 10 pounds (which is the base unit of measure for this item) or less of the item in the available stock. Also, 20 pounds of mangoes will be used as the fixed quantity for the calculation of replenishment parameters in the *RETAIL* warehouse.

## Step 3: Preparing the Replenishment

To prepare the replenishment for mangoes in the *RETAIL* warehouse, do the following:

1. Open the [Prepare Replenishment](#) (IN508000) form.
2. In the Selection area, specify the following settings:

- **Warehouse:** RETAIL
- **Purchase Date:** 1/30/2025
- **Me:** Cleared
- **Only Suggested Items:** Selected

With this setting, only items that require replenishment are displayed.

The table shows the items pending replenishment in the *SweetLife Head Office and Wholesale Center* branch, to which you are signed in.

3. In the row for the *MANGOES* stock item, review the following settings:
  - **Qty. to Process:** 20
  - **Replenishment Source:** Purchase
  - **Source Warehouse** (replenishment warehouse): WHOLESALE
  - **Preferred Vendor ID:** GLORYFRUIT
4. In this row, select the check box in the unlabeled column.
5. On the form toolbar, click **Process**. The **Processing** dialog box opens, showing the progress and then the results of the processing. The system generates a replenishment request for the *MANGOES* stock item and adds the request to the [Create Transfer Orders](#) (SO509000) form.
6. Click **Close** to close the **Processing** dialog box.

Notice that the row for the *MANGOES* stock item is no longer displayed in the table.

Now you can create a transfer order.

## Step 4: Creating the Transfer Order

To create a transfer order for the 20 pounds of mangoes, do the following:

1. On the [Create Transfer Orders](#) (SO509000) form, in the row with the *IN Replanned* plan type and the *MANGOES* stock item, select the check box in the unlabeled column.
  2. On the form toolbar, click **Process**.
- The system creates a transfer order for 20 pounds of mangoes and opens it on the [Sales Orders](#) (SO301000) form. Notice that the status of the order is *Open*. In the table footer, you can see that the *On Hand* quantity of mangoes is 0. This means that you cannot ship mangoes from the *WHOLESALE* warehouse yet because the item is not in stock and needs to be purchased.
3. On the **Details** tab, for the *MANGOES* line, make sure that the **Mark for PO** check box is selected. This means that the order line is marked for purchasing.

## Step 5: Creating the Purchase Order

To create the purchase order to purchase mangoes from the Glory Fruit Case vendor, do the following:

1. While you are still viewing the transfer order on the [Sales Orders](#) (SO301000) form, click **Create Purchase Order** on the More menu, under **Replenishment**.

2. On the [Create Purchase Orders](#) (PO505000) form, which opens, in the row with the *SO to Purchase* plan type and the *MANGOES* stock item, select the check box in the unlabeled column.
3. On the form toolbar, click **Process**.

The system creates a purchase order for 20 pounds of mangoes and opens it on the [Purchase Orders](#) (PO301000) form. Notice that the status of the order is *On Hold*.

4. On the form toolbar, click **Remove Hold**. The system changes the status of the purchase order to *Open*.

Suppose that you now print the purchase order and send it to the Glory Fruit Case vendor by mail.

## Step 6: Receiving the Stock Items from the Vendor

Suppose that the Glory Fruit Case vendor has delivered the mangoes to the Wholesale warehouse. To prepare the documents to reflect the receipt of the mangoes, do the following:

1. While you are still viewing the purchase order with 20 pounds of mangoes on the [Purchase Orders](#) (PO301000) form, click **Enter PO Receipt** on the form toolbar. The system opens the [Purchase Receipts](#) (PO302000) form with the new receipt. The receipt has the *Balanced* status and the data copied from the linked purchase order.
2. On the form toolbar, click **Release**. The system creates and releases the purchase receipt. On the **Other** tab, in the **IN Ref. Nbr.** box, you can view the reference number of the created inventory receipt; you could also click the reference number link to view the inventory receipt on the [Receipts](#) (IN301000) form.
3. Open the [Inventory Summary](#) (IN401000) form.
4. In the Selection area, specify the following settings:
  - a. **Inventory ID:** *MANGOES*
  - b. **Warehouse:** *WHOLESALE*

In the **On Hand** column, notice that the quantity of 20, representing the 20 pounds of mangoes that you have received. In the **SO Allocated** column, notice that 20 is displayed, which means that this quantity is allocated for the sales order of the *Transfer* type to the *RETAIL* warehouse.

The mangoes are ready for shipment to the *RETAIL* warehouse.

## Step 7: Shipping the Stock Items from the Distribution Center

To prepare the documents for shipping the mangoes from the *WHOLESALE* warehouse to the *RETAIL* warehouse, do the following:

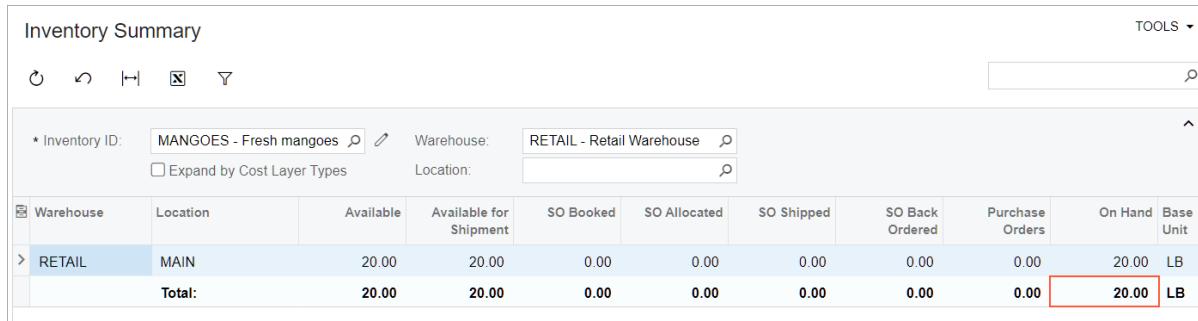
1. On the [Sales Orders](#) (SO301000) form, open the transfer order for the 20 pounds of mangoes. You prepared this transfer order in Step 4 of this activity to transfer the purchased fruits from the *WHOLESALE* warehouse to the *RETAIL* warehouse.
2. On the form toolbar, click **Create Shipment**.
3. In the **Specify Shipment Parameters** dialog box, which opens, make sure that the 1/30/2025 date and the *WHOLESALE* source warehouse are specified, and click **OK**. The system closes the dialog box, creates the related shipment of the *Transfer* type, and opens it on the [Shipments](#) (SO302000) form.
4. On the form toolbar, click **Confirm Shipment**.
5. To update the inventory of the *WHOLESALE* warehouse and issue the items from the *WHOLESALE* warehouse, on the form toolbar, click **Update IN**. The system issues the mangoes from the *WHOLESALE* warehouse and changes the status of the shipment to *Completed*. On the **Orders** tab, in the **Inventory Ref. Nbr.** column, you can view the reference number of the created transfer order; if needed, you could click the link to open the transfer of the 2-Step type on the [Transfers](#) (IN304000) form.

## Step 8: Receiving the Stock Items in the Warehouse

Suppose that the *RETAIL* warehouse receives the mangoes. To update the stock, do the following:

1. On the *Purchase Receipts* (PO302000) form, add a new record.
2. In the Summary area, specify the following settings:
  - **Type:** Transfer Receipt
  - **Warehouse:** RETAIL
3. On the **Details** tab, do the following:
  - a. On the table toolbar, click **Add Transfer**.
  - b. In the **Add Transfer Order** dialog box, which opens, select the check box in the unlabeled column of the only row, which is for the transfer that you have processed earlier in this activity.
  - c. Click **Add & Close** to add the line with the stock item to be received to the transfer receipt.
4. On the form toolbar, click **Release**. The system releases the transfer receipt and creates and releases the related inventory receipt. On the **Other** tab, in the **IN Ref. Nbr.** box, you can view the reference number of the created inventory receipt; if needed, you could also click the reference number link to view the inventory receipt on the *Receipts* (IN301000) form.
5. Open the *Inventory Summary* (IN401000) form.
6. In the Selection area, specify the following settings:
  - a. **Inventory ID:** MANGOES
  - b. **Warehouse:** RETAIL

Notice that in the **On Hand** column, the quantity is 20, as shown in the following screenshot.



The screenshot shows the 'Inventory Summary' form with the following details:

Inventory Summary										TOOLS ▾	
<input type="button" value="↻"/>		<input type="button" value="↶"/>	<input type="button" value="↷"/>	<input type="button" value="✖"/>	<input type="button" value="▼"/>						
* Inventory ID:		MANGOES - Fresh mangoes <input type="text"/>		Warehouse:	RETAIL - Retail Warehouse <input type="text"/>						
		<input type="checkbox"/> Expand by Cost Layer Types		Location:	<input type="text"/>						
Warehouse	Location	Available	Available for Shipment	SO Booked	SO Allocated	SO Shipped	SO Back Ordered	Purchase Orders	On Hand	Base Unit	
> RETAIL	MAIN	20.00	20.00	0.00	0.00	0.00	0.00	0.00	20.00	LB	
	Total:	20.00	20.00	0.00	0.00	0.00	0.00	0.00	20.00	LB	

*Figure: The stock item received in the RETAIL warehouse*

Now the 20 pounds of mangoes are available for sale in the *RETAIL* warehouse.

# Additional Materials

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This part of the guide describes an example of replenishment parameter calculation and provides the settings that are needed for configuration of replenishment and for replenishment of inventory.

## Appendix A

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This appendix provides an example of the calculation of replenishment parameters based on historical sales data.

### Configuration of Replenishment: Example of Parameter Calculation

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The following example illustrates the calculation of replenishment parameters based on three months of historical sales data.

#### Company Story

Suppose that on March 1, the ABC company first purchased a new gadget for bikers (the *New Gadget* stock item) and sold it to a local sporting goods store, Best Sports. Best Sports decided to order 200 units during April and May.

ABC's purchasing manager, who is responsible for sales of the *New Gadget* item, has checked the item's settings on the [Stock Items](#) (IN202500) form. On the **Inventory Planning** tab, the manager has specified the following replenishment parameters during these three months of sales:

- **Safety Stock:** 20
- **Reorder Point:** 50
- **Max Quantity:** 200

Before extending the sales to other customers, the purchasing manager has decided to collect the relevant sales data during the first three months and then calculate the replenishment parameters based on this data by using the following settings on the [Stock Items](#) form:

- **Forecast Type:** Month
- **Periods to Analyze:** 3
- **Launch Date:** March 1

#### Timeline of Events

The purchasing manager tracks the events related to *New Gadget* and collects the data as follows.

*Table: Timeline of Purchasing, Receiving, and Replenishing New Gadget*

Business Date	Event	Form
<b>March</b>		
March 1	ABC configures replenishment for <i>New Gadget</i> .	Multiple forms. For details, see <a href="#">Configuration of Replenishment: General Information</a> .
March 1	A purchase order for 200 units of <i>New Gadget</i> is created, approved, and sent to the <i>Best Gadgets</i> vendor.	<a href="#">Purchase Orders</a> (PO301000)

Business Date	Event	Form
March 15	The Best Sports store places a sales order for 200 units.	<a href="#">Sales Orders</a> (SO301000)
March 21	ABC receives 200 units of <i>New Gadget</i> . A purchase receipt for 200 units is released.	<a href="#">Purchase Receipts</a> (PO302000)
March 22	A shipment to the Best Sports store is confirmed.	<a href="#">Shipments</a> (SO302000)
March 31	ABC collects the data: <ul style="list-style-type: none"><li>• Total sales: 200 units</li><li>• Daily demand: <math>200 / 31 = 6.45</math></li><li>• Lead time: 20 days</li></ul>	Offline event
<b>April</b>		
April 1	ABC prepares replenishment for <i>New Gadget</i> .	<a href="#">Prepare Replenishment</a> (IN508000)
April 1	A purchase order for 200 units of <i>New Gadget</i> is created, approved, and sent to the <i>New Gadget</i> vendor.	<a href="#">Purchase Orders</a>
April 15	The Best Sports store places a sales order for 200 units of <i>New Gadget</i> .	<a href="#">Sales Orders</a>
April 18	ABC receives 200 units of <i>New Gadget</i> . A purchase receipt for 200 units is created and then released.	<a href="#">Purchase Receipts</a>
April 22	A shipment to Best Sports is confirmed.	<a href="#">Shipments</a>
April 30	ABC collects the data: <ul style="list-style-type: none"><li>• Total sales: 200 units</li><li>• Daily demand: <math>200 / 30 = 6.67</math></li><li>• Lead time: 17 days</li></ul>	Offline event
<b>May</b>		
May 1	ABC prepares replenishment for <i>New Gadget</i> .	<a href="#">Prepare Replenishment</a>
May 1	A purchase order for 200 units of <i>New Gadget</i> is created, approved, and sent to the <i>Best Gadgets</i> vendor.	<a href="#">Purchase Orders</a>
May 15	ABC receives 200 units of <i>New Gadget</i> . A purchase receipt for 200 units is created and released.	<a href="#">Sales Orders</a>
May 15	Best Sports places a sales order for 200 units.	<a href="#">Purchase Receipts</a>
May 22	A shipment to Best Sports is confirmed.	<a href="#">Shipments</a>

Business Date	Event	Form
May 31	ABC collects the data: <ul style="list-style-type: none"><li>• Total sales: 200 units</li><li>• Daily demand: <math>200 / 31 = 6.45</math></li><li>• Lead time: 14 days</li></ul>	Offline event
<b>June</b>		
June 1	ABC uses the collected data to calculate the replenishment parameters, as described in the following section.	<a href="#">Calculate Replenishment Parameters</a> (IN508500)

## Calculation of Replenishment Parameters

On June 1, the purchasing manager initiates the calculation of replenishment parameters by using the [Calculate Replenishment Parameters](#) (IN508500) form. The service level for the *New Gadget* stock item is specified as 90%.

The system calculates the replenishment parameters as follows.

Parameter	Suggested Values	Calculation	Comment
Average Daily Demand	6.52	$(200 + 200 + 200) / (31 + 30 + 31)$	The value is calculated according to the formula. For details, see <a href="#">Configuration of Replenishment: Demand Forecast Model</a> .
<b>Lead Time STDEV</b>	0.10	STDEV(200 / 31, 200 / 30, 200 / 31)	Standard deviation of the lead time (in days) from the average value
<b>Lead Time Average</b>	17	$(20 + 17 + 14) / 3$	<a href="#">Item Warehouse Details</a> (IN204500) form
STDEV	2.45	STDEV(20, 17, 14)	Lead time for standard deviation of purchases
<b>Service Level</b>	90%		The value is copied from the item on the <a href="#">Stock Items</a> (IN202500) form
Normsinv (Service Level)	1.28		The value is calculated according to the formula. For details, see <a href="#">Configuration of Replenishment: Demand Forecast Model</a> .
<b>Safety Stock</b>	20.6	$1.28 * \text{SQRT}((17 * 0.1)^2 + (6.52 * 2.45)^2)$	The value is copied from the item on the <a href="#">Stock Items</a> form.
<b>Reorder Point</b>	131.49	$(17 * 6.52 + 20.6)$	The value is copied from the item on the <a href="#">Stock Items</a> form.

Parameter	Suggested Values	Calculation	Comment
<b>Max. Quantity</b>	131.49		The value is copied from the item on the <i>Stock Items</i> form.

As this simple example shows, the reorder point should be increased to 131 units, mostly because of a rather large average lead time.

## Appendix B

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This appendix provides the settings that are needed for configuration of replenishment and for replenishment of inventory through transfers, through purchases, and through a distribution center.

### Configuration of Replenishment: Configuration Prerequisites

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Before you start configuring replenishment in Acumatica ERP, you should be sure that the needed features have been enabled, settings have been specified, and entities have been created, as described in the following sections.

#### Enabling the Needed Features

On the *Enable/Disable Features* (CS100000) form, the following features have been enabled:

- *Inventory Replenishment*
- *Multiple Warehouse Locations* if your company uses multiple warehouse locations
- *Multiple Warehouses* if your company replenishes inventory through transfers

#### Configuring the System

You need to make sure that the following tasks have been performed in Acumatica ERP before you start to configure replenishment:

- Basic company settings have been configured, as described in *Preparing an Instance for Implementation*.
- At least the minimum general ledger, cash management, accounts payable, and accounts receivable functionality has been implemented. These functional areas of Acumatica ERP do not require any change to their configuration when replenishment is configured; however, this functionality should be implemented before you set up replenishment. For details, see *Company Without Branches*.
- The basic configuration of order management with inventory has been performed, as described in *Order Management with Inventory*.
- On the *Warehouses* (IN204000) form, the needed warehouses have been created.
- On the *Item Classes* (IN201000) form, the needed item classes have been created.
- On the *Stock Items* (IN202500) form, the needed stock items have been created.
- Optional: On the *Replenishment Seasonality* (IN206600) form, the needed seasonalities have been created.

## Identifiers for Replenishment Requests

Acumatica ERP uses a numbering sequence to automatically generate identifiers for new replenishment requests. Replenishment requests are internal records that the system creates automatically when you process stock items on the [Prepare Replenishment](#) (IN508000) form. Thus, this numbering sequence is for internal use only.

On the **General** tab of the [Inventory Preferences](#) (IN101000) form (**Numbering Settings** section), you can review the numbering sequence that is used to generate identifiers for replenishment requests.

## Replenishment Through Transfers: Implementation Checklist

The following sections provide details you can use to ensure that the system is configured properly for performing replenishment through transfers, and to understand (and change, if needed) the settings that affect the processing workflow.

### Implementation Checklist

We recommend that before you start performing replenishment through transfers, you make sure that the needed features have been enabled, settings have been specified, and entities have been created, as summarized in the following checklist.

Form	Criteria to Check
<a href="#">Enable/Disable Features</a> (CS100000)	<p>The following features have been enabled:</p> <ul style="list-style-type: none"> <li>• <i>Inventory and Order Management</i></li> <li>• <i>Inventory</i></li> <li>• <i>Inventory Replenishment</i></li> <li>• <i>Multiple Warehouses</i> if your company replenishes inventory through transfers</li> <li>• <i>Multiple Warehouse Locations</i> if your company uses multiple warehouse locations</li> </ul>
Multiple forms	The replenishment functionality has been configured, as described in <a href="#">Configuration of Replenishment: General Information</a> .
<a href="#">Stock Items</a> (IN202500)	The needed stock items have been created and the replenishment settings have been specified for each existing stock item for which replenishment will be performed.
<a href="#">Order Types</a> (SO201000)	The needed order types have been created.

## Replenishment Through Purchases: Implementation Checklist

The following sections provide details you can use to ensure that the system is configured properly for performing replenishment through purchases, and to understand (and change, if needed) the settings that affect the processing workflow.

## Implementation Checklist

We recommend that before you start performing replenishment by purchase, you make sure the needed features have been enabled, settings have been specified, and entities have been created, as summarized in the following checklist.

Form	Criteria to Check
<a href="#">Enable/Disable Features</a> (CS100000)	<p>The following features have been enabled:</p> <ul style="list-style-type: none"> <li><i>Inventory and Order Management</i></li> <li><i>Inventory</i></li> <li><i>Inventory Replenishment</i></li> <li><i>Multiple Warehouses</i></li> <li><i>Multiple Warehouse Locations</i> if your company uses multiple warehouse locations</li> </ul>
Multiple forms	<p>The replenishment functionality has been configured, as described in <a href="#">Configuration of Replenishment: General Information</a>.</p>
<a href="#">Stock Items</a> (IN202500)	<p>The needed stock items have been created and the replenishment settings have been specified for each existing stock item for which replenishment will be performed.</p>

## Other Settings That Affect the Workflow

You can affect the workflow of replenishment through purchases by specifying additional settings. To cause the system to use the default vendor of the inventory item, select the **Default** check box for this vendor on the **Vendors** tab of the [Stock Items](#) (IN202500) form.



If your organization uses multiple warehouses, you can also specify the preferred vendor on the [Item Warehouse Details](#) (IN204500) form for the combination of an item and a warehouse. By default, the system inserts the default vendor specified for the item, but you can override the preferred vendor by selecting the **Override Preferred Vendor** check box and then selecting the needed vendor in the **Preferred Vendor** box.

## Replenishment Through a Distribution Center: Implementation Checklist

The following sections provide details you can use to ensure that the system is configured properly for performing replenishment through a distribution center, and to understand (and change, if needed) the settings that affect the processing workflow.

### Implementation Checklist

We recommend that before you start performing replenishment through a distribution center, you make sure the needed features have been enabled, settings have been specified, and entities have been created, as summarized in the following checklist.

Form	Criteria to Check
<a href="#"><i>Enable/Disable Features</i></a> (CS100000)	<p>The following features have been enabled:</p> <ul style="list-style-type: none"><li>• <i>Inventory and Order Management</i></li><li>• <i>Inventory</i></li><li>• <i>Inventory Replenishment</i></li><li>• <i>Multiple Warehouses</i></li></ul>
Multiple forms	<p>The replenishment functionality has been configured, as described in <a href="#"><i>Configuration of Replenishment: General Information</i></a>.</p>
<a href="#"><i>Stock Items</i></a> (IN202500)	<p>The needed stock items have been created and the replenishment settings have been specified for each existing stock item for which replenishment will be performed.</p>