

CHAPTER 2: ITEM RESERVATIONS AND ORDER TRACKING

Objectives

The objectives are:

- Reserve items on inventory or inbound.
- Track from demand to matching supply and vice versa.
- Distinguish reservations from order tracking links.

Introduction

For many companies, the greater challenge lies in their ability to couple demand with supply in a manner that provides transparency and guarantees superior customer satisfaction without increasing inventory carrying costs.

To meet such a challenge, most wholesalers and manufacturers generally need the ability to:

- Ensure that a specific demand can always be fulfilled by committing a corresponding supply to it.
- See the details of such allocations to locate alternatives that can satisfy urgent customer requests in situations where inventory is otherwise unavailable.

Microsoft Dynamics® NAV supports these needs with the following features:

- Reservations
- Order tracking

Reserve Items

Reservations are intended for salespeople who want to reserve inventory or inbound items for a specific sales order, and for production planners who want to reserve components for firm planned production orders before they are released.

The reservation system enables the user to make a firm link between existing supply and demand, which directly affects the way the inventory transaction is performed. Reservations may also be used to handle exceptional situations where the results of the normal, automatic offsetting of supply and demand are unacceptable.

Microsoft Dynamics NAV follows the simplicity principle that if reservations are broken because of quantity changes on the demand or supply side, the user must manually remove and recreate the reservation.

Reservations Setup

Each item can be set up to handle reservations by selecting one of three different options in the **Reserve** field on the **Planning** FastTab of the Item Card:

- **Never** - Neither automatic nor manual reservation is possible.
- **Optional** - Reservations are never made automatically, but the user can reserve manually in the **Reservation** page.
- **Always** (also called automatic) - Every time the item is entered on a sales order or other outbound order, such as an outbound transfer or a production component line, the system automatically tries to reserve the required quantity from the first available supply in inventory or on inbound orders, such as purchase or production orders.

No other setup is required for reservations.

Automatic reservation with no user involvement, regardless of the above reservation setup, occurs when the planning system creates supply orders using the Make-to-Order manufacturing policy, or when the user creates a production order directly from a sales order. Refer to the "Manufacturing I in Microsoft Dynamics® NAV 2009" training material for more information about supply planning.

Reservation Page

From any outbound order, a user can reserve from four different types of supply:

- Item ledger entry (quantity in inventory)
- Purchase order line
- Released production order line
- Firm planned production order line

Manually reserving either of these supply types occurs when selecting from a proposed supply with dedicated functions in the **Reservation** page. Review this by opening existing sales order 109001 in the demonstration company.

1. On the navigation page, click **Sales & Marketing**.
2. On the **Sales & Marketing** page, click **Order Processing** and then click **Sales Orders**.
3. Open sales order number 109001.
4. Click the sales order line.
5. On the **Lines** FastTab, click **Actions** (the lightning bolt icon), point to **Functions**, and then click **Reserve**.

Summary Type	Total Quantity	Total Reserved Quantity	Qty. Allocated in Warehouse	Total Available Quantity	Current Reserved Quantity
Item Ledger Entry	32	0	0	32	0
Firm Planned Prod. Order Line	16	0	0	16	0
Released Prod. Order Line	26	0	0	26	0

FIGURE 2.1 RESERVATION PAGE PROPOSING RESERVATIONS FROM THREE DIFFERENT SUPPLY TYPES

The **Reservation** page shows all the supply types that may cover the required quantity on the sales order line.

To reserve a quantity, click a supply type line, and then click **Reserve from Current Line** on the Action Pane.

Microsoft Dynamics NAV can be used to reserve items that are not available in inventory but are inbound on purchase or production orders. The condition is that the expected receipt date of such inbound quantities is earlier than the shipment date of the sales order. The program cancels a reservation automatically when date changes make the supply-demand link impossible.

Demonstration: Reserve Items on a Purchase Order

Scenario: Susan, the order processor at CRONUS International Ltd., is about to finalize a sales order for four units of item 80201 for customer 20000. The items are not in inventory, but they are expected to arrive before the sales order is to be shipped. To be absolutely sure that the sales order is fulfilled, she reserves the needed quantity from the purchase order.

Follow these steps to create the purchase and sales orders and make the reservations for the required item quantity:

1. Create a purchase order for vendor 30000 for ten units of item 80201 with an expected receipt date on 02/01/10 at a blank location.
2. Create a sales order for customer 20000 for four units of item 80201 with a shipment date of 02/03/10 from a blank location.
3. On the **Lines** FastTab, click **Actions**, point to **Functions** and then click **Reserve**.

Reservation - Order 1001 80201

Process

Auto Reserve | Reserve from Current Line | Cancel Reservation from Current Line | Available to Reserve | Reservation Entries

General

Item No.: 80201 | Quantity to Reserve: 4
 Shipment Date: 2/3/2010 | Reserved Quantity: 0
 Description: | Unreserved Quantity: 4

Summary Type	Total Quantity	Total Reserved Quantity	Qty. Allocated in Warehouse	Total Available Quantity	Current Reserved Quantity
Purchase Line, Order	10			10	

Filters

Variant Code: | Serial No.: |
 Location Code: | Lot No.: |

OK

FIGURE 2.2 RESERVATION PAGE SHOWING THAT FOUR ARE REQUIRED AND 10 ARE AVAILABLE ON A PURCHASE ORDER LINE.

The **Reservation** page header contains information about the demand. The lines show the available supply, including how much of the supply is currently allocated in the warehouse on picks or shipments. This is shown in the **Qty. Allocated in Warehouse** field. The lines may contain several sources of supply with a different reservation status.

NOTE: If the sales order is for a specific serial and/or lot number, the Reservation system will allow the user to reserve that specific serial/lot number in a dedicated page. For more information, refer to "Serial/Lot Numbers" in this training material.

In this scenario, Susan is not concerned with reserving specific items (serial/lot numbers), so she proceeds to reserve four of the 10 units on the purchase order line.

4. On the Action Pane, click **Reserve from Current Line**.

The screenshot shows the 'Reservation - Order 1001 80201' window. The 'Actions' pane includes 'Auto Reserve', 'Reserve from Current Line', 'Cancel Reservation from Current Line', 'Available to Reserve', and 'Reservation Entries'. The 'General' section contains the following fields:

- Item No.: 80201
- Shipment Date: 2/3/2010
- Description: (empty)
- Quantity to Reserve: 4
- Reserved Quantity: 4
- Unreserved Quantity: 0

Summary Type	Total Quantity	Total Reserved Quantity	Qty. Allocated in Warehouse	Total Available Quantity	Current Reserved Quantity
Purchase Line, Order	10	4		6	4

The 'Filters' section includes:

- Variant Code: (empty)
- Location Code: (empty)
- Serial No.: (empty)
- Lot No.: (empty)

An 'OK' button is located at the bottom right of the window.

FIGURE 2.3 FOUR PIECES ARE NOW RESERVED.

Susan can see from the **Reservation** page that the four units of item 80201 are reserved for her sales order. To verify this, she reviews the reservation entries of the sales order.

5. Click **OK** to close the **Reservation** page.
6. On the **Lines** FastTab, click the **Reserved Quantity** field.

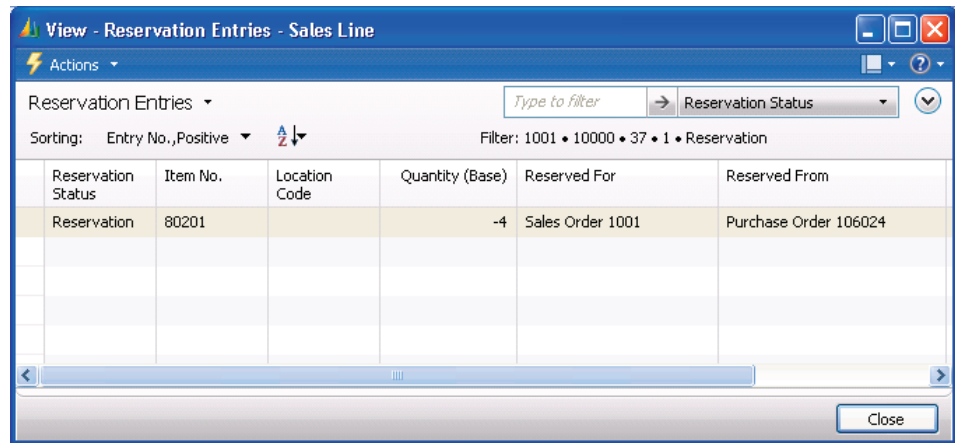


FIGURE 2.4 RESERVATION ENTRIES CREATED BETWEEN THE SALES ORDER AND THE INBOUND PURCHASE ORDER

***HINT:** The **Reservation Entries** page can also be opened by clicking **Actions** on the **Lines** FastTab, pointing to **Line** and then clicking **Reservation Entries**.*

Track Supply and Demand

Similar to reservations, order tracking is the linking of demand to a corresponding supply. However, order tracking is merely informational and does not affect availability as do reservations.

Depending on item setup, Microsoft Dynamics NAV creates order tracking links dynamically to reflect possible order fulfillment. This linking works as information about possible fulfillment within the availability system and, as such, may work as a simple planning tool. If the item is not set up for such dynamic order tracking, then order tracking links are only created as a reflection of concrete reservations or planning results.

A more advanced feature of order tracking is that of action messaging (planning suggestions), which is mostly for decision making in connection with production planning.

Relation to Reservations and Planning

Order tracking is managed in the same system that manages reservations and action messages. Accordingly, reservations created automatically or manually will also create order tracking links even if the item is not set up for dynamic order tracking. To illustrate this, complete the "Reserve Items on a Purchase Order" demonstration by performing the following steps:

1. Open the sales order created in the "Reserve Items on a Purchase Order" demonstration.
2. On the **Lines** FastTab, click **Actions**, point to **Functions** and then click **Order Tracking**.

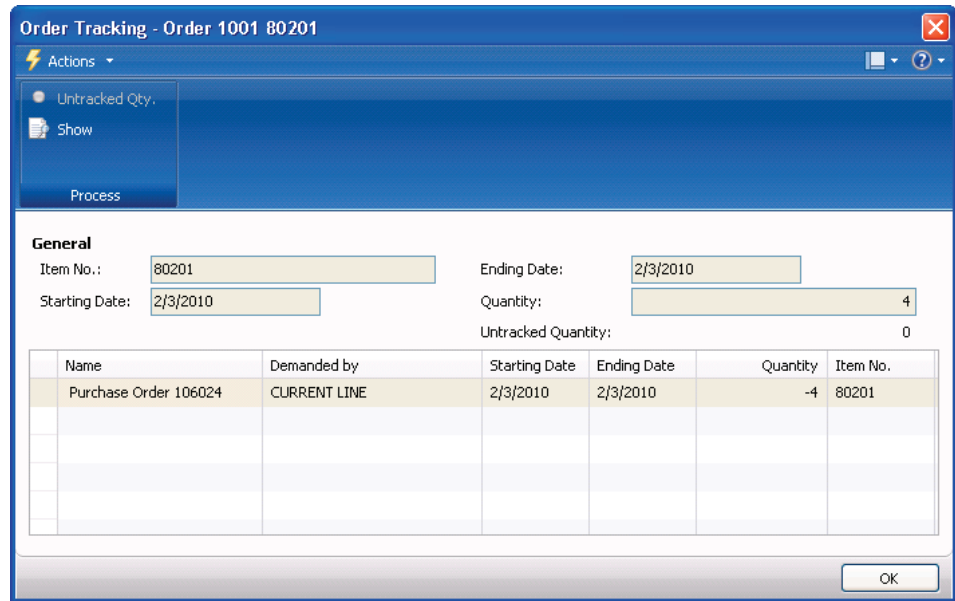


FIGURE 2.5 ORDER TRACKING INFORMATION CREATED AS A RESULT OF A RESERVATION

The four reserved pieces are now also reflected as order tracking links between the sale and the purchase, although item 80201 is not set up for dynamic order tracking.

For the same reason as for reservations, Microsoft Dynamics NAV creates order tracking links between demand and a corresponding supply that is created by the planning system. A typical example of this is the order tracking between a sales order and a purchase order indicating that the existence of the sales order caused the planning run to create the purchase order. For detailed information about order tracking and action messages in planning, refer to the "Manufacturing II in Microsoft Dynamics® NAV 2009" training material.

Order Tracking Setup

Each item can be set up to create order tracking links by selecting one of three different options in the **Order Tracking Policy** field on the **Planning** FastTab of the item card:

- **None** - Order tracking links are not created dynamically, only as a result of concrete reservations or planning results.
- **Tracking Only** (also called dynamic tracking) - Order tracking links are created as soon as the user creates an order that may be offset by an existing order.
- **Tracking & Action Msg.** - In planning, this option means the same as above, plus action messages are created for net change planning purposes.

No other setup is required for order tracking.

Demonstration: Track Items on a Sales Order to a Purchase Order

Scenario: On 01/24/10, Susan, the order processor at CRONUS, is about to promise to a customer the sale of eight Performance Keyboards, which is item 80212. She knows these items are not in inventory, so to ensure that they will be available, she uses order tracking and sees that they are inbound on a purchase order with a receipt date of 01/20/10.

Follow these steps to set up the item for dynamic order tracking:

1. On the navigation pane, click **Purchase** and then click **Planning**.
2. On the **Planning** page, click **Items**.
3. Open the item card for item 80212.
4. Expand the **Planning** FastTab.
5. In the **Order Tracking Policy** field, enter Tracking Only. Click **OK** in the information dialog box.
6. Click **OK** to close the item card.

Follow these steps to create the purchase order for this item:

1. On the navigation pane, under Purchase, click **Order Processing** and then click **Purchase Orders**.
2. Create a new purchase order from any vendor for 20 pieces of item 80212 to the BLUE location with the receipt date on 01/20/10.
3. Click **OK** to close the purchase order.

Follow these steps to create the sales order for this item:

1. On the navigation pane, click **Sales & Marketing** and then click **Order Processing**.
2. On the **Order Processing** page, click **Sales Orders**.
3. Create a new sales order to any customer for eight pieces of item 80212 from the BLUE location with the shipment date on 01/24/10.

To verify that the items will be available on 01/24/10, Susan uses order tracking to see if a matching supply exists.

4. On the **Lines** FastTab, click **Actions**, point to **Functions** and then click **Order Tracking**.

Name	Demanded by	Starting Date	Ending Date	Quantity	Item No.
Purchase Order 106025	CURRENT LINE	1/24/2010	1/24/2010	-8	80212

FIGURE 2.6 ORDER TRACKING LINK FROM THE DEMAND TO THE SUPPLY

The **Order Tracking** page shows that the full sales quantity of eight pieces is covered by purchase order 106025; the **Untracked Quantity** field shows zero. Susan decides to open and review the purchase order.

5. In the Action Pane, click **Show**. The purchase order created in the previous steps opens.

To ensure that the purchase order is linked to her sales order, Susan uses order tracking in the other direction: from the supply to the demand.

6. On the **Lines** FastTab, click **Actions**, point to **Functions**, and then click **Order Tracking**.

Name	Supplied by	Starting Date	Ending Date	Quantity	Item No.
Sales Order 1002	CURRENT LINE	1/20/2010	1/20/2010	8	80212

FIGURE 2.7 ORDER TRACKING LINK FROM THE SUPPLY TO THE DEMAND

Now the **Order Tracking** page shows that eight pieces on the purchase order are linked to eight pieces on the sales order. The remaining 12 pieces are an untracked quantity, meaning that no link is made for this quantity. In connection with order tracking between actual supply and demand pages, like purchase and sales orders, clicking the **Untracked Quantity** field will never yield any additional information.

When using order tracking in supply planning, through the requisition worksheet or planning worksheet, clicking the **Untracked Quantity** field will show order tracking links to the following other types of demand:

- Planning parameters
- Production forecasts
- Blanket sales orders

For detailed information about using this information in the **Untracked Planning Elements** page, refer to the "Manufacturing II in Microsoft Dynamics® NAV 2009" training material.

Items Reservations vs. Order Tracking

Order tracking is managed within the reservation system but with a distinct difference from reservations: reservations are only possible against order network entities (document lines that represent supply or demand) that are part of the availability calculation and have a status higher than planned (scheduled availability).

Order tracking, on the other hand, is possible against any order network entity that takes part in the net requirement calculation by the planning run. This includes pure order suggestions and planned production orders.

The following table shows which order network entities can be order tracked and which can be reserved.

Name	Option
Item Ledger Entry	Reserve / Order Track
Sales Quote	Can only be order tracked to a simulated production order and vice versa.
Sales Order	Reserve / Order Track
Purchase Order	Reserve / Order Track
Requisition line	Order Track (Only if resulting from a planning run)
Planned Prod. Order line	Order Track
Firm Planned Prod. Order line	Reserve / Order Track
Released Prod. Order Line	Reserve / Order Track
Simulated Prod. Order Line	Order track to sales quote only
Prod. Order Component	Reserve / Order Track (Reservation only against firm planned and released components)
Materials Resource Planning (MRP) Line	Order Track (Only if resulting from a planning run)
MRP Component	Order Track (Only if resulting from a planning run)
Planning Parameter	Order Track (in Untracked Quantity field)
Production Forecast	Order Track (in Untracked Quantity field)
Blanket Sales Orders	Order Track (in Untracked Quantity field)

Summary

Reservations and order tracking links are managed in the same system and serve similar purposes, namely to link demand with supply. In the case of reservations, the link locks the two together and thereby excludes the supply from availability until posting or cancellation. Order tracking, on the other hand, is merely informational and can dynamically link all types of supply and demand.

Both reservations and order tracking links help order processors and planners meet customer requirements without increasing inventory carrying costs.

Test Your Knowledge

Test your knowledge with the following questions.

1. Which **Reserve** setting on an item card must be selected to manually reserve an item?
 - Sometimes
 - Never
 - Optional
 - Always

2. What is the purpose of the reservation feature?

3. Which of the following types of supply can be reserved? (Select all that apply)
 - Released production order line
 - Sales order
 - Planned production order line
 - Item ledger entry

4. With an **Order Tracking Policy** setup option of None, when are order tracking links created? (Select all that apply)
- Between a sales order and a matching production order that is created by the planning system.
 - Between a sales order and its reserved purchase order.
 - Between a sales order and its reserved production order.
 - Between a sales order and a matching purchase order.
5. What is the purpose of the order tracking feature?

Quick Interaction: Lessons Learned

Take a moment and write down three key points you have learned from this chapter:

1.

2.

3.

Solutions

Test Your Knowledge

1. Which **Reserve** setting on an item card must be selected to manually reserve an item?
 - Sometimes
 - Never
 - Optional
 - Always

2. What is the purpose of the reservation feature?

MODEL ANSWER: To make a firm link from a demand to a supply that blocks the supply from being available to other demands.

3. Which of the following types of supply can be reserved? (Select all that apply)

- Released production order line
- Sales order
- Planned production order line
- Item ledger entry

4. With an **Order Tracking Policy** setup option of None, when are order tracking links created? (Select all that apply)

- Between a sales order and a matching production order that is created by the planning system.
- Between a sales order and its reserved purchase order.
- Between a sales order and its reserved production order.
- Between a sales order and a matching purchase order.

5. What is the purpose of the order tracking feature?

MODEL ANSWER: To view system-created links between supply and demand, either as a result of reservation or planning or as a dynamic matching of potential order fulfillment.