RenRøros
Intelligent Automation as

Blue Prism Master Class

Internet Explorer to Chromium Conversion

Introduction

The Internet Explorer 11 (IE11) Web Browser is the last version that Microsoft will produce. Microsoft Edge will superceed IE11 and is built on the open source Chromium code base that Google Chrome is also based upon. What does this mean for RPA solutions that are tightly coupled to applications running on IE11?

1. Do nothing – Run Windows 10 IE11 for as long as the RPA solutions exists
2. Convert – Switch all IE11 RPA solutions to a new Browser; Chrome or Edge.
3. Hybrid – Switch Browser for expected long-life solutions and run IE11 for short-life solutions.

Assuming 1 is not an viable option there is likely a Browser conversion project on the horizon that needs to be managed. This document will give an overview of some key utilities that might help manage such a conversion project.

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Toolkit

- Chrome Conversion Report
- IE to Chromium* Conversion Utility
- Testing Utilities
- Process Dependancy Reports
- Conversion Monitoring Analytics Tiles

* Both Google Chrome and Microsoft Edge are built on the same underlying Chromuim open-source code base

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Chrome Conversion Report

This report will identify the scope of the conversion accurately including for each business object

- The number of actions
- The number of Internet Explorer stages
- The number of Internet Explorer Application Modeller elements

In addition, an estimated cost for conversion is included using the IE to Chromium conversion utility.

Chrome Conversion Report

Instructions

1. Import the Chrome Conversion package into your Blue Prism environment
2. Set values for the 3 environment variables (File Directory / Price per Element / Price per Stage)
3. Export a release package containing all of the business objects to be converted to the File Directory
4. Run the process “RRIA – Chrome Conversion Report” from Control Room
5. Open the HTML report from the File Directory

Chrome Conversion Report

Object Name	Number of Actions	Number of Stages	Number of Elements	Price per Stage	Price per Element	Object Cost
Custom - IE2CHROME	0	0	0	10	10	0
ePhorte - Hoved	8	13	40	10	10	530
ePhorte - Hoved - Chrome	0	0	0	10	10	0
ePhorte - JP behandling *child to a shared object	15	56	0	10	10	560
	0	0	0	0	0	0
Total Cost (NOK)	0	0	0	0	0	1090

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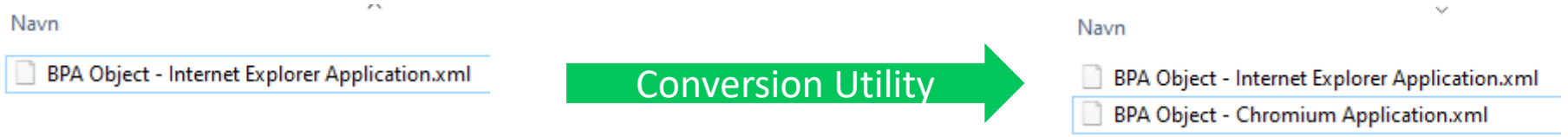
IE to Chrome Conversion Utility

To re-spy and re-dev manually an entire Business Object from IE to Chromium is time consuming. By utilising a conversion utility that reads an Exported Internet Explorer Business Object file and produces a Chromium version of the same Business Object in just a few minutes will save on this manual operation.

Given the IE11 HTML Blue Prism Stage functions do not map one-to-one directly to the WebBrowser Chromium functions it is expected that a degree of manual correction is necessary on the automatically produced Chromium Business Object.



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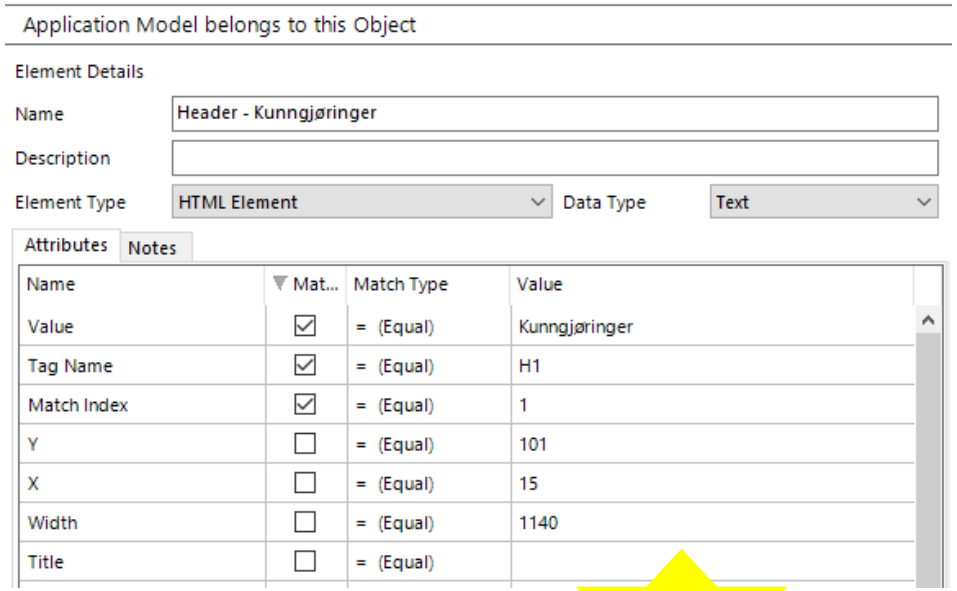
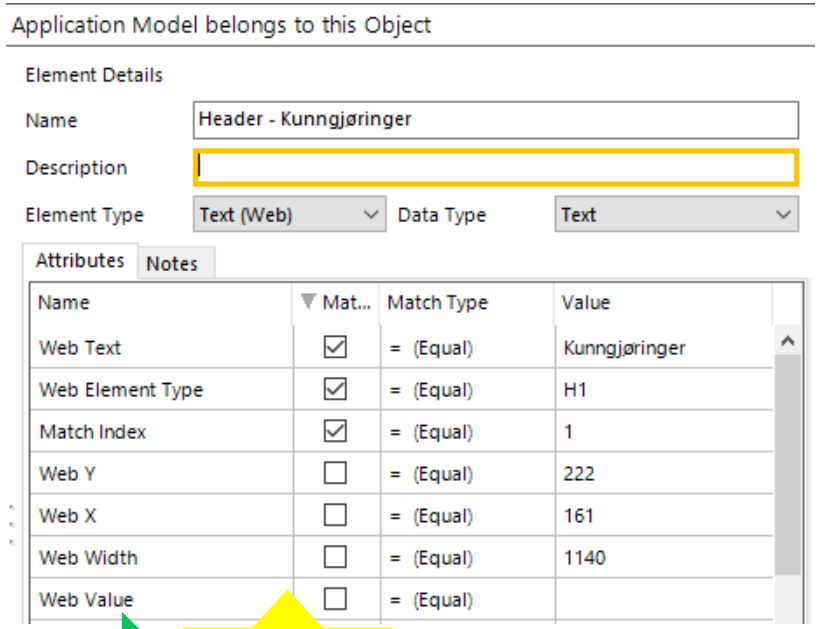
IE to Chrome Conversion Utility

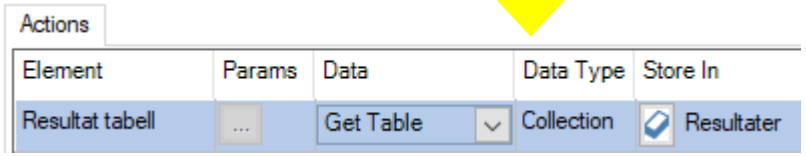


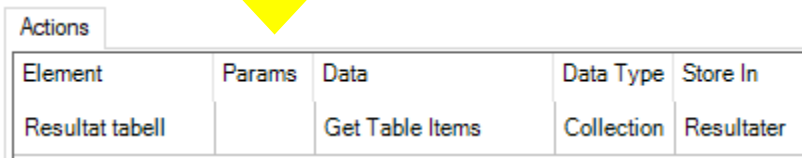
IE

Conversion Utility

Chrome







All ***Elements Type, Attributes*** and ***Stage Actions*** are converted to their Chrome equivalent.

All existing ***Match*** criteria are retained.

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Testing Utilities

In order to check that the Chromium Business Object behaves in the same way as the IE11 Business Object, it is necessary to Test. A desirable outcome is every Business Object Action can be verified to function in the same way for both IE11 and Chromium, independant of the Process layer.

A Test-Suite that executes the Business Object Actions with test data, with both positive and negative tests, can provide a robust checkpoint that the conversion has been successfull before making any changes to the process layer. A Test-Suite coverage report will provide an insight into how much of the Business Object functionality is covered in these automatic tests.

Test Process Name	Business Object Name	Total Number of Actions	Total Number of Tested Actions	% Coverage
Test Suite - ObjectZ	ObjectZ	25	20	80 %

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Process Dependancy Reports

The Process layer interacts with the Business Objects. It this interface within the Process Studio that will require modification in order to adopt the Chromium Browser solution.

In order to understand the dependancies within a process on the business object a Process Dependancy Report will highlight all Business Objects and Actions that are used within a given Process. This data can then be collated to help prioritise the business objects, and therefore Processes, that should be converted first.

The same report can be used throughout the project to track the conversion over time.

ProcessName	ObjectName	ActionName	BrowserType
ProcessA	ObjectZ	Action01	IE
ProcessA	ObjectZ	Action02	IE
ProcessA	ObjectZ	Action03	IE
ProcessA	ObjectY	Action10	IE
ProcessB	ObjectY	Action11	IE
ProcessB	ObjectY	Action12	IE
ProcessB	ObjectX	Action13	Chrome
ProcessB	ObjectX	Action14	Chrome
ProcessC	ObjectW	Action20	Chrome
ProcessC	ObjectW	Action21	Chrome
ProcessC	ObjectW	Action22	Chrome

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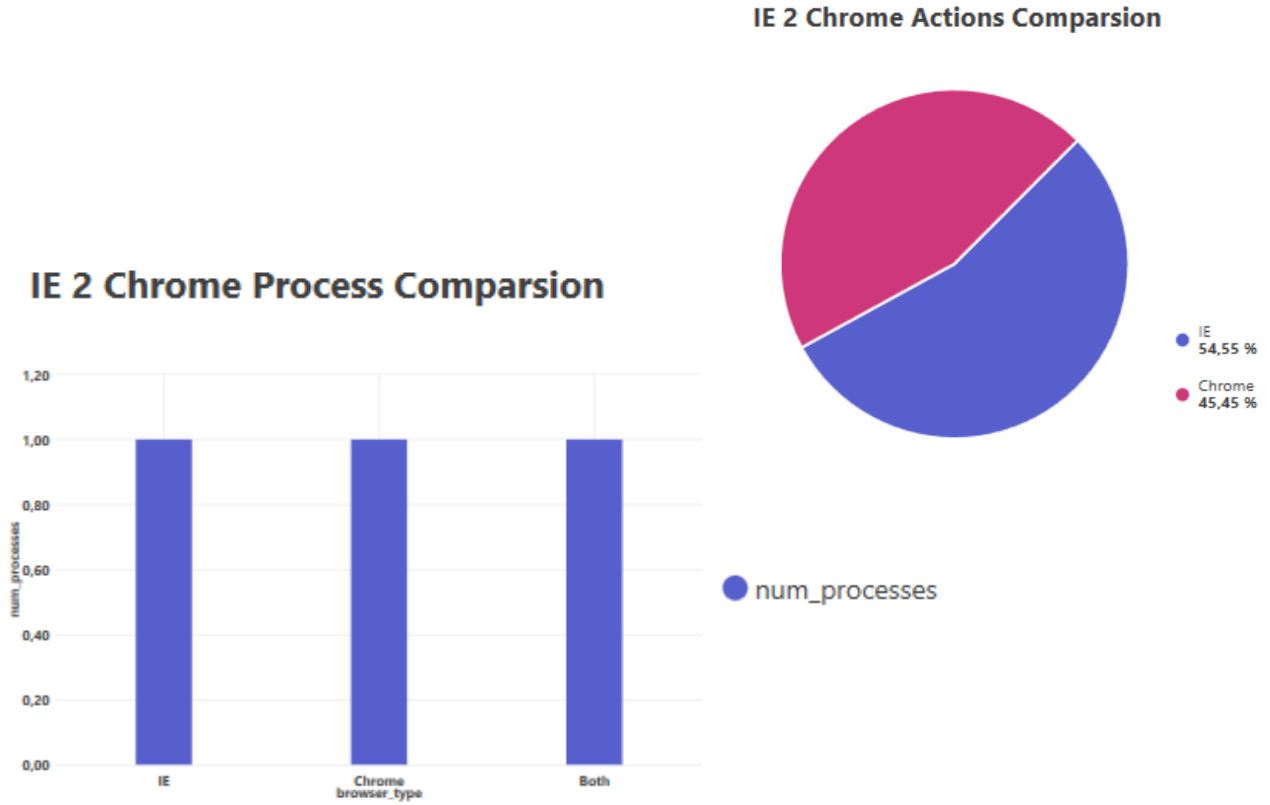
Conversion Monitoring Analytics Tiles

IE 2 Chrome Actions Comparsion
IE 2 Chrome Object Comparsion
IE 2 Chrome Process Comparsion

Projects with multiple Browser based applications may benefit from an overview of progress through the use of Blue Prism's Analytics Tiles. A snapshot of the current conversions by

1. Process
2. Business Object
3. Business Object Action

will help report the project status



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IE v Chome – issues

- Get Table – Read Stage returns single column table or a timeout error*
- Wait Stage missing multple conditions (Document Loaded, Get HTML, etc)*
- Read stage Get Attribute not working as documented
- Dynamic Web Path – multiple elements found
- Dropdown ‘Get Selected Item Text’ – IE as Text – Chrome as Collection
- Web Element Is Editable – If «In-Use» necessary to de-select in Chrome
- Web Text v Web Value – mapping not consistent to IE **Title** and **Value** attributes
- IE Application Modeller elements using Value may contain extra characters
- Salg og kundeservice – COM dll exception that requires a retry to work

*fixed in v6,9