Sequence 8.2 Release Notes

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PNMsoft UK 38 Clarendon Road Watford Herts W17 1JJ

Tel: +44(0)192 381 3420 • Email: info@pnmsoft.com • Website: www.pnmsoft.com

Contents

Introduction

Sequence 8.2 includes a wide range of features and enhancements that make Sequence more portable and flexible as a cross-platform iBPMS solution. It's now easier than ever to deploy Sequence to end users in SharePoint and non-SharePoint environments with Flowtime Website and a brand new SharePoint App. PNMsoft Cloud now provides a fully hosted Azure Cloud solution which can simplify infrastructure and save costs. In this release, we've also made major leaps in infrastructure, such as upgrading to .NET 4.6.2, and performance, with features like In-Memory execution and In-Process Consumer.

This is the most robust and agile Sequence ever – enjoy!

Installation

You can download the installation files from the Download Center. See the Sequence Installation Guide for software and hardware requirements and detailed installation instructions.

New Sequence 8.2 Installation

1. Unzip the file *8.2.0.0Installation/Setup Or Upgrade/8.2.0_Installation.zip*.
2. Run *8.2.0_Setup.exe* (it is in the zip file).
   Notes:
   a. Run as Administrator.
   b. The installer will offer to install **Flowtime** – the non-SharePoint runtime website.
   c. For the SharePoint-based Flowtime, please refer to the Sequence SharePoint App Guide.
3. Follow the instructions in the Sequence Installation Guide in the Knowledge Center.

Upgrading from v7.10.5, v8.0 or v8.1

1. Verify that version 7.10.5 or later is installed on your server.
2. Backup the configuration files and your database.
3. Free up system resources:
   a) Use the IISReset command-line utility to reset the IIS.
   b) Stop the Sequence Windows services (ADSS, BRS, JES).
4. Download and run the file:
   8.2.0.0Installation/Setup Or Upgrade/8.2.0_Installation.zip   (Run as Administrator)
   i. In the component selection screen, note that **Flowtime** is the new non-SharePoint runtime website component.
   If the server has SharePoint Flowtime already installed on it, then that will be indicated separately as **SharePoint Flowtime Portal**.

ii. If you choose to install **Flowtime**, then remember to change its default setting to the website that was created for it (as described in the <u>Sequence Installation Guide</u>).
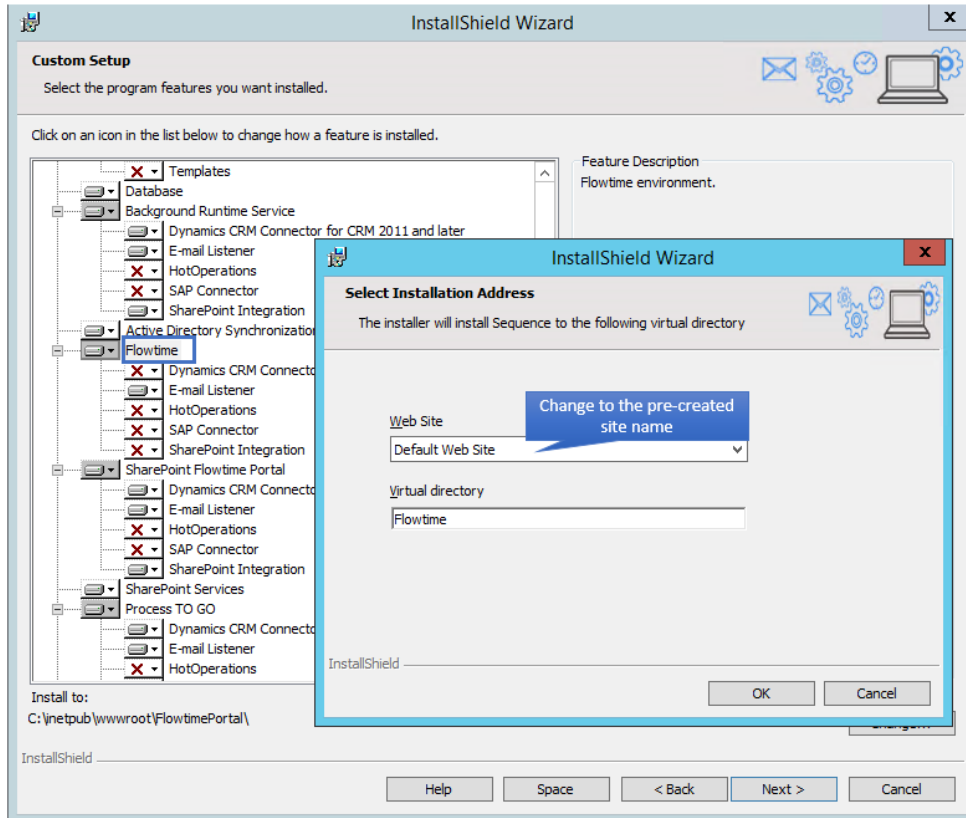
Select Installation Address

iii. If you have SharePoint-less Flowtime installed, you will need to remove this installation and remove the installation folders, and then install Flowtime Website (as described in the <u>Flowtime Website guide</u>).

5. Run IISReset.

6. Start the Sequence Windows services (ADSS, BRS, JES).

Notes:

Any earlier version must be upgraded to v7.10.5 first. See details in the <u>v7.10.4 Release Notes</u> and the <u>v7.10.5 Update Readme</u>.

If you are updating your Database using scripts, use the scripts located in the "Upgrade" folder.

New Features

Flowtime Website

Flowtime is Sequence's end user environment. In past versions, Flowtime was installed on SharePoint by default. In this version, we present 'Flowtime Website', an independent website. Flowtime Website enables you to provide Flowtime functionality and experience to end users without having to install SharePoint.

Flowtime Website includes the option to add and edit pages easily, without the need to compile, as this is a website. It does not include SharePoint-specific features such as Document Management.

Flowtime Website includes HotOperations if applicable.
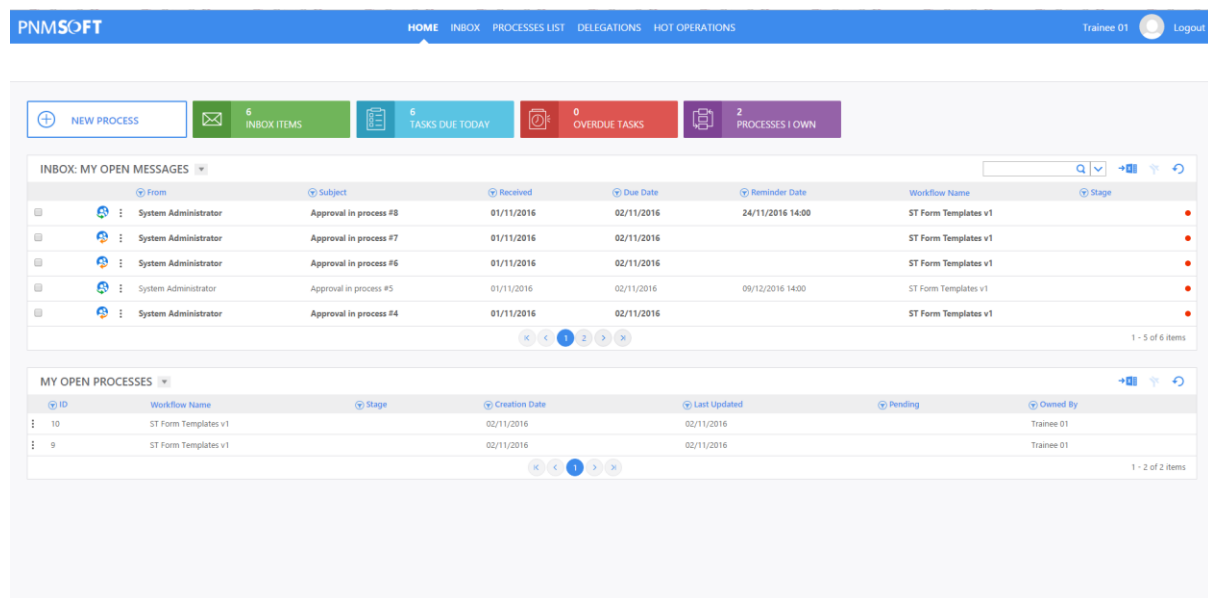
Flowtime Website

Click here to learn more about Flowtime Website.

PNMsoft Cloud is Here

Sequence is now available as a fully-hosted Azure cloud offering – **PNMsoft Cloud**. PNMsoft Cloud is a secure, scalable and reliable way to enable digital transformation for organizations from mid-size to enterprise. PNMsoft Cloud brings compelling benefits, including: fewer operational issues, better use of resources, reduced costs of installation and maintenance, automatic updates, and the ability to work from anywhere.

Web-based, Scalable Architecture

Sequence's 100% web-based interface and scalable architecture makes it an ideal environment to deploy as a service in the cloud. PNMsoft Cloud has the same functionality

as Sequence iBPMS on-premises deployments and provides a powerful way to accelerate your process improvement initiatives.

There are two options for PNMsoft Cloud: Self-Development and Turnkey.

Self-Development Option

In this option, the customer develops and maintains his own Sequence applications, including custom code elements if required.

Turnkey Development Option

In this option, the customer receives the fully functional application. PNMsoft professional services team develops and maintains the applications for the customer.

Security and Reliability

PNMsoft Cloud provides the top level of reliability and security based on Microsoft Azure Services. Solutions and workflows built on PNMsoft Cloud are also 100% portable between on-premises and cloud deployment options.

In summary, with PNMsoft Cloud you'll be able to:

- Accelerate your process improvement initiatives.
- Transform your business with security, scalability and reliability.
- Support strategic initiatives around the mobile enterprise and social business collaboration.

To move to PNMsoft Cloud, please contact your Account Manager today.

System Modules .NET Version Alignment

All Product Modules have been upgraded to the latest .NET version (4.6.2).
This includes: Administration, Flowtime Website, Process$^{TO\,GO}$, BRS, JES, ADSS.
As a result of this upgrade, SharePoint 2010 is no longer supported.

SharePoint App for Sequence

For applications which required Sequence Flowtime to be embedded in SharePoint, we have issued a slick, up-to-date SharePoint App, which includes all the Flowtime functionality as app parts. The App is supported on SharePoint Online and SharePoint 2013/2016 on premises.
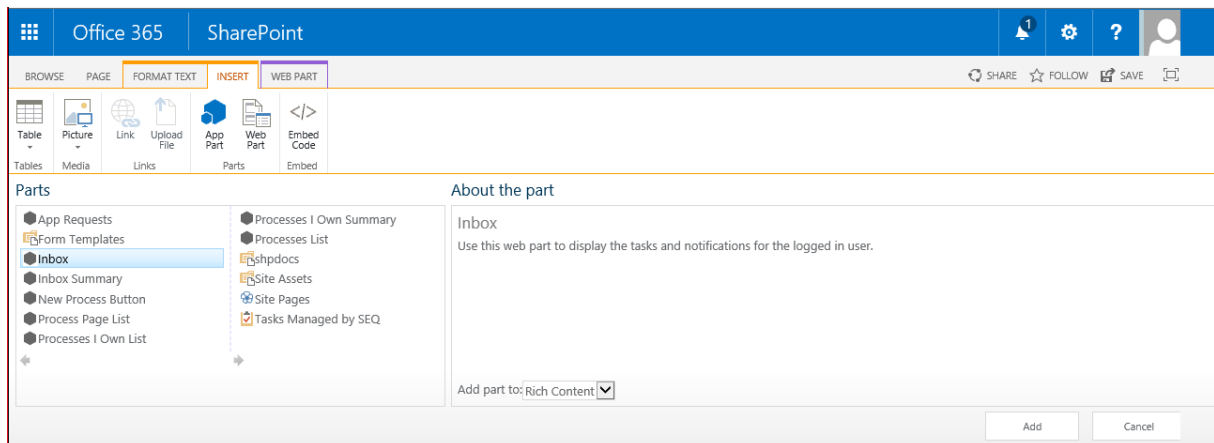
Flowtime App Parts

The SharePoint App replaces the legacy 'Remote Web Part Solution'.

To download the app, please contact PNMsoft Support.

Click here for a detailed guide on installing and configuring the SharePoint App.

In-Memory Workflow Execution

Sometimes you create a workflow only to perform a complex calculation or operation without using Form, Task or Data activities. You may not want or need to save the execution details of this operation to the database. This type of "black-box" workflow could be a valuable part of a larger process, such as a sub workflow that calculates the score of a loan request. While the result of the calculation may be of high importance to the larger process, it may not be important for you to track the intermediate steps inside the workflow during its execution.

In such cases, it is possible to set the workflow to execute **In-Memory**. This can significantly improve its performance (10x faster execution), since all operations exist in cache only, and are not persisted to the database.

This state-of-the-art development is critical to the way you architect your solution, and it opens many opportunities for architects to improve performance, visibility and scalability.
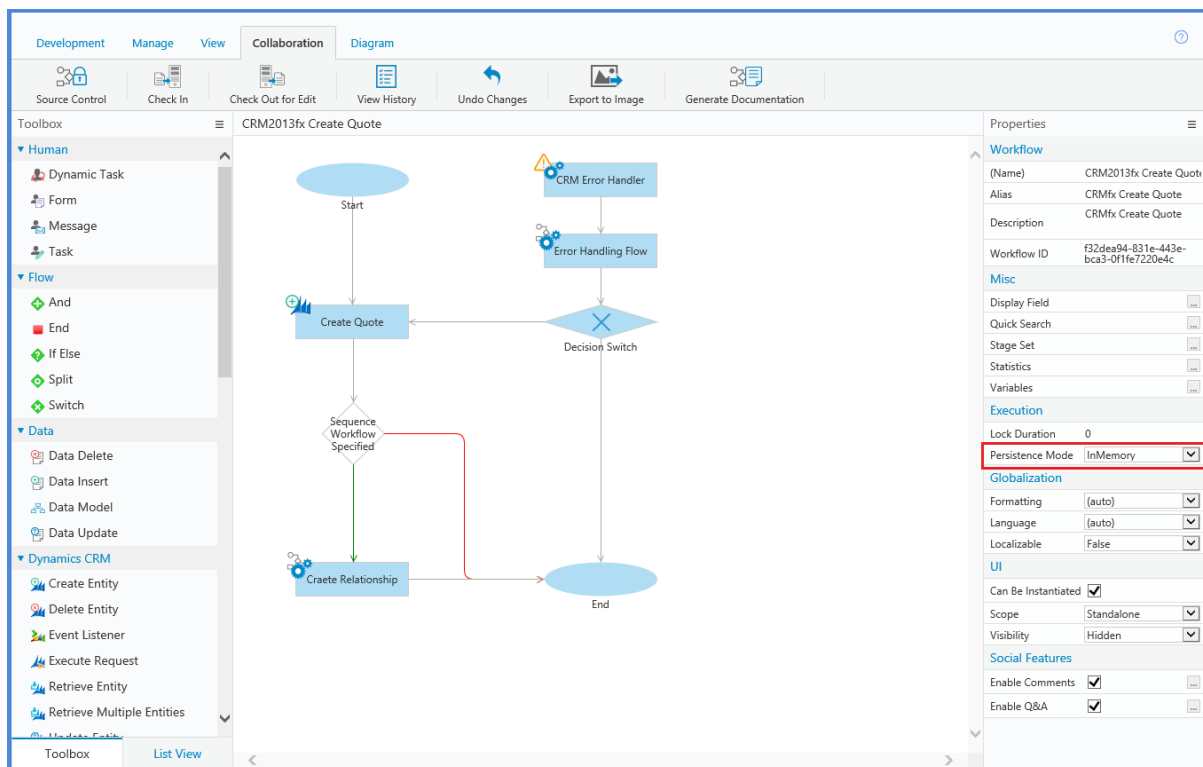
In Memory Execution
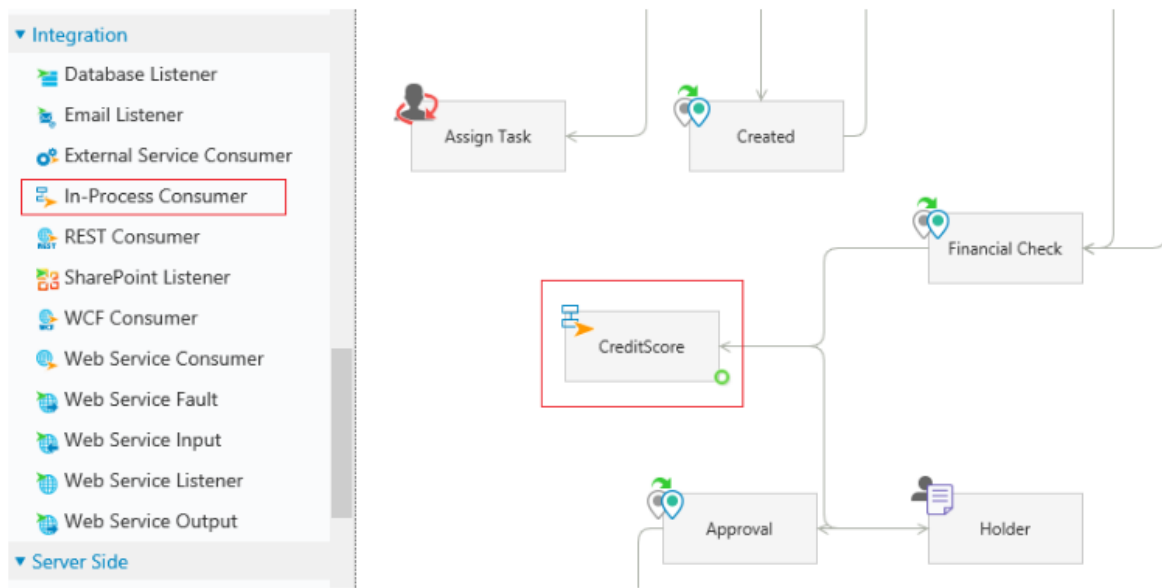
[Click here](#) to learn more about this feature.

In-Process Consumer

Sequence 8.2 introduces a new and powerful activity: **In-Process Consumer**. This activity can consume a Web Service Listener from another workflow. This enables you to pass complex objects between workflows (as opposed to a standard workflow – sub-workflow pair, where only a flat object can be passed). It also promotes encapsulation and modularity, enabling multiple workflows to consume the same web service. The child workflow execution is done in-process and not through the HTTP protocol, so performance is optimized.

The In-Process Consumer works like a standard Web Service Consumer, except that it consumes a Web Service Listener in another workflow.

The Web Service Listener is a standard Web Service Listener, except that its Access Mode property must be set to **In-Process**, for it to be consumed by an In-Process Consumer.

A good example for when to use this feature is when you have a dispatcher object that triggers different workflows based on the type of claim that was received. The claim details are a complex object with many information fields, and each process has different logic to handle the claim based on its type. Using In-Process Consumer, this object can be passed efficiently between the workflows.

In-Process Consumer

In-Process Consumer Wizard
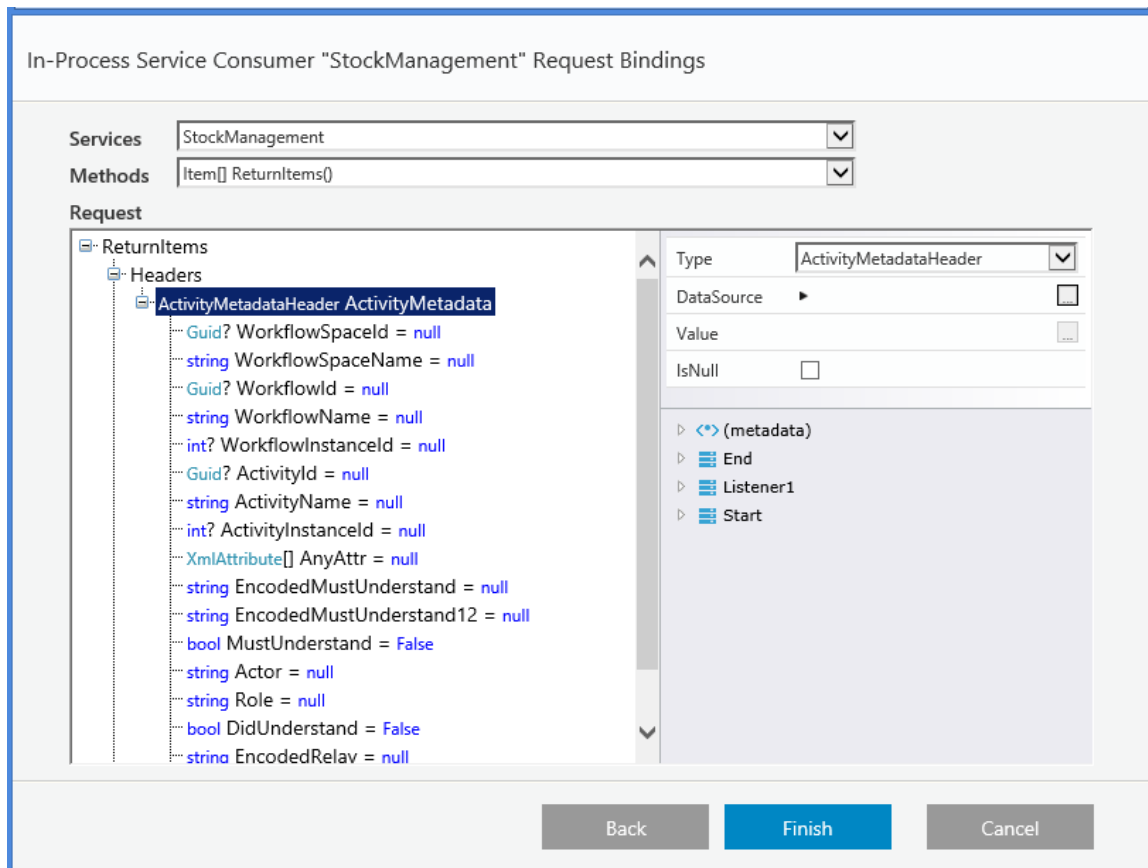
In-Process Consumer Request Bindings

Click here to learn more about this feature.

JSON to XSD Tool

We have created a clever tool which helps you figure out the service schema (XSD) when all you have is your JSON result.

As some process designers find the Rest Consumer complex to configure, we built this great tool to simplify your experience. The primary use of the tool is to provide a starting point when defining a Sequence REST Service Consumer.

Please contact PNMsoft Support to obtain this tool.

User Extended Properties

Sequence developers can now consume more information about the user with user-based expressions. If you have decided to synchronize new columns from the Active Directory, developers can consume these columns during application development.

For example, if you have extended the Employee table with the property 'Manager', you can use this expression in your process: wf.CreatedBy.ExtendedProperties["Manager"] to return the manager of the employee who created the workflow.

Support Synch of Users and Groups from Azure AD Using AD Graph API

User synchronization into Sequence can now be performed from both Azure and the local Active Directory.

You can define multiple domains to be synchronized to the same Sequence environment using the Active Directory Synchronization Wizard.
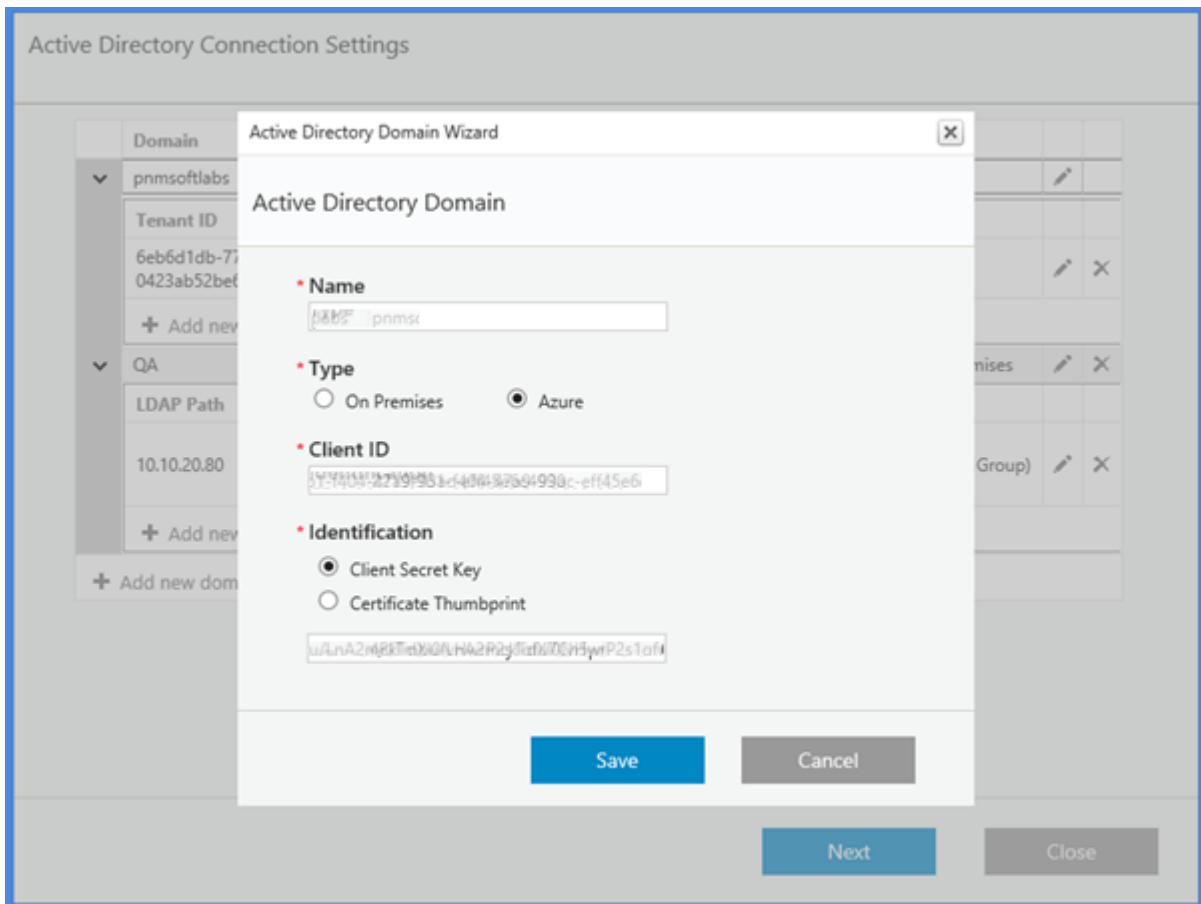
Active Directory Wizard

mwf Keyword for Expressions

You can now query the master workflow object from child workflows. For this purpose, a new keyword has been added to the Sequence Expression language: mwf.

Using mwf, you can retrieve values from the parent workflow, for example:
mwf.CreatedBy.Displayname

> *Note: You cannot query activities' data, such as a field in a query. Other custom fields, such as variables, will be retrieved un-typed.*
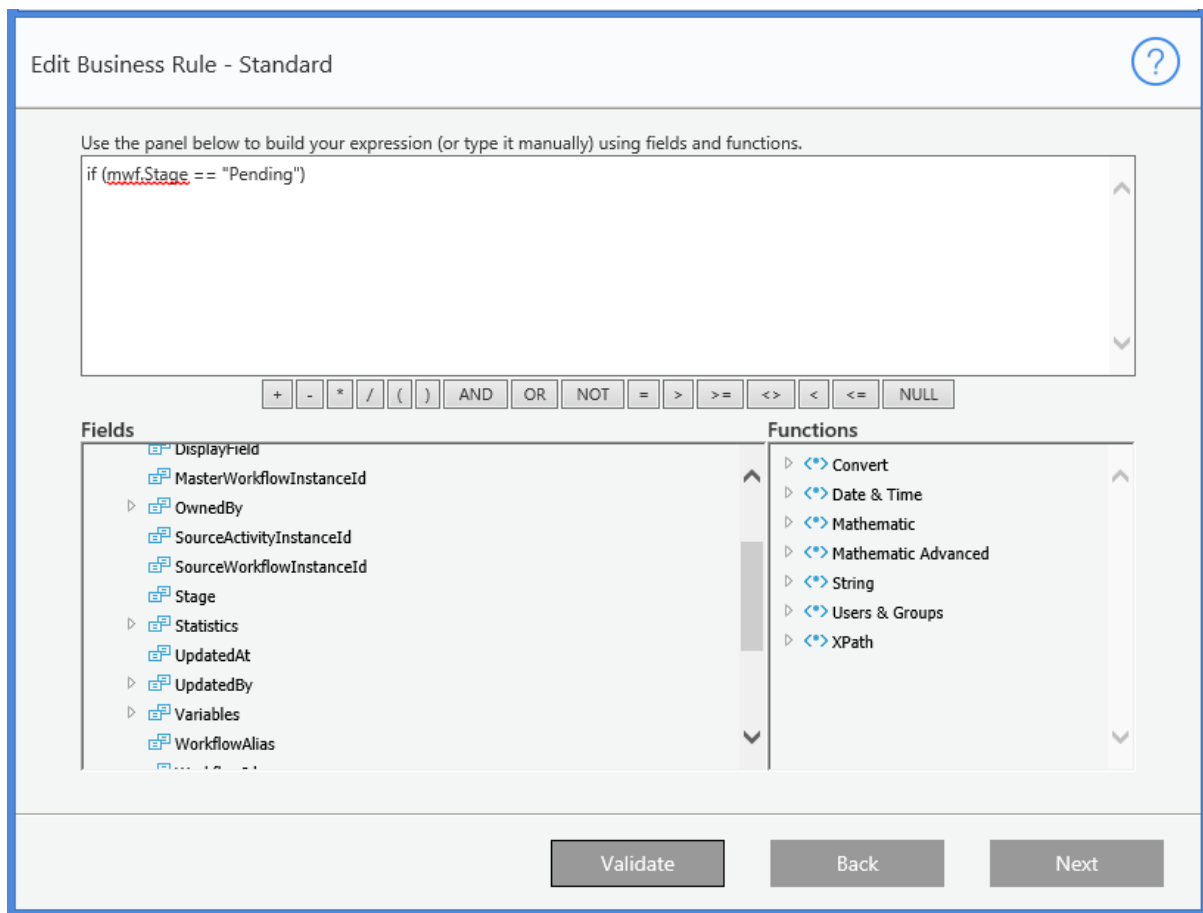
mwf in Expression Wizard

On-premises Claims Now Supports WIF 4.5 (SAML 2.0)

We have added a new claims authentication provider to Sequence which supports SAML 2.0 (WIF 4.5).

To use this new claim provider, add these lines to your web.config file:

1. Add the Identity Model Section:

```
<section name="system.identityModel"
type="System.IdentityModel.Configuration.SystemIdentityModelSection,
System.IdentityModel, Version=4.0.0.0, Culture=neutral,
PublicKeyToken=B77A5C561934E089" />

<section name="system.identityModel.services"
type="System.IdentityModel.Services.Configuration.SystemIdentityModelSer
vicesSection, System.IdentityModel.Services, Version=4.0.0.0,
Culture=neutral, PublicKeyToken=B77A5C561934E089" />
```

2. Modify the <authentication> section under <sequence.engine> as follows:

```
<authentication impersonate="false">
      <providers>
            <add
            type="PNMsoft.Sequence.Security.ClaimsIdentityAuthentication
            Provider, PNMsoft.Sequence.IdentityModel.v8,
            Version=8.0.0.0, Culture=neutral,
            PublicKeyToken=0a1a1b90c1c5dca1" />
      </providers>
      <claims enabled="true" signoutFromSts="false">
      <IdentityClaims>
            <add
            claimType="http://schemas.xmlsoap.org/ws/2005/05/identity/cl
            aims/emailaddress"
            originalIssuer="https://sts.windows.net/b29b688b-faba-4adf-
            8b56-8c29fc53e2e8/"
            authenticationType="http://pnmsoft.com/sequence/2008/03/auth
            entication/types/email" />
      </IdentityClaims>
      </claims>
</authentication>
```
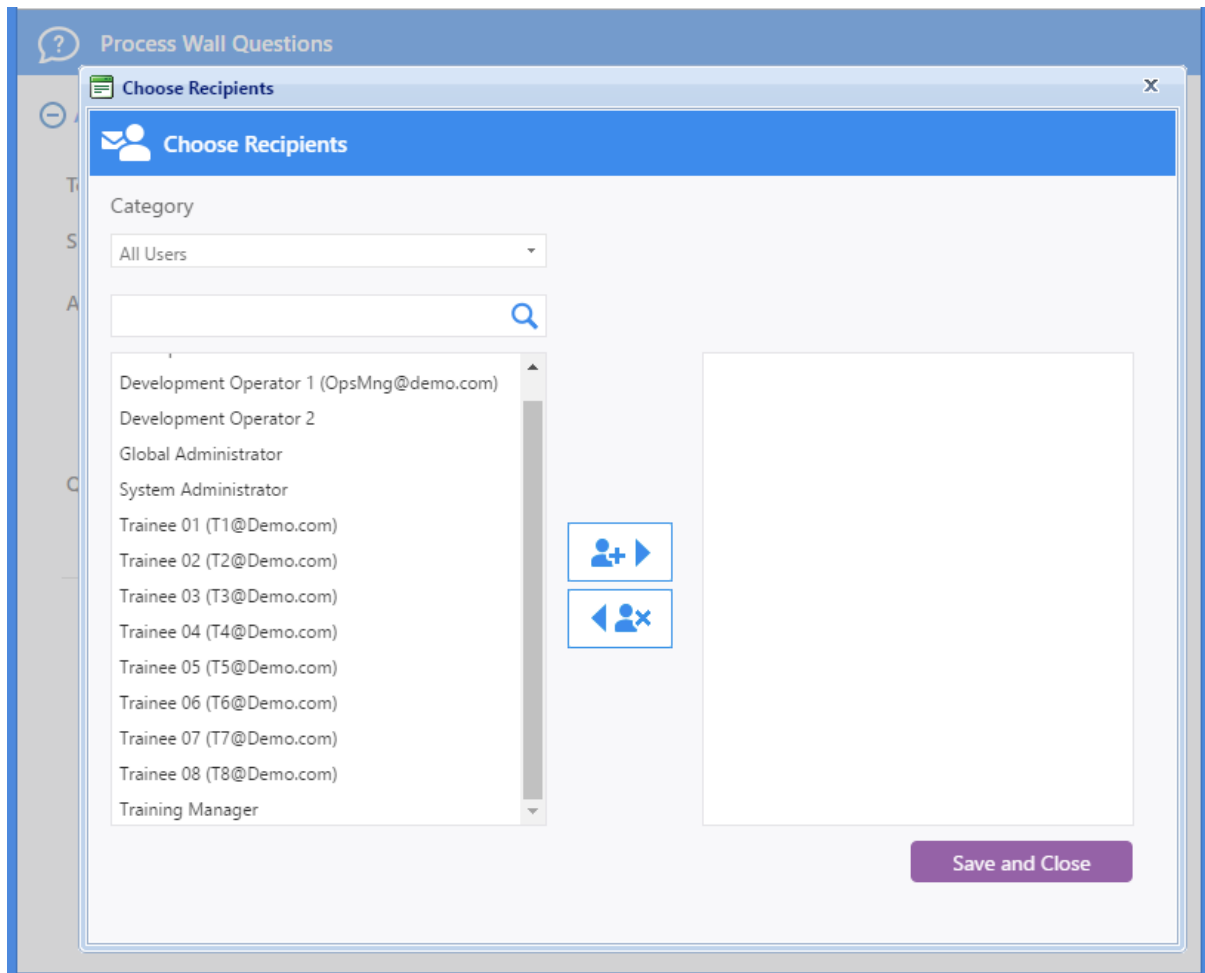
This claim authenticates the user against his email value in Sequence.

Enhanced Features

Flowtime Recipient Picker Displays User Emails

We have added the user's email to all Flowtime user pickers, to help user easily find the relevant user when more than one user shares the same display name.

Email Displayed in Recipient Picker

Persistence of Integration Activities on Failure

One of the challenges in BPM projects is integration with external systems. There is often some trial and error until a stable connection is achieved between Sequence and the other end points.

To ease this part of the development, we have changed the way Sequence persists the integration activity data. Now the Request will be persisted to the Database even if the activity has failed. This will enable the developer to review the request XML and apply the required changes.

Control Over Activity Focus

In response to numerous requests from developers, you can now declare which activity will be in focus when opening Runtime.aspx with the workflow id as the parameter.

The developer can control if the page will focus on the first or last activity.

To control this option, you can add a key to the configuration file:
C:\Program Files\PNMsoft\Shared Resources\Components\WorkflowExplorer\Config\WorkflowExplorer.config

```
<ui workflowTreeSelectionMode="Last" />
```

This key can be set to the values: First or Last

> *Note: This option is only applicable when opening the page with workflow instance id.*

Support for Pre-defined Filter for Flowtime Grids

For business cases where you wish to display one of the Flowtime grids filtered by criteria such as date or a variable, there is now an option to filter the grids from the configuration file attached to each grid.

For example, if you wish to display a grid that exposes only workflows in a Pending stage, edit the grid's config file and add a filter to this column. In the Portal, set the grid to use this config file. More details on steps and syntax can be found in the *Flowtime Configuration* guide.

> *Note: The configuration changes should be applied on a copy of the grid's config file and not on the original file, to avoid software updates reversing these changes.*

'Select All' Option in Cases Grid

A Select All option has been added to the Operations Manager Cases Grid. The Select All is limited to 10,000 items.

This option will enable Operations Managers to more easily re-allocate multiple cases based on a filter. For example: reallocating all the cases from Gold Customers to the VIP Team.

New Options Added to JES Triggers Scheduling

There are now more options to control the JES command execution. This will provide developers who extend the JES with scheduled code better control over the code execution.

For example, you could use these options to process information at the beginning or ending of every month or week.

JES Advanced Scheduling

JES Advanced Scheduling – Custom Option

Context Menu for Workflow Items

You can now perform common workflow actions from the Workflow Categories > workflow context menu.
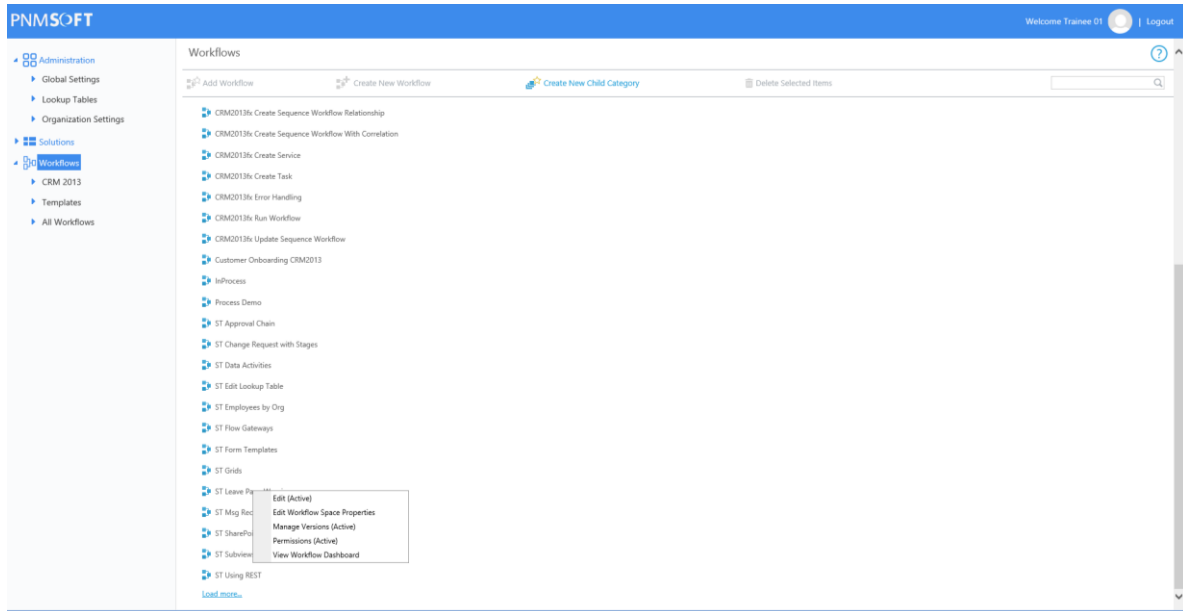
Workflow Categories Context Menu

Active Directory Synchronization Enhancement

You can now use Secure LDAP with Sequence Active Directory synchronization. This option can be set in the Active Directory Synchronization wizard. This is important for organizations with a highly secure Active Directory.

Quick Edit to Sub Workflow from the Activity Context Menu

You can now edit a sub workflow more quickly, by selecting **Edit Sub Workflow** from the sub workflow activity's context menu in the main workflow.
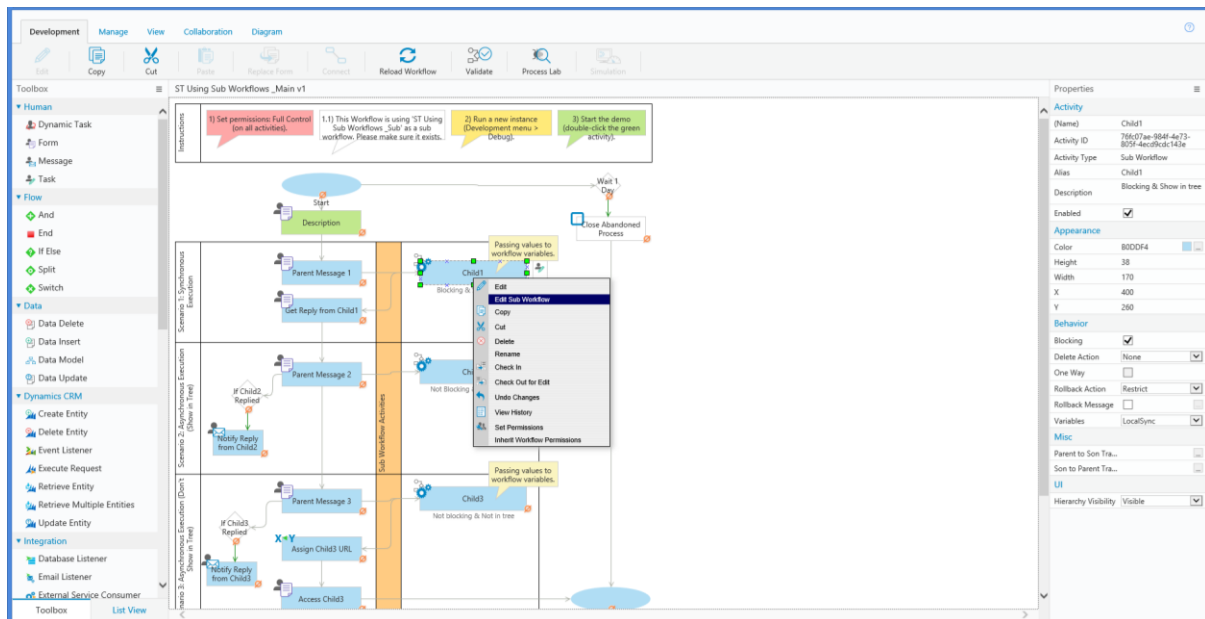
Quick Edit of Sub Workflow

Added HTTPS Binding to the Default Bindings in WCF / REST Configuration

For easier configuration of REST and WCF integration, there is now a default HTTPS binding provided when the end point consumed is HTTPS.

## Client API to Radio Button and Checkbox

Sequence now has client-side API for the Radio Button and Checkbox controls. Now all the controls in Sequence Forms are aligned with the same client API, and accessing the controls from the client-side is the same for all the controls.

For example:

```
get_selectedValue - gets selected value
set_selectedValue - sets specific radio button by value
```

Debugger is Now 'Process Lab'

The Debugger has been renamed 'Process Lab' to reflect its usage more accurately – a safe environment where applications can be analyzed, experimented with and improved.
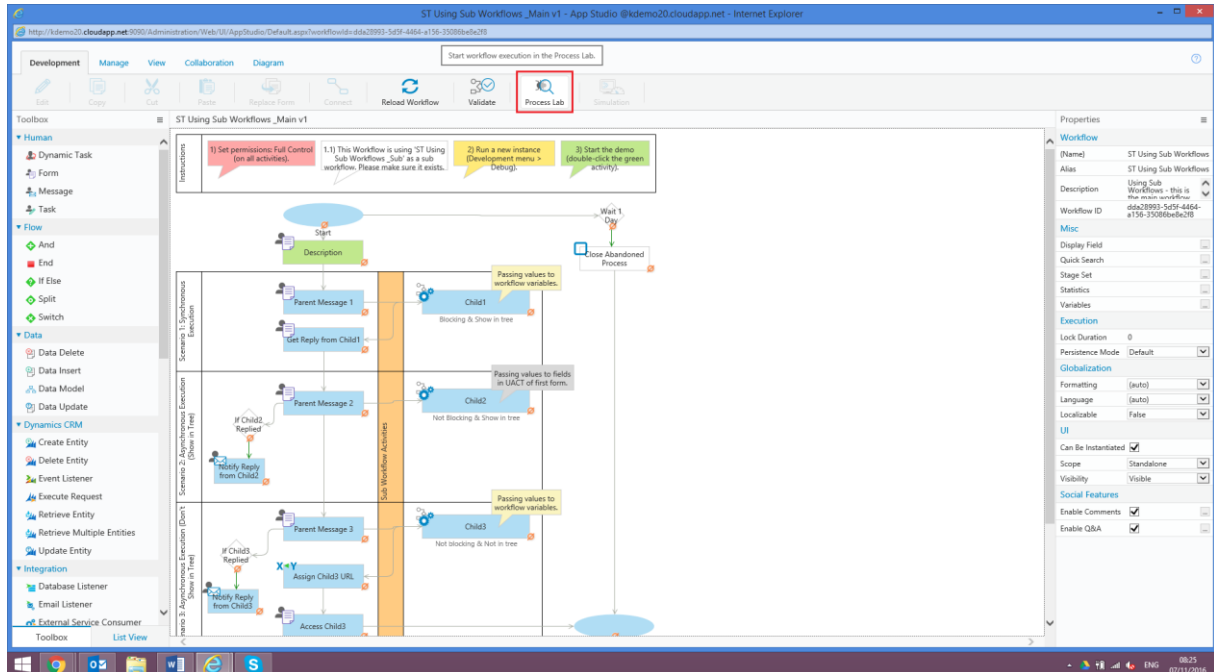
Process Lab

Support for Custom Schemes in External Databases

When using an external connection string for a view or table as a query in the Data Model, it is now possible to refer to schemas other than dbo. For this to work, you must set the schema as the default schema for the user defined in the connection.

## HotOperations Enhancements

Group Mapping on Solution Import

When importing a solution from one environment to another, the developer can define the groups that will be part of the Operation and the Allocation Plan in the target environment.

Group Cost Displayed in Allocation Board

Operations Managers can now view each group's cost per person, in the Operations Manager Allocation Board.
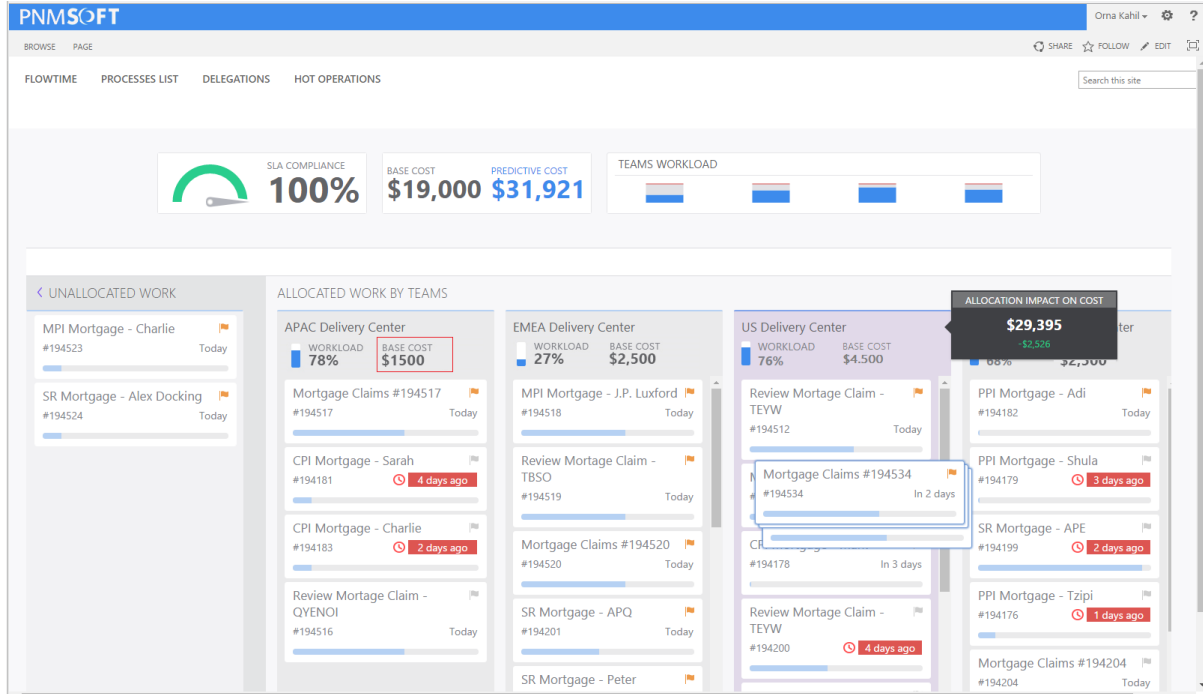
Group Cost Display

New Templates in Form Creation

There are three new templates in the Form Creation Mode Selection wizard that will enable process designers to quickly build great looking and useful forms. The following template have been added:

- Form with header and footer
- Grid with header and Footer
- Read Only Form with Header and Footer

The existing templates have been renamed: '<Template Name> section',
e.g. 'Grid Section'.
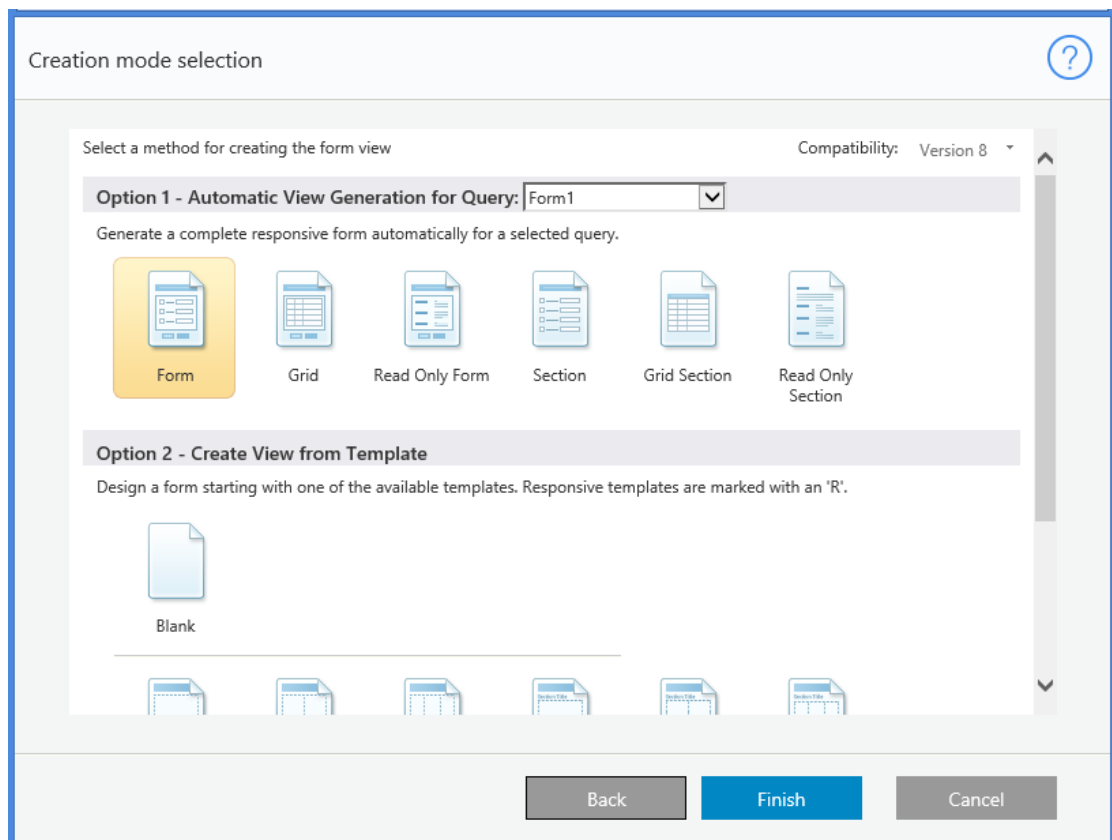
New Form Templates

Extended Chart Options in the Data Streams

As Data Streams have been well received, we have extended the chart list to be used in tiles to include the following charts:

- 2D Columns Chart
- Combination Chart of 2D Column and Line
- 2D Multi Series Column Chart
- 2D Bar Chart
- Bubble Chart
- 2D Pie Chart
- Funnel Chart

Obsolete Items Removal

A few obsolete items were removed from the Administration tree:

- Legacy monitoring
- CRM 4.0
- Input Validation

and more.

Resolved Issues

1. **Listener as First Activity in a Container**

When using a Web Service Listener, Database Listener or Email Listener inside a container, the engine could not allocate the relevant workflow to trigger. The issue has been fixed and all listeners can be used inside a container.

2. **Minor Security Issues**

Minor security issues in Administration table were closed.

3. **Integration Activities Wizard Resize**

While resizing the integration activity wizard, controls did not expand to fit the window size. The issue has been resolved, providing a larger window for the developer to define integration bindings.

4. **Ability to Map Custom Recipient Picker Groups and Users During Deployment**

While deploying a process with a custom recipient definition, the option to map the groups to the target environment was missing. This has been resolved.

5. **Culture Mismatch in the Allocation Board**

The currency in the Work Allocation board is now in the same culture that was defined in the application's web.config file.

Breaking Changes

1. Runtime controls globalization key can be set in the web.config file. This will overwrite culture defined in the control itself.
2. Sequence Administration, Process$^{TO\ GO}$ and BRS have been upgraded to .NET 4.6.2.
3. Workflow Instance object has been synchronized from the Start workflow activity.
4. Forms Authentication is set to False by default.
5. Methods were added to all Flowtime view interfaces.
6. The Request is persisted on failure in integration activity execution.

Summary and Benefits

Sequence 8.2 is more agile, more robust and easier to use than ever. Using this version, you'll realize the following benefits:

- Platform independence
- Cloud computing
- Rapid performance
- Quick and easy integration
- Enhanced UX
- Highest level security