KRYON™

BE YOUR FUTURE

User Guide

Kryon Process Discovery v1.5

Document revision: 08-Nov-2018

Contents

CHAPTER 1: Introduction

Kryon Process Discovery is a powerful, proprietary, AI-based platform designed to identify your organization's business processes, correlate variants, and make recommendations for enhanced efficiency via automation.

As an initial introduction, this chapter will take a look at the components that enable Process Discovery to work its magic, examine the roles that different members of your organization play (and the Process Discovery tools they'll use), and lay the groundwork for in-depth knowledge with some basic terminology:

Process Discovery Components

Discovery Robot

A **Discovery Robot** is the client application that runs silently (in the background) on employee desktops and records user interactions with business applications. The raw data collected by the Discovery Robot is comprised of:

1. A screenshot for each window action; and
2. Detailed metadata corresponding to each screenshot, including –
    - the Windows process name (e.g., Chrome/Outlook)
    - Complete URL (for internet applications)
    - Event type (e.g., mouse wheel, left mouse click)
    - Mouse position (e.g., x:933, y:637)
    - Keystroke type (for keyboard actions)
    - Screen resolution (e.g., 1080 x 1920)
    - Screen dpi
    - User name
    - Window size height and width
    - Time stamp

The applications and websites that are monitored by the Discovery Robots are managed by the IT Administrator, using a whitelist (i.e., applications/websites that **WILL** be monitored) and/or a blacklist (i.e., applications/websites that **WILL NOT** be monitored).

Discovery Database

The **Discovery Database** is the database (either MariaDB or MySQL) in which all the data collected by the **Discovery Robots** is stored. The data collected by the **Discovery Robots** is transferred almost immediately to the **Discovery Database** and remains on the client machine for only very short time.

Discovery Server

The data stored in the **Discovery Database** is utilized by the **Discovery Server**, where it undergoes a complex algorithmic process, including:

- Computer vision algorithm – extraction of relevant information from every image
- Tagging algorithm – identification of each individual action on each screen and assignment of a unique tag to each, facilitating recognition and matching of repeated actions
- Machine learning algorithm – comparison and compilation of extracted and tagged

information; mapping of processes and variants

- Automation recommendation engine – calculation of automation recommendations
- Output of process and variant data to the Discovery Console

Process Discovery's AI mechanism, as executed by the **Discovery Server**, gets smarter and more effective as more and more data is gathered by the Discovery Robots.

Discovery Console

The **Discovery Console** presents the results of all the recording, identifying, and complex data crunching in an easy-to-read and understand format. From the **Discovery Console**, you can see an overview of all discovered processes and then dig deeper into the actions, variants, and statistics comprising each.

The **Discovery Console** can be accessed using a web browser from any machine with access to the **Discovery Server**.

Automation Recommendation Engine

Kryon Process Discovery calculates a recommendation for automation priority based on the following ROI-related factors:

Factor	Weight
Average time	40%
Frequency	30%
Number of steps	15%
Number of variants	15%

Each of these factors is measured against the discovered process that has the highest measurement in that factor. The calculation is best understood in the context of an example:

EXAMPLE

Calculation of Automation Recommendation

Let's assume that Process Discovery has identified 4 processes at Forward Looking Company, Inc.:

- **Process A** has the highest average time = 60 minutes
- **Process B** has the highest frequency = 10 times per day
- **Process C** has the largest number of steps = 100 steps
- **Process C** also has the largest number of variants = 12 variants

How would Process Discovery calculate the automation recommendation for **Process D**, which has the following statistics?

- **Average time** = 30 minutes
- **Frequency** = 2 times per day
- **Number of steps** = 10 steps
- **Number of variants** = 6 variants

Time		Frequency		Steps		Variants
0.4 * (30/60)	+	0.3 * (2/10)	+	0.15 * (10/100)	+	0.15 * (6/12)
0.20	+	0.06	+	0.015	+	0.075

Automation Recommendation = 35%

Process Discovery Users & Tools

Different members of your organization play different roles in getting Process Discovery up and running, analyzing the data it provides to make automation decisions, and in creating the automated workflows that increase organizational efficiency. And each has different Process Discovery tools at his or her disposal.

IT Administrator

The IT Administrator's primary Process Discovery roles include:

- Installing the **Discovery Server** and **Discovery Robots**
- Securing the Process Discovery operating environment
- Managing Process Discovery users and credentials
- Blacklisting/whitelisting applications and websites to be monitored by **Discovery Robots**
- Controlling and monitoring system performance

The IT Administrator's tools

The IT Administrator's primary Process Discovery tools include:

- The software installation packages provided by Kryon (for **Discovery Robots** and the **Discovery Server**)
- Process Discovery administration tool (referred to as **Orchestrator**)

Relevant documentation

Kryon Process Discovery Installation & Administration Guide

Business Process Analyst

The Business Process Analyst is the organization's expert in how one or more business processes are executed. He or she utilizes the data provided by Process Discovery to:

- Review the ways in which employees are actually executing processes on a daily basis
- Compare these"real-life" variants to the prescribed process instructions/procedures
- Analyze the most efficient process path for getting the job done; and
- Determine which processes to automate in order to optimize operational efficiency

BEST PRACTICES

Getting the most out of Process Discovery

If you are a Business Process Analyst, you are a key player in helping your organization to get the most out of Process Discovery. You have the knowledge of how end-to-end processes are executed, and you are able to interpret the data that Process Discovery has assembled and connect it to "real life" processes. You can then extract the relevant information, export automations, and organize them properly for the Automation Developer.

Say, for example, a single end-to-end process is executed by 3 different members of your organization in different departments. Process Discovery will identify and output 3 different processes. It is you, as the Business Process Analyst, that is able to recognize these 3 processes as a single end-to-end process for automation. And it's you who will interpret the data, export and organize the relevant processes and variants into a single folder, and provide guidance to the Automation Developer.

The Business Process Analyst's tools

The Business Process Analyst's primary tool is the **Discovery Console**, which provides detailed analysis, statistics, process maps, and recommendations.

Relevant documentation

Kryon Process Discovery User Guide (this document)

Automation Developer

The Automation Developer is the creator of the automated workflows that provide Kryon RPA robots instructions for executing their assigned tasks. This job is made significantly easier by the ability to export processes from Process Discovery and import them directly into Kryon Studio, where they can be efficiently edited and implemented as automated workflows.

The Automation Developer's tools

The Automation Developer's primary tools include:

- The **Discovery Console's** one-click export function Download Automation
- Kryon Studio

Relevant documentation

- Creating Automations chapter of the *Kryon Process Discovery User Guide* (this document)
- The *Kryon Studio User Guide*

Basic Terminology

Process

A **process** is a repeating business workflow (i.e., it has been executed at least twice). A process is defined by a common start point and end point.

Variant

A **variant** is a sequence of steps (actions) by which a user executes a process. A single process can have many variants – i.e., many different ways by which the users got from the common start point to the common end point.

Action

An **action** is single step in a process.

Subprocess

A **subprocess** is a sequence of steps within a process that:

- Was discovered as a complete process in and of itself; ***or***
- Is repeated as an identical sequence in more than one discovered process

CHAPTER 2: The Discovery Console

In this chapter:

Accessing the Discovery Console

Access the **Discovery Console** using a web browser from any machine with access to the **Discovery Server** by entering its URL or IP address.

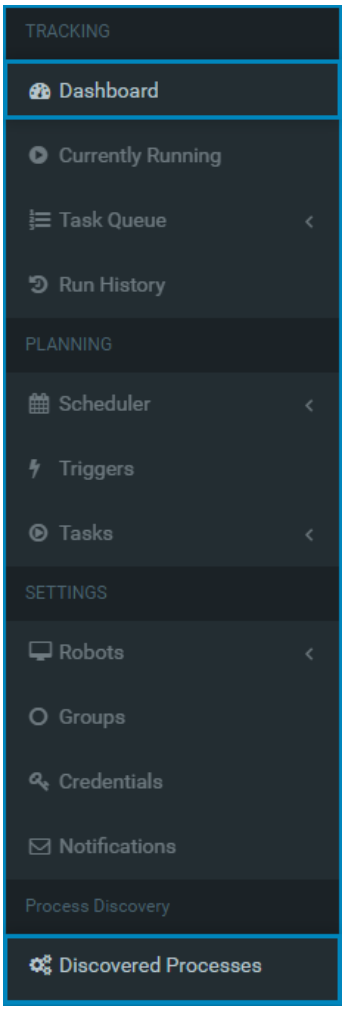
To log in, use the credentials provided to you by your IT Administrator.

Discovered Processes View

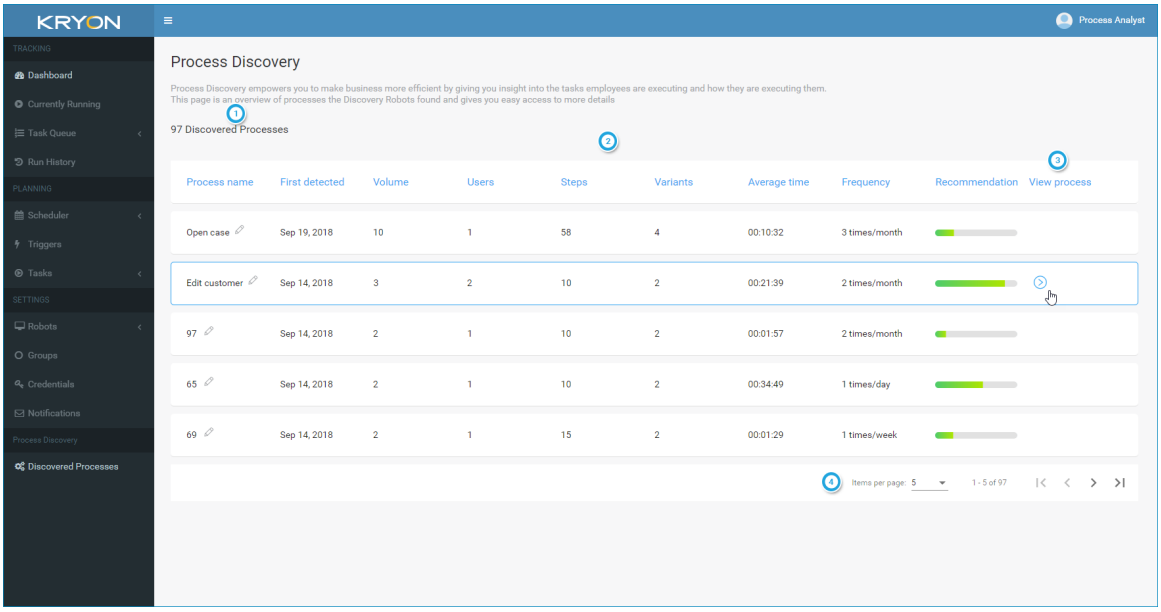
The Discovered Processes view is the first page you'll see when you enter the Discovery Console. It displays a table of all the processes detected since Kryon Process Discovery began running, including each process' major properties. From the Discovered Processes view, it is easy to dig deeper into the details of each discovered process by accessing its Process Details View.

Accessing the Discovered Processes view

Return to the Discovered Processes view at any time by clicking **DASHBOARD** or **DISCOVERED PROCESSES** from the navigation pane.



A tour of the Discovered Processes view



1. Total number of unique processes detected by Kryon Process Discovery

2. Process Properties table

3. Access the Process Details View for the selected process by clicking the icon that appears when hovering over the **View Process** column

4. Pagination controls, including the option to define the number of processes that appear on a single screen of the Discovered Processes view. See Navigating the Discovered Processes view.

A closer look at the Process Properties table

Property	Description
Process name	Name you have assigned to the process. (Until you give the process a name, a system-generated process number will appear in this column). See Naming Processes.
First detected	Date on which the process was first detected by Process Discovery
Volume	Total number of times the process has been executed since it was first detected (all variants)
Users	Total number of unique users who have executed the process since it was first detected (all variants)

Property	Description
Steps	Total number of unique steps in the process (all variants). See How many steps?
Variants	Total number of process variants
Average time	Average time taken to execute the process once (total execution time of all variants ÷ volume) • A measure of the time that could be saved by automating the process **each time the process is executed**
Frequency	Measure of how often the process is executed on average (volume ÷ elapsed time since the process was first detected)
Automation recommendation	Scale representing priority for conversion to an automated process based on ROI-related factors. See Automation Recommendation Algorithm.

TIP

Sorting the Process Properties table

Sort the **Process Properties table** by any property simply by clicking on the column title of that property. (Each successive click changes the sort order from ascending to descending and back again.)

EXAMPLE

How many steps?

Assume the process for creating a new sales lead has 3 variants:

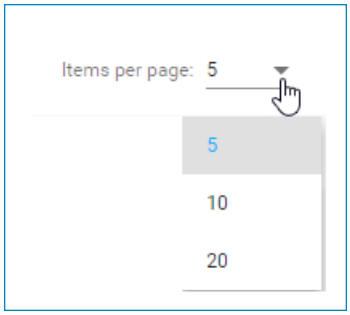
- Variant #1 contains **10 steps**
- Variant #2 contains **6 steps** (2 steps that are the same as in Variant #1 and 3 steps that are the same as in Variant #3 → ***1 unique step***
- Variant #3 contains **7 steps** (1 step that is the same as in Variant #1 and 3 steps that are the same as in Variant #2 → ***3 unique steps***

A simple sum of the steps in all 3 variants equals 23 (10+6+7); however, the sum of ***unique*** steps in all 3 variants equals **14** (10+1+3). Therefore, the number appearing in the Steps column will be **14**.

Navigating the Discovered Processes view

Use the pagination controls (4) to:

- Select the number of processes displayed on a single page;



- and -

- Navigate from page to page

Naming Processes

When Process Discovery initially detects a process, it is assigned a system-generated process number. You should give the process a meaningful name to allow you and others to easily identify it.

Defining the process name

To give a process a name:

1. Access the Discovered Processes View
2. Click on the icon in the Process name column
3. Type the desired process name
4. Press the `Enter` key to save your changes

Editing the process name

You can edit the process name at any time by following the same steps.

Process Details View

The **Process Details** view allows you to:

- take a high-level view of each discovered process by reviewing its visual Process map;
- take a close look at each action in the process by reviewing detailed Action information; and
- dig deep into the details of each process variant and how it affects the whole by reviewing Process Coverage and the Process Variants table

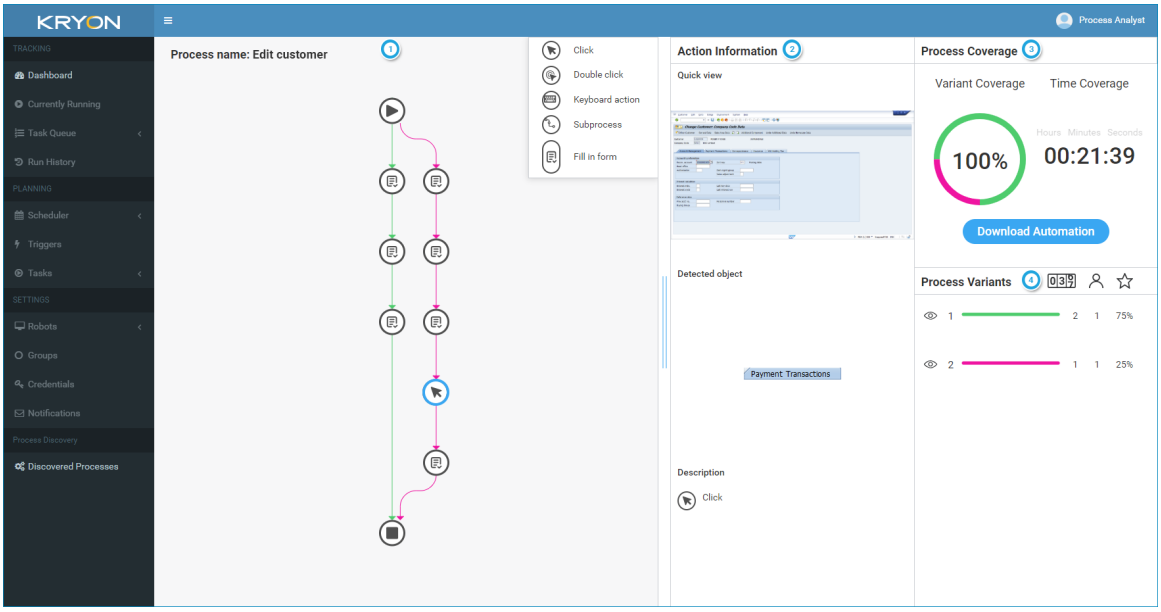
Accessing the Process Details view

To access the **Process Details** view for a selected process:

1. From the Discovered Processes View, hover over the **View process** column
2. Click the icon that appears

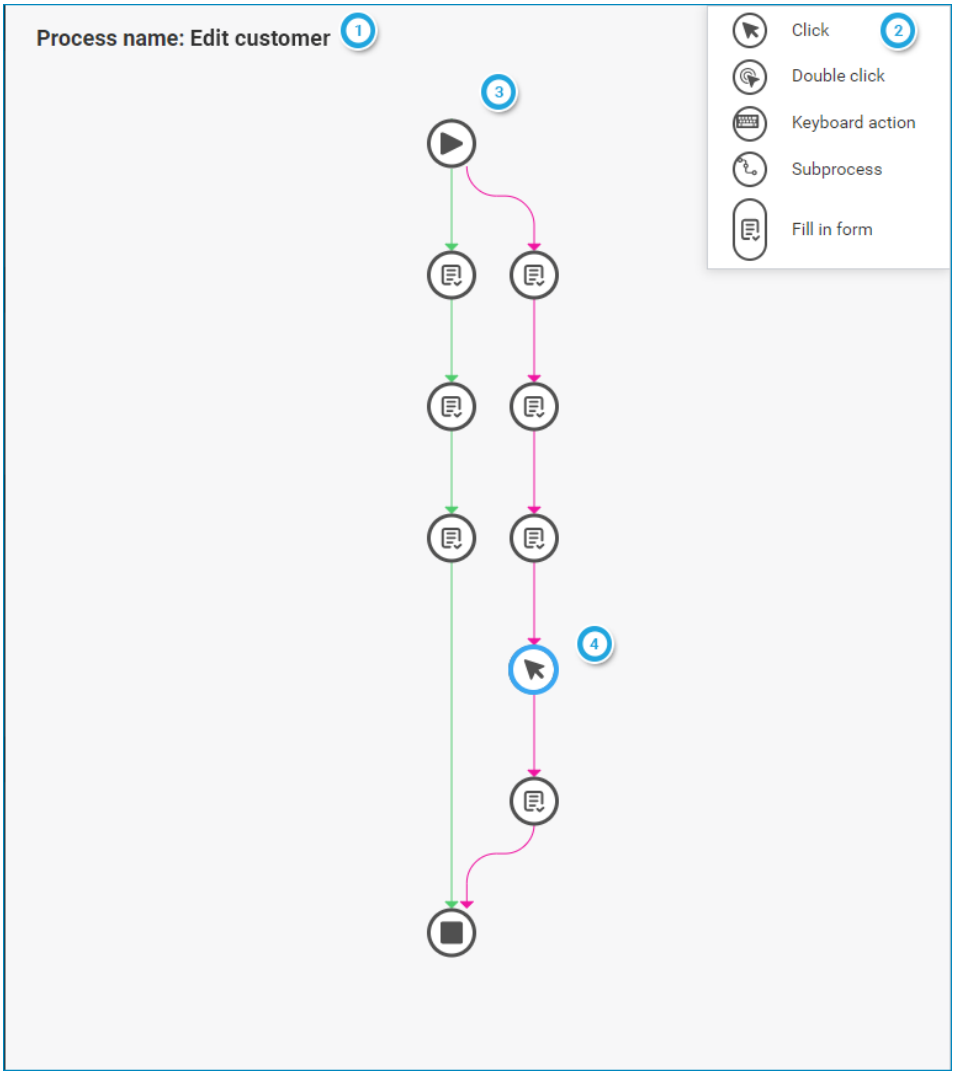
The **Process Details** view for the selected process opens.

A tour of the Process Details view



1. Process Map pane: a graphical representation of the discovered process
2. Action Information pane: detailed information about the selected action
3. Process Coverage pane: display of aggregate **Variant Coverage**, **Time Coverage**, and the **Download Automation** button
4. Process Variants table: a list of all discovered variants for the process, including detailed statistics for each variant and the ability to toggle the variant's visibility

A closer look at the Process Map pane



1 **Process name:** for additional details, see Naming Processes

2 **Legend:** list of all available action types and the icons by which they are represented in the process map

3 **Process map:** graphical representation of the discovered process

- Each variant is represented by a different color
  - You can select which variants are displayed on the process map by toggling the visible variants
- Each action is displayed as a node, with an image representing the action type (see Legend)
  - Special nodes:

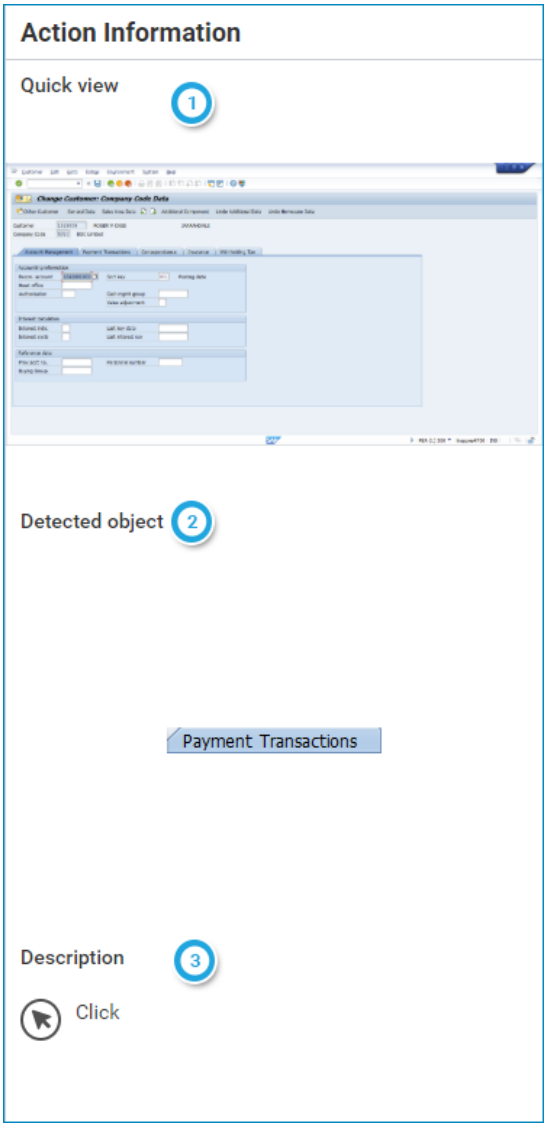
    Process start point

    Process end point

4 **Selected action:** the action for which details are displayed in the Action Information pane

- Represented by blue ring around the action node, for example:

A closer look at the Action Information pane

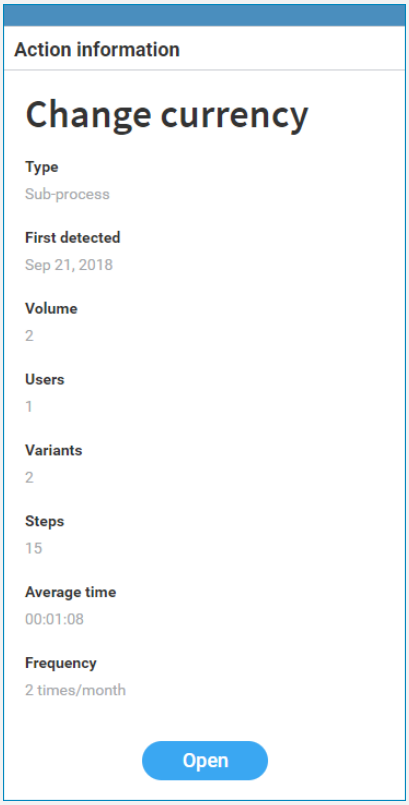


1. **Quick view:** an image of the screen on which the selected action was executed
   - To enlarge the **Quick view**, click the icon. Click again anywhere outside the enlarged image to return to the original view.
2. **Detected object:** an image of the screen object on which the selected action was executed
   - **Note:** not displayed for the **Fill in form** action type
3. **Description:** the selected action's icon and description
   - The description can be particularly useful when the selected action is the process start point or end point (for which a special icon is displayed on the Process map)

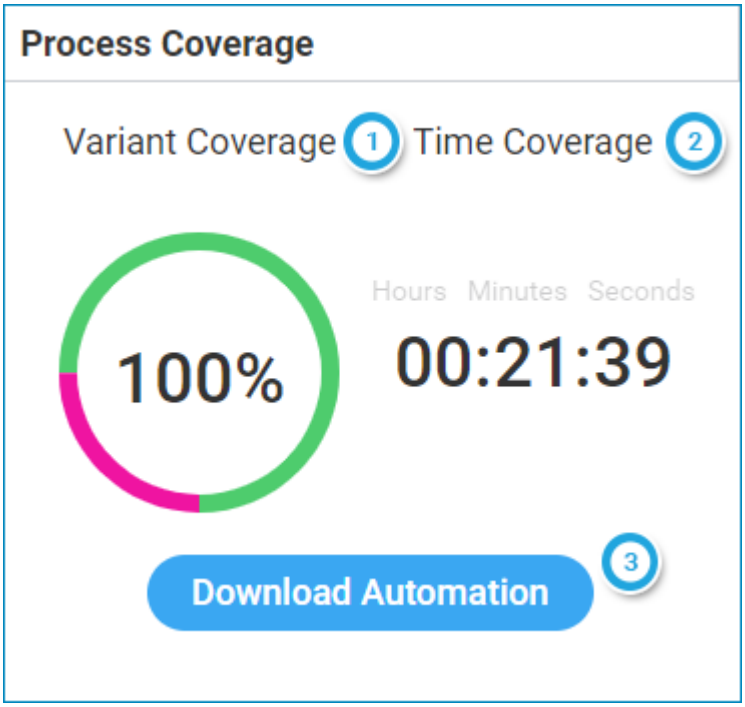
NOTE

Special display for subprocesses

When the selected action is a subprocess, the Action Information pane display changes to show detailed information about the subprocess:

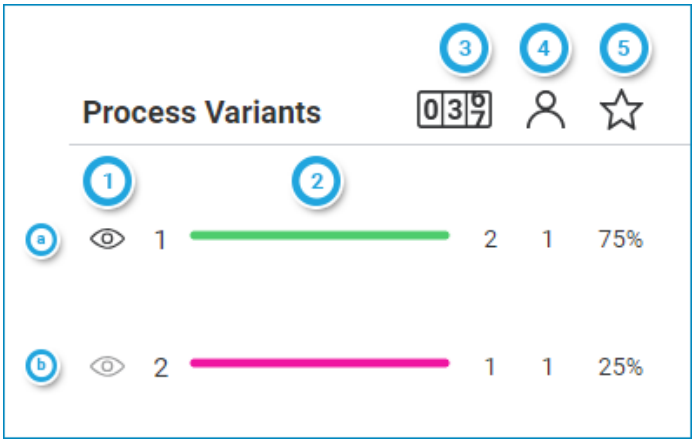


A closer look at the Process Coverage pane



1. **Variant Coverage (aggregate)**: total percentage of process volume covered by the visible variants
2. **Time Coverage**: time taken to execute the process once (**weighted average** of the visible variants only)
3. **Download Automation button:** Click this button to download the visible variants as automations. See Creating Automations.

A closer look at the Process Variants table



1 **Variant visibility toggle:** Click the icon to turn the variant's visibility on/off

a Visible variant

a Non-visible variant

A variant's visibility determines whether:

- it will be visible in the Process map
- it will be included in the calculation of aggregate Variant Coverage and Time Coverage
- it will be exported when downloading the process as an automation

2 **Variant color:** shows the color in which the variant is displayed in the Process map

- The green variant represents the variant with the highest volume and is known as the baseline variant
- The baseline variant's visibility can not be toggled off (i.e, it is always visible)

Variant statistics:

3 **Variant volume:** total number of times the variant has been executed since it was first detected

4 **Variant users:** total number of unique users who have executed the variant since it was first detected

5 **Variant coverage (single variant):** percentage of total process volume covered by this variant

BEST PRACTICES

Get a complete understanding with the Process Details view

The following is a suggested sequence to help you get the most out of the Process Details view:

1. Turn off the visibility of all variants other than the baseline variant
2. Identify and understand the applications used in the process
3. Identify the steps in which data is transferred from one place or system to another
4. Name the process in the Discovered Processes view
5. Return to the Process Details view and turn on the visibility of additional variants (one at a time) to understand: (1) how the same process is performed by different employees/team members; and (2) to identify the most efficient variant(s)
6. Identify the variants you want to download for automation

CHAPTER 3: Creating Automations

One of Kryon Process Discovery's greatest strengths is its ability not only to provide actionable information, but also to export it in an immediately usable format. This chapter will examine the quick steps for generating automations directly from within the Discovery Console and importing them into Kryon Studio for editing and RPA implementation.

In this chapter:

Downloading an Automation from Process Discovery

Exporting a process as an automated workflow is as simple as clicking a single button – but it also provides you with the flexibility to determine exactly which process variants you want to export.

To export an automated workflow from Process Discovery:

1. Access the Process Details view of the process you want to export
2. Toggle **ON** the visibility of each variant you **DO** want to export
3. Toggle **OFF** the visibility of each variant you do **NOT** want to export
4. Click the Download Automation button

A file named `pd-export.PD` will be created and automatically downloaded to your internet browser's default download folder. Save this file to an easily-accessible location, and you'll be ready to import it to Kryon Studio.

BEST PRACTICES

Organizing your exported automations

As you export processes and variants:

1. Rename each exported file with a relevant name
2. Organize your exported automations into folders – one folder for each end-to-end business process to be automated
3. Transfer your organized folders to the Automation Developer(s) for upload to Kryon Studio and additional development

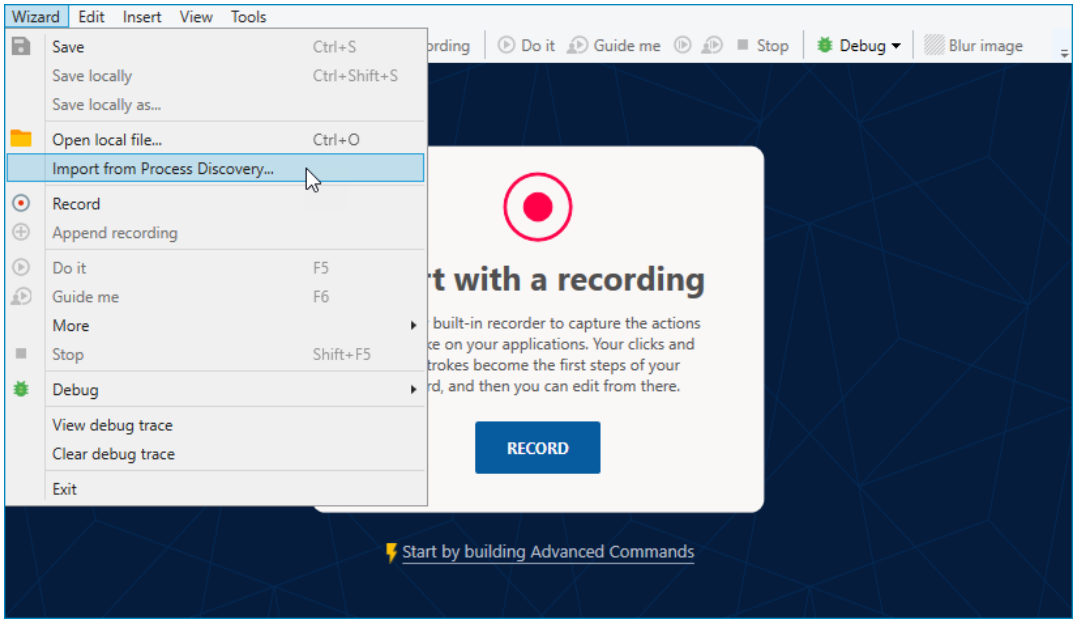
Importing an Automation to Kryon Studio

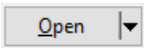
To import a process you downloaded from Process Discovery to Kryon Studio:

1. Open Kryon Studio
2. Create a new wizard in the **Catalog**
3. Open the wizard in the **Wizard Editor**

> **NOTE**
> **Creating, opening & editing wizards**
>
> For detailed instructions and information about creating, opening, and editing wizards, see the ***Kryon Studio User Guide (Creating Wizards)***.

4. From the menu bar, click **Wizard**, then **Import from Process Discovery**



5. Navigate to the location in which you saved the `pd-export.PD` file, select the file, and click the 

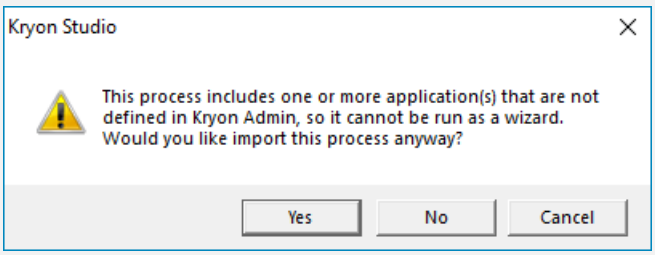
button

The import will begin. When complete, the process downloaded from Process Discovery will populate the open wizard in the **Wizard Editor.**

CAUTION

Define those applications!

If you attempt to import a process that contains applications and/or websites that are not yet defined in Kryon Admin, you will receive the following warning:



If you choose to import the process, you will be able to view it (and even edit it), but you will not be able to run it or save it as a wizard. So you won't be able to save any changes you have made.

To enable a complete import, ask the Kryon RPA Administrator in your organization to add the necessary apps and/or websites. Then import the process again.