CHAPTER 1: ITEM TRACKING – USABILITY

Objectives

The objectives are:

- Select one or multiple serial/lot numbers based on availability, bin, and expiration date.
- Reclassify serial/lot numbers and reuse information cards.
- Count serial/lot numbers for detailed physical inventory.
- Reserve items carrying serial/lot numbers.

Introduction

Usability of item tracking functionality is important for the productivity of end-users and to instill confidence that item tracking entries are created correctly – especially for outbound transactions. Item Tracking in Microsoft Dynamics™ Nav 5.0 introduces several improvements and new features with the common purpose of increasing the usability of item tracking functionality in the system.

A renewed look-up-and-select design enables outbound order handlers to select single or multiple serial/lot numbers based on advanced availability information. This helps reassure order processors that the supply promised to customers is secured at selection time – not just at posting time. Available serial/lot numbers are automatically sorted and filtered by expiration date and bin code – both for manual selection and in auto-generated inventory picks.

Reclassification of serial/lot numbers is simplified and extended with functionality for reuse of serial/lot number information records. The physical inventory process is streamlined and extended to support serial/lot numbered inventory. New principles in the reservation system helps users in specific-tracking environments reserve serial/lot numbers without unnecessary application conflicts.

This chapter provides training on all the new features within the theme of item tracking usability and is taught as part conceptual description and part demonstration of actual use, and also exercises labs on selected functionality.
Outbound Serial/Lot Numbers

**NOTE:** All usability improvements covered in this topic relate to the selection of existing serial/lot numbers in inventory for outbound document lines, whereas functionality for first-time assignment of serial/lot numbers to items on in- or outbound documents is unchanged in version 5.0 and therefore not covered.

In earlier versions, order processors complained that the system did not warn about availability problems or conflicting use of serial/lot numbers at the point in time when they selected serial/lot numbers for outbound documents. The fact that the system only checked for serial/lot number availability when document lines were posted (sometimes hours or days after assigning serial/lot numbers) meant that open sales orders carrying serial/lot numbers may not always be considered committed supply. This situation frequently led order processors to make a reservation in addition to the assigned serial/lot numbers in order to help secure the items – even if the customer did not request specific serial/lot numbers.

**BEST PRACTICES:** The overuse of reservations in combination with serial/lot numbers is unfortunate as it disturbs the mechanisms of ATP (Available to Promise), namely to display rich availability information and only enable feasible supply commitments. Only some scenarios justify reserving specific items which already hold serial/lot numbers. Refer to the topic titled "Reserving Items carrying Serial/lot numbers."

Another general issue for serial/lot number handling in outbound documents was the fact that users were only able to select one serial/lot number from inventory at a time. This was annoying in customer installations without bar code readers, as selecting 30 serialized inventory items for a sales order required 30 separate lookups.

In the current version, the following usability features are provided to help outbound order handlers when they select from serial/lot numbers in inventory:

- Complete overview of availability. This includes quantities not yet committed to the database
- Warning symbols that appear on the item tracking line as soon as a conflicting serial/lot number or quantity is entered
- Ability to select multiple serial/lot numbers in one action

The availability calculation used for serial/lot numbers is based on a simple formula. For any given serial and/or lot number, the calculation is:

\[
\text{Available} = \text{quantity in inventory} - (\text{all demands} + \text{quantity in the current ITL window not yet written to database})
\]

**NOTE:** This formula implies that the serial/lot number availability calculation only considers inventory and ignores projected receipts.
Chapter 1: Item Tracking – Usability

The availability overview is provided within one central lookup window. This is dynamically named and adapted depending on which of these it is opened by using:

- Select Entries function – to select all needed serial/lot numbers in one action
- Lookup (F6) from the Serial No. field or the Lot No. field – to select one serial/lot number

Both selection methods take the user to the Item Tracking Summary window (dynamically named depending on where it is opened from). This displays availability information per serial/lot number about:

- How many are in inventory (Total Quantity)
- How many are selected for the item tracking line being handled, but not yet committed to the database (Current Pending Quantity)
- How many are assigned to all unposted document lines. This includes the one being handled (Total Requested Quantity)
- How many are reserved on the document line being handled
- How many are reserved on all unposted document lines
- When it expires (if carrying an expiration date)
- When its warranty expires (if carrying a warranty date)

Refer to the demonstration titled "Selling from a Specific Lot" for detailed descriptions of the user tasks involved in guaranteeing that a customer receives items from a specific requested lot – without making reservations.

The general usability and transparency improvements introduced with the new look-up-and-select design also support the following business configurations.

**Concurrent Selection of Serial/Lot Numbers**

For environments where multiple outbound order handlers plan for serial/lot numbers at the same time, the Refresh Availability button is available from the Item Tracking Lines window. This function can be used to regularly update availability information in the current instance of the window with any new commitments made in the database by other users.

Refer to steps 11 and 12 of the demonstration titled "Selling from a Specific Lot."

**Picking Serial/Lot Numbers from Bins**

If the item is handled at a location that requires a bin, the Item Tracking Summary window displays availability information for that particular bin. This makes it easier to pick in bin-controlled environments.

Refer to the demonstration titled "Selecting Serial/Lot Numbers from a Bin."
Selecting Items by Expiration Date

If an expiration date was defined for the serial/lot number when it entered inventory, that expiration date will be displayed in shaded font and read-only in the Item Tracking Lines window when that serial/lot number is outbound. Such serial/lot numbers are sorted by earliest expiration date so that outbound order handlers can easily select items by first-expire-first-out (FEFO). This sorting functionality also applies when the Select Entries function is used to select serial/lot numbers.

Refer to the demonstration titled "Selecting the First Serial Number to Expire."

Picking/Moving by FEFO

In warehouse configurations, expiration dates can be used to have the system auto-select serial/lot numbers according to their expiration date when filling in these documents:

- Inventory Pick
- Warehouse Pick
- Warehouse Movement

The following criteria must be met:

- The item was entered into inventory with an expiration date.
- The item uses SN and/or Lot Warehouse Tracking.
- The location is set up with Pick According to FEFO.

This completes the conceptual descriptions of improved serial/lot number handling in outbound processes. In this chapter are a series of demonstrations that relate to selected features within this area.

Demonstration – Selling from a Specific Lot

**ATTENTION**: Load a clean Cronus database without changes to the data.

This demonstrates how the overview of serial/lot number availability provides decision support to order processors at the time of selecting the serial/lot numbers. This instills confidence that the serial/lot-numbered supply they are promising to customers in unposted sales orders can in fact be fulfilled at posting time.

**Scenario**: An order processor at Cronus International Ltd. is about to create a sales order for ten Ethernet cables, item 80216-T.
NOTE: Item 80216-T is set up with lot-specific tracking. This means that outbound transactions with this item must be assigned a lot number selected from inventory (fully applied). It can be any lot number; however, it must exist in inventory.

The customer, Cannon Group PLC, is skeptical of the quality of the cables and has requested that the ten cables be from the same batch as their last delivery, LOT0002, where all are working well.

Before this sales negotiation, another order processor has already randomly selected some of the available Ethernet cables from LOT0002 for another customer who is not concerned with the lot number.

The order processor dealing with the Cannon Group can communicate the exact availability of LOT0002 and agree on a compromise offer when the customer is on the telephone.

NOTE: Similar scenarios may apply to other situations of outbound order handling, such as, a production planner requesting warehouse workers to pick components from a specific inventory lot.

Steps

Start by creating inventory for LOT0001, -0002, and -0003.

1. Create the following positive inventory adjustments on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Lot no.</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>80216-T</td>
<td>BLUE</td>
<td>LOT0001</td>
<td>10</td>
</tr>
<tr>
<td>80216-T</td>
<td>BLUE</td>
<td>LOT0002</td>
<td>10</td>
</tr>
<tr>
<td>80216-T</td>
<td>BLUE</td>
<td>LOT0003</td>
<td>10</td>
</tr>
</tbody>
</table>

HINT: To auto-assign the lot numbers from number series, click FUNCTIONS → ASSIGN LOT NO.

The resulting item ledger entries for item 80216-T must be as follows:

![Figure 1-1: Item Ledger Entries after Positive Adjustment](image)
Data is now created and ready to start the sales order process.

Continue with the steps of the other order processor who auto-selects twelve pieces from any lot.

2. Create this sales order line for any customer on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>80216-T</td>
<td>BLUE</td>
<td>12</td>
</tr>
</tbody>
</table>

3. Open the **Item Tracking Lines** window and then click **FUNCTIONS → SELECT ENTRIES**.

![Figure 1-2: The system pre-selects the required quantity]

The **Item Tracking – Select Entries** window (an adapted display of the **Item Tracking Summary** window) provides an overview of the serial/lot number availability for item 80216-T.

The **Selected Quantity** field is preset with a suggested selection of the needed quantity – ordered by lot and serial number sequence. Users can edit the suggested quantities as they like, if there is only one of each serial number, before they copy the selected quantities to the item tracking lines.

4. Click **OK** to carry the default selection to the **Item Tracking Lines** window and then close it.

Now that the unspecified sales order is created by using ten pieces from LOT0001 and two pieces from LOT0002 committed and awaiting posting, create the specified sales order for ten pieces from LOT0002.

**ATTENTION**: Do not process the first sales order any more.
Continue to try to select the ten pieces from LOT0002.

5. Create this sales order line for Cannon Group PLC on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>80216-T</td>
<td>BLUE</td>
<td>10</td>
</tr>
</tbody>
</table>

6. Open the Item Tracking Lines window and manually enter LOT0002 in the Lot No. field and 10 in the Quantity (Base) field.

Notice that a yellow triangle icon is displayed in the Availability, Lot No. field. This is an availability warning to indicate that one or more values entered on the item tracking line is not feasible according to the availability of LOT0002. (The warning icon acts on values in the Serial No., Lot No., and Quantity (Base) fields.)
7. Click the icon in the **Availability, Lot No.** field to see details.

![Availability Details Per Lot Number](image)

**FIGURE 1-4: AVAILABILITY DETAILS PER LOT NUMBER**

The **Availability** window is an adapted display of the **Item Tracking Summary** window that contains the current availability picture for LOT0002 only:

- **Total Quantity** of 10 are required on the sales line
- **Total Requested Quantity** of 2 are selected for to another sales line
- **Current Pending quantity** of 10 are entered in the current **ITL** window but not yet committed to the database.
- **Total Available Quantity** of -2 are (un)available to select.

The order processor is now aware that only eight Ethernet cables with LOT00002 are available, and that the last two must be selected from another lot.

8. Close the availability details for LOT0002 and change the value in the **Quantity (Base)** from 10 to 8.

The warning icon disappears to indicate that those eight are available and can be committed to the sales order. However, as indicated in the **Undefined** column in the header of the **Item Tracking Lines** window, two must still be selected from inventory for this sales order.
9. In the second (empty) item tracking line, look up from the **Lot No.** field to select from the current availability of lot numbers for the Ethernet cable at BLUE location.

![Figure 1-5: Updated Availability of Lot Numbers](image)

Notice in the second line that the current pending quantity is 8. This indicates that the selection performed in step 8 has not yet been committed to the database as the **Item Tracking Lines** window has not been closed. (The first line represents the ten pieces selected by the other order processor in step 4 of this demonstration.)

The order processor informs the customer that only 8 Ethernet cables from LOT0002 are available, and that the last two will be from another lot. The customer agrees to the terms.

10. Put the pointer in the last line (LOT0003) and then click **OK**.

![Figure 1-6: Two Pieces Are Selected From LOT0003](image)
Notice that the system has selected the needed quantity of two from LOT0003.

To be sure that no other users have been trying to select these serial/lot numbers when they were not committed to the database, the order processor uses a function that updates availability calculations across all concurrent writing of serial/lot numbers in the database.

11. From the Item Tracking Lines window, click FUNCTIONS→REFRESH AVAILABILITY.

![Figure 1-7: Refresh Message – No Warnings](image)

In this case, no other users have selected from the involved lot numbers and therefore there are no availability conflicts.

However, if, for example, the other order processor had gone in to select more pieces of LOT0002, the system gives the following warning upon running the refresh function.

![Figure 1-8: Refresh Message – Warnings](image)

Also, the yellow warning icon is displayed on the affected item tracking lines – to both users in each of their instance of the window.

**NOTE:** The availability refresh function is automatically performed when the Item Tracking Lines window is closed.
12. Close the Item Tracking Lines window. The selections are committed to the database.

The order processor has now secured the requested lot numbers and can move on to the next customer, reassured that the Cannon Group order can be posted successfully at any time.

**ATTENTION:** Do not process or post the two sales orders.

### Demonstration – Selecting Serial/Lot Numbers from a Bin

This demonstration shows how outbound order handlers can use the extra level of availability control offered with the handling of serial/lot numbers across multiple bins. It also shows how to easily select multiple serial/lot numbers in one action.

**Scenario:** Ellen, the warehouse manager, is optimizing inventory at SILVER location that is set up for bin control. She must transfer 14 serialized hard disks from bin S-01-0001 to BLUE location in no specific bin.

**Steps**

Start by adjusting the LOTSNSALES item tracking code to require warehouse tracking for both serial numbers and lot numbers, and then enter item-tracked inventory to a particular bin in SILVER location:

1. Open the item card of item 80218-T, Hard Disk Drive.
2. On the Item Tracking tab, enter SN1 in the Serial No. field.
3. Look up in the Item Tracking Code field and open the item tracking code card of the LOTSNSALES code (Shift+F5).
4. On the Serial No. tab, put a check mark in the SN Specific Tracking field and then in the SN Warehouse Tracking field.
5. On the Lot No. tab, put a check mark in the Lot Warehouse Tracking field.

Now this item tracking code is ready for a demonstration of selecting serial and lot numbers from specific bins.

6. Start to enter serial/lot numbers into different bins by creating the following positive inventory adjustments on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Bin</th>
<th>Serial no.</th>
<th>Lot no.</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>80218-T</td>
<td>SILVER</td>
<td>S-01-0001</td>
<td>SN000001-SN00010</td>
<td>LOT0004</td>
<td>10</td>
</tr>
<tr>
<td>80218-T</td>
<td>SILVER</td>
<td>S-01-0002</td>
<td>SN00011-SN00020</td>
<td>LOT0005</td>
<td>10</td>
</tr>
</tbody>
</table>
**HINT**: To auto-assign the serial/lot numbers from number series, click **FUNCTIONS → ASSIGN SERIAL NO** and put a check mark in the **Create New Lot No.** field.

The resulting warehouse entries must be as follows (item ledger entries do not show bin information):

![Warehouse Entries After Positive Adjustment](image)

**FIGURE 1-9: WAREHOUSE ENTRIES AFTER POSITIVE ADJUSTMENT**

Setup and data is now ready to start the transfer order processing. Continue to select available serial/lot numbers to transfer.

The warehouse manager creates the transfer order for 14 pieces, but upon selecting serial/lot numbers from bin S-01-0001, notices that only ten are available. The manager then decides to supplement with four pieces from another bin.

7. Create this transfer order on work date:

<table>
<thead>
<tr>
<th>Transfer-from Code</th>
<th>Transfer-to Code</th>
<th>Item</th>
<th>Transfer-from Bin Code</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>SILVER</td>
<td>BLUE</td>
<td>80218-T</td>
<td>S-01-0001</td>
<td>14</td>
</tr>
</tbody>
</table>

8. From the transfer order line, click **LINE → ITEM TRACKING LINES → SHIPMENT.**
9. Click **FUNCTIONS, SELECT ENTRIES**.

![Figure 1-10: The system pre-selects what is available in the bin](image)

Notice that, although the transfer line quantity is 14, the Select Entries function only pre-selects what is available in the specified bin, namely ten pieces.

The warehouse manager clearly sees that the bin only contains ten and decides to look into supplying the last four from another bin.

10. Click **OK** to carry the selected serial/lot numbers to the **Item Tracking Lines** window and close it.

11. In the first transfer order line, change the quantity to 10.

12. Create a second transfer order line for the same item and look up from the **Transfer-from Bin Code** field.

![Figure 1-11: Overview of availability in bins](image)
The warehouse manager sees that the hard disk drive is also available in bin S-01-0002 and selects it to determine which and how many serial/lot numbers the bin holds.

13. Enter 4 in the **Quantity** field.

14. Reopen the **Item Tracking Lines** window and use the Select Entries function.

![Select Entries Window](image)

**FIGURE 1-12: THE LAST FOUR ITEMS ARE PRE-SELECTED FROM ANOTHER BIN**

Notice that because the new transfer order line specifies bin S-01-0002, the Select Entries window now shows availability details for that bin only and has pre-selected the requested quantity.

15. Click **OK** to select the four serial/lot numbers for the second transfer line.

The warehouse manager can now continue to have the items picked – reassured that bin S-01-0001 is emptied and that the requested quantity of 14 will be transferred to BLUE location.

**ATTENTION:** Do not process or post the transfer order.
Demonstration – Selecting the First Serial Number to Expire

This demonstrates how to store and handle serial/lot numbers according to their expiration date. This functionality is required in certain industries (for example those under the American Food and Drug Administration (FDA) and is useful for perishable goods. Therefore, the following scenario may seem unrealistic as it uses computer hardware from the Cronus demonstration data.

**Scenario:** An order processor is about to sell one 17 inch M780 Monitor. This particular model shows bigger repair frequency the longer it is stored in inventory before sale. Expiration date control functions within the system help the order processor pick the monitor with the earliest expiration date.

**Steps**

Start the demonstration by adding monitors with expiration dates to inventory:

1. Create and post this positive item journal line for four serial numbers on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Serial no.</th>
<th>Expiration Date</th>
<th>Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>80102-T</td>
<td>BLUE</td>
<td>SN00021</td>
<td>01/24/08</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SN00022</td>
<td>01/24/07</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SN00023</td>
<td>01/24/06</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SN00024</td>
<td>01/24/09</td>
<td>1</td>
</tr>
</tbody>
</table>

The **Item Tracking Lines** window must look as follows before the inventory journal line is posted:

![Figure 1-13: Item Ledger Entries After the Positive Adjustment](image-url)
NOTE: Make sure that the expiration dates are created as instructed for each serial number, because it will make it easier to illustrate later how the system sorts the item ledger entries when outbound.

Data is now created and ready to start the sales order process. Continue to sell one of the three 17 inch M780 Monitors – the one that expires first.

2. Create this sales order line for any customer on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>80102-T</td>
<td>BLUE</td>
<td>1</td>
</tr>
</tbody>
</table>

3. Click LINE → ITEM TRACKING LINES and use the Select Entries Function.

Notice that the available items are sorted by expiration date, and that the system has pre-selected the monitor that expires first.

ATTENTION: Serial/lot numbers without expiration date will be listed last.

4. Select the serial number by clicking OK.

Notice in the Item Tracking Lines window that the existing expiration date is shaded. This indicates that the date was recorded as it entered inventory and cannot be changed – except by reclassification. Refer to the demonstration titled "Change Expiration Date, Add Comment, and Merge into New Lot."

ATTENTION: Do not process or post the sales order any more.

The demonstrated functionality of sorting serial/lot numbers by expiration date applies to all outbound handling of serial/lot numbers carrying expiration dates.

In inventory picks, warehouse picks, warehouse movements, and the related worksheets, the system will auto-select serial/lot numbers by expiration date in locations set up for Pick according to FEFO (setup field located on the Bin Policies tab of location cards).
Chapter 1: Item Tracking – Usability

This completes the description and demonstrations of improved usability and transparency for the general tasks involved in selecting specific serial/lot numbers for outbound transactions, namely that:

- Outbound order handlers can see across the whole database which and where serial/lot numbers are available for selection – and not only at posting time when it might be too late.
- Availability warnings are displayed immediately as yellow icons next to the affected serial/lot number if availability conflicts occur.
- Multiple serial/lot numbers can be selected in one action based on a suggested selection that can be modified.

In addition, special tasks involved in selecting serial/lot numbers from particular bins and by expiration date have been demonstrated.

Serial/Lot Numbers and Reclassification

In earlier versions, the steps that were required to reclassify serial/lot numbers were labor-intensive. In addition, if the serial/lot number being reclassified carried a serial number or lot number information card, this record was lost in the process and may have needed to be recreated or manually copied beforehand.

In the current version, several improvements and new features make the reclassification of serial/lot numbers easier.

Entering on Item Tracking Line

When the Item Tracking Lines window is opened from a reclassification journal, the New Lot No. and New Serial No. fields are located directly on the item tracking line. This means that users can enter the new data next to the original and preserve the overview. This design aligns with that of general data reclassification in reclassification journal lines.

Carrying to Reclassified Item and Copying to New Cards

Serial/lot number information records, including any attached comments, are automatically carried to the new serial/lot number during reclassification.

When the serial/lot number information cards create a new serial/lot number information card, users can copy from existing serial number or lot number information cards by selecting from the Serial No. information List window, for example.

Serial/lot information cards hold information about how many of the serial/lot numbers are expired – in the new Expired Inventory field.
Merging Expiring Lots – Under Certain Rules

The reclassification journal can be used to merge one or more lots into one new or existing lot. This is also the case for serial/lot numbers carrying expiration dates. But because a lot can only carry one expiration date, the merging of lots is subject to the following limitations:

- If you are reclassifying a lot to the same lot number but with a different expiration date, you must reclassify the whole lot remaining inventory by using one item reclassification journal line.
- If you are reclassifying more than one lot to one new lot number, you must enter the same new expiration date for all the lots.
- If you are reclassifying one existing lot to a second existing lot that has a different expiration date, you must use the expiration date from the second lot. If you leave the New Expiration Date field blank, the lot or serial number will be reclassified with a blank expiration date.

Demonstration – Change Expiration Date and Group in Lot

This demonstration shows that the reclassification of serial/lot numbers now aligns with the standard design of entering data into New fields next to the original. It also shows how to manage information cards.

Scenario: John, the warehouse worker, must change the expiration date of a particular serial number on the 17 inch M780 Monitor. It was wrongly entered as 01/24/09 and must be changed to 01/24/07. He must also record the change in a serial number information card with an attached comment. Last, he must group all expired monitors into a new lot called EXLOT.

Steps

Start by reclassifying SN00024:

1. Click WAREHOUSE, INVENTORY → ITEM RECLASS → JOURNALS
2. Create this item reclassification journal line on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>80102-T</td>
<td>BLUE</td>
<td>1</td>
</tr>
</tbody>
</table>

3. Open the Item Tracking Lines window, look up from the Serial No. field and select SN00024 (latest expiration date).
**Chapter 1: Item Tracking – Usability**

![Figure 1-15: Item Tracking Line for Reclassification](image)

Notice that the expiration date assigned when the monitor entered inventory is displayed as shaded to indicate that it cannot be edited on the item tracking line.

Before changing the expiration date, review the serial number information card.

4. **Click LINE→SERIAL NO. INFORMATION and go to the Inventory tab.**

The **Expired Inventory** field enables users to review availability in relation to expiration date. Notice that the quantity is zero. This indicates that SN00024 is not expired.

5. **Go back to the item tracking line and change the preset date in the New Expiration Date field to 01/24/07 (one year before work date).**

6. **Open the serial number information card again and enter the text Expired in the Description field:**

Continue to enter a comment for the information card instructing order processors to sell this monitor at a 20% discount.

7. **Click SERIAL NO.→COMMENT and enter this comment on work date.**
8. Close the comment, information, and item tracking lines windows and then post the reclassification journal.

SN00024 now has the correct expiration date and the inventory worker can continue to group all expired monitors under a new lot number.

Continue to group expired serial numbers in a new lot:

9. Create this item reclassification journal line on work date:

<table>
<thead>
<tr>
<th>Item</th>
<th>Location</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>80102-T</td>
<td>BLUE</td>
<td>2</td>
</tr>
</tbody>
</table>

10. Open the Item Tracking Lines window and use the Select Entries function to select the two oldest available monitors.

Notice that SN00023 is requested on a sales order and therefore not considered. As all four items carry expiration dates, the system suggests SN00022 and SN00024 (earliest expiration dates). Refer to the demonstration titled "Selecting the First Serial Number to Expire."
Before creating the new lot, review the result of the first reclassification of SN00024.

11. Select the item tracking line of SN00024 (now expires 01/24/07) and open its serial number information card.

Review the Inventory tab to confirm that SN00024 is expired: Expired Inventory field = 1. Then continue to create the new lot.

12. On each item tracking line, enter EXLOT in the New Lot No. field.

Before posting this reclassification, continue to document the same discount policy for SN00022.

13. With the pointer on the item tracking line of SN00022, click LINE→NEW SERIAL NO. INFORMATION AND THEN→FUNCTIONS→COPY INFO.
Notice that a list of all existing serial number information records is provided from which users can drill down to detailed information and copy to the new information card.

**BEST PRACTICES:** In ordinary circumstances, this window lists several serial number information records – usually created upon receiving the item.

14. Click **OK** to create the same information and comment for SN00022 as for SN00024.

15. Close the comment, information card, and item tracking lines windows, and then post the reclassification journal.

The two expired monitors are now reentered into inventory with complete serial number information cards and grouped in one lot.

This completes the description and demonstration of improved usability for the reclassification of serial/lot numbers.

### Serial/Lot Numbers in Physical Inventory Counting

In earlier versions, it was not possible to record the physical counting of serial/lot numbers in the Physical Inventory List report (the printout for physical recording), as the report had no fields or columns dedicated to these item dimensions. Moreover, it was labor-intensive to adjust for missing or extra serial/lot numbers with the physical inventory journal. This meant that companies sometimes were unable to establish exactly what was on inventory.

In the current version, if the **Show Serial/Lot No.** field contains a check mark, the Physical Inventory List report will also list serial/lot numbers for counting – each serial number on its own line. Also, the entry of counted serial/lot numbers in the **Item Tracking Lines** window is much improved.

In addition, the Phys. Inventory List report can now be accessed directly from the Phys. Inventory Journal. This provides a smoother process of initiating physical counting based on inventory calculations prepared in the journal.

### Counting in Basic vs. Advanced Warehousing

The usability improvements also apply to the corresponding documents within Warehouse Management Systems (WMS): The Warehouse Physical Inventory List report and the Warehouse Physical Inventory journal.

However, the following rules will govern the display of serial/lot numbers, in the basic and advanced reports respectively, according to the warehousing complexity as defined by location setup:

- In locations without Bin Mandatory and without Directed Put-away and Pick, the report lists serial/lot numbers by item and location
• In locations with Bin Mandatory and without Directed Put-away and Pick, and with SN and/or Lot Warehouse Tracking, the report lists serial/lot numbers by item, location, and bin

• In locations with Bin Mandatory and without Directed Put-away and Pick, and without SN Warehouse Tracking and Lot Warehouse Tracking, the report lists serial/lot numbers as a summary by item

• In locations with Directed Put-away and Pick, the (whse.) report lists serial/lot numbers item, zone, and bin

**NOTE:** After registering warehouse physical inventory (with WMS documents), the same count must be entered and posted in the Physical Inventory journal to synchronize warehouse entries with item ledger entries.

Refer also to the chapter titled "Integration" to learn more about synchronization between Physical Inventory Journals and Warehouse Physical Inventory Journals.

This completes the conceptual description of usability improvements made to the tasks involved in counting serial/lot numbers in inventory. Here is a demonstration of a complete physical inventory process involving serial/lot numbers.

**Demonstration – Count Inventory of Serial/Lot Numbers**

This demonstrates the tasks involved in performing physical inventory of items with serial/lot numbers.

**Scenario:** John, the warehouse worker in charge of location BLUE, must perform the annual count of inventory items carrying serial/lot numbers. He initiates the process by filling the physical inventory journal with calculated inventory quantities, prints the Physical Inventory List report and continues to do the physical counting. In the process, he records that one M780 monitor is missing and that a forgotten lot of ten hard disks are found.

**Steps**

Prepare the physical inventory journal and calculate inventory:

1. Click **WAREHOUSE**→**INVENTORY**→**PHYSICAL INVENTORY JOURNALS**.

2. Click **FUNCTIONS**→**CALCULATE INVENTORY** and set a location code filter for BLUE. Then run the calculation.
What’s New in Microsoft Dynamics NAV 5.0 – Application Part II

Notice that the **Physical Inventory Journal** window has a **Print** button. This connects the journal conveniently to the process of counting inventory.

3. Continue to prepare the physical inventory report by clicking **PRINT**.

4. Do not enter filters, but fill in the **Options** tab as follows:

---

**NOTE:** The **Show Serial/Lot No.** field is introduced with the current version and relates to a larger feature set aimed at including serial/lot numbers in all printable documents. Refer to the topic titled "Serial/Lot Numbers in Printed Documents and Reports" in the chapter titled "Transparency."
5. Preview the Physical Inventory List report (scroll to page 24).

![Physical Inventory List Report](image)

**Figure 1-22: PHYS. INVENTORY LIST REPORT FOR SERIAL/LOT NO. COUNTING**

Notice that serial/lot numbers are listed in extra information columns under the item in question. The quantity of each (here, all the items are serialized) is shown in the **Quantity (Base)** field and each serial/lot number has a separate line in which to enter the counted quantity.

With the printout in hand, the warehouse worker now goes into BLUE warehouse to perform a detailed physical inventory – down to serial numbers.

In the process of counting BLUE inventory, he discovers that one monitor M780 (SN00021) is missing, and that a forgotten lot of ten Ethernet cables with serial numbers SN01 to SN10 have reappeared. He writes the counted quantities of each item or serial/lot number on the empty lines in the **Qty. (Phys. Inventory)** column of the printed sheet:
Notice that on the line of item 80102-T, he enters 3 on the empty line behind the calculated 4, and then he enters 1 for each counted serial/lot number – to indicate which one is missing. Regarding the ten found Ethernet cables, he enters this count at the bottom of the sheet and indicates to himself that they must be recorded under a new lot number.

**NOTE:** The warehouse worker does not count the three computer packages as they are currently requested on open sales orders, therefore, the negative figures.

Continue to enter the count in the physical inventory journal.

6. Back in the physical inventory journal that contains the calculated BLUE inventory, select the line for item 80102-T, M780 Monitor.

7. Enter 3 instead of 4 in the **Qty. (Phys. Inventory)** field. Notice that the **Entry Type** and **Quantity** fields are updated.

8. Click **LINES → ITEM TRACKING LINES**.

9. Look up from the **Serial No.** field, select SN00021 and close the **Item Tracking Lines** window.

10. In the physical inventory journal, select the line for item 80216-T, Ethernet Cable.

11. Change the **Qty. (Phys. Inventory)** field to 40 and access the **Item Tracking Lines** window.

12. Use the Create Customized SN function to enter the serial numbers of the found Ethernet cables under the next auto-generated lot number, LOT0006.
13. Go back to the physical inventory journal and post the inventory adjustments – carrying the recorded serial/lot number details.

This completes the demonstration of tasks involved in counting and recording serial/lot numbers.
Reservations with Serial/Lot Numbers

In earlier versions, in environments that use specific tracking, the reservation of a non-specific serial/lot number to be picked later was able to block the posting with an application error. The reservation was made non-specifically (any serial/lot number). But the reservation system actually made an early binding to a certain serial/lot number. Later, an arbitrary item (any serial/lot number) was picked from inventory that in most cases cannot correspond to the one bound by the reservation system. When a user tried to post the sales line with the picked serial/lot number, the posting was blocked because fixed application was not possible.

The following is a short scenario outline of the problem:

1. Inventory: 7 pieces carrying SN
2. Create sales line: 1 piece without SN
3. Make reservation (unspecific) from sales to inventory
4. Physically pick arbitrary 1 from inventory (SNx)
5. State SNx on the sales line.

The expected system behavior in the scenario was that the reservation remained and became specific on SNx, therefore making sure that SNx was available to be fully applied.

The actual system behavior was that the reservation was in most cases lost because the system in step 3 had made a specific reservation against SNz. When users tried to specify SNx in step 5, this reservation therefore no longer matched and was lost. This meant that SNx was no longer reserved and full application was not ensured.

In rare cases, the system happened to reserve the one that was picked. But this was unlikely in a large warehouse with hundreds of units in inventory.

Late Binding

In the current version, the concept of Late Binding is introduced to make sure that a non-specific reservation (user does not care which) of a serial/lot number remains loosely coupled until posting. At posting time, the system can reshuffle non-specific reservations to make sure that fixed application is possible against serial/lot number actually picked. The serial/lot number is meanwhile made available for specific reservation (user does care which) in other documents requesting that particular serial/lot number.

**NOTE:** The Late Binding functionality only relates to items set up with specific tracking and only applies to reservations against inventory, instead of to supply such as purchase orders.
In the current version, the Late Binding feature helps outbound order handlers in environments that use specific SN tracking by trying to resolve any availability conflicts that occur when reservations and serial/lot numbers are combined.

**BEST PRACTICES:** The improved information and warnings about serial/lot number availability will help avoid conflicts between reservations and serial/lot numbers because outbound order handlers will have less reason to reserve serial/lot numbers. Refer to the demonstration titled "Selling from a Specific Lot" for tips about how to help secure serial/lot numbered supply.

### Specific Reservation

Late Binding introduces two new states for reservation entries: specific and non-specific. A specific reservation is a regular reservation, that is, a rigid link between supply and demand, where both carry serial/lot numbers. Notice that the demand must carry serial/lot number to be a specific reservation; refer to Figure 1-27.

An example of a specific reservation is when a user requests the M780 monitor that carries serial number SN00023 – and not just any M780 monitor.

### Non-Specific Reservation

A non-specific reservation is a state imposed by the system on reservation entries for serial/lot numbers that are not selected specifically. In that case, the demand does not carry serial/lot numbers; refer to Figure 1-27.

An example of non-specific reservation is when a user requests any M780 monitor – not a specific serial number. The user has then reserved any item that carries a serial/lot number, and the system non-specifically reserves the serial/lot number in question.

The main difference between specific and non-specific reservation is defined by the existence of serial/lot numbers on the demand side, as shown in Table 1-1:

<table>
<thead>
<tr>
<th></th>
<th>Supply</th>
<th>Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specific</strong></td>
<td>SN/Lot</td>
<td>SN/Lot</td>
</tr>
<tr>
<td><strong>Non-Specific</strong></td>
<td>SN/Lot</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 1-1: SPECIFIC AND NON-SPECIFIC RESERVATION**

### Reshuffle

When a user posts an outbound document after picking the wrong serial/lot number, the system reshuffles any other non-specific reservations to reflect the actual serial/lot number that was picked. This satisfies the posting engine with a rigid link (fixed application) between supply and demand.
For all supported business scenarios, reshuffling will only be possible against positive item ledger entries that carry reservation and serial/lot numbers, but without serial/lot numbers defined on the demand side.

The reasons that late binding system only focuses on reservations made against inventory is that this is the most important customer problem, another is that the implementation is less complex.

**Supported Business Scenarios**

The late binding solution involves functionality for three different business scenarios of serial/lot number reservation against inventory:

- Enter specific serial/lot number on outbound document with non-specific reservation of wrong serial/lot number
- Reserve specific serial/lot number
- Post outbound document with non-specific reservation of serial/lot number

**Entering on Outbound Document with Non-Specific Reservation**

Entering a picked serial/lot number on an outbound document with non-specific reservation of a wrong serial/lot number is a business scenario that is the most common of the three supported scenarios. In this case, the Late Binding functionality makes sure that a user can enter a specific picked serial/lot number on an outbound document that already has a non-specific reservation of another serial/lot number. The need arises, for example, when an order processor has at first made a non-specific reservation (of any serial/lot number). Later when the physical item is picked from inventory, the picked serial/lot number must be entered on the order before posting it.

In earlier versions, the initial (non-specific) reservation was most likely lost when users tried to enter the specific picked serial/lot number. The reason was that the entered serial/lot number differed from the one randomly chosen by the system when the initial, non-specific reservation was made. In the current version, the late binding feature makes sure that users can enter the picked serial/lot number without losing a reservation. The feature therefore makes sure that the picked serial/lot number can be fully applied and posted.

**Reserve Specific Serial/Lot Numbers**

This business scenario is supported with Late Binding functionality that makes sure a user trying to reserve a particular serial/lot number, that is currently non-specifically reserved, can do so. This is facilitated as the system tries to reshuffle a non-specific reservation in order to free it for a specific request.

The functionality happens automatically, but embedded help is displayed in the bottom of the Reservation window when the criteria are met, for example:
Notice the **Non-specific Reserved Qty.** field that displays how many reservation entries are non-specific. By default, this field cannot be seen.

**Post Outbound Document with Non-Specific Reservation of Serial/Lot Numbers**

This business scenario is supported with Late Binding functionality that enables fixed application and outbound posting of what was actually picked by reshuffling other non-specific reservations of serial/lot numbers. If the system cannot reschedule, the standard inventory error ("cannot be fully applied") will appear when the user tries to ship.

This completes the conceptual description of the Late Binding feature. The following is a simple demonstration of the reschedule that occurs with the main scenario of reservation and serial/lot number combination.

### Demonstration – Reshuffling a Non-Specific Reservation

This demonstration shows that the system can reschedule between non-specific reservations to make sure that an item reserved on the sales line matches the one actually picked from inventory.

**Scenario:** An order processor reserves any one of the four 17 inch M780 Monitors in inventory.

**NOTE:** The 17 inch monitor is set up with serial number-specific tracking. This means that an outbound serial number must be fully applied with the same serial number in inventory upon posting.

The system randomly reserves SN00021. Later, a warehouse worker randomly picks SN00022. Before posting the sales order, the order processor must enter SN00022 on the sales order – to make sure the item can be fully applied. The
Late Binding feature retains the reservation by reshuffling the non-specific reservation of SN00021 to SN00022.

**Steps**

Start by deleting existing item tracking lines in Cronus:

1. Open existing sales order 1003 for one piece of item 80102-T.
2. Open the **Item Tracking Lines** window, delete the existing line for SN00023, and then close the window.
3. From the sales order, click **FUNCTIONS**→**RESERVE**.
4. From the **Reservation** window, click **FUNCTIONS**→**RESERVE FROM CURRENT LINE**.
5. Drill down on the **Current Reserved Quantity** field to see that the system has randomly reserved SN00021 – non-specifically. (You may have to add the **Serial No.** field to your view.)

![FIGURE 1-27: SN00021 IS RESERVED NON-SPECIFICALLY BY THE SYSTEM](image)

Later in this sales order process, a warehouse worker picks SN00022 from inventory and this serial number must be entered on the sales order.

6. Close all reservation windows and open the **Item Tracking Lines** window.
7. Enter (or select) SN00022 in the **Serial No.** field and EXLOT in the **Lot No.** field and close the window.

In earlier versions, there was at this point no coupling between the specific serial number reserved on the sales order (SN00021) and the serial number picked from inventory (SN00022). In environments where inventory reservations are used extensively, this may lead to a posting error because the item might meanwhile be reserved by another user.

Continue to verify that Late Binding has performed the needed reshuffle.

8. Reopen the **Reservation** window (answer No to the option of specific serial/lot number) and drill down on the **Current Reserved Quantity** field.
Notice that the system has reshuffled the initial non-specific reservation of SN00021 with SN00022. It has therefore restored a specific reservation and made sure that SN00022 can be fully applied across inventory and posted as shipped.

**ATTENTION:** Do not process or post the sales order any more.

This completes the description of the Late Binding solution that is introduced in version 5.0 to resolve those rare cases where reservations are used for items set up with specific tracking. The solution includes functionality for three different scenarios, of which the most common is to enable shipment of a randomly picked serial/lot number that does not match a randomly reserved serial/lot number.

**BEST PRACTICES:** As stated several times in this chapter, it is often not necessary to reserve items that carry serial/lot numbers. This is especially true for items set up with specific tracking. Instead, users must trust the built-in ATP engine and the improved transparency of serial/lot number availability to help secure serial/lot-numbered supply.
Conclusion

Usability of item tracking functionality is important for the productivity of end-users and to instill confidence that item tracking entries are created correctly – especially in outbound transactions.

Microsoft Dynamics Nav 5.0 contains valuable features and improvements that enhance the usability of tasks involved in selecting existing serial and/or lot numbers for outbound document lines. The supported business processes span from selecting for multiple item tracking lines, selecting by bin and/or expiration date, reclassifying and counting serial/lot numbers to making specific or non-specific reservations of serial/lot numbers.