



System Application Overview And Its Capabilities in Dynamics 365 Business Central

**Helping Dynamics Partners To Automate NAV To Dynamics 365
Business Central Upgrades**

Simplanova



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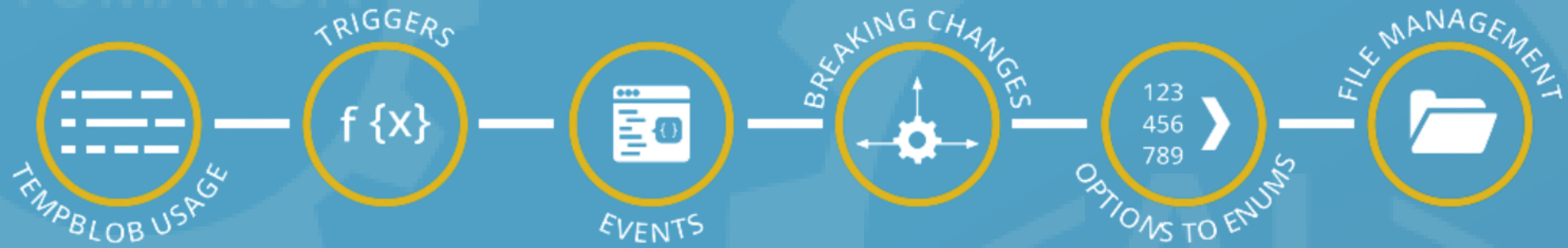
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Simplanova AL Tools (SALT)

Upgrades to BC taking too long?

Automate migration with SALT & get guidance from our cutting edge upgrade chatbot!

SALT AUTOMATICALLY HANDLES:



30%

of estimated time can be saved on a heavily modified conversion from C/AL to AL

1000 hours

saved on Simplanova's C/AL to AL upgrade projects

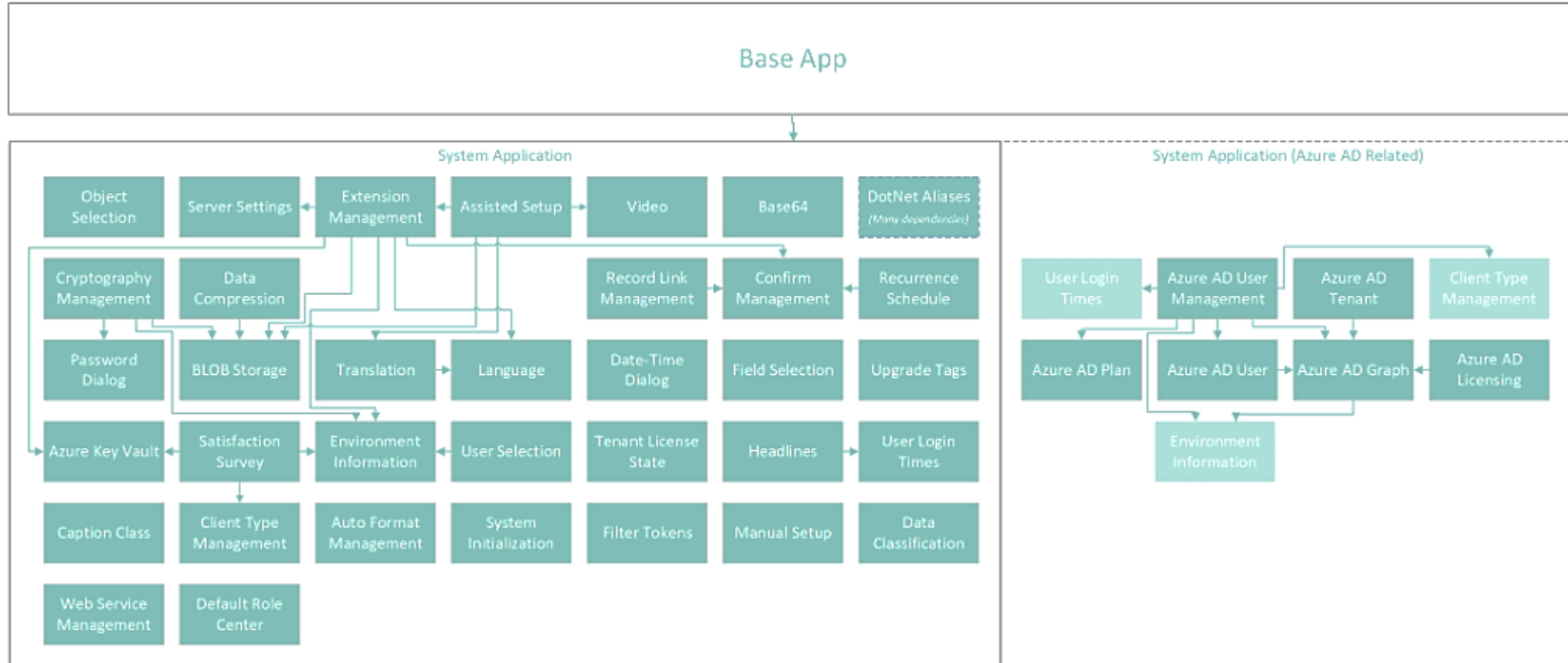
200 Q&A

of estimated time can be saved on a heavily modified conversion from C/AL to AL

- **Challenges:**
 - System Application overview
 - Barcode Encoder
 - Camera and Media Interaction
 - Video
 - Image
 - Sharepoint
 - Translation
 - Base64 Convert
 - Cryptography Management
 - Business Chart
 - BLOBs
- **QA**

System Application

- The System Application is the interface to the Business Central platform and cloud ecosystem. Currently, the collection of system application modules looks as follows:



- <https://github.com/microsoft/ALAppExtensions/tree/main/Modules/System>

To adopt the Microsoft Open Source Code of Conduct, the System application's source code is available on GitHub and is open to various requests and changes from the community.

Regex
Retention Policy
Satisfaction Survey
Secrets
Server Settings
SharePoint Authorization
SharePoint
SmartList Designer Subscribers
System Initialization
System Permissions
Table Information
Telemetry
Tenant License State
Time Zone Selection
Translation

Barcode Encoder

Barcode Encoder is split into 2 categories:

- Barcode Font Provider
- Barcode Font Provider 2D
- Encoders are capable of encoding a text into QR Code (2D) or into various barcode formats (1D).
- There are different kinds of barcode providers, Business Central Uses IDAutomation and Dynamics2D.

1D Barcode Generation:

```
procedure Generate1DBarcodeSymbology(BarcodeSymbology: Enum "Barcode Symbology"; BarcodeString: Text[50]): Text
var
    BarcodeFontProviderEnum: Enum "Barcode Font Provider";
    BarcodeFontProvider: Interface "Barcode Font Provider";
begin
    BarcodeFontProvider := BarcodeFontProviderEnum::IDAutomation1D;
    BarcodeFontProvider.ValidateInput(BarcodeString, BarcodeSymbology);
    Exit(BarcodeFontProvider.EncodeFont(BarcodeString, BarcodeSymbology));
end;
```

- A provider interface is initialized with an enum.
- Currently, only a single enum option exists: IDAutomation1D
- EncodeFont function is used with a desired symbology:
 - Code39
 - Codabar
 - Code128
 - Code93
 - Interleaved2of5
 - UPC-E

2D Barcode Generation:

```
trigger OnAction()  
var  
    BarcodeEncoder: Interface "Barcode Image Provider 2D";  
    TempBlob: Codeunit "Temp Blob";  
    InStr: InStream;  
    OutStr: OutStream;  
begin  
    BarcodeEncoder := Enum::"Barcode Image Provider 2D"::Dynamics2D;  
    TempBlob := BarcodeEncoder.EncodeImage(InputText, Enum::"Barcode Symbology 2D"::"QR-Code");  
    TempBlob.CreateInStream(InStr);  
    Rec.Barcode.CreateOutStream(OutStr);  
    CopyStream(OutStr, InStr);  
    Rec.Modify();  
end;
```

- A provider interface is initialized with an enum.
- Currently, only a single enum option exists: Dynamics2D
- EncodeFont function is used with a desired symbology:
 - Aztec
 - Data Matrix
 - Maxi Code
 - PDF417
 - QR-Code

Demonstration

Camera and Media Interaction

Camera and Media Interaction

- The Camera module allows the developer to prompt the user to take a picture using any camera that's available on the device.
- The image taken is saved into an InStream.
- This module is used in Customer page.

Details Attachments (0)

Customer Picture ▾



Details Attachments (0)

Customer Picture ▾

Take

Import

Export

Delete

Activate the camera on the device.

Demonstration

Video

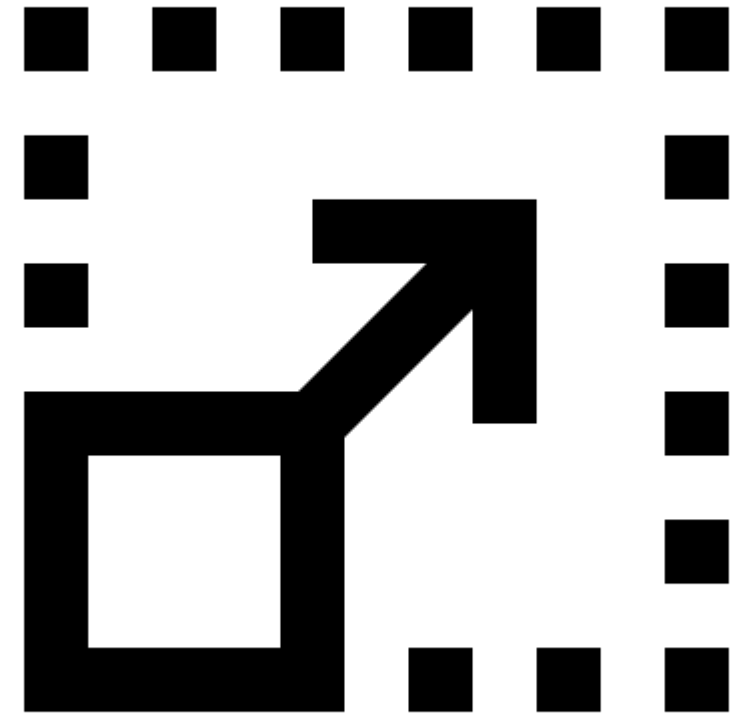
- This module provides functionality to add, look up, and select product videos.
- Use this module to do the following:
 - Display a video on a new page.
 - Add links to the Product Videos page.
 - Get all videos associated with a category.
 - For example, use this to access video tutorials.

Demonstration

Image

Image

- This module provides an API for working with images in Business Central. The module provide some basic for manipulating images.
- For example, you might want images to always display in a certain width and height, so we've added the ability to do things like resize and crop images.
- This can be used to enhance report generation performance when loading large images onto the layout.



Demonstration

Sharepoint

Connecting to a Sharepoint Site

The system application contains 2 Sharepoint modules:

- Sharepoint Authorization
- Sharepoint

Sharepoint Authorization does not store any data, and provides functionality for authenticating to the SharePoint REST API.

Sharepoint module Provides functions to interact with SharePoint REST API.

Use this module to do the following:

- Navigate Lists and Folders.
- Upload and Download files.
- Create folders and list items.

 SharePoint Authorization	Uptake version change to 21.5 (#22001)
 SharePoint	Uptake version change to 21.5 (#22001)

Authorization Requirements

Connector setup table:

- Client ID
- Client Secret
- Site URL.

Connector setup page:

- Client ID
- Client Secret
- Site URL.
- Action to authorize to a Sharepoint site.

```
table 50000 "Sharepoint Connector Setup"
{
    DataClassification = ToBeClassified;

    fields
    {
        1 reference
        field(1; "Primary Key"; Code[10])
        {
            DataClassification = ToBeClassified;
        }
        2 references
        field(2; "Client ID"; Text[250])
        {
            DataClassification = EndUserIdentifiableInformation;
        }
        2 references
        field(3; "Client Secret"; Text[250])
        {
            DataClassification = EndUserIdentifiableInformation;
        }
        5 references
        field(4; "Sharepoint URL"; Text[250])
        {
            DataClassification = ToBeClassified;
        }
    }

    keys
    {
        - reference
        key(PK; "Primary Key")
        {
            Clustered = true;
        }
    }
}
```

Demonstration

Translation

- This module lets you add and modify language translations for user data, so that people in different regions can understand the data.

The Translation module provides capabilities for:

- Setting translations for a specified field on a record, and a given language.
- Fetching and showing up the translations for a field on a record.
- Deleting all translations for a record or for a specified field on it.
- Showing the Translations page for a specified field on all records in a table.
- Checking whether any translations are available.

Demonstration

Base64 Convert

- The module provides functionality to convert the text to and from base 64. It may be used for dealing with large XML files, pictures etc.
- Base64 Convert can also be used to create authorization codes when sending HTTP requests.

Demonstration

Cryptography Management

- Provides helper functions for encryption and hashing.
- Encryption is always turned on for online versions, and you cannot turn it off.
- Cryptography Management offers both basic methods of encryption as well as more advanced functionalities to manage encryptions.
- Cryptography Management also allows to create self signed certificates.

Demonstration

Business Chart

Business Chart

- The module provides the basic procedures needed to create a custom business chart, used for role centers and various other pages.
- Business Charts can be created by using one of the pre-defined control add-ins in the base application.

```
layout
{
    0 references
    area(content)
    {
        1 reference
        usercontrol(BusinessChart; "Microsoft.Dynamics.Nav.Client.BusinessChart")
        {
            ApplicationArea = Basic, Suite;

            trigger AddInReady()
            begin
                UpdateChart;
            end;

            trigger Refresh()
            begin
                UpdateChart;
            end;
        }
    }
}
```

Demonstration

BLOBs

- Provides a way to store various kinds of data.

Consists of:

- TempBlob container to store BLOB data in-memory
- Persistent BLOB Management interface for storing BLOB data between sessions
- TempBlob List interface for storing sequences of variables, each of which stores BLOB data.
- Potential uses are storing images, very long texts, PDF files, and so on.

Demonstration



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SIMPLANNOVA AL Tools (SALT) and
CLEAN-START CALCULATOR

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