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NAV 2016: WORKFLOW, DYNAMICS CRM INTEGRATION AND EVENTS

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(Microsoft MDCC)

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NAV EVENTS

Torben Wind Meyhoff

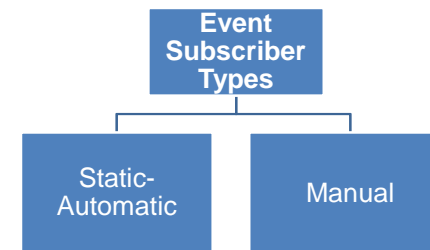
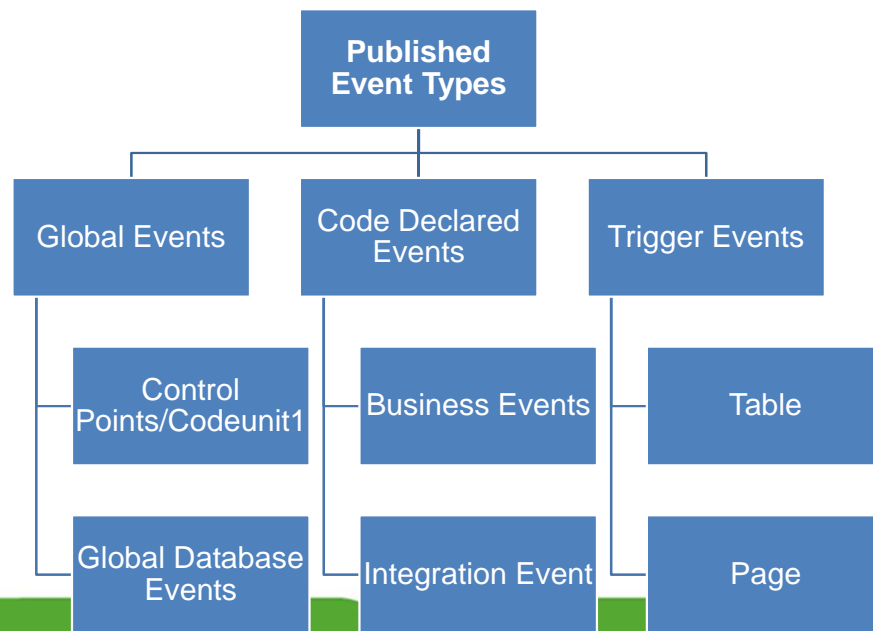
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WHAT IS NAV EVENTS?

The ability to react on actions without changing business logic on the caller side.

Ability for NAV Extension to interact with the base application without doing any code modification



CODE DECLARED EVENT PUBLISHERS

All code objects can publish events

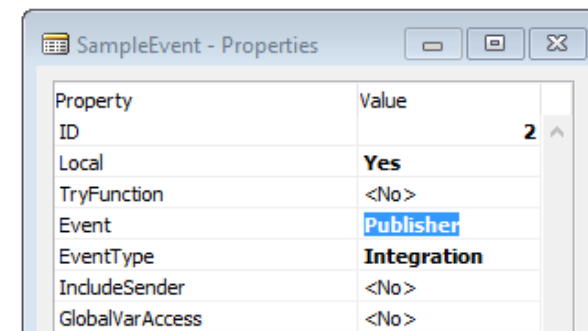
Declared as a function

Events cannot have code, only documentation comments

No return value

Instead you can use VAR arguments

```
4 |  
3 | OnRun()  
4 | // Execute the event  
5 | SampleEvent(5);  
6 |  
7 | LOCAL [IntegrationEvent] SampleEvent(SomeArgument : Integer)  
8 | // Here we can only add comments, no code
```



Demo

PUBLISHER PROPERTIES

IncludeSender

```
LOCAL [EventSubscriber] CustomerOnSomeAction(VAR Sender : Page "Customer Card")
```

GlobalVarAccess on Integration Event

```
OnRun()  
MyGlobalInt := 9;  
OnEvent;  
MESSAGE('From: Publisher:' + FORMAT(MyGlobalInt));  
  
LOCAL [IntegrationEvent] OnEvent()  
// Here we send no parameters
```

```
OnRun()  
  
LOCAL [EventSubscriber] GlobalVariableExample(VAR MyGlobalInt : Integer)  
// Here we have declared the object as an VAR  
MESSAGE('From subscriber: ' + FORMAT(MyGlobalInt));  
MyGlobalInt := 42;
```

Demo

EVENT SUBSCRIBERS

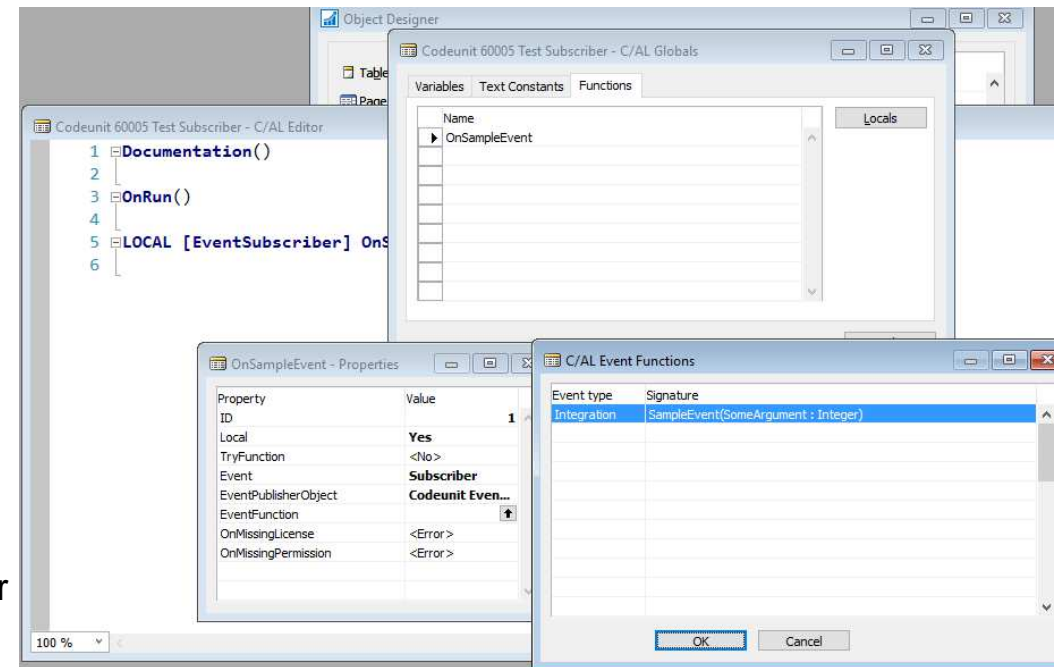
Only codeunit can be subscribers

Each Publisher Event can have multiple subscribers

- Invocation order is not predetermined

Argument Binding

- Bound by name and type
- Order of parameters is not important
- You can remove parameters not used to make a lighter binding



Demo

CODE DECLARED EVENTS

Business Events

- Formal Contract
- Implicit promise to not change in the future
- Public API
- No Global Variable access
- Not very likely to change
- Documented behavior before and after

Integration Events

- Like the Business Event
- Can have Global Variable access
- Likely hood of change is bigger
- Many is added to avoid code modifications
- Candidates for being Business Events

GLOBAL EVENTS

CODEUNIT1 Events/Integration Events Today

OnAfterGetApplicationVersion(VAR AppVersion : Text[80])
OnBeforeCompanyOpen()
OnAfterCompanyOpen()
OnBeforeCompanyClose()
OnAfterCompanyClose()
OnAfterFindPrinter(ReportID : Integer;VAR PrinterName : Text[250])
OnAfterGetDefaultRoleCenter(VAR DefaultRoleCenterID : Integer)
OnAfterMakeDateText(VAR Position : Integer;VAR DateText : Text[250])
OnAfterMakeTimeText(VAR Position : Integer;VAR TimeText : Text[250])
OnAfterMakeText(VAR Position : Integer;VAR Text : Text[250])
OnAfterMakeDateTimeFilter(VAR Position : Integer;VAR DateTimeFilterText : Text[250])
OnAfterMakeDateFilter(VAR Position : Integer;VAR DateFilterText : Text[1024])
OnAfterMakeTextFilter(VAR Position : Integer;VAR TextFilterText : Text)
OnAfterMakeCodeFilter(VAR Position : Integer;VAR TextFilterText : Text)
OnAfterMakeTimeFilter(VAR Position : Integer;VAR TimeFilterText : Text[250])
OnAfterAutoFormatTranslate(AutoFormatType : Integer;AutoFormatExpression : Text[80];VAR AutoFormatTranslation : Text[80])
OnAfterCaptionClassTranslate(Language : Integer;CaptionExpression : Text[1024];VAR Caption : Text[1024])
OnAfterGetSystemIndicator(VAR Text : Text[250];VAR Style : 'Standard,Accent1,Accent2,Accent3,Accent4,Accent5,Accent6,Accent7,Accent8,Accent9')

Global Database Events

OnAfterGetGlobalTableTriggerMask(TableID : Integer;VAR TableTriggerMask : Integer)
OnAfterOnGlobalInsert(RecRef : RecordRef)
OnAfterOnGlobalModify(RecRef : RecordRef;xRecRef : RecordRef)
OnAfterOnGlobalDelete(RecRef : RecordRef)
OnAfterOnGlobalRename(RecRef : RecordRef;xRecRef : RecordRef)
OnAfterGetDatabaseTableTriggerSetup(TableID : Integer;VAR OnDatabaseInsert : Boolean;VAR OnDatabaseModify : Boolean;VAR OnDatabaseDelete : Boolean;VAR OnDatabaseRename : Boolean)
OnAfterOnDatabaseInsert(RecRef : RecordRef)
OnAfterOnDatabaseModify(RecRef : RecordRef)
OnAfterOnDatabaseDelete(RecRef : RecordRef)
OnAfterOnDatabaseRename(RecRef : RecordRef;xRecRef : RecordRef)

Demo

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TRIGGER EVENT

Table Object

OnBeforeDeleteEvent(VAR Rec: Record, RunTrigger: Boolean)

OnAfterDeleteEvent(VAR Rec: Record, RunTrigger: Boolean)

OnBeforeInsertEvent(VAR Rec: Record, RunTrigger: Boolean)

OnAfterInsertEvent(VAR Rec : Record, RunTrigger : Boolean)

OnBeforeModifyEvent(VAR Rec : Record, VAR xRec : Record, RunTrigger : Boolean)

OnAfterModifyEvent(VAR Rec : Record, VAR xRec : Record, RunTrigger : Boolean)

OnBeforeRenameEvent(VAR Rec : Record, VAR xRec : Record, RunTrigger : Boolean)

OnAfterRenameEvent(VAR Rec : Record, VAR xRec: Record, RunTrigger : Boolean)

OnBeforeValidateEvent(VAR Rec : Record, VAR xRec : Record, RunTrigger : Boolean; CurrentFieldNo : Integer)

OnAfterValidateEvent(VAR Rec : Record, VAR xRec : Record, RunTrigger : Boolean, CurrentFieldNo : Integer)

Page Object

OnBeforeActionEvent(VAR Rec : Record)

OnAfterActionEvent(VAR Rec : Record)

OnAfterGetCurrRecordEvent(VAR Rec : Record)

OnAfterGetRecordEvent(VAR Rec : Record)

OnBeforeValidateEvent(VAR Rec : Record, VAR xRec : Record)

OnAfterValidate(VAR Rec : Record, VAR xRec : Record)

OnClosePageEvent(VAR Rec : Record)

OnDeleteRecordEvent(VAR Rec : Record, VAR AllowDelete : Boolean)

OnInsertRecordEvent(VAR Rec : Record, BelowxRec : Boolean, VAR xRec : Record, VAR AllowInsert : Boolean)

OnModifyRecordEvent(VAR Rec : Record, VAR xRec : Record, VAR AllowModify : Boolean)

OnNewRecordEvent(VAR Rec: Record, BelowxRec : Boolean, VAR xRec : Record)

OnOpenPageEvent(VAR Rec : Record)

OnQueryClosePageEvent(VAR Rec : Record, VAR AllowClose : Boolean)

Demo

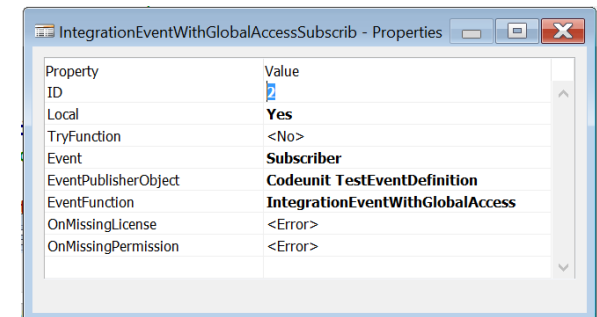
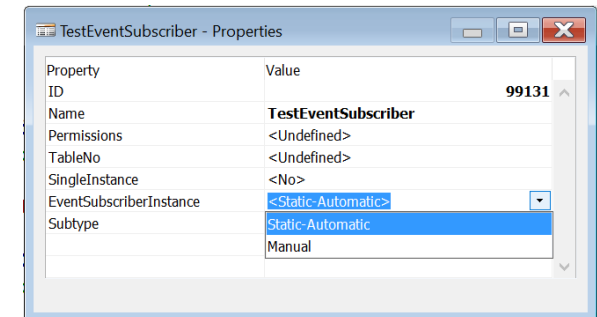
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EVENT SUBSCRIBER INSTANCES

Property EventSubscriberInstance

- Static-Automatic Binding
 - Each call will make an instance of the subscribing codeunit
- Manual Binding
 - Each binding is handled with BINDSUBSCRIPTION and UNBINDSUBSCRIPTION



BIND AND UNBIND SUBSCRIPTIONS

```
Codeunit 60004 Event Binding - C/AL Editor
1 Documentation()
2
3 OnRun()
4 // Execute the event
5 MESSAGE('Beginning ' + FORMAT(Counter));
6 SampleEvent(Counter);
7 MESSAGE('No subscriber ' + FORMAT(Counter));
8
9 // Now we will bind a listener
10 BINDSUBSCRIPTION(TestSubscriber1);
11 BINDSUBSCRIPTION(TestSubscriber2);
12 SampleEvent(Counter);
13 MESSAGE('Two subscriber ' + FORMAT(Counter));
14
15 // Now we release one again
16 UNBINDSUBSCRIPTION(TestSubscriber2);
17 Counter := 0;
18 SampleEvent(Counter);
19 MESSAGE('One subscriber ' + FORMAT(Counter));
20
21 LOCAL [IntegrationEvent] SampleEvent(VAR SomeArgument : Integer)
22 // Here we can only add comments, no code
23
```

One
Publisher
many
subscribers

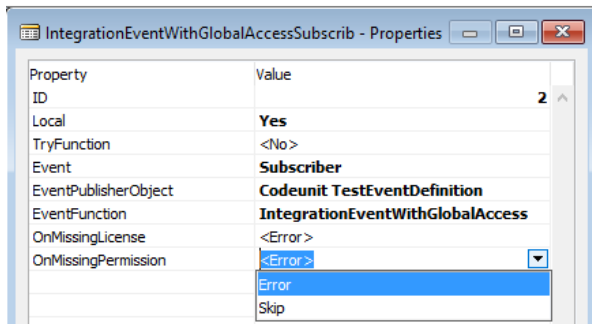
- Subscriber one
- Subscriber two
- Subscriber three

Demo

ERROR LEVELS

License and Permission errors

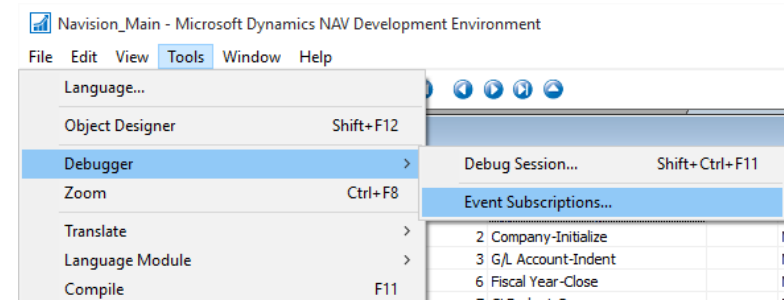
What action do you want to happen on errors



Binding Errors

- Publisher signature changed
- Publisher not there anymore
- Full list documented on MSDN

Look in the active Event Subscription Page



LIST SUBSCRIBERS

Virtual table Event Subscriptions 2000000140

View - Event Subscriptions

HOME

CRONUS International Ltd. ?

Show as List View Show as Chart View OneNote Notes Links Refresh Clear Filter Page Find

Event Subscriptions

Type to filter (F3) Subscriber Codeunit ID No filters applied

Subs... Cod...	Subscriber Codeunit Name	Subscriber Function	Event Type	Publisher Object ...	Publisher Object ID	Publisher Object Name	Published Function	Active	Number of Calls	Subscriber Instance	Active Manual...	Originating App Name	Error Information
400	SMTP Mail	HandleSMTPRegisterServiceConn...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
802	Online Map Management	HandleMAPRegisterServiceConne...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
826	DO Payment Integration Mgt.	HandleDOLRegisterServiceConne...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
871	Social Listening Management	HandleMSERRegisterServiceConne...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
1060	Payment Service Management	HandlePaymentServiceConnection	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
1061	PayPal Payment Link Manage...	RegisterPayPalPaymentProvder	Integration	Table	1060	Payment Service Setup	RegisterNewPaymentTypes	✓	0	Static-Automatic	0		
1265	Bank Data Conv. Serv. Mgt.	HandleBankDataConvRegisterSer...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
1280	Map Currency Exchange Rate	HandleCurrencyExchangeRateRe...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
1294	OCR Service Mgt.	HandleOCRRegisterServiceConne...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
1410	Doc. Exch. Service Mgt.	HandleVANRegisterServiceConne...	Integration	Table	1400	Service Connection	OnRegisterServiceConnection	✓	0	Static-Automatic	0		
1520	Workflow Event Handling	RunWorkflowOnAfterCreateDocF...	Integration	Codeunit	132	Release Incoming Document	OnAfterCreateDocFromIncoming...	✓	0	Static-Automatic	0		
1520	Workflow Event Handling	RunWorkflowOnAfterCreateDocF...	Integration	Codeunit	132	Release Incoming Document	OnAfterCreateDocFromIncoming...	✓	0	Static-Automatic	0		
1520	Workflow Event Handling	RunWorkflowOnAfterIncomingD...	Integration	Codeunit	133	Send Incoming Document t...	OnAfterIncomingDocReadyForOCR	✓	0	Static-Automatic	0		
1520	Workflow Event Handling	RunWorkflowOnAfterIncomingD...	Integration	Codeunit	1410	Doc. Exch. Service Mgt.	OnAfterIncomingDocReceivedFro...	✓	0	Static-Automatic	0		
1520	Workflow Event Handling	RunWorkflowOnAfterIncomingD...	Integration	Codeunit	133	Send Incoming Document t...	OnAfterIncomingDocReceivedFro...	✓	0	Static-Automatic	0		
1520	Workflow Event Handling	RunWorkflowOnAfterIncomingD...	Integration	Codeunit	133	Send Incoming Document t...	OnAfterIncomingDocSentToOCR	✓	0	Static-Automatic	0		
1520	Workflow Event Handling	RunWorkflowOnAfterInsertGener...	Trigger	Table	81	Gen. Journal Line	OnAfterInsertEvent	✓	0	Static-Automatic	0		

Close

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DEBUGGING EVENTS

Event Phase	Breakpoint	Description
On publishing an event	<p>Add a breakpoint in the event publisher function that declares an event. Although an event publisher function does not contain any code, except comments, you can add a breakpoint on a non-code line.</p> <p>For more information about publishing and event, see Publishing Events.</p>	<p>This enables you to step into the event handler code in event subscriber functions that subscribe to the event, without executing code that raises an event.</p>
On raising an event	<p>Add a breakpoint on the line of code that calls the event publisher function which raises the event.</p>	<p>This enables you to step into event handler code in event subscriber functions from where the events are raised.</p> <p>For more information about raising and event, see Raising Events.</p>
On subscribing to an event	<p>Add breakpoints on lines of code in the event subscriber function that subscribes to a raised event.</p>	<p>This enables you to step through code that handles an event.</p> <p>For more information about publishing and event, see Subscribing to Events.</p>

[https://msdn.microsoft.com/en-us/library/mt299435\(v=nav.90\).aspx](https://msdn.microsoft.com/en-us/library/mt299435(v=nav.90).aspx)

Demo

FIND EVENT PUBLISHERS IN CODE

Unfortunately we did not make it to a publisher page

Export all application objects to text file and search for:

- [Business ←no end] since more parameters can come
- [Integration ←no end] since more parameters can come

WHERE IS IT USED?

NAV 2016

- Dynamics CRM Integration
- Workflow
- Permission Recorder
- Custom Events for Posting
- <https://msdn.microsoft.com/en-us/dynamics/nav/mt598589.aspx>
- Registering Service Connection
- NAV Extension

Need one for NAV Extension request it thru <https://blogs.msdn.microsoft.com/nav/2015/10/15/integration-events-in-microsoft-dynamics-nav-2016/>

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GETTING STARTED/WALKTHROUGH

Walkthrough: Publishing, Raising, and Subscribing to an Event in Microsoft Dynamics NAV

[https://msdn.microsoft.com/en-us/library/mt299404\(v=nav.90\).aspx](https://msdn.microsoft.com/en-us/library/mt299404(v=nav.90).aspx)

Walkthrough: Implementing New Workflow Events and Responses

[https://msdn.microsoft.com/en-us/library/mt574349\(v=nav.90\).aspx](https://msdn.microsoft.com/en-us/library/mt574349(v=nav.90).aspx)



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DYNAMICS CRM INTEGRATION

Steffen Balslev

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INTEGRATING DYNAMICS CRM

Platform support

- Table type

Modelling cmdlet

- New-NAVCrmTable

Application

- Dynamics CRM Connection Setup
- Initial mapping of data between NAV and CRM
- Synchronization jobs for Customers, Contacts, Unit Of Measure, Currency, Salespeople and Sales Invoices.

INTEGRATING DYNAMICS CRM

Table

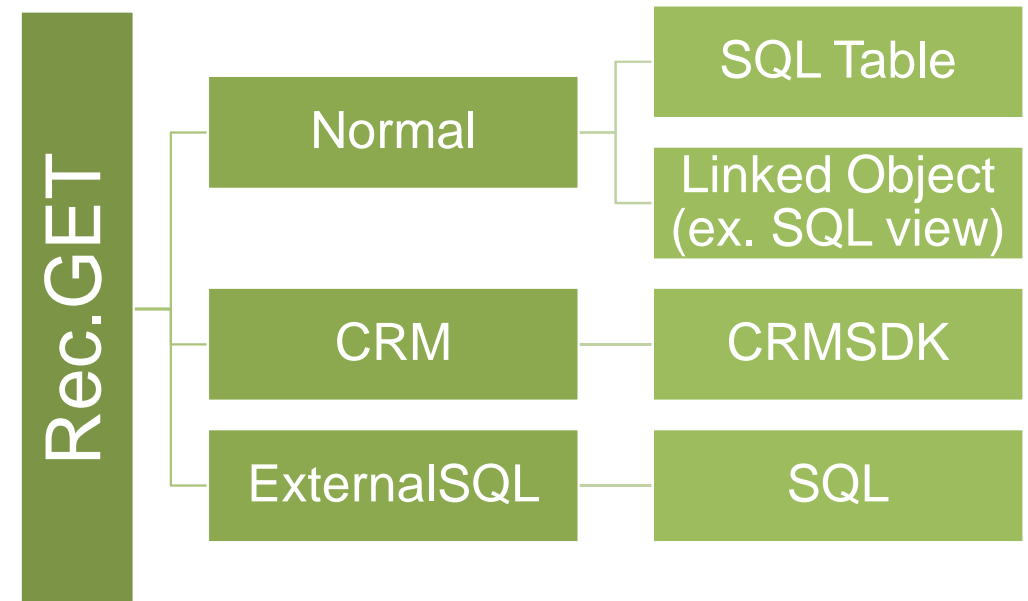
- TableType (Normal, CRM, ExternalSQL)
- ExternalName

Fields

- ExternalName
- ExternalType (picklist, lookup, .net data types)
- ExternalAccess
- OptionOrdinalValues

Connecting to remote data available

- RegisterTableConnection
- SetDefaultTableConnection



DEMO – USING REGISTERCONNECTION

```
// Register table connection to make it available
REGISTERTABLECONNECTION(
    TABLECONNECTIONTYPE::CRM, // It is a CRM Table connection
    'My First Connection', // It is my first connection
    'URL=https://sbtechdays2015.crm4.dynamics.com;USERNAME=john@sbtechdays2015.onmicrosoft.com;PASSWORD=' + MySecretPassword
);

// Querying for data now will fail.
MESSAGE(FORMAT(
    CRMAccount.FINDFIRST
));
```

DEMO – USING REGISTERCONNECTION

```
// Register table connection to make it available
REGISTERTABLECONNECTION(
    TABLECONNECTIONTYPE::CRM, // It is a CRM Table connection
    'My First Connection', // It is my first connection
    'URL=https://sbtechdays2015.crm4.dynamics.com;USERNAME=john@sbtechdays2015.onmicrosoft.com;PASSWORD=' + MySecretPassword
);

// Set the default connection when using tables
SETDEFAULTTABLECONNECTION(
    TABLECONNECTIONTYPE::CRM, // Of type CRM
    'My First Connection'); // To my connection

MESSAGE(FORMAT(
    CRMAccount.COUNT
));
```

DEMO – USING REGISTERCONNECTION

```
// Working with multiple table connections

// Register first table connection
REGISTERTABLECONNECTION(TABLECONNECTIONTYPE::CRM,'My First Connection',
    'URL=https://sbtechdays2015.crm4.dynamics.com;USERNAME=john@sbtechdays2015.onmicrosoft.com;PASSWORD=' + MySecretPassword);
// Register second table connection
REGISTERTABLECONNECTION(TABLECONNECTIONTYPE::CRM,'My Second Connection',
    'URL=https://compdemonav2016.crm4.dynamics.com;USERNAME=admin@compdemonav2016.onmicrosoft.com;PASSWORD=pass@word1');

// Connect the first CRM Account list to the first connecton
SETDEFAULTTABLECONNECTION(TABLECONNECTIONTYPE::CRM,
    'My First Connection');
CRMAccountsRecord1.FINDSET;

// Connect the second CRM Account list to the second connecton
SETDEFAULTTABLECONNECTION(TABLECONNECTIONTYPE::CRM,
    'My Second Connection');
CRMAccountsRecord2.FINDSET;

MESSAGE('First: %1, Second %2', CRMAccountsRecord1.COUNT, CRMAccountsRecord2.COUNT);
```


DEMO – USING REGISTERCONNECTION

```
LOCAL PROCEDURE Demo4@12();
BEGIN
    // Using scoped connections

    // Register first table connection
    REGISTERTABLECONNECTION(TABLECONNECTIONTYPE::CRM,'My First Connection',
        'URL=https://sbtechdays2015.crm4.dynamics.com;USERNAME=john@sbtechdays2015.onmicrosoft.com;PASSWORD=' + MySecretPassword);
    // Register second table connection
    REGISTERTABLECONNECTION(TABLECONNECTIONTYPE::CRM,'My Second Connection',
        'URL=https://compdemonav2016.crm4.dynamics.com;USERNAME=admin@compdemonav2016.onmicrosoft.com;PASSWORD=pass@word1');

    // Set the default connection to be the first
    SETDEFAULTTABLECONNECTION(TABLECONNECTIONTYPE::CRM,
        'My First Connection');
    MESSAGE('Default is: %1',GETDEFAULTTABLECONNECTION(TABLECONNECTIONTYPE::CRM));

    Demo4InnerScope;

    MESSAGE('Coming back the default is: %1',GETDEFAULTTABLECONNECTION(TABLECONNECTIONTYPE::CRM));
END;

LOCAL PROCEDURE Demo4InnerScope@13();
BEGIN
    SETDEFAULTTABLECONNECTION(TABLECONNECTIONTYPE::CRM,
        'My Second Connection',TRUE);
    MESSAGE('Inner scope the default is: %1',GETDEFAULTTABLECONNECTION(TABLECONNECTIONTYPE::CRM));
END;
```

INTEGRATING DYNAMICS CRM

New-NAVCrmTable

CRM: CRMServer, Credential and EntityLogicalName(s)

NAV: ObjectId(s) and Name(s)

Creating multiple entities at the same time also creates relations (lookups).

```
PS > New-NAVCrmTable `
-CRMServer $myServer `
-EntityLogicalName account `
-ObjectId 50010 `
-Name "CRM Account"
```

```
PS > New-NAVCrmTable `
-CRMServer $myServer `
-EntityLogicalName account,systemuser `
-ObjectId 50010,50011 `
-Name "CRM Account","CRM SystemUser"
```

DEMO – NEW CRM FIELD IN NAV

+ NEW DEACTIVATE CONNECT ADD TO MARKETING LIST DYNAMICS NA

ACCOUNT
Beef House

Summary

ACCOUNT INFORMATION

Account Name*	Beef House
Account Group Name	<div>Super Customer</div>
Phone	
Fax	
Website	--
Parent Account	--
Ticker Symbol	--


ADDRESS

Südermarkt 6

POSTS ACTIVITIES

Enter post here

Both Auto posts User

 **Beef House**
Account: Create
On [Beef House](#)
12-11-2015 11:

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DEMO – NEW CRM FIELD IN NAV

```
{ 130 ;      ;new_AccountGroupName;Option  
  
    ExternalAccess=Read;  
    CaptionML=DAN=ben oms'tning (tilstand);  
    Description=Tilstand for tben oms'tning. }  
;InitValue=[ ];  
ExternalName=new_accountgroupname;  
ExternalType=Picklist;  
OptionOrdinalValues=[-1;100000010;100000020;100000050];  
CaptionML=DAN=Account Group Name;  
OptionCaptionML=DAN=" ,Super Customer,Extraordinary Customer,My Friend".  
OptionString=[ ,SuperCustomer,ExtraordinaryCustomer,MyFriend];  
Description= }  
}
```

DEMO – NEW CRM FIELD IN NAV

```
TAB53410 - Notepad
File Edit Format View Help

{ 129 ; ;OpenRevenue_State ;Integer
;ExternalType=DateTime;
;ExternalAccess=Read;
;CaptionML=DAN=ben oms'tning (t:
;Description=Dato/klokkesl't for
;ExternalName=openrevenue_state.
;ExternalType=Integer;
;ExternalAccess=Read;
;CaptionML=DAN=ben oms'tning (t:
;Description=Tilstand for tben (
{ 130 ; ;new_AccountGroupName;Option
;InitValue=[ ];
;ExternalName=new_accountgroupna
;ExternalType=Picklist;
;OptionOrdinalValues=[-1;1000000
;CaptionML=DAN=Account Group Nar
;OptionCaptionML=DAN=" ,Super Cu
;OptionString=[ ,SuperCustomer,l
;Description= }
}
KEYS
{
{ ;AccountId ;Clustered=Yes }
}

TAB5341 - Original - Notepad
File Edit Format View Help

{ 150 ; ;OpenRevenue_State ;Integer
;ExternalType=DateTime;
;ExternalAccess=Read;
;CaptionML=ENU=Open Revenue(Last
;Description=The date time for (
;ExternalName=openrevenue_state.
;ExternalType=Integer;
;ExternalAccess=Read;
;CaptionML=ENU=Open Revenue(Stat
;Description=State of Open Rever
;TableRelation="CRM Account Stat
;ExternalName=nav_accountstatist
;ExternalType=Lookup;
;CaptionML=ENU=Account Statistic
;Description=The account statist
;FieldClass=FlowField;
;CalcFormula=Lookup("CRM Account
;ExternalName=nav_accountstatit:
;ExternalType=String;
;ExternalAccess=Read;
;CaptionML=ENU=AccountStatistic
{ 200 ; ;AccountStatisticsId ;GUID
{ 201 ; ;AccountStatisticsName;Text100
}
```


DEMO – NEW CRM FIELD IN NAV

```
TAB53410 - Notepad
File Edit Format View Help

{ 129 ; ;OpenRevenue_State ;Integer | ;Description=Dato/klokkesl'et for
;ExternalName=openrevenue_state.
;ExternalType=Integer;
;ExternalAccess=Read;
;CaptionML=DAN=ben oms'tning (t:
;Description=Tilstand for tben
{ 130 ; ;new_AccountGroupName;Option
;InitValue=[ ];
;ExternalName=new_accountgroupna
;ExternalType=Picklist;
;OptionOrdinalValues=[-1;1000000
;CaptionML=DAN=Account Group Nar
;OptionCaptionML=DAN="" ,Super Ci
;OptionString=[ ,SuperCustomer,I
;Description= }
}
KEYS
{
{ ;AccountId ;Clustered=Yes }
{ ;Name }
}
FIELDGROUPS
{
{ 1 ;DropDown ;Name }
}
CODE

TAB5341 - New - Notepad
File Edit Format View Help

;CaptionML=ENU=Open Revenue(Last
;Description=The date time for (
;ExternalName=openrevenue_state.
;ExternalType=Integer;
;ExternalAccess=Read;
;CaptionML=ENU=Open Revenue(Stat
;Description=State of Open Rever
;TableRelation="CRM Account Stat
;ExternalName=nav_accountstatist
;ExternalType=Lookup;
;CaptionML=ENU=Account Statisti
;Description=The account statist
;FieldClass=FlowField;
;CalcFormula=Lookup("CRM Account
;ExternalName=nav_accountstatit:
;ExternalType=String;
;ExternalAccess=Read;
;CaptionML=ENU=AccountStatisticsI
;InitValue=[ ];
;ExternalName=new_accountgroupna
;ExternalType=Picklist;
;OptionOrdinalValues=[-1;1000000
;CaptionML=ENU=Account Group Nar
;OptionCaptionML=ENU="" ,Super Ci
;OptionString=[ .SuperCustomer.I
```

CUSTOMIZING DYNAMICS CRM INTEGRATION

Enabling Dynamics CRM data in NAV

- ✓ Adding a field on one of the existing integration entities from Dynamics CRM to existing integration
- ✓ Adding a new Dynamics CRM entity to connect to Dynamics NAV pages.
- ✓ Customizing synchronization

Mappings

- Table 5335 Integration Table Mappings
- Table 5336 Integration Field Mappings

Coupling

- Page per entity
- Codeunit 5331 CRM coupling Management
- Codeunit 5150 Integration Management

Scheduling

- Job pr. entity
- Job for updating customer statistics

Defaults

- Codeunit 5334 CRM Setup defaults
- Codeunit 5340 CRM Integration Table synch

Custom synch. ogic

- Codeunit 5335 Int. Table Synch & Codeunit 5341 CRM Int. Table. Subscriber
- Codeunit 5343 CRM Sales Order to Sales Order

CUSTOMIZING DYNAMICS CRM INTEGRATION

Find

- OnFindUncoupledDestinationRecord

Field

- OnBeforeTransferRecordFields
- OnAfterTransferRecordFields

Default

- OnBeforeApplyRecordTemplate
- OnAfterApplyRecordTemplate

Insert

- OnBeforeInsertRecord
- OnAfterInsertRecord

Modify

- OnBeforeModifyRecord
- OnAfterModifyRecord

DEMO – CUSTOMIZING SYNCHRONIZATION

TAB5335 Tables, TB5336 Fields

COD5334 - Defaults

Custom codeunit - listening to events.

AUTO APPROVING CRM SALES ORDER

Job queue entry looking for new Dynamics CRM Sales orders marked as ready processing.

Send it off to workflow who will set the state to submitted.

If the total amount is < 1000 a NAV sales order will be automatically created.

Otherwise a notification will be sent to John



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WORKFLOW

Marc Hansen,

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WHAT ARE NAV WORKFLOWS

- Automation
- Notification
- Restrictions
- Approvals

WORKFLOW ELEMENTS



EXISTING WORKFLOW TEMPLATES

Integration

Incoming Document Workflow
Incoming Document Approval Workflow
Incoming Document Exchange Workflow
Incoming Document OCR Workflow

Administration

Overdue approvals

Purchase Documents

Purchase Quote workflow
Purchase Invoice workflow
Purchase Invoice Approval
Purchase Credit Memo approval
Purchase Return Order Approval
Purchase Order Approval workflow
Blanket Purchase Order Approval Workflow

Finance

General Journal Batch Approval
General Journal Line Approval

Sales and Marketing

Customer Credit Limit change approval
Customer Approval workflow

Sales Documents

Sales Return Order Approval workflow
Sales Quote Approval workflow
Sales Order Credit Limit Approval
Sales Order Approval Workflow
Sales Invoice Credit Limit Approval
Sales Invoice Approval Workflow
Sales Credit Memo Approval Workflowh
Blanket Sales Order Approval workflow

EXISTING EVENTS

Approval

- Requested, Approved, Rejected, Canceled, Delegated

Record changed

- Item, Customer, Vendor

Incoming Document

Branching Events

Others

EXISTING RESPONSES

Approval

- Create, Approve, Cancel, Reject, Send

Restriction

- Add, Remove, Revert value, Apply value, Discard Value

Document

- Release, Post, Reopen

Incoming Document

- Send to OCR, Receive from OCR ...

Inform user

- Notification, Show message

Others

DEMO – HALLO WORLD IN DESIGNER

HALLO WORKFLOW · Hallo World Workflow

Code: HALLO WORKFLOW
Description: Hallo World Workflow
Category: INT
Enabled: ☒

Workflow Steps

When Event	On Condition	Then Response
A customer record is changed.	Address is Changed	Show message "Hallo World".

Edit - Event Conditions - A customer re... CRONUS Inte... ?

Set conditions for the event:
Condition

Set a condition for when a field value changes:
Field Address is Changed

Remove the condition.

OK Cancel

Edit - Workflow Responses - A customer record is changed. CRONUS Internation... ?

Select Response: Show message "Hallo World".

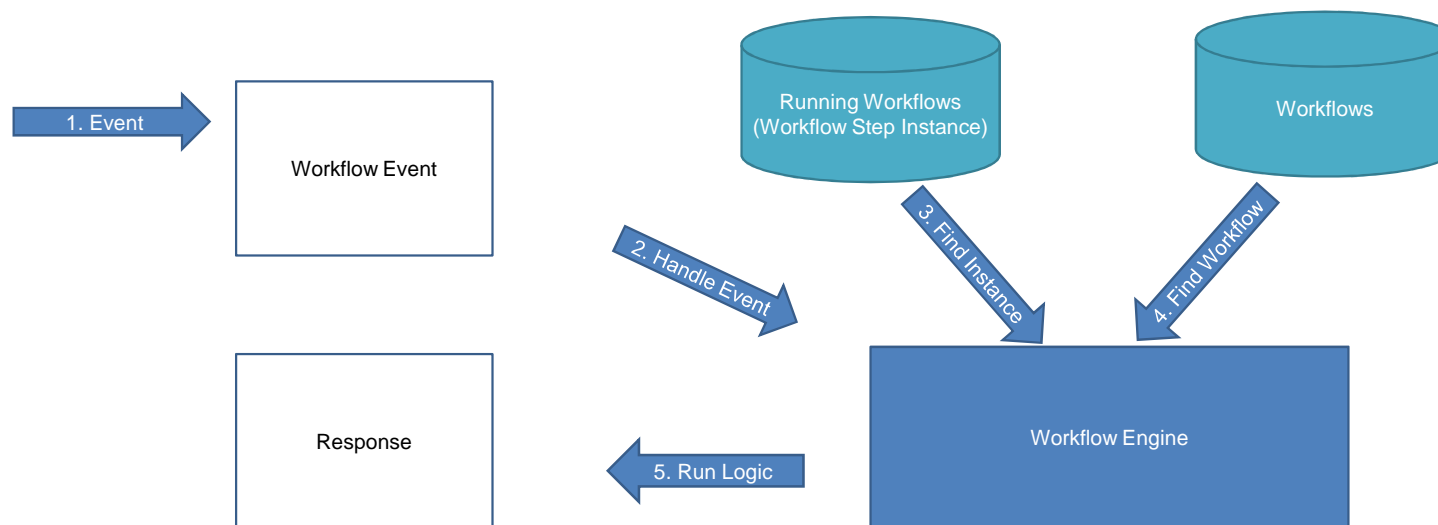
Add More Responses
<(Optional) Select Next Step>

Options for the Selected Response

Message: Hallo World

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WORKFLOW AT RUNTIME



WORKFLOW ACROSS DIFFERENT RECORDS

```
11 WorkflowSetup.InsertTableRelation(  
12     DATABASE::Customer, Customer.FIELDNO("No."),  
13     DATABASE::"Sales Header", SalesHeader.FIELDNO("Sell-to Customer No.));
```


ADVANCED EVENTS AND RESPONSES

Event

- Change Rec

- Related record

- Default Fields

- Custom Request Page

- Event Predecessor

Response

- Arguments

- Response Predecessor

Any Questions?

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THANK YOU

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