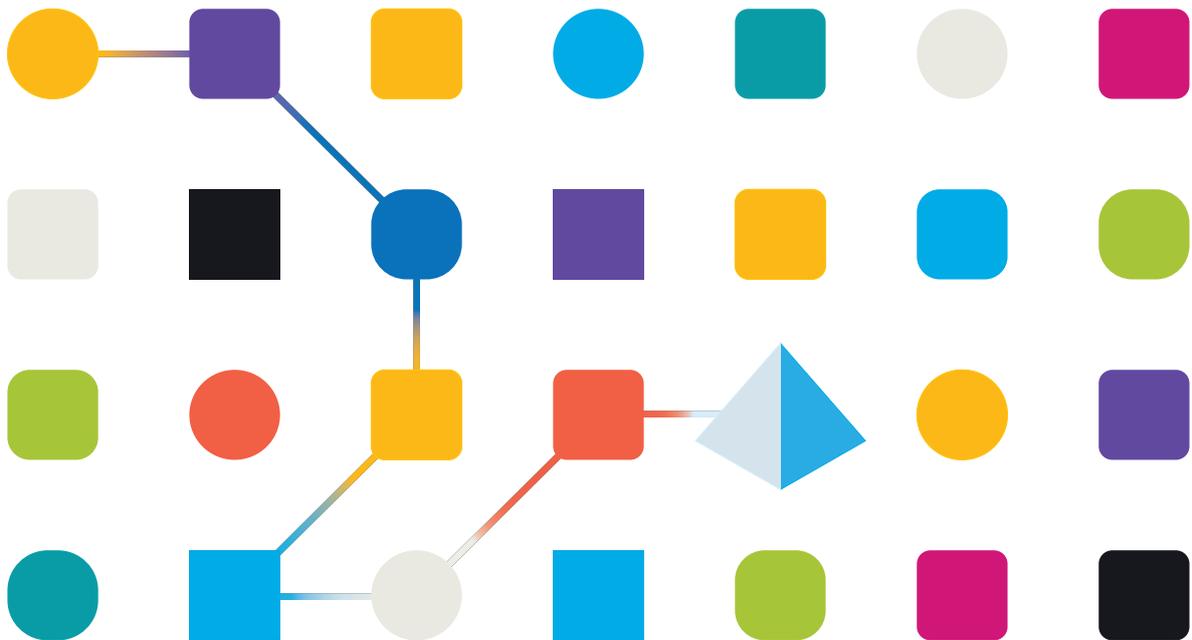




# Blue Prism Desktop 1.0

## Process Developer Guide

Document Revision: 1.0



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## Process development for Blue Prism Desktop

Automations for use in Blue Prism® Desktop can be developed using current Blue Prism functionality and methodology. This guide describes the differences between a standard Blue Prism interactive client and a Blue Prism interactive client with a Desktop license applied, and outlines special considerations when developing processes for Desktop.

Before creating a Blue Prism process to run in Desktop, it is recommended that you refer to [Blue Prism Desktop process design considerations on page 12](#) for a suggested design approach.

### Process design elements for Blue Prism Desktop

Blue Prism process developers can create automations to run on Blue Prism Desktop. The processes can incorporate forms (using an Input stage), which prompt the Desktop user to enter data required to complete the process. All published processes stored in the Blue Prism database can be made available using role permissions to connected Desktop users and access can be controlled using existing permissions functionality.

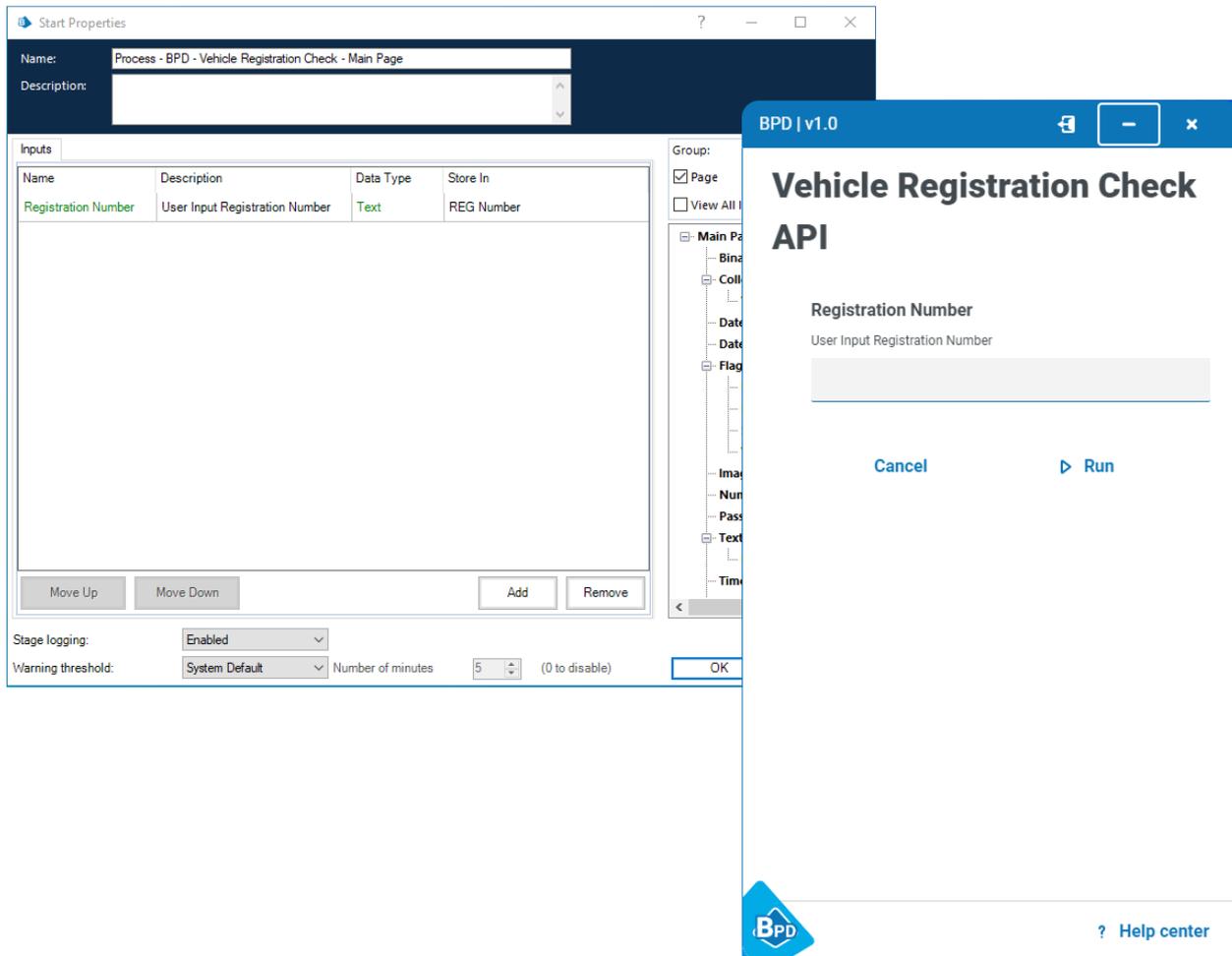
The following design elements should be considered when creating a process to run in Blue Prism Desktop:

- [Start stage](#)
- [Input stage](#)
- [Session timeout](#)
- [Windows Credentials business object](#)
- [User input blocking](#)

## Start stage

The Start stage can be used in Blue Prism processes to add start-up parameters to a process. When input parameters are added to a Start stage, they are displayed as a form in Blue Prism Desktop to enable the Desktop client user to enter required parameters before running the process. See [Start stage](#) for details.

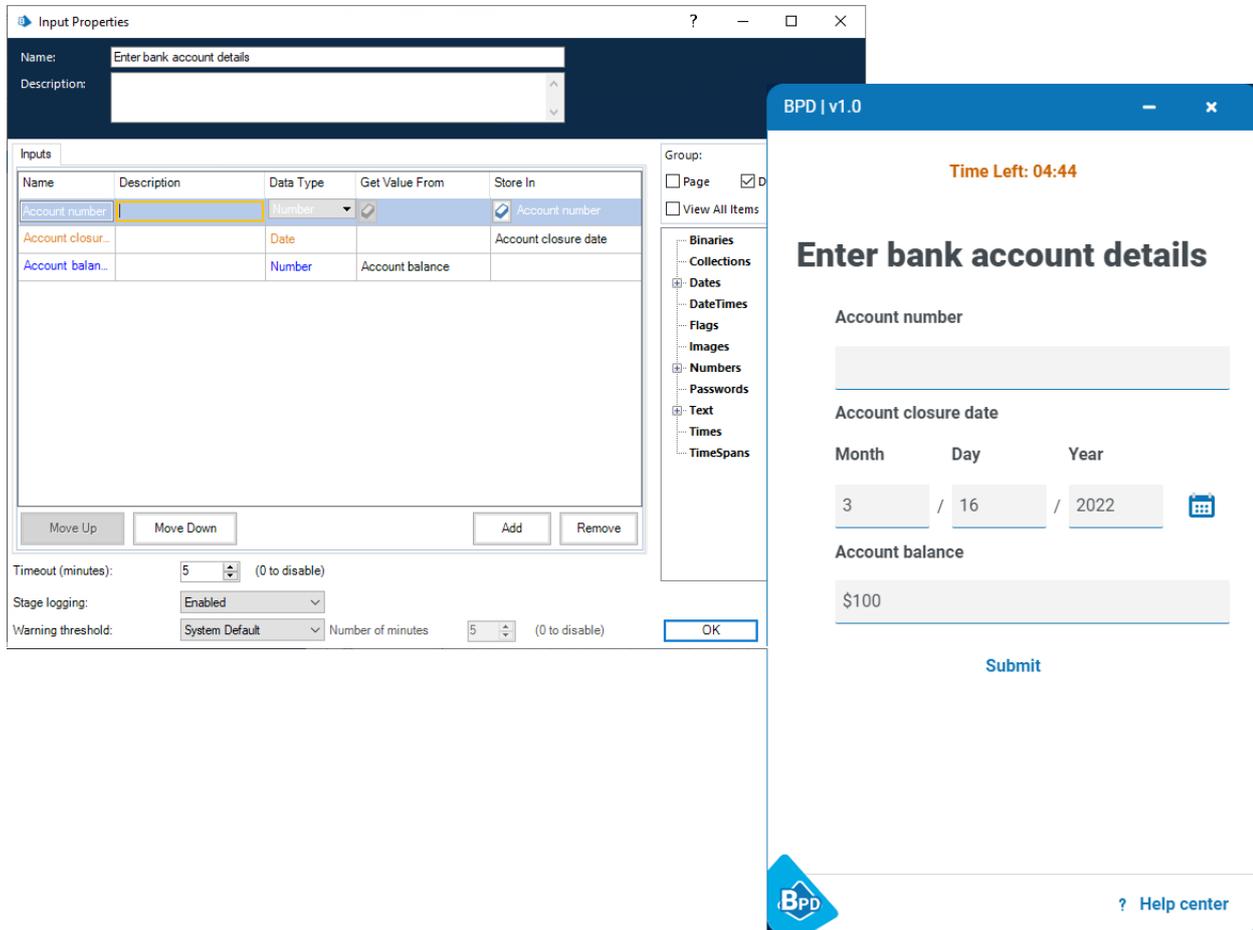
The following image shows the Start stage in Blue Prism and the corresponding form in Desktop.



## Input stage

The Input stage can be used in Blue Prism processes to add a form to a process. This stage is only available for users with a Blue Prism Desktop license. See [Input stage](#) for details.

The following image shows the Input stage in Blue Prism and the corresponding form in Desktop.



If your process includes an Input stage, a debug form displays the input fields when run in Process Studio in debug mode. This enables you to create and test a process without having to publish and run it in Blue Prism Desktop.



The style of the debug form displayed in Process Studio does not match the style used in the Desktop user interface, but provides an accurate representation of the content.

## Session timeout

A mandatory 10 minute session limit is automatically applied to all processes running in Blue Prism Desktop, after which time, the process is stopped. If a timeout occurs, it is captured in the session history in the Blue Prism interactive client and displayed on the View issues screen in Desktop.

The 10 minute timer is paused while an input form is open. See [Input stage](#) for details of how to add a time limit (timeout) to a Desktop form. If the **Timeout** setting has not been configured for the Desktop form via the Input stage, then the form will remain open and the 10 minute timer will remain paused.

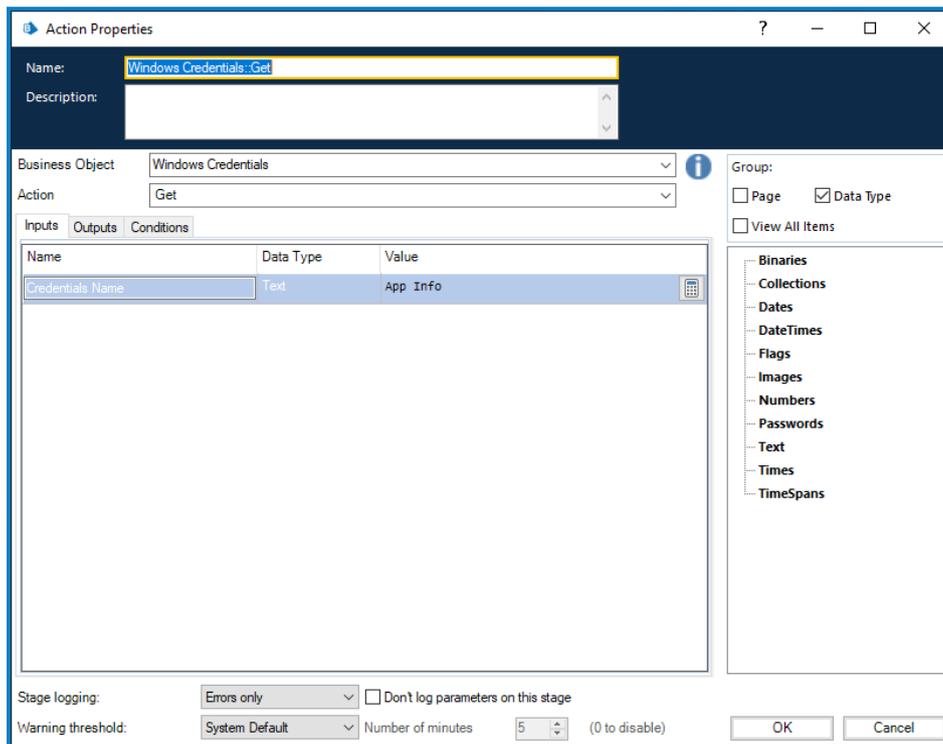


This is the default setting of the session run time limit, which means that Desktop processes must be designed with this restriction in mind, as standard. However, if you have a use case that requires a higher time limit, please contact the Blue Prism Desktop team at [blueprismdesktop@blueprism.com](mailto:blueprismdesktop@blueprism.com) for details on how it can be increased.

## Windows Credentials business object

As Blue Prism Desktop is a tool used by Desktop users on their machines, using their profile, accounts, and credentials, Desktop processes do not have access to the Blue Prism credential store, and users' credentials are not stored in the Blue Prism database.

The Windows Credentials business object can be used to access users' credentials stored locally for use with Desktop processes. The Windows Credentials business object interacts with credentials stored under Control Panel > User Accounts > Credential Manager > Windows Credentials > Generic Credentials.



The following actions are available:

- **Get** – Retrieves the specified credentials.

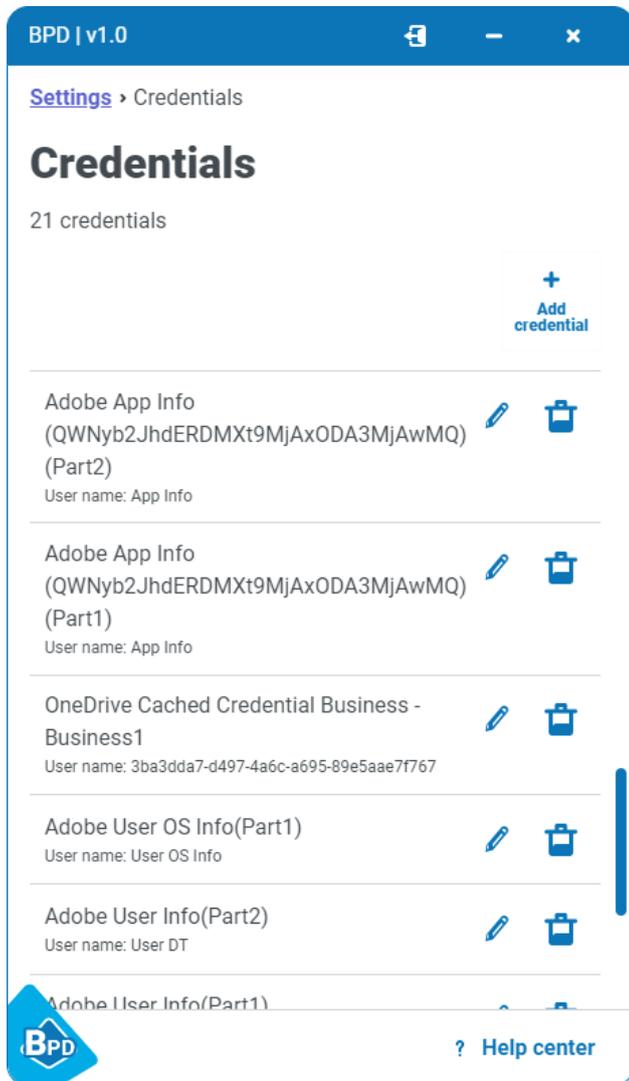
Parameter	Direction	Data type	Description
Credentials Name	In	Text	The internet or network address from the Windows Credential Manager.
Username	Out	Text	The user name for the specified credential.
Password	Out	Password	The password for the specified credential.

- **Set** – Populates given credential name with specified values for username and password.

Parameter	Direction	Data type	Description
Credentials Name	In	Text	The name of the credentials to set. This will be saved in the internet or network address field in the Windows Credentials Manager.
Username	In	Text	The user name for the specified credential.
Password	In	Password	The password for the specified credential.

## User credentials in Blue Prism Desktop

In Blue Prism Desktop, users can view, edit, and delete their own credentials from **Settings > Credentials**.



For details see [Configure credentials](#).

## User input blocking

 User input blocking in Desktop helps prevent accidental updates by the user while applications are being automated. Generally, users will not be prevented from interacting with other applications while a process is running, however, there are some exceptions which are detailed below.

When Blue Prism Desktop automates an application, user input (for example, mouse clicks and key strokes) is blocked whilst the automation is running:

- If automating a Windows application, only the application being automated is blocked. All other Windows applications on the machine remain operational and will accept user inputs.
- If automating a Java, Microsoft Word, Excel, PowerPoint, Outlook, or browser application, all applications of that type on the machine are blocked. However, only one type of browser window is blocked so, for example, if Chrome is being automated, Edge, or Firefox will continue to work as expected.

 If you already have Microsoft Word, Excel, PowerPoint, or Outlook open on your computer when a Blue Prism Desktop process automates the same application, interactions with that application may not be blocked. Any interactions that you make with the application could cause the process to run with incorrect data or to fail, so it is recommended that you save and close Word, Excel, PowerPoint, or Outlook before running a process that automates these applications.

Depending on process design, the sending of mouse clicks from Blue Prism may require the target application to be in focus. It is recommended, where possible, that approaches to send mouse clicks to applications that do not require focus are used. Details of these options are listed below:

- Mouse clicks can be sent to Windows applications using the **Press** or **Press Menu Item** actions to avoid moving a user's mouse. When performing a **Press** or **Press Menu Item** action, the Windows application under automation may come into focus. Users can move focus to other applications once the action has completed.
- Mouse clicks can be sent to a Java application in a way that does not move the mouse or steal the focus, as these other actions are all API driven through the Java Access Bridge.
- Mouse clicks can be sent to browser applications using the **Click** action available in Browser spy mode.

Sending key strokes:

- Key strokes can be sent to a Windows application without stealing focus, by using the **Windows Press Keys** action.
- Key strokes can be sent to a target Java application, but not a specific element.
- Text can be written to a browser application using Write stages. There is no option to send individual key strokes to a browser window other than using **Global Send Keys**, which requires the application window to be in focus.

## Touchpad actions that are not blocked

When running a process in Blue Prism Desktop, the following touchpad actions related to gestures are not blocked in applications automated by the process:

- Pinch to zoom in and stretch to zoom out.
- Drag two fingers to scroll.
- Tap two fingers to mimic right-click.

## Differences in Blue Prism functionality

The following sections describe the differences that apply to the Blue Prism interactive client with a Desktop license applied:

- Environment functions
- Business objects
- Spying
- Excluded functionality

### Environment functions

The `IsStopRequested` environment function is not available in Calculation and Decision stages for business objects and processes. This is because it cannot be used to return a meaningful response in Blue Prism Desktop. Any existing processes that use this function will return `False`.

The new `IsBPDEnvironment` environment function can be used in Calculation and Decision stages for business objects and processes to detect whether the process is running on a Blue Prism Desktop runtime resource.

 When running a business object or process that includes the `IsBPDEnvironment` environment function in debug mode in Studio, the function will return `No` which indicates that a Blue Prism Enterprise resource is running.

### Internal business objects

The following internal business objects are available for use when using the Blue Prism interactive client with a Desktop license:

- Internal Business Objects – Collections.
- Internal Business Objects – Windows Credentials. See [Windows Credentials business object](#) for details.

No other internal business objects are available with a Blue Prism Desktop license.

### Spying

All spy modes available in this release of Blue Prism are fully compatible with Blue Prism Desktop, with the exception of Region mode. Region mode is available, but is not recommended for use in Blue Prism Desktop processes, due to potentially varying screen resolutions and other differing factors.

## Excluded functionality

The following Blue Prism Enterprise functionality is not currently available in the Blue Prism interactive client if a Blue Prism Desktop license has been applied:

- **Work queues** – Blue Prism Desktop is not designed to operate like a Blue Prism Enterprise runtime resource, completing one case after another in batch mode, and potentially sharing data with other runtime resources via a common work queue. Desktop is intended to operate in isolation from other runtime resources, controlled by the Desktop user, working cases individually. For this reason, Desktop solutions do not have access to Blue Prism work queues and cannot use the Work Queues VBO. Work queues are not available in System or in Control Room.

Because work queue functionality is not available for Desktop, the **System > Reporting - Work Queue Snapshots** option is also not available.

- **Environment locks** – The Blue Prism Desktop solution does not work simultaneously with other Blue Prism processes, so it has no need for environment locks. The Environment Locking VBO and the Environment Locks screen are not available.
- **Schedules** – Blue Prism Desktop is not designed to work with the Scheduler, therefore schedules are not available in System or Control Room.
- **Calendars** – Blue Prism Desktop is not designed to work with calendars, therefore the Calendars VBO will not function in a Blue Prism Desktop solution. Calendars are not available in System or Control Room.
- **Data Gateways** – Blue Prism Desktop is not designed to work with Data Gateways, therefore the Data Gateways VBO will not function in Desktop solutions.
- **Enterprise credentials** – Desktop client users will use their own local Windows credentials in processes, rather than credentials stored in Blue Prism, so the ability to use credential functionality in Blue Prism is not required.
- **Session control functionality** – The ability to start and stop sessions in Control Room is not available.
- **Automatic archiving** – The ability to select automatic mode on the System - Archiving screen is unavailable.

## Blue Prism Desktop process design considerations

This section covers some of the considerations that should be made when creating a solution for Desktop. For details of process design elements which are specific to Blue Prism Desktop, see [Process development for Blue Prism Desktop on page 4](#).

Designing processes for Desktop is slightly different from an unattended RPA solution. With Desktop automations users are directly contributing to the running of a process, with the expectation that the automation runs consistently and successfully. In unattended RPA, workloads are processed in bulk and digital workers loop continuously, working case after case, operating in a clean, consistent, and unobserved environment. By contrast, in Desktop automations, cases tend to come one at a time, the state of the environment is less predictable, and the user is present to observe, participate, and potentially interfere.

It is important that care is taken to ensure that a Desktop solution is designed in a way that offers an optimal user experience, maximizes performance, and mitigates any risk of failure.

### Solution design considerations

The following elements must be considered when designing an automation for Desktop.

#### User requirements

As with unattended RPA, identifying and agreeing requirements and success criteria are key to a successful project. With Desktop automation the Desktop user must also be considered.

Business analysts and solution designers should consider the users as customers, and ideally involve them in the requirements gathering, process walk-throughs, design workshops, and design sign-off. These users are the subject matter experts (SMEs) of the business process and will have a good understanding of the process and its associated workarounds, and problems. This valuable knowledge and experience should be utilized when designing an automation for Desktop.

Having user representation on the project will also help encourage user buy-in and ensure they are informed. Because the ultimate aim is for users to welcome and benefit from automation, their involvement will minimize the chance of low uptake or even rejection of a Desktop solution.

#### Solution shape

As already mentioned, unattended RPA solutions are meant to work one case after another, so usually utilize loops. Desktop solutions do not involve a work queue and will tend to work one case at a time, as directed by the Desktop user. This means that Desktop processes are more likely to be linear rather than circular in design as loops are not generally used. This isn't to say that a Desktop process could not be designed to repeat certain steps, but by nature, requirements will veer more toward 'one-shot' automation rather than batch work.

#### Process structure

As with a standard Blue Prism solution, your templates should also be used to construct Desktop solutions. This is to assist with time saving, standardization, promotion of best practices, ease of collaboration, and reduction of overall ownership cost.

#### Preliminary checks

It's very likely that a Desktop solution will need to make multiple initial checks when it starts to run. An unattended automation will operate in a virtual environment built specifically for runtime resources, the machine specification is known and the state of the machine is controllable and predictable.

The Desktop environment is far less clean and more uncertain. Specifications and builds may not be standard, the state of the machine cannot be presumed, and the actions of the user are unpredictable. In summary, a Desktop automation is able to make far fewer assumptions about the environment that it is operating in, and it will need to make more allowances than a Blue Prism Enterprise automation. The following are some of the additional checks that a Desktop automation may need to make:

- Did the user enter valid input parameters?
- What is the state of the target application – is it already running, is the user logged in, what screen is open in the application, or does the application need to be launched?
- Is the version of the target application as expected?
- Is screen resolution important and does the machine meet the requirements?
- Is the Windows version important and does the machine meet the requirements?
- Are the user's credentials in the Windows credential store?

Some form of exception handling will be required to inform the user of the issue where the problem cannot be resolved by the automation.

## Minimized applications

It is possible for a Desktop user to minimize an active application from the taskbar while an automation is running. It is therefore recommended that the process design includes checks that the target application is active and visible on screen where required.

## Exception handling

For a Blue Prism Enterprise automation, exception handling can be as simple as recording the detail of the problem against the queue item and moving on to the next case. But in Blue Prism Desktop, there is no work queue and there probably is no next case, so the solution designer must make every effort to keep the user informed.

Mid-process terminations should be avoided and instead problems should be reported back to the user gracefully. The language used should be tailored to the user, who may not have technical experience.

The user's actions may be the cause of the problem and the solution designer should attempt to anticipate user interaction. Training will go some way towards controlling user behavior, but the designer of a Desktop automation should expect the unexpected. There is no simple solution to this problem, but being aware of such factors will help when designing processes for Desktop.