

**NAV
TECH
DAYS
2014**

mibuso.com

OFFICE 365 INTEGRATION AND DOCUMENT REPORTING IN NAV 2015

Vlad Precup, Torben Wind Meyhoff
(Microsoft MDCC)

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

**NAV
TECH
DAYS
2014**

mibuso.com

FOCUS ON SIMPLICITY



Image source: www.usnews.com

Microsoft Dynamics
NAV 2015



Image source: elevatednetwork.com

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

NAV
TECH
DAYS
2014
mibuso.com

**NAV
TECH
DAYS
2014**

mibuso.com

OFFICE 365 INTEGRATION IN NAV 2015

Vlad Precup

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

**NAV
TECH
DAYS
2014**

mibuso.com

OFFICE 365 INTEGRATION IN NAV 2015

1



Attach files to emails and send them from NAV 2015
Automatic setup for Exchange Online

2



Federated authentication configuration with PS
Automated configuration for Azure AD

3



OAuth app authentication support on NAV server
Case study: Mobile app consuming NAV data service

OFFICE 365 INTEGRATION IN NAV 2015

1



Attach files to emails and send them from NAV 2015
Automatic setup for Exchange Online

2



Federated authentication configuration with PS
Automated configuration for Azure AD

3



OAuth app authentication support on NAV server
Case study: Mobile app consuming NAV data service

THE NEW SMTP EMAIL FLOW IN NAV

SETUP

- Simplified setup experience
- Better integration with Office 365 out of the box

EMAIL DATA FLOW

- Simpler to use
- Boosts your productivity (fields are auto-completed)
- Out-of-the-box appearance in application pages such as Posted Sales Invoice, Quote etc.
- SMTP vs Outlook based on the user scenario

THE NEW SMTP EMAIL FLOW IN NAV

SETUP

• **DEMO** Simplified setup experience

- Better integration with Office 365 out of the box

EMAIL DATA FLOW

- Simpler to use
- Boosts your productivity (fields are auto-completed)
- Out-of-the-box appearance in application pages such as Posted Sales Invoice, Quote etc.
- SMTP vs Outlook based on the user scenario

DEVELOPMENT EXTENSIONS FOR EMAIL

API BENEFITS

- Simple
- One entry point for the email functionality
- SMTP vs Outlook logic abstraction
- Email composition dialog abstraction

DEVELOPMENT EXTENSIONS FOR EMAIL

API BENEFITS

Simple DEMO

- One entry point for the email functionality
- SMTP vs Outlook logic abstraction
- Email composition dialog abstraction

OFFICE 365 INTEGRATION IN NAV 2015

1



Attach files to emails and send them from NAV 2015
Automatic setup for Exchange Online

2



Federated authentication configuration with PS
Automated configuration for Azure AD

3



OAuth app authentication support on NAV server
Case study: Mobile app consuming NAV data service

FEDERATED AUTHENTICATION

= Delegate the authentication responsibility to an external specialized service which we trust

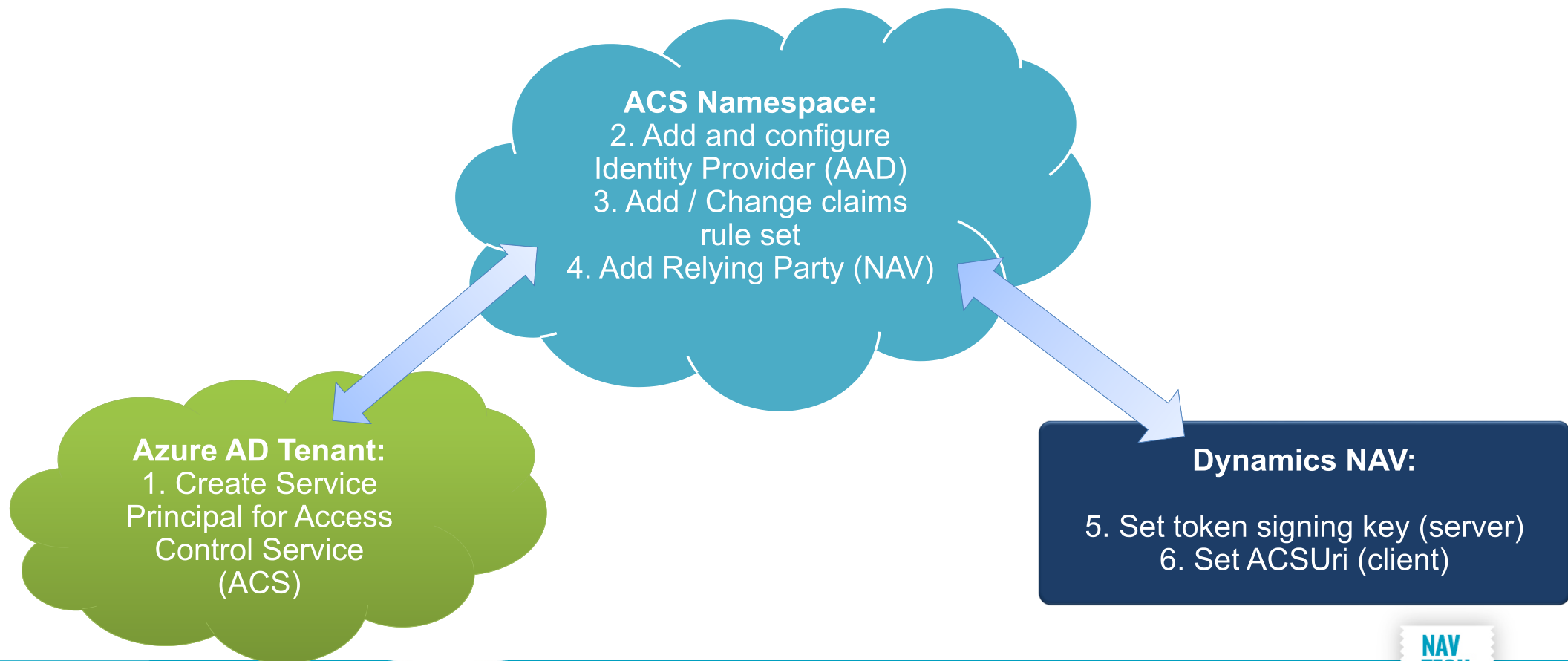
- WHY? Let's revisit...
 1. **Data security** – no password storage on our side.
 2. **Authentication codebase** is maintained by the trusted federated service.
 3. **Single Sign-on** user experience (with Office 365 services).
- Trusted Office 365 authentication service: provided by Azure Active Directory
=> seamless integration with SharePoint Online, Office Web Apps etc.
- Everything sounds great but there is one problem: CONFIGURATION ☺

FEDERATED AUTHENTICATION CONFIGURATION

| CONFIGURATION TASK | BEFORE (2013R2 RTM) | AFTER (2015 RTM*) |
|---|------------------------|----------------------|
| • Admin needs to change NAV config files ⁽¹⁾ | MANUAL ☹ | AUTOMATED ☺ |
| • Admin needs to add her user account to the DB | MANUAL ☹ | AUTOMATED ☺ |
| • Admin needs Microsoft Azure subscription | YES ☹ | NO ☺ |
| • Admin needs to add Azure AD application in MGMT portal ⁽²⁾ | MANUAL ☹ | AUTOMATED ☺ |
| • AAD Authentication is accepted in Windows Client out of the box ⁽³⁾ | NO ☹ | YES ☺ |
| • Sign-in Assistant + AAD Module for PS need to be installed | NO ☺ | YES* |

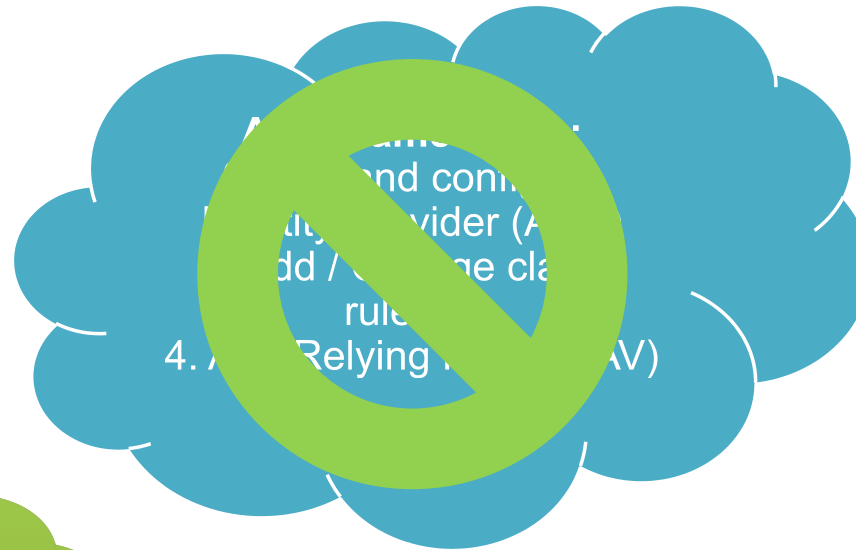
1. Except for the Win client (due to unknown deployment model)
2. Case sensitive, very easy to get it wrong
3. Before, very complex setup was needed for this.

AAD AUTHENTICATION SETUP - NAV 2013 R2



AAD AUTHENTICATION SETUP

NAV 2015 &
NAV 2013R2-CU8



Azure AD Tenant:
1. Create Service
Principal for NAV



Dynamics NAV:
5. Set federation metadata
location (server)
6. Set ACSUri (client)

AUTOMATED SSO SETUP – PS CMDLET

Set-NavSingleSignOnWithOffice365

- NavServerInstance *ServerInstanceName*
- NavWebServerInstanceName *WebServerInstanceName*
- NavWebAddress *WebAddress*
- NavUser *YourNavUser*
- AuthenticationEmail *YourOffice365Email*
- NavServerCertificateThumbprint *SecurityCertificateThumbprint*

AUTOMATED SSO SETUP – PS CMDLET

Set-NavSingleSignOnWithOffice365

-NavServerInstance *ServerInstanceName*

-NavWebServerInstanceName *WebServerInstanceName*

-NavWebAddress *WebAddress*

-NavUser *YourNavUser*

-AuthenticationEmail *YourOffice365Email*

-NavServerCertificateThumbprint *SecurityCertificateThumbprint*

OFFICE 365 INTEGRATION IN NAV 2015

1



Attach files to emails and send them from NAV 2015
Automatic setup for Exchange Online

2



Federated authentication configuration with PS
Automated configuration for Azure AD

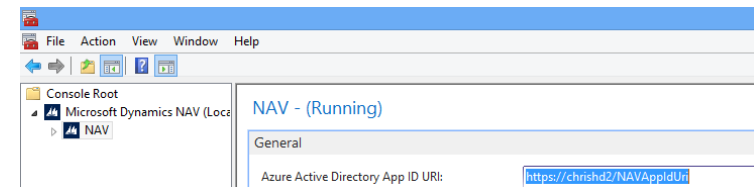
3



OAuth app authentication support on NAV server
Case study: Mobile app consuming NAV data service

WEB SERVICES USING OFFICE AUTHENTICATION (OAUTH)

- WHEN?
 - When implementing custom applications showing NAV data
- WHY?
 - Authenticate using your Office 365 credentials
 - Works for both SOAP and OData
- HOW?
 - Register the NAV server in AAD and save App ID URI in the server configuration
 - Register your custom client in AAD
 - Assign permissions for your client to access NAV server resources in AAD
 - Update your client code



```
// Get access token from AAD. This will show the login dialog.  
var authenticationContext = new AuthenticationContext("https://login.windows.net/" +  
    AadTenantId);  
AuthenticationResult authenticationResult = authenticationContext.AcquireToken(  
    ServerAppIdUri, ClientId, new Uri(ClientAppUri));
```

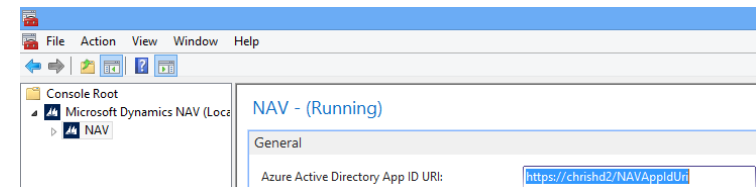
WEB SERVICES USING OFFICE AUTHENTICATION (OAUTH)

- WHEN?
 - When implementing custom applications showing NAV data

DEMO

WHY?

- Authenticate using your Office 365 credentials
- Works for both SOAP and OData



- HOW?
 - Register the NAV server in AAD and save App ID URI in the server configuration
 - Register your custom client in AAD
 - Assign permissions for your client to access NAV server resources in AAD
 - Update your client code

```
// Get access token from AAD. This will show the login dialog.  
var authenticationContext = new AuthenticationContext("https://login.windows.net/" +  
    AadTenantId);  
AuthenticationResult authenticationResult = authenticationContext.AcquireToken(  
    ServerAppIdUri, ClientId, new Uri(ClientAppUri));
```

NAV
TECH
DAYS
2014

mibuso.com

DOCUMENT REPORTING IN NAV 2015


Torben Wind Meyhoff
(Microsoft MDCC)


WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

NAV
TECH
DAYS
2014

mibuso.com

SESSION OBJECTIVES

1  Introduce Word Report Layout
Using Word as a layout option for reports

2  Introduce custom report layouts
Ends users can now create and customize report layouts

3  Introduce report scheduling
Schedule reports to execute on server

4  Introduce other new functionality
Some smaller new features

WORD REPORT LAYOUTS

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com



CHALLENGES WITH RDLC DOCUMENT REPORTS

Creating or changing layouts is costly

- Customers find it too expensive to customize sales documents
- RDLC is precision layout, does not scale with, e.g., font changes
- Visually complex layouts are tedious and complex to make and maintain

Not an end user friendly format

- Modifying the reports require specialized knowledge
- Not suited for end user customization

INTRODUCING MICROSOFT WORD REPORT LAYOUTS

Benefits of Microsoft Word

- Strong visual design capabilities
- WYSIWYG and free flow, with precision layout support
- Theming and templates
- Easy self-service and a customization story for end users

Primarily targeting document reports

- Word's strength is documents, e.g., external facing sales invoices, letters, contracts etc.
- Alternative to RDLC, not a substitute

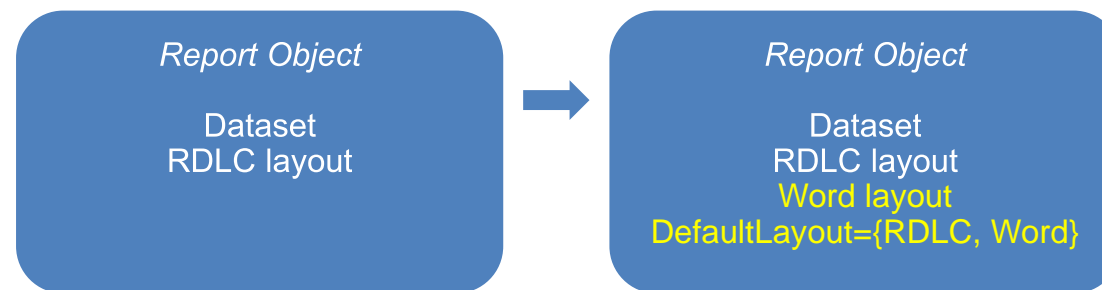
Customers and partners ask for a Word solution

- Natural companion for a Microsoft ERP system
- Aligns well with Office and O365 integration

WORD IS “JUST” A NEW REPORT LAYOUT OPTION

Aligned with the reporting platform

- Same report object, dataset and runtime as RDLC (request page, report selection etc.)
- A report object can now have one (built-in) RDLC layout and one (built-in) Word layout
- A new default layout property controls which layout to use out of the box



The logo is a white speech bubble with a serrated edge, containing the text "NAV TECH DAYS 2014" in blue. The background of the slide is a blue geometric pattern of triangles.

**NAV
TECH
DAYS
2014**

mibuso.com

DEMO: WORD BASED SALES INVOICE

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

The logo is a blue speech bubble with a serrated edge, containing the text "NAV TECH DAYS 2014" in white. Below the speech bubble is the text "mibuso.com".

**NAV
TECH
DAYS
2014**
mibuso.com

NEW SALES DOCUMENTS REPORTS

Introducing a new set of sales document reports

- Sales quote (1304), sales order confirmation (1305), sales invoice (1306) and sales credit memo (1307)
- Added to show-case new Word layouts and simpler RDLC layouts

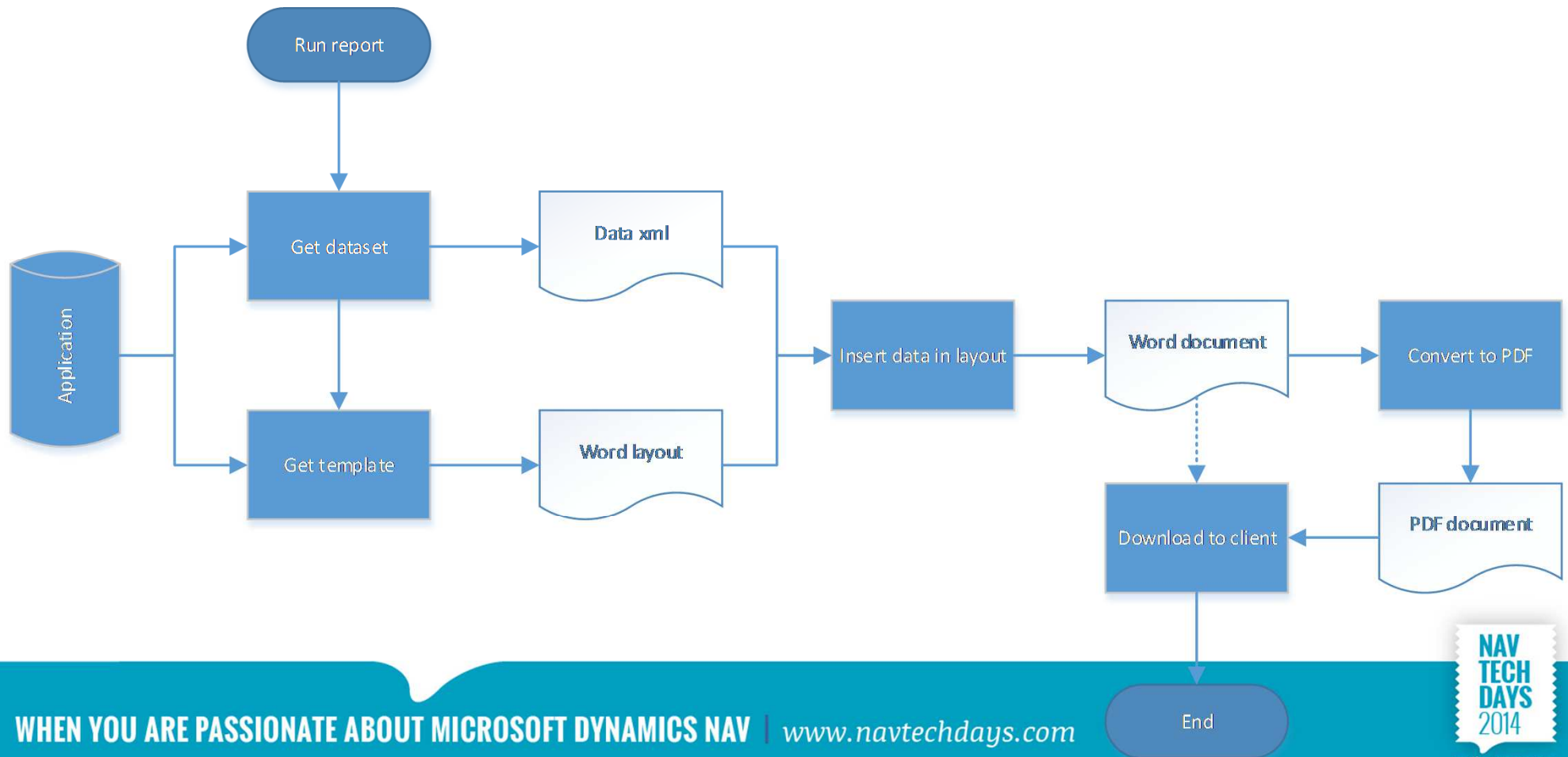
Simplified

- Revised, aligned dataset to make it simpler and easier to reuse layouts across related reports
- Dataset optimized for Word layouts
- RDLC layout simplified to make it easier to understand and customize
- Same layout across all countries (with NA and ES specific versions)
- Simplified for the mini app

Added as new reports

- Current 204-207 RDLC reports retained, so non-breaking

Running a Word layout report - Flow



**NAV
TECH
DAYS
2014**

mibuso.com

DEMO: WORD TOOLING EXPERIENCE

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

**NAV
TECH
DAYS
2014**

mibuso.com

DEMO SUMMARY: WORD TOOLING EXPERIENCE

Import/Export in C/SIDE

- Used to edit layout in Microsoft Word

Inserting fields in Word

- Microsoft Word 2013 required
- Enable Developer tab
- Select the embedded dataset xml in the XML Mapping pane
- Add content controls for dataset fields

Best practices

- Data set should be simple with end user friendly names
- Conditional data can result in empty content, and unexpected empty pages

PRINTING MULTIPLE DOCUMENTS AS ONE

Already supported for RDLC layouts

Similar support for Word layouts

- Implemented using sections in Word
- Layout should not include sections itself
- Global content like TOC and index will not work per document contribution

Setting up

- The root dataset item defining a new document instance (typically header) must be set in the 'WordMergeDataItem' property

Provide a WordMergeDataItem property value

- The root dataset item defining a new document instance must be defined
- Usually the header

LIMITATIONS OF MICROSOFT WORD REPORTS

Microsoft Word is not a generic report engine

- Microsoft Word is not suitable for complex precision layout or very large documents
- No grouping or totals
- Conditionals, e.g., for visibility, are not supported.
- Number formatting is limited to built-in Microsoft Dynamics NAV number formatting.

We have designed it to be simple

- Not aiming at 100% parity between Word and RDLC
- Use layout technology as appropriate for task
- Most scenarios can be handled in the dataset instead

PDF conversion uses external component

- Does not support advanced Word rendering like WordArt

WHAT ABOUT RDLC?

Still important part of the reporting story

- RDLC provides a good foundation for report design and is still our strategy moving forward.
- RDLC is stronger for conditional and precision layout and for lists, grouping etc.
- We are shipping new, simplified RDLC sales document reports

Multi-tenancy requires an easier end user customization story for document reports than RDLC

- In multi-tenancy, all customers need to share the same application, so app reports will look the same
- While that is acceptable for the majority of reports, there are certain document style reports where the individual customer brand needs to be preserved.
- For those scenarios we now provide an optional capability to further configure and fine tune the reports' look based on a tool that our customers find natural and intuitive to use – Word.

CUSTOM REPORT LAYOUTS

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com



CHALLENGES WITH BUILT-IN REPORTS

Expensive to customize reports

- Customers would like the option to easily change the appearance of reports themselves

Sharing document reports across tenants is limiting

- Customers want their own visual identity in external facing document reports.

ANY REPORT LAYOUT CAN NOW BE CUSTOMIZED

A single report can now have many layouts

- One RDLC and Word layout can be built into the application object
- There can be as many custom layouts as desired, stored in business data.
- End users can control which layout is used for a given report
- Word layouts are edited in Word 2013, RDLC layouts in Microsoft SQL Server Report Builder (or Visual Studio)

New layouts can be created by the end user

- An end user can, e.g., create a Word layout for a list report that out of the box only has an RDLC layout

Custom layouts are per tenant and company

- Tenants can have their own custom RDLC and Word layouts, per company
- Built-in report layouts and report datasets are the same across all tenants on the same application

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com



The logo is a white rectangular tag with a serrated left edge, containing the text "NAV TECH DAYS 2014" in blue. The background of the slide is a blue geometric pattern of triangles.

NAV
TECH
DAYS
2014

mibuso.com

DEMO: CUSTOMIZING LAYOUTS

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

The logo is a blue rectangular tag with a serrated right edge, containing the text "NAV TECH DAYS 2014" in white. Below the tag is the website "mibuso.com".

NAV
TECH
DAYS
2014
mibuso.com

The logo is a white speech bubble with a serrated left edge, containing the text "NAV TECH DAYS 2014" in blue. The background of the slide is a blue geometric pattern of triangles.

NAV
TECH
DAYS
2014

mibuso.com

DEMO: CREATING A SIMPLE GROUP WORD LAYOUT

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

The logo is a blue speech bubble with a serrated left edge, containing the text "NAV TECH DAYS 2014" in white. Below the speech bubble is the website "mibuso.com".

NAV
TECH
DAYS
2014
mibuso.com

DEMO SUMMARY: SIMPLE WORD LAYOUT

New layouts can be added to reports

- End users not restrained to only customize report layouts that come out of the box
- Existing datasets typically optimized for RDLC reports though

REPORT SCHEDULING

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com



CHALLENGES RUNNING SOME REPORTS IN CLIENT

Performance issues

- Report execution takes a long time
- Client side runs out of memory (32 bit only)

UI thread locked

- User cannot work while waiting for result

Happens for a few large reports

- Trial/balance is one example

INTRODUCING ABILITY TO SCHEDULE REPORTS

Any report can now be scheduled

- Runs asynchronous on the server
- Invoked from the request page (Print > Schedule, non modal only)
- Possible to defer run to a given timeslot, e.g., during the night
- Relies on the general job schedule and queue features, adding report specific UX

Report parameters captured

- Parameters from request page are captured, stored and reused when report is run

New Report Inbox

- Generated reports from the scheduling ends up in a new Report Inbox part, configurable on role center

BENEFITS

Benefits

- Continue working, UI thread no longer locked
- Performance scales with server
- Supports device scenarios (initiate on leaving work and check result from device on the run)

Reports should still be optimized

- Large reports should always be optimized with regards to data and calculations
- Server must have adequate resources (memory) to run the report

**NAV
TECH
DAYS
2014**

mibuso.com

DEMO: SCHEDULING OF REPORTS

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

**NAV
TECH
DAYS
2014**

mibuso.com

OTHER NEW FEATURES

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com



NEW REPORTING C/AL METHODS

A number of changed and new APIs to handle reports

- Report.SaveAs
- Report.SaveAsXml
- Report.WordXmlPart
- Report.RDLCLayout
- Report.WordLayout

- Report.Print
- Report.Execute
- Report.RunRequestPage

```
XmlParameters := REPORT.RUNREQUESTPAGE(206);  
  
Content.CREATE('TestFile.pdf');  
Content.CREATEOUTSTREAM(OSTream);  
REPORT.SAVEAS(206,XmlParameters,REPORTFORMAT::Pdf,OSTream);  
  
REPORT.EXECUTE(206,XmlParameters);  
REPORT.PRINT(206,XmlParameters);
```

OTHER NEW FUNCTIONALITY

Multi-line comments in C/AL editor

- Uncomment a block of C/AL code in a single go

C/SIDE variable name defaulting

- Names default to formatted object name

Unicode Support for CaptionML

- Support Multilanguage without using the same codepage
- Localization happens out side of CSIDE on the Server

Support for Report Viewer 2014 and Report Builder 2014

- Latest versions. No new functionality, bug fixes only
- Possible to force 2012 version use for side by side

OTHER NEW FUNCTIONALITY - PRINTING

Faster print in remote session

- New, simpler print dialog for remote sessions allows much faster printing
- For advanced print options, standard print dialog is still required. Performance improved as well.

Server side print from web services

- Printing from web services or ODATA triggers is now possible

Capturing request page parameters and pass these

- Possible to capture request page parameters and pass parameters programmatically
- Allows, e.g., running report from portal or defining different parameter sets for a report
- Used in the new report scheduling feature

CLOSING REMARKS

Reports now support Word layouts

- Word layout is an *alternative* to RDLC layouts
- Primary use case is document reports
- All investments in RDLC reports are retained

Any RDLC or Word report can have custom layouts

- Layouts can be created and customized by end users
- Tenant and company specific

Reports can be scheduled to run on the server

- Continue working, unblock UI thread
- Store report output in the Report Inbox for later use
- Report parameter capture can be reused in other scenarios

Any Questions?

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com



THANK YOU

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com





LUNCH BREAK

see you back in 60 min.

WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | www.navtechdays.com

NAV
TECH
DAYS
2014

mibuso.com