# Citrix integration

Citrix applications can be automated using SS&C | Blue Prism Enterprise. To achieve this, an appropriate Blue Prism Citrix agent must be installed on the Citrix environment, usually by a Citrix administrator. Once this setup is complete, automations can be spied using the same mechanisms as for native applications.

## Prerequisites

The following prerequisites must be met before setting up Citrix automation:

- Blue Prism 7.3 must be installed on the user's local machine.
- The Citrix Workspace application must be installed on each runtime resource that will run processes that automate Citrix applications natively, and on each interactive client used to build these processes.
- Ability to install the Blue Prism agents on the Citrix environment for the profile of the user account used to log in to the environment.

## Setup overview

### Citrix Virtual Desktops

Blue Prism communicates with the Citrix Virtual Desktop Environment (VDE) using the virtual channel driver, which forwards the data over a Citrix Independent Computing Architecture (ICA) channel (BPAPMAN). The data is received by the Blue Prism Citrix Virtual Desktops agent and is forwarded to the Blue Prism Application Manager through internal communication.
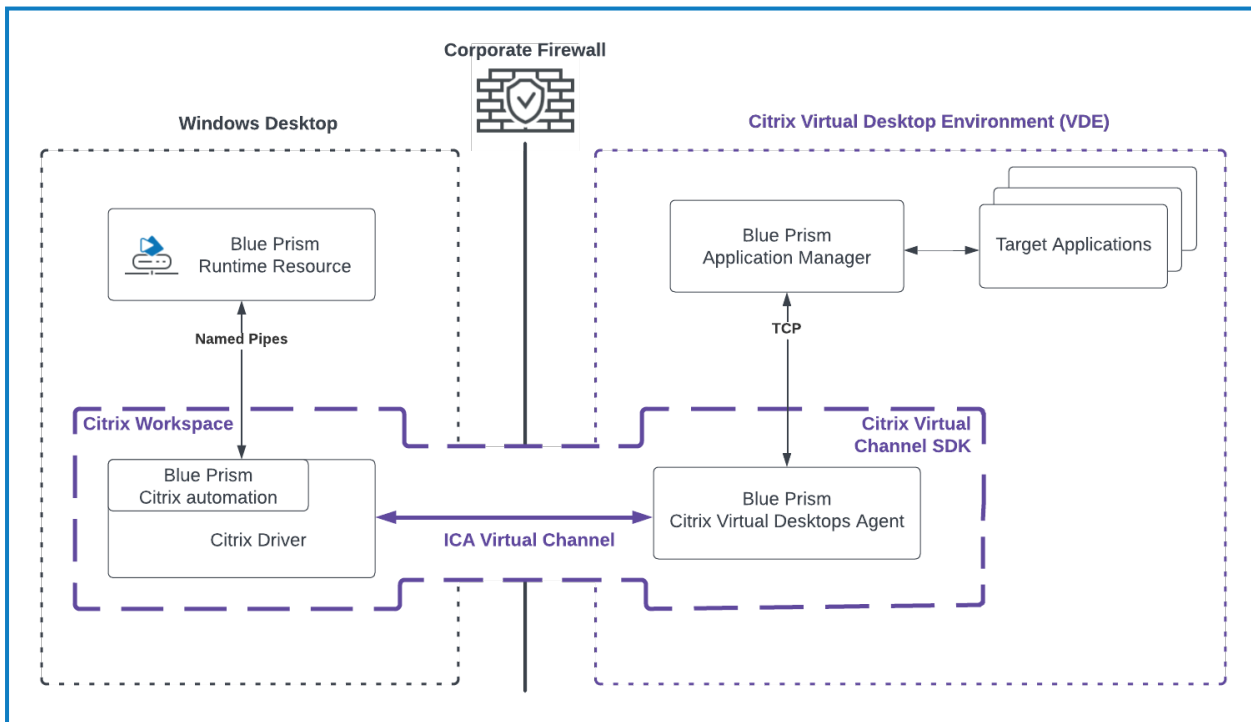
## Citrix Virtual Apps

To automate a virtual application on a Citrix Virtual Apps server, the Citrix administrator needs to create a Blue Prism published app to act as a proxy for the application being launched. The runtime resource starts the proxy application using the QLaunch feature of Citrix Self Service, which then launches the Citrix virtual application through the Blue Prism Virtual Apps Launcher.

After launching the virtual application, Blue Prism communicates with the Citrix Virtual Apps agent using the Citrix driver over the Blue Prism Citrix ICA virtual channel (BPAPMAN). The Blue Prism Citrix Virtual Apps agent controls the Blue Prism Application Manager that is responsible for automating the virtual application.
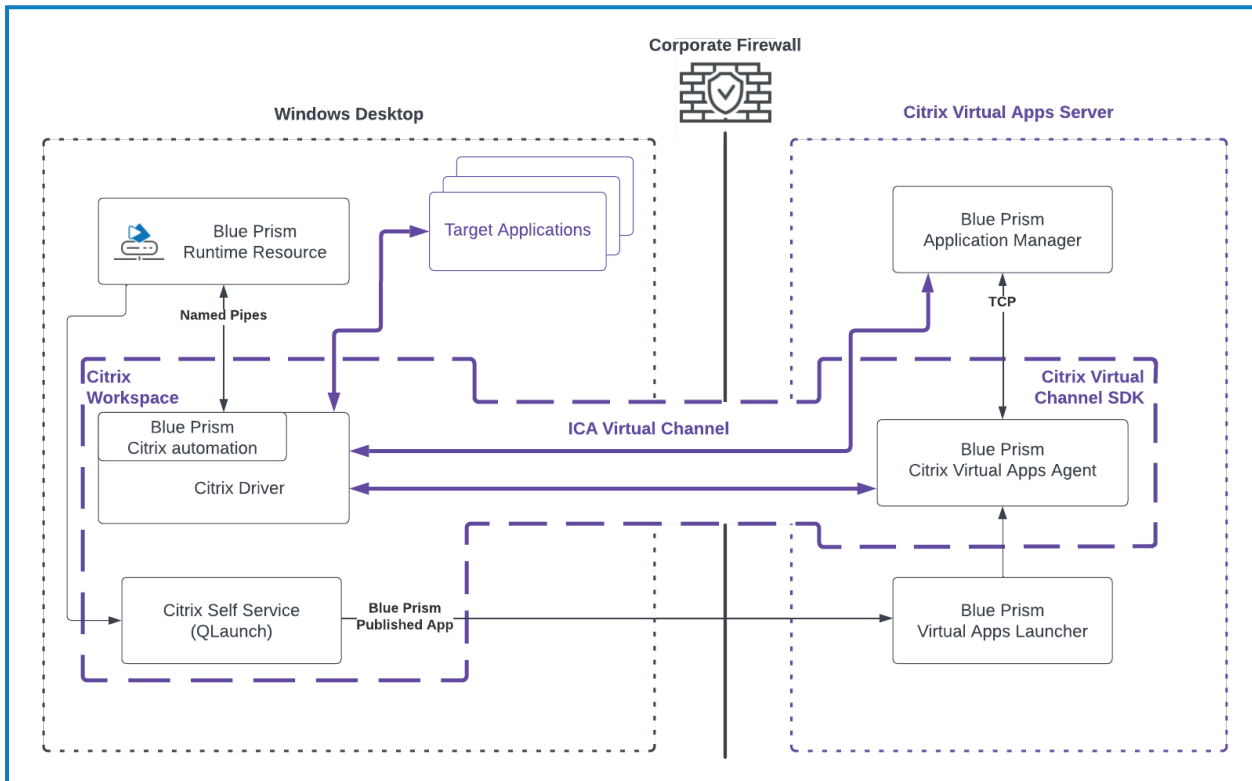
## Virtual channel security

> If virtual channel security is enabled in your Citrix policy, the opening of the virtual channel to the Blue Prism Application Manager may fail. To resolve this issue, add an entry to the Citrix policy allow list.
>
> The entry will vary depending on where Blue Prism is installed, whether it is a 32-bit or 64-bit installation, and which Citrix agents are installed.
>
> **64-bit:**
> - `BPAPMAN,C:\Program Files\Blue Prism Limited\Blue Prism Automate\BluePrism.Citrix.VirtualDesktopsAgent.exe`
> - `BPAPMAN,C:\Program Files\Blue Prism Limited\Blue Prism Automate\BluePrism.Citrix.VirtualAppsAgent.exe`
> - `BPAPMAN,C:\Program Files\Blue Prism Limited\Blue Prism Automate\BluePrism.Citrix.VirtualAppsAgent.exe,C:\Program Files\Blue Prism Limited\Blue Prism Automate\BluePrism.Citrix.VirtualDesktopsAgent.exe`
>
> **32-bit:**
> - `BPAPMAN,C:\Program Files\Blue Prism Limited (x86)\Blue Prism Automate\BluePrism.Citrix.VirtualDesktopsAgent.exe`
> - `BPAPMAN,C:\Program Files\Blue Prism Limited (x86)\Blue Prism Automate\BluePrism.Citrix.VirtualAppsAgent.exe`
> - `BPAPMAN,C:\Program Files\Blue Prism Limited (x86)\Blue Prism Automate\BluePrism.Citrix.VirtualAppsAgent.exe,C:\Program Files\Blue Prism Limited (x86)\Blue Prism Automate\BluePrism.Citrix.VirtualDesktopsAgent.exe`
>
> For more information, see Virtual channel security in the Citrix product documentation.

## Automating Citrix applications

The following steps must be completed to automate Citrix applications:

1. Install Blue Prism on the Citrix environment on page 4.
2. Install Blue Prism on the required interactive clients and runtime resources on page 5.
3. Automate Citrix applications on page 9.

## Limitations

Previous limitations on the number of connections between Citrix VDEs and runtime resources have been removed. Such connections are now only constrained by limitations within Citrix.
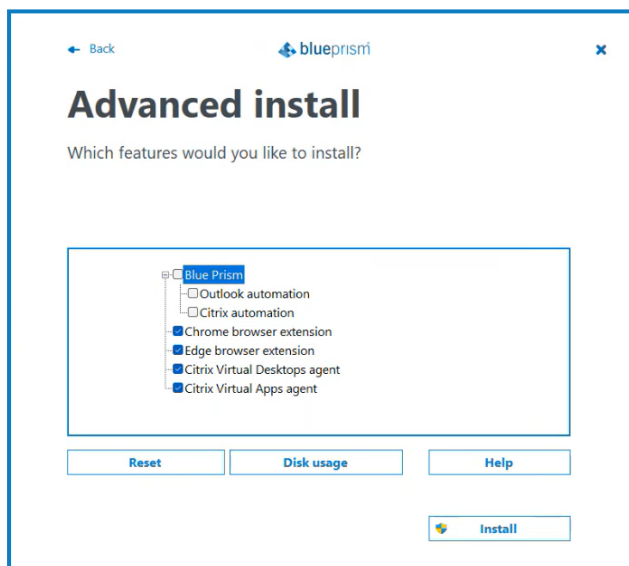
# Citrix installation

The instructions below describe how to install and configure Blue Prism on a Citrix environment in an already installed Citrix Workspace application, as well as on the interactive clients used to build processes, and on the runtime resources used to run these processes.

## Install Blue Prism on the Citrix environment

1. Log in to the Citrix Workspace application on the Citrix environment and start the installation of Blue Prism components.

2. On the Advanced install screen:

   a. Select the Chrome and Edge browser extensions if you are planning to automate browser-based applications in a Citrix environment.

   b. Select **Citrix Virtual Desktops agent** or **Citrix Virtual Apps agent** depending on whether you are enabling automation of whole desktops or specific applications. If the **Blue Prism** option was previously selected, it will be automatically cleared.

   > You can install both Citrix agents on the same environment.



This installs the Blue Prism components necessary to automate applications in a Citrix environment and, if you selected **Citrix Virtual Desktops agent**, adds a Citrix Virtual Desktops agent shortcut on the desktop.

> The Citrix Virtual Apps agent can only be run by the Citrix Virtual Apps Launcher, so there is no desktop shortcut for this agent if you select **Citrix Virtual Apps agent**.

> The Blue Prism interactive client must always be run locally, and not within the Citrix environment.

## Install Blue Prism on the required interactive clients and runtime resources

Blue Prism should be installed on all the interactive clients used to build processes and on all the runtime resources used to run the processes.

1. Log out of any virtual desktop environments including Citrix, and Blue Prism if already installed.

2. Install Blue Prism on the interactive clients used to build processes and on the runtime resources used to run the processes.

3. On the Advanced install screen, select the **Citrix automation** option under **Blue Prism**.

> ✎ If you have not installed the Citrix Workspace application on your local machine, the Citrix automation option will not be available for selection on the Advanced install screen.
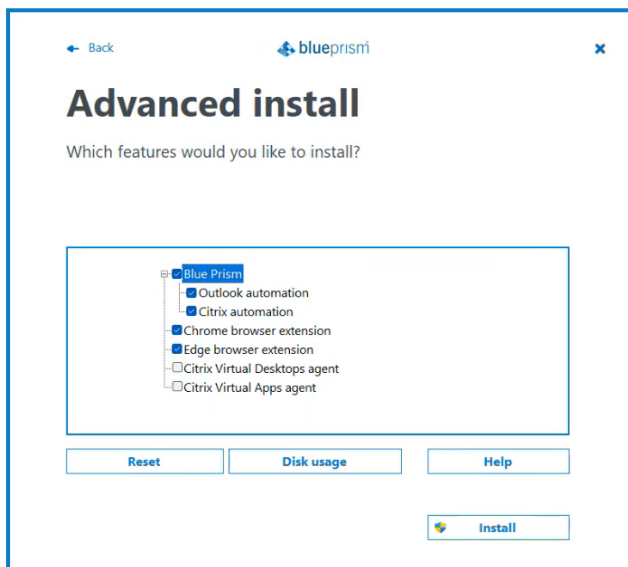


The Blue Prism virtual driver and supporting DLLs are installed into the ICA client folder in the Citrix install directory. These files are loaded by the Citrix virtual driver and allow Blue Prism to interact with your Citrix applications where the relevant agent has been installed into the Citrix environment.

4. Restart Blue Prism and the Citrix environment.

> ✎ If you have already installed Blue Prism without Citrix and want to add it later, you can run the installer again and modify the installation.

## Set up Citrix Virtual Apps

To automate virtual applications, the Citrix administrator needs to set up the applications that have been selected for automation so that they are launched by the Blue Prism Citrix Virtual Apps Launcher.

1. In the Citrix management interface, publish the application manually using a path. You need to provide the following details:

   > ✎ The interface and field labels will be different depending on whether you are working in a Citrix cloud or on-premises environment.

   - **Application name** – Provide a name that will identify this application as one that will be available for automation with Blue Prism Enterprise. For example, `BP Calculator`.
   - **Path** – This is the path to the Blue Prism Citrix Virtual Apps Launcher. For example:

     ```
     C:\Program Files\Blue Prism Limited\Blue Prism
     Automate\BluePrism.Citrix.VirtualAppsLauncher.exe
     ```

     or:

     ```
     C:\Program Files (x86)\Blue Prism Limited\Blue Prism
     Automate\BluePrism.Citrix.VirtualAppsLauncher.exe
     ```

   - **Command line parameters** – This is the path to the application you want to publish. The path must be enclosed within double quotes and must be appended with `%**`. For example, `"C:\Windows\system32\win32calc.exe" %**`.
   - **Working directory** – This is the directory where the Blue Prism Citrix Virtual Apps Launcher is installed. For example:

     ```
     C:\Program Files\Blue Prism Limited\Blue Prism Automate
     ```

     or:

     ```
     C:\Program Files (x86)\Blue Prism Limited\Blue Prism Automate
     ```

## Set up Citrix Virtual Apps in a cloud environment



## Set up Citrix Virtual Apps in an on-premises environment

## Configure timeout parameters

If you have changed the default timeout parameter settings in your local environment, you can replicate the same settings in your Citrix environment by copying the appman_config.xml file from C:\Users\<Username>\AppData\Roaming in your local environment and pasting it into the same folder on the Citrix machine.

For more information about timeout parameters, see Timeout parameters and Configure browser timeout parameters.
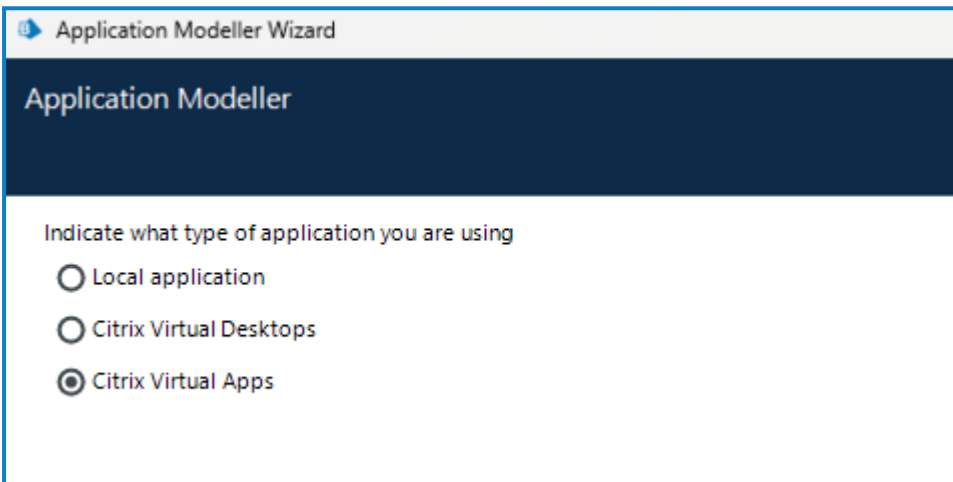
# Automate Citrix applications

> ✎ To automate Citrix applications, you must be using a Blue Prism interactive client that has been configured for Citrix automation. For more information, see Install Blue Prism on the required interactive clients and runtime resources on page 5.
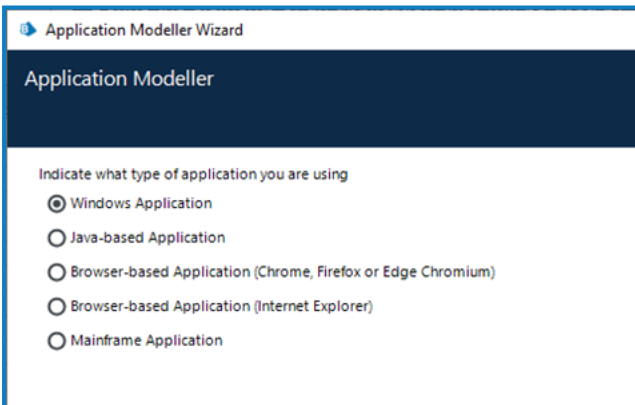>
> The Blue Prism interactive client must always be run locally and not within the Citrix environment.

To automate Citrix applications:

1. In the Application Modeller Wizard in Object Studio, select **Citrix Virtual Desktops** or **Citrix Virtual Apps** and click **Next**.



2. Select the type of application to automate and click **Next**.



> ✎ The Firefox browser extension is not available for installation from Blue Prism 7.2. The latest Blue Prism version that includes the Firefox extension is Blue Prism 7.1.2. For more information, see the Upgrade notices.

3. Continue through the Application Modeller wizard and complete all required fields based on your selected application type. For more information, see Application parameters.

> ✎ The external Citrix 32-bit and 64-bit automation modes are available in the Application Modeller. The Citrix agents run in 32-bit mode due to a reliance on 32-bit Citrix DLLs, but this will not affect the external mode selected.