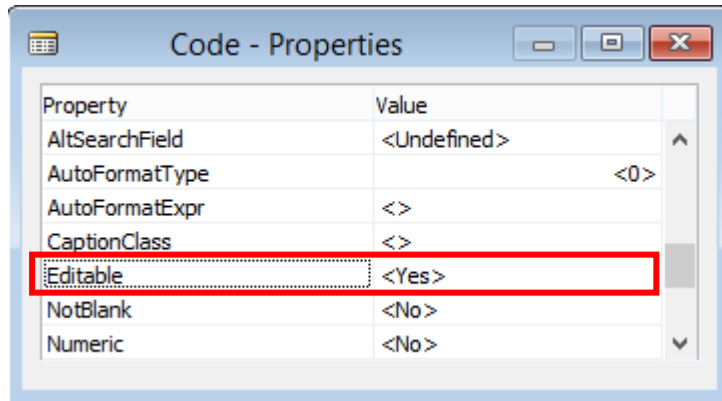


Development Environment Introduction in Microsoft Dynamics NAV 2015

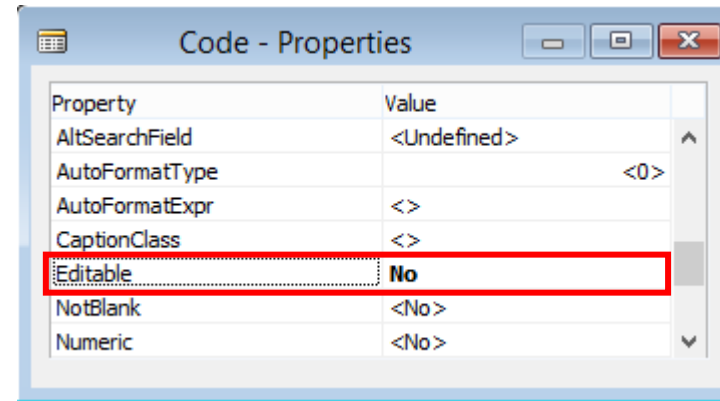
Module 1 - Microsoft Dynamics NAV Development Environment

1. Non-default property values

Microsoft Dynamics NAV objects properties that have non default value of the property appear as bold in the Properties window.



Property	Value
AltSearchField	<Undefined>
AutoFormatType	<0>
AutoFormatExpr	<>
CaptionClass	<>
Editable	<Yes>
NotBlank	<No>
Numeric	<No>



Property	Value
AltSearchField	<Undefined>
AutoFormatType	<0>
AutoFormatExpr	<>
CaptionClass	<>
Editable	No
NotBlank	<No>
Numeric	<No>

Module 2 – Tables

1. Database Schema Synchronization

Source: Synchronizing Table Schemas - Microsoft Development network - [https://msdn.microsoft.com/en-us/library/dn762357\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn762357(v=nav.80).aspx) and Sync-NAVtenant - Microsoft Development network - [https://msdn.microsoft.com/en-us/library/dn466418\(v=nav.90\).aspx](https://msdn.microsoft.com/en-us/library/dn466418(v=nav.90).aspx)

When you design a table in Microsoft Dynamics NAV, you define the metadata for the table, such as the name and object ID, and the fields and their data types. This table definition describes the table that must be created in the SQL Server database to store business data. You create and modify the table definition by using the Microsoft Dynamics NAV Development Environment. When you make changes to the table definition in the development environment, or when you upgrade a Microsoft Dynamics NAV database to a newer version, you must synchronize the business database table schema with the new or changed table definition so that the two are the same. Table schema synchronization is performed by the Microsoft Dynamics NAV Server instance that connects to the business database.

Depending on the changes to a table definition, you might have to consider how to handle the existing data in the business data table when synchronizing the schema. For example, you must decide whether to keep or delete the data. Some table definition changes, such as adding and renaming a field, adding a new table, or modifying C/AL code to a table, do not affect data in the database table and are considered to be non-destructive changes. With non-destructive changes, you can synchronize the schema without any special data handling considerations. However, if you make destructive changes to the table definition, such as removing a field, then you will be warned by the development environment when you try to save the changes, and you must specify how to handle the data when synchronizing the schema.

Synchronizing Table Schemas with SQL Server

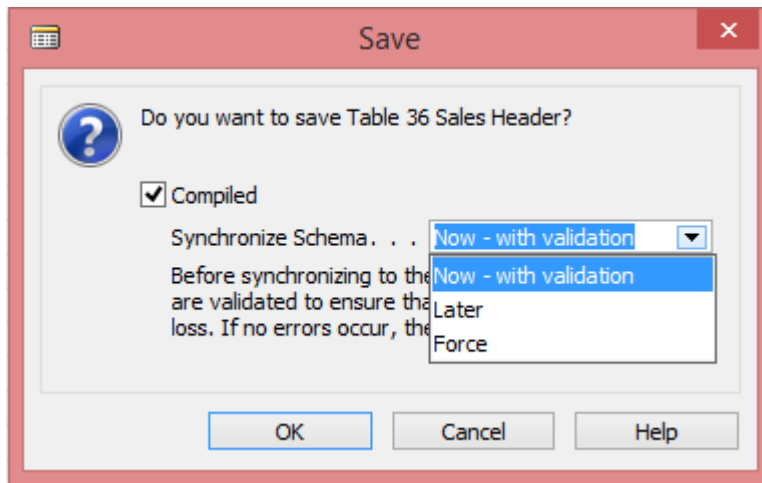
You can synchronize table schemas from the Microsoft Dynamics NAV Development Environment or by using the Sync-NAVtenant cmdlet in the Microsoft Dynamics NAV 2015 Administration Shell.

Synchronizing the Table Schema for Specific Tables From the Development Environment

In the development environment, you can synchronize the table schema for a specific table or for all tables. You have the option to synchronize a table schema when you perform one of the following operations on a table from the development environment:

- Save
- Save As
- Compile (This also pertains when you select multiple tables for compiling from Object Designer).

- Delete (This also pertains when you select multiple tables for deleting from Object Designer).



Schema Synchronization Options

When you perform one of the operations on a table, you can choose from the following schema synchronization options:

Option	Description
Now - with validation	<p>Before applying changes to the business data table, Microsoft Dynamics NAV Server validates the changes to the table definitions to check whether they are destructive changes. This includes changes that will delete data in the fields of the business data table which are affected by the changes.</p> <ul style="list-style-type: none"> • If there are no destructive changes to the table, then the schema changes are applied to the business data table immediately. • If there are destructive changes, Microsoft Dynamics NAV Server checks that there are table synchronization instructions in an upgrade codeunit. If there are instructions, then the schema changes are applied to the business database table according to the instructions. If there are no instructions, then an error message appears. The table definition changes are not saved and the schema changes are not applied.

Later	<p>Table definition changes are saved and compiled in the application but the changes are not validated or applied to the business data table. You synchronize the table schema later by doing one of the following:</p> <ul style="list-style-type: none"> • Save or compile the table from Object Designer in development environment and choose either the Now - with validation or Force synchronization option. • Use the Sync. Schema for All Tables option on the Tools menu. • Run the Sync-NAVtenant cmdlet from the Microsoft Dynamics NAV 2015 Administration Shell.
Force	<p>Table definition changes are applied to the business data table schema without validation. For destructive changes, data in columns of the business data table that are affected by changes will be deleted.</p> <p>This option ignores any table synchronization instructions for the table in upgrade codeunits.</p>

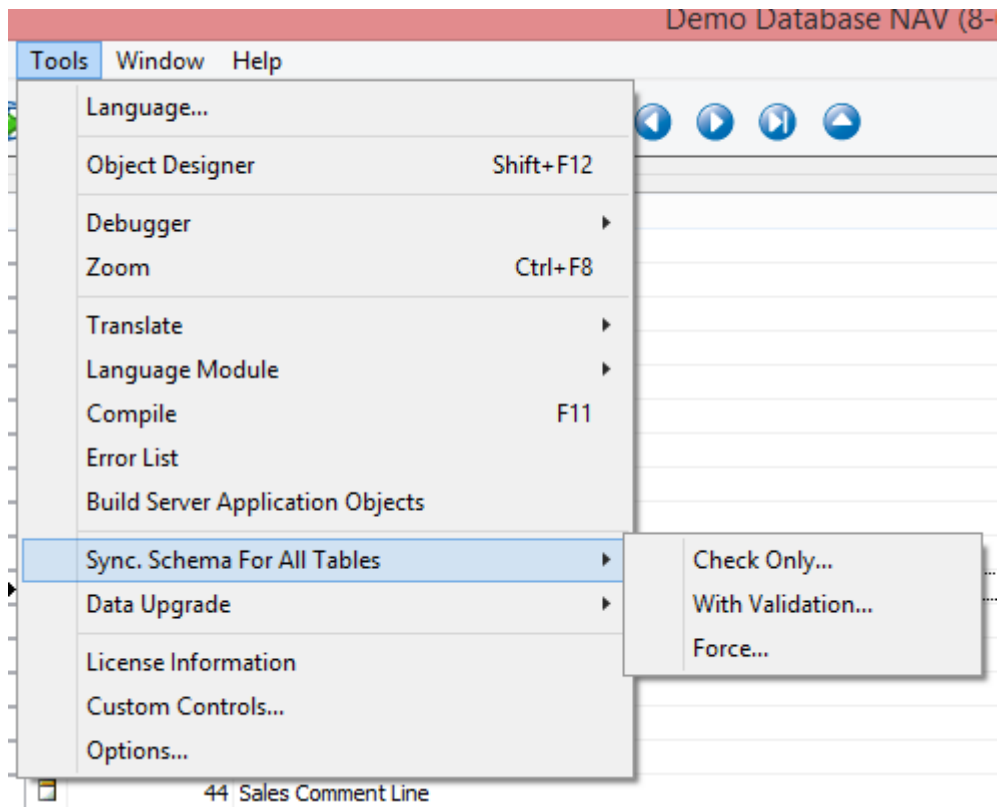
Synchronizing All Table Schemas From the Development Environment

From the development environment, you can synchronize table schema changes for all tables in the database. This is useful when you upgrade from an earlier version of Microsoft Dynamics NAV or when you made changes to a table or multiple tables previously and chose to synchronize later.

To synchronize schema changes for all tables, on the **Tools** menu, under **Sync. Schema For All Tables**, you can choose one of the following options:

Option	Description
Check Only	<p>Microsoft Dynamics NAV Server validates the table definition changes but does not apply the schema changes to the business database.</p> <ul style="list-style-type: none"> • If there are no destructive changes to any of the tables, no errors occur. • If there are destructive changes, Microsoft Dynamics NAV Server checks that there are table synchronization instructions in an upgrade codeunit. If

	<p>there are instructions, then no errors occur. If there are no instructions, an error occurs.</p> <p>For more information about how Microsoft Dynamics NAV Server validates changes, see the How Microsoft Dynamics NAV Server Validates Table Schema Changes section.</p>
With Validation	<p>Before applying changes to the business data table, Microsoft Dynamics NAV Server validates the table definition changes to check for destructive changes to the table.</p> <ul style="list-style-type: none"> • If there are no destructive changes to the table, then the schema changes are applied to the business data table immediately. • If there are destructive changes, Microsoft Dynamics NAV Server checks that there are table synchronization instructions in an upgrade codeunit. If there are instructions, then the schema changes are applied to the business database table according to the instructions. If there are no instructions, then an error message appears. Table definition changes are not saved and the schema changes are not applied. <p>For more information, see How Microsoft Dynamics NAV Server Validates Table Schema Changes.</p>
Force	<p>Table definition changes are applied to the business data table schema without validation. For destructive changes, data in columns of the business data table that are affected by changes will be deleted.</p> <p>This option ignores any table synchronization instructions for the table in upgrade codeunits. You should use this option only when you are sure that there is no risk of unwanted data loss.</p>



Sync-NAVTenant cmdlet

Use the Sync-NAVTenant cmdlet to synchronize the database schema in a tenant database with the schema in the application database.

Parameters

-Force

Forces the command to run without asking for user confirmation.

-Mode<Int>

Specifies how the database schema for the tenant database is synchronized with the database schema that the mounted application database defines. The default value is Sync, ForceSync = 0, Sync = 2 and CheckOnly = 3.

-ServerInstance<String>

Specifies the Microsoft Dynamics NAV Server instance that the application database and the tenant database are mounted against, such as DynamicsNAV90.

-Tenant<TenantId>

Specifies the ID of the tenant that you want to synchronize with the application, such as Tenant1.

Example:

```
PS C:\> Sync-NAVTenant -ServerInstance DynamicsNAV90 -Tenant 'Tenant1'
```

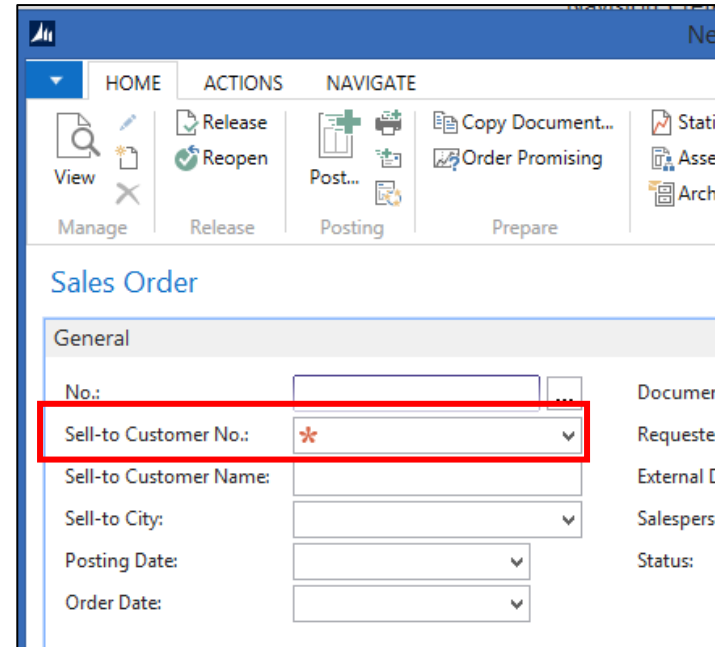

Module 3 – Pages

1. Mandatory Fields

Source: Simplified UX - White Paper - Brian Nielsen (Principal Program Manager), Nikola Kukrika (Software Engineer), Jacob Winther (Senior UX Designer), July 2014, Microsoft

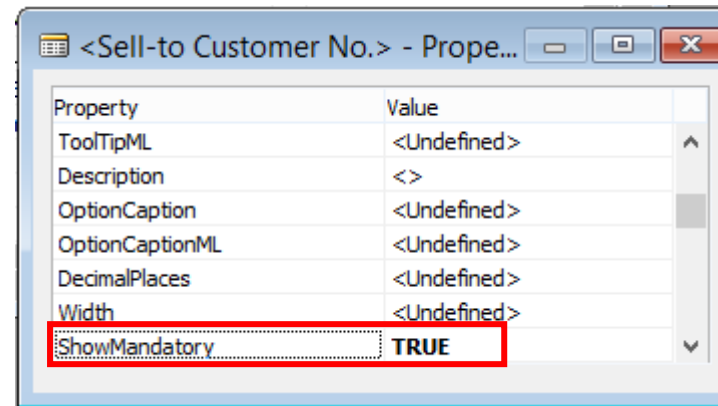
Less experienced users often do not know which fields to fill in as a minimum, for example on the customer card, for the customer to be used in processes, such as invoice posting. All the help they get is an error message when they try to complete the process.

To help users with this issue, the ShowMandatory property has been introduced. In this context, “mandatory” means that a field is marked with red asterisk to indicate to users that they are expected to fill the field. The user can still leave page without getting error messages if the field is not otherwise validated by business logic.



The screenshot displays the Microsoft Dynamics NAV 2015 interface for a Sales Order. The ribbon at the top includes tabs for HOME, ACTIONS, and NAVIGATE. The ACTIONS tab is active, showing icons for View, Release, Reopen, Post..., Copy Document..., Order Promising, and Status. Below the ribbon, the 'Sales Order' page is shown with a 'General' section. The 'Sell-to Customer No.' field is highlighted with a red rectangle and contains a red asterisk, indicating it is a mandatory field. Other fields visible include 'No.', 'Sell-to Customer Name', 'Sell-to City', 'Posting Date', and 'Order Date'.

To set the field as mandatory developer can change value of property ShowMandatory.



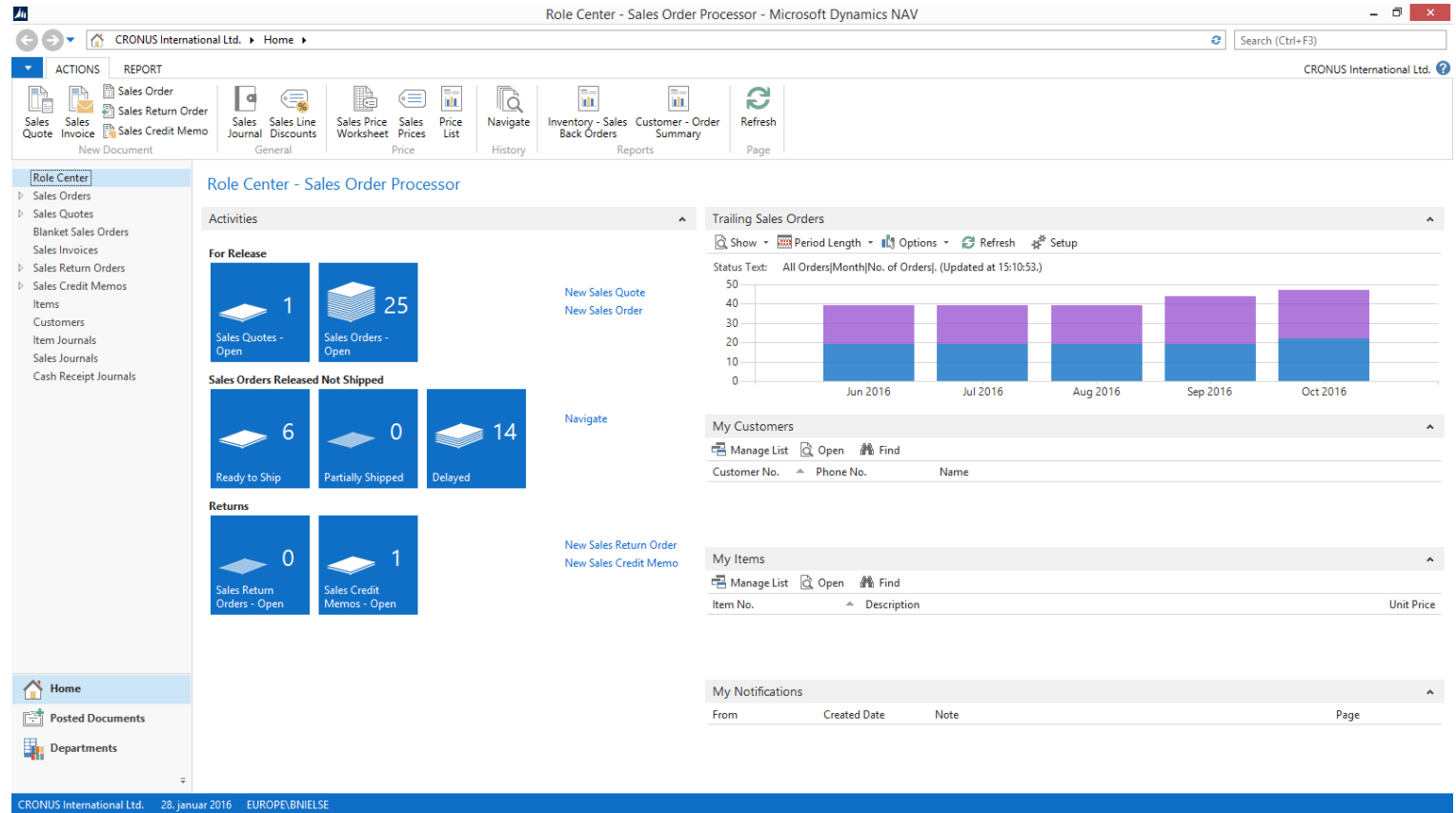
2. UI Elements Removal

Source: Microsoft Dynamics NAV 2015 - Simplified UX - Brian Nielsen (Principal Program Manager), March 2014, Microsoft

NAV 2015 remove UI Elements not in the user's license or permissions set the UI can be made very simple, only showing the things the user have access to.

Example with a sales order processor with a very restricted permission set before and after the system removes UI elements not in the user's permissions.

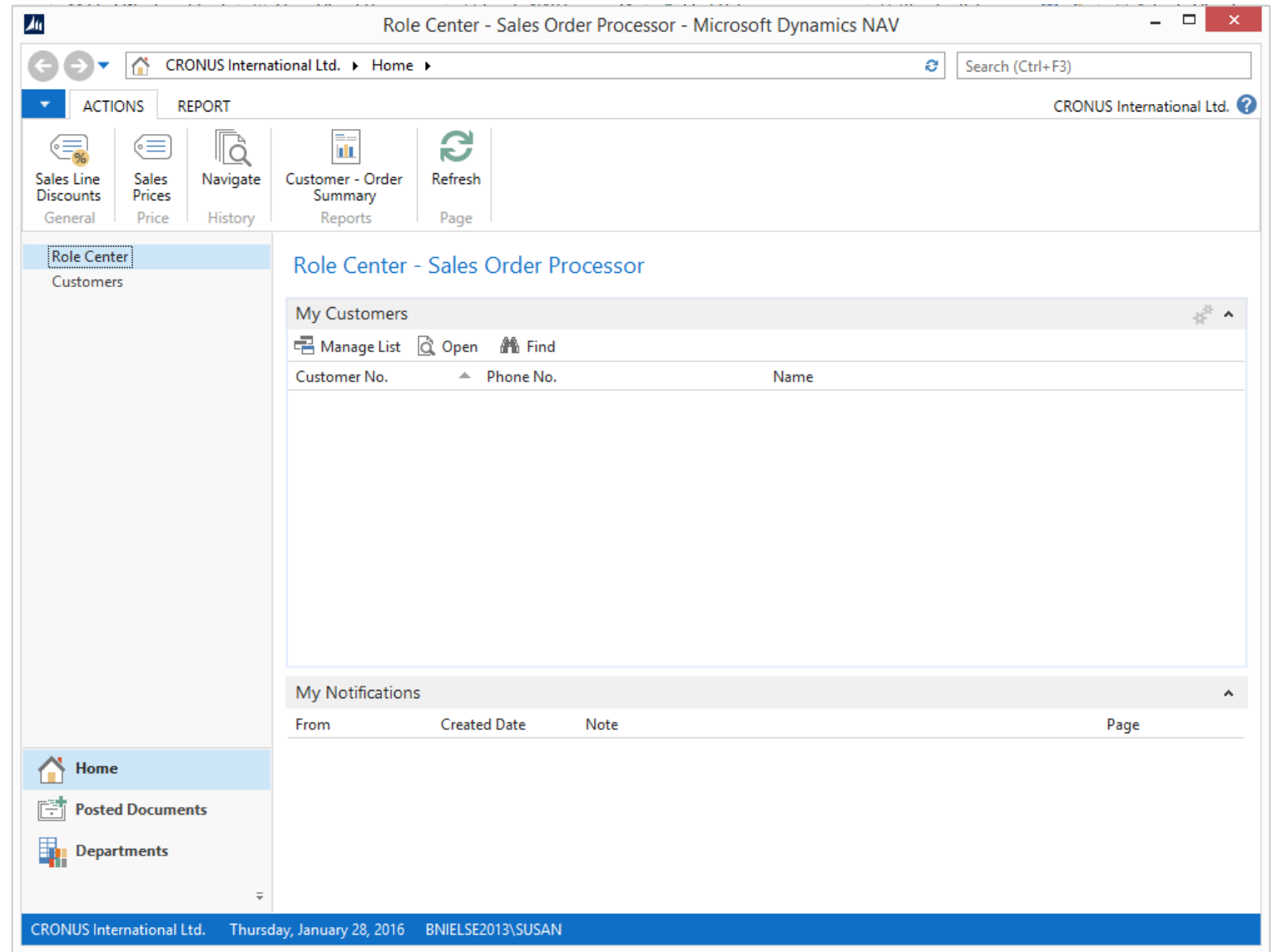
Before UI Elements were removed.



The screenshot displays the Microsoft Dynamics NAV 2015 Role Center for a Sales Order Processor. The interface is organized into several key sections:

- Navigation Pane (Left):** Lists various business objects including Sales Orders, Sales Quotes, Sales Return Orders, Sales Invoices, Sales Return Orders, Sales Credit Memos, Items, Customers, Item Journals, Sales Journals, and Cash Receipt Journals.
- Activities (Main Area):**
 - For Release:** Two cards showing 'Sales Quotes - Open' (1) and 'Sales Orders - Open' (25).
 - Sales Orders Released Not Shipped:** Three cards showing 'Ready to Ship' (6), 'Partially Shipped' (0), and 'Delayed' (14).
 - Returns:** Two cards showing 'Sales Return Orders - Open' (0) and 'Sales Credit Memos - Open' (1).
- Trailing Sales Orders (Right):** A chart showing the number of orders over time from June 2016 to October 2016. The status text indicates 'All Orders|Month|No. of Orders|. (Updated at 15:10:53.)'.
- My Customers (Right):** A section for managing customer lists with options for 'Manage List', 'Open', and 'Find'. It includes fields for 'Customer No.', 'Phone No.', and 'Name'.
- My Items (Right):** A section for managing item lists with options for 'Manage List', 'Open', and 'Find'. It includes fields for 'Item No.', 'Description', and 'Unit Price'.
- My Notifications (Right):** A table for displaying notifications with columns for 'From', 'Created Date', 'Note', and 'Page'.

After UI Elements were removed.



The screenshot displays the Microsoft Dynamics NAV 2015 Developer interface. The window title is "Role Center - Sales Order Processor - Microsoft Dynamics NAV". The breadcrumb navigation shows "CRONUS International Ltd. > Home >". A search bar is present with the text "Search (Ctrl+F3)".

The interface is divided into several sections:

- Actions and Reports:** A horizontal bar contains icons for "Sales Line Discounts" (General), "Sales Prices" (Price), "Navigate" (History), "Customer - Order Summary" (Reports), and "Refresh" (Page).
- Role Center - Sales Order Processor:** The main content area is titled "Role Center - Sales Order Processor". It features a "My Customers" section with a "Manage List" button, "Open" and "Find" icons, and a table with columns "Customer No.", "Phone No.", and "Name". Below this is a "My Notifications" section with a table with columns "From", "Created Date", "Note", and "Page".
- Navigation Pane:** On the left, a vertical pane shows "Role Center" and "Customers" as the current selection. Below it are "Home", "Posted Documents", and "Departments" (sic).
- Status Bar:** The bottom blue bar displays "CRONUS International Ltd. Thursday, January 28, 2016 BNIELSE2013\SUSAN".

3. UI Elements Removal Setup

Source: How to: Specify When UI Elements Are Removed, Microsoft Dynamics NAV 2015, Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn271718\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn271718(v=nav.80).aspx) and How to: Remove UI Elements Using the AccessByPermission Property, Microsoft Dynamics NAV 2015, Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn789564\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789564(v=nav.80).aspx)

How to Specify When UI Elements Are Removed

Depending on the setting in the UI Elements Removal field in the Microsoft Dynamics NAV Server Administration tool, only user interface (UI) elements on objects in the license or on objects that the user has permissions to will appear in the user interface.

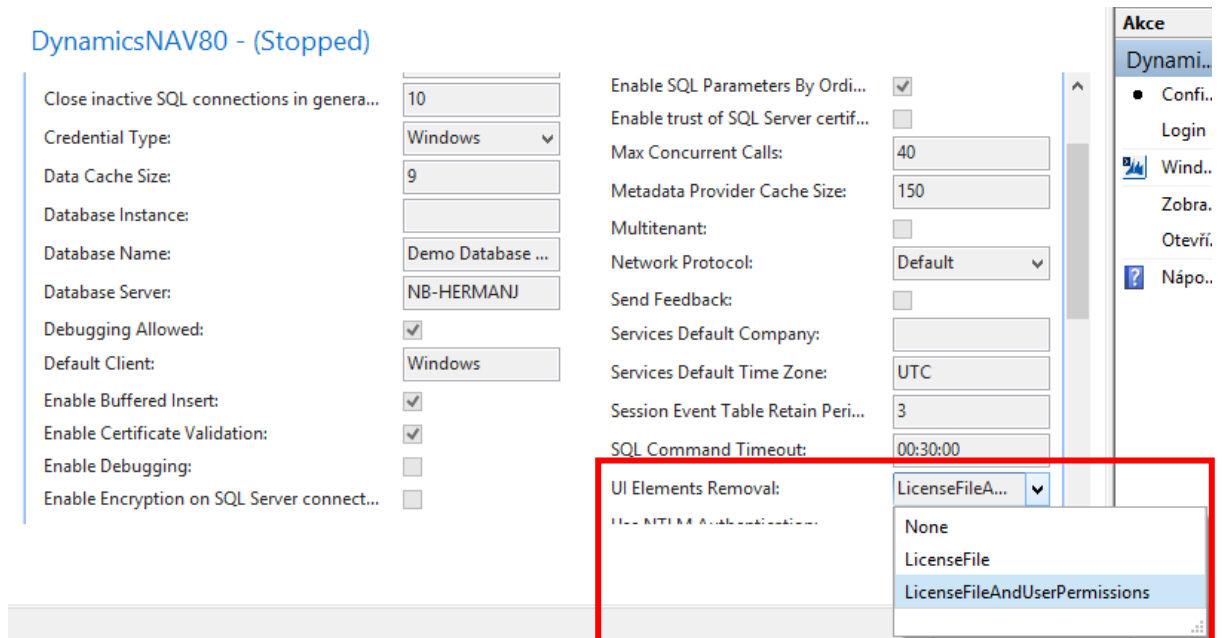
All types of UI elements will be removed if they relate to objects that are not included in the license or the user does not have the required permission to the objects:

- Fields
- Actions
- Page parts

UI elements that are directly related to an object through the TableRelation or the CalcFormula property can be removed automatically according to the license file and/or user permissions.

To specify when UI elements are removed user can change settings using Microsoft Dynamics NAV Server Administration tool. In the UI Elements Removal field user can choose one of following options:

- None - All UI elements are displayed, even if the license file does not include the related object and the user does not have permissions to the related object.
- LicenseFile - A UI element is removed if the related object is



The screenshot shows the 'DynamicsNAV80 - (Stopped)' configuration window. The 'UI Elements Removal' dropdown menu is open, showing three options: 'None', 'LicenseFile', and 'LicenseFileAndUserPermissions'. The 'LicenseFileAndUserPermissions' option is highlighted. The background shows various server configuration settings such as 'Close inactive SQL connections in general...', 'Credential Type', 'Data Cache Size', 'Database Instance', 'Database Name', 'Database Server', 'Debugging Allowed', 'Default Client', 'Enable Buffered Insert', 'Enable Certificate Validation', 'Enable Debugging', 'Enable Encryption on SQL Server connect...', 'Enable SQL Parameters By Ord...', 'Enable trust of SQL Server certif...', 'Max Concurrent Calls', 'Metadata Provider Cache Size', 'Multitenant', 'Network Protocol', 'Send Feedback', 'Services Default Company', 'Services Default Time Zone', 'Session Event Table Retain Peri...', and 'SQL Command Timeout'.

not included in the license file.

- LicenseFileAndUserPermissions -
- A UI element is removed if the related object is not included in the license file and the user does not have permissions to the object as defined in the AccessByPermission property for the related UI element. By default, this option is selected.

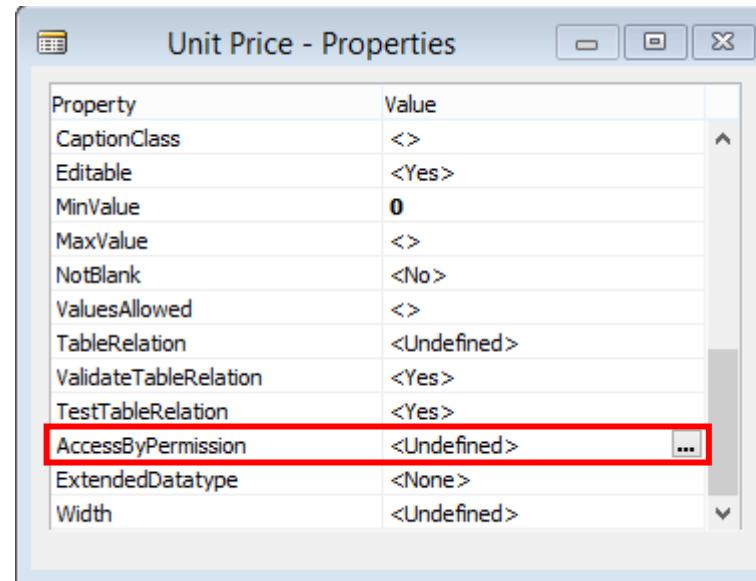
How to: Remove UI Elements Using the AccessByPermission Property

For UI elements that are not directly related to an object, you can use the AccessByPermission property to remove the element according to the user's permission to a related object.

The **AccessByPermission** property sets a value for a table field or UI element that determines the permission mask for an object that a user must have to see and access the related page fields or UI element in the client. The UI element will be removed at runtime if the user does not have permissions to a certain object as specified in the **Access By Permission** window.

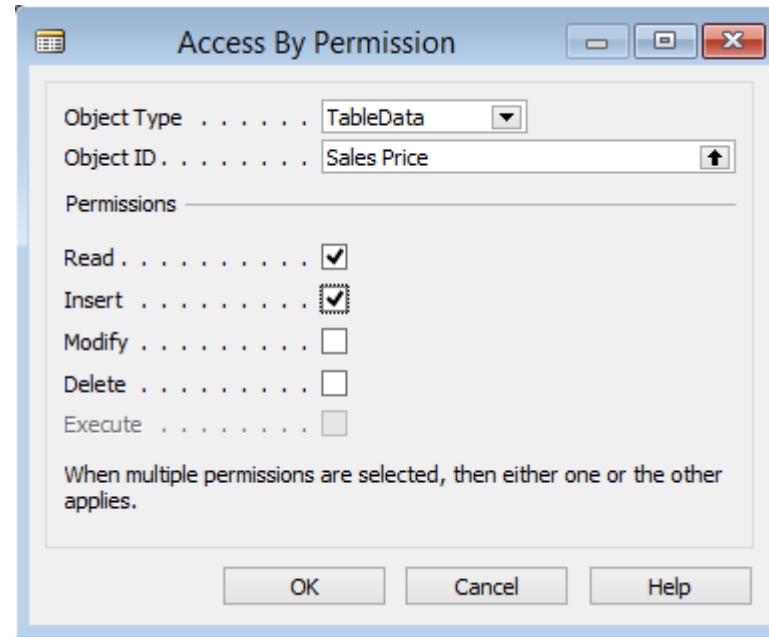
To remove UI elements by using the AccessByPermission property developer can do following:

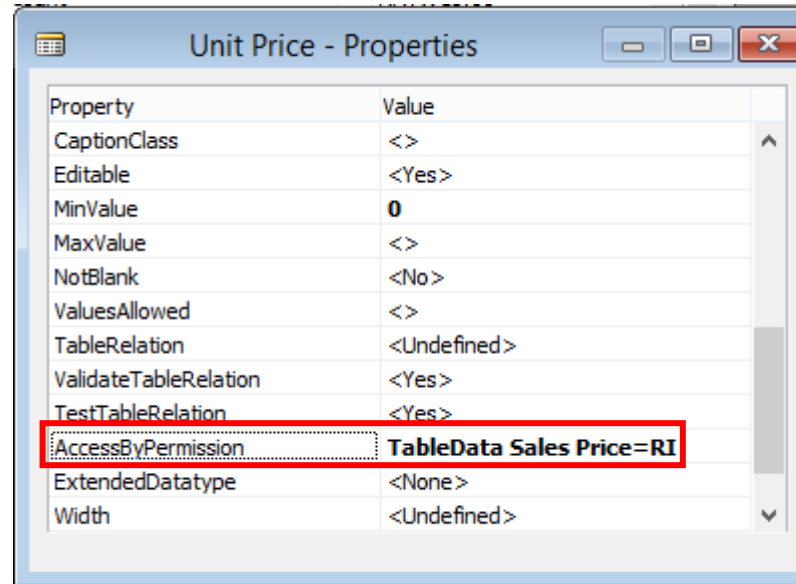
- In the Microsoft Dynamics NAV Development Environment, view the properties of a table field for which you want to remove its page control(s) or view the properties of a field, action, or part on a page object.
- For the AccessByPermission property, choose the AssistEdit button.
- In the Access By Permission window, fill the fields as described next:
 - Object Type - Specify the type of object to which



permission is required for the UI element to be visible. Object ID - Specify the object to which permission is required for the UI element to be visible.

- Read - Specify if Read permission is required for the UI element to be visible.
- Insert - Specify if Insert permission is required for the UI element to be visible.
- Modify - Specify if Modify permission is required for the UI element to be visible.
- Delete - Specify if Delete permission is required for the UI element to be visible.
- Execute - Specify if Execute permission is required for the UI element to be visible.
- When multiple permissions are selected, then one or another applies. For example, if you choose Insert and Modify, then the user must have either the Insert or the Modify permission to the object for the UI element to be visible.
- Save and compile the changes. The UI element in question is now invisible to users who do not have the specified permissions to the object.





Property	Value
CaptionClass	<>
Editable	<Yes>
MinValue	0
MaxValue	<>
NotBlank	<No>
ValuesAllowed	<>
TableRelation	<Undefined>
ValidateTableRelation	<Yes>
TestTableRelation	<Yes>
AccessByPermission	TableData Sales Price=RI
ExtendedDatatype	<None>
Width	<Undefined>

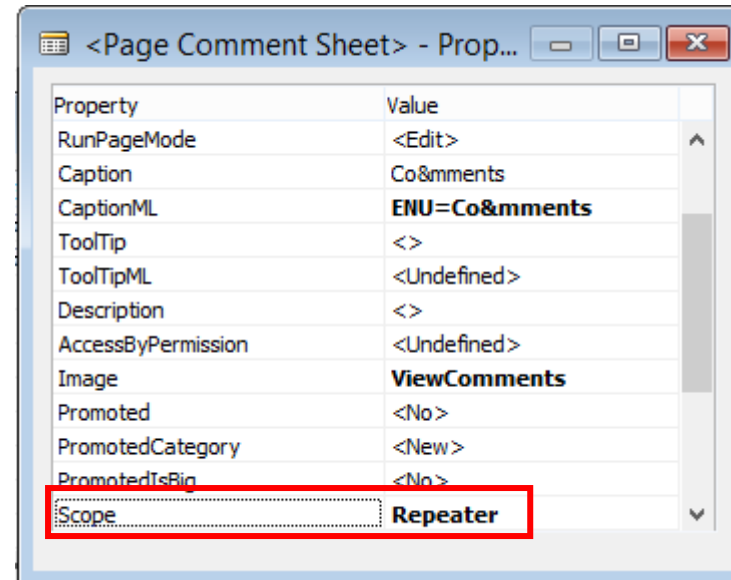
4. Defining Action Scope for NAV Page

Source: Defining Action Scope for Microsoft Dynamics NAV Pages, Microsoft Dynamics NAV 2015, Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn789514\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789514(v=nav.80).aspx)

Defining Action Scope for Microsoft Dynamics NAV Pages

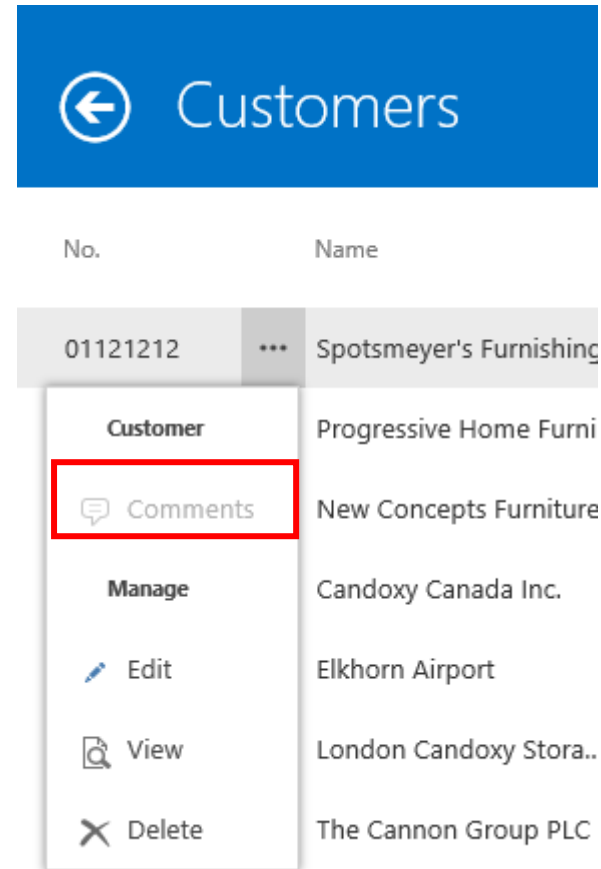
When developing pages for Microsoft Dynamics NAV Tablet and Web client that include a repeater control, it is useful to be able to define whether the actions available on a page apply to the whole page or are related to the repeater control on the page. The purpose of the **Scope** property is to enable application developers to add row-specific actions to the shortcut menu which is available to the user on each line. This gives users a more direct way to invoke actions that relate to the selected row/line.

This is the case when you have, for example, Line Comments which are related to a line, but appear in the ribbon. You can specify the scope of action by setting the property on the page action to be either **Page** or **Repeater**.



Tablet Client

Scope property = Repeater – action is displayed only in repeater scope.

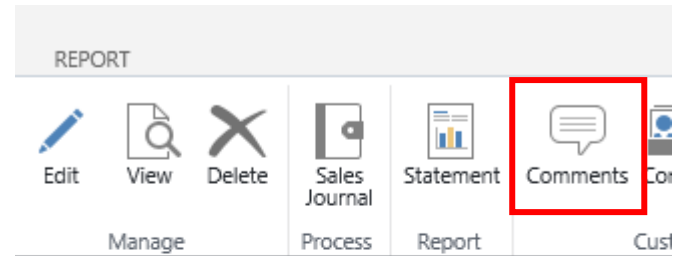


The screenshot shows the 'Customers' page in the Microsoft Dynamics NAV 2015 Tablet Client. The page has a blue header with a back arrow and the title 'Customers'. Below the header is a table with two columns: 'No.' and 'Name'. The first row is highlighted in grey and has a context menu open over it. The context menu is a white box with a red border around the 'Comments' option. The menu items are: 'Customer', 'Comments', 'Manage', 'Edit', 'View', and 'Delete'. The 'Comments' option is highlighted with a red border.

No.	Name
01121212	Spotsmeyer's Furnishing
	Progressive Home Furni
	New Concepts Furniture
	Candoxy Canada Inc.
	Elkhorn Airport
	London Candoxy Stora..
	The Cannon Group PLC

Web Client

Scope property = Repeater – action is displayed in action ribbon and in repeater scope as well.



CRONUS International Ltd.

Customers

⊕ new

No.	Name
<input checked="" type="checkbox"/>	01121212

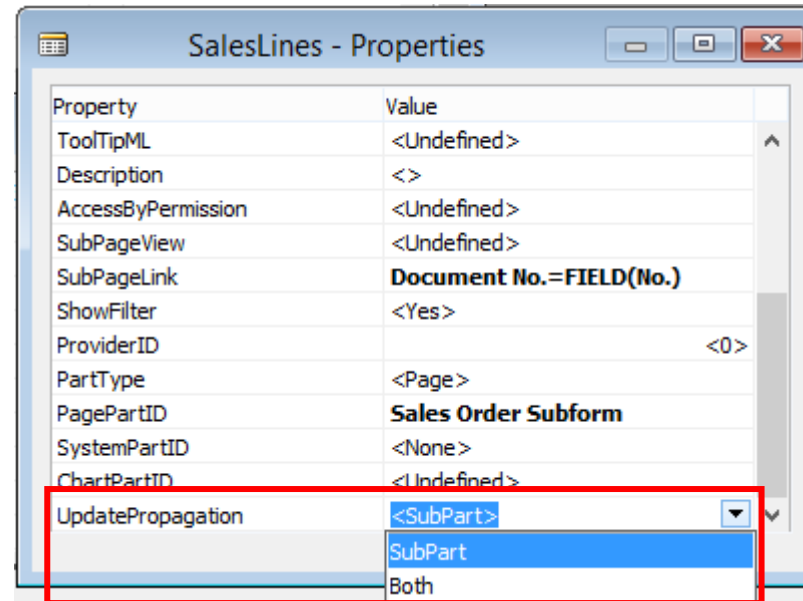
No.	Name
<input checked="" type="checkbox"/>	01121212
	Spotsmeyer's Furnishing
	Progressive Home Furni:
	New Concepts Furniture
	Candoxy Canada Inc.
	Elkhorn Airport
	London Candoxy Storag
	The Cannon Group PLC
	Selangorian Ltd.
	Metatorad Malaysia Sdn

5. Update Parent Page from a Subpage

Source: UpdatePropagation Property, Microsoft Dynamics NAV 2015, Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn789582\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789582(v=nav.80).aspx)

Update Parent Page from a Subpage

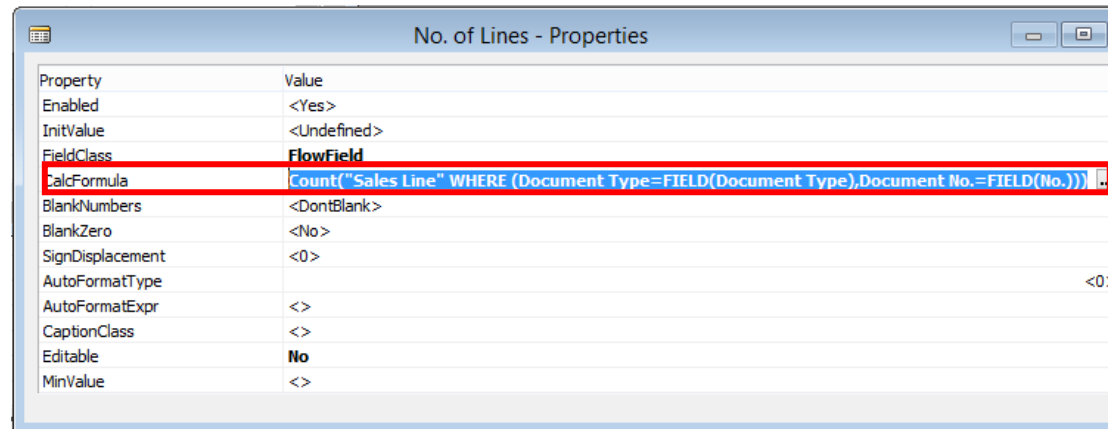
Sets a value that specifies what happens when a main page with a subpage is updated. The **UpdatePropagation** property is available on **Part** controls and has two options; **Subpage** and **Both**. If **UpdatePropagation** is set to **Subpage**, an update action will update the subpage only. If **UpdatePropagation** is set to **Both**, an update action will update both the main page and the subpage. This is useful if a value on the subpage changes, and you want a main page total to be refreshed automatically.



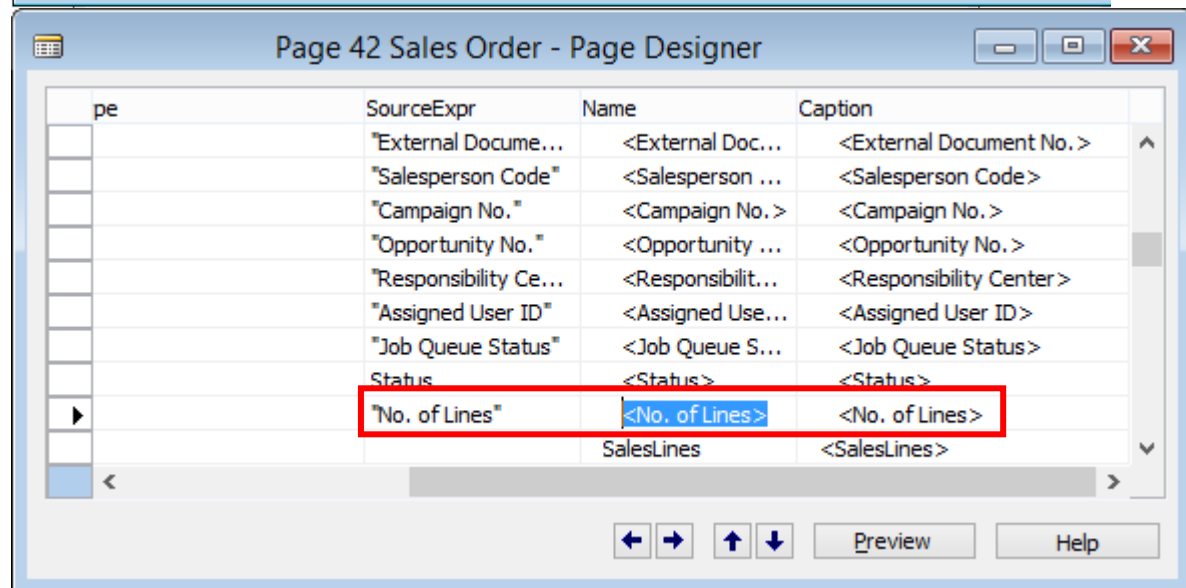
Example:

Create new field on Sales Order page – No. of Lines which will automatically calculate number of lines created for the Sales Order.

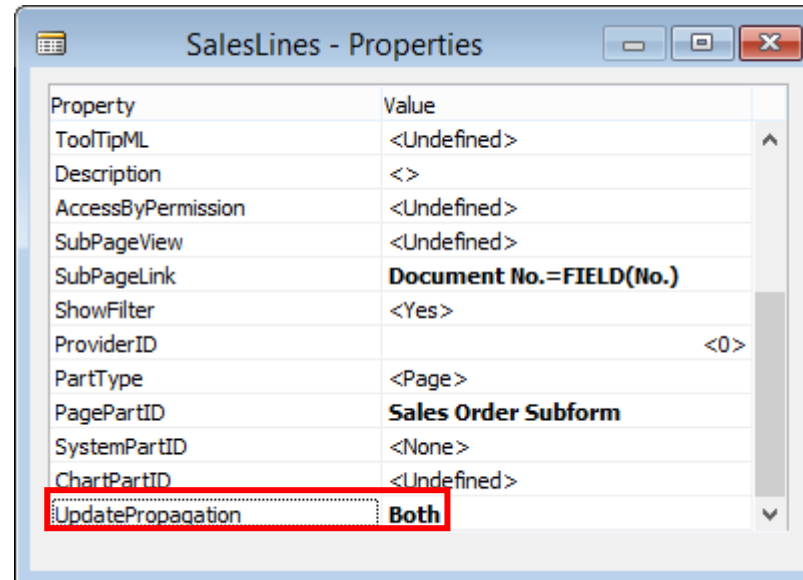
1. Create new non-editable field No. of Lines – int – Flowfield in table Sales Header. Flowfield calculates number of existing records in table Sales Line for Document Type and Document No. same as for Sales Header.



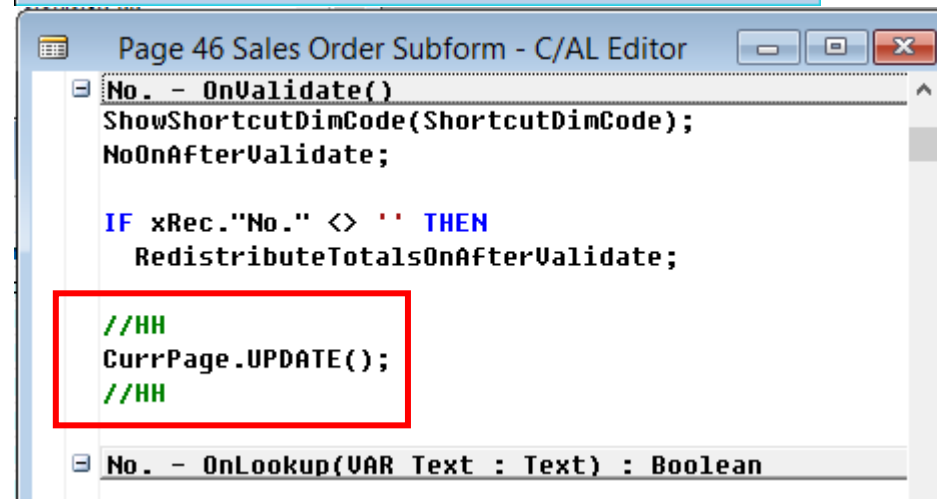
2. Add new field to Sales Order page.



3. Change Update Propagation Property to Both for subpage with lines.



4. Add CurrPage.UPDATE(); call on appropriate subpage trigger, for example OnNewRecord.



Edit - Sales Order - 101005 · John Haddock Insurance Co. CRONUS International Ltd. ?

HOME ACTIONS NAVIGATE

Manage Release Posting Plan Order Documents Order Confirmation Show Attached Page

101005 · John Haddock Insurance Co.

Sell-to Customer No.: 30000 Requested Delivery Da...
 Sell-to Customer Na... John Haddock Insu... External Document No.:
 Sell-to City: Manchester Salesperson Code: PS
 Posting Date: 29. 1. 2016 Status: Open
 Order Date: 14. 1. 2016 No. of Lines: 3
 Document Date: 14. 1. 2016

Show more fields

Sell-to Customer Sal...
 Customer No.: 30000
 Quotes: 0
 Blanket Orders: 0
 Orders: 5
 Invoices: 0
 Return Orders: 0
 Credit Memos: 0
 Pstd. Shipments: 6
 Pstd. Invoices: 3
 Pstd. Return Rece...: 0
 Pstd. Credit Mem...: 0

Sales Line Details
 Item No.: 1920-S
 Required Quantity: 0
Availability
 Shipment Date: 14. 1. 2016

Lines

Line Functions Order Find Filter Clear Filter

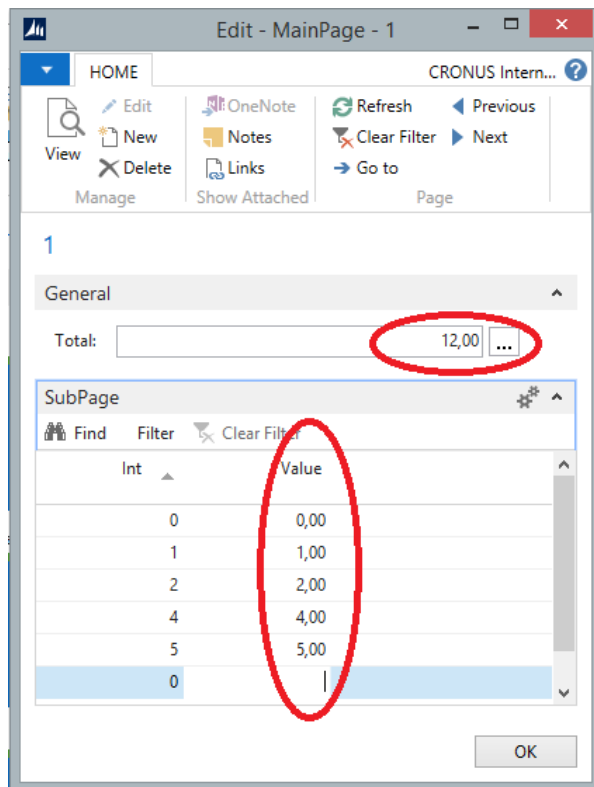
Type	No.	Description	Location Code	Quantity
Item	1920-S	ANTWERP Conference Table	RED	
Item	1000	Bicycle		
Item	1000	Bicrcle		

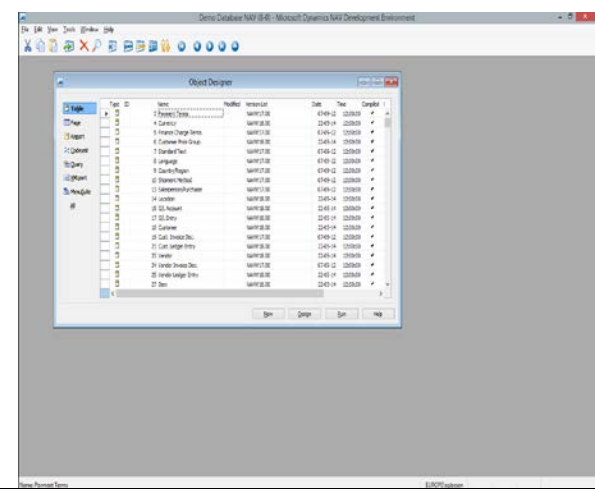
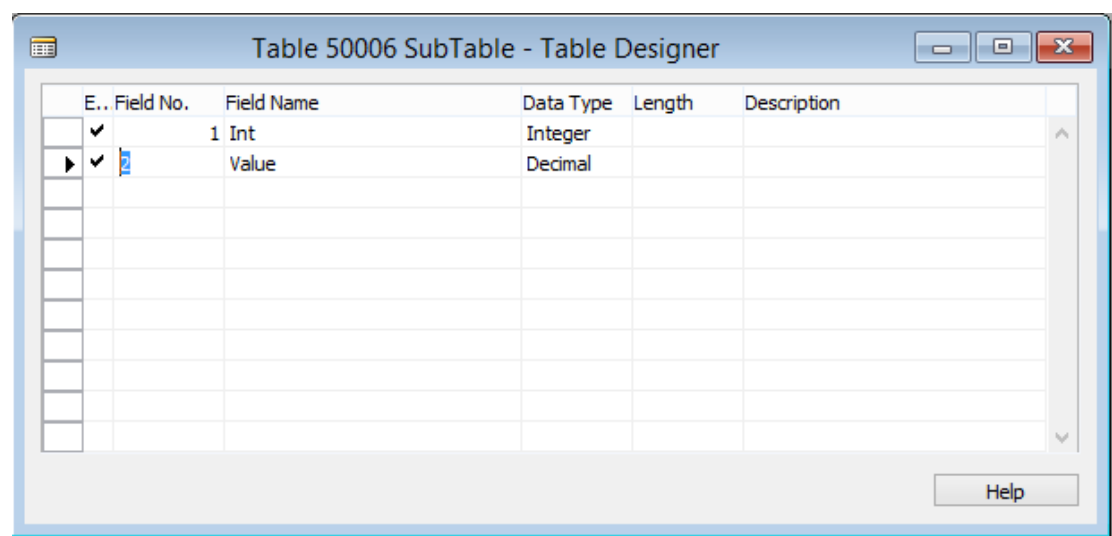
OK

6. Lab - Update Parent Page from a Subpage

Source: Demo Script - Refreshing Parent Page with UpdatePropagation, Stuart Glasson (Program Manager), August 2014, Microsoft

The scenario in this lab is to build a header/subpage pattern page and display a current total in the header. At the end, you will create a page that looks and behaves like the page in the following illustration where the sum of the values is totalled in the **General** FastTab without a user needing to refresh the page.



What to do	What to say	Screenshots
<ol style="list-style-type: none"> 1. Open the Microsoft Dynamics NAV 2015 Development Environment. 2. On the Tools menu, choose Object Designer. 	<p>So, let's get started by opening the Development Environment and Object Designer.</p>	
<ol style="list-style-type: none"> 3. Choose Table and then choose New. <ol style="list-style-type: none"> a. Specify two fields: <ul style="list-style-type: none"> • Int as Integer • Value as Decimal b. Save the table as follows: <ul style="list-style-type: none"> ID: 50006 Name: SubTable c. Close Table Designer. 	<p>Build the table that will be the data source for the subpage.</p>	

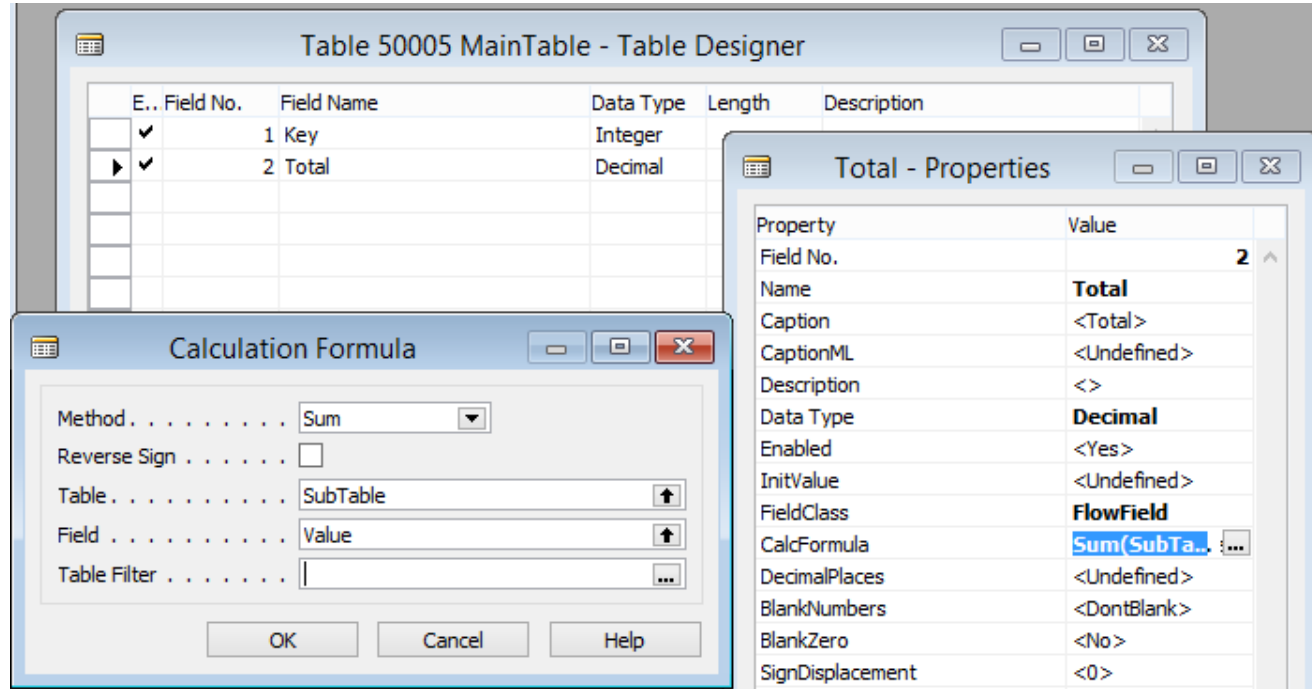
4. Choose **Table** and then choose **New**.
 - a. Specify two fields:
 - **Key** as Integer
 - **Total** as Decimal
 - b. Select the **Total** field and open the **Properties** window (Shift+F4).
 - c. Set the **FieldClass** property to **FlowField**.
 - d. In the **CalcFormula** property, choose the **AssistEdit** button to open the CalcFormula wizard.
 - e. Set the following formula:

Method: **Sum**
 Table: **SubTable**
 Field: **Value**.
 - f. Choose the **OK** button and close the Calculation Formula wizard and then close the **Properties** window.
 - g. Save the table as follows:

ID: **50005**
 Name: **MainTable**
 - h. Close Table Designer.

Next, build the table that will be the data source for the main page.

Note that the total for the **Total** field is a FlowField calculated as the sum of values from table 50006.



The screenshot displays three windows from the Microsoft Dynamics NAV 2015 Developer interface:

- Table 50005 MainTable - Table Designer:** A table with two fields:

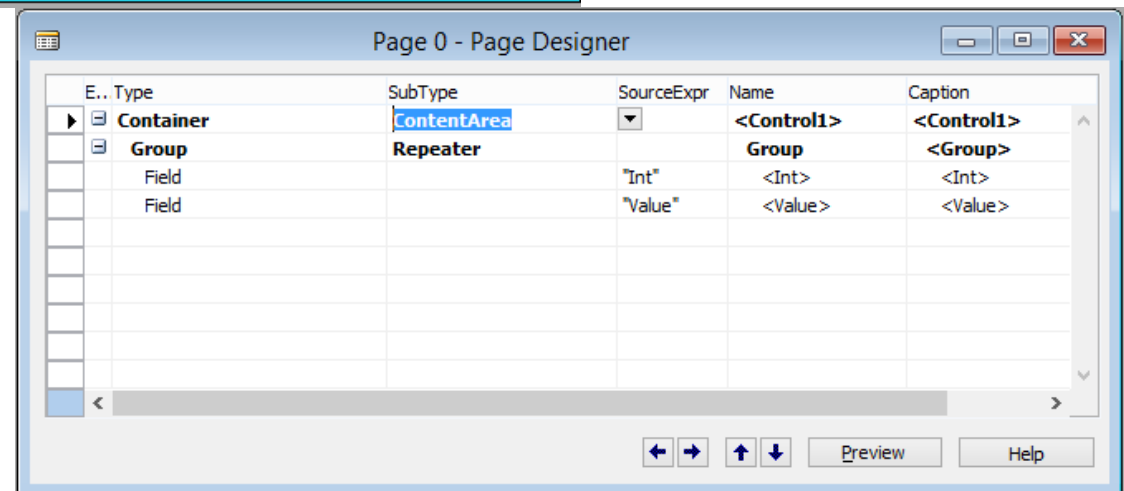
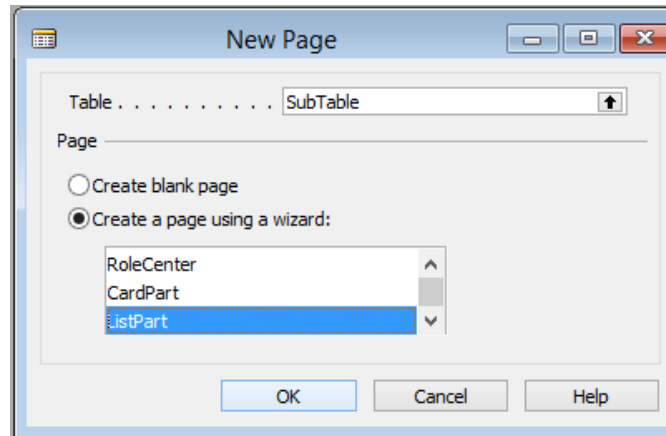
E.. Field No.	Field Name	Data Type	Length	Description
1	Key	Integer		
2	Total	Decimal		
- Calculation Formula:** A wizard window with the following settings:
 - Method: Sum
 - Reverse Sign:
 - Table: SubTable
 - Field: Value
 - Table Filter: (empty)
- Total - Properties:** A properties window for the 'Total' field with the following values:

Property	Value
Field No.	2
Name	Total
Caption	<Total>
CaptionML	<Undefined>
Description	<>
Data Type	Decimal
Enabled	<Yes>
InitValue	<Undefined>
FieldClass	FlowField
CalcFormula	Sum(SubTa...
DecimalPlaces	<Undefined>
BlankNumbers	<DontBlank>
BlankZero	<No>
SignDisplacement	<0>

5. Choose **Page** and then choose **New**.
 - a. Specify the following:
 Table: **SubTable**
 Create a Page: **ListPart**
 - b. Add both fields.
 - c. Close, save, and compile the page:
 ID: **50006**
 Name: **SubPage**

Now that you have your data sources, it's time to build the pages.

First, build the subpage that will show the line information. For this, use the Page Designer wizard and pick a ListPart page type.



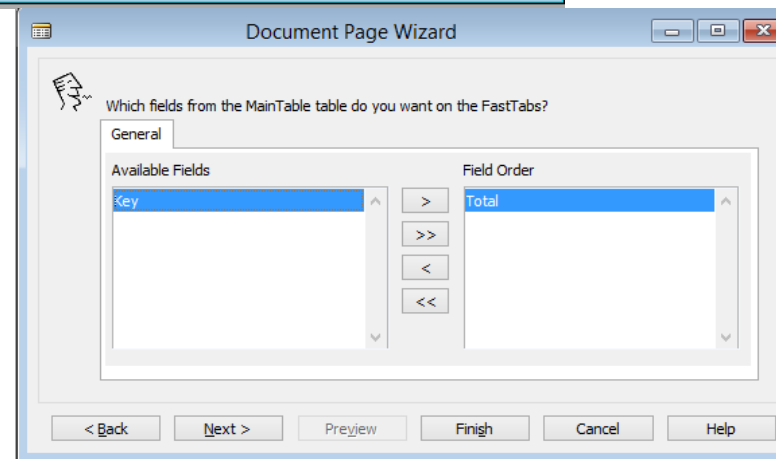
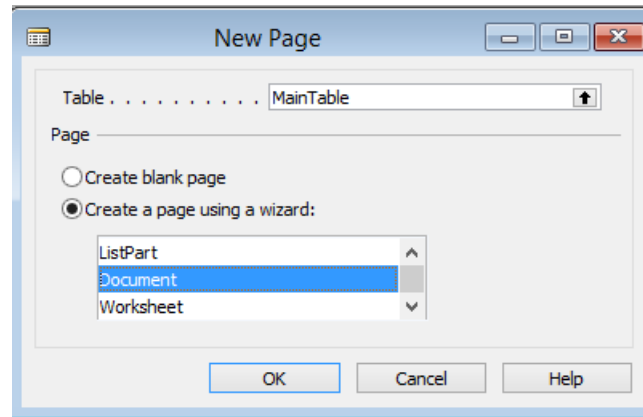
6. Choose **Page** and then choose **New**.
 - a. Specify the following:
Table: **MainTable**
Create a Page: **Document**
 - b. Choose the **OK** button.
 - c. Choose **Next** to create a General FastTab.
 - d. Add the **Total** field to the Field Order list box.
 - e. Choose **Finish**.
 - f. Select the first empty line and add a new entry:
Type: **Part**
Subtype: **Page**.
 - g. Choose the left arrow button to indent the subpage entry one step back.
 - h. Open the **Properties** window for the Part:Page entry and set the **PagePartID** property to **SubPage**.
7. Choose **Preview**.
8. Close, save, and compile the page:
ID: **50005**
Name: **MainPage**.

Next, build the main page, which will show the header information. Again, use the Page Designer wizard and this time pick the Document page type.

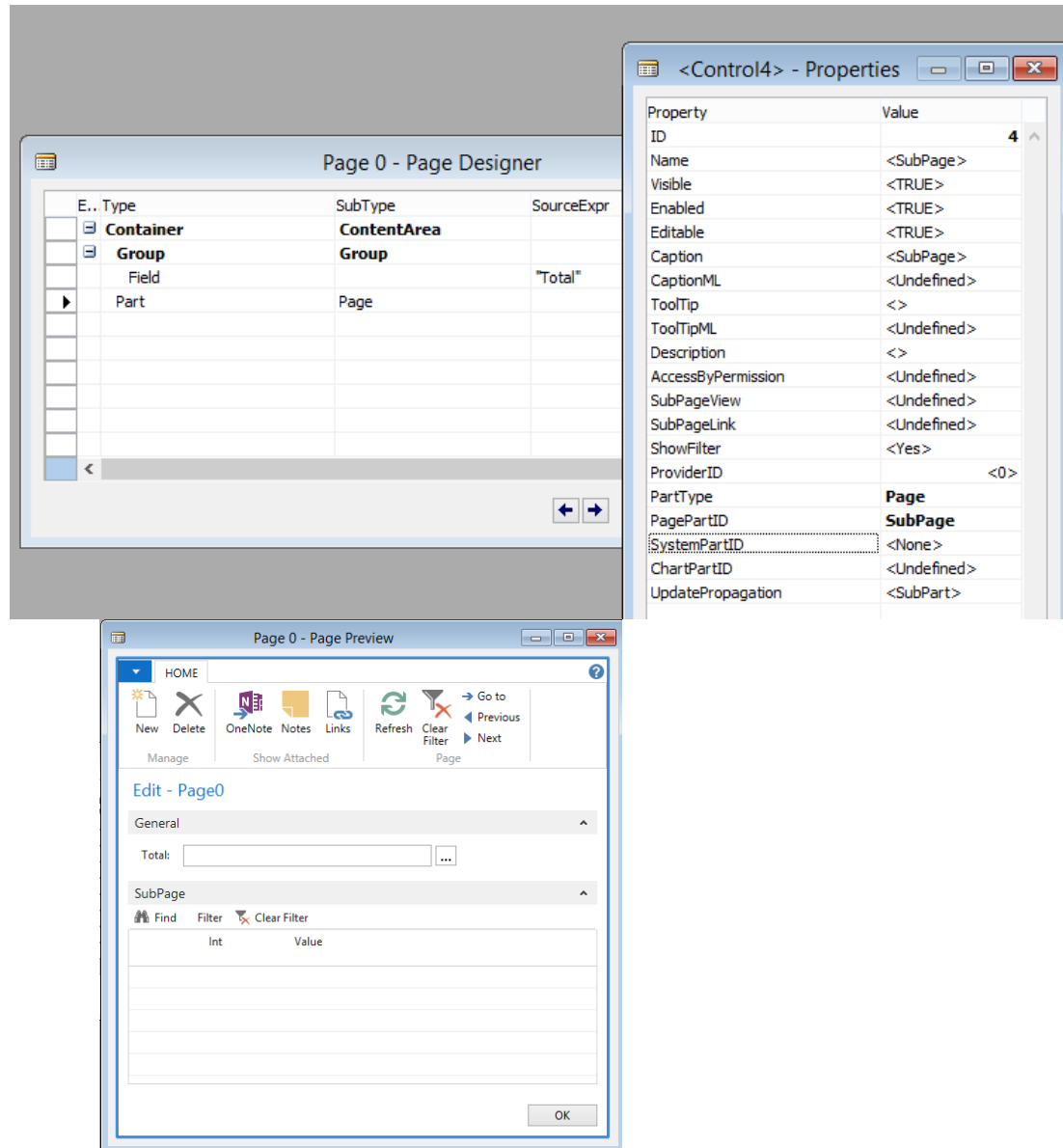
As you make the page, you only want to display the total value in the header.

After adding the **Total** field, close the Page Designer wizard and add the subpage to the main page.

In Page Designer, add the subpage to the page. Make sure to choose the left arrow to indent the subpage entry one step back. If you do not do this, the subpage part will display next to the **Total** field and you want it to be underneath.



Choose the **Preview** button to see if you are on track.



The screenshot displays the Microsoft Dynamics NAV 2015 Developer interface. The main window is titled "Page 0 - Page Designer" and contains a table with the following data:

E..	Type	SubType	SourceExpr
	Container	ContentArea	
	Group	Group	
	Field		"Total"
▶	Part	Page	

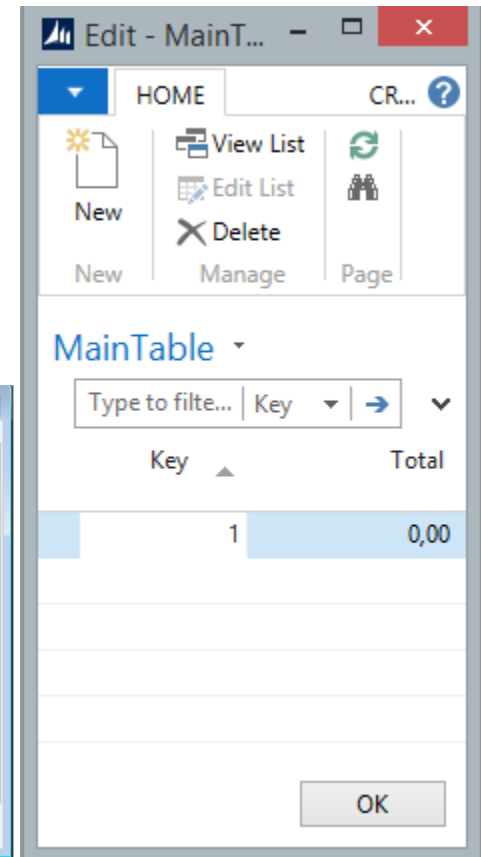
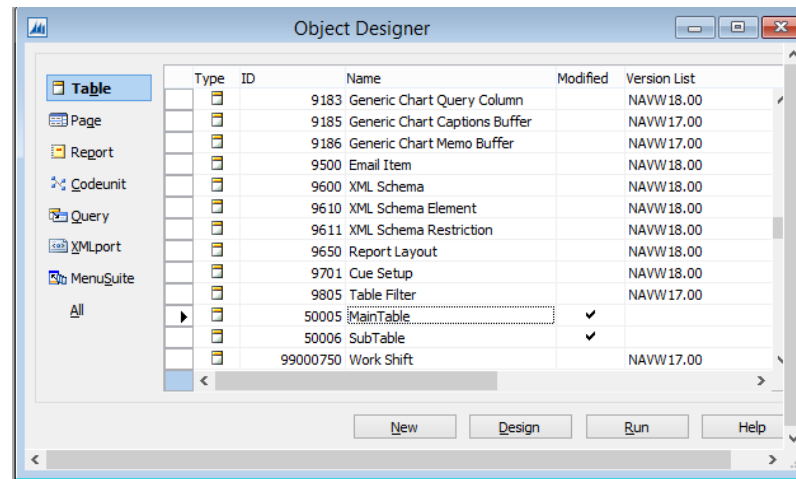
To the right of the Page Designer is the "<Control4> - Properties" window, which lists various properties and their values:

Property	Value
ID	4
Name	<SubPage>
Visible	<TRUE>
Enabled	<TRUE>
Editable	<TRUE>
Caption	<SubPage>
CaptionML	<Undefined>
ToolTip	<>
ToolTipML	<Undefined>
Description	<>
AccessByPermission	<Undefined>
SubPageView	<Undefined>
SubPageLink	<Undefined>
ShowFilter	<Yes>
ProviderID	<0>
PartType	Page
PagePartID	SubPage
SystemPartID	<None>
ChartPartID	<Undefined>
UpdatePropagation	<SubPart>

Below the Page Designer is the "Page 0 - Page Preview" window. It shows a preview of the page layout with a ribbon menu (HOME) containing options like New, Delete, OneNote, Notes, Links, Refresh, Clear Filter, Go to, Previous, and Next. The main content area is titled "Edit - Page0" and includes a "General" section with a "Total" field and a "SubPage" section with a "Find" button and a table with columns "Int" and "Value".

9. From Object Designer, run Table MainTable.
10. The MainTable table opens. Enter 1 in the table.
11. Choose the **OK** button to close the page.
12. Switch back to the development environment.

To test this, add a demo data record to the main table. From Object Designer, run Table Main Table and add the number 1 to the table.



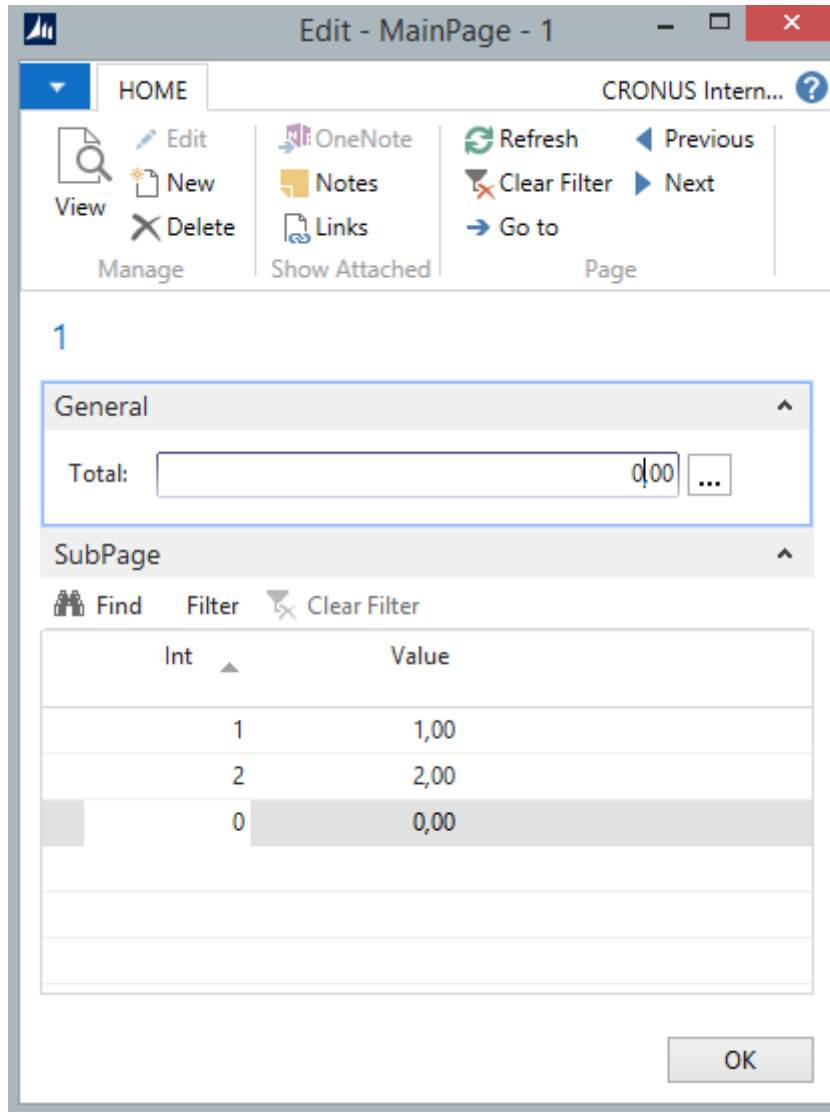
13. From Object Designer, run Page MainPage.
The Microsoft Dynamics NAV Windows Client opens and displays the page.
14. On the **Manage** tab, choose Edit.
Add some test values.

Now, test if the header/subpage solution works.

Run the Main Page.

Add some values and notice that as you add them, the **Total** field does not update. If you refresh the page, then it does, but it does not do it automatically.

Let's fix that with the new UpdatePropagation functionality.



1

General

Total:

SubPage

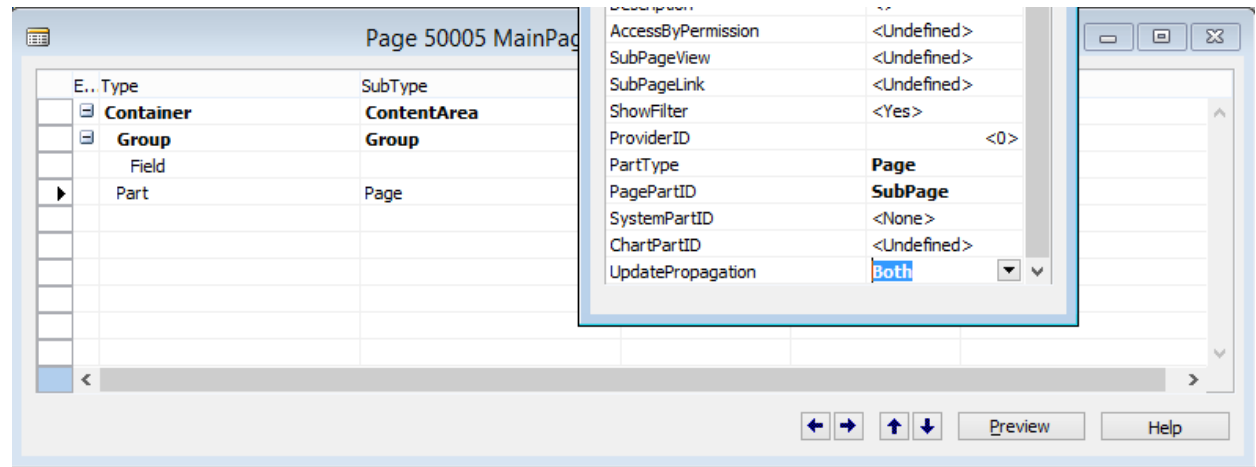
Find Filter Clear Filter

Int	Value
1	1,00
2	2,00
0	0,00

OK

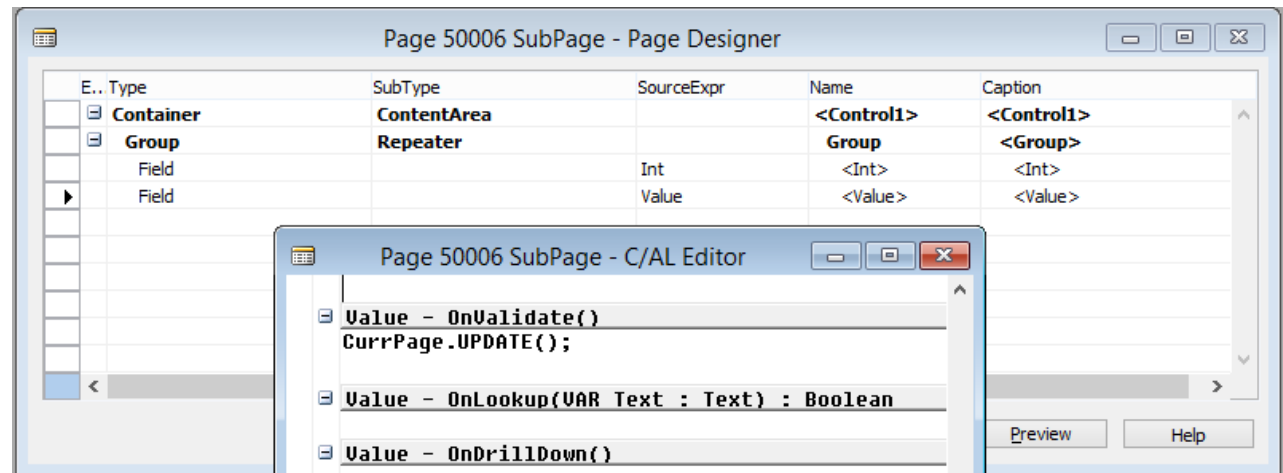
15. Return to the development environment.
16. Open the MainPage in the Page designer. Select the Part:Page line and open the **Properties** window (Shift + F4).
17. Set the **UpdatePropagation** property to **Both**.
18. Close and save the MainPage page.

Change the setting of the **UpdatePropagation** property on the Page Part from **SubPart** to **Both**. This means any refresh or page update from the subpage will refresh the parent page too.



19. Open the SubPage page in Page Designer.
20. Select the Value line and open the C/AL code editor (F9).
21. Find the **Value OnValidate** trigger and add the following line of code **CurrPage.Update()** ;
22. Close the code editor and save the page.

Next, you want to make the subpage refresh itself on changes. Add AL code for a page refresh to the OnValidate trigger of the field.



23. Run the MainPage page again.
24. Choose Edit, and add more values to the lines.

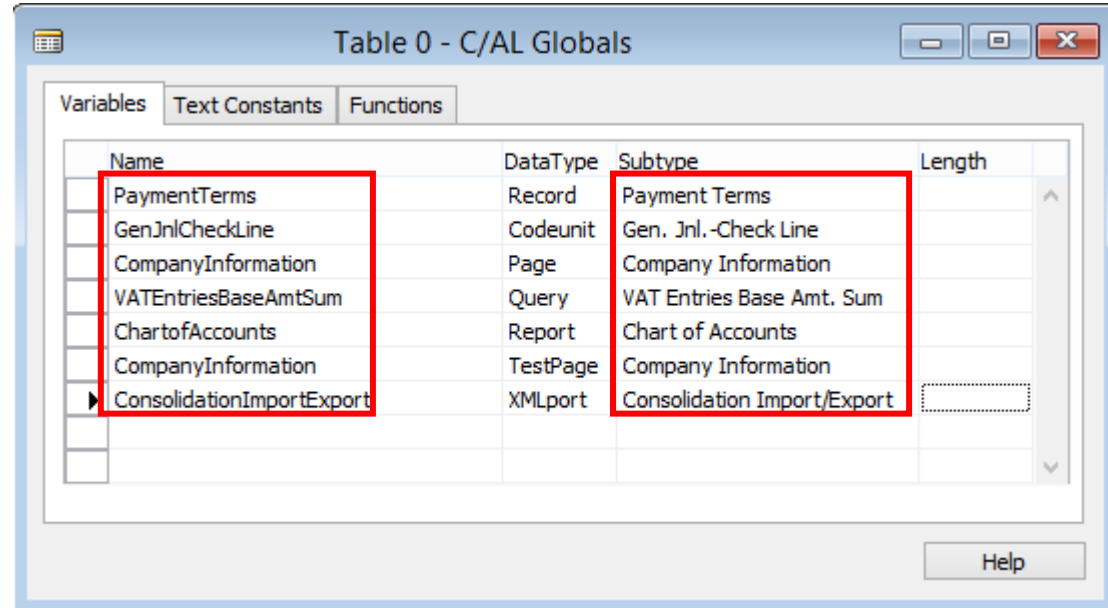
Now, run the MainPage page again. As you add values in the subpage, notice the automatic refresh of the total in the

	header.	
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Module 4 - Introduction to C/AL Programming

1. Variable Scope - Auto-generating of C/AL variable and parameter names for complex data types

When defining global or local variable (C/AL Globals or C/AL Locals) or function parameter of complex data type Record, Codeunit, Page, Query, Report, TestPage, and XMLPort, NAV 2015 Development Environment creates Name of that variable/parameter automatically using name of the associated NAV object.



Name	DataType	Subtype	Length
PaymentTerms	Record	Payment Terms	
GenJnlCheckLine	Codeunit	Gen. Jnl.-Check Line	
CompanyInformation	Page	Company Information	
VATEntriesBaseAmtSum	Query	VAT Entries Base Amt. Sum	
ChartofAccounts	Report	Chart of Accounts	
CompanyInformation	TestPage	Company Information	
ConsolidationImportExport	XMLport	Consolidation Import/Export	

Module 6 - C/AL Statements

1. The Syntax of Comments - Multiple lines comments

In order to comment multiple lines of code, select lines and then go to **Edit** menu and use **Comment Selection** or **Shift+Ctrl+K**.

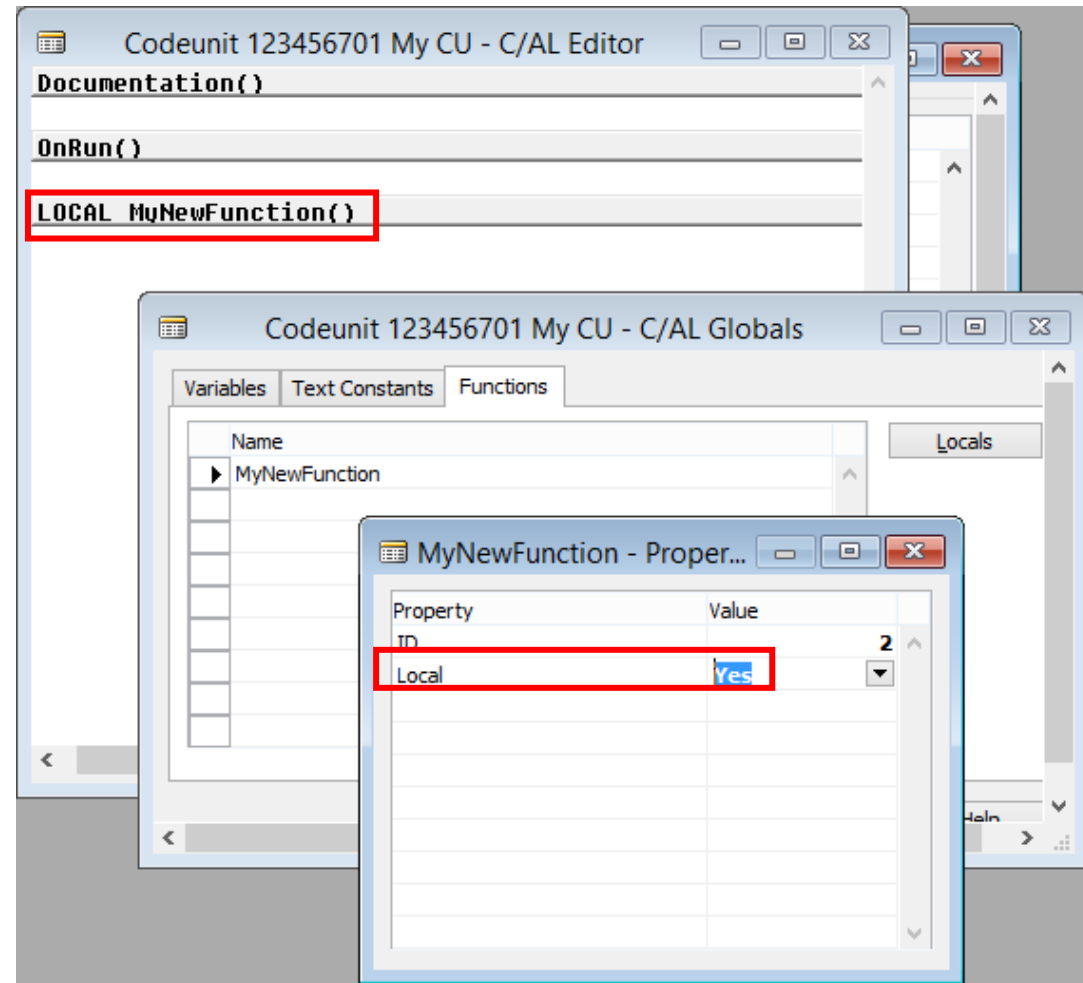
In order to uncomment multiple lines of code, select lines and then go to **Edit** menu and use **Uncomment Selection** or **Shift+Ctrl+O**.

Edit	View	Tools	Window	Help
Undo				Ctrl+Z
Cut				Ctrl+X
Copy				Ctrl+C
Paste				Ctrl+V
Clear				Delete
New				F3
Delete				F4
Select				
Select All				Ctrl+A
Select Object				
Expand				▶
Collapse All				Shift+Ctrl+M
Comment Selection...				Shift+Ctrl+K
Uncomment Selection...				Shift+Ctrl+O
Find...				Ctrl+F
Replace...				Ctrl+H

Module 7 - C/AL Functions

1. Functions and Parameters - C/AL functions are local by default

New functions are local by default, property Local is set to Yes. Local function is not accessible outside the object in which is it defined.



Module 8 – Reports

1. Word Document Reports

Source: Demo Script – Word Document Reports and Custom Layout, Microsoft

Benefits:

- Users are familiar with Word
- Flexible layout
- WYSIWYG

Limitations

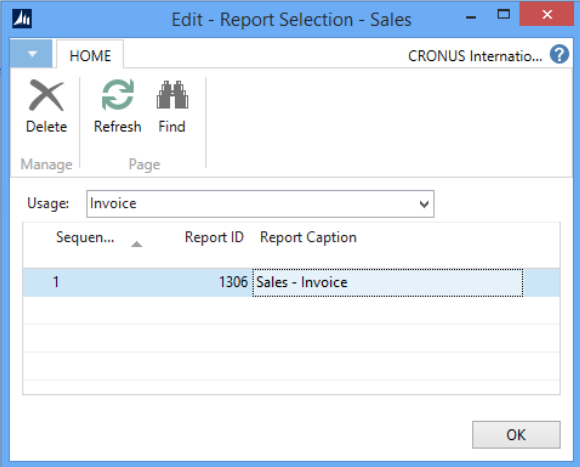
- Not suitable for complex layout or very large documents
- Conditional formatting is not supported
- Number formatting limited to built-in NAV numbers

Lab 1 – Using Report Selector to run Report 1306 Instead of Report 206

Lab story: Microsoft Dynamics NAV 2015 ships with the following a set of new and simplified sales document reports:

- 1304 Mini Sales – Quote
- 1305 Mini Sales – Confirmation
- 1306 Mini Sales – Invoice
- 1307 Mini Sales – Credit Memo

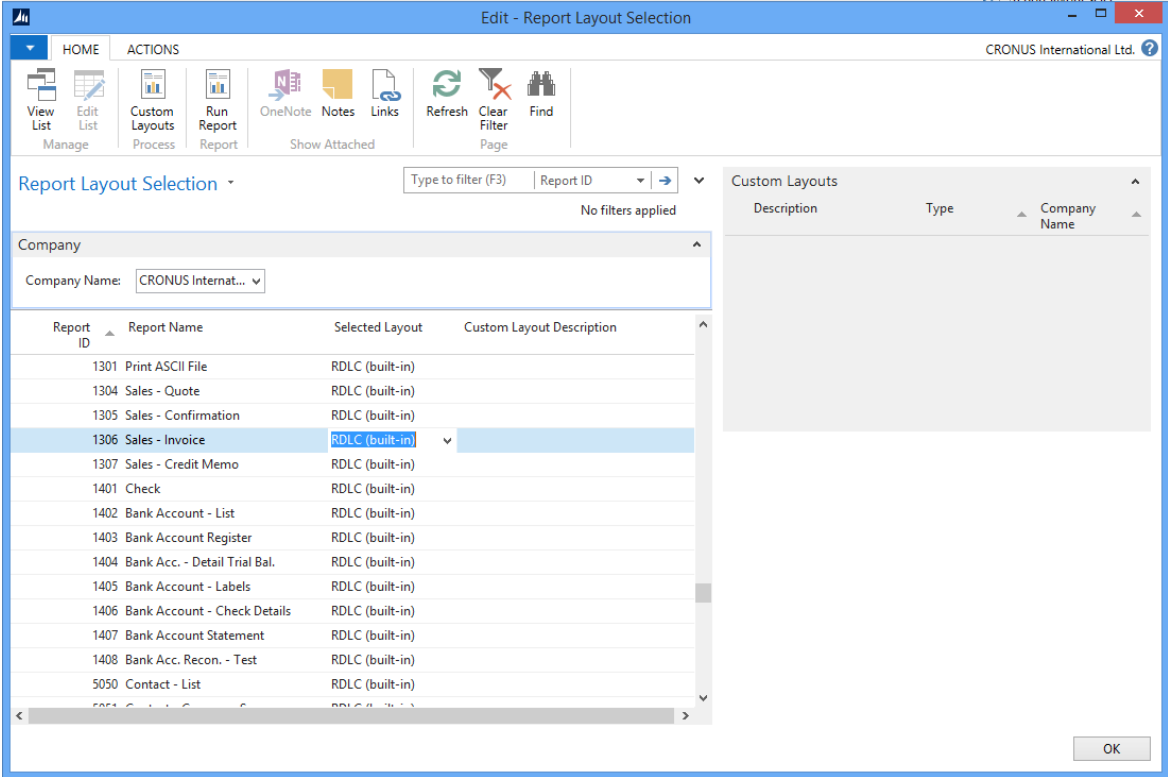
Out of the box, the customary reports 204, 205, 206, and 207 are still enabled by default. To use the new reports, you set them up by using the report selection feature. In this lab, the required steps to use the new sales document reports are shown.

What to do	What to say	Screenshots
<p>1. Open the Report Selection – Sales page by doing one of the following:</p> <ul style="list-style-type: none"> In the Search box, enter Report Selection – Sales, and then choose the related link. In the navigation pane, choose Departments, Administration, IT Administration, and then Reports. 	<p>For the remaining labs, instead of running the default report “206 Sales – Invoice”, we want to run the newly designed Sales Invoice report, that is, report “1306 Mini Sales – Invoice.”</p> <p>To do this, we will use the Report Selection feature.</p>	
<p>2. In the Report Selection – Sales window, do the following:</p> <ol style="list-style-type: none"> Set the Usage field to Invoice. In the Report ID field, replace 206 with 1306. Choose the OK button. 	<p>Set up the report selection to run report 1306 instead of report 206 when printing invoices.</p>	

Lab 2 — Managing Report Layouts

Lab story: Microsoft Dynamics NAV 2015 enables reports to have a single built-in RDLC and Word layout, shared among tenants, as well as any number of customized layouts per tenant. To browse and manage which layout is currently used for a given report, a new Report Layout Selection list page has been introduced.

In this lab, we will use the Report Layout Selection page to switch between and run the RDLC and Word layouts that are shipped as part of the new Sales Invoice report 1306.

What to do	What to say	Screenshots																																																												
<ol style="list-style-type: none"> Open Report Layout Selection page by doing one of the following: <ul style="list-style-type: none"> In the Search box, enter Report Layout Selection, and then choose the related link. In the navigation pane, choose Departments, Administration, IT Administration, Reports, and then Report Layout Selection. In the Small Business Role Center, on the Actions tab, choose Setup, Company Information, and then choose Report Layouts. Ensure that the Company Name field is set to the correct company because reports layouts are company-specific. 	<p>The Report Layout Selection page lists all of the reports that are available for the company that is specified in the Company field at the top of the window.</p> <p>The Selected Layout field specifies the layout that is currently used for a given report.</p> <p>A report can be set up with more than one report layout, which you can then switch among as needed.</p> <p>Depending on the layouts that are available for a report, you can choose to</p>	 <table border="1" data-bbox="896 909 1601 1316"> <thead> <tr> <th>Report ID</th> <th>Report Name</th> <th>Selected Layout</th> <th>Custom Layout Description</th> </tr> </thead> <tbody> <tr><td>1301</td><td>Print ASCII File</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1304</td><td>Sales - Quote</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1305</td><td>Sales - Confirmation</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1306</td><td>Sales - Invoice</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1307</td><td>Sales - Credit Memo</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1401</td><td>Check</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1402</td><td>Bank Account - List</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1403</td><td>Bank Account Register</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1404</td><td>Bank Acc. - Detail Trial Bal.</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1405</td><td>Bank Account - Labels</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1406</td><td>Bank Account - Check Details</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1407</td><td>Bank Account Statement</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1408</td><td>Bank Acc. Recon. - Test</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>5050</td><td>Contact - List</td><td>RDLC (built-in)</td><td></td></tr> </tbody> </table>	Report ID	Report Name	Selected Layout	Custom Layout Description	1301	Print ASCII File	RDLC (built-in)		1304	Sales - Quote	RDLC (built-in)		1305	Sales - Confirmation	RDLC (built-in)		1306	Sales - Invoice	RDLC (built-in)		1307	Sales - Credit Memo	RDLC (built-in)		1401	Check	RDLC (built-in)		1402	Bank Account - List	RDLC (built-in)		1403	Bank Account Register	RDLC (built-in)		1404	Bank Acc. - Detail Trial Bal.	RDLC (built-in)		1405	Bank Account - Labels	RDLC (built-in)		1406	Bank Account - Check Details	RDLC (built-in)		1407	Bank Account Statement	RDLC (built-in)		1408	Bank Acc. Recon. - Test	RDLC (built-in)		5050	Contact - List	RDLC (built-in)	
Report ID	Report Name	Selected Layout	Custom Layout Description																																																											
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1408	Bank Acc. Recon. - Test	RDLC (built-in)																																																												
5050	Contact - List	RDLC (built-in)																																																												

	<p>use a built-in RDLC layout, a built-in Word layout, or a custom layout.</p> <p>From the Report Layout Selection page, it is also possible to manage custom layouts for reports.</p>	
<ol style="list-style-type: none"> 3. In the list, locate the document report 1306 Sales – Invoice by doing one of the following: <ul style="list-style-type: none"> • Scroll down through the list. • Filter on the Report ID equal to 1306. 4. Select the row for report 1306. 5. Choose the down arrow in the Selected Layout field to show the options (RDLC, Word, and Custom). 	<p>First we will have a look at the new report 1306 Sales - Invoice, which has a built-in RDLC and Word layout. Out of the box, it does not have any custom layouts – we will add these in later labs.</p> <p>As you can see, the RDLC (built-in) is typically the layout that selected by default. This can, however, be controlled by using the Default</p>	

<p>Layout property on the specific report object in Microsoft Dynamics NAV Development Environment.</p> <p>Notice that the page also contains a Custom Layouts FactBox. This lists any available custom layouts for a selected report in the list. If there are no custom layouts for the report, then you will have to create one first.</p>	
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6. In the row for report 1306, set the **Selected Layout** field to **RDLC (built-in)**.
7. On the **Home** tab, in the **Report** group, choose **Run Report**.
8. In the resulting report request page, use default values, and then select the **Print** button and choose **PDF**.
9. Open and inspect the resulting PDF file for report, which is based on the RDLC layout.

We will now select and run the built-in RDLC layout for report 1306 Sales – Invoice from the Report Layout Selection list page.

Page 1 / 1

Invoice

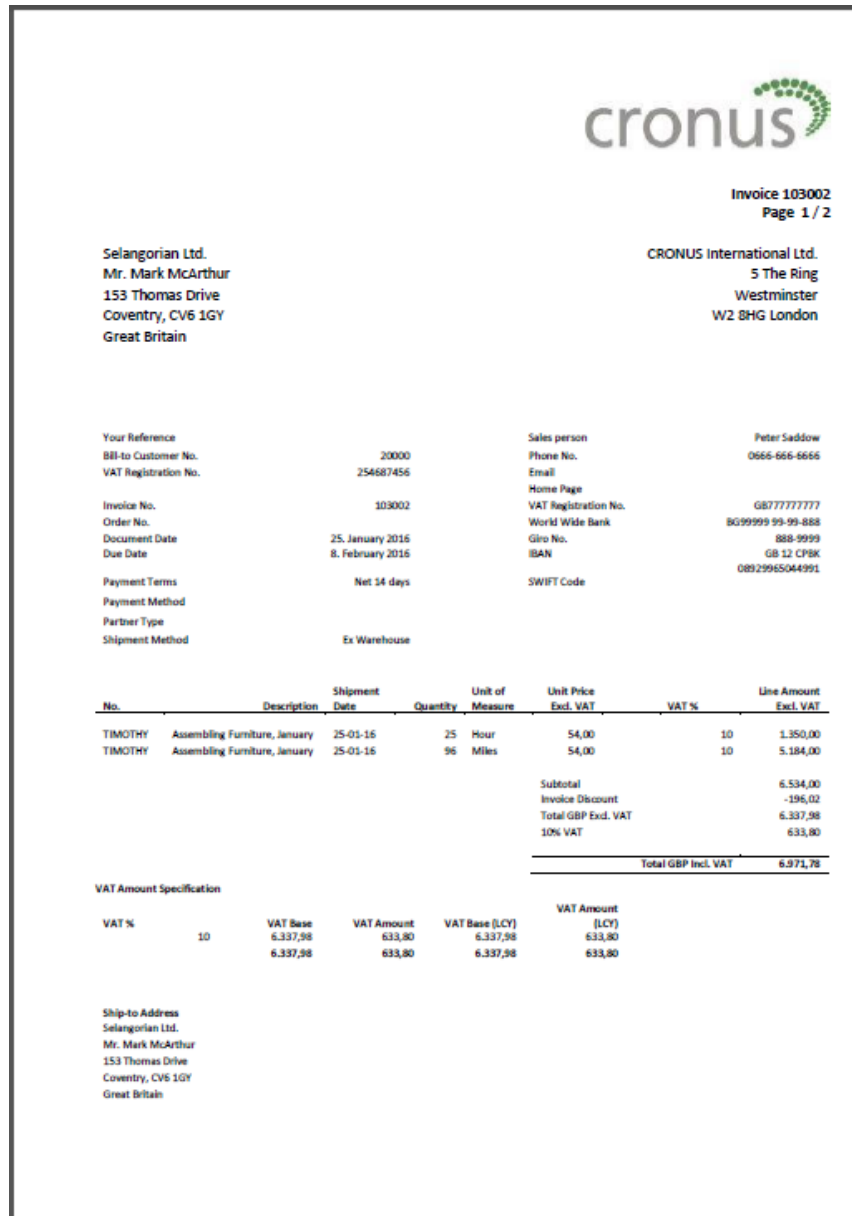
Selangorian Ltd. Mr. Mark McArthur 153 Thomas Drive Coventry, CV6 1GY Great Britain		CRONUS International Ltd. 5 The Ring Westminster W2 8HG London	
Your Reference Bill-to Customer No. 20000 VAT Registration No. 254687456		Sales person Email Home Page Phone No. 0666-666-6666 VAT Registration No. GB777777777	
Invoice No. 103002		World Wide Bank 8G999999 99-99-888	
Order No.		Giro No. 888-9999	
Document Date 25. January 2016		IBAN GB 12 CPBK 08929965044991	
Due Date 8. February 2016		SWIFT Code	
Payment Terms Net 14 days			
Partner Type			

No.	Description	Shipment Date	Quantity	Unit of Measure	Unit Price Excl. VAT	VAT %	Line Amount Excl. VAT
TIMOTHY	Assembling Furniture, January	25-01-16	25	Hour	54,00	10	1.350,00
TIMOTHY	Assembling Furniture, January	25-01-16	96	Miles	54,00	10	5.184,00
Subtotal							6.534,00
Invoice Discount							-196,02
Total GBP Excl. VAT							6.337,98
VAT Amount							633,80
Total GBP Incl. VAT							6.971,78

VAT Amount Specification			
VAT Identifier	VAT %	VAT Base	VAT Amount
VAT10	10	6.337,98	633,80

10. In the **Report Layout Selection** page, select the line for report 1306, and then set the **Selected Layout** field to **Word (built-in)**.
11. On the **Home** tab, in the **Report** group, choose **Run Report**.
12. In the resulting report request page, use default values, and then select the **Print** button and choose **PDF**. [Note: This might not work for all client setups because it relies on server-side PDF conversion. As an alternative, use the **Preview** option on the request page, which will result in a Word document.)
13. Open and inspect the resulting PDF file for the report, which is based on the Word layout.

Finally, we will change the layout to the built-in Word layout and then run the report.



The screenshot shows a PDF invoice from Cronus International Ltd. The invoice is for Selangorian Ltd. and includes details such as the invoice number (103002), dates, and a table of items. The total amount is 6,972.78 GBP including VAT.

Invoice 103002
Page 1 / 2

cronus

Selangorian Ltd.
Mr. Mark McArthur
153 Thomas Drive
Coventry, CV6 1GY
Great Britain

CRONUS International Ltd.
5 The Ring
Westminster
W2 8HG London

Your Reference: BB-to Customer No. 20000, VAT Registration No. 254687456, Invoice No. 103002, Order No., Document Date 25. January 2015, Due Date 8. February 2015, Payment Terms Net 14 days, Payment Method, Partner Type, Shipment Method Ex Warehouse

Sales person: Peter Sadow, Phone No. 0666-666-6666, Email, Home Page, VAT Registration No. GB77777777, World Wide Bank BG99999 99-99-888, Giro No. 888-9999, IBAN GB 12 CP8K 0892996504991, SWIFT Code

No.	Description	Shipment Date	Quantity	Unit of Measure	Unit Price Excl. VAT	VAT %	Line Amount Excl. VAT	
TIMOTHY	Assembling Furniture, January	25-01-16	25	Hour	54,00	10	1.350,00	
TIMOTHY	Assembling Furniture, January	25-01-16	96	Miles	54,00	10	5.184,00	
							Subtotal	6.534,00
							Invoice Discount	-196,02
							Total GBP Excl. VAT	6.337,98
							10% VAT	633,80
							Total GBP Incl. VAT	6.971,78

VAT Amount Specification

VAT %	VAT Base	VAT Amount	VAT Base (LCY)	VAT Amount (LCY)
10	6.337,98	633,80	6.337,98	633,80
	6.337,98	633,80	6.337,98	633,80

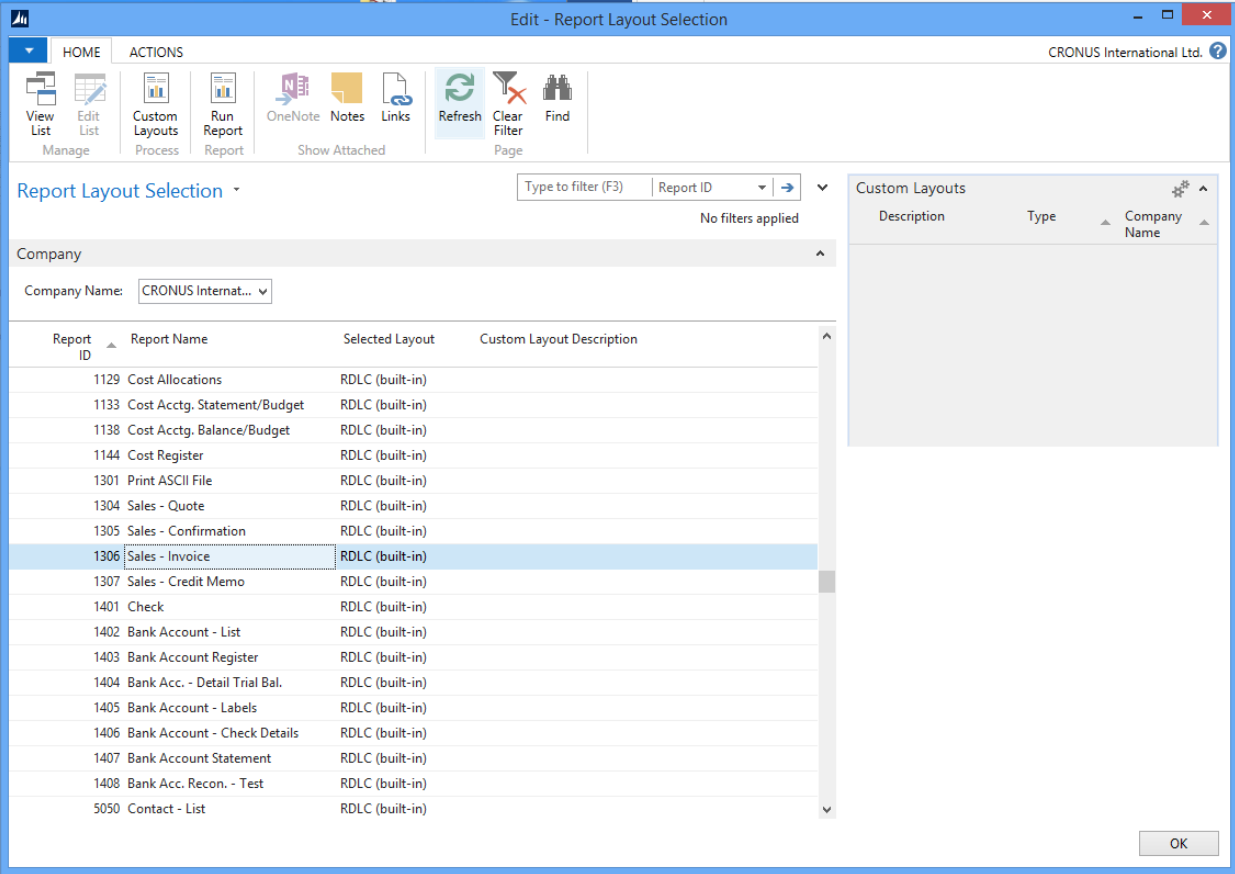
Ship-to Address
Selangorian Ltd.
Mr. Mark McArthur
153 Thomas Drive
Coventry, CV6 1GY
Great Britain

Lab 3 — Customize Report 1306 Sales Invoice Word Layout: Simple Formatting

Lab story: Microsoft Dynamics NAV 2015 enables end users to customize RDLC and Word based report layouts. By default, a report will have a built-in report layout, which can be either an RDLC report layout or Word report layout, or both. You cannot modify built-in layouts. However, you can create your own custom layouts that enable you to change the appearance of a report when it is viewed, printed or saved. You can create multiple custom report layouts for the same report, and then switch the layout that is used by a report as needed.

To create a custom layout, you can either make a copy of an existing custom layout or add a new custom layout, which in most cases is based on a built-in layout. When you add a new custom layout, you can choose to add an RDLC report layout type, Word report layout type, or both. The new custom layout will automatically be based on the built-in layout for the report if one is available. If there is no built-in layout for the type, then a new blank layout is a created, which you will have to modify and design from scratch.

This lab showcases how non-technical end users, such as Annie or Stan, can customize the sales invoice document report by adding a new custom Word layout based on the built-in Word layout, changing the formatting to the desired visual identity, and setting the new custom layout to the active layout for the sales invoice report.

What to do	What to say	Screenshots																																																																												
<ol style="list-style-type: none"> Open Report Layout Selection page by doing one of the following: <ul style="list-style-type: none"> In the Search box, enter Report Layout Selection, and then choose the related link. In the navigation pane, choose Departments, Administration, IT Administration, Reports, and then Report Layout Selection. In the Small Business Role Center, on the Actions tab, choose Setup, Company Information, and then choose Report Layouts. Ensure that the Company Name field is set to the correct company because reports layouts are company specific. In the list, locate the document report 1306 Sales – Invoice by doing one of the following: <ul style="list-style-type: none"> Scroll down through the list. Filter on the Report ID equal to 1306. 	<p>The normal starting point for customizing a report is from the list of reports in the application, i.e., from the Report Layout Selection page.</p> <p>A contextual option, e.g., from the request page, is not yet supported.</p> <p>As we want to customize the 1306 Sales Invoice, the first step is to browse to this in the report list</p>	 <table border="1" data-bbox="884 582 1697 1077"> <thead> <tr> <th>Report ID</th> <th>Report Name</th> <th>Selected Layout</th> <th>Custom Layout Description</th> </tr> </thead> <tbody> <tr><td>1129</td><td>Cost Allocations</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1133</td><td>Cost Acctg. Statement/Budget</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1138</td><td>Cost Acctg. Balance/Budget</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1144</td><td>Cost Register</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1301</td><td>Print ASCII File</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1304</td><td>Sales - Quote</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1305</td><td>Sales - Confirmation</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1306</td><td>Sales - Invoice</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1307</td><td>Sales - Credit Memo</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1401</td><td>Check</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1402</td><td>Bank Account - List</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1403</td><td>Bank Account Register</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1404</td><td>Bank Acc. - Detail Trial Bal.</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1405</td><td>Bank Account - Labels</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1406</td><td>Bank Account - Check Details</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1407</td><td>Bank Account Statement</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>1408</td><td>Bank Acc. Recon. - Test</td><td>RDLC (built-in)</td><td></td></tr> <tr><td>5050</td><td>Contact - List</td><td>RDLC (built-in)</td><td></td></tr> </tbody> </table>	Report ID	Report Name	Selected Layout	Custom Layout Description	1129	Cost Allocations	RDLC (built-in)		1133	Cost Acctg. Statement/Budget	RDLC (built-in)		1138	Cost Acctg. Balance/Budget	RDLC (built-in)		1144	Cost Register	RDLC (built-in)		1301	Print ASCII File	RDLC (built-in)		1304	Sales - Quote	RDLC (built-in)		1305	Sales - Confirmation	RDLC (built-in)		1306	Sales - Invoice	RDLC (built-in)		1307	Sales - Credit Memo	RDLC (built-in)		1401	Check	RDLC (built-in)		1402	Bank Account - List	RDLC (built-in)		1403	Bank Account Register	RDLC (built-in)		1404	Bank Acc. - Detail Trial Bal.	RDLC (built-in)		1405	Bank Account - Labels	RDLC (built-in)		1406	Bank Account - Check Details	RDLC (built-in)		1407	Bank Account Statement	RDLC (built-in)		1408	Bank Acc. Recon. - Test	RDLC (built-in)		5050	Contact - List	RDLC (built-in)	
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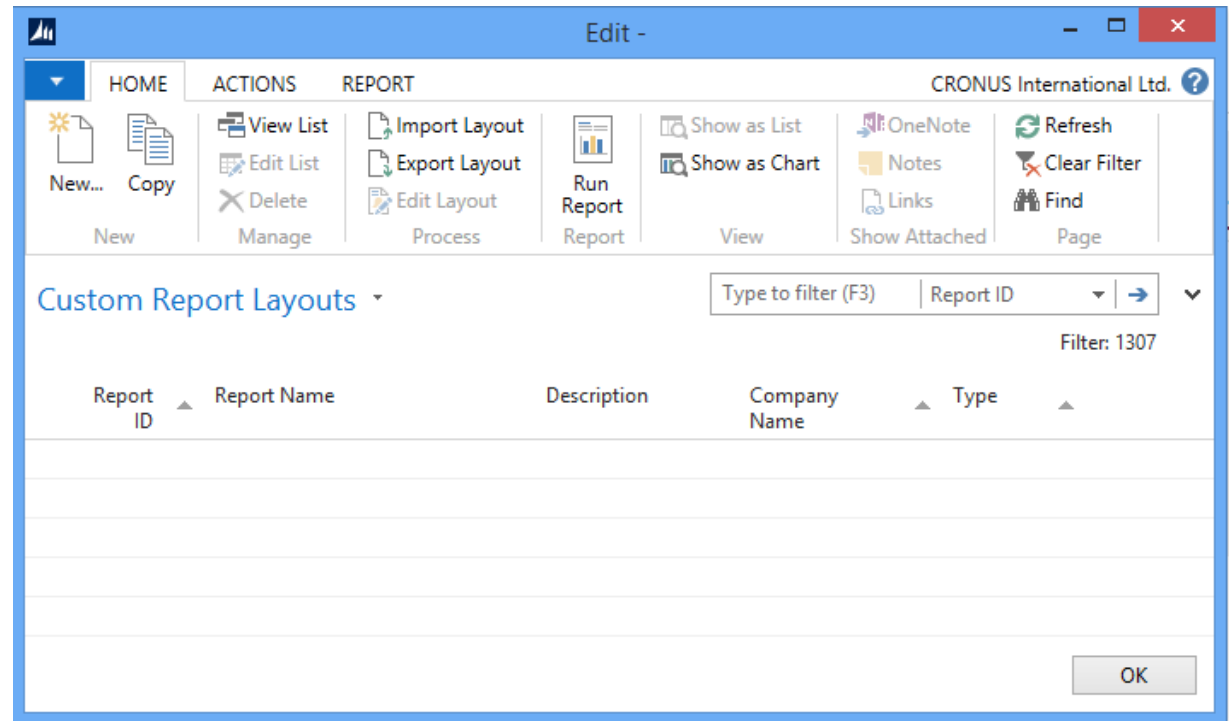
4. Select the row for report 1306, and then on the **Home** tab, in the **Process** group, choose **Custom Layouts**.

The Custom Layouts page is used to create and manage custom layouts for a selected report.

Out of the box, the list is empty, because there are no custom layouts.

Notice that the Custom Report Layouts page can be opened by itself by searching for the page or using the Departments, or, as here, from the context of a given report. In the case of the latter, the page is filtered to the selected report ID when opened. If opened on its own, the page lists all custom layouts across all reports, which is useful when managing layouts for multiple reports.

The **Custom Layouts** page is also accessed from the **Selected Layout** field on **Report Layout Selection** page. In this case, the **Custom Layouts** page works as a lookup.



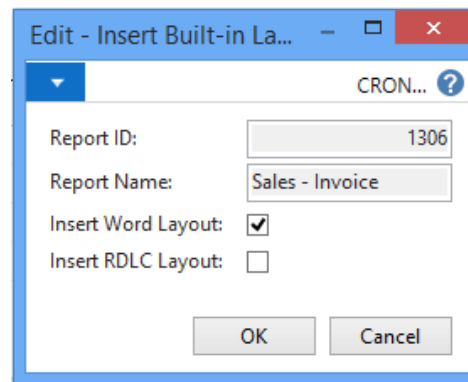
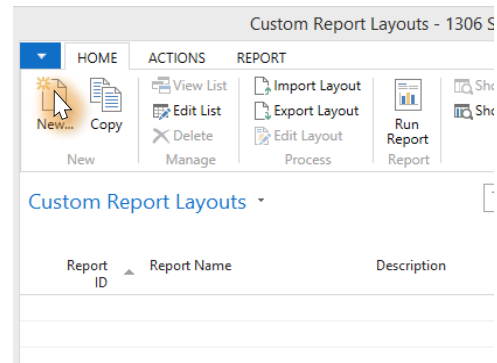
In this mode, it is still possible to create and modify layouts. However, when you select a layout in **Custom Layouts** page, and then choose the **OK** button to close the page, the selected layout becomes the active layout for the report.

5. On the **Home** tab, in the **New** group, choose **New** to insert a new custom layout. The **Insert Built-in Layout for a Report** window appears. The **ID** and **Name** fields are automatically filled in
6. To add a custom Word report layout type, select the **Insert Word Layout** check box, and then choose the **OK** button,
7. In the **Custom Report Layouts** page, in the **Description** field, rename the newly created custom layout to “My Word layout”.

The built-in layouts themselves cannot be edited, therefore we are going to create a new Word report layout based on (or in other words, a copy of) the built-in Word layout, and then customize that layout further.

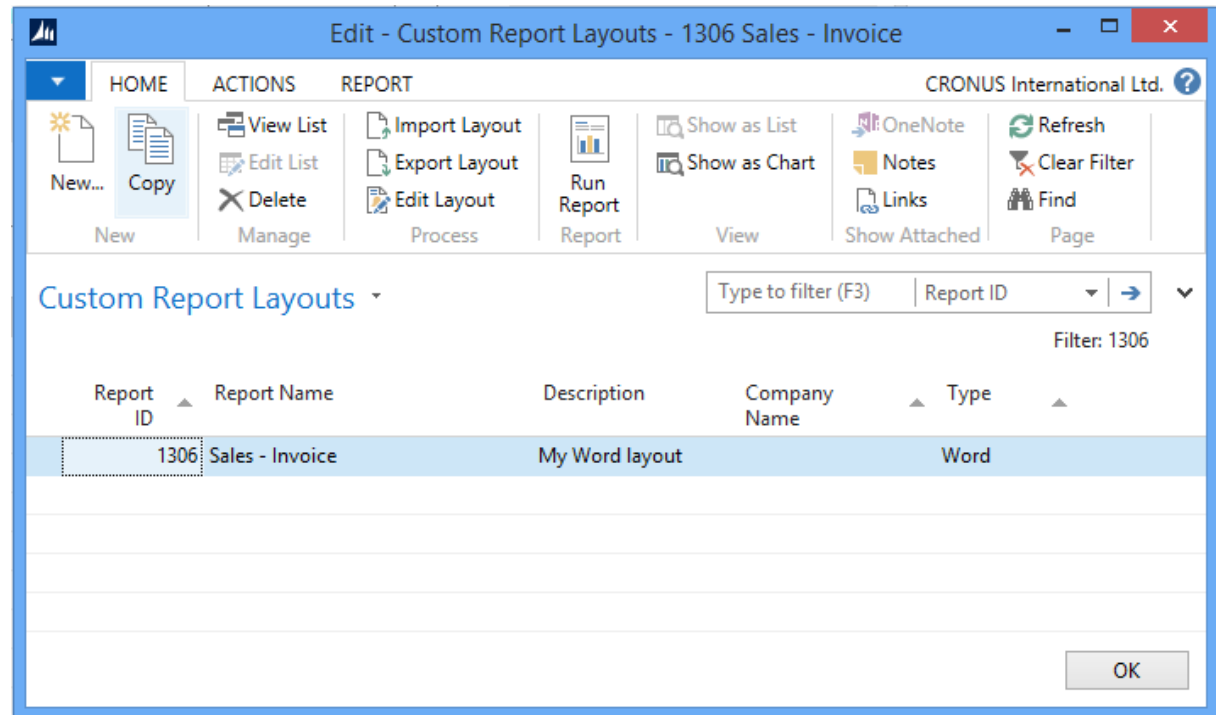
The new custom layout appears in the **Custom Report Layouts** page.

If a new layout is based on a built-in layout, then it has the words **Copy of Built-in Layout** in the **Description** field. If there was no built-in layout for the report, then the new



layout has the words **New Layout** in the **Description** field, which indicates that custom layout is blank.

The **Custom Report Layouts** list includes a **Type** column that indicates whether the custom layout is RDLC or Word based. It also includes the **Company Name** column that allows you to specify whether the layout should be company specific. In this case, we have made the custom layout apply to all companies by leaving the field blank.



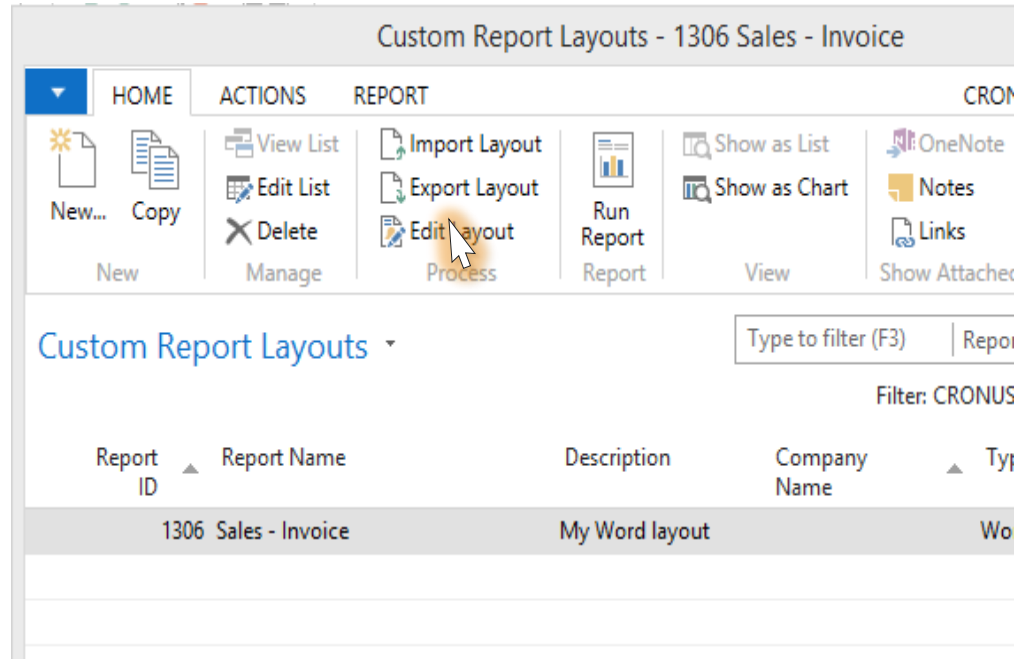
Report ID	Report Name	Description	Company Name	Type
1306	Sales - Invoice	My Word layout		Word

8. On the **Home** tab, in the **Process** group, choose **Edit Layout**.

With the custom layout created, we will now edit it in Word.

Note that the **Edit** function relies on client-side automation, and therefore requires that the Microsoft Dynamics NAV 2015 Windows client and Word 2013 are installed.

If you are using the Microsoft Dynamics NAV 2015 Web client or a device, the custom layout can be edited by manually exporting the layout to a Word (.docx) file, editing it in Word, and then importing the layout file back into the appropriate report.



Custom Report Layouts - 1306 Sales - Invoice

HOME ACTIONS REPORT CROM

New... Copy View List Import Layout Show as List OneNote
 Edit List Export Layout Show as Chart Notes
 Delete Edit Layout Run Report Links
 New Manage Process Report View Show Attachments

Custom Report Layouts Type to filter (F3) Report

Filter: CRONUS

Report ID	Report Name	Description	Company Name	Type
1306	Sales - Invoice	My Word layout		Word

9. Look at the Word report layout content.

A Word report layout is a Word document with content controls laid out in either free form or in table structures, which can even be repeating.

The content controls themselves map to fields in the report dataset.

In this lab, we will continue changing some of the formatting, and then in a later lab look at how to add content controls (fields).

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DocumentTitle_Lbl DocumentNo
Page_Lbl 1 / 2

CustomerPostalBarCode

CustomerAddress1		CompanyAddress1	
CustomerAddress2		CompanyAddress2	
CustomerAddress3		CompanyAddress3	
CustomerAddress4		CompanyAddress4	
CustomerAddress5		CompanyAddress5	
CustomerAddress6		CompanyAddress6	
CustomerAddress7			
CustomerAddress8			

CompanyLegalOffice_Lbl CompanyLegalOffice

YourReference_Lbl	YourReference	SalesPersonBlank_Lbl	SalesPersonName
BilltoCustomerNo_Lbl	BilltoCustomerNo	CompanyPhoneNo_Lbl	CompanyPhoneNo
VATRegistrationNo_Lbl	VATRegistrationNo	EMail_Header_Lbl	CompanyEMail
GlobalLocationNumber_Lbl	GlobalLocationNumber	HomePage_Header_Lbl	CompanyHomePage
DocumentNo_Lbl	DocumentNo	CompanyVATRegistrationNo_Lbl	CompanyVATRegistrationNo
OrderNo_Lbl	OrderNo	CompanyBankName	CompanyBankBranchNo
DocumentDate_Lbl	DocumentDate	CompanyGiroNo_Lbl	CompanyBankAccountNo
DueDate_Lbl	DueDate	CompanyIBAN_Lbl	CompanyGiroNo
PaymentTermsDescription_Lbl	PaymentTermsDescription	CompanySWIFT_Lbl	CompanySWIFT
PaymentMethodDescription_Lbl	PaymentMethodDescription	PaymentReference_Lbl	PaymentReference
LegalEntityType_Lbl	LegalEntityType		
ShipmentMethodDescription_Lbl	ShipmentMethodDescription		

ItemNo_Lbl	Description_Line_Lbl	ShipmentDate_Line_Lbl	Quantity_Line_Lbl	UnitOfMeasure_Line_Lbl	UnitPrice_Line_Lbl	VATPct_Line_Lbl	LineAmount_Line_Lbl
ItemNo_Line	Description_Line	ShipmentDate_Line	Quantity_Line	UnitOfMeasure_Line	UnitPrice_Line	LineDiscountPercentText_Line	LineAmount_Line
Description_ReportTotalsLine							Amount_ReportTotalsLine
TotalIncludingVATText							TotalAmountIncludingVAT

VATAmountSpecification_Lbl							
VATPct_VatAmountLine_Lbl	VATBase_VatAmountLine_Lbl	VATAmount_VatAmountLine_Lbl	VATBaseLCY_VATAmountLine_Lbl	VATAmountLCY_VATAmountLine_Lbl			
VATPct_VatAmountLine	VATBase_VatAmountLine	VATAmount_VatAmountLine	VATBaseLCY_VATAmountLine	VATAmountLCY_VATAmountLine			
TotalNetAmount		TotalVATAmount	TotalVATBaseLCY	TotalVATAmountLCY			

Code_VATClauseLine	Description_VATClauseLine	VATAmount_VATClauseLine
	Description2_VATClauseLine	

ShipToAddress_Lbl
ShipToAddress1
ShipToAddress2

50

10. Change the fonts as follows:
 - a. Select all text (Ctrl+A).
 - b. On the **Home** tab, in the **Font** group, change the font to Comic Sans.
11. Change the font size and colour of document title and document no. as follows:
 - a. In the header, select the **DocumentTitle_Lbl** control, and then increase font size a couple of steps and change the colour to Blue, Accent 1 (top row in normal colours).
 - b. Repeat for the **DocumentNo** control.
12. Add a style to the item lines item table as follows:
 - a. Select the item lines table.
 - b. On the **Design** tab under **Table Tools**, expand the **Table Styles** control.
 - c. Select **Grid Table 4, accent 1** (blue, with solid header and alternating rows).
13. Insert a glowing “Enjoy Microsoft Dynamics NAV2015!” greeting as follows:
 - a. Add text to the end of the document.
 - b. Select the text, and then on **Home** tab, in the **Font**

In Word, we are going to make some format customizations and insert a greeting.

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DocumentTitle_Lbl DocumentNo
Page_Lbl 1 / 2

CustomerPostalBarCode

CustomerAddress1
CustomerAddress2
CustomerAddress3
CustomerAddress4
CustomerAddress5
CustomerAddress6
CustomerAddress7
CustomerAddress8

YourReference_Lbl YourReference
BillToCustomerNo_Lbl BillToCustomerNo
VATRegistrationNo_Lbl VATRegistrationNo
GlobalLocationNumber_Lbl GlobalLocationNumber
DocumentNo_Lbl DocumentNo

OrderNo_Lbl OrderNo

DocumentDate_Lbl DocumentDate
DueDate_Lbl DueDate

PaymentTermsDescription_Lbl PaymentTermsDescription
PaymentMethodDescription_Lbl PaymentMethodDescription
LegalEntityType_Lbl LegalEntityType

ShipmentMethodDescription_Lbl ShipmentMethodDescription

CompanyAddress1
CompanyAddress2
CompanyAddress3
CompanyAddress4
CompanyAddress5
CompanyAddress6

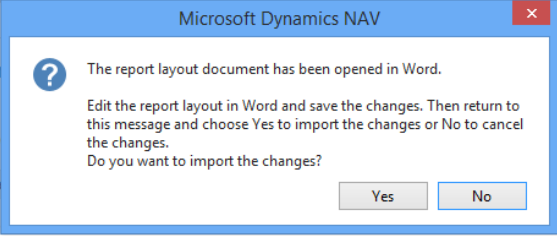
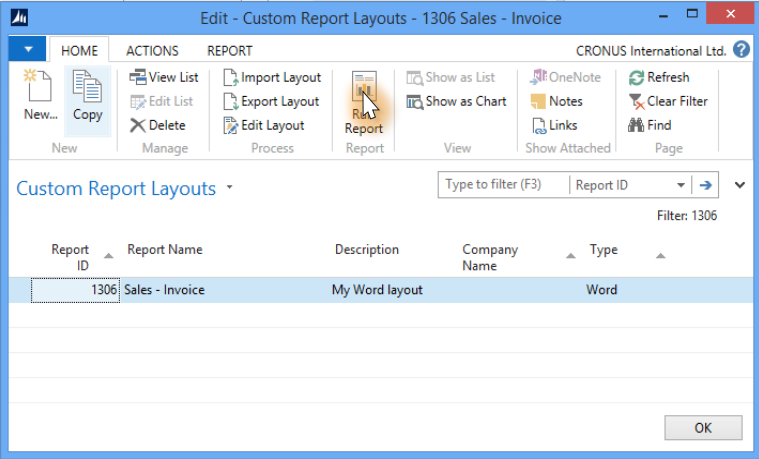
CompanyLegalOffice_Lbl CompanyLegalOffice


SalesPersonBlank_Lbl SalesPersonName
CompanyPhoneNo_Lbl CompanyPhoneNo
EMail_Header_Lbl CompanyEMail
HomePage_Header_Lbl CompanyHomePage
CompanyVATRegistrationNo_Lbl CompanyVATRegistrationNo
CompanyBankName CompanyBankBranchNo
CompanyBankAccountNo

CompanyGiroNo_Lbl CompanyGiroNo
CompanyIBAN_Lbl CompanyIBAN
CompanySWIFT_Lbl CompanySWIFT

PaymentReference_Lbl PaymentReference

ItemNo_Lbl	Description_Line_Lbl	Shipment Date_Line_Lbl	Quantity_Line_Lbl	UnitOfMeasure_Lbl	UnitPrice	VATPct_Line_Lbl	LineAmount_Line_Lbl
ItemNo_Line	Description_Line	Shipment Date_Line	Quantity_Line	UnitOfMeasure	UnitPrice	LineDiscountText_Line	LineAmount_Line
					Description_ReportTotalLine		Amount_ReportTotalLine
					TotalIncludingVATText		TotalAmount IncludingVAT

<p>group, select the A in the Text Effects and Typography field.</p> <p>c. Choose second entry in second row (Gradient Fill – Blue, Accent 1, Reflection).</p> <p>d. Change the font size to 12.</p>												
<p>14. Save the changes and close the Word document.</p> <p>15. On the confirmation dialog that appeared when the layout was opened for editing, choose Yes to import the revised layout in the Microsoft Dynamics NAV client.</p>	<p>With the changes in place, the Word layout is saved and imported back into Microsoft Dynamics NAV 2015.</p>											
<p>16. In the Custom Report Layouts page, select the new custom layout, and then on the Home tab, in the Report group select Run Report.</p> <p>17. In the request page, use default values, choose the Print button, and then choose PDF.</p> <p>18. Open and inspect the result file. Validate the font, colour and size changes, the table style, and the greeting.</p>	<p>Before setting the new custom layout as the active layout for the sales invoice report, we are going to test it out by running it from within the Custom Report Layouts page.</p>	 <table border="1" data-bbox="878 1015 1617 1078"> <thead> <tr> <th>Report ID</th> <th>Report Name</th> <th>Description</th> <th>Company Name</th> <th>Type</th> </tr> </thead> <tbody> <tr> <td>1306</td> <td>Sales - Invoice</td> <td>My Word layout</td> <td></td> <td>Word</td> </tr> </tbody> </table>	Report ID	Report Name	Description	Company Name	Type	1306	Sales - Invoice	My Word layout		Word
Report ID	Report Name	Description	Company Name	Type								
1306	Sales - Invoice	My Word layout		Word								



Invoice 103002
Page 1 / 2

Selangoran Ltd.
Mr. Mark McArthur
153 Thomas Drive
Coventry, CV6 1GY
Great Britain

CRONUS International
Ltd.
5 The Ring
Westminster
W2 8HG London


Your Reference: 20000
Bill-to Customer No.: 254687456
VAT Registration No.: 103002
Invoice No.: 25-January-2016
Order No.: 8-Feb-2016
Document Date: 25-January-2016
Due Date: 8-Feb-2016
Payment Terms: Net 14 days
Payment Method:
Partner Type:
Shipment Method: Ex Warehouse

Sales person: Peter Soddaw
Phone No.: 0666-666-6666
Email:
Home Page:
VAT Registration No.: 6877777777
World Wide Bank: 8699999 99-99-888
Giro No.: 888-9999
IBAN: 68 12 OFBK
08929965049991
SWIFT Code:

No.	Description	Shipment Date	Quantity	Unit of Measure	Unit Price Excl. VAT	VAT %	Line Amount Excl. VAT
TZMOTH Y	Assembling Furniture, January	25-01-16	25	Hour	54,00	10	1.350,00
TZMOTH Y	Assembling Furniture, January	25-01-16	96	Miles	54,00	10	5.184,00
Subtotal							6.534,00
Invoice Discount							-196,02
Total GBP Excl. VAT							6.337,98
10% VAT							633,80
Total GBP Incl. VAT							6.971,78

VAT Amount Specification

VAT %	VAT Base	VAT Amount	VAT Base (L0Y)	VAT Amount (L0Y)
10	6.337,98	633,80	6.337,98	633,80
	6.337,98	633,80	6.337,98	633,80



Invoice 103002
Page 2 / 2

Ship-to Address
Selangoran Ltd.
Mr. Mark McArthur
153 Thomas Drive
Coventry, CV6 1GY
Great Britain

Enyou Microsoft Dynamics NAV 2015!

19. Open **Report Layout Selection** page again.
20. Locate and select the report 1306 Sales Invoice,
21. Change **Selected Layout** field to **Custom**

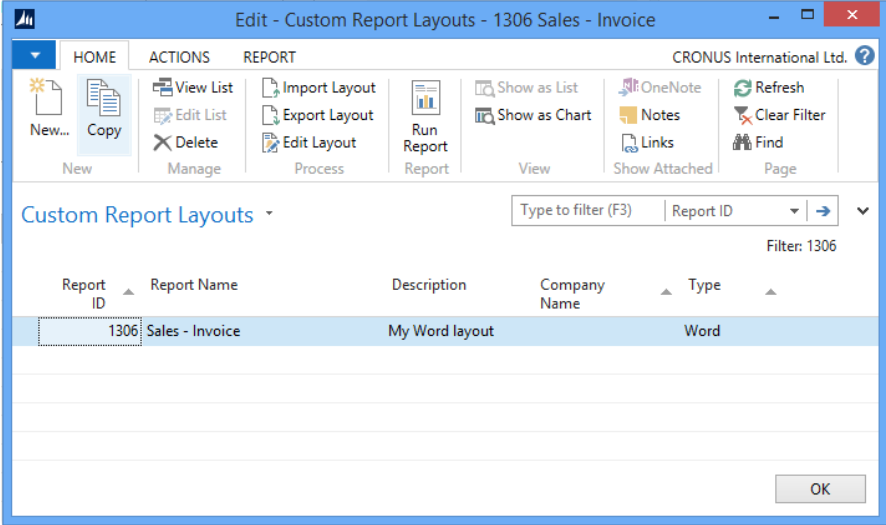
Being satisfied with the new layout, we are now going to make this the default layout for the sales invoice report.

<p>22. In Custom Report Layouts page that appears, select layout “My Word layout” that you just created, and then choose the OK button to close the lookup.</p> <p>23. Verify that the Selected Layout field is now set to Custom and the Custom Layout Description field is set to “My Word layout” for the report 1306.</p>	<p>To do this, we will set the Selected Layout field in the Report Layout Selection page to the newly created custom layout.</p> <p>Note that if the Selected Layout field is already set to Custom, then the actual custom layout is changed by using the lookup in the Custom Layout Description field instead.</p>	
<p>24. Open Posted Sales Invoices by doing one of the following:</p> <ul style="list-style-type: none"> • In the Search box, enter Posted Sales Invoices, and then choose the related link. • In the navigation pane, choose Posted Documents, and then Posted Sales Invoices. <p>25. Select a sales invoice from the list, and then on the Home tab, in the Invoice group, choose Print.</p> <p>26. In the print dialog, use default values, select the Print button, and then choose PDF.</p> <p>27. Verify that the resulting PDF file is using the custom layout “My Word layout” that you created previously.</p>	<p>Finally, we will run the sales invoice from a real application context, e.g., Posted Sales Invoices, to verify that the new custom layout is used.</p>	

Lab 4 — Customize 1306 Sales Invoice Word Layout: Adding Fields and Changing Structure

Lab story: Microsoft Dynamics NAV 2015 enables end users to customize RDLC and Word based report layouts, both from a formatting point of view, as well as changing the structure and adding new fields from the report’s dataset.

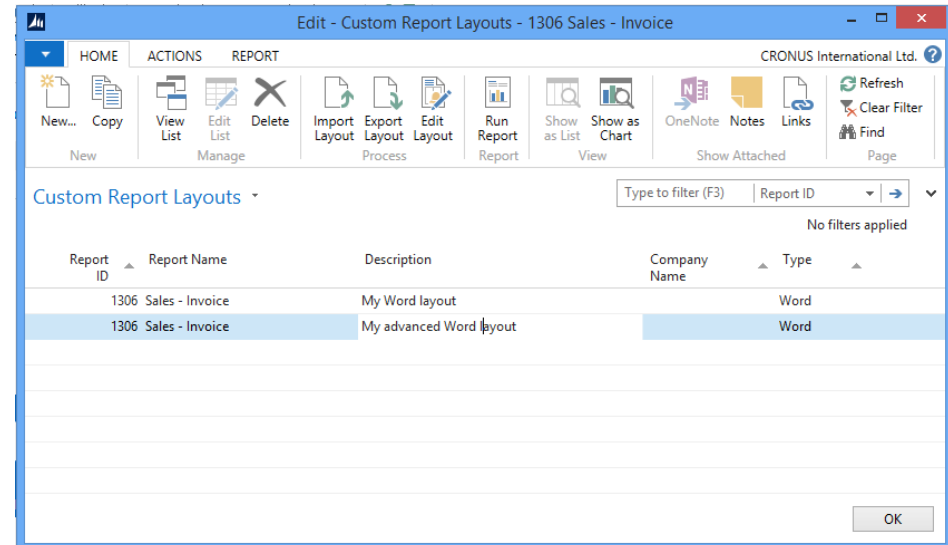
This lab showcases how power users, such as Sean, or technically experienced personas, such as Annie or Stan, can customize the Word based document reports, like the Sales Invoice report, to include desired fields and layout structure. The lab assumes that lab 3 has been completed, and that there is already a custom layout available for the document report 1306 Sales Invoice. If this is not the case, the lab can still be run but with the small variation that a new custom layout based on the built-in Word layout should be used, instead of copying an existing custom layout.

What to do	What to say	Screenshots
<p>1. Open Custom Report Layouts page by doing one of the following:</p> <ul style="list-style-type: none"> In the Search box, enter Custom Report Layouts, and then choose the related link. In the navigation pane, choose Departments, Administration, IT Administration, and then Reports. 	<p>First, we want to make a copy of the previously created custom report and work on that. Once the layout is completed and tested, we will switch over to using the layout created in this lab.</p> <p>Rather than opening Custom Report Layouts from the context of a specific report in the Report Layout Selection list, we are now going to open it directly. Note that doing this will display all custom layouts unfiltered across all reports in the tenant. In this case though, we still only have a single entry from the previous lab.</p> <p>An alternative to opening the Custom Report Layout page on its own, is to open it for a specific</p>	

report from the **Report Layout Selection** page, and then remove the report ID filter which has been set.

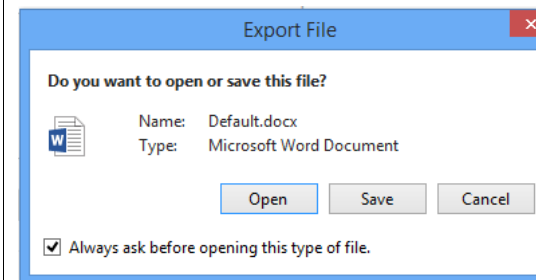
2. Select the “My Word layout” row, and on the **Home** tab, in the **New** group, choose **Copy**.
3. In the **Description** field, rename the newly created layout to “My advanced Word layout”.

We are going to add fields to the custom layout made in the previous lab. However, instead of modifying that layout directly, we are going to create a copy. This lets you work with and test the layout without risking impact to an actively used layout.



4. Select the “My advanced Word layout” row, and then on the **Home** tab, in the **Process** group, choose **Export Layout**.
5. In the **Export File** dialog, select **Save**, and save the file to a preferred device location, such as the Desktop.
6. Open the document from the saved location in Word 2013.

With the custom layout created, we will now edit it in Word. In this lab, we will use Import Layout and Export Layout instead of Edit Layout, as you would do when using the Microsoft Dynamics NAV Web client.



7. Select a table structure in the layout, such as the sales lines.
8. In Word, on the **Layout** tab, in the **Table** group, choose **View Gridlines**.

As Word report layouts often use hidden table structures to align content controls (such as field mappings), enabling gridlines in Word is quite useful to understand the structure.

As can be seen, the sales invoice header fields are all arranged in tables for easier alignment in Word.

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Invoice_Lbl No_Header
Page_Lbl 1 / 2

CustomerPostalBarCode

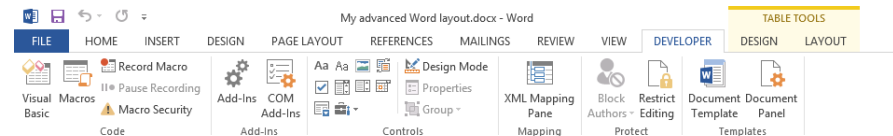
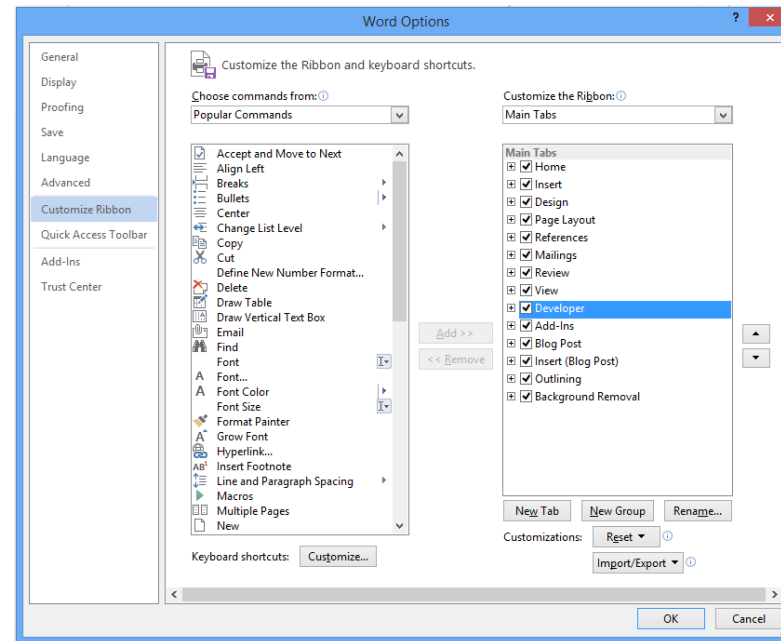
CustomerAddress1			CompanyAddress1
CustomerAddress2			CompanyAddress2
CustomerAddress3			CompanyAddress3
CustomerAddress4			CompanyAddress4
CustomerAddress5			CompanyAddress5
CustomerAddress6			CompanyAddress6
CustomerAddress7		CompanyLegalOffice_Lbl	CompanyLegalOffice
CustomerAddress8			

YourReference_Header_Lbl	YourReference_Header		SalesPersonText_Header_Lbl	SalesPersonName_Header
BilltoCustomerNo_Header_Lbl	BilltoCustomerNo_Header		CompanyPhoneNo_Lbl	CompanyPhoneNo
VATRegistrationNo_Header_Lbl	VATRegistrationNo_Header		EMail_Header_Lbl	CompanyEMail
GlobalLocationNumber_Header_Lbl	GlobalLocationNumber_Header		HomePage_Header_Lbl	CompanyHomePage
No_Header_Lbl	No_Header		CompanyVATRegistrationNo_Lbl	CompanyVATRegistrationNo
OrderNo_Header_Lbl	OrderNo_Header		CompanyBankName	CompanyBankBranchNo
			CompanyBankAccountNo	
DocumentDate_Header_Lbl	DocumentDate_Header		CompanyGiroNo_Lbl	CompanyGiroNo
DueDate_Header_Lbl	DueDate_Header		CompanyIBAN_Lbl	CompanyIBAN
PaymentTermsDescription_Lbl	PaymentTermsDescription		CompanySWIFT_Lbl	CompanySWIFT
PaymentMethodDescription_Lbl	PaymentMethodDescription		PaymentReference_Header_Lbl	PaymentReference_Header
LegalEntity_Type_Lbl	LegalEntity_Type			
ShipmentMethodDescription_Lbl	ShipmentMethodDescription			

No_Line_Lbl	Description_Line_Lbl	PostedShipmentDate_Lbl	Quantity_Line_Lbl	UnitOfMeasure_Lbl	UnitPrice_Lbl	VATPct_Line_Lbl	LineAmount_Line_Lbl
No_Line	Description_Line	PostedShipmentDate_Line	Quantity_Line	UnitOfMeasure	UnitPrice	LineDiscountPercent_Line	LineAmount_Line
					Description_ReportTotalsLine		Amount_ReportTotalsLine
					TotalIncludingVATText		TotalAmountIncludingVAT

9. In Word, do one of the following:
 - Right click the ribbon, and then select **Customize the Ribbon**.
 - On the **File** menu, choose **Options**, and then select **Customize Ribbon** tab in the **Word Options** dialog box.
10. In the right pane, select the **Developer** check box, and then choose **OK**.
11. Select the **Developer** tab that is now visible in Word.

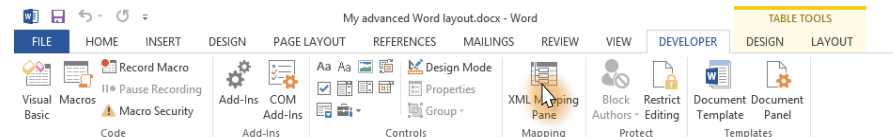
To insert new fields from the report dataset in the Word layout, we need to take advantage of the custom XML mapping feature in Word. This feature is available in the **Developer** tab in Word, which is hidden by default, so the first task is to enable it.



12. On the **Developer** tab, choose **XML Mapping Pane**.
13. In the **XML Mapping** pane, in the **Custom XML Part** dropdown list, choose the custom XML part for the 1306 Sales Invoice. Typically, this is last in the list. The name of the custom XML part has the following format:

Word layouts in Microsoft Dynamics NAV 2015 rely on mapping content controls to dataset fields. To facilitate this, Word's custom XML feature is used.

A Word document can contain one or more embedded XML parts with



urn:microsoft-dynamics-
nav/reports/Mini_Sales_Invoice/1306

14. The **XML Mapping** pane now displays the labels and field controls that are available for the report. Browse the structure by expanding the tree and notice heading and different line structures.

data. When Word layouts are exported or invoked for editing from Microsoft Dynamics NAV 2015, the layout will have a specific Microsoft Dynamics NAV XML ml part added, which represents the dataset structure of the report. This structure is then used when mapping the dataset to content controls.

Therefore, first we need to show the **XML Mapping** pane in Word, and then select the proper embedded XML part that represents the report dataset.

The name of the custom XML part has the following format:

urn:microsoft-dynamics-
nav/reports/report_name/ID

Where *report_name* is the normalized name that is assigned to the report as specified by the report's Name Property in the Microsoft Dynamics NAV Development Environment, and *ID* is the identification number of the report.

XML Mapping

Custom XML Part:

urn:microsoft-dynamics-nav/reports/Mini_Sales_Invo...

- ▲ NavWordReportXmlPart
 - ▲ Header
 - BilltoCustomerNo_Lbl
 - BilltoCustomerNo
 - CompanyAddress1
 - CompanyAddress2
 - CompanyAddress3
 - CompanyAddress4
 - CompanyAddress5
 - CompanyAddress6
 - CompanyBankAccountNo
 - CompanyBankAccountNo_Lbl
 - CompanyBankBranchNo
 - CompanyBankBranchNo_Lbl
 - CompanyBankName
 - CompanyBankName_Lbl
 - CompanyCustomGiro
 - CompanyCustomGiro_Lbl
 - CompanyEMail
 - CompanyGiroNo
 - CompanyGiroNo_Lbl
 - CompanyHomePage
 - CompanyIBAN
 - CompanyIBAN_Lbl
 - CompanyLegalOffice
 - CompanyLegalOffice_Lbl
 - CompanyLegalStatement
 - CompanyLogoPosition
 - CompanyPhoneNo
 - CompanyPhoneNo_Lbl
 - CompanyPicture
 - CompanyRegistrationNumber
 - CompanyRegistrationNumber_Lbl
 - CompanySWIFT

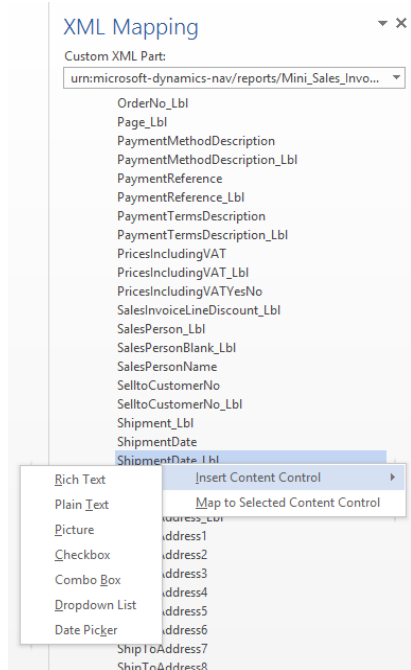
15. In the document header table, locate the empty cell in the last row and second last column.
16. Insert the text marker by clicking in the cell.
17. In the **XML Mapping** pane, expand the header structure and locate ShipmentDate_Lbl.
18. Right click on ShipmentDate_Lbl, select **Insert Content Control**, and then choose **Plain Text**.
19. Insert the text marker in the last cell in the row.
20. In the **XML Mapping** pane, locate ShipmentDate.
21. Right-click on ShipmentDate, select **Insert Content Control**, and then choose **Plain Text**.

We are going to add a Shipment date field and a corresponding Shipment data label (for the localized field) name to the document header.

We will add these to the empty cells at the bottom of the header, and to the right of the ShipmentMethodDescription field.

When inserting the fields from the **XML Mapping** pane, Word inserts a content control at the text marker in the document, and links that content control to the xpath of the field in the custom XML part that represents the dataset. The content control also gets a visible name/caption which corresponds to the field name – however, this does not determine the mapping. The name can be changed, but the mapping remains the same.

To remap a content control, either delete the content control and add a new one, or highlight the content control, find the correct field in the **XML Mapping** pane, right click it and then select **Map to Selected Content Control**,



YourReference_Header_Lbl	YourReference_Header		SalesPersonText_Header_Lbl	SalesPersonName_Header
BilltoCustomerNo_Header_Lbl	BilltoCustomerNo_Header		CompanyPhoneNo_Lbl	CompanyPhoneNo
VATRegistrationNo_Header_Lbl	VATRegistrationNo_Header		EMail_Header_Lbl	CompanyEMail
GlobalLocationNumber_Header_Lbl	GlobalLocationNumber_Header		HomePage_Header_Lbl	CompanyHomePage
No_Header_Lbl	No_Header		CompanyVATRegistrationNo_Lbl	CompanyVATRegistrationNo
OrderNo_Header_Lbl	OrderNo_Header		CompanyBankName	CompanyBankBranchNo CompanyBankAccountNo
DocumentDate_Header_Lbl	DocumentDate_Header		CompanyGiroNo_Lbl	CompanyGiroNo
DueDate_Header_Lbl	DueDate_Header		CompanyIBAN_Lbl	CompanyIBAN
PaymentTermsDescription_Lbl	PaymentTermsDescription		CompanySWIFT_Lbl	CompanySWIFT
PaymentMethodDescription_Lbl	PaymentMethodDescription		PaymentReference_Header_Lbl	PaymentReference_Header
LegalEntityType_Lbl	LegalEntityType			
ShipmentMethodDescription_Lbl	ShipmentMethodDescription		ShipmentDate_Lbl	ShipmentDate

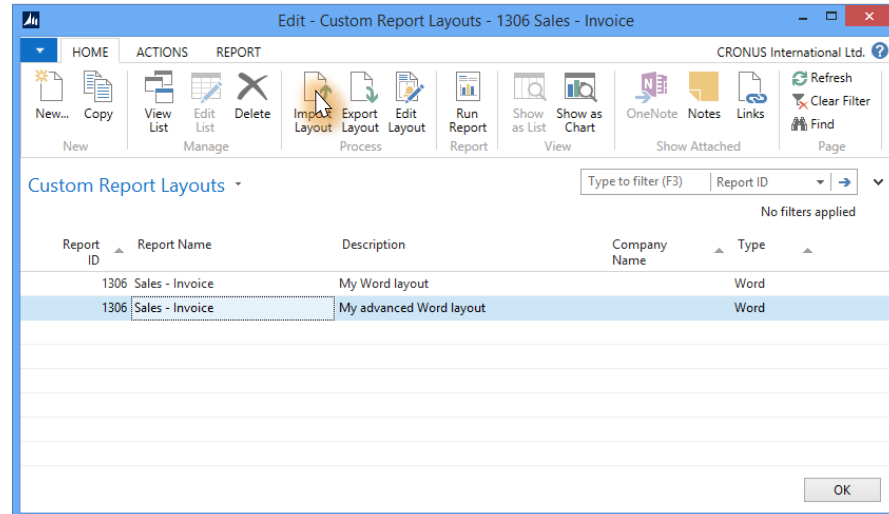
XML Mapping

Custom XML Part:
 urn:microsoft-dynamics-nav/reports/Mini_Sales_Invoice/1306/

- Header
 - BilltoCustomerNo_Lbl
 - BilltoCustomerNo
 - CompanyAddress1
 - CompanyAddress2
 - CompanyAddress3
 - CompanyAddress4
 - CompanyAddress5
 - CompanyAddress6
 - CompanyBankAccount
 - CompanyBankAccount
 - CompanyBankBranchNo
 - CompanyBankBranchNo_Lbl


22. Save the document in Word.
23. Go back to the **Custom Report Layouts** page in Microsoft Dynamics NAV 2015 and make sure the new custom layout “My advanced Word layout” is selected.
24. On the **Home** tab, in the **Process** group, choose **Import layout**
25. In the **Import Word Document** dialog box, browse to the location where you exported the layout in the beginning of the lab, select the edited Word file, and choose **OK** to import the layout.

Sean could have continued to add, delete, or move fields around, but for this lab, Sean is content, so he saves his work and imports the layout document back into the new custom Word layout in Microsoft Dynamics NAV.



26. In the **Custom Report Layouts** page, select the “My advanced Word layout” row, and then on the **Home** tab, in the **Report** group, select **Run Report**.
27. In the resulting request page, use default values, select the **Print** button, and then choose **PDF**.
28. Inspect the resulting report and validate that Shipment Date is included.

Before setting the new custom layout as the active one, Sean runs it to validate it works as intended.

			
		Invoice 103001 Page 1 / 2	
The Cannon Group PLC		CRONUS International Ltd. 5 The Ring Westminster W2 8HG London	
Mr. Andy Teal 192 Market Square Birmingham, B27 4KT Great Britain			
Your Reference		Sales person	Peter Sadow
Bill-to Customer No.	10000	Phone No.	0666-666-6666
VAT Registration No.	789456278	Email	
Invoice No.	103001	Home Page	
Order No.		VAT Registration No.	6877777777
Document Date	25. January 2016	World Wide Bank	B699999 99-99-888
Due Date	25. February 2016	Giro No.	888-9999
Payment Terms	1 Month/2% 8 days	IBAN	68 12 CPBK 08929965044991
Payment Method		SWIFT Code	
Partner Type		Shipment Date	25. January 2016
Shipment Method	Ex Warehouse		

29. Open **Report Layout Selection** page
30. Browse to and select the report 1306 Sales Invoice.
31. Assuming that **Selected Layout** field is already set to **Custom**, change **Custom Layout Description** field to the new “My advanced Word layout” layout.
32. Open **Posted Sales Invoices** by doing one of the following:
 - In the Search box, enter Posted Sales

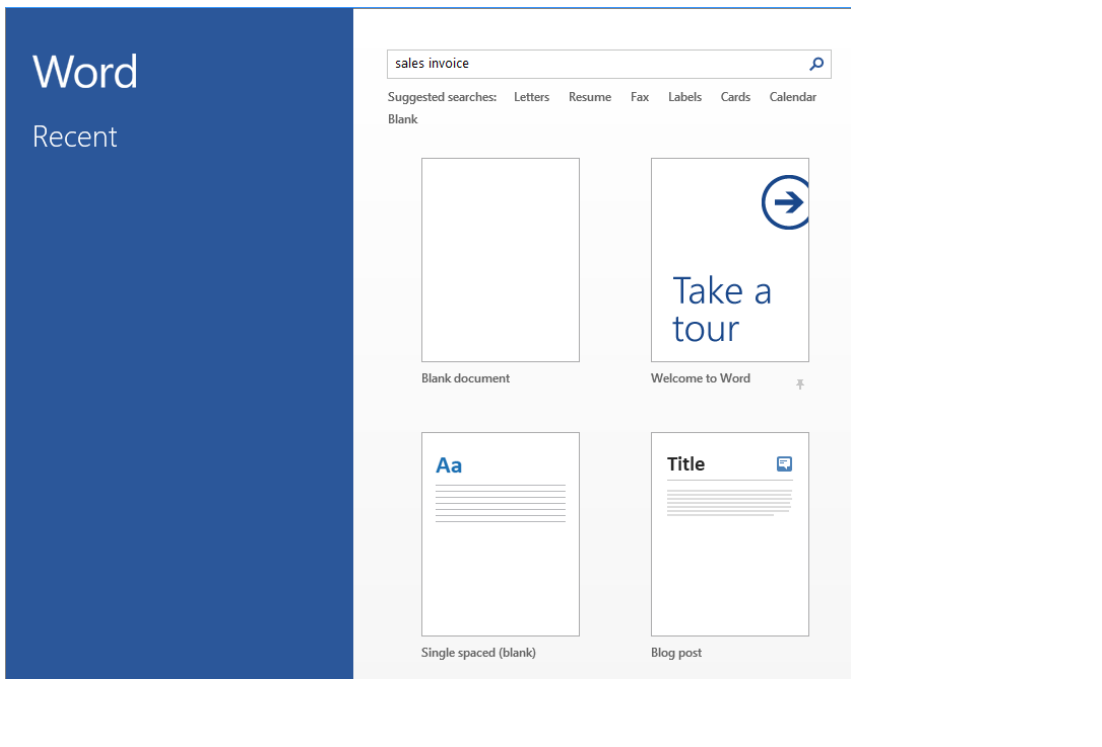
Finally, Sean switches over to use the newly created custom layout, which the ShipmentDate, as the active sales invoice Word layout.

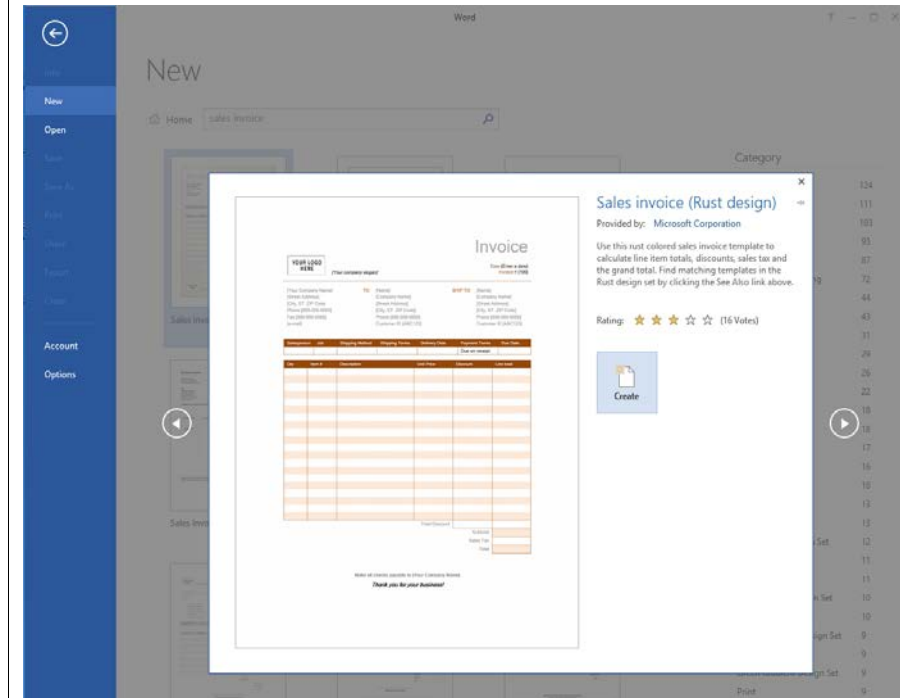
-
- Invoices, and then choose the related link.
- In the navigation pane, choose **Posted Documents**, and then **Posted Sales Invoices**.
33. Select a sales invoice from the list, and then on the **Home** tab, in the **Invoice** group, choose **Print**.
34. In the print dialog, use default values, select **Print**, and then **PDF**.
35. Validate that the resulting PDF is using the custom layout “My advanced Word layout” that you created previously.
-

Lab 5 — Creating a new Word Document Report Layout Based on an Existing Word Template

Lab story: Microsoft Word supports the creation of great looking documents. Unless a visual identity has already been defined by a designer though, it is often much easier to start with an existing Word template, for example, from the community, than from scratch (although possible), and then tweak the templates visual design instead.

In this lab, we will look at how a power user such as Sean can take an online Word template and add content controls that map to the Microsoft Dynamics NAV report dataset to create a custom sales invoice to fit the desired visual identity of his company relatively easy.

What to do	What to say	Screenshots
<ol style="list-style-type: none"> Browse for invoice templates in Word online, by doing one of the following: <ul style="list-style-type: none"> Open Word 2013 and search for sales invoice. In an existing Word 2013 session, on the File menu, select New, and then search for sales invoice. In the search result, look through the different suggested templates by selecting one and viewing the preview pane. Use left and right arrow buttons to shift through templates that have been found. Locate the Rust template, and select Create in the preview pane to create a document from the template. Save the document to a desired file location. 	<p>First, Sean is selecting the template he would like to work on.</p> <p>As Microsoft Dynamics NAV Word layouts cannot be based on Word .dotx template files directly, Sean will have to create a document using the template.</p> <p>Sean opens Microsoft Word 2013 and browses through available sales invoice templates using the preview capability.</p> <p>He ends up liking the Rust template the most, and selects Create to make a document based on this template.</p>	 <p>The screenshot shows the Microsoft Word 2013 interface. On the left, a blue sidebar displays the 'Word' logo and 'Recent' items. The main area shows search results for 'sales invoice'. At the top, there's a search bar with 'sales invoice' entered. Below it, 'Suggested searches' include 'Letters', 'Resume', 'Fax', 'Labels', 'Cards', and 'Calendar'. A 'Blank' document is listed. The 'Recent' section shows four templates: 'Blank document', 'Welcome to Word' (with a blue arrow icon), 'Single spaced (blank)', and 'Blog post' (with a blue icon).</p>



5. Open **Report Layout Selection** page by doing one of the following:
 - In the Search box, enter **Report Layout Selection**, and then choose the related link.
 - In the navigation pane, choose **Departments, Administration, IT Administration**, and then **Reports**,
 - In the **Small Business Role Center**, on the **Actions** tab, choose **Setup, Company Information**, and then choose **Report Layouts**.
6. Ensure that the correct company is specified in the **Company Name** field,

With the Word template in a document, Sean creates a new Sales Invoice custom layout in Microsoft Dynamics NAV 2013.

<p>because reports layouts are company specific.</p> <p>7. Locate the document report 1306 Sales – Invoice in the list by doing one of the following:</p> <ul style="list-style-type: none"> • Scroll down through the list. • Filter on the Report ID equal to 1306. <p>8. Select the row for report 1306, and on the Home tab, in the Process group, choose Custom Layouts.</p> <p>9. On the Home tab, in the New group, choose New to insert a new custom layout. The Insert Built-in Layout for a Report window appears. The ID and Name fields are automatically filled in.</p> <p>10. To add a custom Word report layout type, select the Insert Word Layout check box, and then choose OK.</p> <p>11. In the list, change the Custom Layout Description field of the newly created custom layout to “My Rust Word layout”.</p>		
<p>12. On the Home tab, in the Process group, select Import layout.</p> <p>13. In the Import Word Document dialog, browse to the location where you saved the Word document Word document that is based on the Rust template (in the beginning of the lab), select the document, and then choose OK to import the layout.</p>	<p>As the newly created Word custom layout just contains a copy of the built-in Word layout, Sean imports his template document created in the beginning of the lab to overwrite the content.</p>	
<p>14. On the Home tab, in the Process group, choose Edit Layout.</p>	<p>With the new custom layout containing the Rust template, Sean</p>	

opens the custom layout for editing to start inserting content controls that represent data from Microsoft Dynamics NAV.

Note that the Edit function relies on client-side automation, and therefore requires that the Microsoft Dynamics NAV 2015 Windows client and Word 2013 are installed.

If you are using the Microsoft Dynamics NAV 2015 Web client or a device, the custom layout can be edited by exporting the layout to a Word file, editing it in Word, and then importing the layout file back into the appropriate report.

Also note that when you edit or export the custom layout, the required custom XML part is automatically inserted. Instead of importing the Rust template first before editing or exporting it, Sean could also have exported only the custom XML part from the **Export Word XML Part** in the **General** group on the **Actions** tab. Then, he could have manually inserted XML part into the template in Word, done all the content controls, and

imported the custom layout into Microsoft Dynamics NAV. However, the lab steps described here are easier to understand.

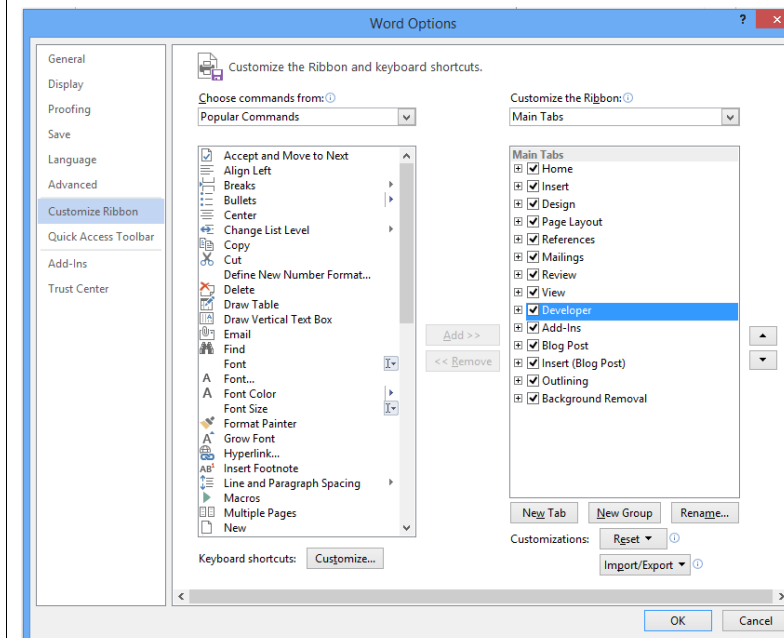
15. Select a table structure in the layout, for example, the sales lines.
16. In Word, on the **Layout** tab, in the **Table** group, choose **View Gridlines**.

As Word report layouts often use hidden table structures to align content controls (such as field mappings), enabling gridlines in Word is quite useful to understand the structure.

As can be seen, the sales invoice header fields are all arranged in tables for easier alignment in Word.

17. In Word, do one of the following:
- Right click the ribbon, and then select **Customize the Ribbon**.
 - On the **File** menu, choose **Options**, and then select **Customize Ribbon** tab in the Word Options dialog box.
18. In the right pane, select the **Developer** check box, and then choose **OK**.
19. Select the **Developer** tab that is now visible in Word.

To insert new fields from the report dataset in the Word layout, we need to take advantage of the custom XML mapping feature in Word. This feature is available in the **Developer** tab in Word, which is hidden by default, so the first task is to enable it.



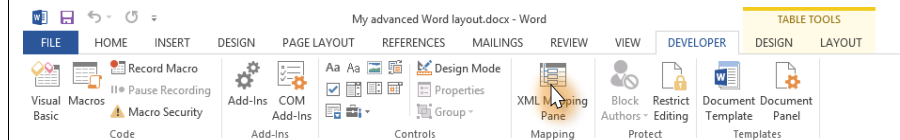
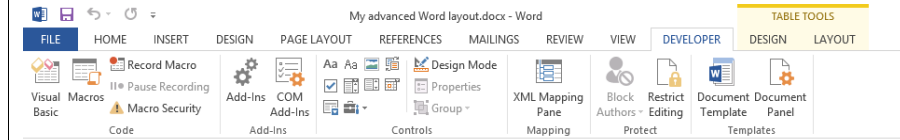
20. On the **Developer** tab, choose **XML Mapping Pane**.
21. In the **XML Mapping** pane, in the **Custom XML Part** dropdown list, choose the custom XML part for the 1306 Sales Invoice. Typically this is the last in the list. The name of the custom XML part has the following format:
urn:microsoft-dynamics-nav/reports/Mini_Sales_Invoice/1306
22. The **XML Mapping** pane now displays the labels and field controls that are available for the report. Browse the structure by expanding the tree and notice heading and different line structures.

Word layouts in Microsoft Dynamics NAV 2015 rely on mapping content controls to dataset fields. To facilitate this, the Words custom XML feature is used.

A Word document can contain one or more embedded XML parts with data. When Word layouts are exported or invoked for editing from Microsoft Dynamics NAV 2015, the layout will have a specific Microsoft Dynamics NAV XML part added that represents the dataset structure of the report. This structure is then used when mapping the dataset to content controls.

Therefore, first we need to show the **XML Mapping** pane in Word, and select the proper embedded XML part for the report dataset.

The name of the custom XML part has the following format:



urn:microsoft-dynamics-nav/reports/report_name/ID

Where report_name is the normalized name that is assigned to the report as specified by the report's Name Property in the Microsoft Dynamics NAV Development Environment, and ID is the identification number of the report.

XML Mapping

Custom XML Part:

urn:microsoft-dynamics-nav/reports/Mini_Sales_Invo...

NavWordReportXmlPart

Header

- BilltoCustomerNo_Lbl
- BilltoCustomerNo
- CompanyAddress1
- CompanyAddress2
- CompanyAddress3
- CompanyAddress4
- CompanyAddress5
- CompanyAddress6
- CompanyBankAccountNo
- CompanyBankAccountNo_Lbl
- CompanyBankBranchNo
- CompanyBankBranchNo_Lbl
- CompanyBankName
- CompanyBankName_Lbl
- CompanyCustomGiro
- CompanyCustomGiro_Lbl
- CompanyEMail
- CompanyGiroNo
- CompanyGiroNo_Lbl
- CompanyHomePage
- CompanyIBAN
- CompanyIBAN_Lbl
- CompanyLegalOffice
- CompanyLegalOffice_Lbl
- CompanyLegalStatement
- CompanyLogoPosition
- CompanyPhoneNo
- CompanyPhoneNo_Lbl
- CompanyPicture
- CompanyRegistrationNumber
- CompanyRegistrationNumber_Lbl
- CompanySWIFT

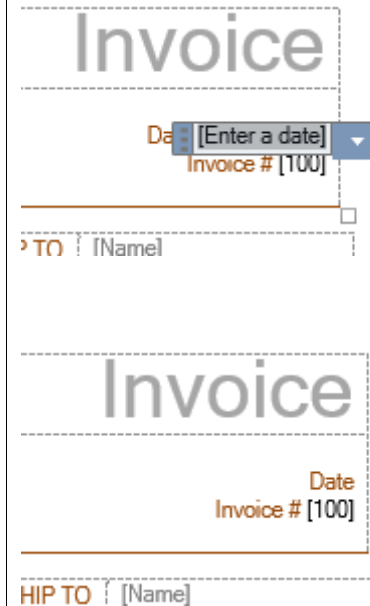
23. Locate and select the existing Date content control.
24. Delete it and make sure the text cursor is still located to the right of the Date text.
25. In the **XML Mapping** pane, expand the header structure and locate DocumentData.
26. Right click on DocumentDate, select **Insert Content Control**, and then choose **Plain Text**.

With the XML Mapping pane enabled, Sean can finally start adding content controls for the various placeholders in the Rust based custom layout.

As Sean is not going to use the layout in any foreign locale, he is just going to use hardcoded text strings for captions, thus avoiding spending time on inserting content controls for labels.

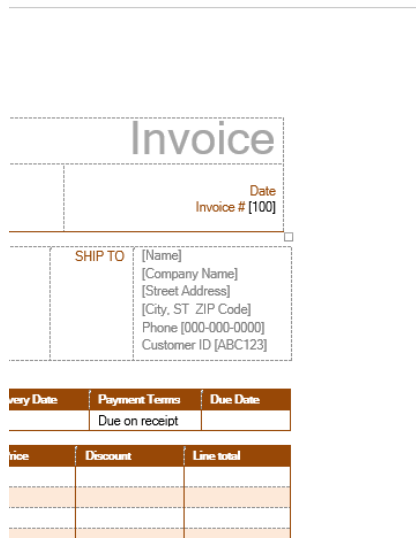
The Rust template already has some content controls. As we are not interested in these controls other than the placeholder, we are going to replace these with Microsoft Dynamics NAV content controls instead.

First, Sean is adding the document date in the header.



The top screenshot shows an invoice header with the word "Invoice" at the top. Below it, there is a date field labeled "Date" with a dropdown arrow and a value "[Enter a date]". Below the date field is an invoice number field labeled "Invoice #" with a value "[100]". Below the invoice number field is a horizontal line. Below the line is a field labeled "TO" with a value "[Name]".

The bottom screenshot shows the same invoice header, but the date field has been replaced by a Microsoft Dynamics NAV content control. The content control is labeled "Date" and has a value "[100]". The invoice number field and the "TO" field are still present.



Invoice

Date
Invoice # [100]

SHIP TO [Name]
[Company Name]
[Street Address]
[City, ST ZIP Code]
Phone [000-000-0000]
Customer ID [ABC123]

Due Date	Payment Terms	Due Date
	Due on receipt	

Line	Discount	Line total

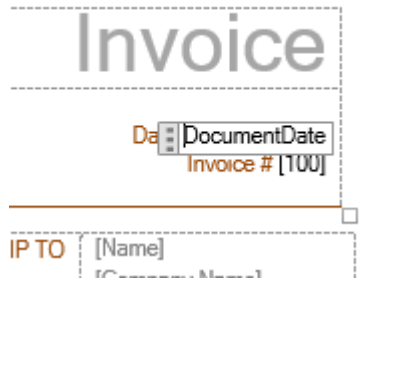
XML Mapping

Custom XML Part:
urn:microsoft-dynamics-nav/reports/Mini_Sales_Invo...

- CustomerAddress1
- CustomerAddress2
- CustomerAddress3
- CustomerAddress4
- CustomerAddress5
- CustomerAddress6
- CustomerAddress7
- CustomerAddress8
- CustomerPostalBarCode
- DocumentCopyText
- DocumentDate
- DocumentNo
- DocumentNo_Lbl
- DocumentTitle_Lbl
- DueDate
- DueDate_Lbl
- EMail_Header_Lbl
- ExchangeRateAsText
- GlobalLocationNumber
- GlobalLocationNumber_Lbl
- HomePage_Header_Lbl

Insert Content Control

- Rich Text
- Plain Text
- Picture
- Checkbox
- Combo Box
- Dropdown List
- Date Picker



Invoice

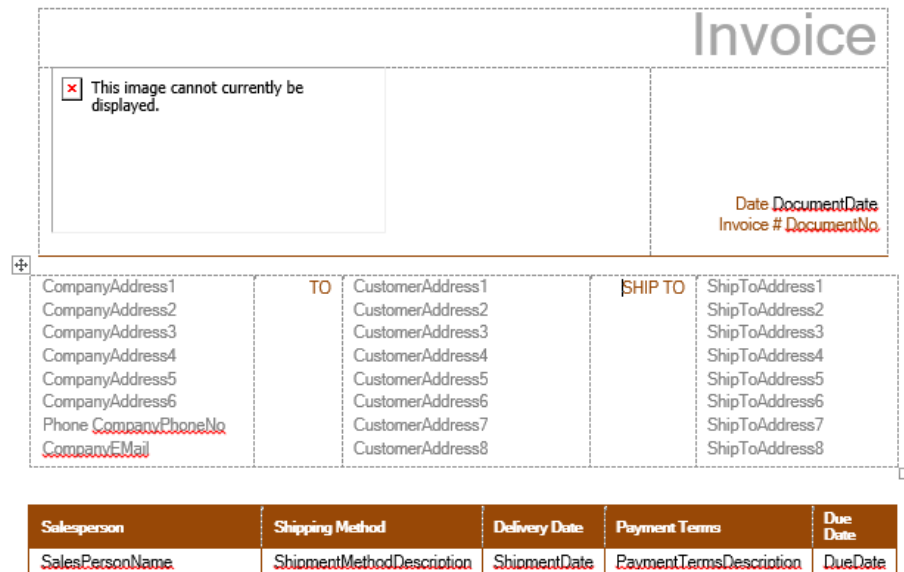
Date DocumentDate
Invoice # [100]

SHIP TO [Name]
[Company Name]

27. Create additional header content controls by repeatedly placing the text cursor in the Word layout and inserting a content control for the required field. To insert a control, find it in the **XML Mapping** pane, right-click it, select **Insert Content Control**, and then choose **Plain Text**.

Sean repeats adding header information to the layout, such as invoice date and number, company address, customer address, ship to address, sales person, shipping method, and so on.

As part of this, Sean tweaks the structure a bit, for example, by adding more address lines because Microsoft Dynamics NAV supports more than those included in the generic Rust template.



The screenshot shows an invoice layout with the following elements:

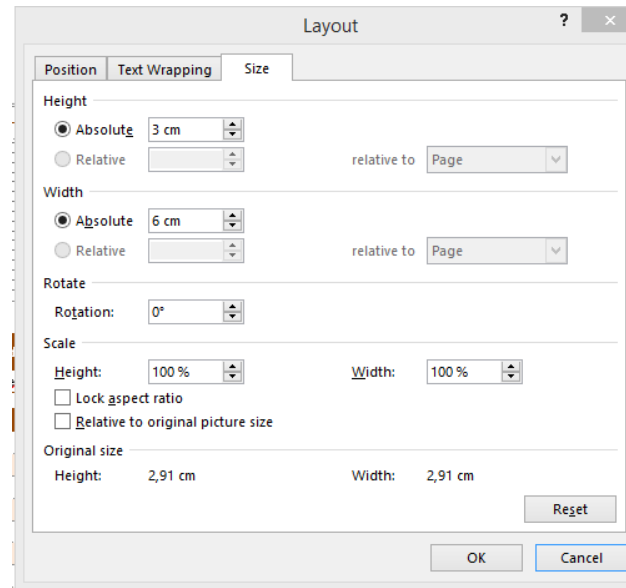
- Header:** "Invoice" title.
- Image Placeholder:** A box with a red 'x' icon and the text "This image cannot currently be displayed."
- Metadata:** "Date" and "Invoice #" fields, both with "DocumentNo" as a tooltip.
- Address Table:** A table with columns for Company, TO, Customer, and SHIP TO, containing 8 rows of address information.
- Shipping/Delivery Table:** A table with columns for Salesperson, Shipping Method, Delivery Date, Payment Terms, and Due Date, containing one row of data.

Company	TO	Customer	SHIP TO
CompanyAddress1		CustomerAddress1	ShipToAddress1
CompanyAddress2		CustomerAddress2	ShipToAddress2
CompanyAddress3		CustomerAddress3	ShipToAddress3
CompanyAddress4		CustomerAddress4	ShipToAddress4
CompanyAddress5		CustomerAddress5	ShipToAddress5
CompanyAddress6		CustomerAddress6	ShipToAddress6
Phone		CustomerAddress7	ShipToAddress7
CompanyEMail		CustomerAddress8	ShipToAddress8

Salesperson	Shipping Method	Delivery Date	Payment Terms	Due Date
SalesPersonName	ShipmentMethodDescription	ShipmentDate	PaymentTermsDescription	DueDate

28. To complete the header, delete the logo placeholder from the Rust template, and then merge the cell where it was contained with the one to the right. Then, place the cursor in the cell, and in the **XML Mapping** pane, right-click **CompanyPicture**, select **Insert Content Control**, and then choose **Picture**.
29. Right-click the inserted picture content control, and then choose **Size and Position**.
30. In the **Layout** dialog box, on the **Size** tab, specify the picture dimensions that correspond to the logo that is used. The Cronus demo data logo has a height of 3 cm and width of 6 cm.

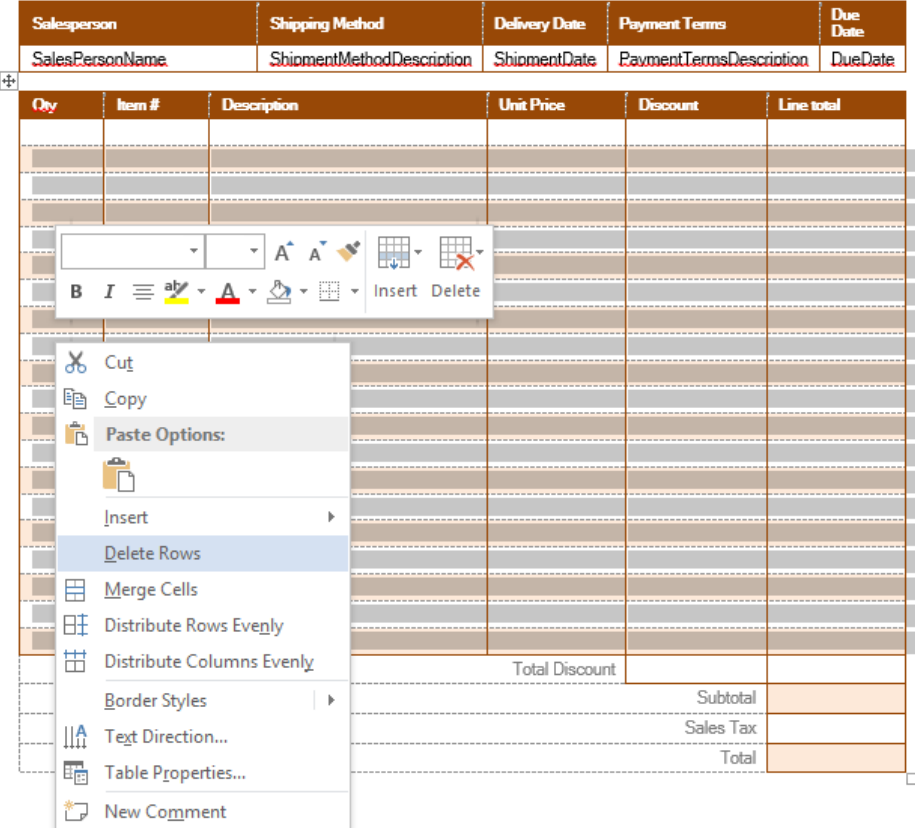
Sean then inserts a logo placeholder.



31. Delete all lines except the first line between the lines header and the totals part. To do this, select the rows, right click, and then choose **Delete Rows**.
32. Select the remaining row in the lines list.
33. In the **XML Mapping** pane, go to the nested Line section at the bottom.
34. Right click the Line entry, select **Insert Content Control**, and then choose **Repeating**.

Lines and totals are just handled as a number of fixed, empty lines in the Rust template.

As the number of lines are dynamic in normal sales invoices, Sean will remove all of the redundant lines and insert a repeater content control for the line structure requiring repeat capabilities.



Salesperson		Shipping Method	Delivery Date	Payment Terms	Due Date
SalesPersonName		ShipmentMethodDescription	ShipmentDate	PaymentTermsDescription	DueDate
Qty	Item #	Description	Unit Price	Discount	Line total
Total Discount					
				Subtotal	
				Sales Tax	
				Total	

The screenshot shows a right-click context menu over the table grid. The menu includes options such as Cut, Copy, Paste Options, Insert, Delete Rows (highlighted), Merge Cells, Distribute Rows Evenly, Distribute Columns Evenly, Border Styles, Text Direction..., Table Properties..., and New Comment.

Salesperson	Shipping Method	Delivery Date	Payment Terms	Due Date
SalesPersonName	ShipmentMethodDescription	ShipmentDate	PaymentTermsDescription	DueDate

Qty	Item #	Description	Unit Price	Discount	Line total
Total Discount					
Subtotal					
Sales Tax					
Total					

- VATBase_Lbl
- VATClause_Lbl
- VATClauses_Lbl
- VATIdentifier_Lbl
- VATPercentage_Lbl
- VATRegistrationNo
- VATRegistrationNo_Lbl
- YourReference
- YourReference_Lbl
- ▾ Line
- ▾ VATA
 - Insert Content Control ▸ Repeating
 - Map to Selected Content Control
- ▾ VATC
- ▾ ReportTotalsLine
- ▾ Totals

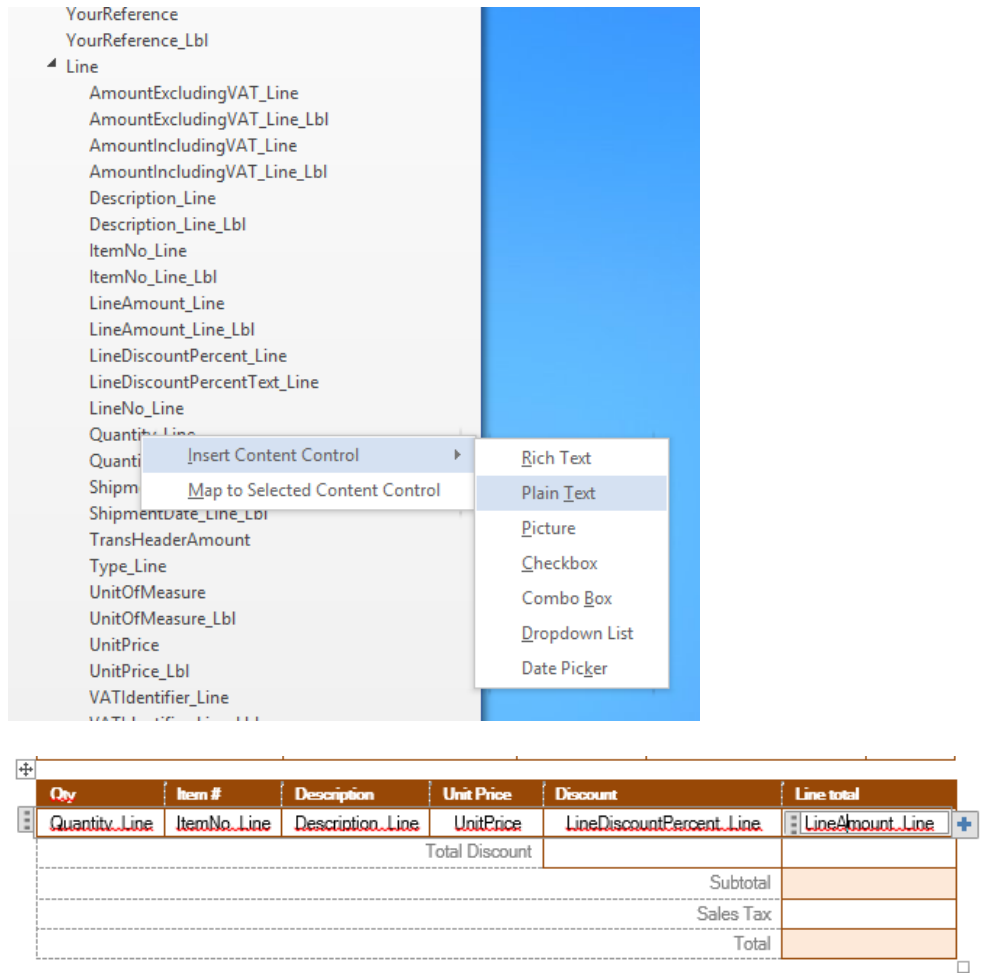
Salesperson	Shipping Method	Delivery Date	Payment Terms	Due Date
SalesPersonName	ShipmentMethodDescription	ShipmentDate	PaymentTermsDescription	DueDate

Qty	Item #	Description	Unit Price	Discount	Line total
Total Discount					
Subtotal					
Sales Tax					
Total					

35. In the cells of the repeating row, insert content controls for quantity, item no, and so on (These controls are nested content controls in the repeater content control). Find the required fields in the nested Line structure in the **XML Mapping** pane.

With the repeater control in place, individual content controls for the column values in a line can be inserted.

Again, Sean tweaks the Rust template a bit as needed.



The screenshot shows the XML Mapping pane on the left, listing the structure of the 'Line' object. The 'Line' object contains several fields, including 'Quantity_Line', 'ItemNo_Line', 'Description_Line', 'UnitPrice', and 'LineAmount_Line'. A context menu is open over the 'Quantity_Line' field, showing options like 'Insert Content Control' and 'Map to Selected Content Control'. The 'Insert Content Control' option is selected, and a sub-menu is visible with options like 'Rich Text', 'Plain Text', 'Picture', 'Checkbox', 'Combo Box', 'Dropdown List', and 'Date Picker'.

Below the XML Mapping pane, a table grid is visible. The table has columns for 'Qty', 'Item #', 'Description', 'Unit Price', 'Discount', and 'Line total'. The first row is a header row with the following values: 'Quantity_Line', 'ItemNo_Line', 'Description_Line', 'UnitPrice', 'LineDiscountPercent_Line', and 'LineAmount_Line'. The second row is a summary row with the following values: 'Total Discount', 'Subtotal', and 'Total'.

Qty	Item #	Description	Unit Price	Discount	Line total
Quantity_Line	ItemNo_Line	Description_Line	UnitPrice	LineDiscountPercent_Line	LineAmount_Line
Total Discount					
				Subtotal	
				Sales Tax	
				Total	

36. In the total cells, insert content controls for total discount, tax, and so on. Find the required fields in the nested Totals structure in the **XML Mapping** pane.

With the line structure in place, Sean inserts totals.

There are two ways totals can be inserted:

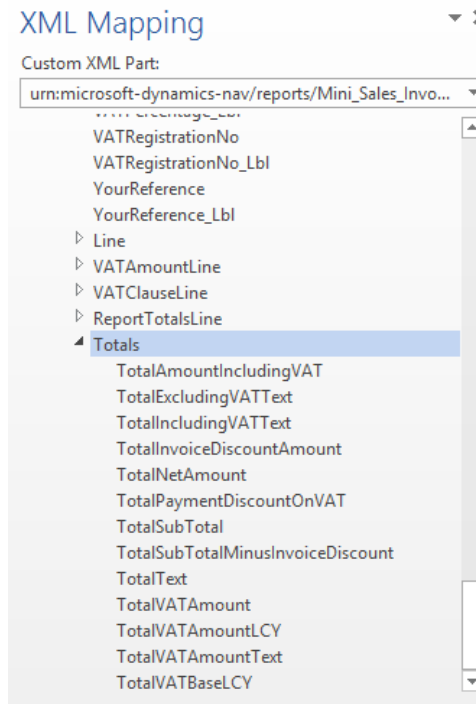
Using individual content controls for each total field found in the Totals structure of the **XML Mapping** pane.

Using a dynamically formatted total repeater by using the ReportTotalsLine structure of the **XML Mapping** pane.

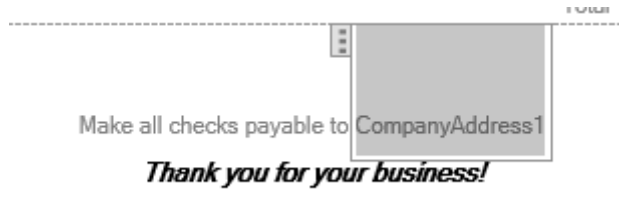
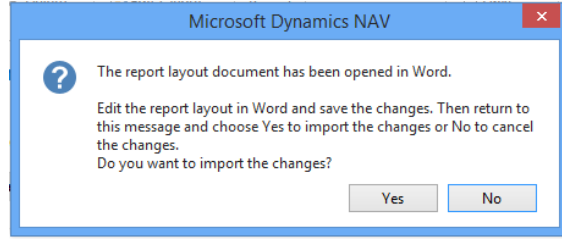
The former has the advantage that individual total numbers can be formatted and placed as desired.

The latter has the advantage that only lines with content (value), such as discount total, are shown.

In this lab, Sean will insert explicit totals. For an example of using the total repeater, see the standard report 1306 Sales Invoice Word layout.




	Unit Price	Discount %	Line total
e	UnitPrice	LineDiscountPercent	LineAmount
	Total Discount		TotalInvoiceDiscountAmount
		Subtotal	TotalSubTotalMinusInvoiceDiscount
		Sales Tax	TotalVATAmount
		Total	TotalAmountIncludingVAT

<p>37. Replace the greeting content control with a content control that refers to CompanyAddress1 to get the company name in the greeting.</p>	<p>Finally, Sean updates the greeting and saves the layout</p>	
<p>38. Save the changes and close the Word document. 39. On the confirmation dialog box which appeared when the layout was opened for editing, choose Yes to accept the changes and import the layout into Microsoft Dynamics NAV.</p>	<p>With the layout done, Sean saves the Word document and accepts importing the changes into Microsoft Dynamics NAV.</p>	

40. In the **Custom Report Layouts** page, select the new custom layout, and then on the **Home** tab, in the **Report** group choose **Run Report**.
41. In the resulting request page, use default values, select the **Print** button, then choose **PDF**.
42. Inspect the resultant PDF and validate that the Rust-based Word layout looks good and has correct field values.

Before enabling the new custom layout as the active layout for the sales invoice report, we are going to test it out by running it from within the **Custom Report Layout** page.

Invoice



Date 25. January 2016
 Invoice # 103002

CRONUS International Ltd.
 5 The Ring
 Westminster
 W2 8HG London

Phone 0666-666-6666

TO Selangorian Ltd.
 Mr. Mark McArthur
 153 Thomas Drive
 Coventry, CV6 1GY
 Great Britain

SHIP TO Selangorian Ltd.
 Mr. Mark McArthur
 153 Thomas Drive
 Coventry, CV6 1GY
 Great Britain

Salesperson	Shipping Method	Delivery Date	Payment Terms	Due Date
Peter Sadow	Ex Warehouse	25-01-2016 00:00:00	Net 14 days	8. February 2016

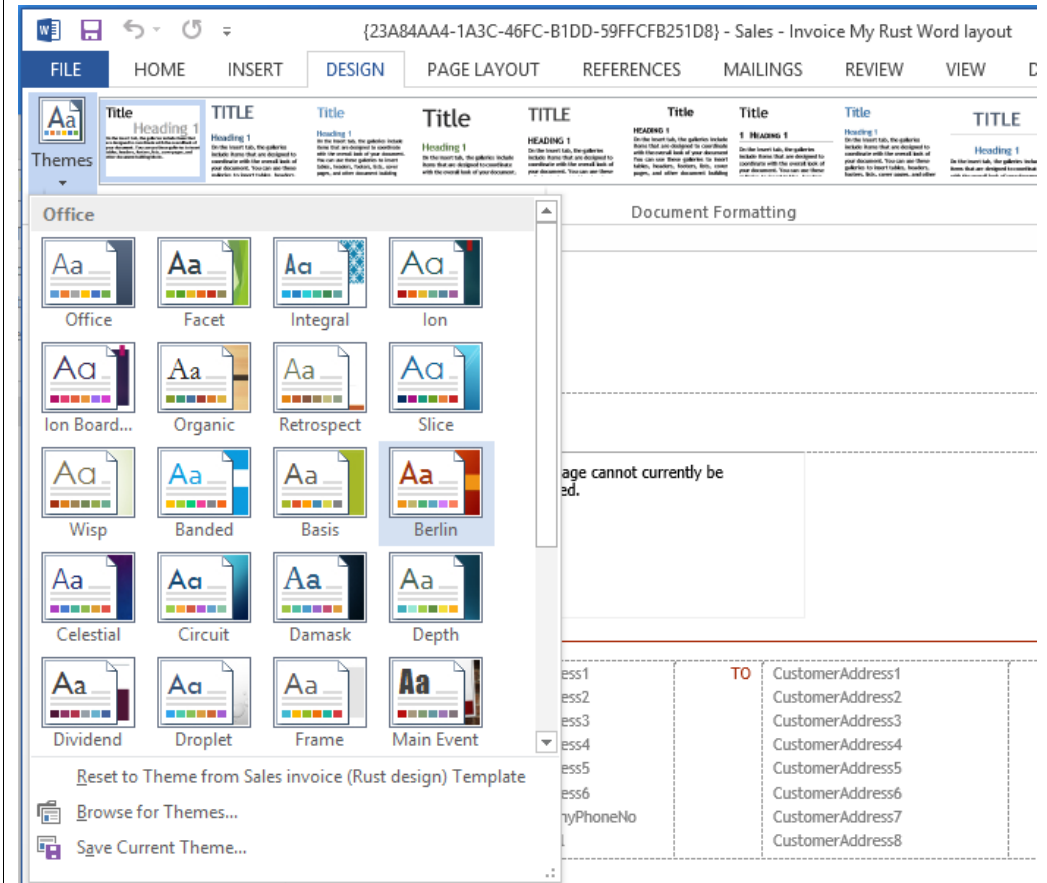
Qty	Item #	Description	Unit Price	Discount %	Line total
25	TIMOTHY	Assembling Furniture, January	54.00	0	1.350.00
96	TIMOTHY	Assembling Furniture, January	54.00	0	5.184.00
Total Discount					-196.02
Subtotal					6.337.98
Sales Tax					633.80
Total					6.971.78

Make all checks payable to CRONUS International Ltd.
Thank you for your business!

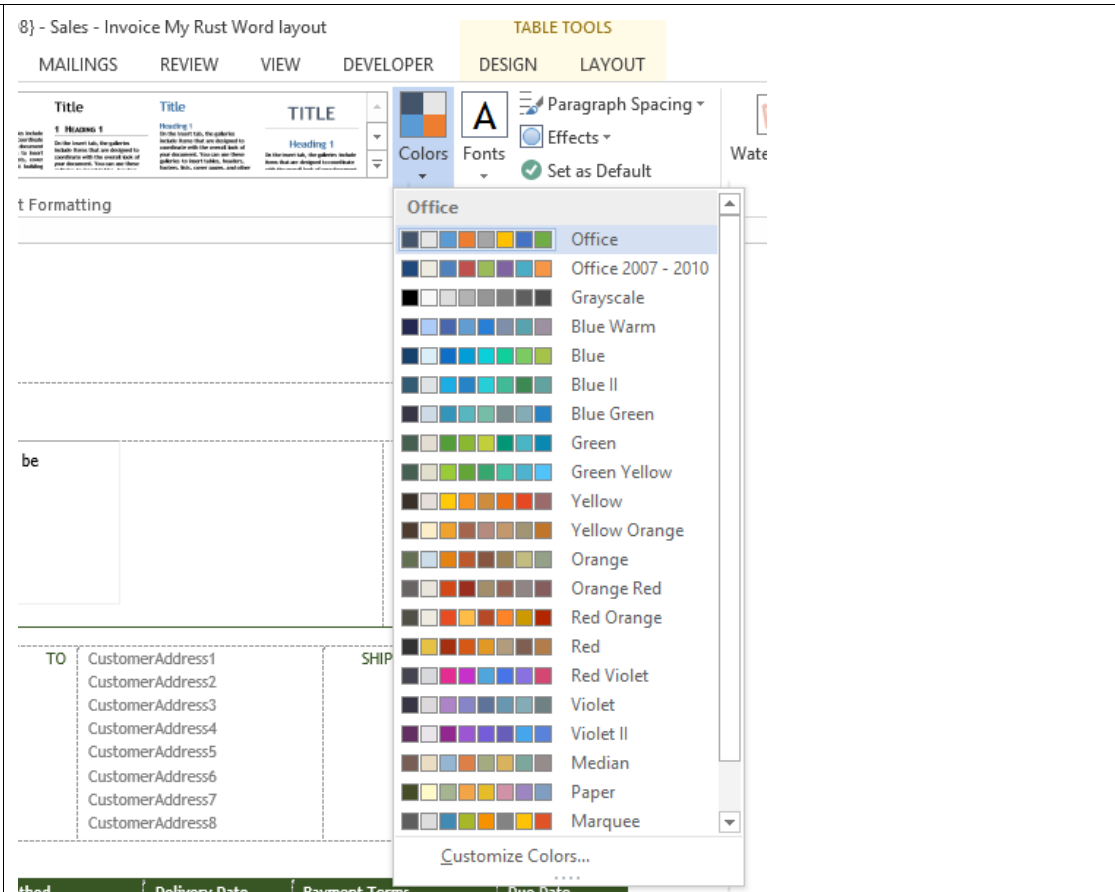
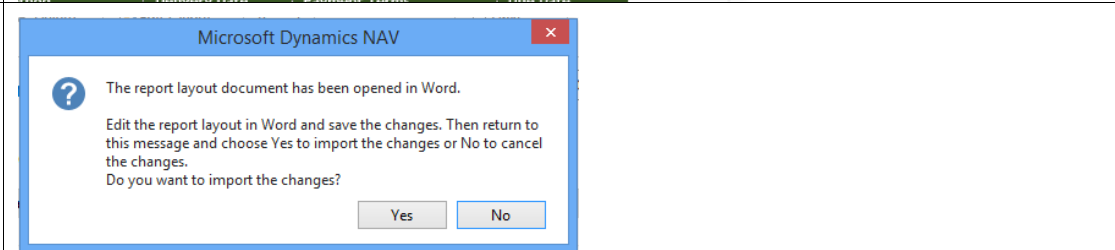
43. Go back to the **Custom Report Layouts** page for report 1306 Sales Invoice.
44. Select the new Rust-based custom layout “My Rust Word layout”.
45. On the **Home** tab, in the **Process** group, choose **Edit Layout**.
46. In Word, on the **Design** tab, use the left most **Themes** drop down list and apply a couple of different theme options to see the impact in the document.
47. Apply the **Berlin** theme.
48. On the **Design** tab, use the **Colour** drop down list to select a couple of different colour schemes to see the impact in the document.
49. Apply the **Office** colour scheme.

Sean likes the result, but he knows that many templates use styles and support Word themes and colour schemes, so he is going to explore these options to see if there are any colour and formatting combination he likes better.

Applying different themes and colours, Sean likes the fonts and setup of the Berlin theme the most. However, to get a colour scheme that better matches his company “green” profile, he changes the colour scheme to Office.




The screenshot shows the Microsoft Word 2015 Developer interface. The title bar indicates the document is titled "{23A84AA4-1A3C-46FC-B1DD-59FFCFB251D8} - Sales - Invoice My Rust Word layout". The ribbon is set to the **DESIGN** tab, with the **THEMES** group expanded. The Themes gallery is open, displaying a grid of 20 theme options. The **Office** theme is selected, which is a light blue and white color scheme. Below the themes gallery, there are options to "Reset to Theme from Sales invoice (Rust design) Template", "Browse for Themes...", and "Save Current Theme...". The document content area shows a table with columns for "TO" and "CustomerAddress1" through "CustomerAddress8". The "TO" column contains the text "ess1" through "ess6" and "nyPhoneNo". The "CustomerAddress" column contains the text "CustomerAddress1" through "CustomerAddress8".

		
<p>50. Save and close the Word document.</p> <p>51. On the confirmation dialog box which appeared when the layout was opened for editing, choose Yes to accept the changes and import the layout into Microsoft Dynamics NAV.</p>	<p>With the layout theme and colour scheme changes, Sean saves the Word document and accepts importing the changes into Microsoft Dynamics NAV.</p>	

52. In the **Custom Report Layouts** page select the new custom layout, and then on the **Home** tab, in the **Report** group select **Run Report**.
53. In the resulting request page, use default values, select the **Print** button, and then choose **PDF**.
54. Inspect the resulting PDF and validate that the Rust-based Word layout now has a new theme and colour scheme.

As a final test, Sean reruns the layout, now with the new theme.

Invoice



Date 25. January 2016
Invoice # 103001

CRONUS International Ltd. 5 The Ring Westminster W2 8HG London	TO The Cannon Group PLC Mr. Andy Teal 192 Market Square Birmingham, B27 4KT Great Britain	SHIP TO The Cannon Group PLC Mr. Andy Teal 192 Market Square Birmingham, B27 4KT Great Britain
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Phone 0666-666-6666

Salesperson	Shipping Method	Delivery Date	Payment Terms	Due Date
Peter Sadow	Ex Warehouse	25-01-2016 00:00:00	1 Month/2% 8 days	25. February 2016

Qty	Item #	Description	Unit Price	Discount %	Line total
25	TIMOTHY	Assembling Furniture, January	54,00	0	1.350,00
120	TIMOTHY	Assembling Furniture, January	54,00	0	6.480,00
Total Discount					-391,50
Subtotal					7.438,50
Sales Tax					743,85
Total					8.182,35

Make all checks payable to CRONUS International Ltd.
Thank you for your business!

55. Open **Report Layout Selection** page again.
56. Browse to and select the report 1306

Being satisfied with the new layout, we are going to make this the

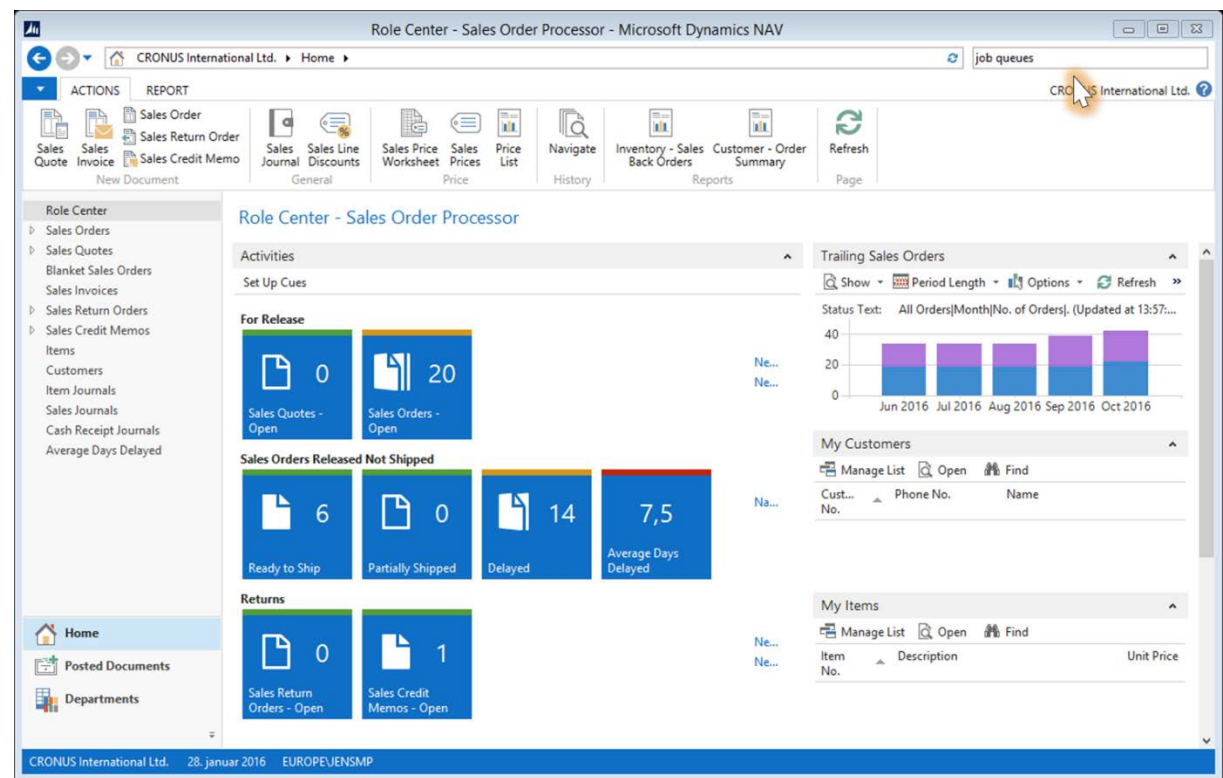
<p>Sales Invoice.</p> <p>57. Change Selected Layout field to Custom.</p> <p>58. In the Custom Report Layouts page that appears, select the layout “My Rust Word layout” that you previously created, and choose the OK button to close the page.</p> <p>59. Validate that the Selected Layout field now is set to Custom and that Custom Layout Description field in the list contains “My Rust Word layout” for the report 1306.</p>	<p>default layout for the sales invoice.</p> <p>To do this, we will set the Selected Layout field in the Report Layout Selection page to the newly defined custom layout.</p> <p>Note that if the Selected Layout field is already set to Custom, the actual custom layout is changed by using the lookup in the Custom Layout Description field instead.</p>	
<p>60. Open Posted Sales Invoices by doing one of the following:</p> <ul style="list-style-type: none"> • In the Search box, enter Posted Sales Invoices, and then choose the related link. • In the navigation pane, choose Posted Documents, and then Posted Sales Invoices. <p>61. Select a sales invoice from the list, and then on the Home tab, in the Invoice group, choose Print.</p> <p>62. In the print dialog, use default values, select the Print button, and then choose PDF.</p> <p>63. Validate that the resulting PDF is using the custom layout “My Rust Word layout” that you previously created.</p>	<p>Finally, Sean runs the sales invoice from a real application context, for example, Posted Sales Invoices, to verify that the new custom layout is used.</p>	

2. Scheduling Reports

Source: Demo Script – Scheduling Reports, Microsoft

Lab 1 — Setting up the job queue to run a report

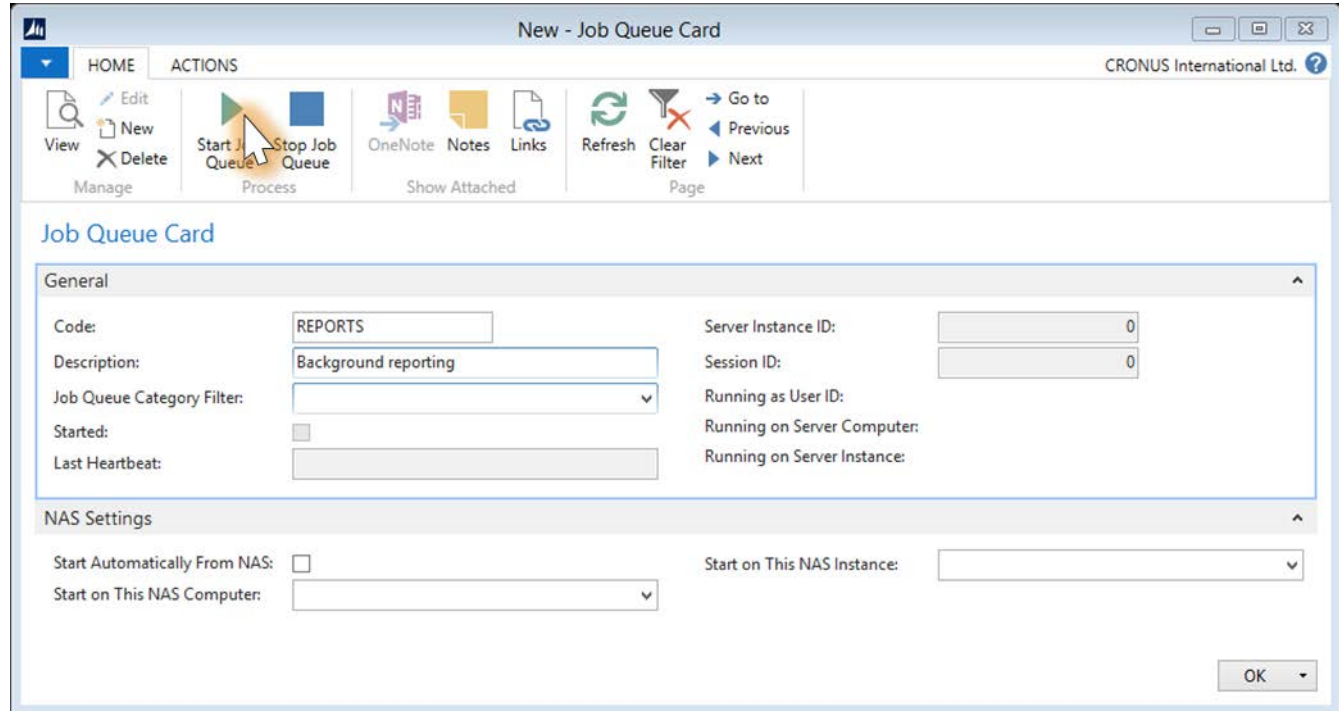
Lab story: Stan needs to run a number of long running reports and does not want to wait for them to complete. The scenario is simplified because a typical customer setup would involve setting up a NAS instance to process the reports.

What to do	What to say	Screenshots
<p>25. Open the Job Queues page.</p> <p>26. On the Home tab, in the New group, choose New to set up a new job queue.</p>	<p>Usually, a job queue would have been set up and started automatically on startup.</p> <p>For simplicity, in this example, we will start a job queue explicitly.</p> <p>Job queues enable you to specify, request, and control when certain processes are run, such as running a report or executing a codeunit.</p> <p>The partner can modify the business logic to direct reports to a specific job queue.</p>	

27. In the **Code** field, type REPORTS.
28. Fill in the **Description** field.
29. Leave the **Job Queue Category Filter** field blank.
30. On the **Home** tab, in the **Process** group, choose **Start Job Queue**.
31. Close the Job Queue Card

A job queue with no filter runs the reports.

In many customer installations, the reports will be picked up by the DEFAULT job queue



The screenshot shows the 'New - Job Queue Card' dialog box in Microsoft Dynamics NAV 2015 Developer. The window title is 'New - Job Queue Card' and the company name is 'CRONUS International Ltd.'. The 'HOME' tab is active, and the 'ACTIONS' group is expanded, showing the 'Start Job Queue' button highlighted with a mouse cursor. The 'Job Queue Card' form has the following fields:

General	
Code:	REPORTS
Description:	Background reporting
Job Queue Category Filter:	
Started:	<input type="checkbox"/>
Last Heartbeat:	
Server Instance ID:	0
Session ID:	0
Running as User ID:	
Running on Server Computer:	
Running on Server Instance:	


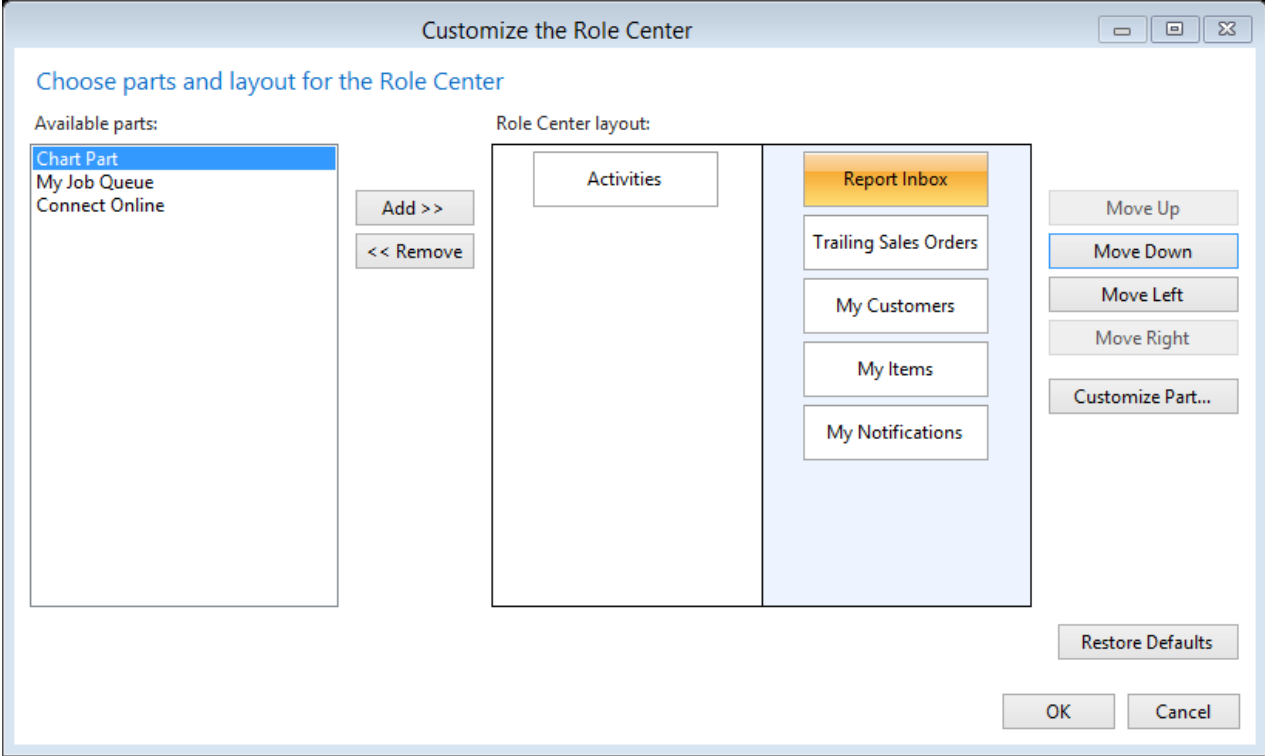
The 'NAS Settings' section includes:

Start Automatically From NAS:	<input type="checkbox"/>
Start on This NAS Instance:	
Start on This NAS Computer:	

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

Lab 2 — Adding the Report Inbox to the Role Center

Lab story: The user wants easy access to the reports that he has scheduled, so he adds the Report Inbox part to the Role Center page.

What to do	What to say	Screenshots
<ol style="list-style-type: none"> To open the Role Center page that you want to customize, in the navigation pane, choose the Home button, then choose the Role Center menu item. On the Application menu , choose Customize, and then Customize This Page. In the Available Parts pane, select Report Inbox, and then choose the Add button. To move the Report Inbox part to top of the second column in the Role Center layout pane, select it and then use the Move buttons. 	<p>By default, the Report Inbox is added to most Role Centers Role that are shipped on the DVD. If the Report Inbox is not present, it can be added by customizing the Role Center.</p>	

5. (Optional) To add the **My Job Queue** to the Role Center, in the **Available Parts** pane, select **My Job Queue**, and then choose the **Add** button.
6. (Optional) To move the **My Job Queue** part below the **Report Inbox** in the **Role Center layout** pane, select it and then use the **Move** buttons.

Optional: When the job queue is in use, it can be useful to have easy access to the state of the jobs that are currently running.

The reason for having the two parts is that the job queue can be used for tasks other than running reports.

Also note, that the job queue can be accessed directly from the **Report Inbox** by choosing the **Show Queue** action. So, if there is a need to preserve space on the **Role Center**, then you do not have to include the **My Job Queue** part.

Report Inbox ^

Show Unread Reports All Reports Delete Show Queue Find

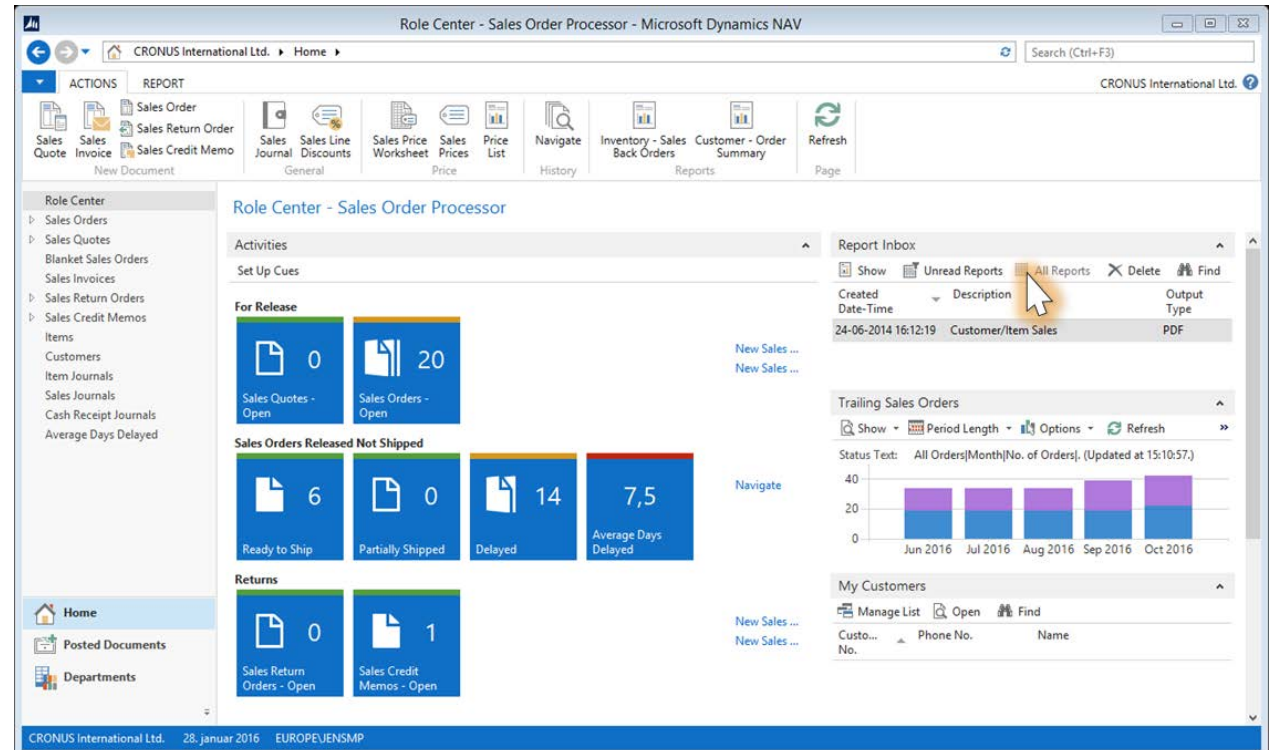
Created Date-Time	Description	Output Type

My Job Queue ^

Show Error Delete Restart Show Record Schedule a Report Edit Job Find

Description	Status

7. Verify that the **Report Inbox** appears in the Role Center.



Role Center - Sales Order Processor - Microsoft Dynamics NAV

CRONUS International Ltd. Home

Search (Ctrl+F3)

CRONUS International Ltd.

ACTIONS REPORT

Sales Quote Sales Invoice Sales Return Order Sales Credit Memo

Sales Journal Sales Line Discounts Sales Price Worksheet Sales Prices Price List

Inventory - Sales Back Orders Customer - Order Summary

Refresh

Role Center

- Sales Orders
- Sales Quotes
- Blanket Sales Orders
- Sales Invoices
- Sales Return Orders
- Sales Credit Memos
- Items
- Customers
- Item Journals
- Sales Journals
- Cash Receipt Journals
- Average Days Delayed

Home

Posted Documents

Departments

Role Center - Sales Order Processor

Activities

Set Up Cues

For Release

Sales Quotes - Open 0

Sales Orders - Open 20

Sales Orders Released Not Shipped

Ready to Ship 6

Partially Shipped 0

Delayed 14

Average Days Delayed 7,5

Returns

Sales Return Orders - Open 0

Sales Credit Memos - Open 1

Report Inbox

Show Unread Reports All Reports Delete Find

Created Date-Time	Description	Output Type
24-06-2014 16:12:19	Customer/Item Sales	PDF

Trailing Sales Orders

Show Period Length Options Refresh

Status Text: All Orders|Month|No. of Orders|. (Updated at 15:10:57.)

Month	No. of Orders
Jun 2016	~25
Jul 2016	~25
Aug 2016	~25
Sep 2016	~25
Oct 2016	~25

My Customers

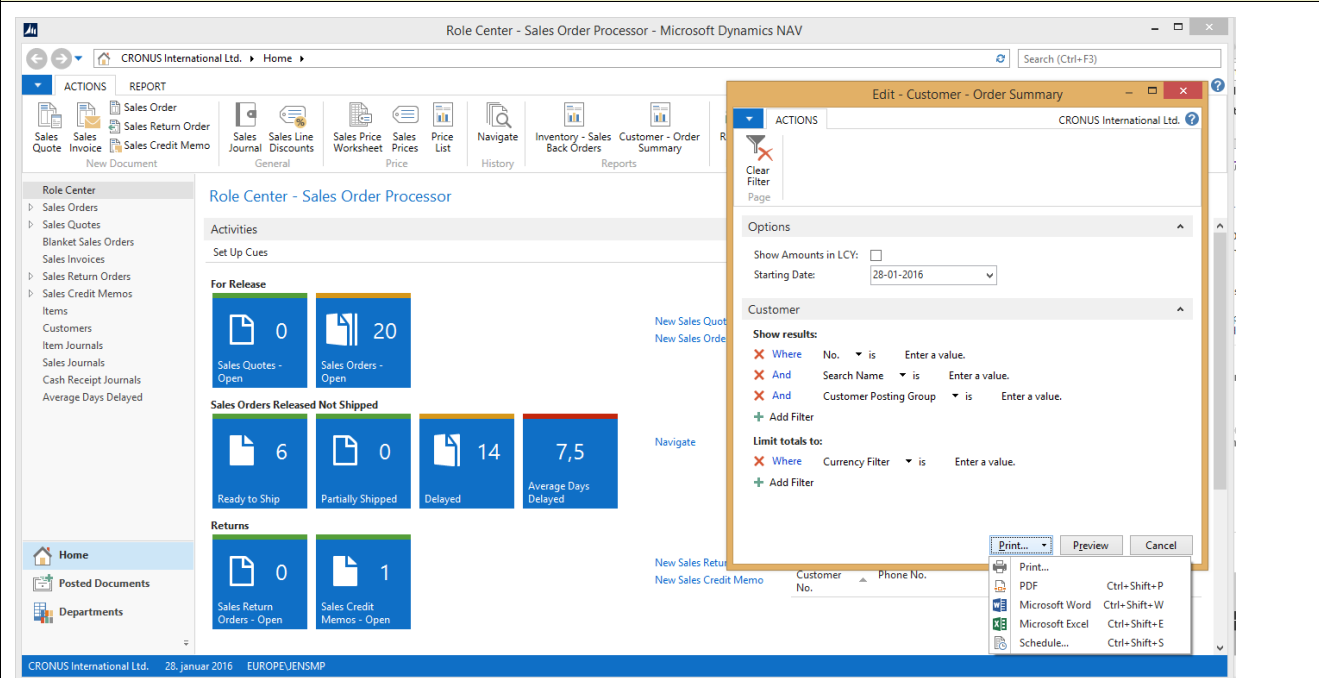
Manage List Open Find

Custom...	Phone No.	Name
No.		

CRONUS International Ltd. 28. januar 2016 EUROPEJENSMP

Lab 3 — Scheduling a report and viewing the result

Lab story: The user wants to run a number of reports and view the contents later. He does not want to wait for the reports to finish running – he just wants to continue his work. The first report he needs is the **Customer Order Summary** report. In other scenarios cases, he may need to run reports that require a lot of memory. In this case, the reports can be run more efficiently on Microsoft Dynamics NAV Server.

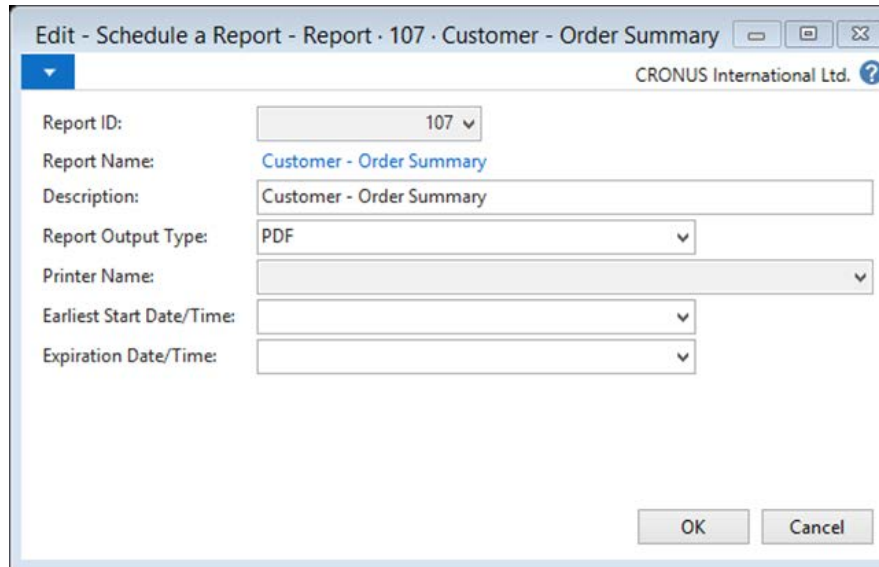
What to do	What to say	Screenshots
<ol style="list-style-type: none"> On the Role Center, on the Report tab, choose Customer Order – Summary. On the report request window, choose the Print button, and then choose Schedule. 	<p>For simplicity, a simple report on the Role Center paged is selected.</p> <p>A good use of this feature is to schedule “long running reports” like the Detail Trial Balance report.</p>	

3. In the **Schedule a Report** window that appears, in the **Description** field type a different text.
4. In the **Report Output Type** field, select the down arrow, and choose **PDF**.
5. Choose the **OK** button.

The user can enter a descriptive name that makes it easier for him to remember his scheduled job.

PDF is the default output format, but you can select other formats.

The user has the option to run the report at a later time. This is particularly useful for long running reports that can be run after normal working hours.



Edit - Schedule a Report - Report · 107 · Customer - Order Summary
 CRONUS International Ltd.

Report ID: 107
 Report Name: Customer - Order Summary
 Description: Customer - Order Summary
 Report Output Type: PDF
 Printer Name:
 Earliest Start Date/Time:
 Expiration Date/Time:

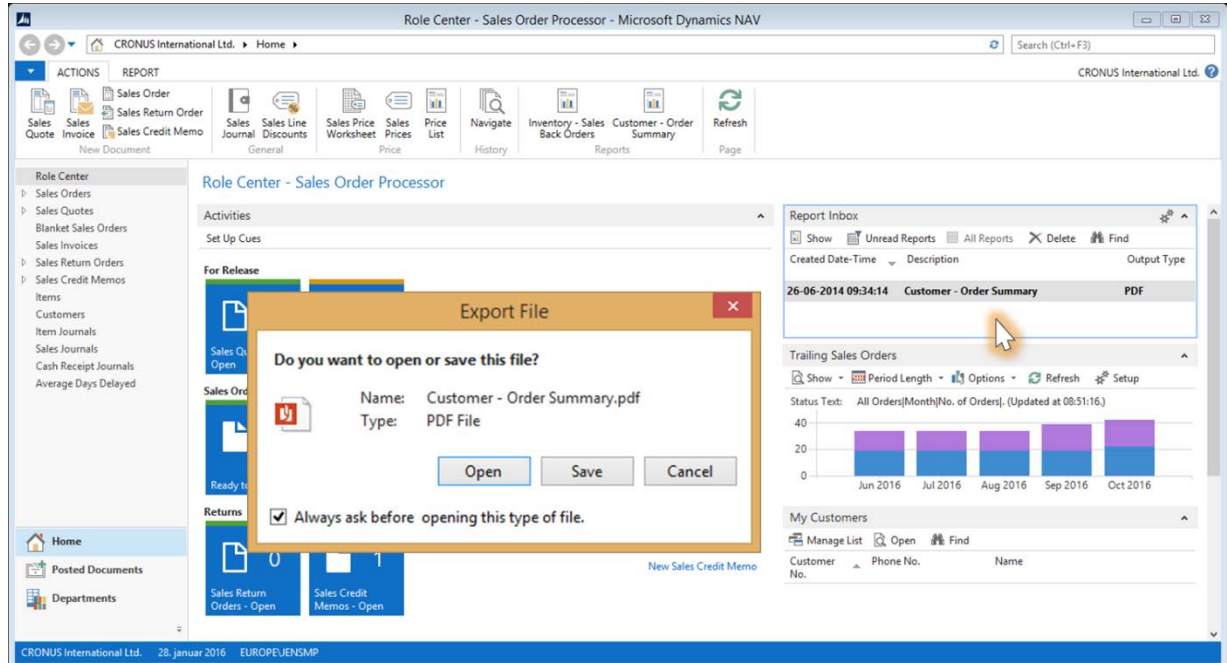
OK Cancel

6. Go to the **Report Inbox** on the Role Center and show that the report appears when it is finished running.
7. To view the report, select it in the **Report Inbox**, and then choose **Show**.

The **Report Inbox** part will update regularly. You can also force an update by pressing **F5** in the Role Center.

Unread reports are shown in bold

You can show the generated report by double-clicking the item or selecting **Show**.



Role Center - Sales Order Processor - Microsoft Dynamics NAV

CRONUS International Ltd. Home

Search (Ctrl+F3)

CRONUS International Ltd.

ACTIONS REPORT

Sales Order Sales Quote Sales Invoice Sales Return Order Sales Credit Memo

Sales Journal Sales Line Discounts Sales Price Worksheet Sales Prices Price List

Navigate Inventory - Sales Back Orders Customer - Order Summary Refresh

New Document General Reports Page

Role Center - Sales Order Processor

Activities Set Up Cues

For Release

Sales Order Open

Ready to

Returns

Sales Return Orders - Open Sales Credit Memos - Open

New Sales Credit Memo

Export File

Do you want to open or save this file?

Name: Customer - Order Summary.pdf

Type: PDF File

Open Save Cancel

Always ask before opening this type of file.

Report Inbox

Show Unread Reports All Reports Delete Find

Created Date-Time	Description	Output Type
26-06-2014 09:34:14	Customer - Order Summary	PDF

Trailing Sales Orders

Show Period Length Options Refresh Setup

Status Text: All Orders|Month|No. of Orders|. (Updated at 08:51:16.)

40

20

0

Jun 2016 Jul 2016 Aug 2016 Sep 2016 Oct 2016

My Customers


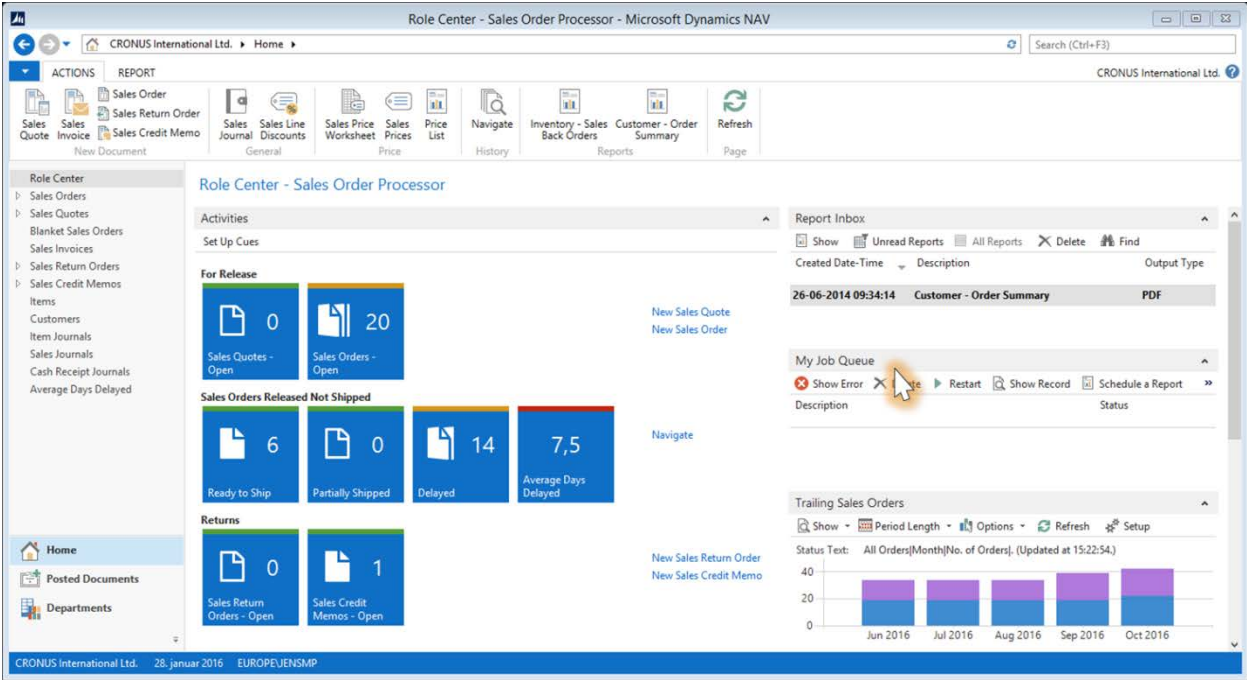
Manage List Open Find

Customer No.	Phone No.	Name

CRONUS International Ltd. 28. januar 2016 EUROPEJENSMP

Lab 4 — When a scheduled report fails

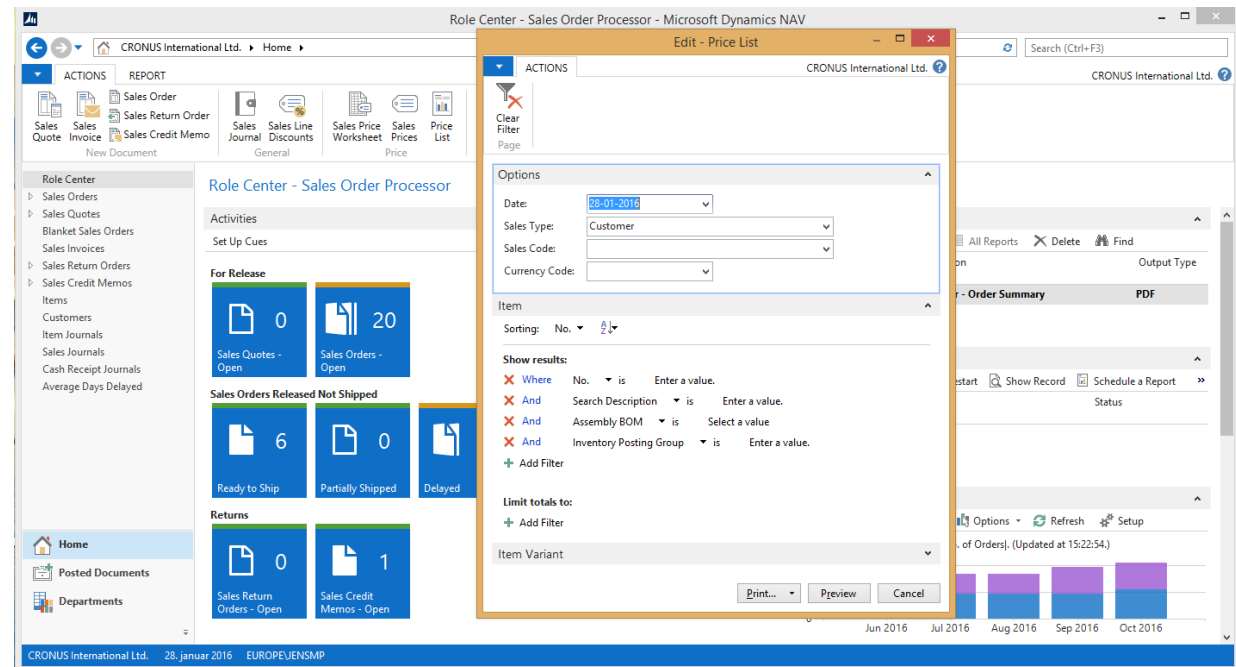
Lab story: Stan schedules a report to be run later, but an error occurred during execution. Stan investigates why the report did not generate an output and realizes that the parameters that were used to run the report are invalid. He changes the parameters, and then reruns the report.

What to do	What to say	Screenshots
<ol style="list-style-type: none"> Open the Role Center. On the Application menu , choose Customize, and then Customize This Page. In the Available Parts pane, select My Job Queue, and then choose the Add button. To move the My Job Queue part below the Report Inbox in the Role Center layout pane, select it and then use the Move buttons In the Role Center, go to the My Job Queue part. 	<p>When the job queue is in use, it is useful to have easy access to the state of the jobs running.</p> <p>The reason for having the Report Inbox and My Job Queue parts is that the job queue can be used for tasks other than running reports.</p> <p>Note, that the job queue can be accessed directly from the Report Inbox by choosing the Show Queue action. So, if there is a need to save space on the Role Center real estate, you do not have to include the My Job Queue part.</p>	 <p>The screenshot shows the Microsoft Dynamics NAV Role Center interface for 'Sales Order Processor'. The 'My Job Queue' section is visible, containing a 'Show Error' button with a red 'X' icon, which is highlighted by a mouse cursor. Other buttons in the queue include 'Restart', 'Show Record', and 'Schedule a Report'. The interface also displays various reports and statistics, such as 'Report Inbox' with a 'Customer - Order Summary' PDF report, and 'Trailing Sales Orders' with a bar chart showing data from June to October 2016.</p>

6. On the Role Center, on the **Reports** tab, choose **Price List**.
7. In the **Sales Type** field select **Customer**.
8. To schedule the report to run later, choose the **Print** button, then select **Schedule**.
9. In the **Schedule a Report** window, leave the default values in fields and choose the **OK** button.

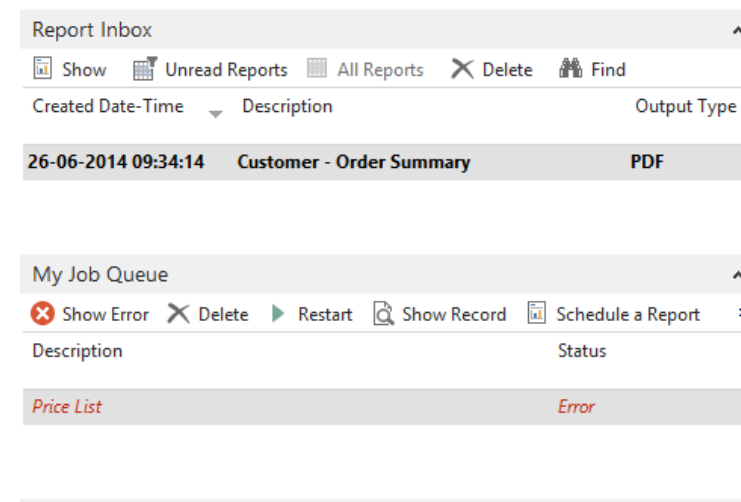
Some reports will generate an error when they are run.

In this example, you must either specify a customer number or select **All Customers** in the **Sales Type** field.



10. When the error shows up in the **My Job Queue** part, select the error, and then choose **Show Error**.
11. Read the error message, and then choose the **OK** button to close it.

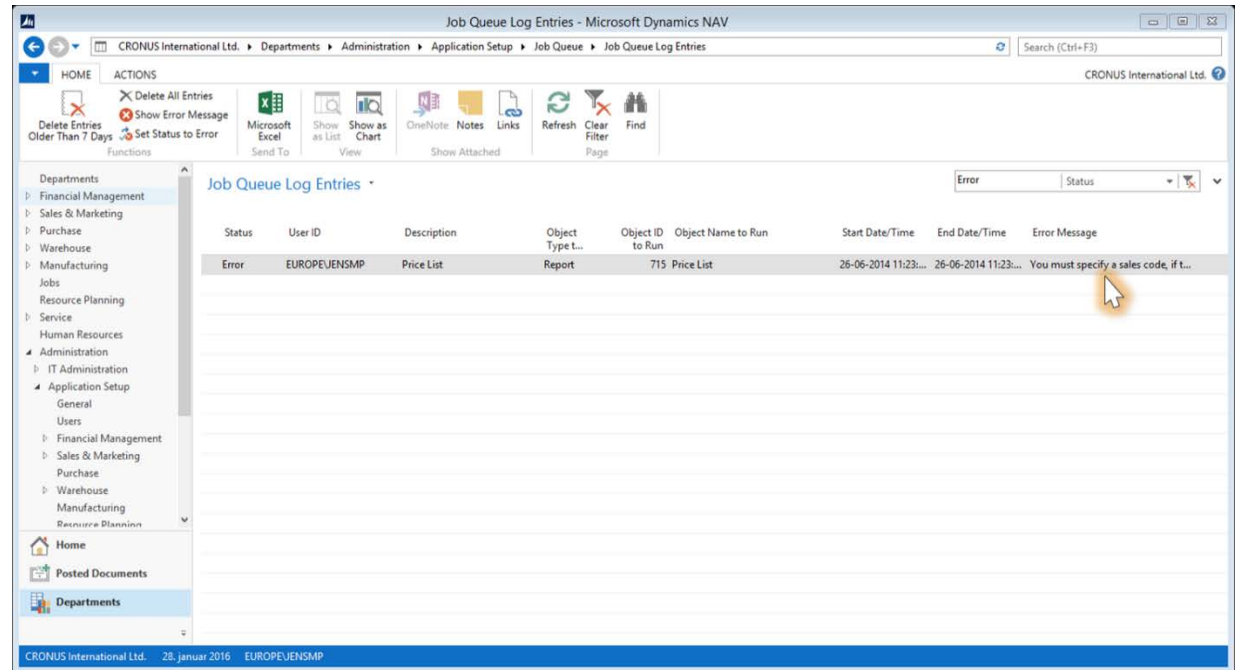
The **My Job Queue** part will update regularly. You can also force an update by pressing **F5** in the Role Center.



Description	Status
Price List	Error

12. Open the **Job Queue Log Entries** page.
13. Filter the list to display entries whose **Status** is **Error**.
14. To view the error message, point to the **Error message** field for the entry, or, select the entry, and then on the **Home** tab, choose **Show Error Message**.

Optional: Going to this page is only needed if you want to know more about when the job was started or if you need to look at failed jobs for other users.



15. Return to the Role Center, and then run the **Price List** report again.
16. On the report request window, set the **Sales Type** field to **All Customers**, choose **Print**, and then choose **Schedule**.
17. In the **Schedule a Report** window, leave the default values in fields and choose

Use the error message information to rerun the report with different parameters.

<p>the OK button.</p> <p>18. In the Report Inbox on the Role Center, view the completed report.</p>		
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Module 12 – Queries

1. Queries - SELECT DISTINCT

Source: SELECT DISTINCT with Queries, Bogdana Botez - Microsoft Development Center Copenhagen, Microsoft Dynamics NAV Community, Design Patterns - <https://community.dynamics.com/nav/w/designpatterns/152.select-distinct-with-queries>

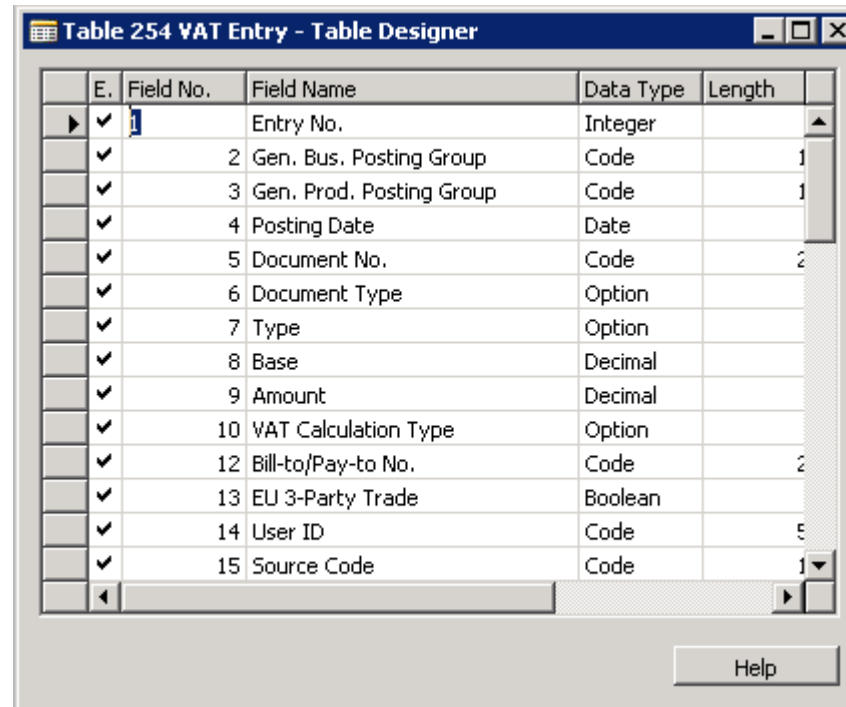
SELECT DISTINCT with Queries

When working with tables, sometimes a developer needs to perform a SELECT DISTINCT (also known as SELECT UNIQUE) from a table. As NAV does not provide this out of the box, we present below a way to select unique records by using queries.

Problem statement

Let's consider the VAT Entry table.

The goal is to select one line for each separate document that produced VAT Entries. In other words, we want records grouped by **Type**, **Document Type** and **Document No.**. However, if there are multiple lines with the same value of the triad **Type**, **Document Type** and **Document No.** in the **VAT Entry** table, we only want to see one of them.



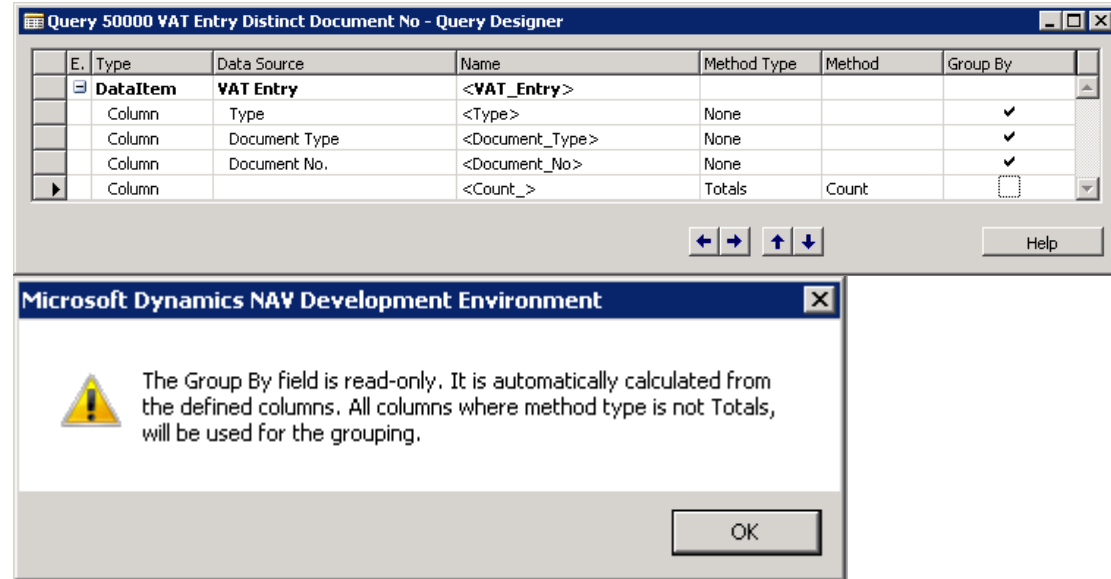
E.	Field No.	Field Name	Data Type	Length
▶	1	Entry No.	Integer	
✓	2	Gen. Bus. Posting Group	Code	1
✓	3	Gen. Prod. Posting Group	Code	1
✓	4	Posting Date	Date	
✓	5	Document No.	Code	2
✓	6	Document Type	Option	
✓	7	Type	Option	
✓	8	Base	Decimal	
✓	9	Amount	Decimal	
✓	10	VAT Calculation Type	Option	
✓	12	Bill-to/Pay-to No.	Code	2
✓	13	EU 3-Party Trade	Boolean	
✓	14	User ID	Code	5
✓	15	Source Code	Code	1

Solution

Create a new query object **VAT Entry Distinct Document No.**, with a single DataItem sourced from **VAT Entry** table. Add the three desired group-by fields **Type**, **Document Type** and **Document No.** as columns.

To enable grouping, add one more column, with **Method Type = Totals**. This will automatically set the **Group By** checkbox to TRUE on the three precedent fields.


Note that the **Group By** field is read-only and trying to set it by hand will clarify that:



The screenshot shows two windows from Microsoft Dynamics NAV. The top window is the 'Query Designer' for a query named 'Query 50000 VAT Entry Distinct Document No'. It displays a table with columns: E., Type, Data Source, Name, Method Type, Method, and Group By. The table contains four rows: a DataItem row for 'VAT Entry', and three Column rows for 'Type', 'Document Type', and 'Document No.'. The 'Group By' column has checkboxes checked for the three column rows. The bottom row is a Totals row with 'Totals' in the Method Type column and 'Count' in the Method column. The bottom window is the 'Microsoft Dynamics NAV Development Environment' showing a warning message: 'The Group By field is read-only. It is automatically calculated from the defined columns. All columns where method type is not Totals, will be used for the grouping.' with an 'OK' button.

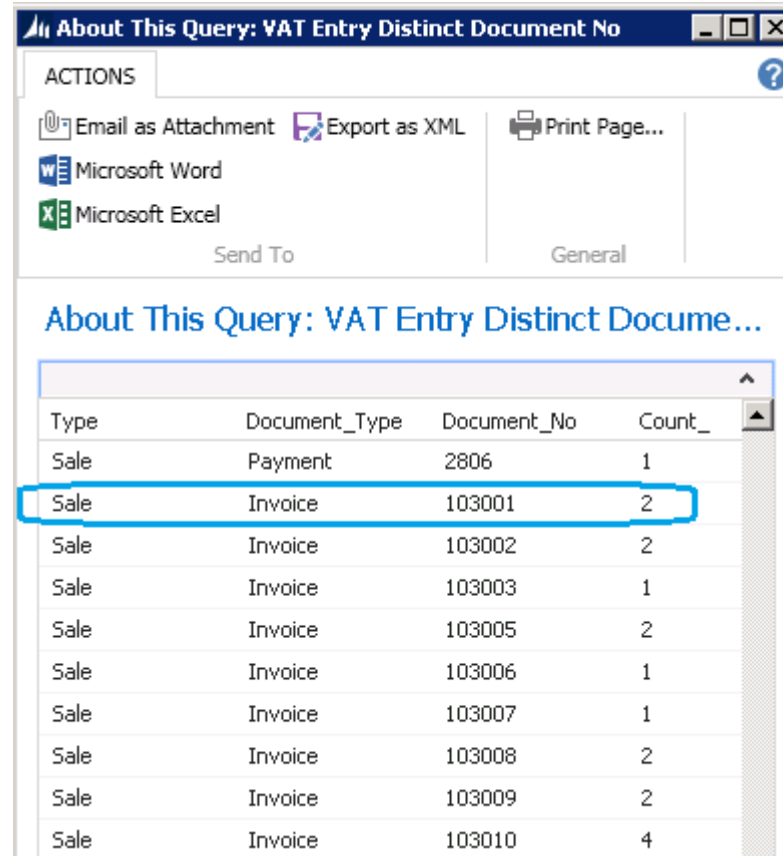
E.	Type	Data Source	Name	Method Type	Method	Group By
	DataItem	VAT Entry	<VAT_Entry>			
	Column	Type	<Type>	None		<input checked="" type="checkbox"/>
	Column	Document Type	<Document_Type>	None		<input checked="" type="checkbox"/>
	Column	Document No.	<Document_No>	None		<input checked="" type="checkbox"/>
	Column		<Count_>	Totals	Count	<input type="checkbox"/>

Microsoft Dynamics NAV Development Environment

 The Group By field is read-only. It is automatically calculated from the defined columns. All columns where method type is not Totals, will be used for the grouping.

OK

Running the query yields a single record per document. You can notice in the second line below for example, how the sales invoice number 103001 had 2 VAT Entries, but it shows up only once in the query:



The screenshot shows a window titled "About This Query: VAT Entry Distinct Document No". It contains an "ACTIONS" section with options like "Email as Attachment", "Export as XML", "Print Page...", "Microsoft Word", and "Microsoft Excel". Below this is a table with the following data:

Type	Document_Type	Document_No	Count_
Sale	Payment	2806	1
Sale	Invoice	103001	2
Sale	Invoice	103002	2
Sale	Invoice	103003	1
Sale	Invoice	103005	2
Sale	Invoice	103006	1
Sale	Invoice	103007	1
Sale	Invoice	103008	2
Sale	Invoice	103009	2
Sale	Invoice	103010	4

2. Usage of Queries with temporary table – Page

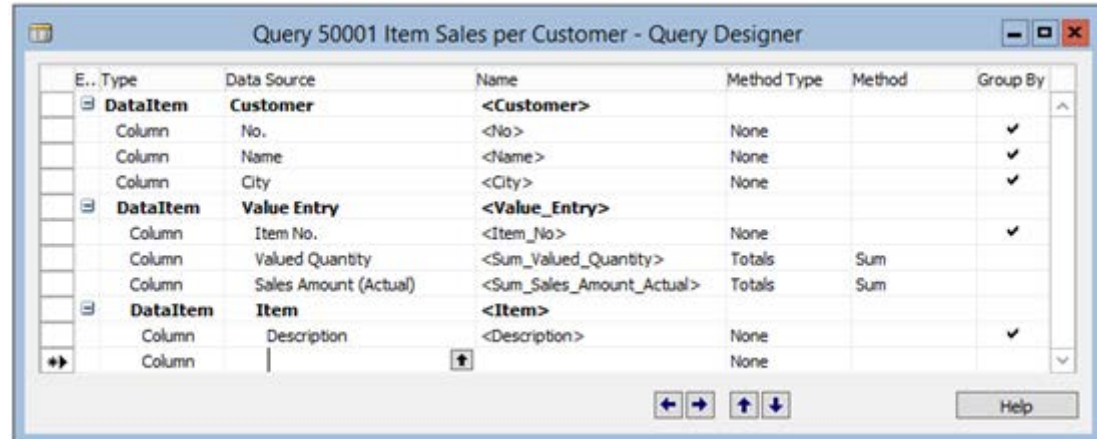
Source: Using Queries in Pages & Reports - Mark Brummel, NAV Skills | Brummel Dynamics Services B.V., <http://nav-skills.com/2013/09/10/tip-35-using-queries-in-pages-reports/>

In order to be able to use Query as a source for Page object developer has to do following:

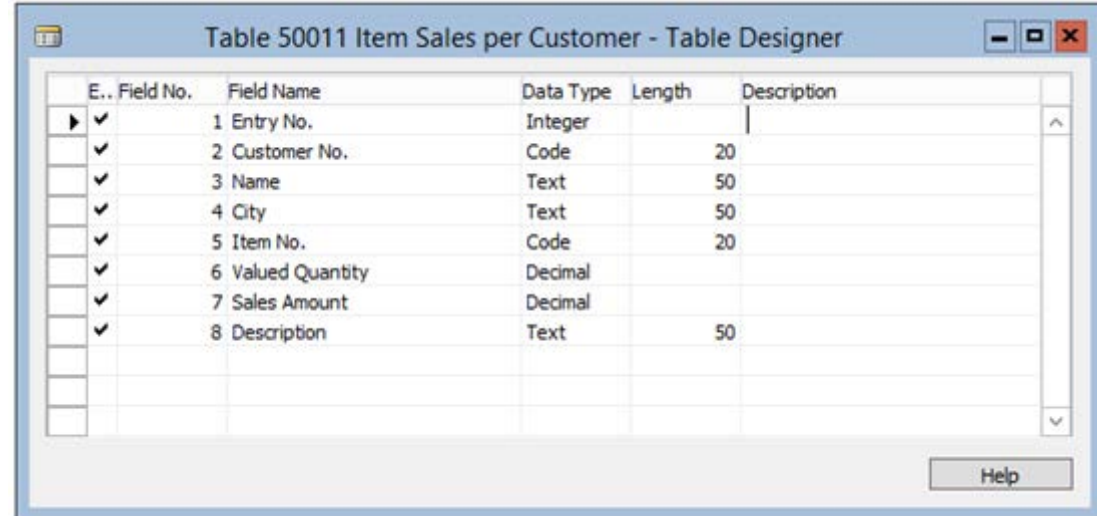
- Create Query object, for example as displayed.
- Create Table object with same fields as Query object.
- Create Page object using the Table as source (SourceTable property).
- Change Page property SourceTableTemporary to Yes.
- Modify OnOpenPage trigger to execute the query and fill result of the query to temporary table.

Create Table object with same fields as Query object and add field for primary key, for example Entry No.

Temporary tables do not need to be in customer licence, therefore there is no need to buy an extra table into customer licence.

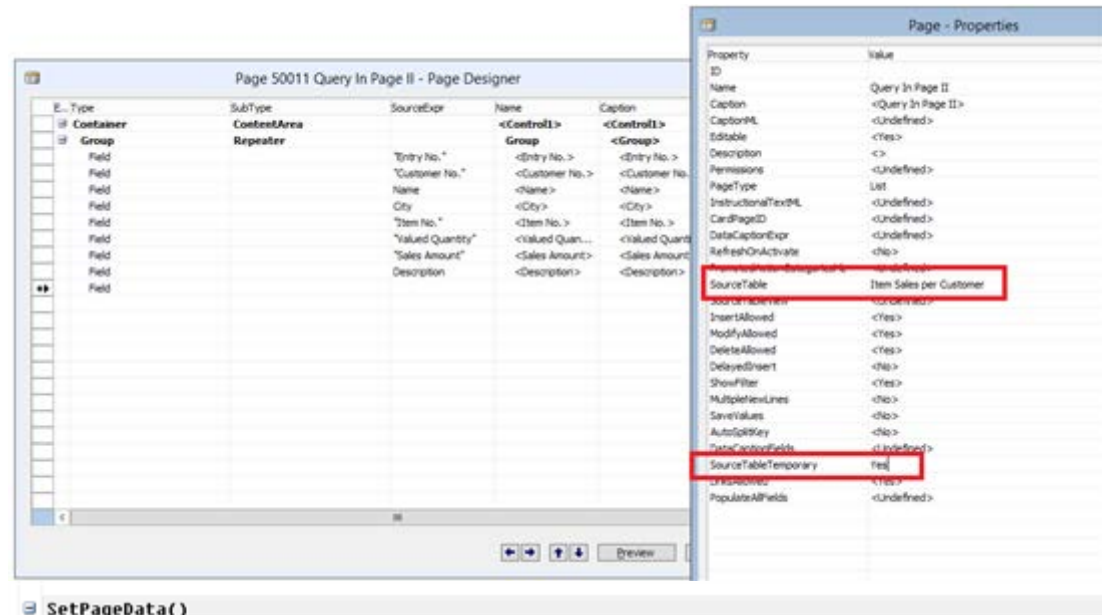


E..	Type	Data Source	Name	Method Type	Method	Group By
[-]	DataItem	Customer	<Customer>			
	Column	No.	<No>	None		✓
	Column	Name	<Name>	None		✓
	Column	City	<City>	None		✓
[-]	DataItem	Value Entry	<Value_Entry>			
	Column	Item No.	<Item_No>	None		✓
	Column	Valued Quantity	<Sum_Valued_Quantity>	Totals	Sum	
	Column	Sales Amount (Actual)	<Sum_Sales_Amount_Actual>	Totals	Sum	
[-]	DataItem	Item	<Item>			
	Column	Description	<Description>	None		✓
	Column			None		



E..	Field No.	Field Name	Data Type	Length	Description
▶	1	Entry No.	Integer		
✓	2	Customer No.	Code	20	
✓	3	Name	Text	50	
✓	4	City	Text	50	
✓	5	Item No.	Code	20	
✓	6	Valued Quantity	Decimal		
✓	7	Sales Amount	Decimal		
✓	8	Description	Text	50	

Create Page object using the Table as SourceTable and change Page property SourceTableTemporary to Yes.



Property	Value
ID	
Name	Query In Page II
Caption	<Query In Page II>
CaptionML	<Undefined>
Editable	<Yes>
Description	< >
Permissions	<Undefined>
PageType	List
InstructionalTextML	<Undefined>
CardPageID	<Undefined>
DataCaptionExpr	<Undefined>
RefreshOnActivate	<No>
SourceTable	Item Sales per Customer
SourceTableTemporary	Yes
SourceTableML	<Undefined>
InsertAllowed	<Yes>
ModifyAllowed	<Yes>
DeleteAllowed	<Yes>
DelayedInsert	<No>
ShowFilter	<Yes>
MultipleViewLines	<No>
SaveValues	<No>
AutoSplitKey	<No>
DataCaptionFields	<Undefined>
PopulateAllFields	<Undefined>

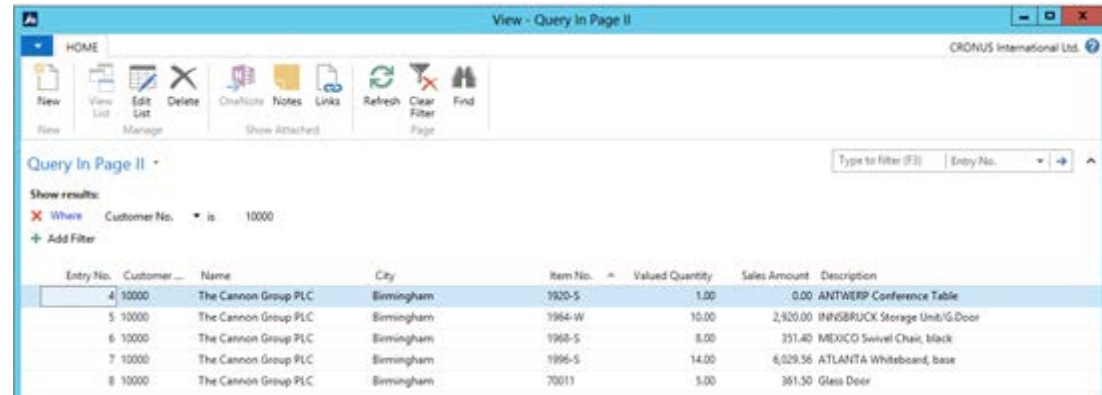
Create function to execute query and fill result of the query to temporary table. Modify OnOpenPage trigger to execute new function.

```

SetPageData()
ItemSalesPerCust.OPEN;
WHILE ItemSalesPerCust.READ DO BEGIN
    NextRowNo := NextRowNo + 1;
    "Entry No." := NextRowNo;
    "Customer No." := ItemSalesPerCust.No;
    Name := ItemSalesPerCust.Name;
    City := ItemSalesPerCust.City;
    "Item No." := ItemSalesPerCust.Item_No;
    "Valued Quantity" := ItemSalesPerCust.Sum_Valued_Quantity;
    "Sales Amount" := ItemSalesPerCust.Sum_Sales_Amount_Actual;
    Description := ItemSalesPerCust.Description;
    INSERT;
END;

FINDFIRST;
    
```

Page with dataset from Query object.



The screenshot shows the 'View - Query in Page II' window in Microsoft Dynamics NAV 2015 Developer. The window title is 'View - Query in Page II' and the company name is 'CRONUS International Ltd.'. The interface includes a 'HOME' ribbon with various action buttons like 'New', 'View List', 'Edit List', 'Delete', 'Show Attached', 'Refresh', 'Clear Filter', and 'Find'. Below the ribbon, there is a search bar with the text 'Type to filter (F3)' and a dropdown menu for 'Entry No.'. A filter is applied: 'Where Customer No. is 10000'. Below the filter, there is a table with the following data:

Entry No.	Customer No.	Name	City	Item No.	Valued Quantity	Sales Amount	Description
4	10000	The Cannon Group PLC	Birmingham	1920-S	1.00	0.00	ANTWERP Conference Table
5	10000	The Cannon Group PLC	Birmingham	1964-W	10.00	2,920.00	INNSBRUCK Storage Unit/G Door
6	10000	The Cannon Group PLC	Birmingham	1960-S	8.00	351.40	MEXICO Swivel Chair, black
7	10000	The Cannon Group PLC	Birmingham	1996-S	14.00	6,029.56	ATLANTA Whiteboard, base
8	10000	The Cannon Group PLC	Birmingham	70011	5.00	361.50	Glass Door

3. Usage of Queries with temporary table – Report

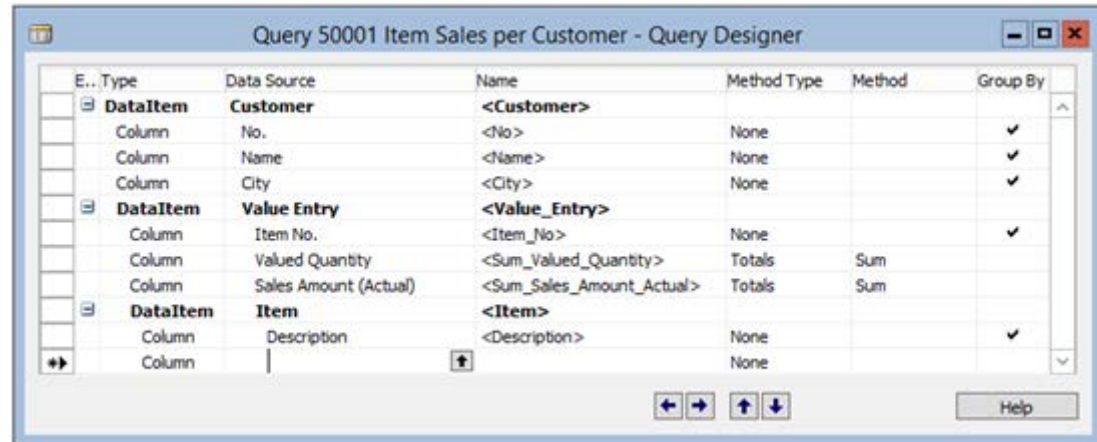
Source: Report Temporary Property - Mark Brummel, NAV Skills | Brummel Dynamics Services B.V., <http://nav-skills.com/2015/03/24/tip-45-nav2015-report-temporary-property/>

In order to be able to use Query as a source for Report object developer has to do following:

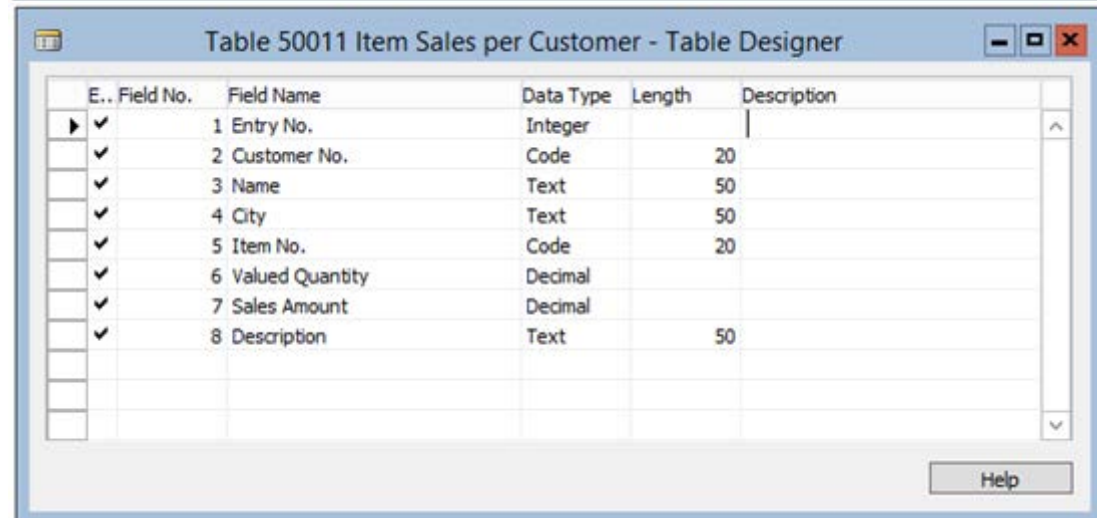
- Create Query object, for example as displayed.
- Create Table object with same fields as Query object.
- Create Report object using the Table as source (DataItemTable property).
- Change DataItem property Temporary to Yes.
- Modify OnPreDataItem trigger to execute the query and fill result of the query to temporary table.

Create Table object with same fields as Query object and add field for primary key, for example Entry No.

Temporary tables do not need to be in customer licence, therefore there is no need to buy an extra table into customer licence.

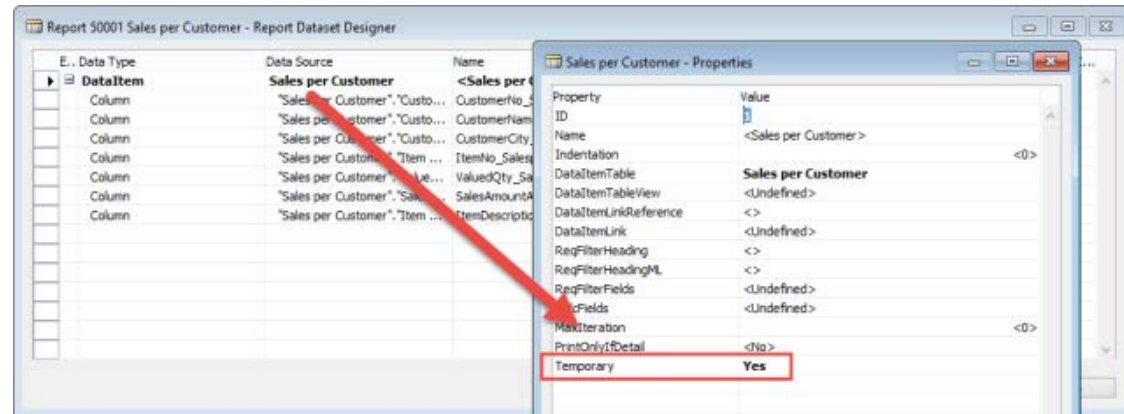


E.. Type	Data Source	Name	Method Type	Method	Group By
DataItem	Customer	<Customer>			
Column	No.	<No>	None		✓
Column	Name	<Name>	None		✓
Column	City	<City>	None		✓
DataItem	Value Entry	<Value_Entry>			
Column	Item No.	<Item_No>	None		✓
Column	Valued Quantity	<Sum_Valued_Quantity>	Totals	Sum	
Column	Sales Amount (Actual)	<Sum_Sales_Amount_Actual>	Totals	Sum	
DataItem	Item	<Item>			
Column	Description	<Description>	None		✓
Column			None		

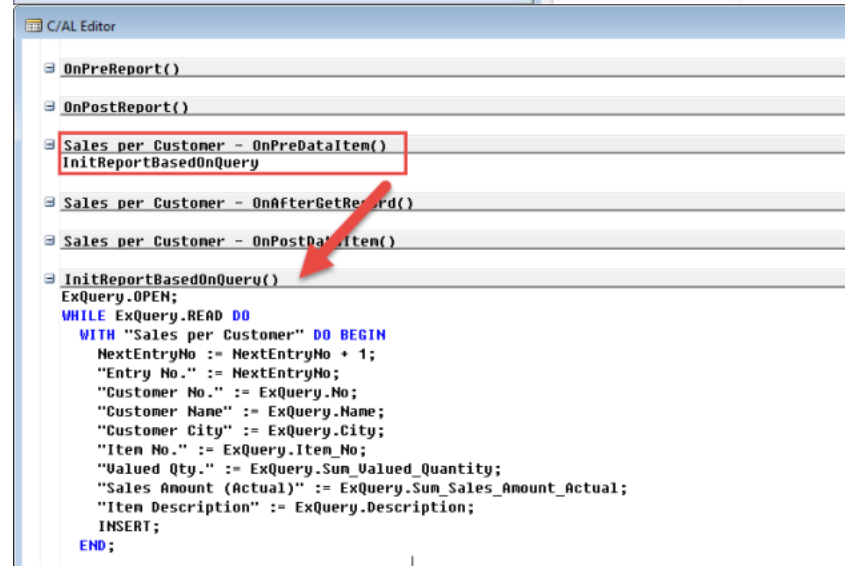


E.. Field No.	Field Name	Data Type	Length	Description
✓ 1	Entry No.	Integer		
✓ 2	Customer No.	Code	20	
✓ 3	Name	Text	50	
✓ 4	City	Text	50	
✓ 5	Item No.	Code	20	
✓ 6	Valued Quantity	Decimal		
✓ 7	Sales Amount	Decimal		
✓ 8	Description	Text	50	

Create Report object using the Table as Dataltem (DataltemTable property) and change Dataltem property Temporary to Yes.



Create function to execute query and fill result of the query to temporary table. Modify OnPreDataltem trigger to execute new function.



Report with dataset from Query object.

Print Preview

Sales per Customer

1 of 3 100% Find Next

No.	Name	City	Item No.	Description	Quantity	Actual Sales Amount
01445544	Progressive Home Furnishings	Chicago	1928-S	AMSTERDAM Lamp	-28	498,4
01445544	Progressive Home Furnishings	Chicago	1972-S	MUNICH Swivel Chair, yellow	-2	123,3
01445544	Progressive Home Furnishings	Chicago	1988-W	CALGARY Whiteboard, yellow	-2	877,32
10000	The Cannon Group PLC	Birmingham	1920-S	ANTWERP Conference Table	-1	0
10000	The Cannon Group PLC	Birmingham	1964-W	INNSBRUCK Storage Unit/G Door	-10	2920
10000	The Cannon Group PLC	Birmingham	1968-S	MEXICO Swivel Chair, black	-8	351,4
10000	The Cannon	Birmingham	1996-S	ATLANTA	-14	6029,56

Development Environment Solution Development in Microsoft Dynamics NAV 2015

Module 6 – Reporting

1. Built-in Report Layouts

Report object can use two types of layout:

- RDLC
- Word

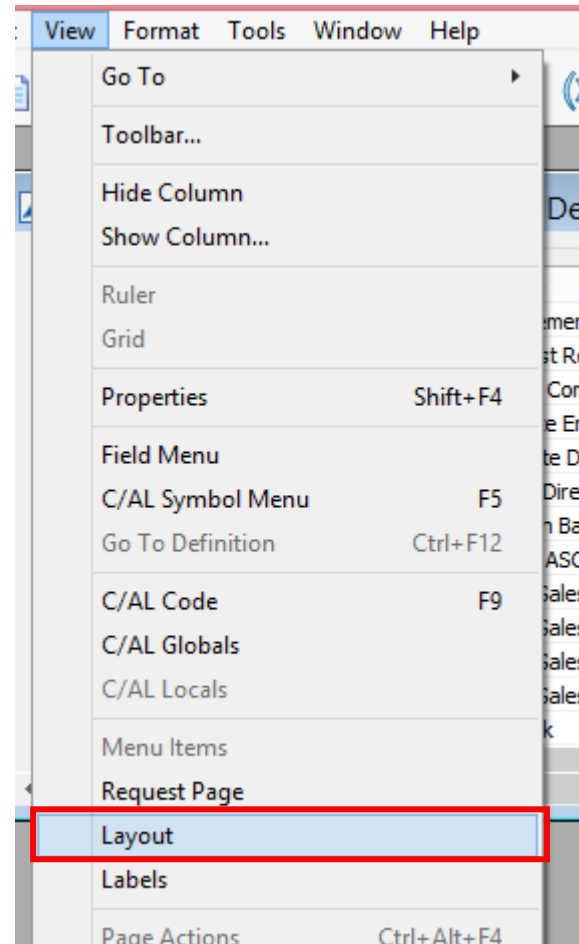
These built-in layouts are part of definition of the report object. If developer export the definition of report object to fob or txt file RDLC and Word layout are included.

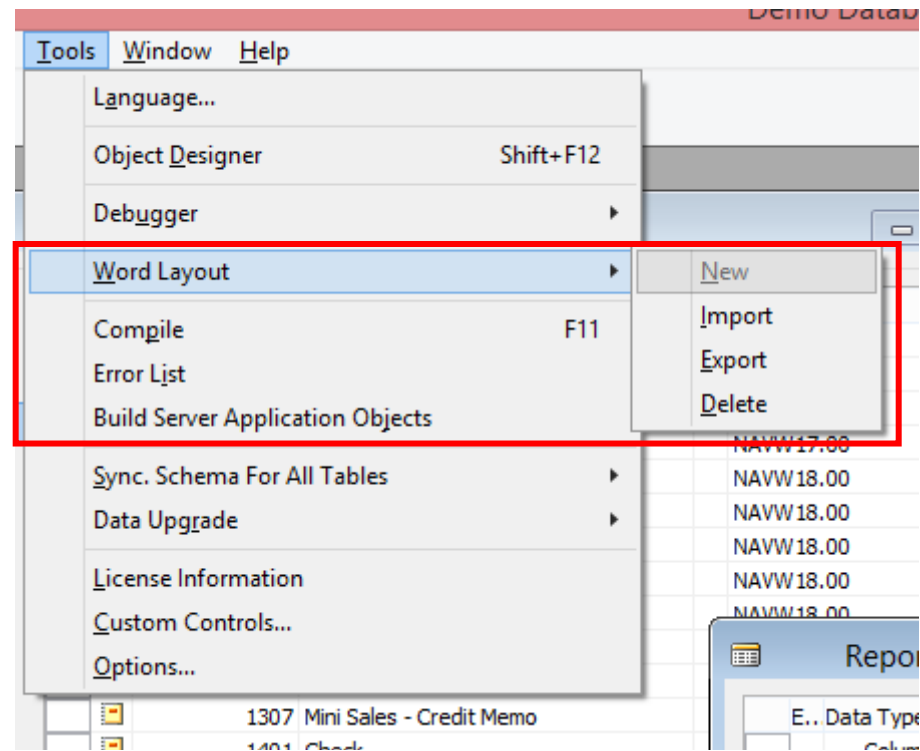
Report object can have:

- 1 built-on RDLC layout
- 1 built-on Word layout

By default, the built-in RDLC layout will be used.

Users can specify whether to use RDLC or Word built-in layout. Users can also create custom layout based on built-in layouts.





2. Change Default Layout

Source: How to: Change Which Layout is Currently Used on a Report Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn789629\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789629(v=nav.80).aspx)

Depending on the layouts that are available for a report, you can choose to use a built-in RDLC report layout, a built-in Word report layout, or a custom layout. User can change the layout using page **Report Layout Selection**.

To change the layout that is used on a report:

1. In the **Search** box, enter **Report Layout Selection**, and then choose the related link.
The **Report Layout Selection** window lists all the reports that are available for the company that is specified in the Company field at the top of the window. The Selected Layout field specifies the layout that is currently used on the report.
2. Set the **Company** field at the top of the window to the company that includes the report.
3. To change the layout that is used by a report, in the row for the report in the list, set the **Selected Layout** field to one of the following options:

Option	Description
RDLC (built-in)	Uses the built-in RDLC report layout on the report.
Word (built-in)	Uses the built-in Word report layout on the report.
Custom	<p>Uses a custom layout on the report.</p> <p>You can see which custom layouts are available for the report in the Report Layouts Part FactBox. If there are no custom layouts for the report, then you will have to create one first.</p> <p>If you choose this option, go to the next procedure to specify the custom layout that you want to use.</p>

3. Create a Custom Report Layout

How to: Create a Custom Report Layout, Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn757308\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn757308(v=nav.80).aspx)

By default, a report will have a built-in report layout, which can be either an RDLC report layout or Word report layout, or both. You cannot modify built-in layouts. However, you can create your own custom layouts that enable you to change the appearance of report when it is viewed, printed or saved. You can create multiple custom report layouts for the same report, and then switch the layout that is used by a report as needed.

To create a custom layout, you can either make a copy of an existing custom layout or add a new custom layout, which in most cases is based on a built-in layout. When you add a new custom layout, you can choose to add an RDLC report layout type, Word report layout type, or both. The new custom layout will automatically be based on the built-in layout for the report if one is available. If there is no built-in layout for the type, then a new blank layout is a created, which you will have to modify and design from scratch.

To create a custom layout:

1. In the **Search** box of the Microsoft Dynamics NAV Windows client or Microsoft Dynamics NAV Web client, enter **Report Layout Selection**, and then choose the related link.
The **Report Layout Selection** window lists all the reports that are available in the company that is specified in the **Company** field at the top of the window.
2. Set the **Company** field to the company in which you want to create the report layout.
3. Select the row for the report that you want to create the layout for, and then on the **Home** tab, in the **Process** group, choose **Custom Layouts**.
The **Custom Report Layouts** window appears and lists all the custom layouts that are available for the selected report.
4. If you want to create a copy of an existing custom layout, select the existing custom layout in the list, and then on the **Home** tab, in the **New** group, choose **Copy**.
The copy of the custom layout appears in the **Custom Report Layouts** window and has the words **Copy of** in the **Description** field.
5. If you want to add a new custom layout that is based on a built-in layout, do the following:
 - a. On the **Home** tab, in the **New** group, choose **New**.
The **Insert Built-in Layout for a Report** window appears. The **ID** and **Name** fields are automatically filled in.
 - b. To add a custom Word report layout type, then select the **Insert Word Layout** check box.
 - c. To add a custom RDLC report layout type, then select the **Insert RDLC Layout** check box.
 - d. Choose the **OK** button.
The new custom layouts appear in the **Custom Report Layouts** window. If a new layout is based on a built-in layout, then it has the words **Copy of a Built-in Layout** in the **Description** field. If there was no built-in layout for the report, then the new layout has the words **New Layout** in the **Description** field, which indicates that custom layout is blank.
6. By default, the **Company Name** field is blank, which means that the custom layout will be available for the report in all companies. To make the custom layout

available in a specific company only, on the **Home** tab, in the **Manage** group, choose **Edit**, and then set the **Company Name** field to the company that you want.

Module 9 - Role Tailoring

1. Enhanced Cues

Source: Microsoft Dynamics NAV 2015 - Enhanced Cues - Jonathan Davis (Program Manager), August 2014, Microsoft

Enhanced Cues are special cue tiles that apply custom formatting to any computed numerical value such as the number of open sales invoices and a custom tile icon (or no icon).

Enhanced Cues can also show an indicator that changes colour based on the data values that the tile reflects. This provides a visual signal of the status of the data based on conditions for favourable and unfavourable thresholds. For example, the tile can show a red bar if the number of open sales invoices is less than 5.

The initial thresholds for the visual clues are set by an administrator or super user, but the end user can modify them to better fit their workflow or situation.

Features of enhanced cues:

- Show any computed value that can be calculated in Microsoft Dynamics NAV (not just counts).
- Support for integers and decimals.
- Automatic font scaling to support large numbers.
- Custom suffixes and prefixes (e.g. \$12M or -67%).
- Choose from a set of 20 new tile icons (or show no icon).
- Automatically apply visual clues with colour indicators linked to tile values.
- Tiles are configurable on a global, per-company or per-user basis.
- End-users can configure their own sentiments in the

Role Center - Small Business

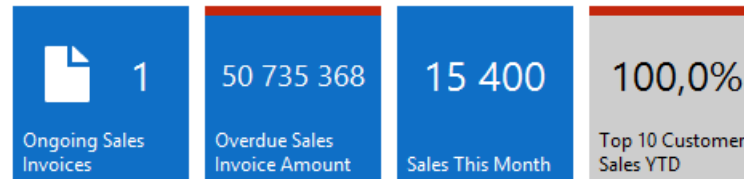
Activities

⚙️ Set Up Cues

Getting Started

[Manage Your Business](#)

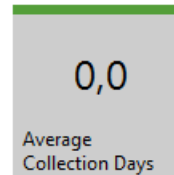
Sales



Purchases



Financial Performance

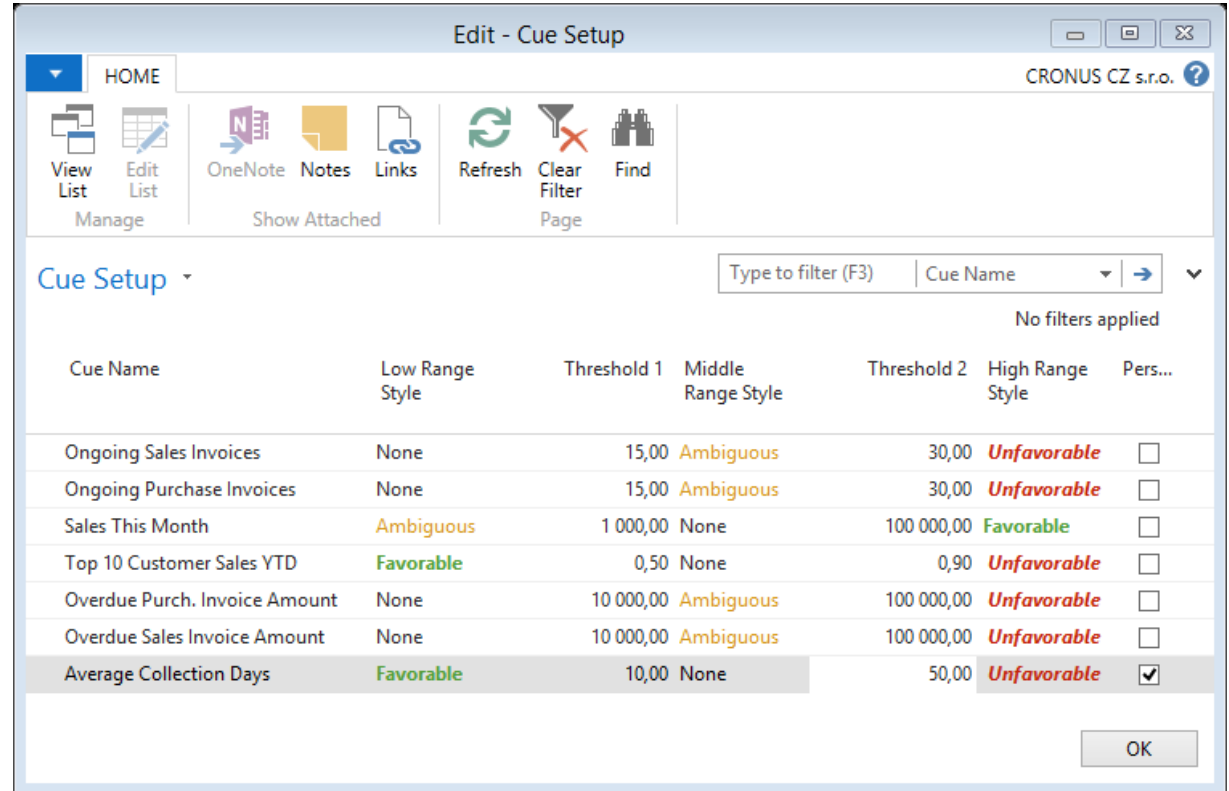


Microsoft Dynamics NAV Windows client or the Microsoft Dynamics NAV Web client.

To setup the cue stack for you as an individual user, do the following:

- Open the Role Centre, Activities part.
- Select the Set Up Cues item, above the Cue Stacks.
- Edit Cue Setup, modify values for Threshold 1 and Threshold 2 and decide what style to use, fields Low Range Style, Middle Range Style and High Range Style.

To setup the cue stack for your company as an Administrator, go to **Departments/Administration/Application Setup/General/Cue Setup** or search for Cue Setup.



The screenshot shows the 'Edit - Cue Setup' window. The title bar indicates the window name and standard window controls. Below the title bar is a ribbon with tabs for 'HOME' and 'CRONUS CZ s.r.o.'. The ribbon contains several groups of icons: 'Manage' (View List, Edit List), 'Show Attached' (OneNote, Notes, Links), and 'Page' (Refresh, Clear Filter, Find). Below the ribbon is a search bar with the text 'Type to filter (F3)' and a dropdown menu for 'Cue Name'. The main area displays a table of cue setups. The table has the following columns: Cue Name, Low Range Style, Threshold 1, Middle Range Style, Threshold 2, High Range Style, and Pers... The table contains the following data:

Cue Name	Low Range Style	Threshold 1	Middle Range Style	Threshold 2	High Range Style	Pers...
Ongoing Sales Invoices	None	15,00	Ambiguous	30,00	Unfavorable	<input type="checkbox"/>
Ongoing Purchase Invoices	None	15,00	Ambiguous	30,00	Unfavorable	<input type="checkbox"/>
Sales This Month	Ambiguous	1 000,00	None	100 000,00	Favorable	<input type="checkbox"/>
Top 10 Customer Sales YTD	Favorable	0,50	None	0,90	Unfavorable	<input type="checkbox"/>
Overdue Purch. Invoice Amount	None	10 000,00	Ambiguous	100 000,00	Unfavorable	<input type="checkbox"/>
Overdue Sales Invoice Amount	None	10 000,00	Ambiguous	100 000,00	Unfavorable	<input type="checkbox"/>
Average Collection Days	Favorable	10,00	None	50,00	Unfavorable	<input checked="" type="checkbox"/>

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

2. Formatting Cues

Source: How to: Set Up Coloured Indicators on Cues by Using the Style and StyleExpr Property, Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn789598\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789598(v=nav.80).aspx)

Set Up Coloured Indicators on Cues by Using the Style and StyleExpr Property

You can configure a cue with a coloured indicator that appears along its top border to provide a visual indication to users about the value of data in the cue. You can configure the indicator to behave in the following ways.

- The indicator has a static colour - in this case, the indicator appears with a specified colour at all times.
- The indicator changes colour conditionally, based on the data in the cue - this is the most typical behaviour. When the data in the cue hits a specified value, the indicator changes colour. There are 4 colours to choose from, which enables you to configure different colours for different data intervals.

You set up the indicator by using the **StyleExpr Property** and **Style Property** for the field that defines the cue and, in most cases, by adding C/AL code to the page object.

The following table describes the values of the **Style** property and the corresponding indicator colour. You will need to know these values for whichever behaviour that you implement.

Value	Colour
Standard	None (uses the background colour of cue)
Favourable	Green
Unfavourable	Red
Ambiguous	Yellow
Subordinate	Grey

Configuring Static Colour Indication on a Cue

Use the following procedure to configure a coloured indicator on the cue that appears at all times.

To configure a static colour on a cue:

1. Open the page in Page Designer.
2. Select the field that you want to format, and on the **View** menu, choose **Properties**.
3. Set the **Style** property value to one of the formats that are described in the preceding table.
4. Set the **StyleExpr** property value to **True**.

Configuring Conditional Colour Indication on a Cue

To configure the indicator to change colour conditionally based on the data in the cue field, you use a combination of C/AL code and the **StyleExpr** property and/or **Style** property. In the C/AL code of the page which contains the cue, you add code that evaluates the cue field's data and sets a variable based on the evaluation. A typical place to add the code is on **OnAfterGetRecord** trigger. The variable can have a data type of **Boolean**, **Codeunit**, or **Text**. You will use the variable on the **StyleExpr** property of the cue field to determine which colour to apply to the indicator. The data type that you use for the variable will depend on what you want to achieve, and it will also influence the configuration. The following table describes the differences when using a Boolean data type compared to a Text or Codeunit data type.

Variable Data Type	Description
Boolean	If you use a Boolean variable, you can only configure one colour condition for the cue. When the StyleExpr property set to a variable that has a Boolean data type, and the variable is true , then indicator uses the colour that is specified by Style property value.
Text or Codeunit	If you use a Text or Codeunit variable, you can configure up to four different colour conditions for the indicator. When the StyleExpr property is set to a variable of the Text or Codeunit data type, the Style property is not used. Instead, the variable must be explicitly set in C/AL code to one of the following values that specify the colour: Favourable , Unfavourable , Ambiguous , and Subordinate . These values correspond to the values of the Style property.

To configure colour indication by using a Boolean variable

1. Add C/AL code that evaluates the cue field data and sets a Boolean variable to **True** when the data meets the conditions for which you want to apply the indicator.
For example, **page 9060 SO Processor Activities** in the CRONUS International Ltd. demonstration database contains the cue field "**Sales Quotes - Open**". You want the indicator to turn red when the number of open sales quotes exceeds 10. To do this, you can add a variable called **ColorVar** that has the data type Boolean, and then add the following code to the **OnAfterGetRecord** trigger.

```
IF ("Sales Quotes - Open" > 10) THEN  
ColorVar := TRUE;
```

2. Set the cue field's **StyleExpr** property to the variable.
For the example in the step 1, you set the property to **ColorVar**.
3. Set the **Style** property on the cue field to the value that corresponds to the colour indication that you want.
For the example, you set the value **Unfavourable** to configure the colour to red.

To configure colour indication by using a Text or Codeunit variable

1. Add C/AL code that evaluates the cue field data and sets a Text or Codeunit variable to one of the following values for each condition that you want colour indication: **Favourable**, **Unfavourable**, **Ambiguous**, and **Subordinate**. For the corresponding colours for these values, see the table in the introduction of this topic

For example, page **9060 SO Processor Activities** in the CRONUS International Ltd. demonstration database contains the cue field "**Sales Quotes - Open**". You want the indicator to have the following colour conditions:

- Green when the number of open sales quotes is 10 or less
- Yellow when open sales quotes is greater than 10
- Red when open sales quotes is greater than 20

To do this, you can add a variable called **ColorVar** that has the data type Text or Codeunit, and then add the following code to the **OnAfterGetRecord** trigger.

```
IF ("Sales Quotes - Open" <= 10) THEN  
ColorVar := 'Favourable'  
ELSE IF("Sales Quotes - Open" > 20) THEN  
ColorVar := 'Unfavourable'  
ELSE ("Sales Quotes - Open")  
ColorVar := 'Ambiguous';
```

2. Set the cue field's **StyleExpr** property to the variable.
For the example in the step 1, you set the property to **ColorVar**.

3. Set Up an Image on a Cue

Source: How to: Set Up an Image on a Cue – Microsoft Developer Network, [https://msdn.microsoft.com/en-us/library/dn789627\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789627(v=nav.80).aspx)

When a field that defines the data in a cue has an **integer** data type, you can set up the cue to include an image.

To set up an image on the cue, you set the Image Property (Fields) of the field that defines the cue as described in the following procedure.

To set up an image on a cue in the development environment, open the page that contains the cue as follows:

- In Page Designer, select the field that defines the cue, and then on the View menu, choose Properties.
- In the Properties window, set the Image property as follows:
 - Choose the AssistEdit button in the Value field.
 - In the Image List window, select the image that you want to use for the cue.
 - If you do not want to include an image on the cue, then select None.
 - To view all the available action images, see Microsoft Dynamics NAV Icon Collection - [https://msdn.microsoft.com/en-us/library/dd568728\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dd568728(v=nav.80).aspx)
- Close the Properties window, and then save the page.

4. Lab - Using Query Object to Calculate the Cue Data

Source: Walkthrough: Creating a Cue Based on a Normal Field and a Query – Microsoft Developer Network, [https://msdn.microsoft.com/en-us/library/dn789551\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789551(v=nav.80).aspx)

This lab illustrates the following tasks:

- Creating a query object for calculating Cue data.
- Adding a field for a new Cue in an existing table, and adding C/AL code to the field to get the data from the query object.
- Adding a new Cue to an existing page for displaying the Cue in the Microsoft Dynamics NAV client.
- Formatting the data in the Cue.

Prerequisites:

- To complete this lab, you need Cue table 123456740 Seminar Cue and page 123456741 Seminar Manager Activities from lab 9.1. Create the Seminar Manager Role Center.

Story:

Viktor is a software developer who is working for CRONUS International Ltd. He has been asked to add a Cue to the Role Centers that shows the total sales for the month. To accomplish this, Viktor will create a Cue that is based on a query object that extracts the total sales for the month from table **21 Cust. Ledger Entry**. The company already has a table (**123456740 Seminar Cue**) and page (**123456741 Seminar Manager Activities**) on the Role Center. Viktor will add the new Cue to these objects.

To create a query for calculating the Cue data do the following:

1. In the Microsoft Dynamics NAV 2015 Development Environment, on the Tools menu, choose Object Designer, choose Query, and then choose New.
2. In Query Designer, on the first line, set Type column to **Dataltem**, and then set the **Data Source** column to **Cust. Ledger Entry** (table ID 21).
3. Under the **Dataltem**, add a **Filter** control for the **Document Type** field and a **Filter** control for **Posting Date** field of the **Cust. Ledger Entry** table. Then, add a Column control for **Sales (LCY)** field that uses a **Totals** method type to return a **Sum** from the table. The Query Designer will look similar to the following table.

Type	Data Source	Name	Method Type	Method
DatalItem	Cust. Ledger Entry	<Cust. Ledger Entry>		
Filter	Document Type	<Document Type>		
Filter	Posting Date	<Posting Date >		
Column	Sales (LYC)	<Sum_Sales_LCY>	Totals	Sum

4. Save the query as follows:
 - a. In the Save As window, in the ID field, enter an ID for the query object, such as 123456750. The ID must be in a valid range for your solution.
 - b. In the **Name** field, enter **Cust. Ledg. Entry Sales Query**.
 - c. Select the Compiled check box, and then choose the OK button.

Adding the Table Field for the Cue Data

Viktor will add a normal field to the table **123456740 Seminar Cue** for holding the Cue data. He will add a global function that returns the total amount of sales invoices for the current month from the query object that he created in the previous procedure.

To add a field for the Cue data

1. In the Microsoft Dynamics NAV 2015 Development Environment, open **table 123456740 Seminar Cue** from Object Designer.
2. Add a new field for the Cue. In the **Field Name**, enter **Sales This Month** and set the **Data type** to **Decimal**. This defines the Cue data field.

To add C/AL code to the table calculate the Cue data

1. On the View menu, choose C/AL code to open the C/AL code for the table.
2. Add a **global function** that is called **CalcSalesThisMonthAmount** as follows:
 - a. On the **View** menu, choose **C/AL Globals**.
 - b. On the **Functions** tab, in the **Name** column, enter **CalcSalesThisMonthAmount**. By default, all functions are set to local functions as specified by the Local Property, so you must change the function to be global as described in the following steps.
 - c. Select the new function, and then in the **Tools** menu, select **Properties**.
 - d. Set the **Local** property to **No**.
3. In the C/AL Globals window, select the new function, and then choose Locals. The C/AL Locals window appears. From her you will add a return value and variables.
4. On the **Return Value** tab, set **Name** field to **Amount** and the **Return Type** field to **Decimal**.
5. On the **Variables** tab, add two variables as shown in the following table:

Name	Data Type	Subtype
CustLedgerEntry	Record	Cust. Ledger Entry
CustLedgEntrySales	Query	Cust. Ledg. Entry Sales

6. In C/AL code, add the following code on the **CalcSalesThisMonthAmount** function:

```

CustLedgEntrySales.SETRANGE(Document_Type,CustLedgerEntry."Document Type"::Invoice);
CustLedgEntrySales.SETRANGE(Posting_Date,CALCDATE('<-CM>',WORKDATE),WORKDATE);
CustLedgEntrySales.OPEN;
IF CustLedgEntrySales.READ THEN
    Amount := CustLedgEntrySales.Sum_Sales_LCY;
  
```

7. To save and compile the table.

Adding the Cue to the Role Center Page

To display the Sales This Month Cue on the Role Center, Viktor adds a new field for the Cue to the existing **page 123456741 Seminar Manager Activities**.

To add the Sales This Month Cue to a page:

1. In Object Designer, open the **page 123456741 Seminar Manager Activities**. To add a Cue, you add **Field** control under a **CueGroup** control. For this lab, you will add the new Cue under the existing **CueGroup** control.
2. In a blank row under the existing **CueGroup** control, set the **Type** to **Field**, and then set the **SourceExpr** column to the "**Sales This Month**" field as follows.
 - a. Select the row, and then on the **View** menu, choose **Field Menu**. The **Field Menu** window opens and displays the list of available fields from the **Seminar Cue** table.
 - b. Select the **Sales This Month** field, and then choose the OK button. In the **Caption** field, enter **Sales This Month**. The Caption value defines the text that appears below the Cue.
3. Open the C/AL code for the page, and then add the following code to the **OnAfterGetRecord** trigger to assign the **Sales This Month** field to the **CalcSalesThisMonthAmount** function of **table 123456740 Seminar Cue**

```
"Sales This Month" := CalcSalesThisMonthAmount;
```

4. To set up a link (drill down) from the Cue to **page 25 Customer Ledger Entries**, do the following:
 - a. Select the **Sales This Month** field row, and then on the **View** menu, choose **Properties**.
 - b. In the **Properties** window, set the **DrillDownPageID** property to **Customer Ledger Entries** (ID 25) and choose the OK button.
 - c. Close the Properties window.
5. Save and compile the page.

The Cue is now available on the page. To view the page, in **Object Designer**, select the page **123456741 Seminar Manager Activities**, and then choose **Run**.

Formatting the Cue Data

Viktor wants to display the amount in the Cue so that it is preceded with "GBP", which indicates British Pound is the currency. Additionally, he does not want to display any decimal places. To achieve this, he sets the `AutoFormatType` Property and `AutoFormatExpr` Property of the Cue field on the page.

To change the data format:

- In Page Designer, to open the properties for the Cue field, select the field, and then on the **View** menu, choose **Properties**.
- In the **Properties** window, set the **AutoFormatType** property to **10**. This enables you to create a custom data format.
- Set the **AutoFormatExpr** property to the following text: 'GBP <precision,0:0><standard format,0>'
 - <precision,0:0> specifies not to display any decimals places.
 - <standard format,0> specifies to format the data according to standard format 0.
- Close the **Properties** windows, and then save and compile the page.

Module 10 – Interfaces

1. File Handling - 3tier Architecture

Source: Microsoft Development Network

In Microsoft Dynamics NAV, the business logic runs on the computer that is running Microsoft Dynamics NAV Server and not on the client. Files are created on Microsoft Dynamics NAV Server and not locally on the client computer.

Use **UPLOAD** Function (File) and **UPLOADINTOSTREAM** Function (File) to send a file from the client to Microsoft Dynamics NAV Server.

Use **DOWNLOAD** Function (File) and **DOWNLOADFROMSTREAM** Function (File) to send a file from Microsoft Dynamics NAV Server to the client.

Module 14 - Developing for the Microsoft Dynamics NAV Tablet Client

1. Tablet Client

Source: Microsoft Dynamics NAV 2015 for tablets – Business Value – Mike Borg Cardona (Program Manager), September 2014, Microsoft

Dynamics NAV for tablets (also referred as tablet client) allows users in small and mid-sized businesses to get access to the data they need from the device they prefer.

While the Microsoft Dynamics NAV Windows Client and Dynamics NAV Web Client are designed for mouse and keyboard interaction, Dynamics NAV for tablets has a modern, fast and fluid interface built exclusively for touch.

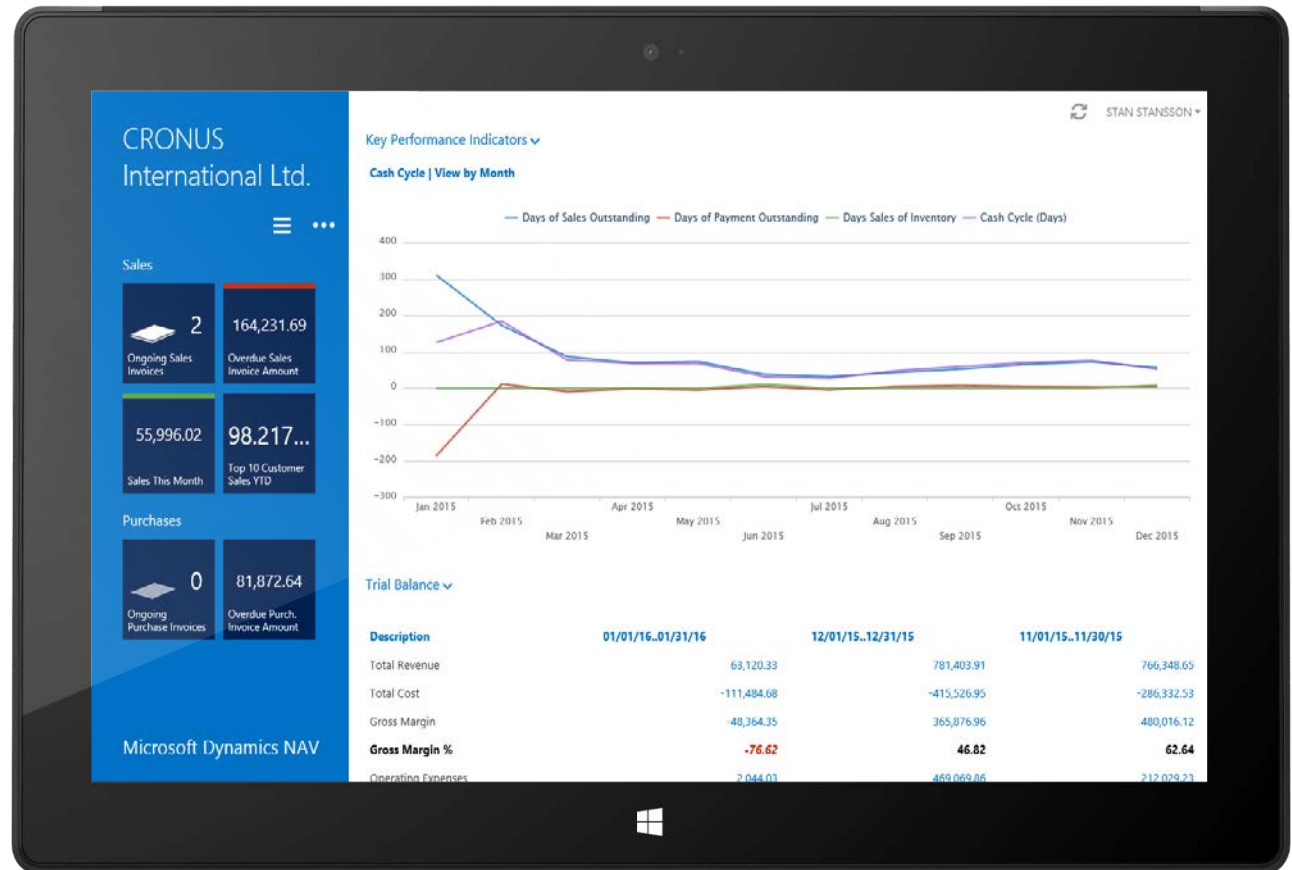
NAV Tablet client is available on 3 platforms – Microsoft Windows tablets, Apple iOS (iPads) and Android.

User can also run tablet client from web browser (Internet Explorer and Chrome for Windows).

Tablet client can be used only on tablets with 7" screen size or larger. Screen resolution has to be at least 960 x 510.

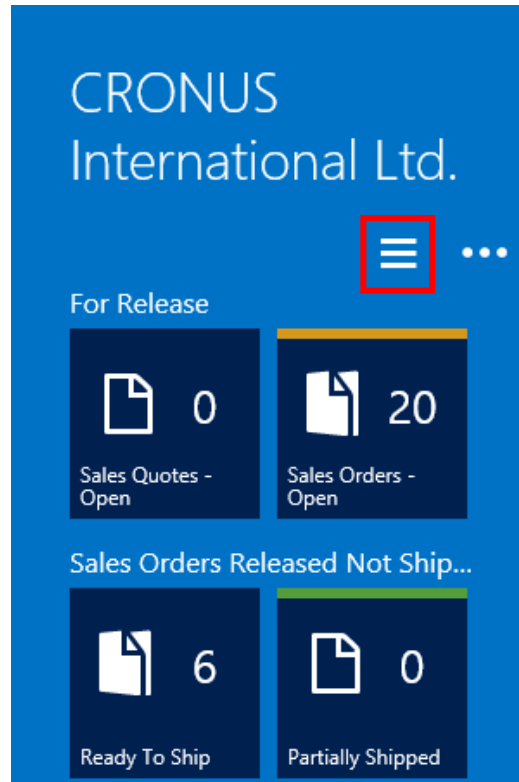
Microsoft Dynamics NAV for tablets does not provide the following capabilities:

- Offline reading and writing of data
- The ability to directly control device hardware such as GPS



Navigation pane

In order to access Navigation Pane user has to click three lines icon above cues.



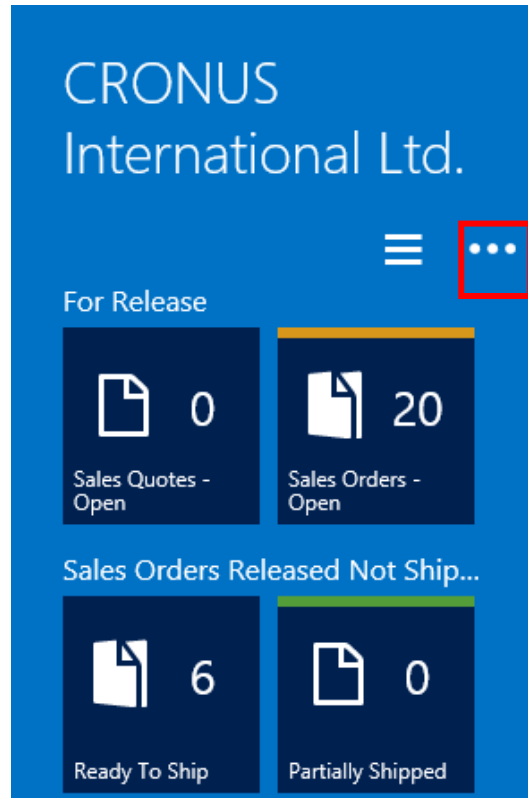
Show list







Sales Orders ^

*All**Shipped Not Invoiced**Completely Shipped Not Invoiced**Pending Approval**Approved**Sales Orders - Open**Ready To Ship**Partially Shipped**Delayed*

Role Centre Action Ribbon

In order to access Role Centre Action Ribbon user has to click three dots icon above cues.

**New Document**

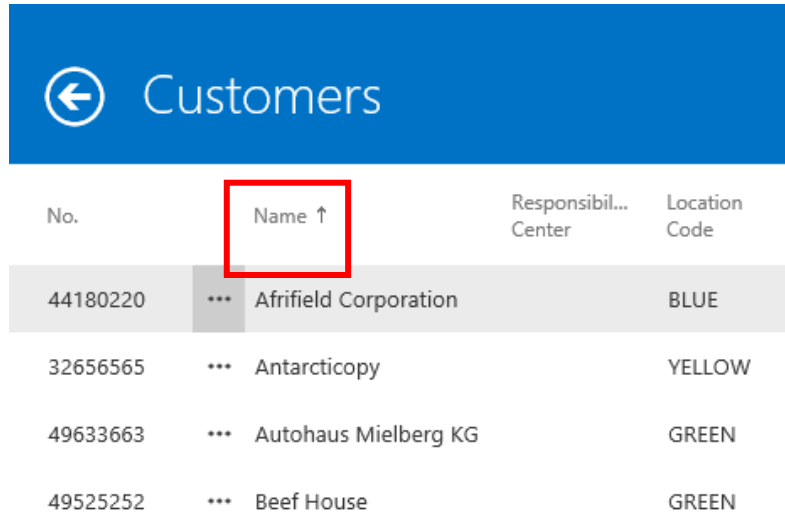
-  Sales Quote
 -  Sales Invoice
 -  Sales Order
 -  Sales Return Order
 -  Sales Credit Memo
- Price**
-  Sales Price Worksheet

Online Help

User can access Online Help by going into Role Centre Action Ribbon and choosing Microsoft Dynamics NAV Help.

Sorting of List Page

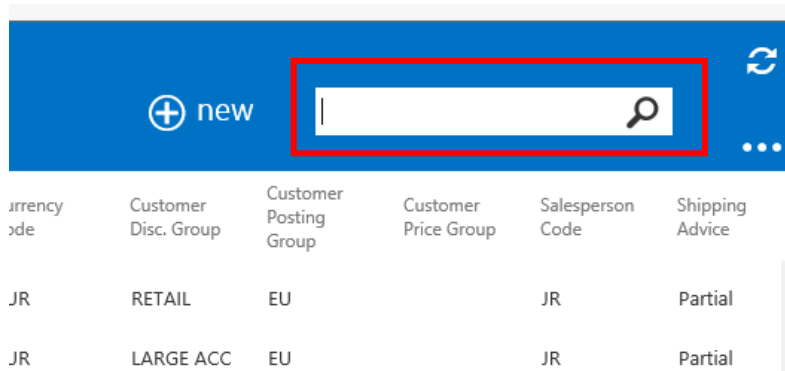
In order to sort records in list page use can simply click on column header name for column which should be used to sort.



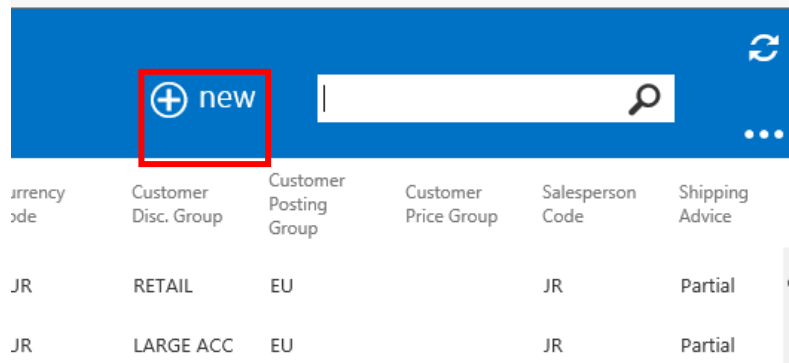
No.	Name ↑	Responsibil... Center	Location Code
44180220	*** Afrifield Corporation		BLUE
32656565	*** Antarcticopy		YELLOW
49633663	*** Autohaus Mielberg KG		GREEN
49525252	*** Beef House		GREEN

Filtering of List Page

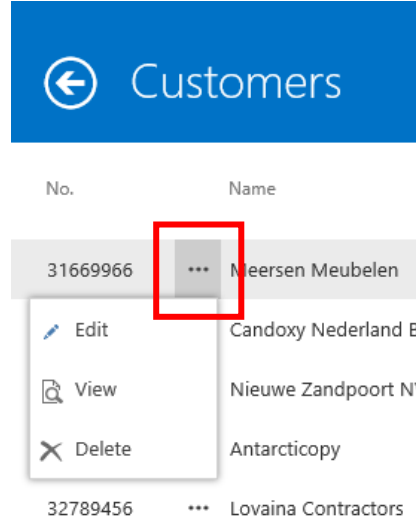
User can filter records by using filter field.



rrrency ode	Customer Disc. Group	Customer Posting Group	Customer Price Group	Salesperson Code	Shipping Advice
JR	RETAIL	EU		JR	Partial
JR	LARGE ACC	EU		JR	Partial

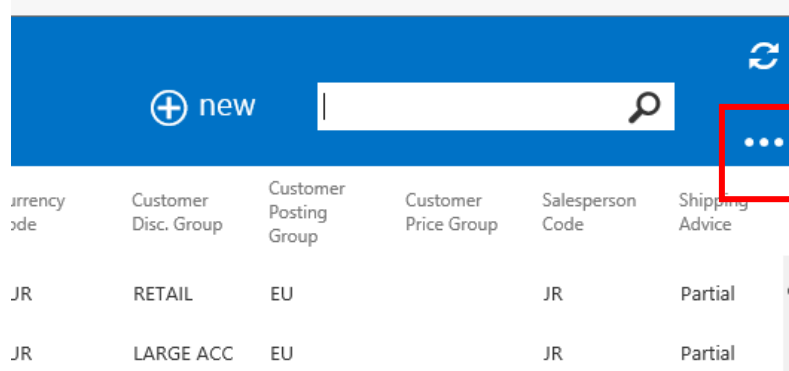
New Record


Currency Code	Customer Disc. Group	Customer Posting Group	Customer Price Group	Salesperson Code	Shipping Advice
JR	RETAIL	EU		JR	Partial
JR	LARGE ACC	EU		JR	Partial

Edit/View/Delete Record


No.	Name
31669966	Meersen Meubelen
	Candoxy Nederland BV
	Nieuwe Zandpoort NV
	Antarcticopy
32789456	Lovaina Contractors

Page Action Ribbon



Currency Code	Customer Disc. Group	Customer Posting Group	Customer Price Group	Salesperson Code	Shipping Advice
JR	RETAIL	EU		JR	Partial
JR	LARGE ACC	EU		JR	Partial

2. Dynamics NAV for tablets Labs

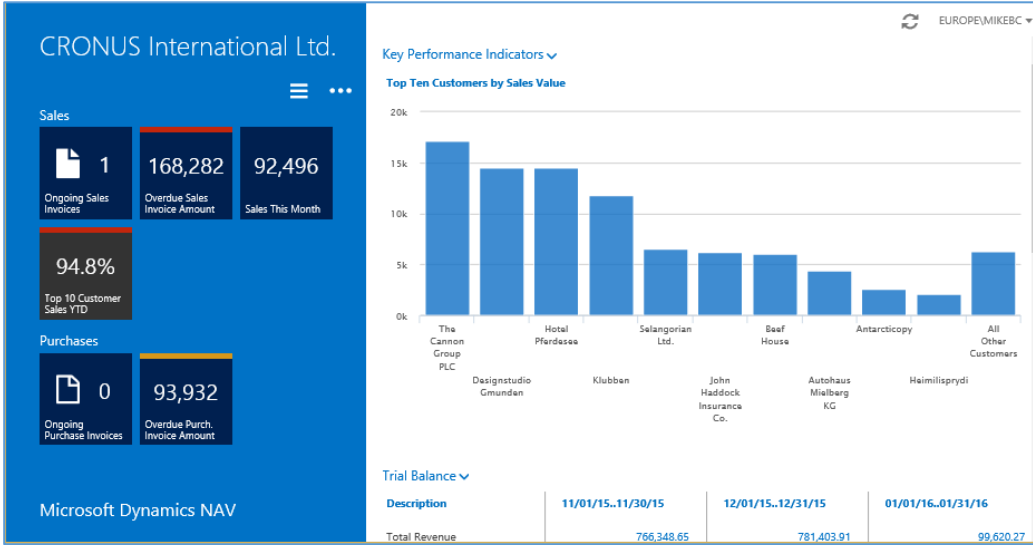
Source: Microsoft Dynamics NAV 2015 for tablets – Business Value – Mike Borg Cardona (Program Manager), September 2014, Microsoft

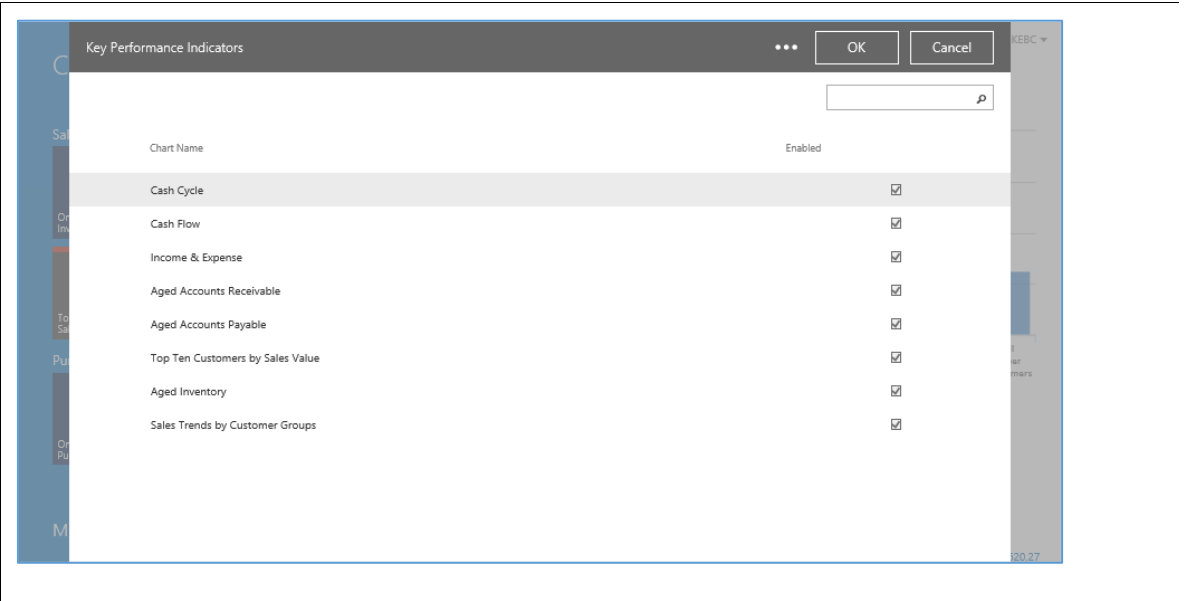
Lab data preparation

1. In the Microsoft Dynamics NAV Windows client, locate the Profiles list page.
2. Select and open the card page for the profile “SMALL BUSINESS - TABLET”.
3. Select the Default Role Centre checkbox.
4. Choose the OK button.
5. Sign into the Microsoft Dynamics NAV Tablet client and, on the Role Centre, tap Key Performance Indicators.
6. In the menu, select the Select Chart item. This will show a list of available charts.
7. Select the Top Ten Customers by Sales Value chart.

Lab 1 — A salesperson prepares to engage with a customer

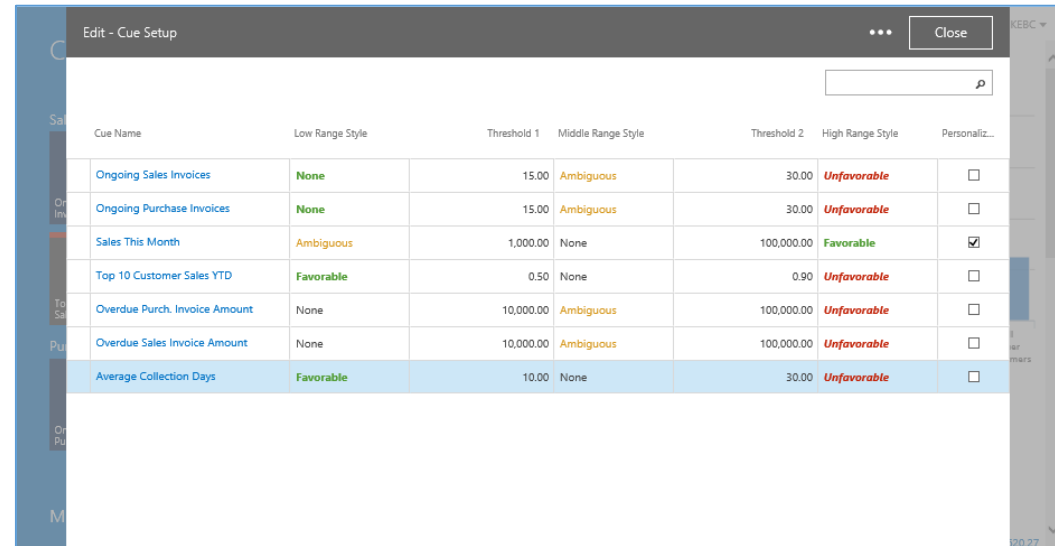
Lab story: In this short demo, we focus on how a salesperson can prepare for engaging with a customer, by quickly looking up information, and by setting sales goals directly in the Role Centre. This demo also serves as an initial explanation of the Role Centre.

What to do	What to say	Screenshots																																
<p>1. On the Start screen, tap the Dynamics NAV tile to launch Microsoft Dynamics NAV.</p>	<p>Here on my Start screen I have all my favourite apps, including Dynamics NAV. If I tap that tile, the app takes me to my Role Centre.</p>																																	
<p>2. Pause for a moment to observe the Role Centre.</p>	<p>This is where I can get an overview of my work at a glance.</p> <p>On the left we have the cues which show me where I need to take action. For example, I can see the Overdue Sales Invoice amount is particularly high today.</p>	 <p>The screenshot displays the Role Centre for CRONUS International Ltd. It features several key performance indicators (KPIs) and a bar chart.</p> <p>Sales KPIs:</p> <ul style="list-style-type: none"> Ongoing Sales Invoices: 1 Overdue Sales Invoice Amount: 168,282 Sales This Month: 92,496 Top 10 Customer Sales YTD: 94.8% <p>Purchases KPIs:</p> <ul style="list-style-type: none"> Ongoing Purchase Invoices: 0 Overdue Purch. Invoice Amount: 93,932 <p>Top Ten Customers by Sales Value (Bar Chart):</p> <table border="1"> <thead> <tr> <th>Customer</th> <th>Sales Value (k)</th> </tr> </thead> <tbody> <tr><td>The Cannon Group PLC</td><td>~17.5</td></tr> <tr><td>Designstudio Gmundan</td><td>~14.5</td></tr> <tr><td>Hotel Pferdsee</td><td>~14.5</td></tr> <tr><td>Klubben</td><td>~12.0</td></tr> <tr><td>Selangorian Ltd.</td><td>~7.0</td></tr> <tr><td>Beef House</td><td>~6.5</td></tr> <tr><td>John Haddock Insurance Co.</td><td>~6.0</td></tr> <tr><td>Autohaus Mialberg KG</td><td>~4.5</td></tr> <tr><td>Antarcticopy</td><td>~3.0</td></tr> <tr><td>Heimilisprydi</td><td>~2.5</td></tr> <tr><td>All Other Customers</td><td>~6.5</td></tr> </tbody> </table> <p>Trial Balance Table:</p> <table border="1"> <thead> <tr> <th>Description</th> <th>11/01/15..11/30/15</th> <th>12/01/15..12/31/15</th> <th>01/01/16..01/31/16</th> </tr> </thead> <tbody> <tr> <td>Total Revenue</td> <td>766,348.65</td> <td>781,403.91</td> <td>99,620.27</td> </tr> </tbody> </table>	Customer	Sales Value (k)	The Cannon Group PLC	~17.5	Designstudio Gmundan	~14.5	Hotel Pferdsee	~14.5	Klubben	~12.0	Selangorian Ltd.	~7.0	Beef House	~6.5	John Haddock Insurance Co.	~6.0	Autohaus Mialberg KG	~4.5	Antarcticopy	~3.0	Heimilisprydi	~2.5	All Other Customers	~6.5	Description	11/01/15..11/30/15	12/01/15..12/31/15	01/01/16..01/31/16	Total Revenue	766,348.65	781,403.91	99,620.27
Customer	Sales Value (k)																																	
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Description	11/01/15..11/30/15	12/01/15..12/31/15	01/01/16..01/31/16																															
Total Revenue	766,348.65	781,403.91	99,620.27																															

<p>3. In the content pane, tap Key Performance Indicators.</p> <p>4. In the menu, tap on Previous Chart, pause, then tap on Next Chart to return to Top 10 Customers By Sales Value.</p>	<p>On the right, I have my chart. I can easily switch between various charts to get an overview of my data.</p>	
<p>5. Gently scroll down the content area until Favorited Customers is in view.</p>	<p>I can have various forms of BI displayed directly on my Role Centre, such as my personal list of Favorited Customers.</p>	
<p>6. Tap on the tile named Sales This Month.</p> <p>7. Pause on the list of sales, and tap the back arrow.</p> <p>8. Tap to show the Action Pane and select Set Up Cues.</p> <p>9. In the row with Cue Name set to Sales This Month, tap the cell in column Middle Range Style and set it to Unfavourable.</p>	<p>If I take a look at Sales This Month, I can see that I am close to the 100,000 mark.</p> <p>I can tap to drill down and see specifically which sales are included.</p> <p>As a salesperson, I want to make it my personal goal to reach that target. Maybe the customer I am meeting today is interested in</p>	

10. Tap the Close button.

purchasing some of our more expensive products which will help me reach that goal.
I can personalize my cues to use colours to indicate if I have reached my goal or not. Here the upper threshold is already set to 100,000 so I just need to set which colour will be shown below that value.



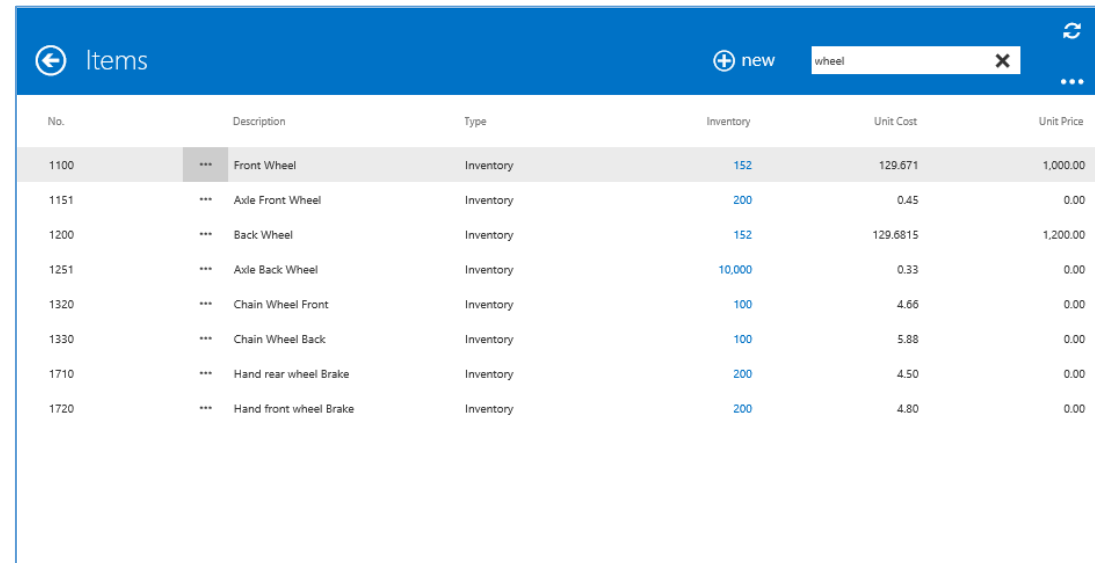
Cue Name	Low Range Style	Threshold 1	Middle Range Style	Threshold 2	High Range Style	Personaliz...
Ongoing Sales Invoices	None	15.00	Ambiguous	30.00	Unfavorable	<input type="checkbox"/>
Ongoing Purchase Invoices	None	15.00	Ambiguous	30.00	Unfavorable	<input type="checkbox"/>
Sales This Month	Ambiguous	1,000.00	None	100,000.00	Favorable	<input checked="" type="checkbox"/>
Top 10 Customer Sales YTD	Favorable	0.50	None	0.90	Unfavorable	<input type="checkbox"/>
Overdue Purch. Invoice Amount	None	10,000.00	Ambiguous	100,000.00	Unfavorable	<input type="checkbox"/>
Overdue Sales Invoice Amount	None	10,000.00	Ambiguous	100,000.00	Unfavorable	<input type="checkbox"/>
Average Collection Days	Favorable	10.00	None	30.00	Unfavorable	<input type="checkbox"/>

11. Bring up the Navigation Pane and tap on Items
12. Gently scroll through the long list of items
13. In the Items list, tap in the Search field, enter the text "wheel" and tap the spy glass to begin searching.

Let's find the price for our more expensive items.

As you can see, this is quite a long list but I'm looking for something specific.

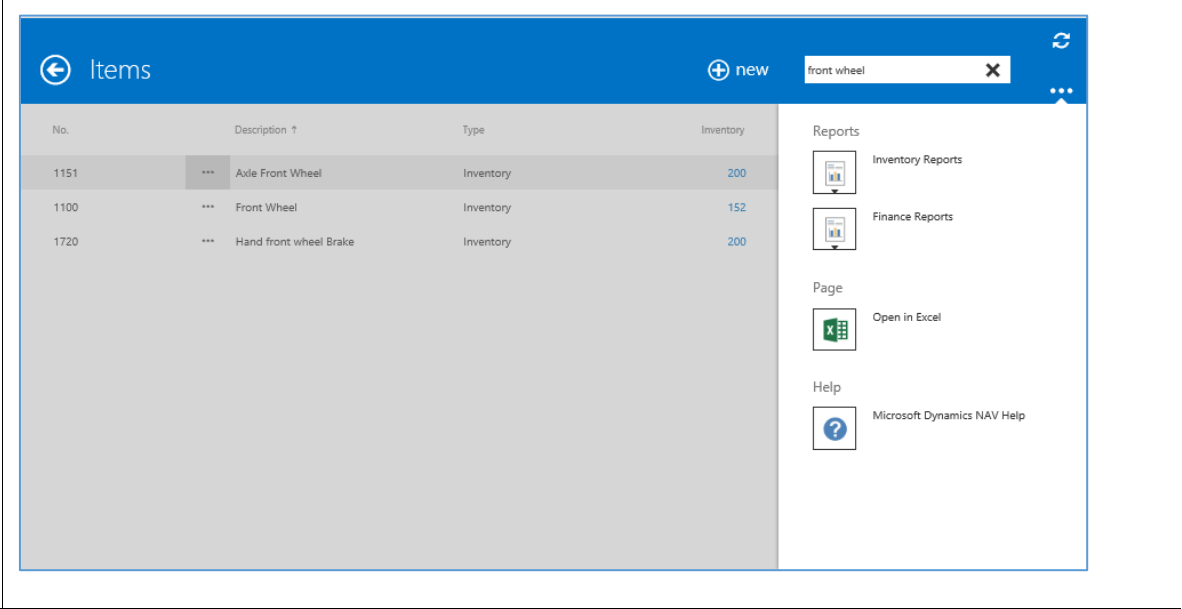
This customer has always purchased a stock of wheels so let us first search for that. Note, how I did not need to specify which columns to search on, and items were found regardless of where the term "wheel" was used.



No.	Description	Type	Inventory	Unit Cost	Unit Price
1100	*** Front Wheel	Inventory	152	129.671	1,000.00
1151	*** Axle Front Wheel	Inventory	200	0.45	0.00
1200	*** Back Wheel	Inventory	152	129.6815	1,200.00
1251	*** Axle Back Wheel	Inventory	10,000	0.33	0.00
1320	*** Chain Wheel Front	Inventory	100	4.66	0.00
1330	*** Chain Wheel Back	Inventory	100	5.88	0.00
1710	*** Hand rear wheel Brake	Inventory	200	4.50	0.00
1720	*** Hand front wheel Brake	Inventory	200	4.80	0.00

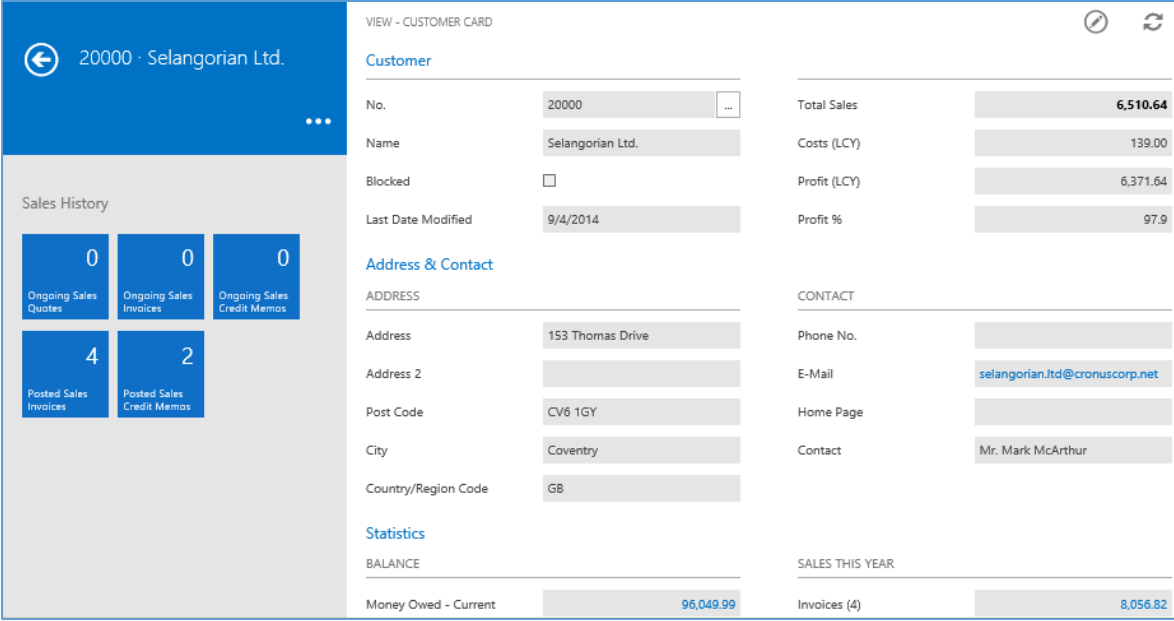
14. Tap in the Search field again,

I can refine my search further, and

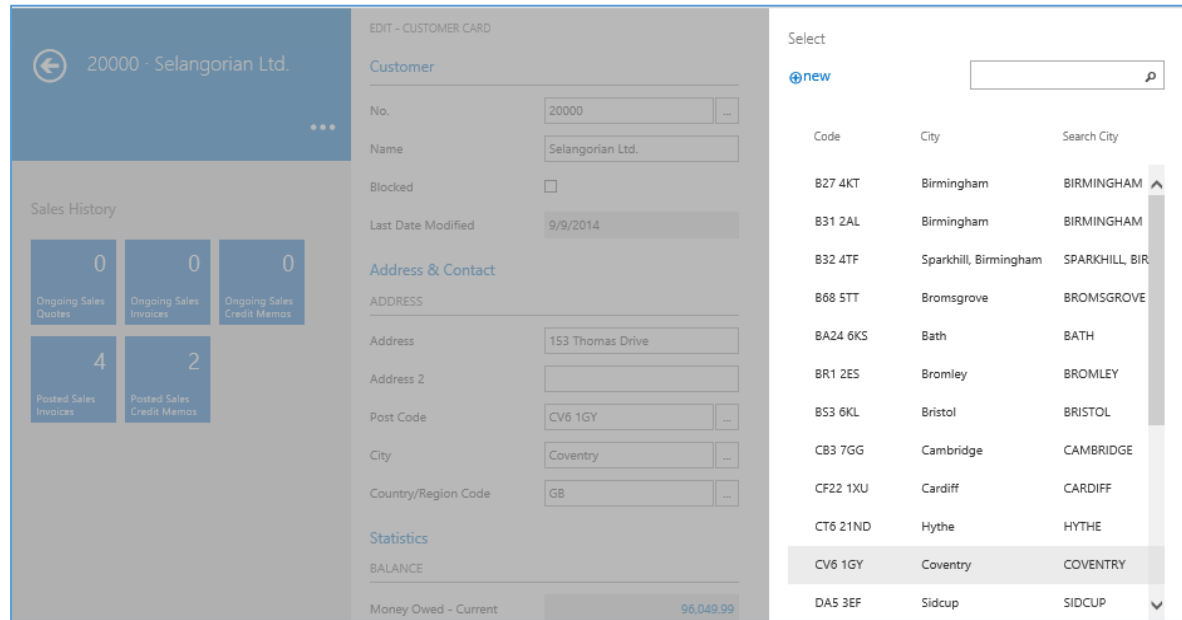
<p>and change the text to “front wheel” and tap Enter on the on-screen keyboard.</p> <p>15. Tap on the column header Description to sort alphabetically.</p>	<p>also sort my list.</p> <p>Now I can see that Front Wheels can be sold at 1,000 for a good profit.</p>																	
<p>16. Bring up the Action Pane and tap on the Open in Excel action.</p>	<p>I can also send this list to Microsoft Excel if I want to perform some quick calculations on pricing directly on my tablet.</p>	 <p>The screenshot shows the 'Items' list in Microsoft Dynamics NAV 2015 Developer. The list has columns for 'No.', 'Description', 'Type', and 'Inventory'. The items listed are:</p> <table border="1"> <thead> <tr> <th>No.</th> <th>Description</th> <th>Type</th> <th>Inventory</th> </tr> </thead> <tbody> <tr> <td>1151</td> <td>Axle Front Wheel</td> <td>Inventory</td> <td>200</td> </tr> <tr> <td>1100</td> <td>Front Wheel</td> <td>Inventory</td> <td>152</td> </tr> <tr> <td>1720</td> <td>Hand front wheel Brake</td> <td>Inventory</td> <td>200</td> </tr> </tbody> </table> <p>The 'Action Pane' is open on the right side, showing the following options:</p> <ul style="list-style-type: none"> Reports: Inventory Reports, Finance Reports Page: Open in Excel Help: Microsoft Dynamics NAV Help 	No.	Description	Type	Inventory	1151	Axle Front Wheel	Inventory	200	1100	Front Wheel	Inventory	152	1720	Hand front wheel Brake	Inventory	200
No.	Description	Type	Inventory															
1151	Axle Front Wheel	Inventory	200															
1100	Front Wheel	Inventory	152															
1720	Hand front wheel Brake	Inventory	200															
<p>17. Switch back to Dynamics NAV and tap the back button to return to the Role Centre.</p>	<p>As always, the Role Centre is only a tap away.</p>																	

Lab 2 — A salesperson updates customer information

Lab story: In this short demo, we focus on how a salesperson could easily update the details for a specific customer, such as the phone number. Dynamics NAV is not just for reading data, but also for writing just like in any other Dynamics NAV client.

What to do	What to say	Screenshots
<p>32. In Dynamics NAV, from the Role Centre, bring up the Navigation Pane and tap on Customers.</p> <p>33. Tap on the row with Name set to Selangorian Ltd.</p> <p>34. Tap the Edit button in the top right to enter Edit mode.</p> <p>35. In the Phone Number field, enter a valid phone number.</p>	<p>After talking with my favourite customer, Selangorian Ltd., I learn that they often use phone calls or Skype for communication. Let's add their phone number to the customer card.</p>	 <p>The screenshot shows the 'VIEW - CUSTOMER CARD' for '20000 - Selangorian Ltd.'. The card is divided into several sections:</p> <ul style="list-style-type: none"> Sales History: A grid of six tiles showing sales metrics: Ongoing Sales Quotes (0), Ongoing Sales Invoices (0), Ongoing Sales Credit Memos (0), Posted Sales Invoices (4), and Posted Sales Credit Memos (2). Customer Information: Fields for No. (20000), Name (Selangorian Ltd.), Blocked (checkbox), and Last Date Modified (9/4/2014). Address & Contact: Fields for Address (153 Thomas Drive), Address 2, Post Code (CV6 1GY), City (Coventry), Country/Region Code (GB), Phone No., E-Mail (selangorian.ltd@cronuscorp.net), Home Page, and Contact (Mr. Mark McArthur). Statistics: A section for BALANCE showing Money Owed - Current (96,049.99) and SALES THIS YEAR showing Invoices (4) (8,056.82).
<p>36. Tap on the AssistEdit button for the City field.</p> <p>37. Gently scroll through the list of cities in the lookup.</p> <p>38. Tap on Luton.</p>	<p>The customer address is also incorrect. Let's quickly update the city.</p>	

39. Tap the back button to return to the list of customers.



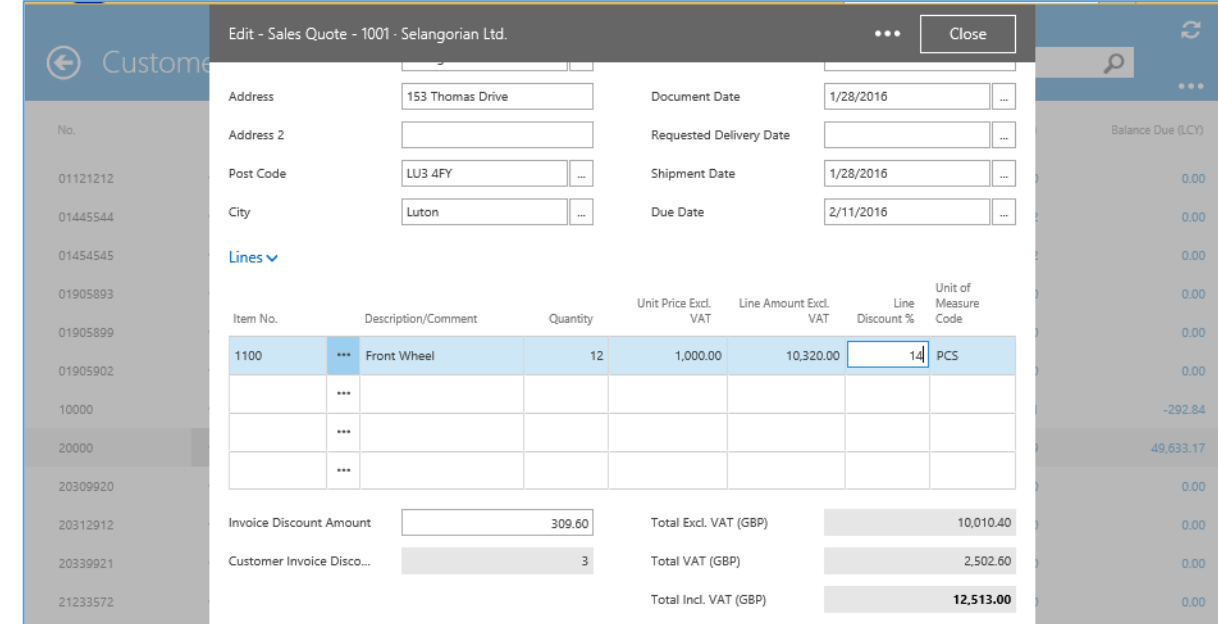
The screenshot displays the 'EDIT - CUSTOMER CARD' interface for customer '20000 - Selangorian Ltd.'. The interface is divided into several sections:

- Header:** Shows a back arrow, the customer name '20000 - Selangorian Ltd.', and a menu icon.
- Sales History:** A grid of six cards showing sales metrics:
 - Ongoing Sales Quotes: 0
 - Ongoing Sales Invoices: 0
 - Ongoing Sales Credit Memos: 0
 - Posted Sales Invoices: 4
 - Posted Sales Credit Memos: 2
- Customer Information:**
 - No.: 20000
 - Name: Selangorian Ltd.
 - Blocked:
 - Last Date Modified: 9/9/2014
- Address & Contact:**
 - ADDRESS
 - Address: 153 Thomas Drive
 - Address 2: [Empty]
 - Post Code: CV6 1GY
 - City: Coventry
 - Country/Region Code: GB
- Statistics:**
 - BALANCE
 - Money Owed - Current: 96,042.99
- Select Dropdown:** A search dropdown is open, showing a list of cities with their corresponding codes and search terms. The list includes:

Code	City	Search City
B27 4KT	Birmingham	BIRMINGHAM
B31 2AL	Birmingham	BIRMINGHAM
B32 4TF	Sparkhill, Birmingham	SPARKHILL, BIR
B68 5TT	Bromsgrove	BROMSGROVE
BA24 6KS	Bath	BATH
BR1 2ES	Bromley	BROMLEY
B53 6KL	Bristol	BRISTOL
CB3 7GG	Cambridge	CAMBRIDGE
CF22 1XU	Cardiff	CARDIFF
CT6 21ND	Hythe	HYTHE
CV6 1GY	Coventry	COVENTRY
DA5 3EF	Sidcup	SIDCUP

Lab 3 — A salesperson creates a Sales Quote for a customer

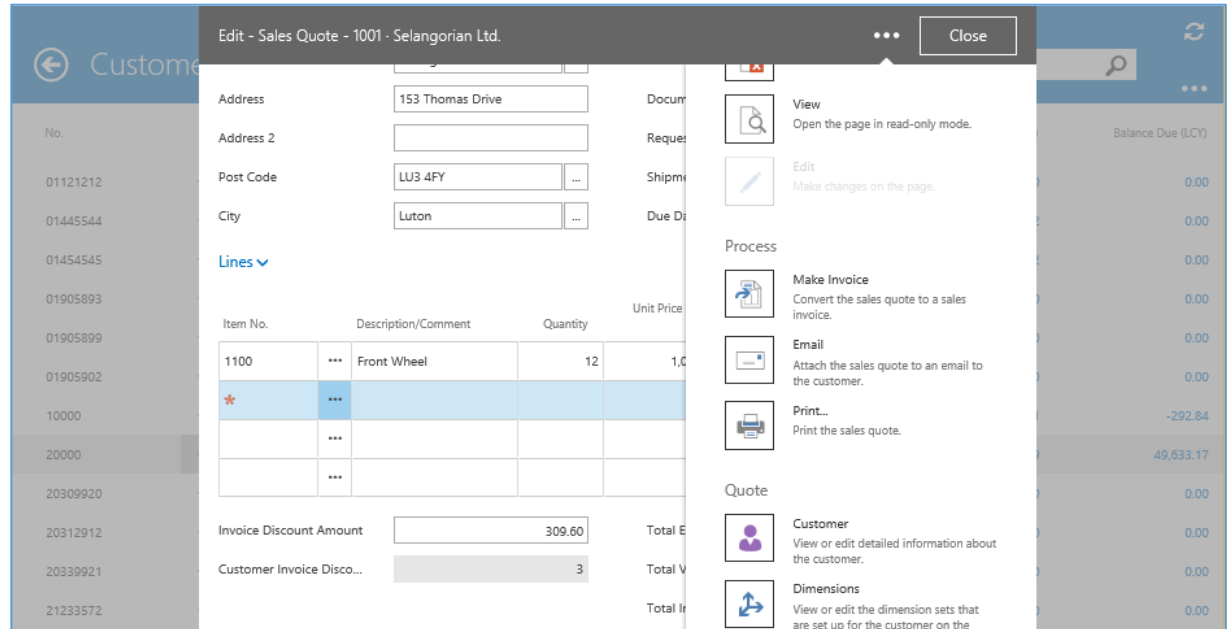
Lab story: In this short demo, we focus on creating a Sales Quote and instantly mailing this to the customer. Creating sales or purchase documents is a common task while a continuation from Demo 2 where we will now send the quote to customer Selangorian Ltd.

What to do	What to say	Screenshots																																															
<ol style="list-style-type: none"> In the Customers list page, bring up the menu for customer Selangorian Ltd. Tap on Sales Quote. Under the Lines section, in the first empty row, tap the AssistEdit button for Item No. In the lookup pane, tap in the Search field, enter "front wheel" and then tap Enter on the keyboard. Tap on the Quantity field and enter value 12. Tap in the Line Discount % field and set the value to 14. 	<p>Let's quickly create a sales quote for this customer. Note, how the customer information has been prefilled in the quote.</p> <p>With a few taps, I can prepare the quote. Since this is one of my favourite customers, I will raise the discount to 14%. See how the total changes accordingly.</p>	 <table border="1" data-bbox="1077 774 1865 981"> <thead> <tr> <th>Item No.</th> <th>Description/Comment</th> <th>Quantity</th> <th>Unit Price Excl. VAT</th> <th>Line Amount Excl. VAT</th> <th>Line Discount %</th> <th>Unit of Measure Code</th> </tr> </thead> <tbody> <tr> <td>1100</td> <td>Front Wheel</td> <td>12</td> <td>1,000.00</td> <td>10,320.00</td> <td>14</td> <td>PCS</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <table border="1" data-bbox="1077 1002 1865 1109"> <tr> <td>Invoice Discount Amount</td> <td>309.60</td> <td>Total Excl. VAT (GBP)</td> <td>10,010.40</td> </tr> <tr> <td>Customer Invoice Disco...</td> <td>3</td> <td>Total VAT (GBP)</td> <td>2,502.60</td> </tr> <tr> <td></td> <td></td> <td>Total Incl. VAT (GBP)</td> <td>12,513.00</td> </tr> </table>	Item No.	Description/Comment	Quantity	Unit Price Excl. VAT	Line Amount Excl. VAT	Line Discount %	Unit of Measure Code	1100	Front Wheel	12	1,000.00	10,320.00	14	PCS																						Invoice Discount Amount	309.60	Total Excl. VAT (GBP)	10,010.40	Customer Invoice Disco...	3	Total VAT (GBP)	2,502.60			Total Incl. VAT (GBP)	12,513.00
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Customer Invoice Disco...	3	Total VAT (GBP)	2,502.60																																														
		Total Incl. VAT (GBP)	12,513.00																																														

7. Bring up the Action pane and, in the Process action group, tap the Email action.
8. In the task dialog, enter the following message: "Thank you for today's meeting – here is the quote we talked about. I am looking forward to hearing from you."
9. Tap the OK button to proceed with sending the mail.

Now let's send the quote to the customer with a few more taps.

The email is sent with the sales quote attached as a PDF document.



The screenshot shows the 'Edit - Sales Quote - 1001 - Selangorian Ltd.' screen. The address is 153 Thomas Drive, Luton, LU3 4FY. The 'Lines' table contains one item: 1100 Front Wheel, quantity 12, unit price 1.0. The total invoice amount is 309.60. The action pane on the right is open, showing the 'Email' action selected under the 'Process' group. The 'Email' action description is 'Attach the sales quote to an email to the customer.'

No.	Description/Comment	Quantity	Unit Price
1100	Front Wheel	12	1.0

3. Differences and Limitations When Developing Pages for the Microsoft Dynamics NAV Tablet Client

Source: Differences and Limitations When Developing Pages for the Microsoft Dynamics NAV Tablet Client, Microsoft Development Network - [https://msdn.microsoft.com/en-us/library/dn757104\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn757104(v=nav.80).aspx) and [https://msdn.microsoft.com/en-us/library/dn789506\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789506(v=nav.80).aspx)

Developing for Microsoft Dynamics NAV Tablet client is not much different from developing for Microsoft Dynamics NAV Windows client, or Microsoft Dynamics NAV Web client. There are, however, some natural limitations on a tablet, such as not having a physical keyboard and mouse, as well as a smaller screen. In addition to this, there are some differences and limitations in developing pages for Microsoft Dynamics NAV Tablet client.

Page Differences and Limitations

In the following section, you will find a description of what to expect when displaying pages on Microsoft Dynamics NAV Tablet client.

Concept	Difference/Limitation	Example	Recommendation
Activity Buttons	Only the content of the Home activity button is shown. You cannot activate other activity buttons.	Home, Departments, and Posted Documents on the Sales Order Processor Role Center.	Design pages to expose the workflows needed by the user. For example, configure the profile to show the important list pages under the Home activity button. Alternatively, consider designing a new Role Center if the activities for the activity button greatly vary from activities in other activity buttons.
Selecting multiple records in Lists	Not available.	Ctrl+A or Ctrl+Click on rows in a list using Microsoft Dynamics NAV Windows client.	Avoid scenarios requiring selecting multiple rows on a list. Also, try to minimize actions on lists.
Ribbon Actions	Only Promoted actions are shown.	On the Small Business Role Center.	Use the development environment to promote actions. Alternatively, configure the profile and add actions to the Home ribbon tab.
FactBoxes	Not shown on List pages or Worksheet pages.	Customer list on the Small Business Role Center.	Make sure the same information is visible on the corresponding card page of the given record.
Advanced Filters	No column-specific filtering is	On the Customer list page.	Send data to Excel and do the complex filtering there.

	available.		
Page Search	Not available.	On Microsoft Dynamics NAV Windows client or Microsoft Dynamics NAV Web client.	Design pages to expose the workflows needed by the user. For example via list places, tiles or actions.
Horizontal Scrolling on Lists	The number of tiles that are shown is based on the size of the screen, no possibility to scroll.	On Items list for the Sales Order Processor profile.	
Cue and Action Tiles	The number of tiles that are shown is based on the size of the screen, no possibility to scroll.	On most Role Center pages.	Design List pages to avoid having important columns on the far right of the column list. Assume you have no control over how many columns are displayed and consider that only the first few columns will be made visible.
Field Groups	Field groups on list pages are not shown. Only the repeater control is shown in the content area of the page.	On Opportunity list page (5123).	Design Role Center pages to avoid having important tiles at the area end. Assume you have no control over how many tiles are displayed and consider that only the first few tiles will be made visible.
Links and Notes	Not available.	On Sales Orders.	Similar to Factboxes, make sure the same information in the field group is visible on the corresponding card page of the given record.
Select from full list	Not available on lookups. Users are not able to run actions on a lookup page, and they cannot access the full set of records.	On the Item Card when selecting the Base Units of Measure .	Make sure the appropriate columns are visible on the lookup. The user is still able to filter, scroll, and search through the lookup.
Date picker in grids	Not available.	On Sales Invoices.	Enter dates in grids manually.
Search across List columns	Partly supported. Search will not include FlowFields.	Customer list.	
GETURL	It is not possible to generate URLs to the Microsoft Dynamics NAV	See example in codeunit 440.	

	Tablet client using the GETURL AL function.		
Report Viewer and CurrReport.PREVIEW	There is no Preview functionality available on the Microsoft Dynamics NAV Tablet client. CurrReport.PREVIEW cannot be reliably used to identify whether a report was run as a draft or as a final printed document.	See example in report 280.	
Matrix Controls	Not supported.	See example in G/L Budget.	
File download	Cannot download multiple files at the same time.	Trial Balance report in the Print to Excel check box.	
Number of columns displayed in a repeater control.	Because of the form factor on tablets, you might experience that not all important columns are displayed.		Use the Width field property to control the size of the column and thereby make room for more columns displayed.

Role Center Behaviours

Concept	Description
Tiles	The app bar will automatically show tiles in two or three columns depending on the total number of tiles. A Role Center with many tiles only displays the tiles that fit vertically on the screen; other tiles are not shown and will not be available.
Actions	Actions that are added under an ActionContainer of the subtype HomeItems are always shown in the navigation pane.
Actions	<p>Actions that are added under an ActionContainer of the subtype ActivityButtons are never shown, and cannot be accessed.</p> <p>There is no ability to navigate to other Activity Buttons as you can do in Microsoft Dynamics NAV Windows client and Microsoft Dynamics NAV Web client. Because Activity Buttons link to related functionality, the recommended workaround is to providing links to this functionality through their own Role Center as a separate entry point.</p>
Actions	<ul style="list-style-type: none"> • In the action pane, if the current profile has no configuration for the specific page, for example, if this was deleted, only promoted actions will be shown. If there are no promoted actions, any actions under NewDocumentItems will be shown. If there are no NewDocumentItems actions, an empty pane will be shown. • If a page configuration exists, the NewDocumentItems will be shown, together with any new groups that were created. Actions, even if they were renamed, which remain in their original group will not show until you move them to a custom group. This behaviour differs from Microsoft Dynamics NAV Windows client which will always show them. • When you add actions to the Home tab, it corresponds to setting the actions to Promoted. However, you can only do this with the configuration tooling if there is at least one Promoted action. Otherwise, the Home tab will never be available for customization.

4. Designing for Different Screen Sizes on a Tablet

Source: Designing for Different Screen Sizes on a Tablet, Microsoft Developer Network - [https://msdn.microsoft.com/en-us/library/dn789596\(v=nav.80\).aspx](https://msdn.microsoft.com/en-us/library/dn789596(v=nav.80).aspx)

Form Factor Considerations

Users can scroll the content area of Microsoft Dynamics NAV for tablets to access all data for a given page. However, some elements of the screen, for example, the app bar cannot be scrolled. The app bar is the blue area of Microsoft Dynamics NAV for tablets and it is designed to provide easy access to important information and tasks that the user should not lose sight of when scrolling. The static elements will display only as much data as they can reasonably fit on the screen. Developers should design to make sure that the important static elements are displayed first, so that that these will be shown even on the smallest, available devices.

Guidance for Page Element Types on Smallest Devices

The following table provides a list of non-scrollable elements in the page content or the app bar.

Page Type	Displays on smallest device
RoleCenter	4 tiles in 1 group, or 2 groups together with 2 tiles
List Pages	5 columns of type Text50 or 8 columns of type Text20
Card Pages	<ul style="list-style-type: none"> • CardPage Factbox with up to 15 fields • 2 CardPage Factboxes with up to 6 fields each • Activities Factboxes with 4 tiles in 1 group, or 2 groups together with 2 tiles
Document Pages	<ul style="list-style-type: none"> • CardPage Factbox with up to 15 fields • 2 CardPage Factboxes with up to 6 fields each • Activities Factboxes with 4 tiles in 1 group, or 2 groups together with 2 tiles