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What's new in Business Central clients for AL developers

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Agenda

- Client Improvements
- Action Improvements
- Action Bar improvements
 - New AL promoted model
 - Client Action Bar Capabilities
 - Uptake and Transition
- Questions

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Control Add-in Improvement

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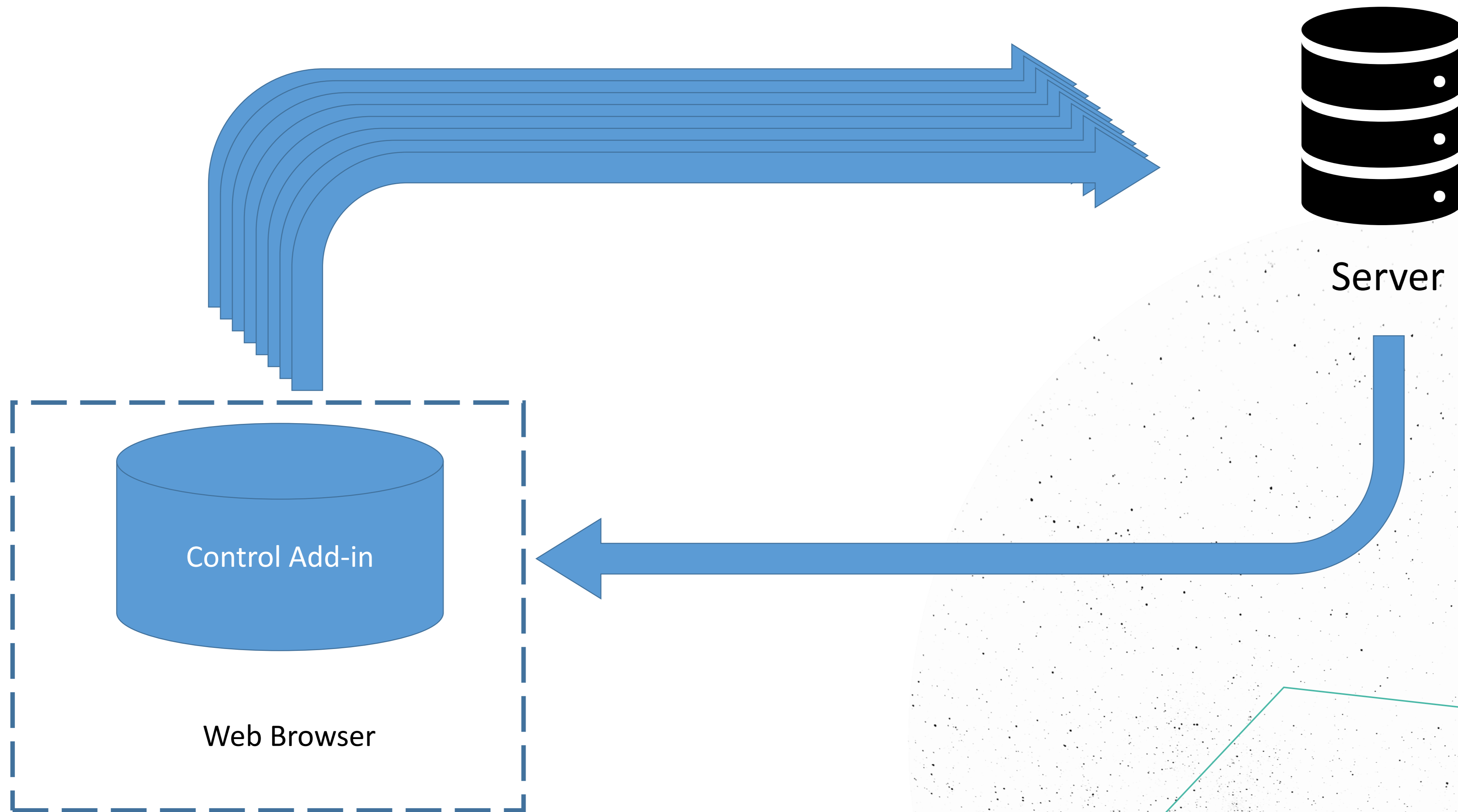
Control Add-in

Problem:

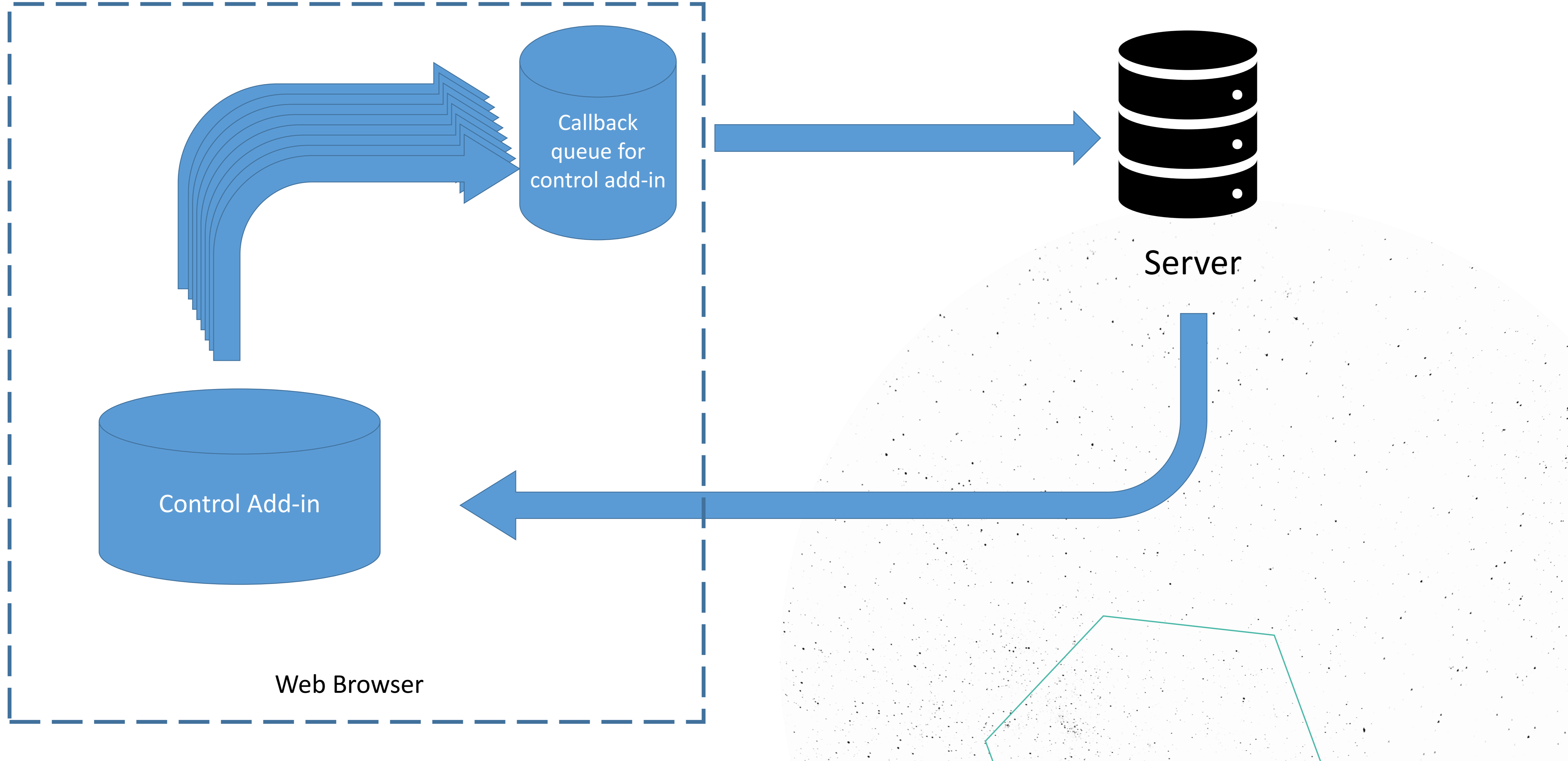
- It was possible to write control add-ins that issue too many callbacks to our server in a short period of time.

```
function invokeALTrigger() {  
    // Invoke the trigger every 10 seconds, ignoring  
    // whether the previous call has completed  
    window.setInterval(() => {  
        Microsoft.Dynamics.NAV.InvokeExtensibilityMethod(  
            "MyTrigger",  
            arguments,  
            false);  
  
        invokeALTrigger();  
    },  
    10000);  
}
```

Control Add-in



Control Add-in



Control Add-in

- When the internal queue reaches 20, then it displays a warning dialog.
- If the queue reaches 50, then we start ignoring new messages that come in until there's a new spot.

Busy control add-in

ⓘ Reduced functionality

The functionality of the control add-in 'DemoAddin' has been reduced, and it may not work as expected. Contact the add-in vendor for more information.

[Learn more](#)

Control Add-in

- Extended the *InvokeExtensibilityMethod* API to notify ignored or failed callbacks.

```
function invokeALTrigger() {  
    Microsoft.Dynamics.NAV.InvokeExtensibilityMethod(  
        "MyTrigger",  
        arguments,  
        false,  
        () => {  
            // Invoking the AL trigger has completed, invoke  
            // the AL trigger again in 10 seconds  
            window.setInterval(() => {  
                invokeALTrigger();  
            },  
                10000);  
        },  
        () => { /* error handling and perhaps retrying */ });  
}
```

- Suggested Reading: [Control Add-In Performance Best Practices - Business Central | Microsoft Docs](#)

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List Views

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List Views

- Define alternative representation of the data on a given page

Filter

Sort

Customize

- Defined in pages, page extensions & page customizations
- Available in the client & can be customized by users

CRONUS International Ltd. | Sales ▾ Purchasing ▾ Inventory ▾ Posted Documents ▾ | ≡

Customers: **VIP Customers ▾** Search + New Delete Process ▾ New Document ▾ Customer ▾ Prices & Discounts ▾ Navigate ▾ Report ▾ More options

Views ✕

All

VIP Customers ⋮

Filter list by:

✕ Balance (LCY)

>100,000

+ Filter...

No.	Name	Responsibility Center	Location Code	Phone No.	Contact	Balance (LCY) ↓	Balance Due (LCY)	Sales (LCY)
<u>30000</u>	John Haddock Insurance Co.				Miss Patricia Doyle	349,615.40	349,615.40	6,142.90
01454545	New Concepts Furniture		YELLOW		Ms. Tammy L. McDonald	222,241.32	222,241.32	0.00
10000	The Cannon Group PLC	BIRMINGHAM	BLUE		Mr. Andy Teal	168,364.41	168,364.41	17,100.96

List Views – Filter & Sort

```
1 pageextension 50100 CustomerListExt extends "Customer List"
2 {
3     views
4     {
5         addfirst
6         {
7             view(VIP)
8             {
9                 Caption = 'VIP Customers';
10                Filters = where("Balance (LCY)" = filter(> 100000));
11                OrderBy = descending("Balance (LCY)");
12            }
13        }
14    }
15 }
```

CRONUS International Ltd. | Sales▼ Purchasing▼ Inventory▼ Posted Documents▼ | ≡

Customers: **VIP Customers** | Search + New Delete Process▼ New Document▼ Customer▼ Prices & Discounts▼ Navigate▼ Report▼ | More options

Views		No.	Name	Responsibility Center	Location Code	Phone No.	Contact	Balance (LCY) ↓	Balance Due (LCY)	Sales (LCY)
All	×	30000	John Haddock Insurance Co.				Miss Patricia Doyle	349,615.40	349,615.40	6,142.90
VIP Customers	⋮	01454545	New Concepts Furniture		YELLOW		Ms. Tammy L. McDonald	222,241.32	222,241.32	0.00
		10000	The Cannon Group PLC	BIRMINGHAM	BLUE		Mr. Andy Teal	168,364.41	168,364.41	17,100.96

Filter list by:

× Balance (LCY)

>100,000

+ Filter...

List Views – Shared vs Custom Layout

- Views with **shared layout** (default):
 - Share the same layout as the default view **All**
 - User personalization and profile configuration are applied on the view
- Views with **custom layout**:
 - Have their own independent layout
 - User personalization and profile configuration are **not** applied on the view

Docs: <https://docs.microsoft.com/en-us/dynamics365/business-central/dev-itpro/developer/properties/devenv-sharedlayout-property>

List Views – Custom Layout

```
1 pageextension 50100 CustomerListExt extends "Customer List"
2 {
3   views
4   {
5     addfirst
6     {
7       view(VIP)
8       {
9         Caption = 'VIP Customers';
10        Filters = where("Balance (LCY)" = filter(> 100000));
11        OrderBy = descending("Balance (LCY)");
12        SharedLayout = false;
13
14        layout
15        {
16          movefirst(Control1; Name, "Balance (LCY)")
17
18          modify("Phone No.")
19          {
20            Visible = false;
21          }
22        }
23      }
24    }
25  }
26 }
```

```
layout
{
  movefirst(Control1; Name, "Balance (LCY)")

  modify("Phone No.")
  {
    Visible = false;
  }
}
```

CRONUS International Ltd. | Sales ▾ Purchasing ▾ Inventory ▾ Posted Documents ▾ | ≡

Customers: **VIP Customers** ▾ | 🔍 Search + New 🗑 Delete Process ▾ New Document ▾ Customer ▾ Prices & Discounts ▾ Navigate ▾ Report ▾ ...

Views X

All

VIP Customers ⋮

Filter list by:

X Balance (LCY)

>100,000

+ Filter...

Name	Balance (LCY) ↓	No.	Responsibility Center	Location Code	Contact	Balance Due (LCY)	Sales (LCY)	Payments (LCY)
John Haddock Insurance Co.	349,615.40	30000			Miss Patricia Doyle	349,615.40	6,142.90	0.00
New Concepts Furniture	222,241.32	01454545		YELLOW	Ms. Tammy L. McDonald	222,241.32	0.00	0.00
The Cannon Group PLC	168,364.41	10000	BIRMINGHAM	BLUE	Mr. Andy Teal	168,364.41	17,100.96	143,872.42

X Phone No.

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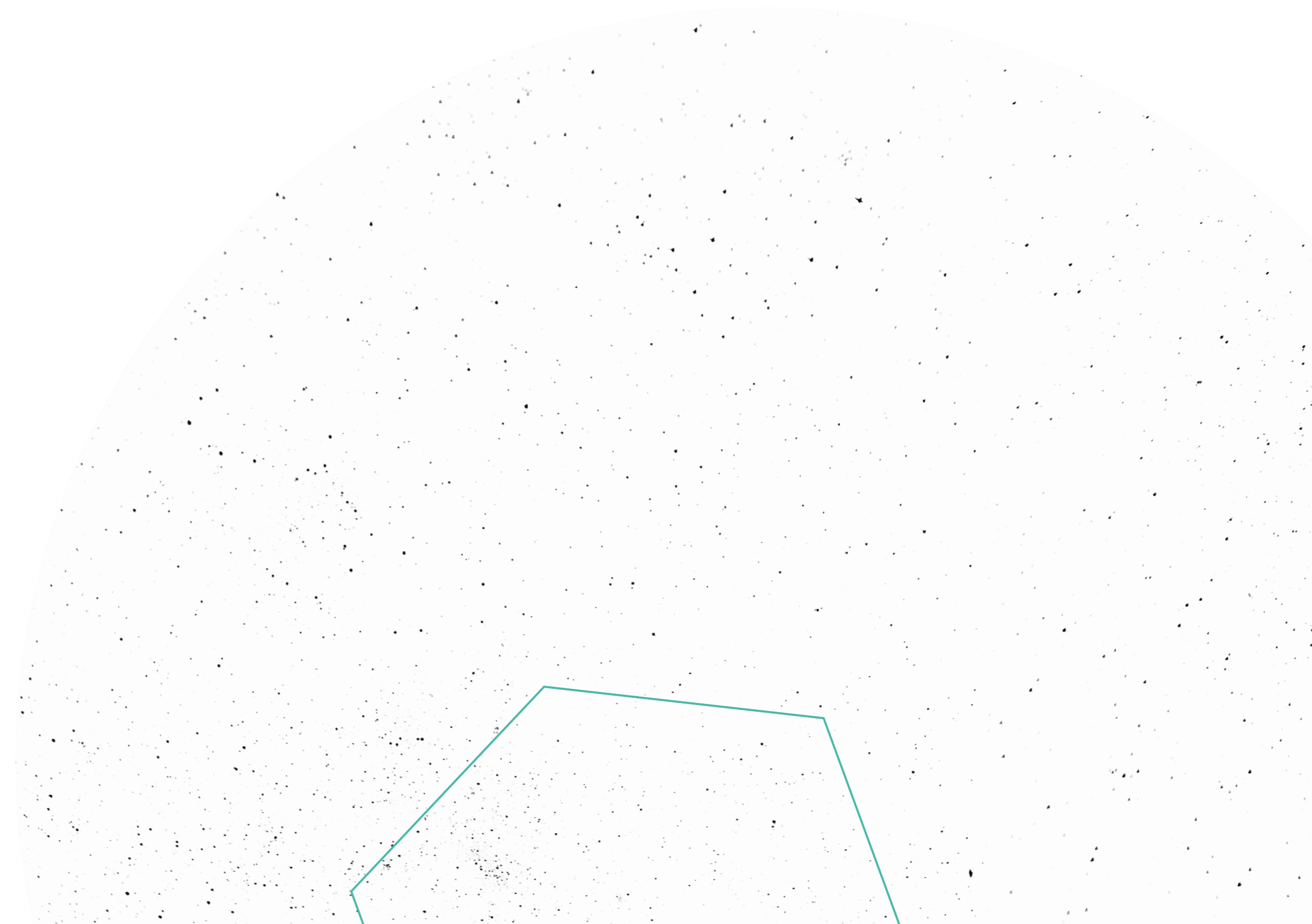
Data Entry Improvement for Grid

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Data Entry – Draft Rows

Problem:

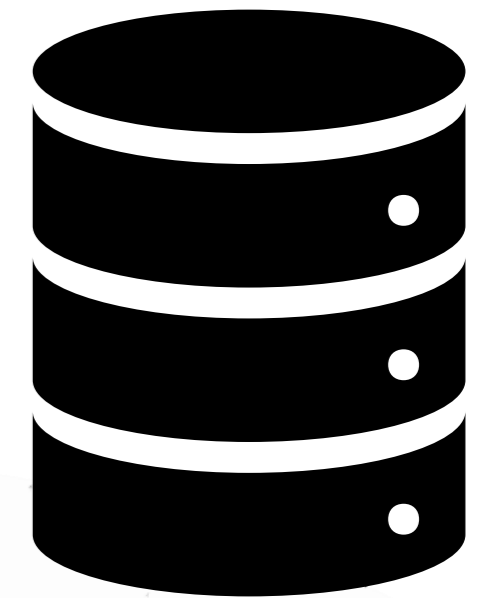
- We only had a buffer of 3 draft rows inside our grid, so it could run out quickly.



Data Entry – Draft Rows

Lines Manage Line Order Fewer options						
Type	No.	Description	Location Code	Quantity	Qty. to Assemble to Order	
Item	1928-W	ST.MORITZ Storage Unit/Drawers	GREEN	2		
Item	1964-W	INNSBRUCK Storage Unit/G.Door	GREEN	1		
Item	1976-W	INNSBRUCK Storage Unit/W.Door	GREEN	1		
Item	1000	Bicycle	BLUE	1		
Item	1001	Touring Bicycle	BLUE	1		
→ Item	⋮	1100	Front Wheel	1		

1. Requests new draft rows



Server

2. More draft rows are created.



Number of Draft Rows: 0

Data Entry – Draft Rows

Lines Manage Line Order Fewer options						
Type	No.	Description	Location Code	Quantity	Qty. to Assemble to Order	
Item	1928-W	ST.MORITZ Storage Unit/Drawers	GREEN	2		
Item	1964-W	INNSBRUCK Storage Unit/G.Door	GREEN	1		
Item	1976-W	INNSBRUCK Storage Unit/W.Door	GREEN	1		
Item	1000	Bicycle	BLUE	1		
Item	1001	Touring Bicycle	BLUE	1		
→ Item	:	1100	Front Wheel	1		

1. Request new draft rows

Server

2. More draft rows are created.

Number of Draft Rows: ~~14~~

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Action Improvements

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Scope Repeater Actions

What is wrong with this action?

```
0 references
page 50100 MyPage
{
    PageType = List;
    SourceTable = Customer;

    layout
    {
        0 references
        area(Content)
        {
            0 references
            repeater(GroupName)
            {
                0 references
                field(Name; Rec.Name) { }
            }
        }
    }
}
```

actions

```
{
    0 references
    area(Processing)
    {
        0 references
        action(MyAction)
        {
            ApplicationArea = All;
            Scope = Repeater;

            trigger OnAction()
            begin
                Message('Hello from a scope repeater action!');
            end;
        }
    }
}
```

```
0 references
action(MyAction)
{
    ApplicationArea = All;
    Scope = Repeater;

    trigger OnAction()
    begin
        Message('Hello from a scope repeater action!');
    end;
}
```

Delete

```
0 references
action(MyAction)
{
    ApplicationArea = All;
    Scope = Repeater;
    Promoted = true;

    trigger OnAction()
    begin
        Message('Hello from a scope repeater action!');
    end;
}
```

Scope Repeater Actions

Version 20 and earlier

- The **Scope = Repeater** property was ignored unless the action was **Promoted = True**.
- New UICop rule AWoo15 depending on the runtime version in app.json

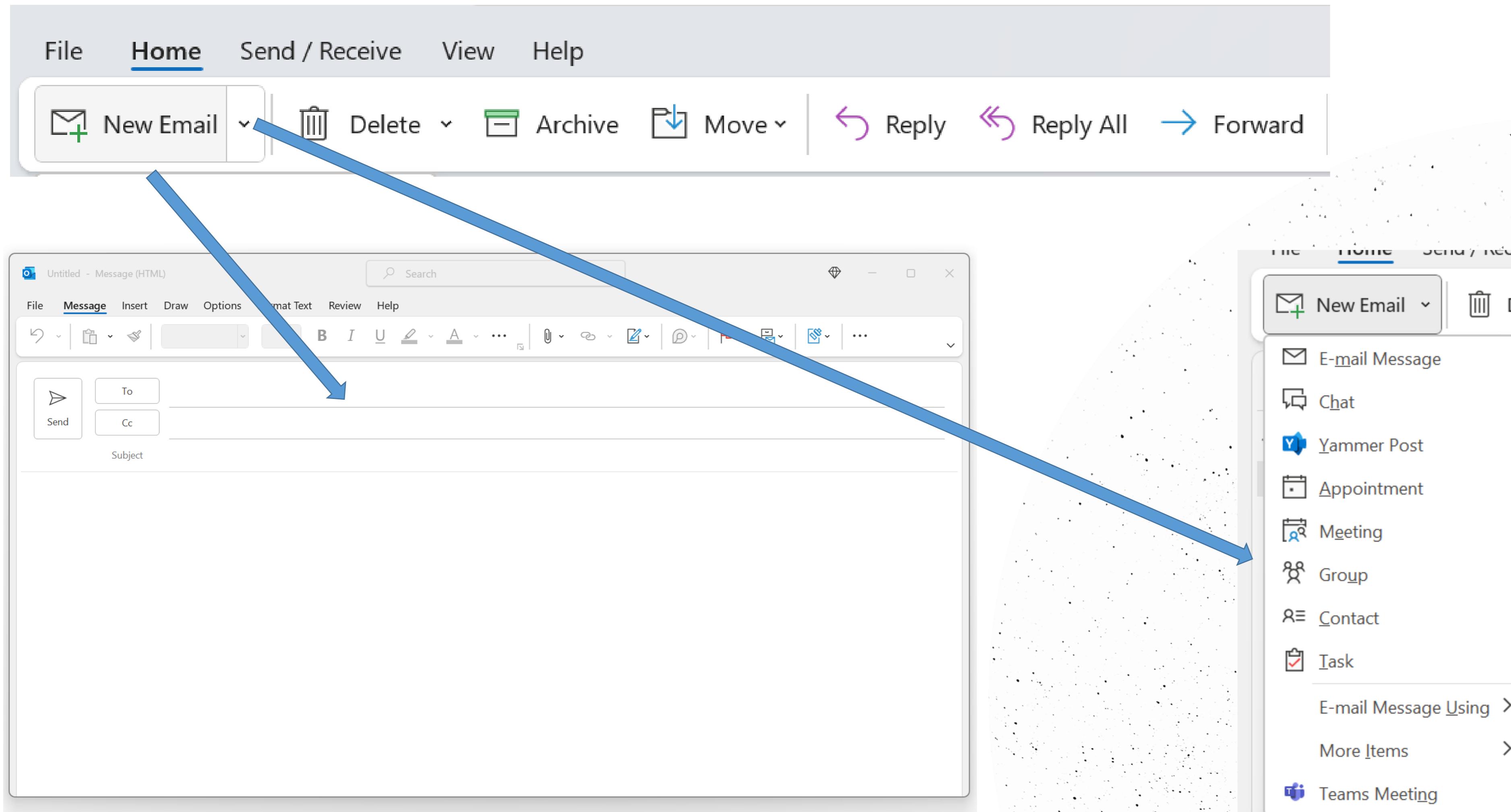
```
0 references  
action(ActionName)  
{  
    Scope = Repeater;  
    ApplicationArea = All;  
    Image = "1099Form";  
}
```

Version 21

Scope = Repeater now works without the action being promoted.

Split Button

Split Buttons are now available in BC!



Split Button

```
group(Posting)
{
    ShowAs = SplitButton;

    1 reference
    action(Post)
    {
        ApplicationArea = All;
        Caption = 'Post';
        Image = Post;

        trigger OnAction()
        begin
            PostOrder();
        end;
    }

    1 reference
    action(PostAndSend)
    {
        ApplicationArea = All;
        Caption = 'Post and Send';
        Image = SendAsPDF;

        trigger OnAction()
        begin
            PostAndSendOrder();
        end;
    }
}
```

Home Prepare Print/Send Request Approval Order Actions ▾ Related

Post... ▾ Release ▾ Create Warehouse Shipment Create Invent

Home Prepare Print/Se

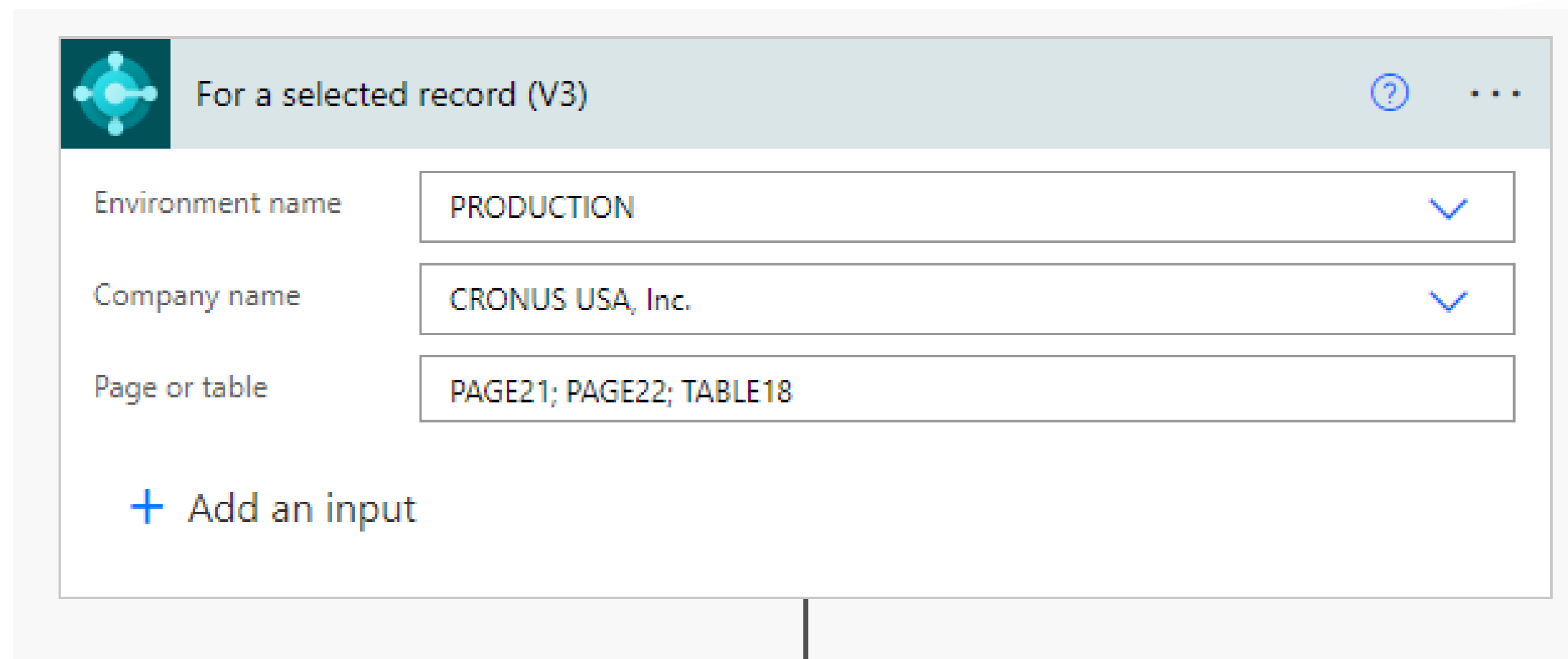
Post... ▾ Release

Post...
Post and Send...
Preview Posting
Pro Forma Invoice...
Post and New...

VAT Date 1/11/

Power Automate

- Create automated workflows between products without writing any code



The screenshot shows the configuration window for the 'For a selected record (V3)' connector in Power Automate. The window has a teal header bar with a connector icon on the left, the title 'For a selected record (V3)' in the center, and a help icon and a three-dot menu icon on the right. Below the header, there are three input fields: 'Environment name' with the value 'PRODUCTION', 'Company name' with the value 'CRONUS USA, Inc.', and 'Page or table' with the value 'PAGE21; PAGE22; TABLE18'. Each field has a blue checkmark icon on the right. At the bottom left, there is a blue plus icon followed by the text 'Add an input'.

Field	Value
Environment name	PRODUCTION
Company name	CRONUS USA, Inc.
Page or table	PAGE21; PAGE22; TABLE18

+ Add an input

Power Automate Flows

Dynamics 365 Business Central

Environment: Sandbox

My Company | Finance | Cash Management | Sales | Purchasing | Shopify

Sales Invoices: All | Search | + New | Delete | Release | Post | Invoice | Send a Reminder | Actions | ...

No. ↑	Sell-to Customer No.	Sell-to Customer Name	External Document No.	Sell-to Contact	Posting Date	Location
(There is nothing to show in this view)						

Reports >

Automate >

Power Automate >

Send a Reminder

Release & Notify Customer

Loading..

Customer Statistics

Customer No.

Balance (LCY) —

Balance (LCY) As Vendor 0.00

Sales

Outstanding Orders (LCY) —

Shipped Not Invd. (LCY) —

Outstanding Invoices (LCY) —

Payments

Payments (LCY) —

Refunds (LCY) —

Last Payment Receipt Date —

Total (LCY) 0.00

Credit Limit (LCY)

Overdue Amounts (LCY) 0.00

Custom actions

- New concept to trigger actions outside of Business Central
- Can define custom actions of type Flow

```
1  pageextension 50100 MyCustomerCardExt extends "Customer Card"
2  {
3      actions
4      {
5          addfirst(creation)
6          {
7              customaction(MyFlowAction)
8              {
9                  Caption = 'My Flow Action';
10                 CustomActionType = Flow;
11                 FlowId = '2bbd8ec4-257f-4e93-b65c-65baab59a59a';
12                 FlowEnvironmentId = 'Default-ed0165d0-d3d6-4b5b-84a9-62628237dbab';
13             }
14         }
15     }
16 }
```

Going further...

Empower citizen and pro AI developers to do more with Power Platform

by Ayrton Massey, Enrico Cimitan, & Lukasz Zoglowek

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New Action Bar model in AL

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The Action Bar

← Sales Invoices | Work Date: 1/25/2024

Search + New Manage Release Posting Invoice Navigate | Actions ▾ Reports ▾ Fewer options

No. ↑	Sell-to Customer No.	Sell-to Customer Name	External Document No.	Sell-to Contact	Posting Date	Location Code	Assigned U ID
<u>103004</u>	: 50000	Guildford Water Department		Mr. Jim Stewart	1/23/2024		

Promoted Actions

Composed of promoted actions & up to 20 promoted categories

Action Repository

Composed of actions & groups

Promoting actions using Promoted property

```
2 page 50105 PageV1
3 {
4     PageType = Card;
5     ApplicationArea = All;
6     UsageCategory = Administration;
7     PromotedActionCategories = 'New,Process,Report,Bank,Application';
8
9     actions
10    {
11        0 references
12        area(Processing)
13        {
14            0 references
15            action(ActionName)
16            {
17                ApplicationArea = All;
18                Promoted = true;
19                PromotedCategory = "Report";
20                PromotedIsBig = true;
21                trigger OnAction()
22                begin
23                    message('there is an action!')
24                end;
25            }
26        }
27    }
28 }
```

Promoted actions are **implicitly** created.

PromotedActionCategories specifies the caption of the 20 defined promoted groups

Promoted creates the promoted action, by default in the category New

PromotedCategory defines the group where the action is added

PromotedIsBig moves the action toward the start of the group

PromotedOnly hides the base action and only shows the promoted action.

Impact on developer & designer experience

Developer experience:

- Not able to choose the exact ordering of promoted actions
- Not possible to create new categories
- Not possible to create sub-group in the categories

Designer experience:

- Not able to move categories
- Not able to change the ordering of actions within one category

The action repository concept

- Some of our pages are getting very complicated.
 - Customer Card has 100+ actions.
- It is hard to create a well-organized and user-friendly action bar that can adopt to different scenarios.

The new Action Bar AL Syntax

- New **Promoted** area representing the left side of the action bar.
- Can contain groups and references to actions.

```
0 references
1  page 50100 MyPage
2  {
3      actions
4      {
5          area(Promoted)
6          {
7          }
8      }
9  }
```

- New **ActionRef** construct representing a reference to an action.
- Can only be defined in the **Promoted** area.
- Inherits all properties from the target action – except visibility which is a combination of both.

```
0 references
actionref(MyActionRef; MyAction)
{
    Visible = true;
}
```

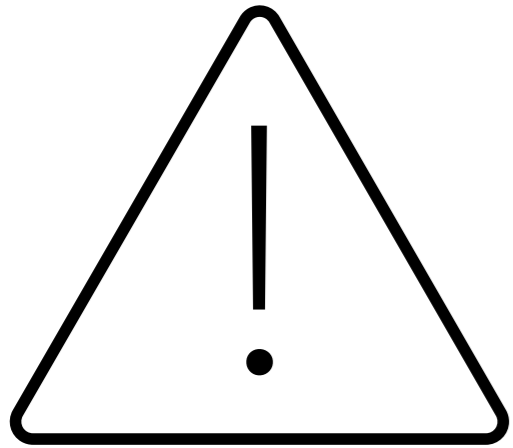
Demo

Promoted area and ActionRefs

Action Bar model capabilities

	Feature	Promoted model	ActionRef model
Promoted Categories	Creating new categories	<i>Limited to 20 predefined ones</i>	✓
	Re-ordering categories	✗	✓
	Defining sub-categories	✗	✓
	Customizability	<i>Only the caption can be updated.</i>	✓
Promoted Actions	Ordering actionrefs	<i>Can only decide if toward the start or the end of a category.</i>	✓
	Defining top-level actionrefs	✗	✓

Mixing Promoted actions & ActionRefs



You cannot mix promoted action syntax and actionref syntax within the same object:

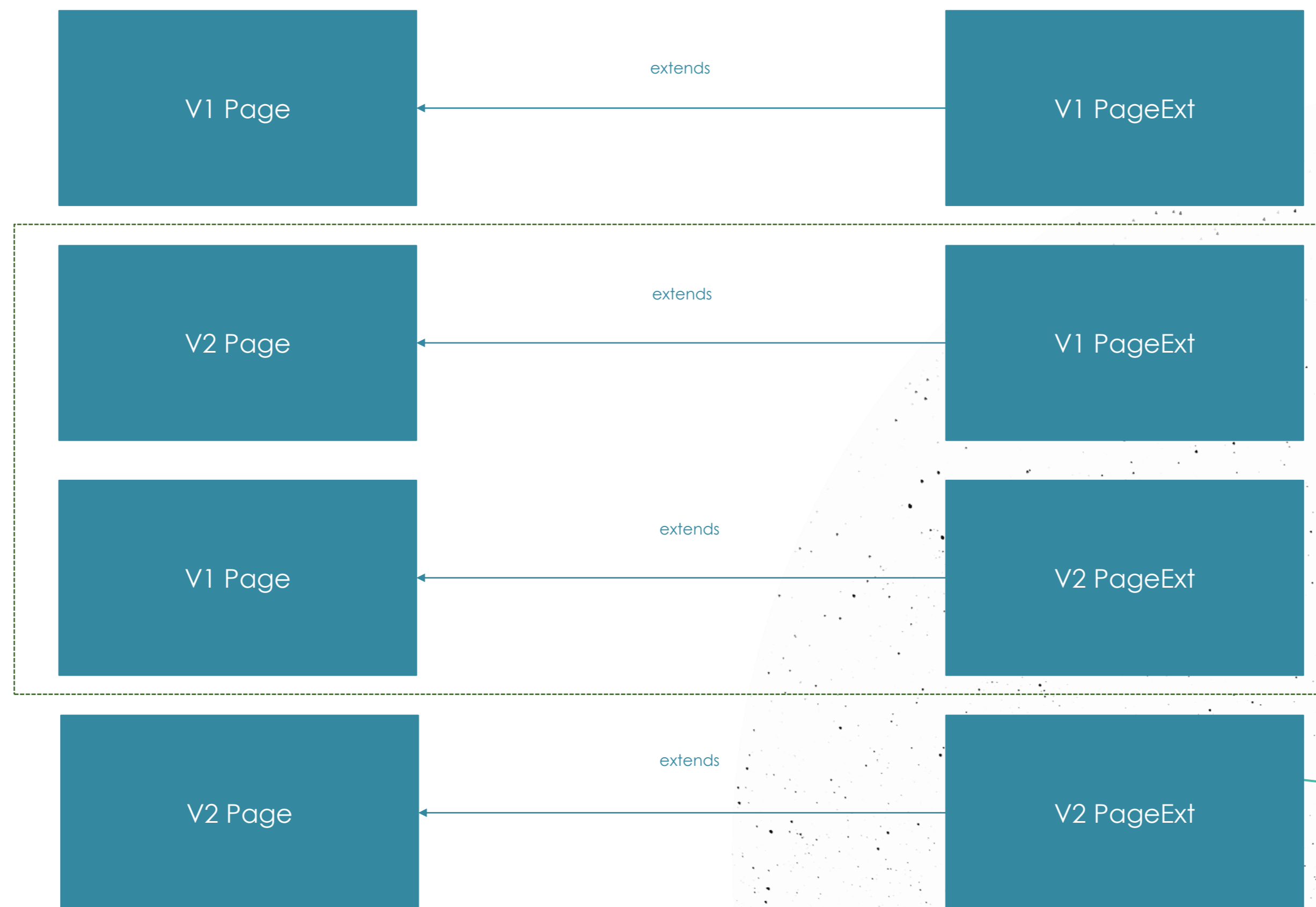
⊗ The property 'Promoted' is not allowed on PageAction 'MyAction' because the PageObject 'MyPage' is using the ActionRef syntax. AL([AL0722](#))

However, you are allowed to have objects with promoted actions and objects with actionrefs in the same app.

How does the runtime support Promoted actions and ActionRefs side-by-side?

Promoted Actions and ActionRefs side-by-side

Support having extensions with Promoted Actions (V1) and extensions with ActionRefs (V2) contributing to the same page.



Demo

Using Promoted Actions & Action Refs side-by-side

Promoted Actions and ActionRefs side-by-side

The compiler & platform automatically convert all promoted actions into ActionRefs under the hood.

```
page 50100 MyPage
{
    actions
    {
        area(Processing)
        {
            action(MyAction)
            {
                PromotedCategory = New;
                Promoted = true;
                RunObject = page MyPage;
            }
        }
    }
}
```



```
page 50100 MyPage
{
    actions
    {
        area(Promoted)
        {
            group(Category_New)
            {
                actionref(MyAction_Promoted; MyAction) { }
            }
        }

        area(Processing)
        {
            action(MyAction)
            {
                RunObject = page MyPage;
            }
        }
    }
}
```

- Promoted Actions: *<ActionName>_Promoted*
- Promoted Categories: *Category_<CategoryName>*

Demo

Converting all pages in a workspace using AL code actions

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Action Bar Improvements in Base Application

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Sales Order - Version 20 vs version 21

20

Dynamics 365 Business Central

Sales Order

S-ORD101001 · Adatum Corporation

Process | Report | Release | Posting | Prepare | Order | Request Approval | Print/Send | Navigate | More options

General

Customer Name Adatum Corporation Due Date 5/2/2022

Details Attachments (0)

Sell-to Customer Sales History

App: Moved categories as sub-categories

21

Dynamics 365 Business Central

Sales Order

S-ORD101001 · Adatum Corporation

Home | Prepare | Print/Send | Request Approval | Order | Report | More options

Post... | Release | Create Warehouse Shipment | Create Inventory Put-away/Pick... | Archive Document

General

Customer Name Adatum Corporation Due Date 5/2/2022

Details Attachments (0)

Sell-to Customer Sales History

Page consistency – version 20

SO

Dynamics 365 Business Central

Sales Order

S-ORD101001 · Adatum Corporation

Process Report Release Posting Prepare Order Request Approval Print/Send Navigate More options

Create Inventory Put-away/Pick...

General Show more Details Attachments (0)

PO

Dynamics 365 Business Central

Purchase Order

106001 · Fabrikam, Inc.

Process Release Posting Prepare Order Request Approval Print/Send Navigate More options

Copy Document... Create Inventory Put-away/Pick...

General Show more Details Attachments (0)

SRO

Dynamics 365 Business Central

Sales Return Order

S-RETORD1001

Process Release Posting Request Approval Print/Send Return Order Navigate More options

Get Posted Document Lines to Reverse... Apply Entries... Create Return-Related Documents...

General Show more Details Attachments (0)

Page consistency – version 21

SO

Dynamics 365 Business Central

Sales Order

S-ORD101001 · Adatum Corporation

Home Prepare Print/Send Request Approval Order Report More options

Post... Release Create Warehouse Shipment Create Inventory Put-away/Pick... Archive Document

General Show more Details Attachments (0)

PO

Dynamics 365 Business Central

Purchase Order

106001 · Fabrikam, Inc.

Home Prepare Print/Send Request Approval Order More options

Post... Release Create Whse. Receipt Create Inventory Put-away/Pick... Send Intercompany Purchase Order Archive Document

General Show more Details Attachments (0)

SRO

Dynamics 365 Business Central

Sales Return Order

Home Prepare Print/Send Request Approval Return Order More options

Post... Release Create Whse. Receipt Create Return-Related Documents... Apply Entries... Archive Document

General Show more Details Attachments (0)

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Client Action Bar Capabilities

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Action Bar Personalization

- You can now move actions and groups at the root level in the promoted section.

The screenshot displays the Microsoft Dynamics 365 interface for a Sales Order. At the top, the header shows 'Sales Order | Work Date: 1/25/2024'. Below this, the customer name '101017 · Selangorian Ltd.' is visible. The Action Bar contains several actions: 'Home', 'Approve', 'Release', 'Posting', 'Prepare', 'Demand Overview', 'Print/Send', 'Navigate', 'Actions', and 'Related'. The 'Demand Overview' action is highlighted with a red box, and a context menu is open over it, showing the following options: 'Move', 'Remove', 'Hide', and 'Open (Ctrl+Click)'. Below the Action Bar, the 'General' section is visible, showing fields for 'Customer Name' (Selangorian Ltd.) and 'Order Date' (1/26/2024).

Sales Order | Work Date: 1/25/2024

101017 · Selangorian Ltd.

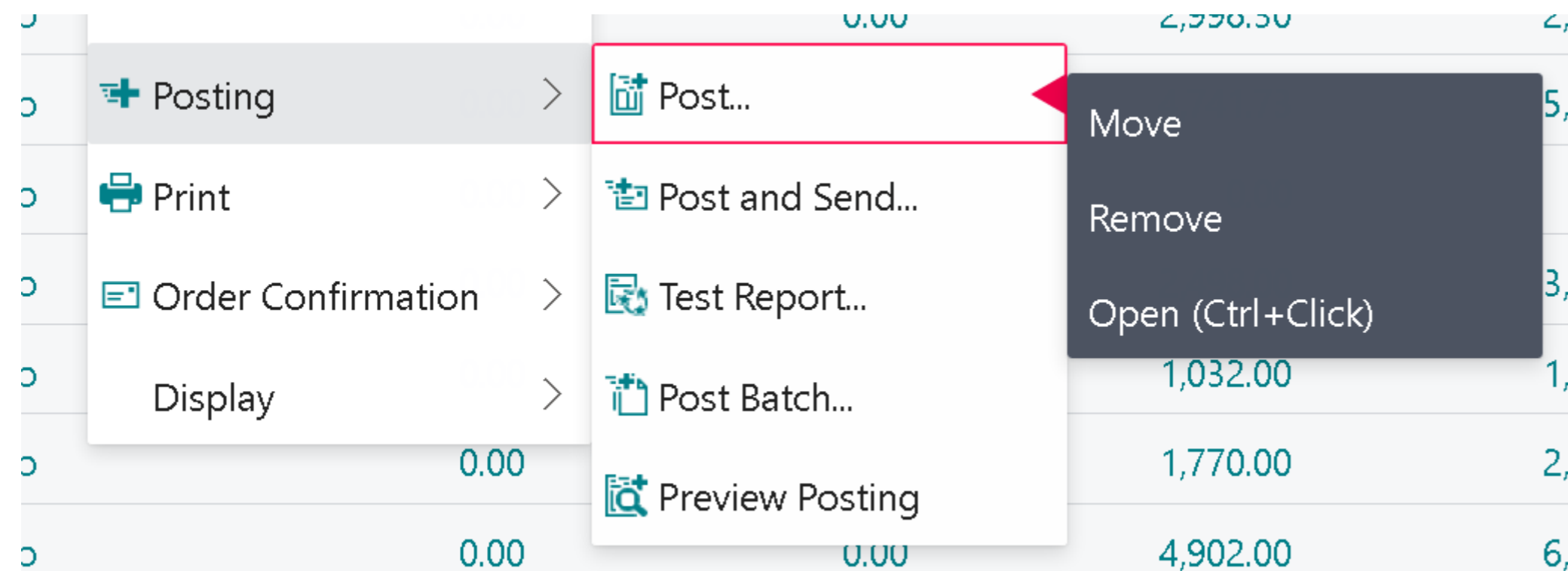
Home Approve Release Posting Prepare Demand Overview Print/Send Navigate Actions Related

Create Inventory Put-away/Pick...

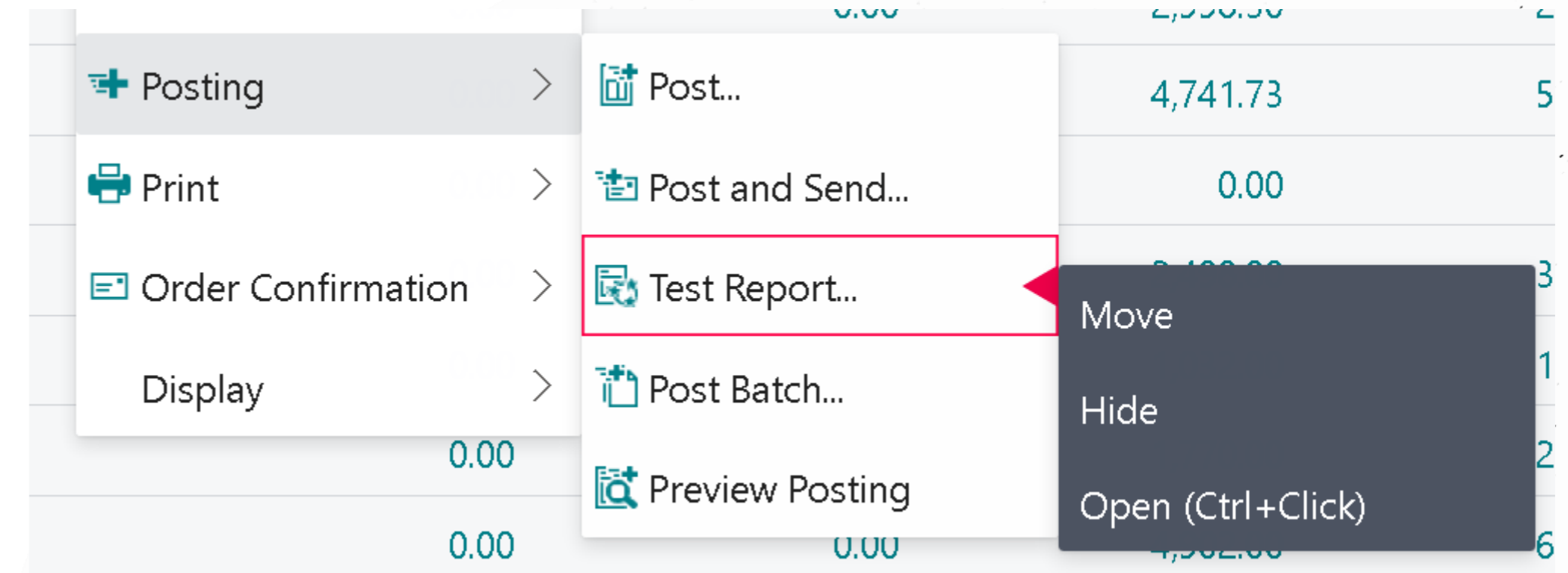
General

Customer Name Selangorian Ltd. Order Date 1/26/2024

Action Bar Personalization – Remove and Hide



Set PromotedOnly = True



Set Visible = False

Action Bar Personalization – Remove and Hide

- **Remove**

=> Removing an action/action ref from the current extension

- **Hide**

=> Set Visible = False

Handling PromotedOnly

- We no longer have **PromotedOnly**.
- We want to encourage users to start prioritizing promoted actions over the base actions.
- We added several UI capabilities to let users to focus more on the promoted section.

Handling PromotedOnly

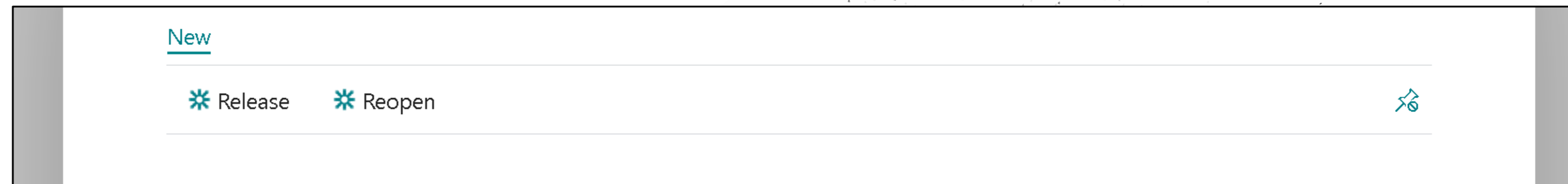
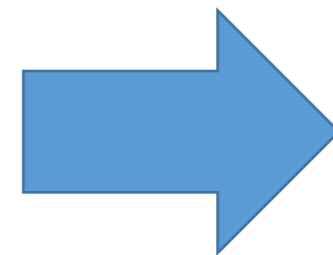
- A group containing only promoted actions are no longer rendered

```
0 references
group(ReleaseAndReopen)
{
    0 references
    action(Release)
    {
        Caption = 'Release';
        Promoted = true;

        trigger OnAction()
        begin
            Message('Released');
        end;
    }

    0 references
    action(Reopen)
    {
        Caption = 'Reopen';
        Promoted = true;

        trigger OnAction()
        begin
            Message('Reopened');
        end;
    }
}
```



Handling PromotedOnly

```
group(Posting)
{
    0 references
    action(Post)
    {
        ApplicationArea = All;
        Caption = 'Post';
        Image = Post;
        Promoted = True;

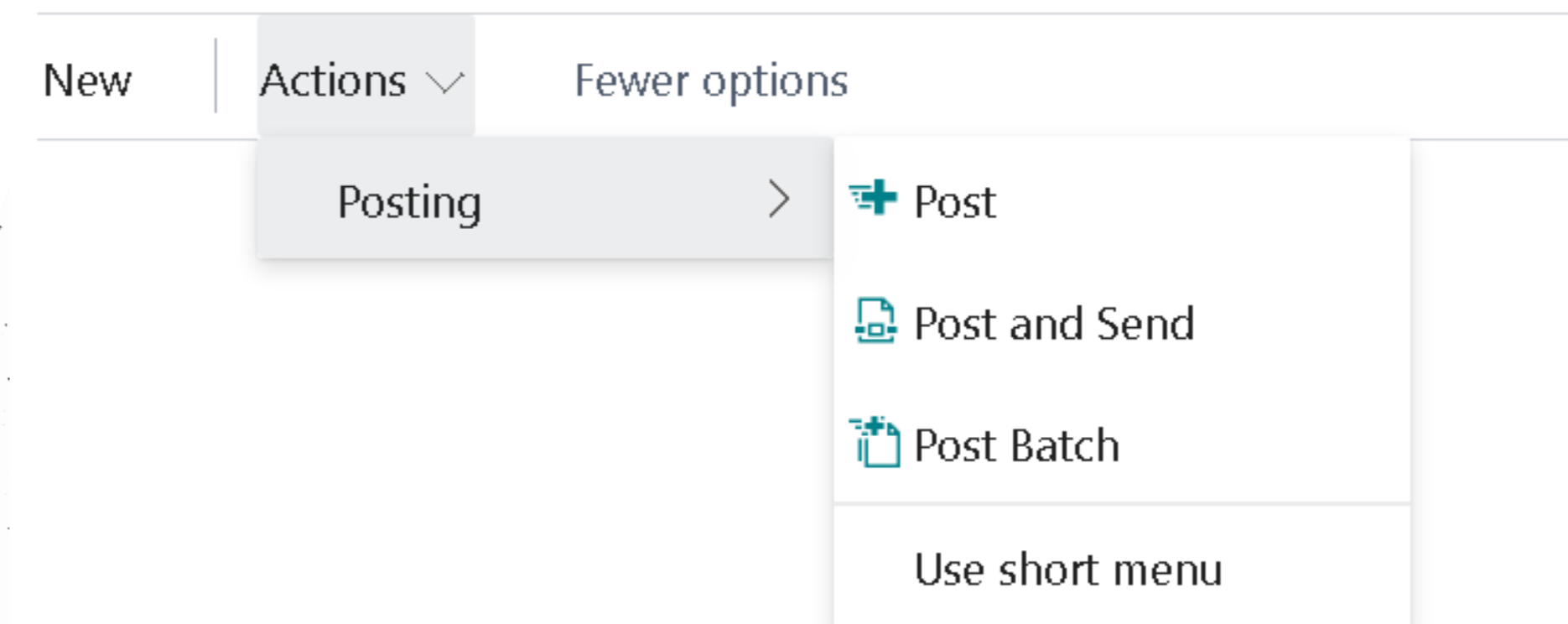
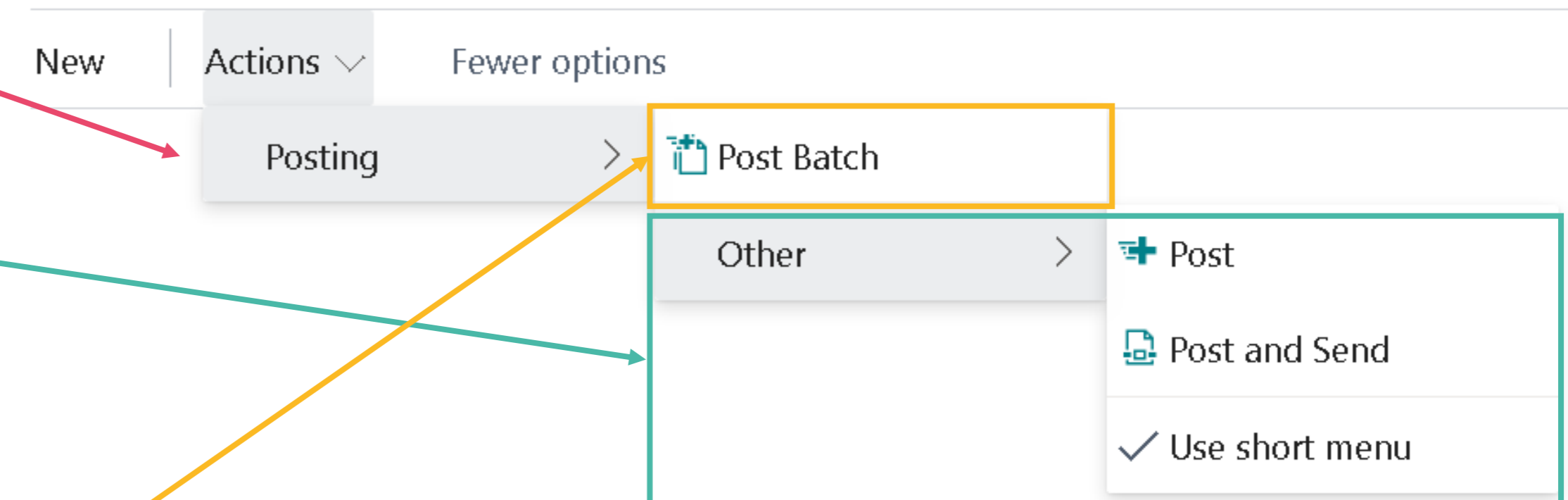
        trigger OnAction()
        begin
            PostOrder();
        end;
    }

    0 references
    action(PostAndSend)
    {
        ApplicationArea = All;
        Caption = 'Post and Send';
        Image = SendAsPDF;
        Promoted = True;

        trigger OnAction()
        begin
            PostAndSendOrder();
        end;
    }

    0 references
    action(PostBatch)
    {
        ApplicationArea = All;
        Caption = 'Post Batch';
        Image = PostBatch;

        trigger OnAction()
        begin
            PostBatchOrders();
        end;
    }
}
```





Demo

Client capabilities

10 YEAR ANNIVERSARY
10 YEAR ANNIVERSARY



Uptake and Transition

www.bctechdays.com

Feature Flag “ModernActionBar”

- New feature flag ***ModernActionBar*** is added to the *Feature Management* page
- *Disabled* for existing users upgrading
- *Enabled by default* for new users

← Feature Management | Work Date: 1/25/2024

✓ Saved

Search Edit List

Feature		Automatically enabled from	Enabled for	Get started
Feature Update: Currency symbol map...	Learn more	Update 22.0 (Q2 2023)	None	—
Feature: Check documents and journals...	Learn more	Update 22.0 (Q2 2023)	All Users	—
Feature Update: Email logging using th...	Learn more	Update 22.0 (Q2 2023)	None	—
Feature: Report read-only data access	Learn more	Update 22.0 (Q2 2023)	All Users	—
Feature Update: Enable use of new exte...	Learn more	Update 23.0 (Q4 2023)	None	—
Feature Update: Enable use of new exte...	Learn more	Update 23.0 (Q4 2023)	None	—
Feature Update: Automatically accept i...	Learn more	Update 22.0 (Q2 2023)	None	—
→ Feature Update: Modern Action Bar	Learn more	Update 24.0 (Q2 2024)	All Users	Try it out
Feature Update: Legacy list views are hi...	Learn more	Update 23.0 (Q4 2023)	None	Try it out
Feature Update: Enable a new user exp...	Learn more	Update 22.0 (Q2 2023)	All Users	—
Feature Update: New time sheet experi...	Learn more	Update 21.0 (Q4 2022)	All Users	—
Feature Update: Map to option sets in ...	Learn more	Update 22.0 (Q2 2023)	None	—
Feature Update: Use tracking by packa...	Learn more	Update 21.0 (Q4 2022)	None	—
Feature Update: Enable inventory and ...	Learn more	Update 22.0 (Q2 2023)	None	—
Feature: New Microsoft Word report re...	Learn more	Update 22.0 (Q2 2023)	All Users	—
Feature Update: Replace the existing In...	Learn more	Update 23.0 (Q4 2023)	None	—
Feature Update: Replace Multiple Intere...	Learn more	Update 22.0 (Q2 2023)	None	—
Feature Update: New sales pricing expe...	Learn more	Update 22.0 (Q2 2023)	None	—
Feature Update: Standardized bank rec...	Learn more	Update 22.0 (Q2 2023)	All Users	—

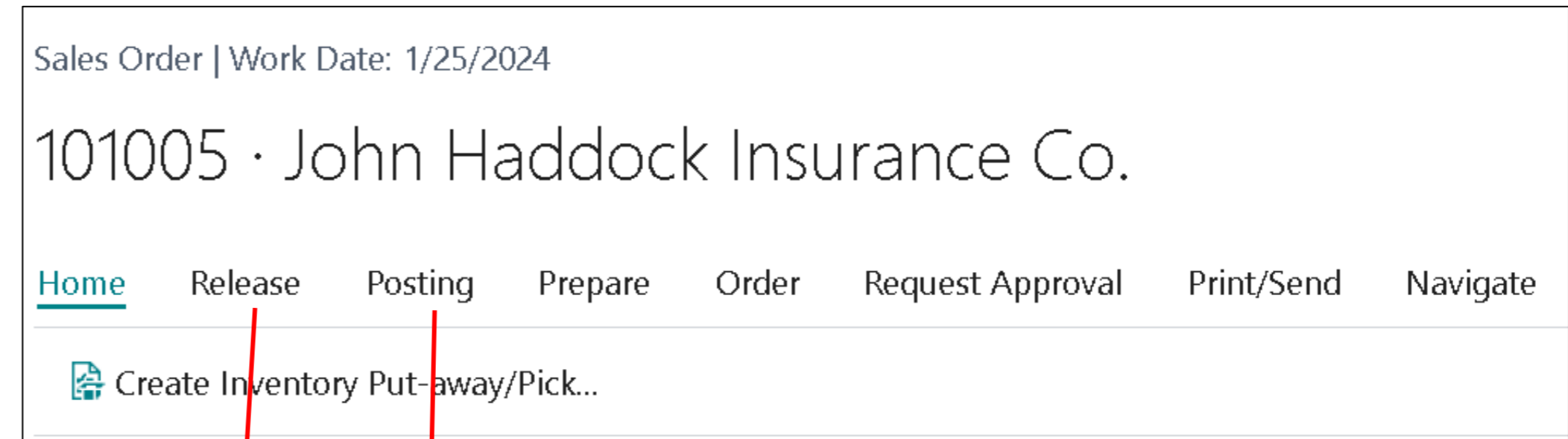
Managing change

Some new features are turned off when Dynamics 365 Business Central is updated to a newer version. These features are optional for a period of time until they are automatically enabled for all users in a later software update. You can prepare in advance by enabling these features for all users on the right environment at the right time that suits your schedule.

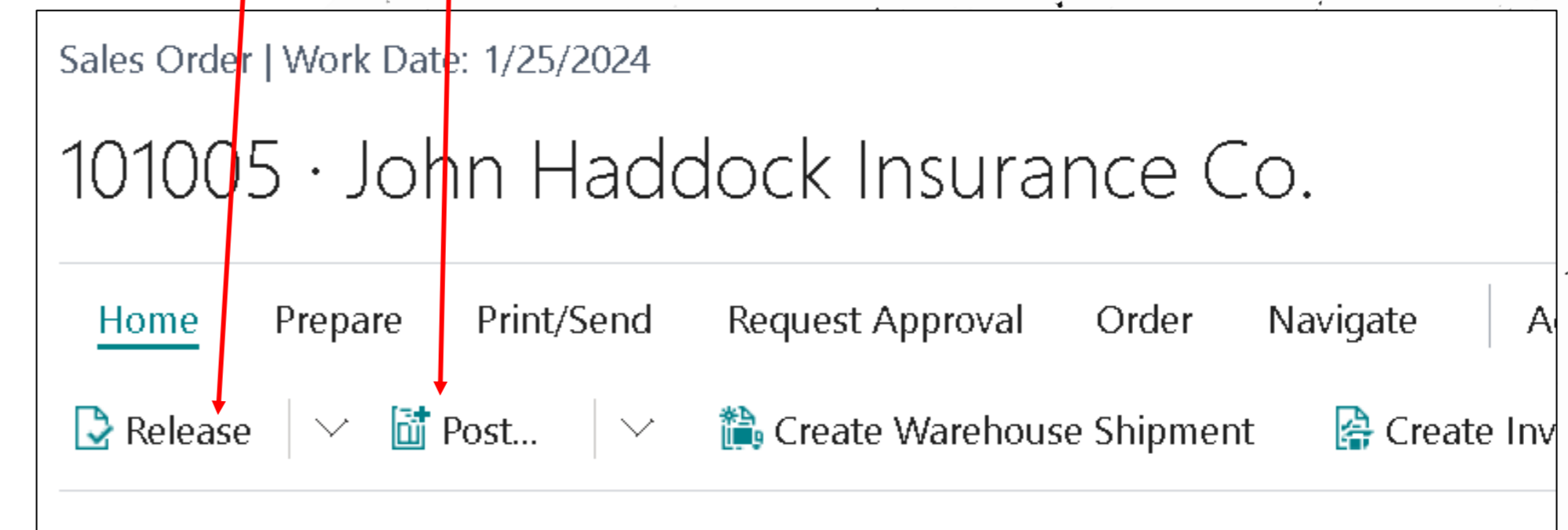
[Learn more about feature management.](#)
[See the Release Plan](#)

Feature Flag – Nested promoted categories

- In version 21, we decided to nest some promoted categories.
 - In this example, Release and Posting are moved inside the Process group.



In Version 20 or Version 21 with feature flag OFF



Version 21 with feature flag ON

Feature Flag – Base actions under hidden group

```
group(MyActions)
{
    Visible = False;

    0 references
    action(TestAction)
    {
        Caption = 'Test Action';
        Promoted = True;
        PromotedCategory = New;

        trigger OnAction()
        begin
            Message('Test Action');
        end;
    }
}
```

New

✱ Test Action

Version 20



The action is rendered in the promoted area even if the base action is hidden.

Version 21

The base and promoted action will be both *hidden*.

*UICope rule has been added to warn devs about this pattern

Converting in-client customizations

Type of customization	Conversion process	Remarks
User Personalization	Fully automated (no user action required)	<ul style="list-style-type: none">- Conversion on upgrade
Profile Customization	Fully automated (no user action required)	<ul style="list-style-type: none">- Conversion on upgrade & on import- Added partner telemetry signals
Designer mode (Sandbox)	One-click conversion (user action required)	<ul style="list-style-type: none">- Code Action in VS Code - Lock icon in the web client 

Demo

Converting Profile Configurations on Import

User profiles conversion

profiles

```
PageCustomization._Sales Quote_.Configuration2.al X
C: > Users > qutreson > Downloads > profiles (1) > PageCustomization._Sales Quote_.Configuration2.al
1 pagecustomization Configuration2 customizes "Sales Quote"
2 {
3     layout
4     {
5         modify(SalesLines)
6         {
7             Visible = false;
8         }
9     }
10    actions
11    {
12        modify(PageInteractionLogEntries)
13        {
14            Promoted = true;
15            PromotedIsBig = true;
16            PromotedCategory = Category4;
17        }
18    }
19 }
20
```

User profiles conversion

Dynamics 365 Business Central

Profiles (Roles) | Work Date: 1/25/2024

Profiles (Roles): All | Search | + New | Manage | Use as default profile | Copy profile... | Customize pages | Export Profiles | **Import Profiles** | More options

Profile ID	Display Name ↑	Source	Role Center ID	Enabled	Use as default profile	Show in Role Explorer
ACCOUNTANT	Accountant	Base Application	9027	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACCOUNTING MANAGER	Accounting Manager	Base Application	9001	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AP COORDINATOR	Accounts Payable Coordinator	Base Application	9002	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AR ADMINISTRATOR	Accounts Receivable Administrator	Base Application	9003	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SECURITY ADMINISTRATOR	Administration of users, user groups and permissions	Base Application	9024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BLANK	Blank Profile	System Application	8999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BOOKKEEPER	Bookkeeper	Base Application	9004	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BUSINESS MANAGER	Business Manager	Base Application	9022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BUSINESS MANAGER EVAL...	Business Manager Evaluation	Base Application	9022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COPY	COPY		9006	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MYPROFILE	Demo Profile	BCTechDays - Profile Configurati...	9006	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EMPLOYEE	Employee	Base Application	8999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FIN	Finance	Base Application	8901	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HR	Human Resources	Base Application	8902	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SHIPPING AND RECEIVING	Inventory Manager	Base Application	9008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IT MANAGER	IT Manager	Base Application	9018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M365 COLLABORATION	M365 Collaboration	Base Application	8999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MACHINE OPERATOR	Machine Operator - Manufacturing Comprehensive	Base Application	9013	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MANUFACTURING	Manufacturing	Base Application	8903	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PRODUCTION PLANNER	Manufacturing Manager	Base Application	9010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

User profiles conversion

Dynamics 365 Business Central

Profiles (Roles) | Work Date: 1/25/2024

Profiles (Roles): All

Search

+ New

Manage

Use as default profile

Copy profile...

Customize pages

Export Profiles

Import Profiles

More options

Profile ID	Display Name	Role Center ID	Enabled	Use as default profile	Show in Role Explorer
PURCH	Purchasing	8905	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PURCHASING AGENT	Purchasing Agent	9007	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RAPIDSTART SERVICES	RapidStart Services Implementer	9021	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RESOURCING	Resource	8906	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RESOURCE MANAGER	Resource Manager	9014	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALES	Sales And Marketing	8907	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SALES AND RELATIONSH...	Sales and Relationship Manager	9026	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALES MANAGER	Sales Manager	9005	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ORDER PROCESSOR	Sales Order Processor	9006	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SERVICES	Service	8908	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DISPATCHER	Service Manager	9016	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHIPPING AND RECEIVIN...	Shipping and Receiving - Warehouse M	9000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHOP SUPERVISOR	Shop Supervisor - Manufacturing Com	9012	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHOP SUPERVISOR - FO...	Shop Supervisor - Manufacturing Four	9011	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEAM MEMBER	Team Member	9028	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEST	TEST	9022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WAREHOUSE	Warehouse	8909	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WAREHOUSE WORKER - ...	Warehouse Worker - Warehouse Management System	9009	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Import Profiles (1 of 3)

Welcome to the import profiles guide

You can update your list of profiles (roles) by uploading a package file that you exported earlier.

Importing a package can add new profiles or replace existing profiles and their page modifications. Before you import a package, we recommend that you create a copy of your existing profiles by using the Export Profiles action on the Profiles (Roles) page.

When you replace a profile, signed-in users who are assigned to the profile may be interrupted briefly.

Let's go!

Choose Select Package to find a profiles package file.

After choosing a package, you can select which profiles you want to add or replace before committing the change.

Select package

User profiles conversion

Dynamics 365 Business Central

Profiles (Roles) | Work Date: 1/25/2024

Profiles (Roles): All | Search | + New | Manage | Use as default profile | Copy profile... | Customize pages | Export Profiles | Import Profiles | More options

Profile ID	Display Name ↑	Role Center ID	Enabled	Use as default profile	Show in Role Explorer
PURCH	Purchasing	8905	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PURCHASING AGENT	Purchasing Agent	9007	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RAPIDSTART SERVICES	RapidStart Services Implementer	9021	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RESOURCING	Resource	8906	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RESOURCE MANAGER	Resource Manager	9014	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALES	Sales And Marketing	8907	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SALES AND RELATIONSH...	Sales and Relationship Manager	9026	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALES MANAGER	Sales Manager	9005	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ORDER PROCESSOR	Sales Order Processor	9006	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SERVICES	Service	8908	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DISPATCHER	Service Manager	9016	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHIPPING AND RECEIVIN...	Shipping and Receiving - Warehouse M	9000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHOP SUPERVISOR	Shop Supervisor - Manufacturing Com	9012	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHOP SUPERVISOR - FO...	Shop Supervisor - Manufacturing Four	9011	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEAM MEMBER	Team Member	9028	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEST	TEST	9022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WAREHOUSE	Warehouse	8909	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WAREHOUSE WORKER - ...	Warehouse Worker - Warehouse Management System	9009	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Import Profiles (2 of 3)

The package contains the following profiles. If there are profiles that you do not want to import, clear the check box.

Select...	Action	Profile ID ↑	Source of the profile in Business Central
→ <input checked="" type="checkbox"/>	⋮ Replace	TEST	(User-created)

Back Import selected

User profiles conversion

Dynamics 365 Business Central

Profiles (Roles) | Work Date: 1/25/2024

Profiles (Roles): All | Search | + New | Manage | Use as default profile | Copy profile... | Customize pages | Export Profiles | Import Profiles | More options

Profile ID	Display Name	Role Center ID	Enabled	Use as default profile	Show in Role Explorer
PURCH	Purchasing	8905	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PURCHASING AGENT	Purchasing Agent	9007	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RAPIDSTART SERVICES	RapidStart Services Implementer	9021	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RESOURCING	Resource	8906	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RESOURCE MANAGER	Resource Manager	9014	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALES	Sales And Marketing	8907	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SALES AND RELATIONSH...	Sales and Relationship Manager	9026	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SALES MANAGER	Sales Manager	9005	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ORDER PROCESSOR	Sales Order Processor	9006	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
SERVICES	Service	8908	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
DISPATCHER	Service Manager	9016	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHIPPING AND RECEIVIN...	Shipping and Receiving - Warehouse M	9000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHOP SUPERVISOR	Shop Supervisor - Manufacturing Com	9012	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SHOP SUPERVISOR - FO...	Shop Supervisor - Manufacturing Four	9011	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEAM MEMBER	Team Member	9028	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEST	TEST	9022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WAREHOUSE	Warehouse	8909	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
WAREHOUSE WORKER - ...	Warehouse Worker - Warehouse Management System	9009	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Import Profiles (3 of 3)

Results

Profile ID	Message
→ TEST	Successfully imported with warnings

Back Done

User profiles conversion

Dynamics 365 Business Central

Detailed Results | Work Date: 1/25/2024

Search

Profile ID ▾	Severity ▾	Message
TEST	Warning	We have detected the use of deprecated language constructs in your profile package and we have automatically updated your pro...
TEST	Verbose	The profile was successfully imported.

Signal	Event ID	Severity
Profile Import Success	LC0046	Info
Profile Import Failure	LC0047	Error
Profile Export Success	LC0048	Info
Profile Export Failure	LC0049	Error
Profile Copy Success	LC0050	Info
Profile Copy Failure	LC0051	Error
Profile Creation	LC0052	Info
Profile Removed	LC0053	Warning
Profile Page Customization Removed	LC0054	Warning
Profile Page Customization Conversion	LC0055	Warning

Information diagnostic about the conversion

+

Partner Telemetry signal for the conversion & profile configuration operations

User profiles conversion

Dynamics 365 Business Central

Profiles (Roles) | Work Date: 1/25/2024

Profiles (Roles): All | Search | + New | Manage | Use as default profile | Copy profile... | Customize pages | **Export Profiles** | Import Profiles | More options

Profile ID	Display Name ↑	Source	Role Center ID	Enabled	Use as default profile	Show in Role Explorer
<u>ACCOUNTANT</u>	Accountant	Base Application	9027	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ACCOUNTING MANAGER	Accounting Manager	Base Application	9001	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AP COORDINATOR	Accounts Payable Coordinator	Base Application	9002	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AR ADMINISTRATOR	Accounts Receivable Administrator	Base Application	9003	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SECURITY ADMINISTRATOR	Administration of users, user groups and permissions	Base Application	9024	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BLANK	Blank Profile	System Application	8999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BOOKKEEPER	Bookkeeper	Base Application	9004	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BUSINESS MANAGER	Business Manager	Base Application	9022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BUSINESS MANAGER EVAL...	Business Manager Evaluation	Base Application	9022	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COPY	COPY		9006	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MYPROFILE	Demo Profile	BCTechDays - Profile Configuratgion	9006	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EMPLOYEE	Employee	Base Application	8999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FIN	Finance	Base Application	8901	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
HR	Human Resources	Base Application	8902	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
SHIPPING AND RECEIVING	Inventory Manager	Base Application	9008	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IT MANAGER	IT Manager	Base Application	9018	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
M365 COLLABORATION	M365 Collaboration	Base Application	8999	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MACHINE OPERATOR	Machine Operator - Manufacturing Comprehensive	Base Application	9013	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
MANUFACTURING	Manufacturing	Base Application	8903	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PRODUCTION PLANNER	Manufacturing Manager	Base Application	9010	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

User profiles conversion

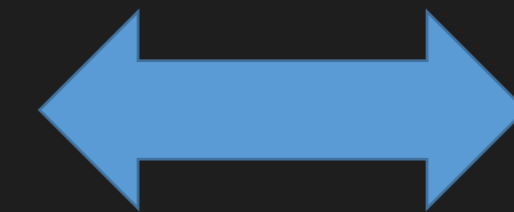
profiles

</

PageCustomization_Sales Quote_Configuration2.al X

C:\> Users > qutreson > AppData > Local > Temp > Temp1_profiles (2).zip > PageCustomization_Sales Quote_Configuration2.al

```
1 pagecustomization Configuration2 customizes "Sales Quote"
2 {
3     layout
4     {
5         modify(SalesLines)
6         {
7             Visible = false;
8         }
9     }
10    actions
11    {
12        addfirst(Category_Category4)
13        {
14            actionref(PageInteractionLogEntries_Promoted; PageInteractionLogEntries)
15            {
16            }
17        }
18    }
19 }
20
```



```
modify(PageInteractionLogEntries)
{
    Promoted = true;
    PromotedIsBig = true;
    PromotedCategory = Category4;
}
```

Summary

- **New AL features**

- New promoted action model based on ActionRefs
- Ability to define split-buttons
- Ability to define actions pointing to Power Automate flows

- **New Client features**

- Fix of scope repeater actions
- Auto-pinning of the action bar
- Rename from Process to Home
- Modern action bar feature
- Enhanced personalization capabilities
- Automated conversion of in-client customizations



Any Questions?

Thank
You!