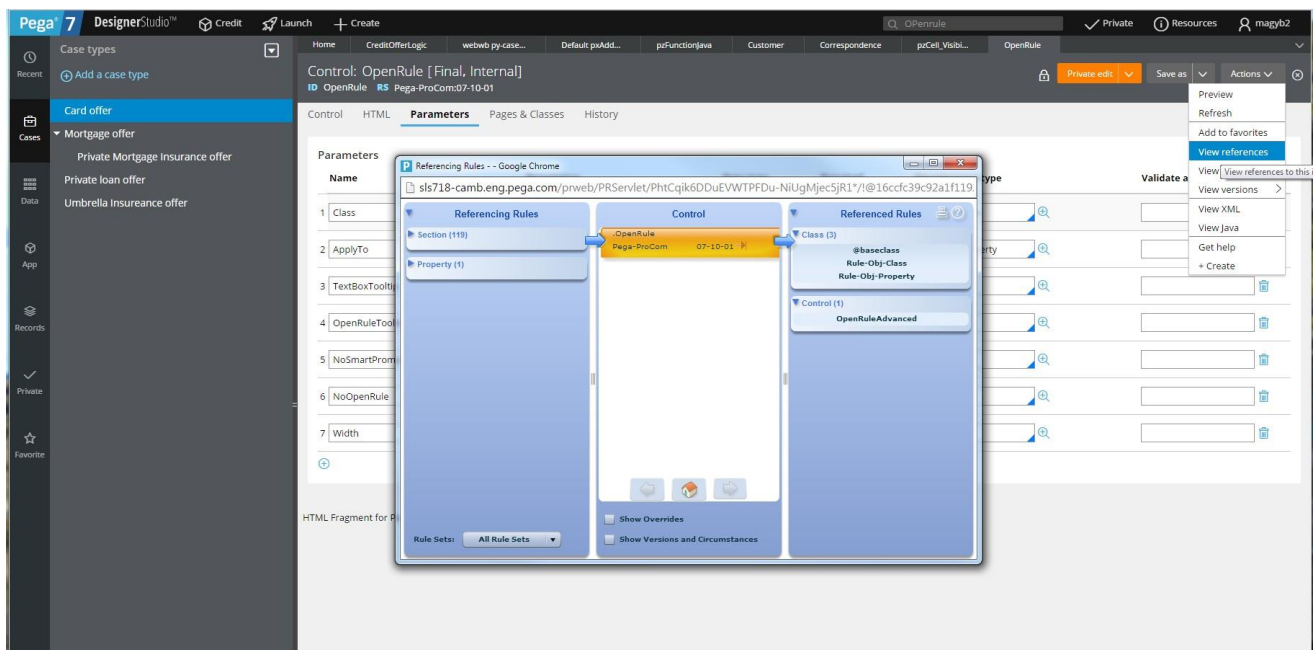# Flash, ActiveX, Silverlight controls, and MS Office Integration in the Pega Platform

Adobe Flash on Pega Platform:

As of Pega 7.2, there are two Flash controls that can optionally be used in the Designer Studio during development. The first is the Referencing Rules viewer. Inside any Designer Studio ruleform, click on Actions → View References to launch the viewer. The viewer displays a list of rules which reference the currently displayed rule.
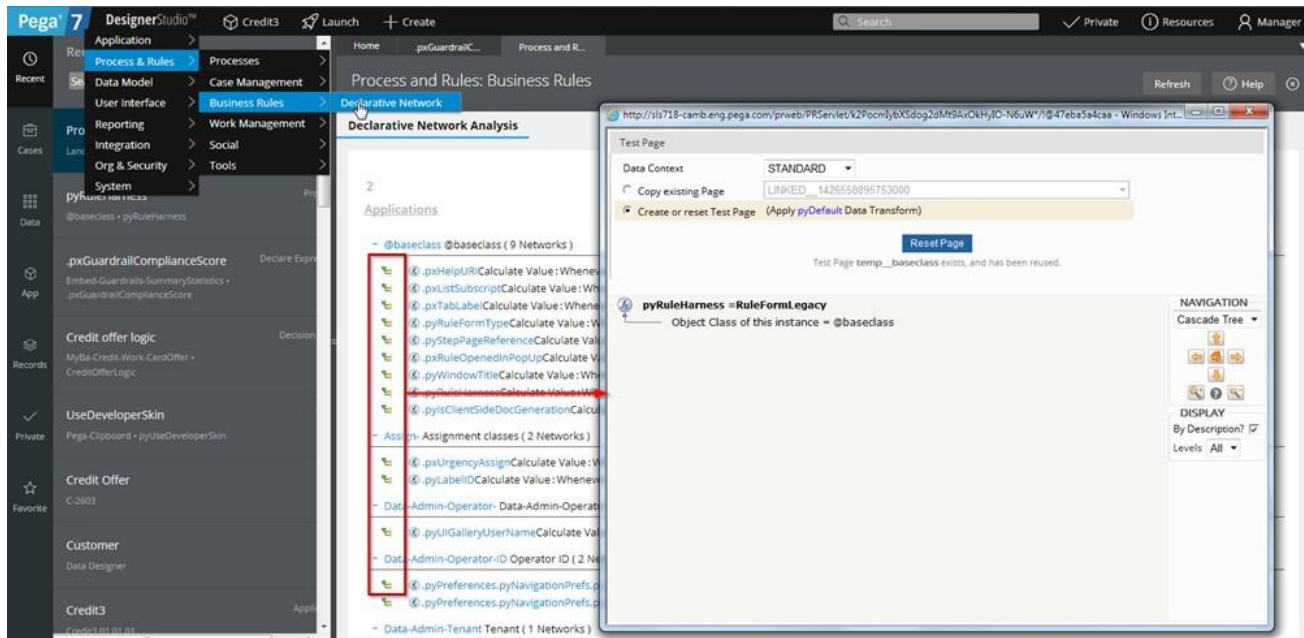

The second Flash control displays the Declarative Network Analyzer (DNA) tool. The DNA is useful for Lead System Architects who may want to trace and debug the evaluation of complex declaratives. The DNA is typically accessed from two places:

- **Declare Expression > Actions > Run**

When unit testing a declare expression, the declarative network analyzer can be viewed as part of the Actions → Run dialog.

- **Designer Studio > Process and Rules > Business Rules > Declarative Network**

The Declarative Network landing page provides a list of all declaratives defined your application, along with a link to open the declarative network analyzer for each instance. Clicking on the "network" link opens the DNA viewer associated with the declarative.

Microsoft ActiveX Controls on Pega Platform

Open Authoring:

There are several areas around the Designer Studio where application developers may choose to edit a rule (or fragments of rule logic) using an external application such as Word, Excel, or Microsoft Notepad. These areas include:

• Modifying the contents of an Activity java step directly in Notepad

• Modifying logic in a Decision Table directly in Excel

• Modifying logic in a Map Value directly in Excel

• Modifying the code inside Rule-Utility-Function in Notepad

• Modifying a Rule-Template-Excel instance directly in Excel

• Modifying a Rule-Template-Word instance directly in Word

• Converting a case attachment to a PDF (ConvertAttachmentToPDF flow action)

These features will either be deprecated or replaced with our file-based import/export model for MS Office integration. For example, Pega 7.1.8 introduced a modern text-editing experience for Activity Java steps, and so the need to use an external editor is no longer necessary. Additionally, the OA control is instantiated when using the following local actions for email and attachment interactions:

• AttachAndHold

• CreateMergedWordDoc

• EditWorkAttachments

• SendEmailCorr

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Pega Outlook:

The PegaOutlook control allows Pega applications to optionally interact with an operator's Microsoft Outlook calendar. The control is only loaded if the GetAppointmentList or SendMeetingRequest flow actions are referenced in a case.

Flow image capture:

Internet Explorer 8 also uses an ActiveX control to generate flow images each time a flow is saved. Internet Explorer 9, 10, 11, and other browsers use an SVG2Canvas JavaScript library to generate flow images.

The same ActiveX control is used in the Pushpin feedback feature, if made available in your application, as well as the "Attach a screenshot" feature, if made available in your application.
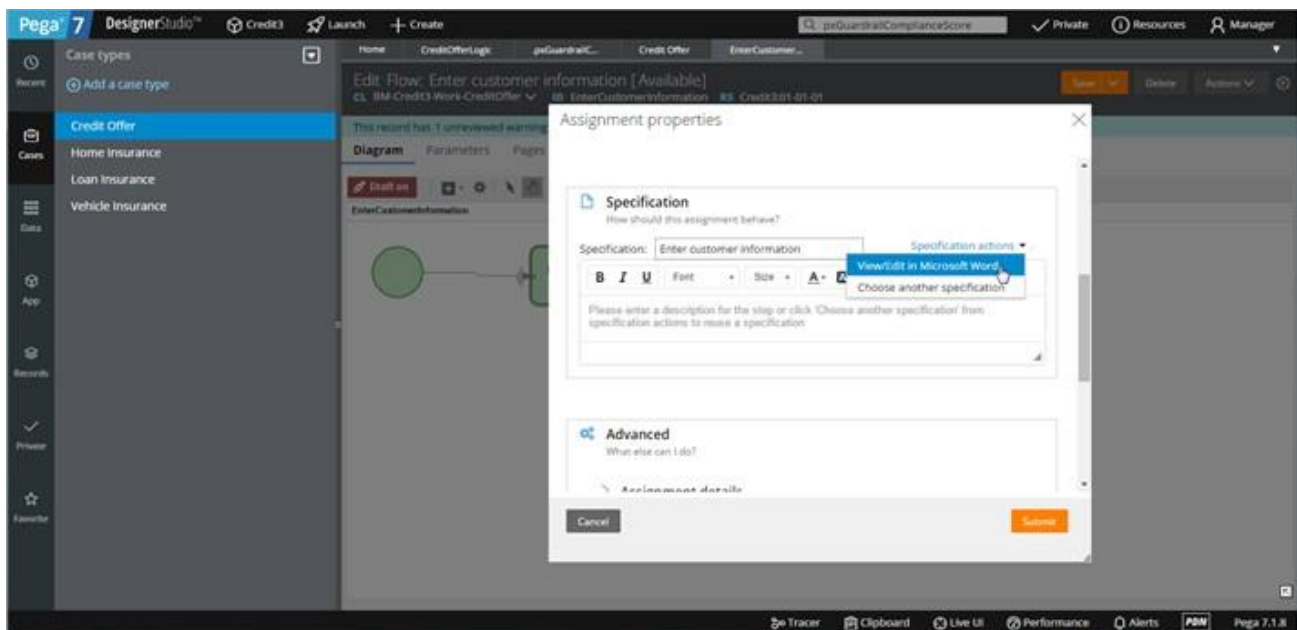
Microsoft Silverlight:

Silverlight is an application framework that enables cross-browser interaction with rich media and desktop applications. There are Silverlight plugins for many browsers, including FireFox and Internet Explorer. As of Pega 7 versions, there are four Silverlight controls that can be used inside the Designer Studio. These controls can be invoked for the following purposes:

1. Document Embed Merging

This tool is used to create a word document through Pega Case processing with dynamic field values. A static Word Macro template consists of hidden dynamic reference fields used for this merging.

Pega "Document Embed Merging" refers to the ability to generate the Word documents by combining the data collected during case processing with pre-defined Word templates with online edit feature.

Flash, ActiveX, Silverlight controls, and MS Office Integration in the Pega Platform

2. Document Scanning

The Pega platform allows end-users to optionally interact with TWAIN-compliant document scanners. Documents can be scanned and attached to cases in order to satisfy business requirements. The control is only loaded if either the pyLaunchScannerConfiguration or pyCreateScannedDocument local actions are referenced from a case. For more information on configuring the Document Scanning control, please see:

https://pdn.pega.com/integration/installing-pega-document-scanning-software

3. Image Viewing

Digital images attached to cases can optionally be viewed directly inside PRPC without requiring additional image software. For more information on configuring the Image Viewing control, please see:

https://pdn.pega.com/integration/pega-content-management-capture-store-and-view-content