

# Configuration Manual

MSc Research Project Cloud Computing

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# Configuration Manual

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## 1 Introduction

This document encompasses the details regarding the configuration set-up of Blue Prism Multi-Robot architecture. It includes the prerequisites that are needed for the successful deployment of the solution along with the tools and technologies required for the development of the same. It gives a detailed set-up instructions on how this architecture could be simulated on any other system.

# 2 Tools/Technologies & Prerequisites

Here's a quick glance on the tools/technologies used:
RPA Tool: Blue Prism v6.8
Framework: .Net framework 4.7
Languages: XML, C#, Java
Database: Microsoft SQL Server
Hypervisor: Oracle VM Virtualbox

Some of the prerequisites needed for the solution are as follows:

- Microsoft .Net Framework 4.7 has to be installed in the system(Limited; 2020)
- Microsoft SQL Server 2017 for database support
- Instances of Virtual Machines should be created using Oracle Virtualbox/ VMware Workstation
- Blue Prism Installation file and license(refer the zip file)

# 3 Solution Deployment Configuration

As the RPA tool Blue Prism is a Windows-based application and the whole architecture revolves around it, its installation and configuration is vital for the deployment of the solution.

## 3.1 Blue Prism Client Configuration

- 1. Install the Blue prism application named BluePrismEvaluation6.8.exe(from the zip folder)
- 2. Once installation is complete, open the application and sign-in as shown in fig. 1. While trying to login for the first time, both the username and password should be entered as "admin".

localDB Connection	Configure connectio
Sign in with Blue F User name	rism credentials
admin	
Password	
•••••	
	Sign in using Blue Prism credentials

Figure 1: Blue Prism login details

3. For the Blue Prism v6.8, the local database is already configured as shown in fig. 2

Saved Connections	Current Connection	
LocaIDB Connection BPServer	Connection Name	LocaIDB Connection The name by which this connection will be remembered
	Connection Type	SQL Server (Windows Authentication) v The type of connection to use
	Database Server	(LocalDB)\BluePrismLocalDB
	Database Name	The hostname of the database server BluePrism
	Additional SQL	The name of the database to connect to
	Connection Parameters	Semi-colon separated parameters to add to the connection string

Figure 2: Local DB Configuration

- 4. After login, the system would prompt to enter the new password and confirm it
- 5. Then install the license(zip file) under Setting tab as displayed in fig.3
- 6. Once the product is activated, select System admin from User roles under Security tab(fig. 6). Check all the roles in the permissions column.(Limited; 2018)



Figure 3: License Installation

toles	Permissions
Alert Subscribers Developers Process Administrators Release Managers Schedule Managers System Administrators Testers Web Service Consumers	Analytics Control Room Object Studio Process Alerts V Release Manager V Resources Scheduler Scheduler System Manager V System Manager

Figure 4: Admin role Configuration

## 3.2 Blue Prism Server Configuration

1. For setting up the Blue Prism Server, go to services in the task manager. Check whether the Blue prism server service is running and switch it to automatic if it is not(fig. 7).

🚟 Block Level Backup Engine	The WBENGINE service is used by		Manual	Local System
🖏 Blue Prism Server	The Blue Prism Server Service	Running	Automatic	.\Administrator
🗟 Bluetooth Handsfree Service	Enables wireless Bluetooth headsets		Manual (Trig	Local Service
🔍 Bluetooth Support Service	The Bluetooth service supports disc		Manual (Trig	Local Service

Figure 5: BP Server service

2. Log on as the user from this account instead of local system account

Blue Prism S	erver Properties (Local C	Computer) ×					
General Log On Reco	overy Dependencies						
Log on as:	Log on as:						
	Local System account     Allow service to interact with desktop						
This account:	This account: .VAdministrator Browse						
Password:							
Confirm password:	•••••						

Figure 6: BP Server properties - I

General	Log On	Recovery Dependencies			
Service	name:	Blue Prism Server			
Display	name:	Blue Prism Server			
Description: The Blue Prism Server Service					
	executabl gram Files	e: \Blue Prism Limited\Blue Prism A	utomate	RP ServerService	
Startup type: Automatic Y					
Startup	-		Diomate		
Service	type:				
Service	type: status: itart	Automatic	2	Resume	

Figure 7: BP Server properties - II

3. Open the Blue Prism Server(BPServer.exe) from the installed Blue Prsim folder(fig.8)

	Blue Prism Server - v6.	8.0
erver config	uration	
Global server settings		
🟠 New configuration	Encryption settings	
Current configuration		
Default	~	
🖉 Edit	🗙 Delete	
🖉 Edit Connection status	X Delete	

Figure 8: Blue Prism Server

4. Configure the settings as shown in fig. 9,10

>				Server Configuration Details	
Details	Key Store	Server Services	Logging	Data Gateways Settings	
Name:		[	Default		
Databa	Database Connection:		LocalDB Connection		
Conne	Connection Mode:		WCF: Insec	cure	
Connection Mode:		E F 1	Blue Prism A Requires se Transport: S Not recomm	ust relationship between devices: No Authentication Modes: Blue Prism Native inverside certificate: No 30AP over HTTP sended. security will need to be provided entirely by third-party solutions.	
Bindin	ig:				
Host	Name or IP /	Address:			
Port:		8	3199	÷	
Port:		٤	199		

Figure 9: Server Configuration - I

"C:\Program Files\Blue Prism	Vindows Services as	sociated with 'Default' server configura'	tion		Mar	nage Permissions	
Blue Prism Server Limited\Blue Prism \Administrator Auto Running 🗸	Name	Service Path	Log On As	Startup Type	Status	URL Permissions	
	Blue Prism Server	Limited Blue Prism		Auto	Running	~	
						· ·	

Figure 10: Server Configuration - II

- 5. Login back to the Blue Prism application and set up the database for BP Server as shown in fig. 11. Ensure that the connection type is set to "Blue prism server" and the IP address should be set to the IP Addr.(Limited; 2018) of the machine where the server has been configured.(host machine in this scenario)
- 6. Now sign in back to the Blue Prism application using the configured BP Server database connection as shown in fig.12

Connection Name	BPServer	
Connection Name BPServer The name by which this connection will be remembered Connection Type Blue Prism Server The type of connection to use		
Connection Type	Blue Prism Server	~
	The type of connection to use	
Blue Prism Server 192.168.0.54 The hostname of the Blue Prism Server	192.168.0.54	
	The hostname of the Blue Prism Server	
Connection Mode	WCF: Insecure	~
	This must match the mode configured on the Blue Prism Server(s)	
Server Port	8199	
	This must match the listening port configured on the Blue Prism Server(s)	

#### Figure 11: BP Server database settings

Sign in to Blue Prism	
Connection	
BPServer	~
	Configure connection
Sign in with Blue Prism creder	ntials
User name	
admin	
Password	
•••••	
	Sign in using Blue Prism credentials

Figure 12: BP Server Login

Note that since Blue Prism has both separate client and server applications, now the server logged-in application will act as the Blue Prism server for all the machines in the network and also it would act like one of the clients(robot) in the Multi-robot setup.

#### 3.3 Connecting Blue prism Client from VM

- 1. First install the Blue prism application in the VM as per 3.1
- 2. Login to the application using the BP Server connection(fig. 13) using the same credentials as used in the host machine

shange language	
Sign in to Blue Pi	rism
Connection	
BPServer	¥
BPServer Configure connection	
User name	n credentials
Password	
•••••	
	Sign in using Blue Prism credentials

Figure 13: Adding a VM client to the BP network

Once connected, all the available resources can be visible as shown in fig. 14

۵			E	lue Prisi	m - Robotic Proc	ess Automa	ion Softv	vare - v6.8	1.0			3 -	ð ×
File	Home	Studio	Co	ntrol	Analytics	Rele	ases	Digi	al Exchange	e Sys	tem	N	Ay Prof 🔹 🕨
	Contr	rol	Sessions	- Contro	ol currently run	ning session	s						≡
	🖶 🛺 Session Mar	nagement	Available Pr	cesses	- Drag and drop pr	ocesses on to re	sources	Resour	es				
	Today	agement	Name		Dec	cription		Name			State		Session Info
	🗌 🔆 🌣 Insurance	eQueue	🖻 👩 Defa			coption		8.6			State		Session mile
	Cheduler	es									Idle		No sessions
	Name       Description         Name       Description <td>es</td> <td></td> <td>yatravelW</td> <td>2</td> <td></td> <td></td> <td></td> <td>JAISON</td> <td></td> <td>Idle</td> <td></td> <td>No sessions</td>	es		yatravelW	2				JAISON		Idle		No sessions
<b>II</b>													
<b></b>													
1			Filter usin	selected	Process 🗌	filter using selec	ted Resourc	e <					>
				20							es.		
											-		
			ID Proce	55	nurance NQ All + All + All + Today + All								
	Apply Ch	anges	<										>
() Sian Out		-		1:51 PM.	User: 'admin', Conn	ction: 'BPServe	r'. Connecte	ed To: 'JAISO	N'				
	é 🚞	<b>(</b>									<b>De 1</b> 0	復 🕦	9:51 PM 8/11/2020
_		0 1:33 PM, Curre	ent: 8/11/2021		User: 'admin', Conn	ection: 'BPServe	r', Connecte	ed To: 'JAISC	DN'	4	De 89	95 AN	9:51 PM

Figure 14: Multiple clients available

## 3.4 Sharing input file using drive mapping

Share the Excel input file named 'Insurance.xlsx'(zip file) using drive mapping so that all the machines can access the file during task execution.

1. Right-click the input file and select Share-Everyone as shown in fig.15

3 File Sharing	
Choose people to share with	
Type a name and then click Add, or click the arrow to find	someone.
	▼ Add
Administrator jaison jj (imjais3@outlook.com)	Level
Everyone	-
Homegroup	Uniter
l'm having trouble sharing	
	Share Ca

Figure 15: File sharing

2. Now map the network drive of the host machine with its IP address(fig. 17). Use the same address and drive for the virtual machines as well. Now the input file can be used by any of the clients when required in the task execution process.

)	🤏 Map N	etwork Drive
	What net	work folder would you like to map?
	Specify the o	drive letter for the connection and the folder that you want to connect to:
	<u>D</u> rive:	Y: ~
	F <u>o</u> lder:	\\192.168.0.54\BluePrism <u>B</u> rowse
		Example: \\server\share
		✓ <u>R</u> econnect at sign-in
		Connect using different credentials
		Connect to a Web site that you can use to store your documents and pictures.

Figure 16: Mapping network drive

### 3.5 Execution of the task

1. Now import the bp release files(included in zip) named LayatravelWQ and laya-Google for both process and object studio respectively.



Figure 17: Importing release files

2. Since all the multiple robots are now connected, we can proceed with the execution. Execution can be done in two ways.

i. It can be done either using the Run option from the process Studio as shown in fig.18

ii. Or it can be done using the Control room(fig.19) where the process has to be just dragged to the multiple resources(bots)



Figure 18: Execution through Process Studio

Control	Analytics	Releases	Digital Exchange	System	My Profile
Sessions - Control	currently runnin	g sessions			
vailable Processes	- Drag and drop proce	sses on to resources	Resources		
Name	sions - Control currently running sessions able Processes - Drag and drop processes on to reso	tion	Name	State	Session In
🔚 LayaTravel Insi	urance		Alson	ldie Idie	No sessio No sessio
Filter using selected P		iter using selected Reso	urce <		

Figure 19: Execution through Control Room

## 4 Validations

Validation of the Blue Prism Multi-Robot system can be done using the Control Room's Queue Management. It displays all the items of the task queue as shown in fig. 20

	Que	ues - Configi	ure wor	k que	eues												
Session Management	1 queu	ies (Running: 1,	Paused: 0	)													
Today Queue Management InsuranceQueue Active Queues Scheduler	Queu	e Name			Status	Worked	Pendir	ng Referr	ed	Total	Average Case	Duration	Total Case I	Duration			
	► In:	suranceQueue			Running	3		0	1	4		00:39.750	C	2:39.000			
ive Queues																	
Reports Recent Activity																	
Timetables																	
Today & Tomorrow																	
Schedules																	
Retired Schedules Ita Gateways																	
in outeriops																	
																	_
		Contents		ar Filters		Positions in Queue											
	All 🗸	All	✓ All	~	All 🗸	All	✓ All	✓ Al	1	¥ A	. v	All	~	All	¥ 🔼	<u>0</u>	
		Item Key	P	riority	Status	Tags	Reso	urce	Attem	pt	Created	7	Last Updated	c	ompleted	Total Wor	rk '
		2		0			HOSE	HEA_debug		2	7/25/2020 11:26:14 P	7/25/2	020 11:28:11 PM	7/25/2020	11:28:11 P		01
				0		Exception: Au		IEA_debug			7/25/2020 11:26:14 P		020 11:27:31 PM				00
	<b>~</b>			0				N_debug			7/25/2020 11:26:14 P		020 11:27:23 PM	7/25/2020			00
	l 🗸	1		0			JAISC	N_debug		1	7/25/2020 11:26:14 P	7/25/2	020 11:26:48 PM	7/25/2020	11:26:48 P	(	0

Figure 20: Validation of the Multi-Robot system

If all the items have a green-tick in the flag column, it shows that the task has been completed successfully. Else if any of items have a flag-mark, it means except those items, all others are executed properly.

Also, the audit for both the process logs and object logs can be found under the Audit column of the System tab. It has both the the statistics for their status and execution time as shown in fig.21

Reset Filters		Search All  Sea	rch Selected	€
last 31 Days 🔷 🗸	All 🗸	All	All	
Start	End	Process	Status	
7/20/2020 12:24:3		LayaTravel Insurance	Debugging	
7/21/2020 12:08:3	7/21/2020 1:28:56	LayatravelWQ	Debugging	
7/23/2020 8:44:26	7/23/2020 8:45:07	LayatravelWQ	Completed	
7/23/2020 8:48:44	7/23/2020 9:04:53	LayatravelWQ	Debugging	
7/23/2020 8:50:35	7/23/2020 8:51:29	LayatravelWQ	Completed	
7/23/2020 8:52:57	7/23/2020 8:53:21	LayatravelWQ	Completed	
7/23/2020 8:55:55	7/23/2020 8:56:18	LayatravelWQ	Completed	
7/23/2020 8:58:23	7/23/2020 8:58:45	LayatravelWQ	Completed	
7/23/2020 9:05:02	7/23/2020 9:06:05	LayaTravel Insurance	Debugging	
7/23/2020 9:08:16	7/23/2020 9:21:37	LayatravelWQ	Debugging	
7/23/2020 9:24:40	7/23/2020 9:35:42	LayatravelWQ	Debugging	
7/25/2020 7:16:35	7/25/2020 8:59:42	LayatravelWQ	Debugging	
7/25/2020 7:18:11	7/25/2020 7:23:40	LayaMutliRobot	Debugging	
7/25/2020 8:47:41	7/25/2020 8:48:09	LayatravelWQ	Completed	
7/25/2020 8:50:35	7/25/2020 8:50:59	LayatravelWQ	Completed	
7/25/2020 9:00:51	7/25/2020 9:05:13	LayatravelWQ	Debugging	
7/25/2020 9:10:59	7/25/2020 9:11:27	LayatravelWQ	Completed	
7/25/2020 9:17:27	7/25/2020 9:18:01	LayatravelWQ	Completed	
7/25/2020 9:18:43	7/25/2020 9:19:16	LayatravelWQ	Completed	
7/25/2020 9:20:36	7/25/2020 9:21:35	LayatravelWQ	Completed	
7/25/2020 9:52:56	7/25/2020 9:53:41	LayatravelWQ	Completed	

Figure 21: Audit - Process logs

# References

Limited, B. P. (2018). v6.4 User Guide - Installing Enterprise Edition, Blue Prism.

Limited, B. P. (2020). v6.7 Getting started - Blue Prism Trial and Learning Editions, Blue Prism.