HCLSoftware

HCL **iAutomate**

Lab Manual

Version 6.4.2

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Document Revision History

This guide is updated with each release of the product or when necessary.

This table provides the revision history of this Lab Manual.

Version Date	Description
October, 2019	HCL iAutomate v4.0 Lab Manual
May, 2020	HCL iAutomate v5.0 Lab Manual
September, 2020	HCL iAutomate v6.0 Lab Manual
November, 2020	HCL iAutomate v6.0.1 Lab Manual
January, 2021	HCL iAutomate v6.0.2 Lab Manual
April, 2021	HCL iAutomate v6.0.3 Lab Manual
October, 2021	HCL iAutomate v6.1 Lab Manual
March, 2022	HCL iAutomate v6.1.1 Lab Manual
August, 2022	HCL iAutomate v6.2 Lab Manual
March, 2023	HCL iAutomate v6.3 Lab Manual
October, 2023	HCL iAutomate v6.3 Lab Manual
December, 2023	HCL iAutomate v6.3.2 Lab Manual
June, 2024	HCL iAutomate v6.4 Lab Manual
August, 2024	HCL iAutomate v6.4.1 Lab Manual
November, 2024	HCL iAutomate v6.4.2 Lab Manual

1 Preface

This section provides information about the HCL iAutomate Lab Manual and includes the following topics–

- Intended Audience
- Prerequisites
- About This Manual
- Related Documents
- Conventions
- Instructions

1.1 Intended Audience

This information is intended for infrastructure administrators responsible for provisioning infrastructure required for installation of iAutomate, administrators responsible for installation & configuration of iAutomate and end users responsible for working towards resolution of tickets with the help of iAutomate.

1.2 Prerequisites

This section describes the hardware and software requisites that needs to be in place before proceeding with this training. It also lists the technical skills and knowledge requirements that candidates should possess beforehand.

1.2.1 Hardware & Software Prerequisites

- Access to a laptop / desktop with standard configuration preferably 4 GB RAM
- High Bandwidth Internet Connectivity
- Admin rights on the laptop / desktop
- Remote Desktop Connection
- Google Chrome Browser
- Cisco Anyconnect Secure Mobility Client (4.5.05030) for enabling VPN connectivity

1.2.2 Technical Skills Prerequisites

Candidates should possess the following skills:

- Sufficient knowledge of ITIL (Information Technology Infrastructure library). ITIL Foundation certification is preferred.
- Working knowledge of any IT Service Management tools like ServiceNow, BMC Remedy
- Basic knowledge of any Runbook Automation Tools like CA ITPAM, Microsoft SCORCH, BMC AO, Ansible and others
- Basic understanding (process oriented) of command center operations covering data center and cloud operations

- Basic knowledge of Cloud Computing
- Basic knowledge of Application Deployment Architecture
- Basic knowledge of Artificial Intelligence and Machine Learning
- Familiarity with Windows Operating System
- Familiarity with Apache, IIS, Solr and MongoDB
- Basic knowledge of REST APIs

1.3 About this Manual

This manual provides information about various scenario-based modules covering the installation, configuration and use of iAutomate product. Each module may include one or more lab exercises to provide detailed instructions to achieve the objectives. In addition, it also provides summarized information about additional servers and optional post- installations and references to the other documents for detailed information.

This lab manual is divided into the following modules:

- Business Case Development – Identification of Automation Opportunities
- Installation of iAutomate
- Configuration of iAutomate
- End to End Ticket Resolution Flow
- Document Processing and Analysis
- Configuration of Runbook Parameters
- Reporting Dashboard

Each of the above modules is further divided into following two sections:

- **Introduction**: A preface of the module
- **Lab Exercise**: Each module may contain one or more lab exercises. Post completion of these exercises, user is expected to have a thorough understanding of the module.

Each of the lab exercises includes the following sections:

- **Scenario** – Provides a brief summary of the objectives of the exercise
- **Prerequisites** – Provide information on all specific requirements that needs to be in place before proceeding with the exercise
- **Solution** – Step-wise procedure to be followed to complete the exercise
- **Conclusion** – Summary of the lab exercise
- **Related Documentation** – Provides information on the related documentation for respective module

The modules in this manual are independent of each other. Hence you can start at the beginning of any module. However, user is advised to go through each module and its subsequent exercise in the order of Table of Contents for a complete understanding.

1.4 Related Documents

The following documents can be referenced in addition to this guide for further information on the iAutomate platform.

- iAutomate User Guide
- iAutomate Pre-Requisite Guide
- iAutomate Troubleshooting Guide

1.5 Conventions

The following typographic conventions are used in this document:

Table 1 – Conventions

Convention	Element
Boldface	Indicates graphical user interface elements associated with an action, or terms defined in text or the glossary
Underlined Blue Face	Indicates cross-reference and links
Italic	Indicates document titles, occasional emphasis, or glossary terms
Courier New (Font)	Indicates commands within a paragraph, URLs, code in examples, and paths including onscreen text and text input from users
Numbered lists	Indicates steps in a procedure to be followed in a sequence
Bulleted lists	Indicates a list of items that is not necessarily meant to be followed in a sequence

1.6 Instructions

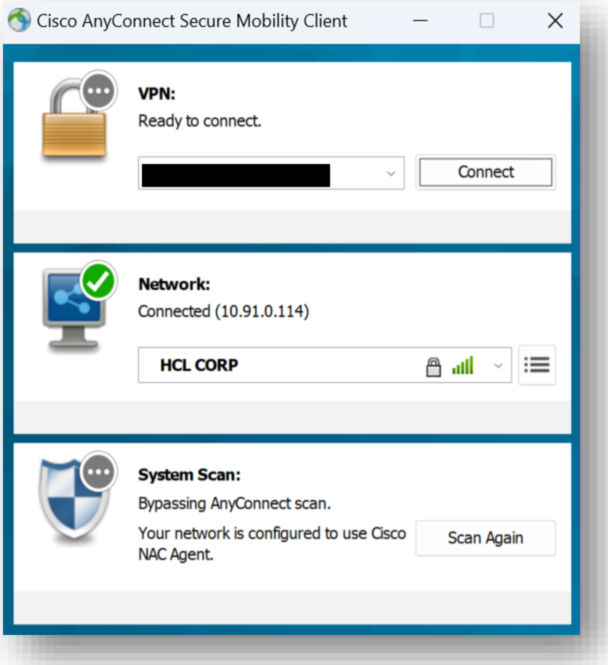
1.6.1 Connectivity to VPN

This section describes a step-by-step procedure to connect to MyCompany Labs VPN (Virtual Private Network) to access the iAutomate Portal. To do so, the user needs to meet the below requirements:

- Cisco AnyConnect Secure Mobility Client 4.5.05030
- Open Internet Connection

To setup the VPN connectivity, follow the below mentioned steps –

1. Connect to open internet and open Cisco AnyConnect Secure Mobility Client 4.5.05030.
2. Enter the IP address in VPN: tab and click Connect.



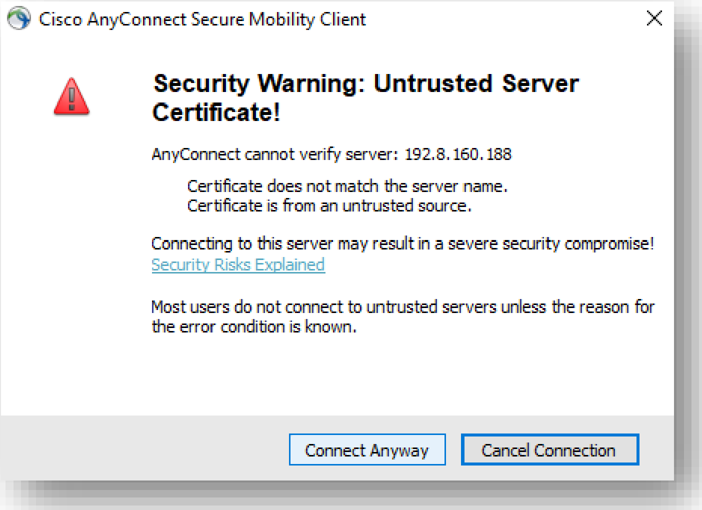
VPN:
Ready to connect.
[redacted]

Network:
Connected (10.91.0.114)
HCL CORP

System Scan:
Bypassing AnyConnect scan.
Your network is configured to use Cisco NAC Agent.

Figure 1 – Setup the VPN Connectivity

3. A security warning message will pop-up.
4. Click Connect Anyway.



Security Warning: Untrusted Server Certificate!

AnyConnect cannot verify server: 192.8.160.188

Certificate does not match the server name.
Certificate is from an untrusted source.

Connecting to this server may result in a severe security compromise!
Security Risks Explained

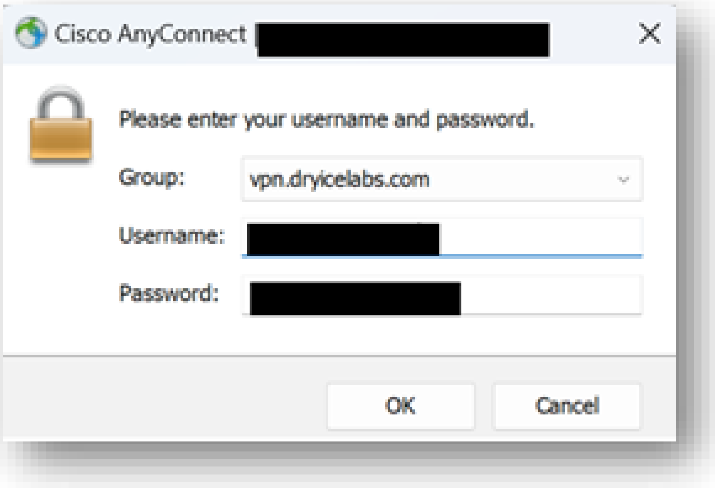
Most users do not connect to untrusted servers unless the reason for the error condition is known.

Figure 2 – Connectivity to VPN

5. Enter the username in Username and Password in the respective fields.

You will be provided with the credentials by the Instructors during the training.

6. Click OK.



Cisco AnyConnect [redacted]

Please enter your username and password.

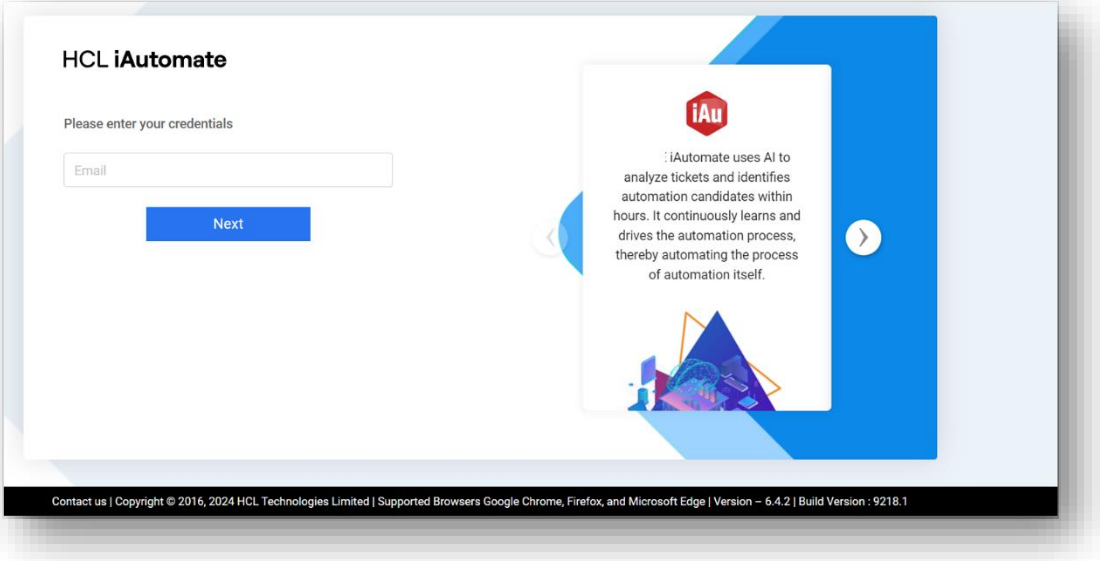
Group: vpn.dryicelabs.com

Username: [redacted]

Password: [redacted]

Figure 3 – Connectivity to VPN (Cont.)

7. Users will be connected to the VPN.
8. Open a browser using the URL provided during the training.
9. It redirects you to the iAutomate Login Page.



HCL **iAutomate**

Please enter your credentials

iAutomate uses AI to analyze tickets and identifies automation candidates within hours. It continuously learns and drives the automation process, thereby automating the process of automation itself.

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Figure 4 – iAutomate Login Page

2 iAutomate Overview

iAutomate is an Intelligent Runbook Automation product which is equipped with Artificial Intelligence, Machine Learning and Natural Language Processing capabilities for simplifying and automating the Incident / Service Request / Change Request Lifecycle Management. It leverages its NLP capabilities for analyzing and understanding the context of a specific ticket, recommends the most relevant solution and even triggers the execution, thereby enabling Zero Touch Automated Remediation. It also provides AI-driven Knowledge Recommendation by recommending relevant knowledge articles from various repositories, both internal and external, as and when required by human agents.

When no runbook is available for automated remediation, it searches & downloads relevant executable codes and scripts for subject matter experts to validate, customize, approve and publish for future use.

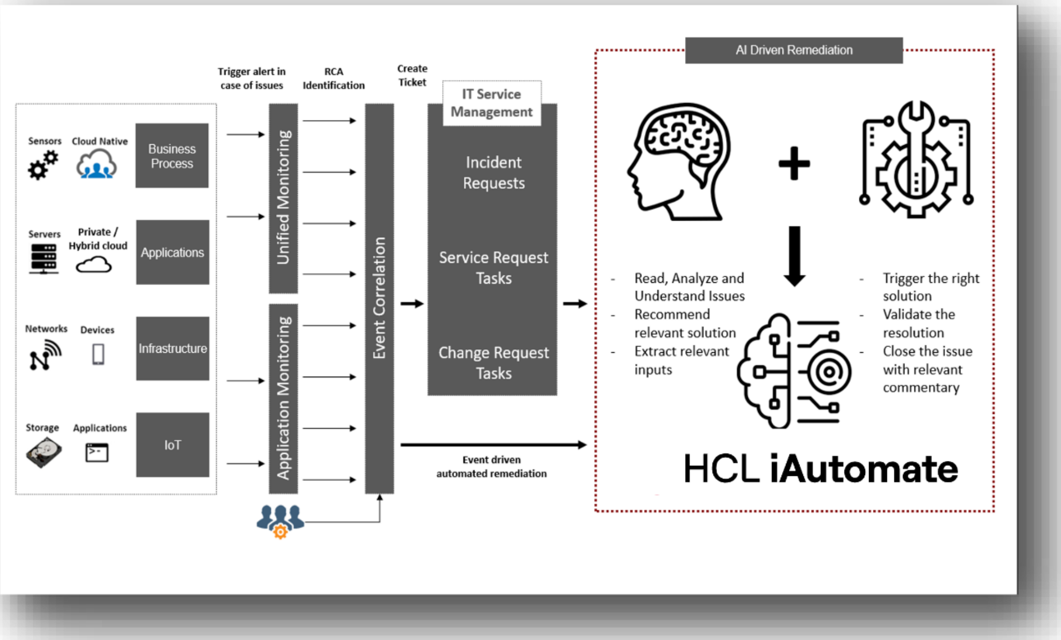


Figure 5 – iAutomate Workflow

Intelligent automation powered by HCL iAutomate can make a tremendous impact in an enterprise adjusting to the New Normal:

- **Reduce Costs**
  - Achieve up to 30% reduction in service desk related costs
  - Quick and High ROI
- **Mitigate Risks**
  - Avoid operational risks and ensure compliance by avoiding critical outages
  - Reduce escalations and improve SLA compliance by up to 20%
  - Achieve up to 85% reduction in MTTTR
- **Drive Efficiency**

- Automate redundant tasks and let employees focus on more creative activities
- Reduce manual effort by 30% to 60%
- Improve customer satisfaction by up to 50% by providing faster incident and service request resolutions.

- **Rapid Time to Value**
  - Quick implementation in 6 to 8 weeks*
  - Leverage 3000+ reusable and configurable runbooks out of the box
  - Achieve zero-touch automation state in 4 to 5 months*

*Conditions Apply

3 Module 1 - Business Case Development - Identification of Automation Opportunities

3.1 Introduction

iAutomate helps in automating the automation lifecycle itself. Before deciding to propose / deploy the product in an environment, it can help in evaluating the automation potential in an environment based on the commonly occurring issues, thereby helping in identifying the need for iAutomate for bringing in automation.

3.2 Lab Exercise 1 – Identification of Automation Opportunities through Ticket Analysis

3.2.1 Scenario

An organization named MyCompany is currently having a complex infrastructure and application landscape with multiple IT service vendors managing different technologies. They are facing challenges in terms of high error rates due to manual resolution of voluminous incidents, service and change requests. They are looking for a solution which can help in automating these monotonous tasks of resolving pre-known issues with standard resolution procedures. They have connected with Presales team and asked them to propose a solution for the same. By mutual agreement, MyCompany has also agreed to share the required information with the Presales team for assessing their environment and preparing the proposal accordingly.

In this lab, we will cover the step-by-step procedure to perform ticket analysis through iAutomate for building the business proposal.

3.2.2 Prerequisites

User must have the following information before proceeding forward with this exercise.

- Ticket Dump from the Service Management tool with information like type of tickets (Incident, Service Request Tasks, Change Request Tasks) at least for last 6 months.

Please seek this information from the Instructor.

- Requisite user, role and access privileges to iAutomate
- User should be part of an Organization.

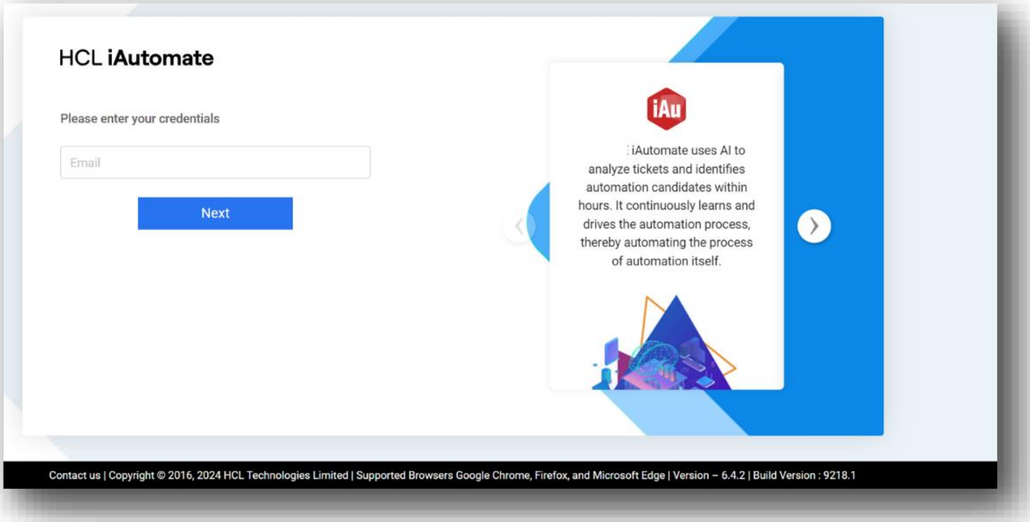
Please note that the ticket dump may include different types of ticket data namely Incident, Service Request Tasks, Change Request Tasks. However, ensure that the data consolidates in one file and contains only four columns namely – Ticket Number, Short description, Description and Date

3.2.3 Solution

Please follow the below steps for identifying the automation potential:

1. Launch a web browser and provide HCL iAutomate Web Portal URL.

2. The iAutomate Login Page appears as shown in Figure 4 – iAutomate Login Page.
3. On iAutomate Login page, type the Login ID. If unavailable, then ask your trainer to provide the login credentials.



iAutomate uses AI to analyze tickets and identifies automation candidates within hours. It continuously learns and drives the automation process, thereby automating the process of automation itself.

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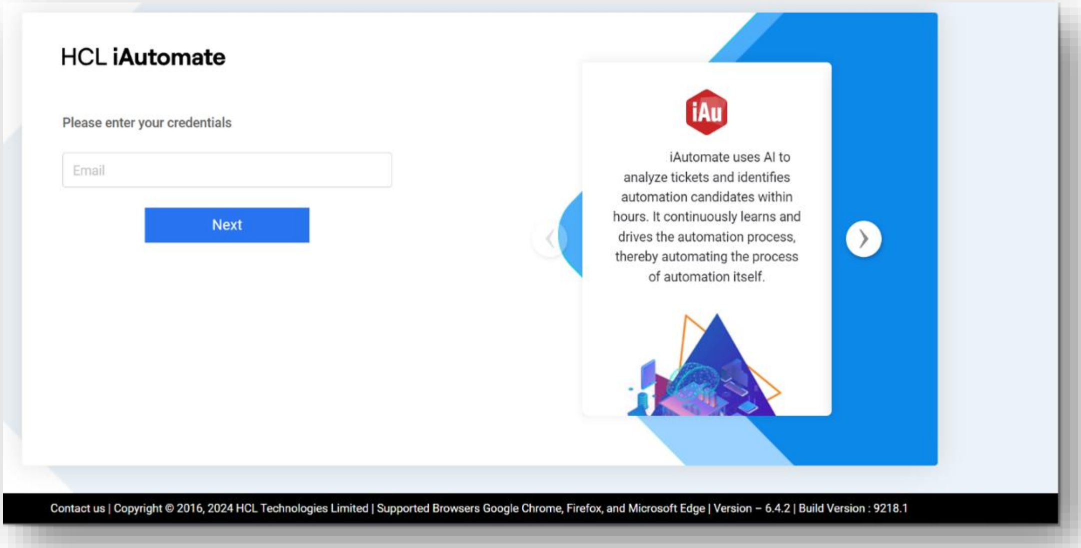
Figure 6 - iAutomate Login Page

4. Click Next.
5. Type password in the Password field.



iAutomate uses AI to analyze tickets and identifies automation candidates within hours. It continuously learns and drives the automation process, thereby automating the process of automation itself.

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Figure 7 - Enter Login Credentials

6. Click Login. The iAutomate User Console page appears.

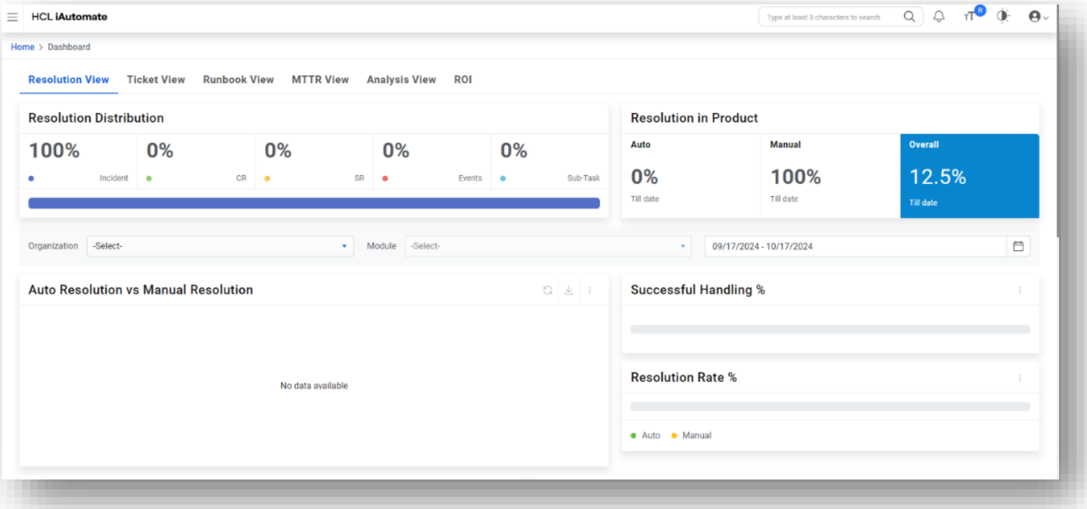


Figure 8 – iAutomate Admin Console

7. Go to menu then Analysis sub menu and select Ticket Analysis.

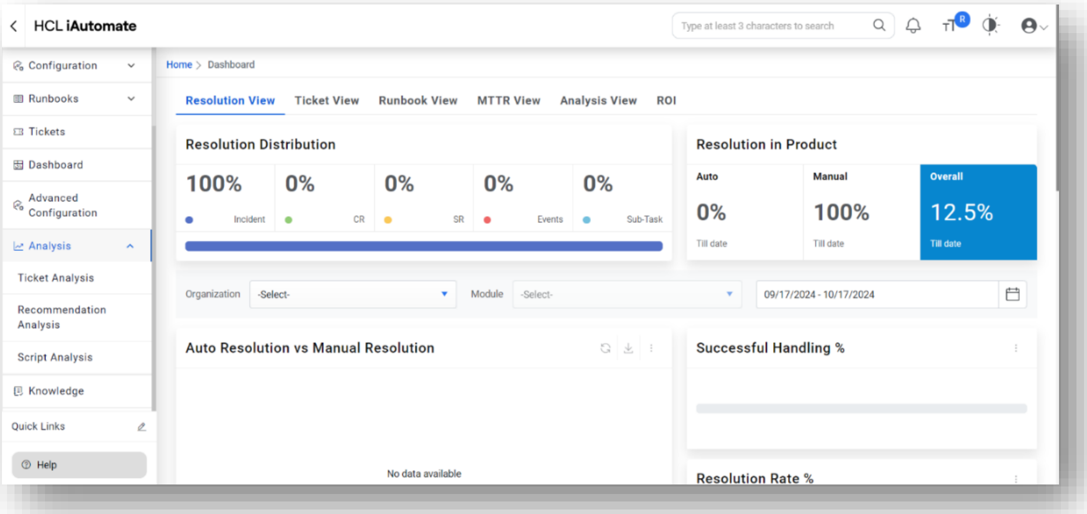
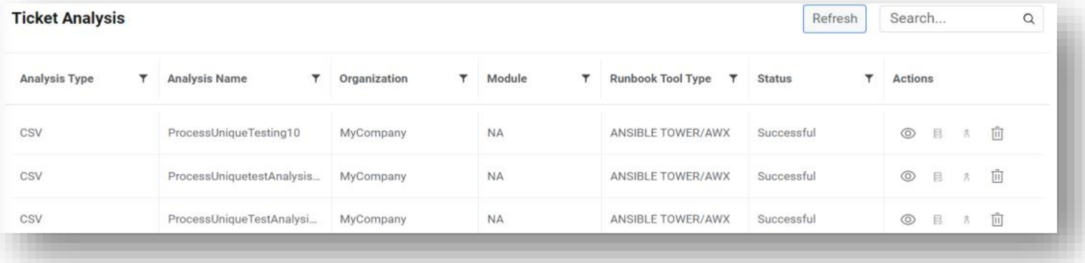


Figure 9 – Ticket Analysis Section

8. The Ticket Analysis page appears. To upload the ticket data file as a new analysis, click Add New Analysis.



Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Actions
CSV	ProcessUniqueTesting10	MyCompany	NA	ANSIBLE TOWER/AWX	Successful	
CSV	ProcessUniquetestAnalysis...	MyCompany	NA	ANSIBLE TOWER/AWX	Successful	
CSV	ProcessUniqueTestAnalysi...	MyCompany	NA	ANSIBLE TOWER/AWX	Successful	

Figure 10 – Ticket Analysis

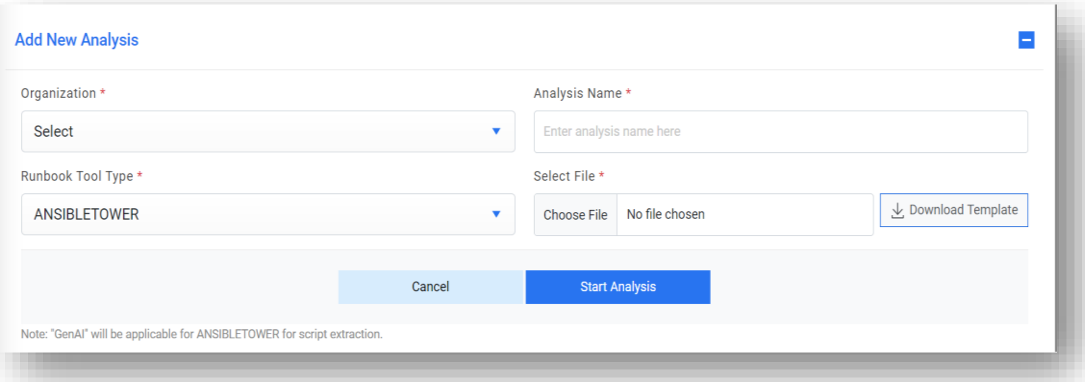
9. For performing the analysis, iAutomate requires a .csv file with four columns – Ticket Number, Short description, Description, and Date. Please refer to the template below for reference -

Table 2 – Ticket Dump Template

Number	Short_description	Description	Date
INC0054414	CPU Utilization Issue	CPU Utilization Issue	9/6/2020 11:51

Please ensure that csv file should contain only the mentioned four columns. This data should be prepared from the ticket data extracted from the Service Management tool. If multiple data sheets are available, each having its own set of ticket number and other details, they should be consolidated into one .csv file. Please ensure to upload only a single csv file for one customer.

10. On clicking Add Analysis, the Upload Data page appears.
11. Select Organization from the Organization drop-down list.



Add New Analysis

Organization * Select

Analysis Name * Enter analysis name here

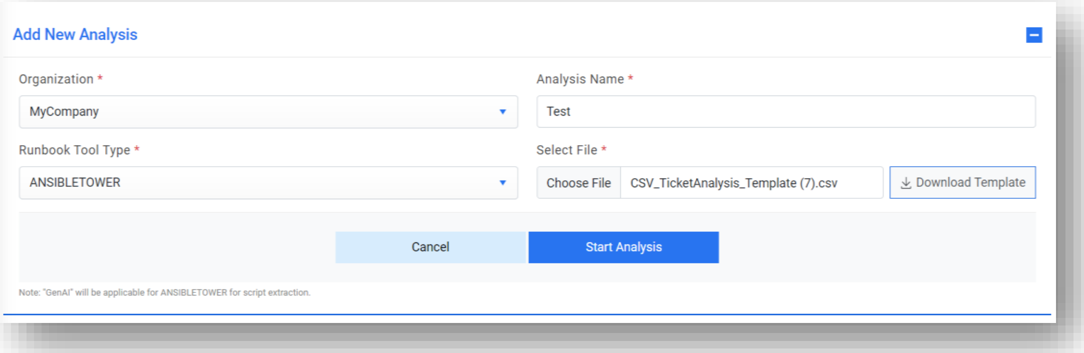
Runbook Tool Type * ANSIBLETOWER

Select File * Choose File No file chosen

Note: "GenAI" will be applicable for ANSIBLETOWER for script extraction.

Figure 11 – Upload Data

12. Type in the Analysis Name. You can use the naming convention: “OrganizationNameModuleType”. For e.g., in this case, organization name is MyCompany and module type is Incidents, so the name could be mentioned as “MyCompanyIncidents”. We have considered ‘MyCompanyAnalysis’ for this exercise.
13. Click on Download Template to get the sample template to get the idea of what kind of template will be accepted to run analysis.
14. Click on Choose Files to select the CSV file and upload it as per the format mentioned earlier.
15. Click Start Analysis.



Add New Analysis

Organization * MyCompany

Analysis Name * Test

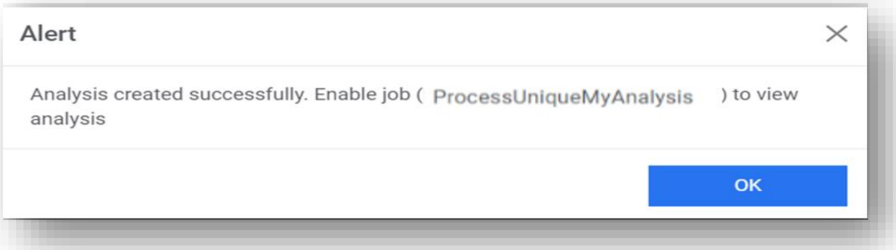
Runbook Tool Type * ANSIBLETOWER

Select File * Choose File CSV_TicketAnalysis_Template (7).csv

Note: "GenAI" will be applicable for ANSIBLETOWER for script extraction.

Figure 12 – Start Analysis

Users will be prompted with the success message as depicted in the below-



Alert

Analysis created successfully. Enable job (ProcessUniqueMyAnalysis) to view analysis

Figure 13 – Analysis Created Successfully

On clicking Start Analysis, three new jobs are created. These are Unique Clustering, Unique Script, and Recommendation. The newly added analyses are listed in the Manage Jobs page.

Next step is to enable the jobs which have been created in the previous step.

1. Go to Actions and click Manage Jobs.

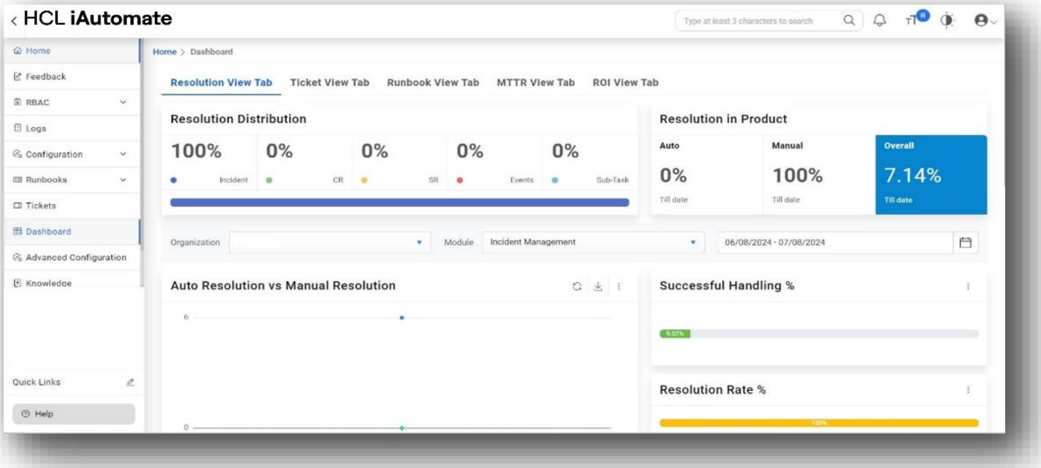
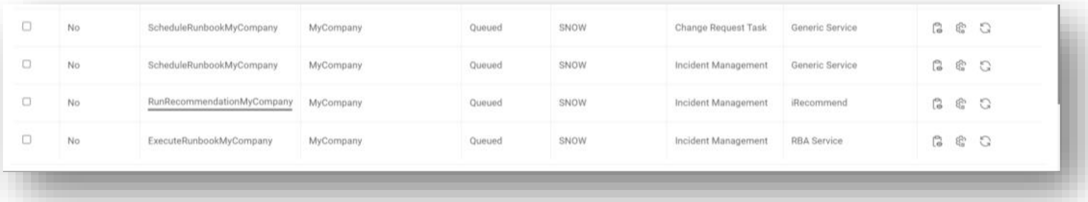


Figure 14 – Manage Jobs

2. On Manage Jobs screen, click filter icon next to Customer and search for "MyCompany" for which analysis has to be done.

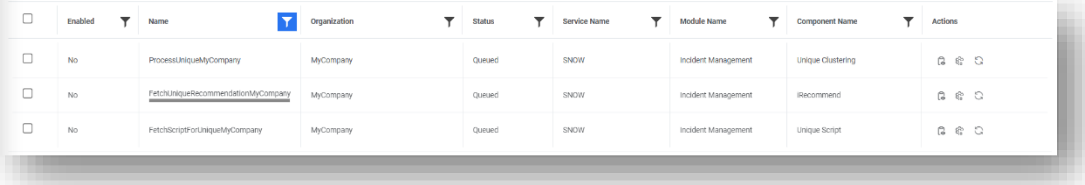


☐	No	ScheduleRunbookMyCompany	MyCompany	Queued	SNOW	Change Request Task	Generic Service	
☐	No	ScheduleRunbookMyCompany	MyCompany	Queued	SNOW	Incident Management	Generic Service	
☐	No	RunRecommendationMyCompany	MyCompany	Queued	SNOW	Incident Management	iRecommend	
☐	No	ExecuteRunbookMyCompany	MyCompany	Queued	SNOW	Incident Management	RBA Service	

Figure 15 – Manage Jobs (Cont.)

3. You will see the list of three jobs for your organization:

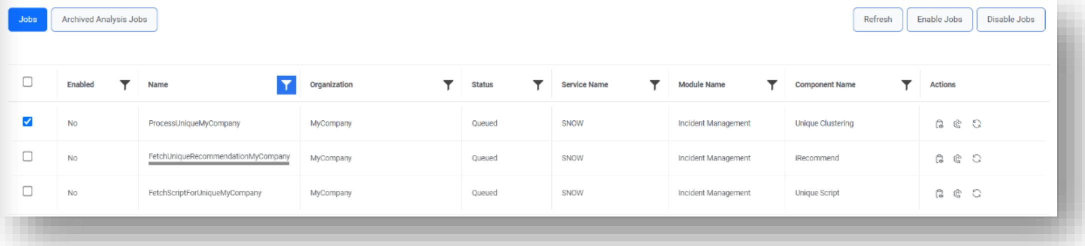
    - **ProcessUnique (Unique)** - responsible for clustering the tickets into unique categories. Each bucket comprises of tickets with similar issues.
    - **FetchUniqueRecommendation (Recommendation)** – Responsible for providing relevant runbook recommendations for the respective ticket categories.
    - **FetchScriptForUnique (Script)** – Responsible for searching and downloading relevant scripts from open data sources for ticket categories for which runbooks are not available within iAutomate.



☐	Enabled	Name	Organization	Status	Service Name	Module Name	Component Name	Actions
☐	No	ProcessUniqueMyCompany	MyCompany	Queued	SNOW	Incident Management	Unique Clustering	
☐	No	FetchUniqueRecommendationMyCompany	MyCompany	Queued	SNOW	Incident Management	iRecommend	
☐	No	FetchScriptForUniqueMyCompany	MyCompany	Queued	SNOW	Incident Management	Unique Script	

Figure 16 – Manage Jobs (Cont.)

4. Select the checkbox for ProcessUnique job and click Enable Jobs.

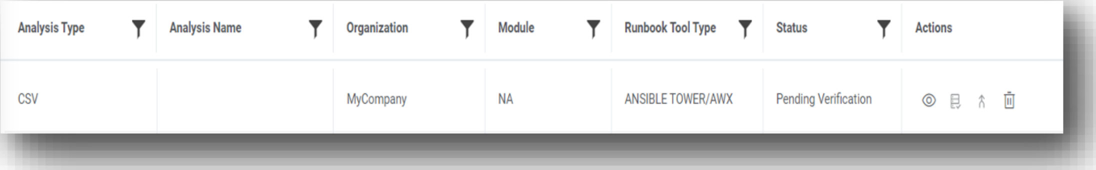


☐	Enabled	Name	Organization	Status	Service Name	Module Name	Component Name	Actions
☑	No	ProcessUniqueMyCompany	MyCompany	Queued	SNOW	Incident Management	Unique Clustering	
☐	No	FetchUniqueRecommendationMyCompany	MyCompany	Queued	SNOW	Incident Management	iRecommend	
☐	No	FetchScriptForUniqueMyCompany	MyCompany	Queued	SNOW	Incident Management	Unique Script	

Figure 17 - Manage Jobs (Cont.)

For ticket analysis, ProcessUnique should be run before FetchUniqueRecommendation and FetchScriptForUnique. Therefore, users should enable jobs corresponding to iUnique (ProcessUnique) only and rest should only be enabled once it has been completed.

5. Go back to Analysis -> Ticket Analysis screen. You should see the entry corresponding to enabled job for ProcessUnique. Initially the status will be "In Progress" and will change to "Pending Verification" once the job is complete.

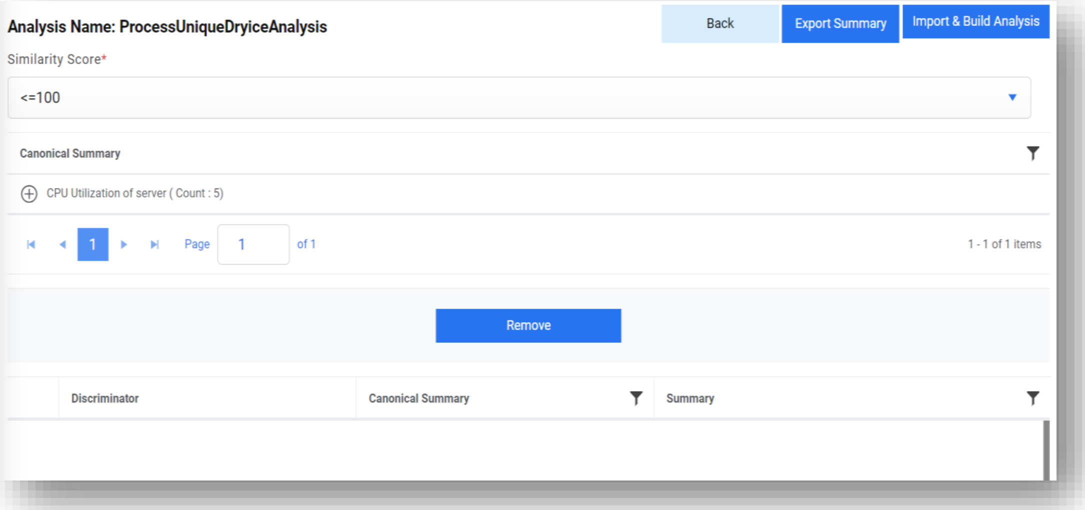


Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Actions
CSV		MyCompany	NA	ANSIBLE TOWER/AWX	Pending Verification	

Figure 18 – Manage Jobs (Cont.)

Next step is to build / approve the analysis.

1. In the Action column, click (Click to Build/Approve Analysis) icon. On the new screen, scroll down and click Verify.



Analysis Name: ProcessUniqueDryiceAnalysis

Similarity Score*: <=100

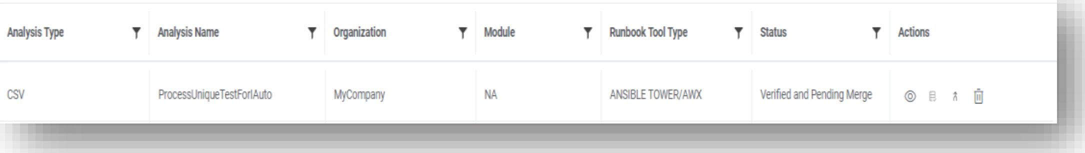
Canonical Summary
CPU Utilization of server (Count : 5)

Page 1 of 1 — 1 - 1 of 1 items

Discriminator	Canonical Summary	Summary

Figure 19 – Manage Jobs (Cont.)

2. User should define the Discriminator before clicking on Verify if the ticket corresponding to same type of issues for different domain lands in the same bucket. Please refer to iAutomate Configuration Guide for more details.
3. Users will be redirected to Ticket Analysis screen and status of the analysis should be Verified and Pending Merge.



Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Actions
CSV	ProcessUniqueTestForAuto	MyCompany	NA	ANSIBLE TOWER/AWX	Verified and Pending Merge	

Figure 20 – Manage Jobs (Cont.)

4. In the action column, click (Click to Merge Analysis) icon. It will take you to Merge Analysis screen.
5. Scroll down to the bottom of the page and click Final Submission.

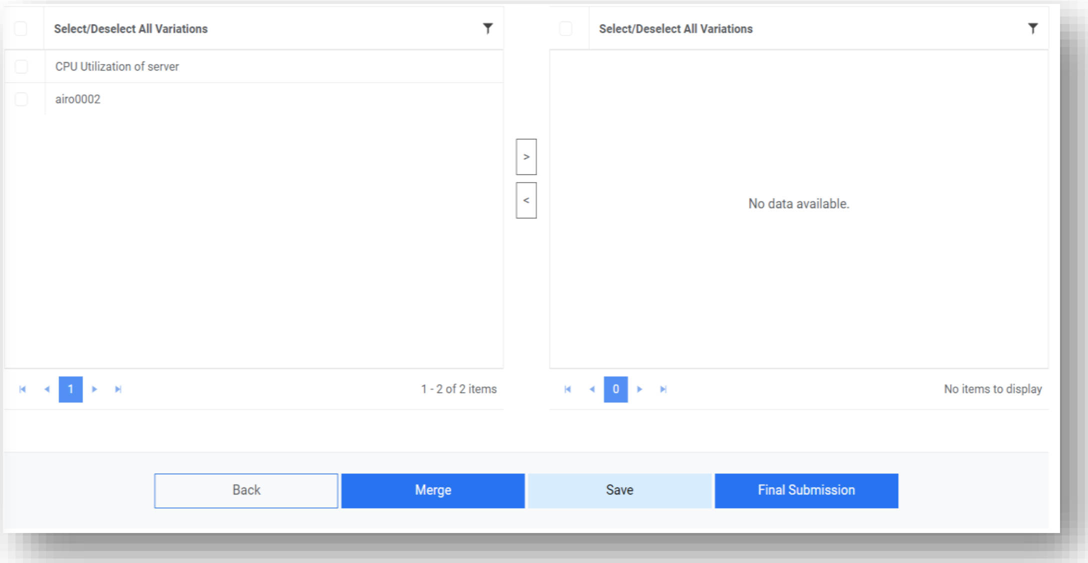
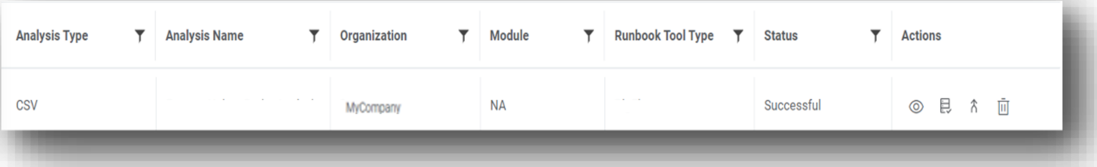


Figure 21 - Manage Jobs (Cont.)

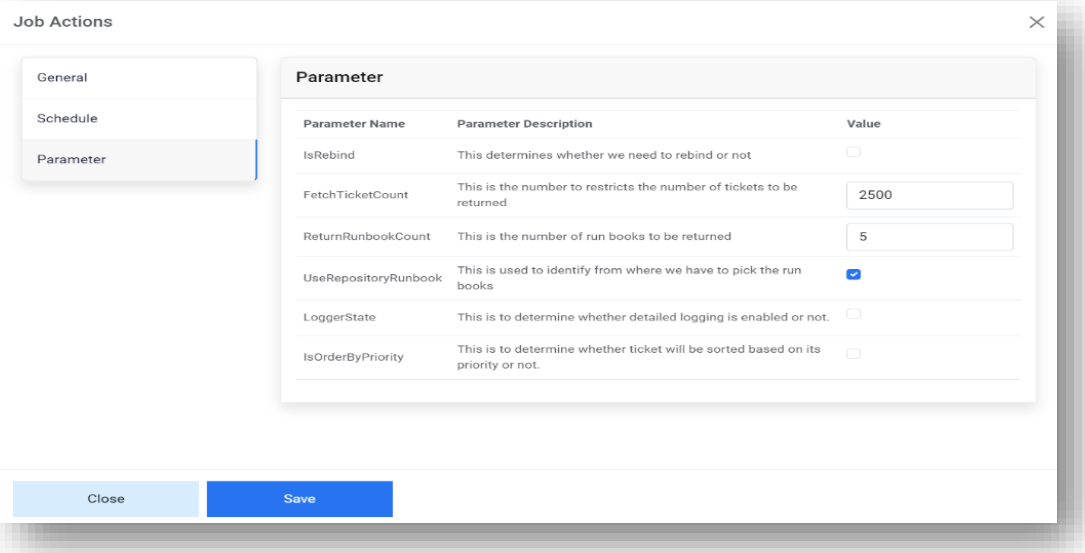
6. User will get a message Merge Analysis saved successfully and user will be redirected to Ticket Analysis page again as shown in **Figure 18 - Manage Jobs (Cont.).** The status of analysis will change to Successful.



Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Actions
CSV		MyCompany	NA		Successful	

Figure 22 - Manage Jobs (Cont.)

7. Once the ProcessUnique (iUnique) job is completed, user needs to enable FetchUniqueRecommendation (Recommendation) job. Since, Recommendation system processes tickets in batches. Therefore, if ticket count is very high then user should define number of tickets, which should be processed at once under job properties.
8. Go to Actions -> Manage Jobs. Filter the jobs for MyCompany.
9. Click ⚙ icon under the Action column corresponding to the iRecommend component.
10. In the popup window, click Parameters and change the values of FetchTicketCount and ReturnRunbookCount as shown below:



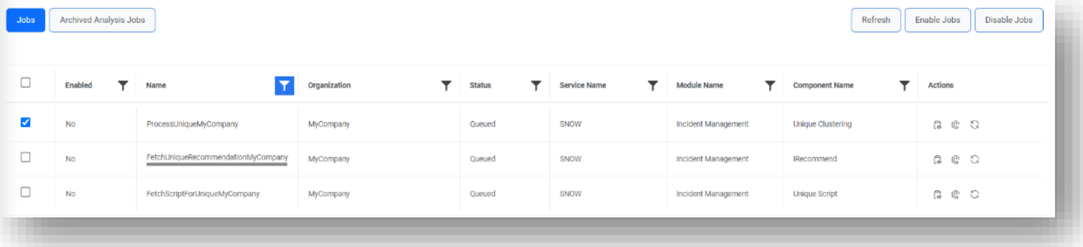
Job Actions

Parameter

Parameter Name	Parameter Description	Value
IsRebind	This determines whether we need to rebind or not	□
FetchTicketCount	This is the number to restricts the number of tickets to be returned	2500
ReturnRunbookCount	This is the number of run books to be returned	5
UseRepositoryRunbook	This is used to identify from where we have to pick the run books	☑
LoggerState	This is to determine whether detailed logging is enabled or not.	□
IsOrderByPriority	This is to determine whether ticket will be sorted based on its priority or not.	□

Figure 23 - Manage Jobs (Cont.)

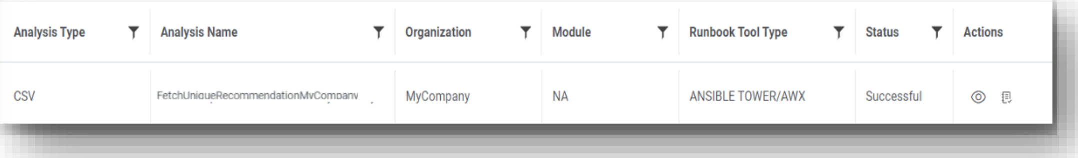
11. Click Save.
12. Select checkbox for Recommendation (FetchUniqueRecommendation) for that analysis and click Enable Jobs.



□	Enabled	Name	Organization	Status	Service Name	Module Name	Component Name	Actions
☑	No	ProcessUniqueMyCompany	MyCompany	Queued	SNOW	Incident Management	Unique Clustering	
□	No	FetchUniqueRecommendationMyCompany	MyCompany	Queued	SNOW	Incident Management	IRecommend	
□	No	FetchScriptForUniqueMyCompany	MyCompany	Queued	SNOW	Incident Management	Unique Script	

Figure 24 - Manage Jobs (Cont.)

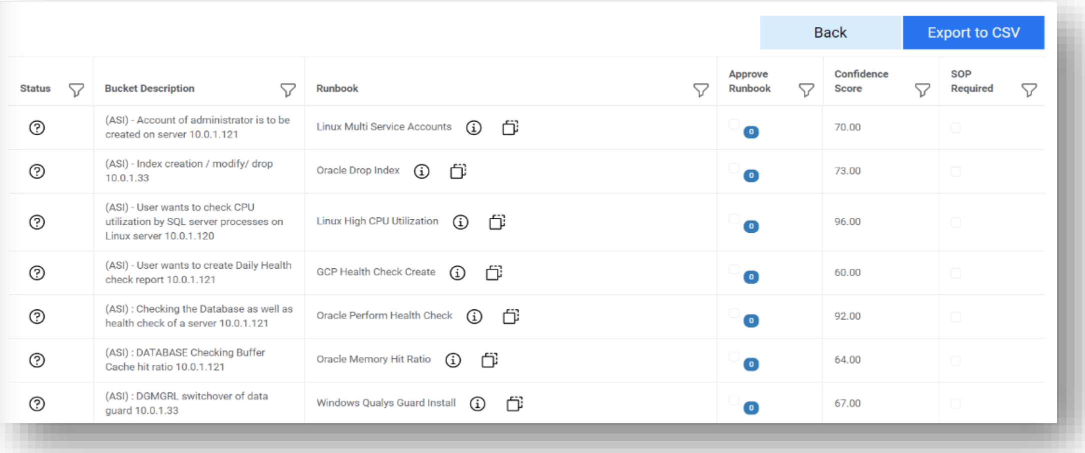
13. Go to Analysis -> Recommendation Analysis. Here, you will see that the recommendation for analysis is in 'In Progress' state. The status will change to Successful once the analysis is complete.



Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Actions
CSV	FetchUniqueRecommendationMyCompany	MyCompany	NA	ANSIBLE TOWER/AWX	Successful	

Figure 25 - Manage Jobs (Cont.)

14. Click ◎ icon in Action column for the recommendation analysis. A popup window Recommendation Details appears.
15. Click Show Details to view detailed analysis.
16. Click Export to download the analysis.



Status	Bucket Description	Runbook	Approve Runbook	Confidence Score	SOP Required
?	(ASI) - Account of administrator is to be created on server 10.0.1.121	Linux Multi Service Accounts	□ 0	70.00	□
?	(ASI) - Index creation / modify/ drop 10.0.1.33	Oracle Drop Index	□ 0	73.00	□
?	(ASI) - User wants to check CPU utilization by SQL server processes on Linux server 10.0.1.120	Linux High CPU Utilization	□ 0	96.00	□
?	(ASI) - User wants to create Daily Health check report 10.0.1.121	GCP Health Check Create	□ 0	60.00	□
?	(ASI) : Checking the Database as well as health check of a server 10.0.1.121	Oracle Perform Health Check	□ 0	92.00	□
?	(ASI) : DATABASE Checking Buffer Cache hit ratio 10.0.1.121	Oracle Memory Hit Ratio	□ 0	64.00	□
?	(ASI) : DGMGRL switchover of data guard 10.0.1.33	Windows Qualys Guard Install	□ 0	67.00	□

Figure 26 - Manage Jobs (Cont.)

A CSV file will be downloaded with Recommendation details for the analysis. The downloaded file will have following columns - ID (Ticker Number), Original Summary (Canonical Description), Runbook Name (Name of recommended runbook), Similarity (Confidence Score) and Count (Number of tickets similar to current ticket for dump under analysis).

To calculate the automation percentage, user can filter on Similarity field i.e., >=0.60. It will show only those incidents corresponding to which recommended runbook confidence score is greater than or equal to 0.60. Thereafter, sum all numbers corresponding to column Count for leftover rows and divide them by the total number of tickets in dump. It will give you automation percentage. Also, the Original Summary column will provide the list of indicative use cases.

Filter value in above text i.e. >=0.60 can be changed as per the customer data. If you see there are some tickets with recommendation whose similarity is less or greater than 0.60 then you can either increase or decrease filter values respectively.

Additionally, this file can further be shared with the Runbook Automation SMEs to identify cases corresponding to which iAutomate does not have runbooks but can be potentially automated if SOPs are available.

3.2.4 Conclusion

Through this module, we have covered the step-by-step procedure to identify the automation potential from the ticket dump shared by an organization. It helps in assessing the applicability of iAutomate for enhancing automation within their environment.

Considering that MyCompany organization has agreed to deploy iAutomate to bring in automation in their environment, let's explore the procedure of installing iAutomate in the next module.

3.2.5 Related Documentation

- iAutomate Configuration Guide

4 Module 2 – Installation of iAutomate

4.1 Introduction

iAutomate is a scalable product and is built as per multi-tenant architecture. It includes various components which enable different features and functionalities. This module covers the procedure for installing iAutomate product in various scenarios, including mandatory and optional components based on requirements. We will also cover the installation of iAutomate in HA mode along with the required configuration. It also covers various considerations that the user needs to make before proceeding with the installation like environment planning, hardware provisioning, installation of prerequisites and others.

Let's begin with the Environment Planning.

4.2 Lab Exercise 1 – Environment Planning

4.2.1 Scenario

A senior IT architect from MyCompany has inquired about the various deployment options and respective hardware sizing to prepare for the deployment of iAutomate in their environment.

In this lab, we will discuss the categorization of environments based on various parameters enabling the user to arrive at the appropriate sizing for the hardware required for deployment of the product.

4.2.2 Prerequisites

User must have the following information (or else seek this information from the architect) before proceeding forward with this exercise –

- Volumes of tickets created in the ITSM tool on a daily, weekly and monthly basis.
- Volume of unique tickets
- Volumes of documents to be processed
- Volume of search queries expected

4.2.3 Solution

There are various parameters that need to be considered for arriving at the hardware sizing as listed below:

- **Number of Tickets** – Number of tickets raised in ITSM tool on a monthly basis
- **Number of Unique Tickets** – Number of unique kinds of tickets created monthly
- **Number of Documents Processed** – Number of documents / knowledge articles ingested in the system for knowledge search and analysis
- **Number of Search Queries** – Number of search queries made by the users on a monthly basis
- **Concurrent Executions** – Number of concurrent executions of tickets

Based on the above listed parameters, hardware sizing has been divided into three categories as mentioned in the below table –

Table 3 – Hardware Sizing

Environment Indicator	# Tickets (per month)	# Unique Tickets (per month)	# Documents Processed**	# Search Queries** (per month)	Concurrent Executions***	Data Retention*
Small	Less than 30,000	Less than 500	Less than 1,000	Less than 5,000	up to 100	6 months
Medium	30,000 to 60,000	500 to 1,000	1,000 to 3,000	5,000 to 10,000	up to 200	6 months
Large	60,000 to 1,50,000	1,000 to 3,000	3,000 to 5,000	10,000 to 30,000	up to 400	6 months

* Data Retention is only applicable for the tickets data

** Applicable when iKnowledge module is installed

*** Concurrent Executions have been arrived at based on the limitation of the RBA tool for runbook executions and the ITSM tool for pushing tickets into iAutomate.

For e.g., a small environment can process at most 30,000 tickets per month, at most 500 unique tickets per month, at most 1000 documents and at most 5,000 search queries. The concurrent executions are limited to 100.

For the purpose of the all the lab exercises covered in this manual, we are going to make use of Small Environment. The specifics are mentioned in the table below.

Table 4 - Small Environment Hardware Details

Server Name	Server Count	Server Type	Recommended Hardware Configuration	Minimum RAM Requirement for iAutomate	Database Requirement	Storage (local)	Other Requirements
Application + Web Server	1	Virtual	2 vCPU, 4 GB RAM	2 GB RAM	NA	50 GB	Operating System - Windows Server 2016, 64-bit
Database Server	1	Virtual	4 vCPU, 8 GB RAM	Not Applicable	Microsoft SQL Server 2016 - Standard Edition	100 GB	Operating System - Windows Server 2016, 64-bit

Advanced AI Server + Mongo DB + Solr	1	Virtual	2 vCPU, 8 GB RAM	4 GB RAM	NA	50 GB	Operating System - Windows Server 2016, 64-bit Mongo DB + Solr

For e.g., some of the exercises, we will be covering installation in HA mode for which users can refer to the installation guide for details on hardware sizing.

iAutomate also requires certain prerequisites to be available before the product installation. Refer to the Prerequisites Guide for installing the prerequisites.

Ensure that the hardware is provisioned as per the environment finalized and the prerequisites are installed before proceeding with the installation in next exercise.

4.2.4 Conclusion

Through this exercise, we have covered the step-by-step procedure to identify the automation potential from the ticket dump shared by an organization. It helps in assessing the applicability of iAutomate for enhancing automation within their environment.

Now, let's explore the installation procedure for iAutomate.

4.3 Lab Exercise 2 – Installation of iAutomate without Document Search and Analysis in Non-HA Mode

4.3.1 Scenario

MyCompany organization has asked for installation of iAutomate in non-HA mode. They are looking for automation of IT operations without Document Search and Analysis functionality. You are part of the implementation team who have been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing iAutomate without Document Search and Analysis in non-HA mode.

4.3.2 Prerequisites

- Hardware should be provisioned for a small environment (non-HA mode) as mentioned in the iAutomate Installation Guide – One Server for Web & App Components and One Database Server
- All the prerequisites mentioned should be installed on the servers as mentioned in the prerequisite guide
- Database credentials should be available

- The user should have “Write“ permission on the Apache24 folder
- The user should have access to the iAutomate installer exe

4.3.3 Solution

1. The user should have access to the iAutomate installer exe.
2. Copy the installer on the server meant for Web and Application components. In this scenario, both Web and Application Components resided on one server.
3. Locate **HCL_iAutomate_v6.4.1_Installer.exe** and click Run as Administrator to begin the installation. On running the installer, the following page will appear.

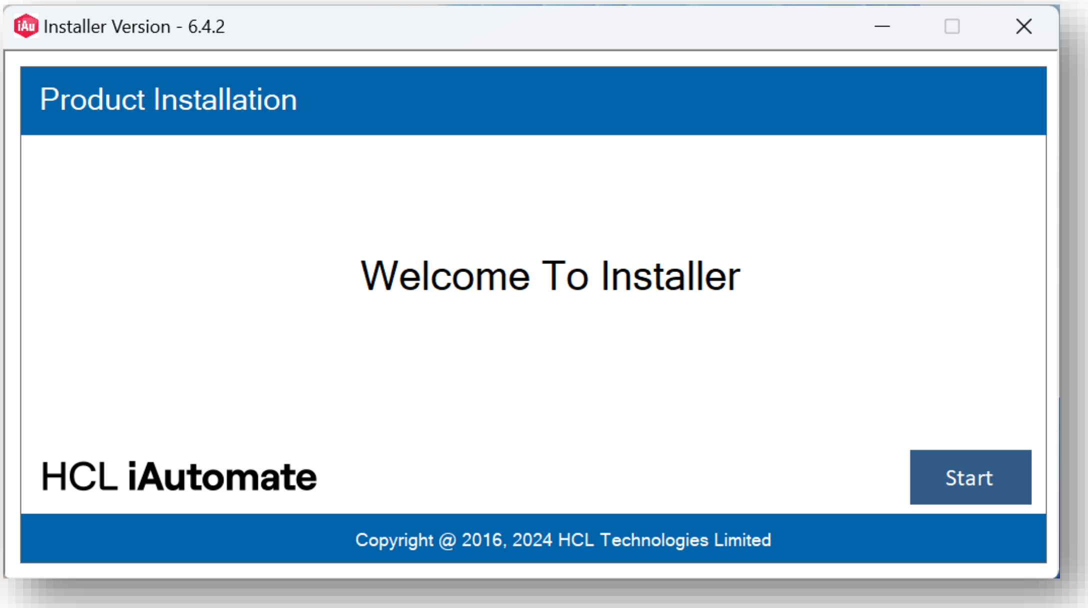
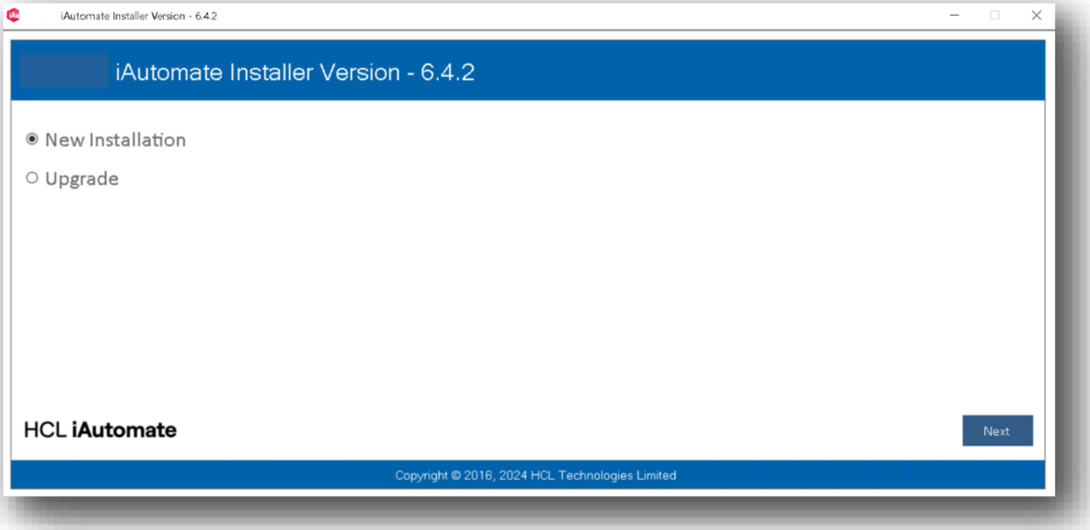

Installer Version - 6.4.2
Product Installation
Welcome To Installer
HCL iAutomate
Start
Copyright @ 2016, 2024 HCL Technologies Limited

Figure 27 – iAutomate Implementation

4. Click Start, the following page appears. It will extract required binaries.



iAutomate Installer Version - 6.4.2

iAutomate Installer Version - 6.4.2

● New Installation

○ Upgrade

HCL **iAutomate**

Copyright © 2016, 2024 HCL Technologies Limited

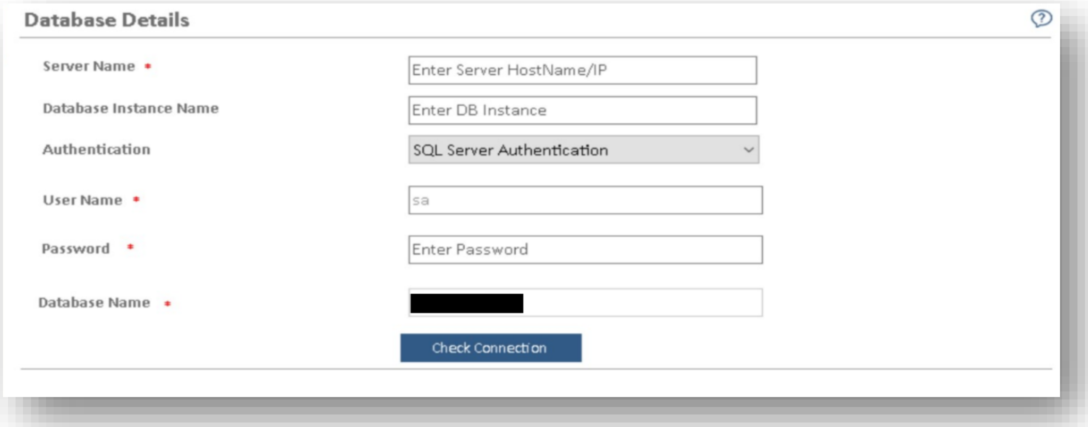
Figure 28 – iAutomate Installer Welcome Page

5. Click Next. The page lists the setup required for installation in the left pane and the details of the selected setup in the right pane.
6. The next step is to populate the database details.

4.3.3.1 Database Details

For this exercise, the authentication type is considered as SQL Server Authentication for database.

1. On the Database Details view, type the Server Name and the Database Instance Name.
2. Select Authentication Type as SQL Server Authentication.
3. In the UserName and Password fields, type username and password to access the server.
4. In the Database Name field, Database Name is auto filled by default.
5. To check the connectivity to a server using the credentials provided, click Check Connection.
7. This displays a message for Connection Success or Connection Failure. Successful connection to the database enables the Next button.



Database Details

Server Name * : Enter Server HostName/IP

Database Instance Name : Enter DB Instance

Authentication : SQL Server Authentication

User Name * : sa

Password * : Enter Password

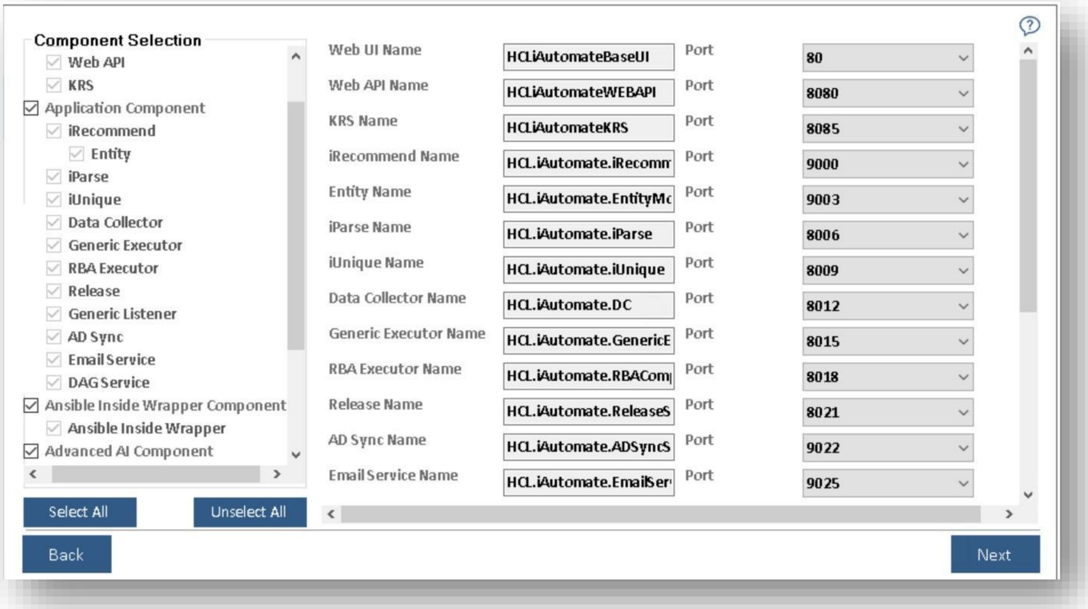
Database Name * : [redacted]

Figure 29 – Database Details

8. Click Next to get to the Component Selection view.

4.3.3.2 Component Selection

1. Select Web Component and Application Component.



Component Selection

- ☑ Web API
- ☑ KRS
- ☑ Application Component
  - ☑ iRecommend
    - ☑ Entity
  - ☑ iParse
  - ☑ iUnique
  - ☑ Data Collector
  - ☑ Generic Executor
  - ☑ RBA Executor
  - ☑ Release
  - ☑ Generic Listener
  - ☑ AD Sync
  - ☑ Email Service
  - ☑ DAG Service
- ☑ Ansible Inside Wrapper Component
  - ☑ Ansible Inside Wrapper
- ☑ Advanced AI Component

Web UI Name	HCLiAutomateBaseUI	Port	80
Web API Name	HCLiAutomateWEBAPI	Port	8080
KRS Name	HCLiAutomateKRS	Port	8085
iRecommend Name	HCL.iAutomate.iRecomm	Port	9000
Entity Name	HCL.iAutomate.EntityMc	Port	9003
iParse Name	HCL.iAutomate.iParse	Port	8006
iUnique Name	HCL.iAutomate.iUnique	Port	8009
Data Collector Name	HCL.iAutomate.DC	Port	8012
Generic Executor Name	HCL.iAutomate.GenericE	Port	8015
RBA Executor Name	HCL.iAutomate.RBACom	Port	8018
Release Name	HCL.iAutomate.ReleaseS	Port	8021
AD Sync Name	HCL.iAutomate.ADSyncS	Port	9022
Email Service Name	HCL.iAutomate.EmailSer	Port	9025

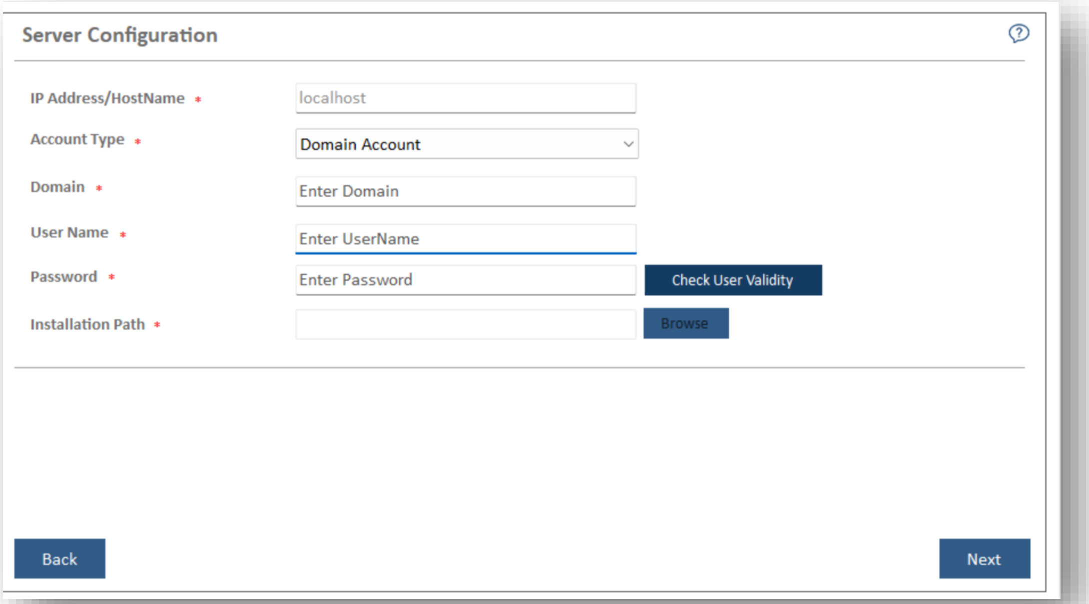
Figure 30 – Component Selection

The administrator can add or remove components based on their environment as decided during the planning phase.

2. Click Next to get to the Server Configuration view.

4.3.3.3 Server Configuration

1. The IP Address / Hostname is auto populated.
2. Select the Account Type as Domain Administrator.
3. Type in the organization domain in Domain field.
4. In the Username and Password fields, type the login credentials.
5. Click Check User Validity to ensure the following:
   - User should be part of domain defined in field Domain Name
   - User should have administrative privileges to install iAutomate components
6. Click **Browse** to specify the appropriate Installation Path to install the server components.
7. On successful connection to the server, a Validation Successful message appears beside the Password field.



Server Configuration

IP Address/HostName * localhost

Account Type * Domain Account

Domain * Enter Domain

User Name * Enter UserName

Password * Enter Password

Installation Path *

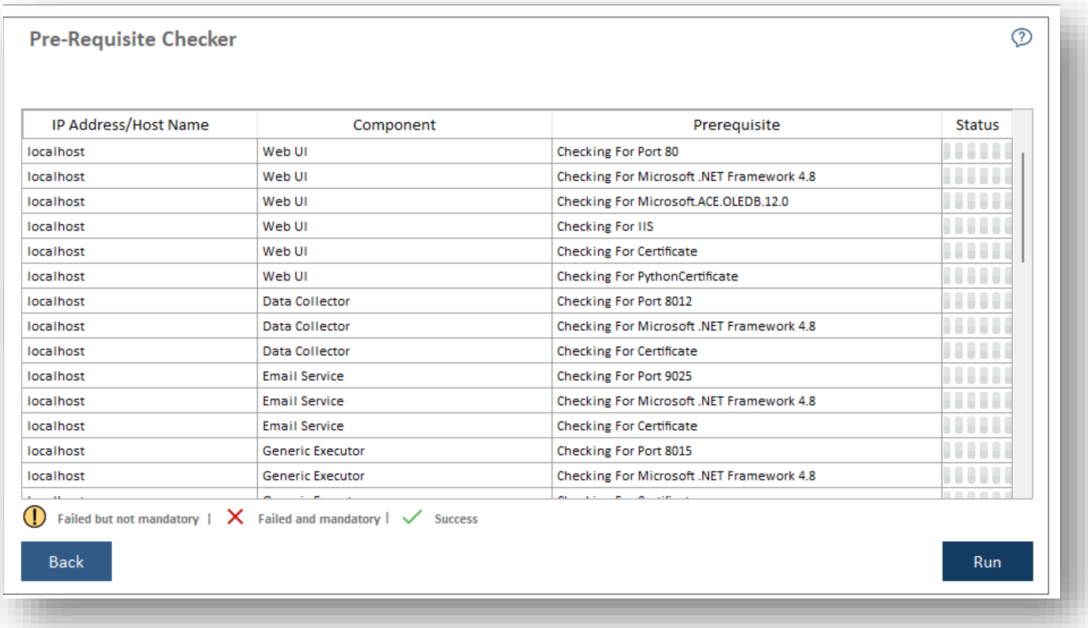
Figure 31 – Server Configuration

8. Click Next to get to the Pre-requisite Checker view.

4.3.3.4 Pre-requisite Checker

Pre-requisite Checker is responsible for checking if all iAutomate installation prerequisites have been met before beginning the installation setup. It identifies all the missing pre-requisite software and utilities and highlights to the user. User will have to ensure that the identified prerequisites are installed before proceeding further.

1. Click Run to begin the process.



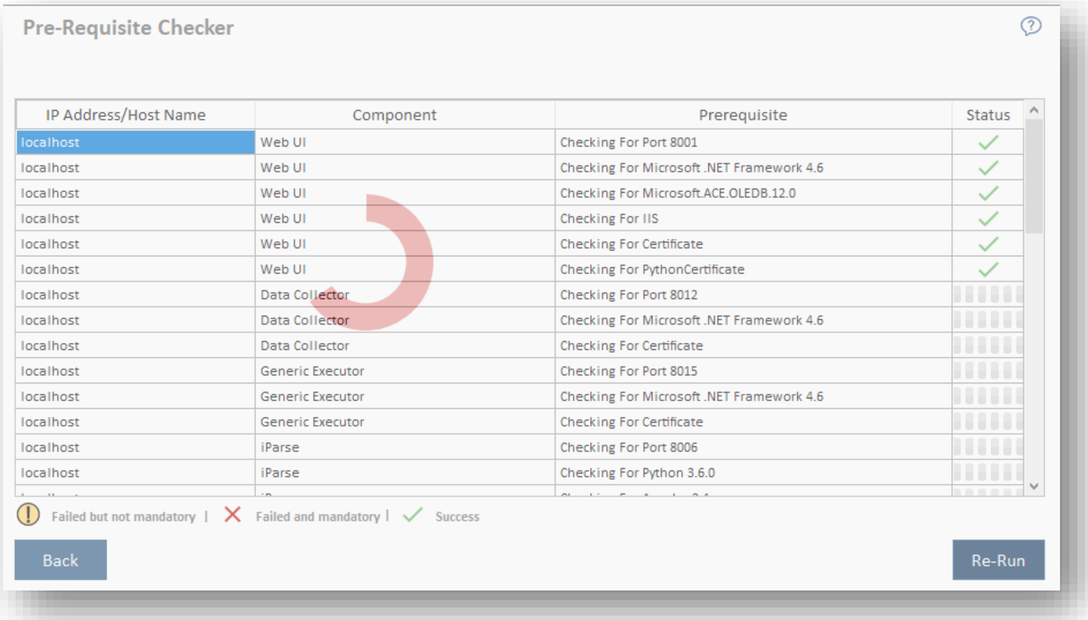
Pre-Requisite Checker

IP Address/Host Name	Component	Prerequisite	Status
localhost	Web UI	Checking For Port 80	
localhost	Web UI	Checking For Microsoft .NET Framework 4.8	
localhost	Web UI	Checking For Microsoft.ACE.OLEDB.12.0	
localhost	Web UI	Checking For IIS	
localhost	Web UI	Checking For Certificate	
localhost	Web UI	Checking For PythonCertificate	
localhost	Data Collector	Checking For Port 8012	
localhost	Data Collector	Checking For Microsoft .NET Framework 4.8	
localhost	Data Collector	Checking For Certificate	
localhost	Email Service	Checking For Port 9025	
localhost	Email Service	Checking For Microsoft .NET Framework 4.8	
localhost	Email Service	Checking For Certificate	
localhost	Generic Executor	Checking For Port 8015	
localhost	Generic Executor	Checking For Microsoft .NET Framework 4.8	

Figure 32 – Pre-Requisite Checker

The Pre-requisite Checker always runs as part of the iAutomate setup.

A progress bar appears while the Pre-Requisite Checker runs.

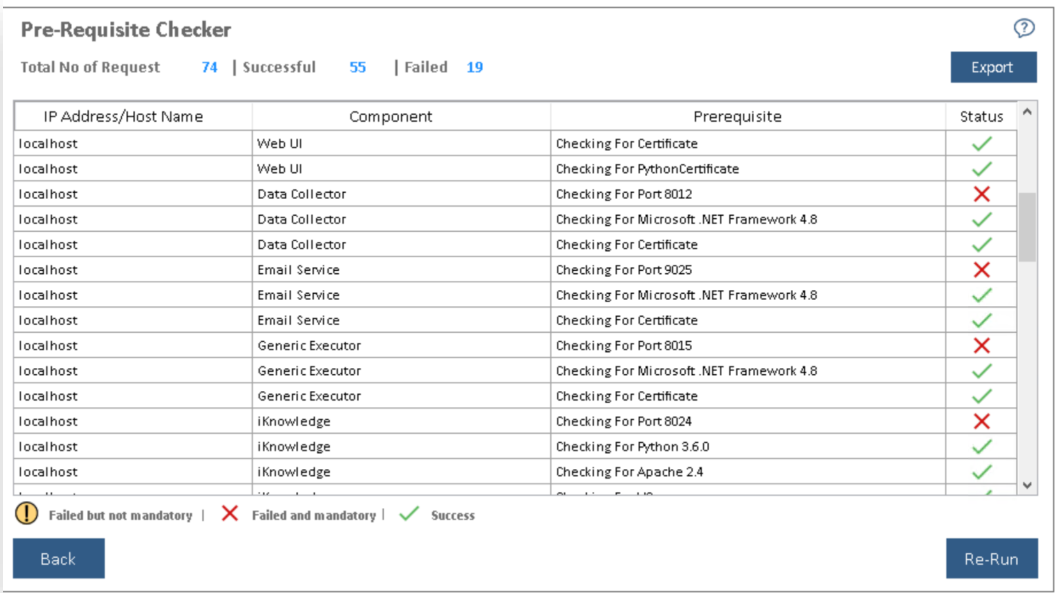


Pre-Requisite Checker

IP Address/Host Name	Component	Prerequisite	Status
localhost	Web UI	Checking For Port 8001	✓
localhost	Web UI	Checking For Microsoft .NET Framework 4.6	✓
localhost	Web UI	Checking For Microsoft.ACE.OLEDB.12.0	✓
localhost	Web UI	Checking For IIS	✓
localhost	Web UI	Checking For Certificate	✓
localhost	Web UI	Checking For PythonCertificate	✓
localhost	Data Collector	Checking For Port 8012	
localhost	Data Collector	Checking For Microsoft .NET Framework 4.6	
localhost	Data Collector	Checking For Certificate	
localhost	Generic Executor	Checking For Port 8015	
localhost	Generic Executor	Checking For Microsoft .NET Framework 4.6	
localhost	Generic Executor	Checking For Certificate	
localhost	iParse	Checking For Port 8006	
localhost	iParse	Checking For Python 3.6.0	

Figure 33 - Pre-Requisite Checker (Cont.)

2. In the Status column, each pre-requisite is marked as Success or Failure



Pre-Requisite Checker

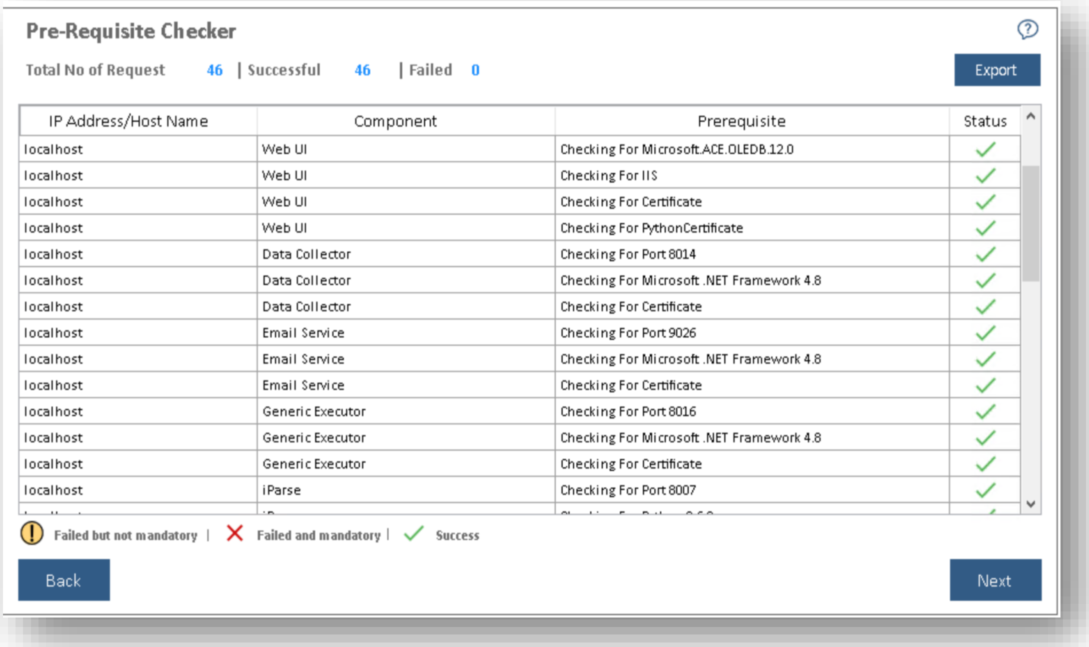
Total No of Request 74 | Successful 55 | Failed 19

IP Address/Host Name	Component	Prerequisite	Status
localhost	Web UI	Checking For Certificate	✓
localhost	Web UI	Checking For PythonCertificate	✓
localhost	Data Collector	Checking For Port 8012	✗
localhost	Data Collector	Checking For Microsoft .NET Framework 4.8	✓
localhost	Data Collector	Checking For Certificate	✓
localhost	Email Service	Checking For Port 9025	✗
localhost	Email Service	Checking For Microsoft .NET Framework 4.8	✓
localhost	Email Service	Checking For Certificate	✓
localhost	Generic Executor	Checking For Port 8015	✗
localhost	Generic Executor	Checking For Microsoft .NET Framework 4.8	✓
localhost	Generic Executor	Checking For Certificate	✓
localhost	iKnowledge	Checking For Port 8024	✗
localhost	iKnowledge	Checking For Python 3.6.0	✓
localhost	iKnowledge	Checking For Apache 2.4	✓

?
Export
! Failed but not mandatory | ✗ Failed and mandatory | ✓ Success
Back
Re-Run

Figure 34 - Pre-Requisite Checker (Cont.)

3. In case of Failure, Re-Run button appears. Please ensure that the identified issue is resolved and re-run the pre-requisite checker.
4. Please refer to the case failure as mentioned in figure. This is quite common error where port 80 is not available. In this case, select a different port from component selection page or remove default website from IIS.
5. Upon successful validation of all pre-requisites, Next is enabled. Click Next to get to the Configure Admin Details view.



Total No of Request 46 | Successful 46 | Failed 0

IP Address/Host Name	Component	Prerequisite	Status
localhost	Web UI	Checking For Microsoft.ACE.OLEDB.12.0	✓
localhost	Web UI	Checking For IIS	✓
localhost	Web UI	Checking For Certificate	✓
localhost	Web UI	Checking For PythonCertificate	✓
localhost	Data Collector	Checking For Port 8014	✓
localhost	Data Collector	Checking For Microsoft .NET Framework 4.8	✓
localhost	Data Collector	Checking For Certificate	✓
localhost	Email Service	Checking For Port 9026	✓
localhost	Email Service	Checking For Microsoft .NET Framework 4.8	✓
localhost	Email Service	Checking For Certificate	✓
localhost	Generic Executor	Checking For Port 8016	✓
localhost	Generic Executor	Checking For Microsoft .NET Framework 4.8	✓
localhost	Generic Executor	Checking For Certificate	✓
localhost	iParse	Checking For Port 8007	✓

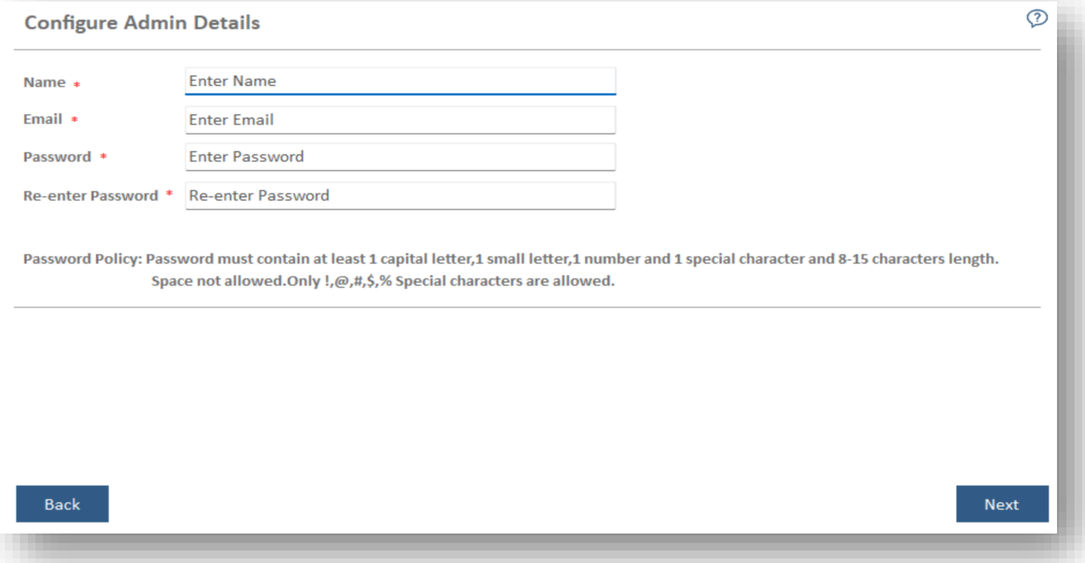
(!) Failed but not mandatory | ✗ Failed and mandatory | ✓ Success
Back
Next

Figure 35 - Pre-Requisite Checker (Cont.)

4.3.3.5 Configure Admin Details

To configure Super Administrator user for iAutomate, perform the below steps:

1. Type the new administrator's Name, Email and Password.
2. Enter the same password again in Re-enter Password field.



Name *	Enter Name
Email *	Enter Email
Password *	Enter Password
Re-enter Password *	Re-enter Password

Password Policy: Password must contain at least 1 capital letter,1 small letter,1 number and 1 special character and 8-15 characters length. Space not allowed.Only !,@,#,$,% Special characters are allowed.

Figure 36 – Configure Admin Details

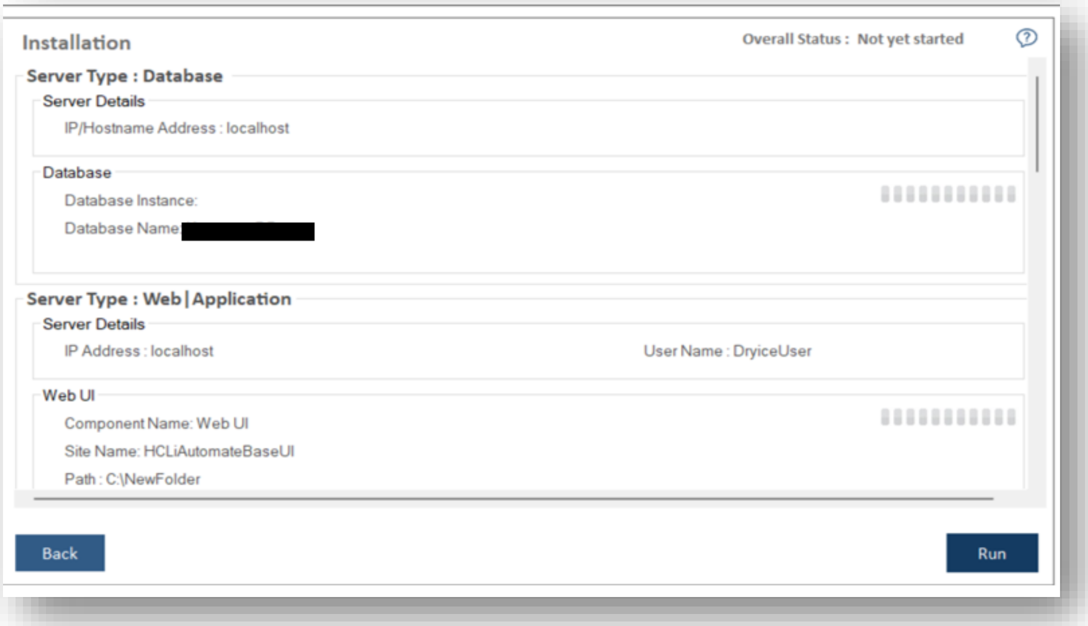
If the database provided in the Database Setup already exists at the time of installation, then the Configure Admin Details page will remain unavailable.

Please ensure password should be of 8-15 characters; and Password and Re-enter Password should match. Post installation, this Super Administrator user can access the administration console.

3. Click Next to review the information provided so far.

4.3.3.6 Installation

1. Before proceeding with installation, review the information provided so far. To make any changes, Click Back to go back to previous views.
2. Click Run to begin the installation process.



Installation

Overall Status : Not yet started

Server Type : Database

Server Details

IP/Hostname Address : localhost

Database

Database Instance:

Database Name [redacted]

Server Type : Web | Application

Server Details

IP Address : localhost

User Name : DryiceUser

Web UI

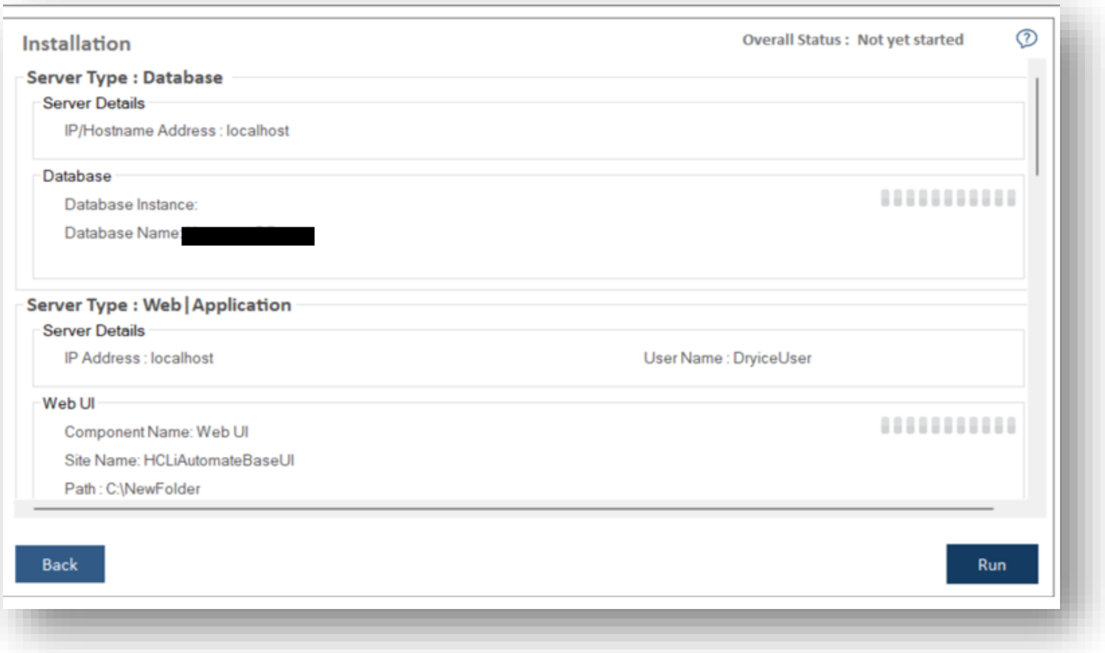
Component Name: Web UI

Site Name: HCLiAutomateBaseUI

Path : C:\NewFolder

Figure 37 – Installation

3. The progress bar displays the installation progress.



Installation

Overall Status : Not yet started

Server Type : Database

Server Details

IP/Hostname Address : localhost

Database

Database Instance:

Database Name [redacted]

Server Type : Web | Application

Server Details

IP Address : localhost

User Name : DryiceUser

Web UI

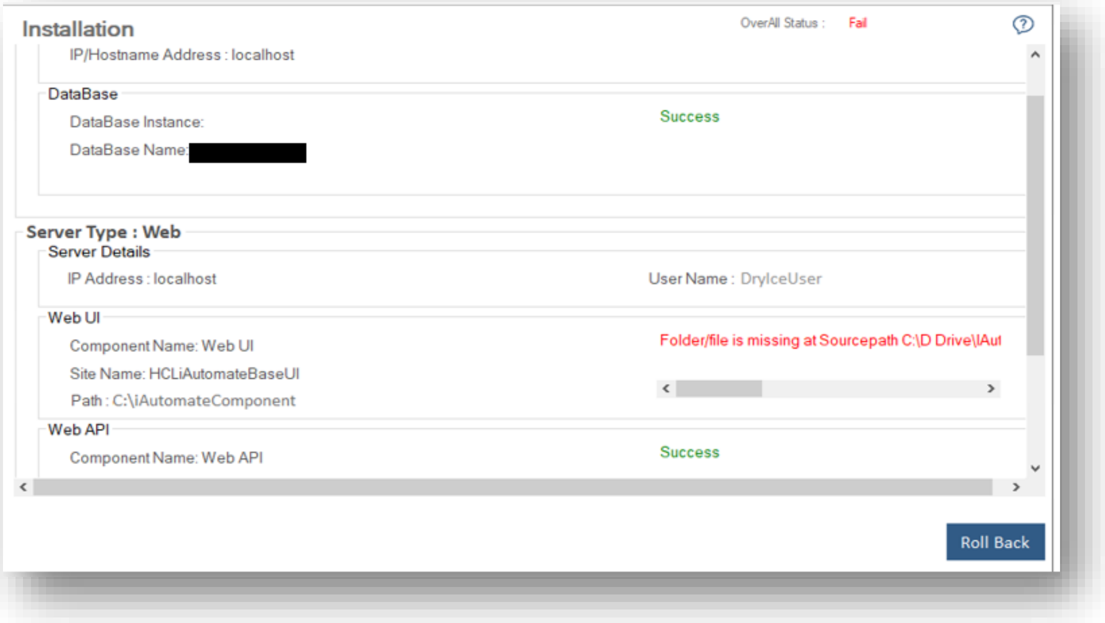
Component Name: Web UI

Site Name: HCLiAutomateBaseUI

Path : C:\NewFolder

Figure 38 – Installation (Cont.)

4. In case of any installation failure, error messages for the corresponding component appear on the screen. Click Rollback button to uninstall the components and re-run the Installer after resolving the issues. To perform the cleanup, delete all the folders manually on the servers' installation path provided earlier. Contact the product team administrator for further assistance.



Installation

OverAll Status : Fail

IP/Hostname Address : localhost

DataBase

DataBase Instance:

DataBase Name [redacted]

Success

Server Type : Web

Server Details

IP Address : localhost

User Name : DryIceUser

Web UI

Component Name: Web UI

Site Name: HCLiAutomateBaseUI

Path : C:\iAutomateComponent

Folder/file is missing at Sourcepath C:\D Drive\iAut

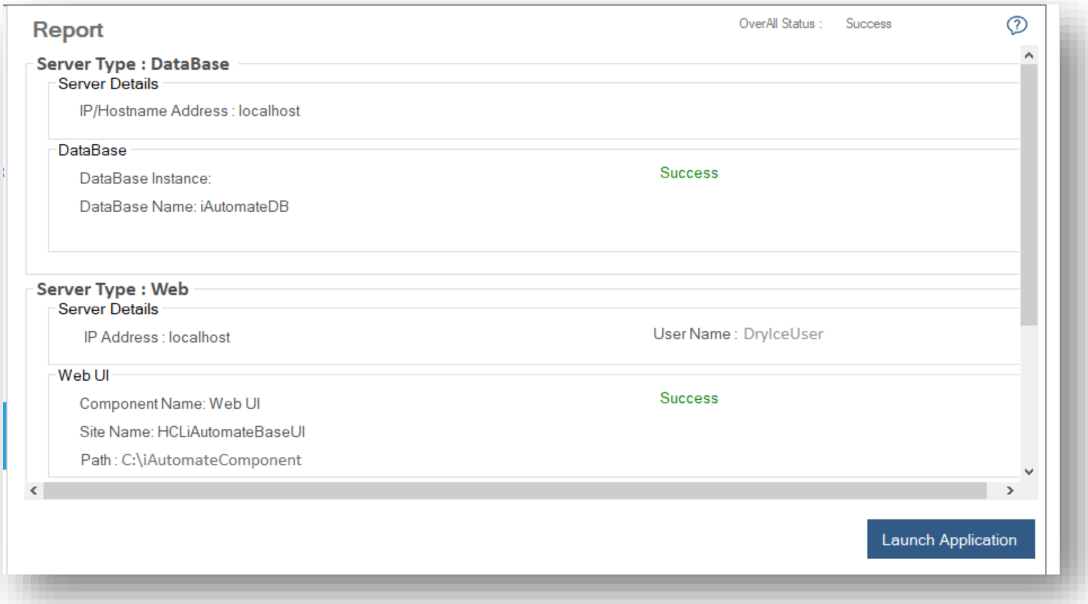
Web API

Component Name: Web API

Success

Figure 39 – Installation (Cont.)

5. Once the installation is successful, Launch Application button appears.



Report

OverAll Status : Success

Server Type : DataBase

Server Details

IP/Hostname Address : localhost

DataBase

DataBase Instance: Success

DataBase Name: iAutomateDB

Server Type : Web

Server Details

IP Address : localhost User Name : DryIceUser

Web UI

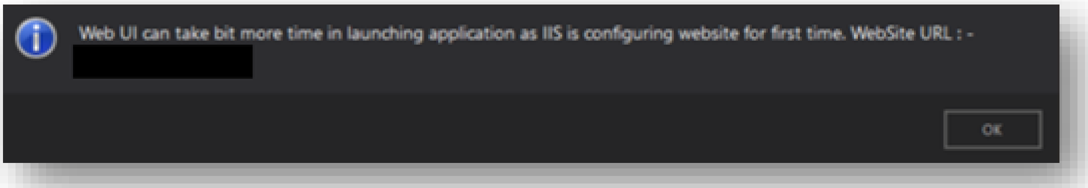
Component Name: Web UI Success

Site Name: HCLiAutomateBaseUI

Path : C:\iAutomateComponent

Figure 40 – Installation (Cont.)

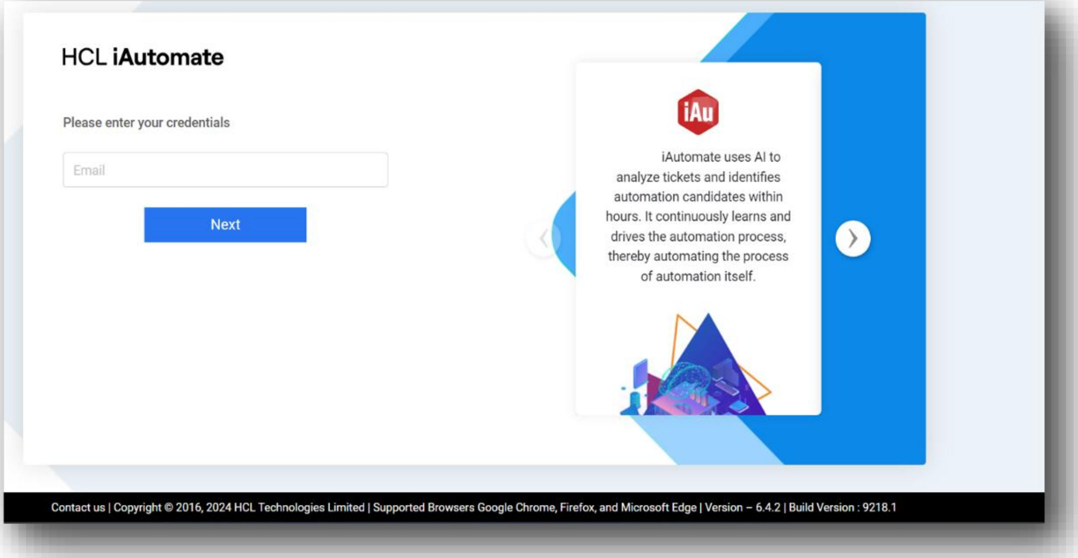
6. Click Launch Application to launch iAutomate website.



Web UI can take bit more time in launching application as IIS is configuring website for first time. WebSite URL : - [redacted]

Figure 41 – Launch Application

System will take some time to configure everything. Please wait for some time after clicking on OK button.



HCL **iAutomate**

Please enter your credentials

Email

Next

iAutomate uses AI to analyze tickets and identifies automation candidates within hours. It continuously learns and drives the automation process, thereby automating the process of automation itself.

Contact us | Copyright © 2016, 2024 HCL Technologies Limited | Supported Browsers Google Chrome, Firefox, and Microsoft Edge | Version – 6.4.2 | Build Version : 9218.1

Figure 42 – iAutomate Login Page

4.3.4 Conclusion

Post the conclusion of this exercise, you should have a thorough understanding of the installation of iAutomate Web and Application components in a small environment in non-HA mode.

Now, let's explore the installation procedure for other modes and scenarios.

4.4 Lab Exercise 3 – Installation of iAutomate without Document Search and Analysis in HA mode

4.4.1 Scenario

MyCompany organization has asked for installation of iAutomate in High Availability (HA) mode. They are looking for only ticket resolution automation without Document Search and Analysis functionality. You are part of the implementation team who have been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing iAutomate without Document Search and Analysis in HA mode.

4.4.2 Prerequisites

- Hardware should be provisioned for a small environment (HA mode) as mentioned in the iAutomate Installation Guide – One Server for Web components, One Server for App Components and One Database Server with Cluster enabled
- All the prerequisites mentioned should be installed on the servers as mentioned in the prerequisite guide
- Database credentials should be available

- Shared drive between servers should be available.
- All the required ports should be load balanced.
- The user should have "Write" permission on the Apache24 folder
- The user should have access to the iAutomate installer exe

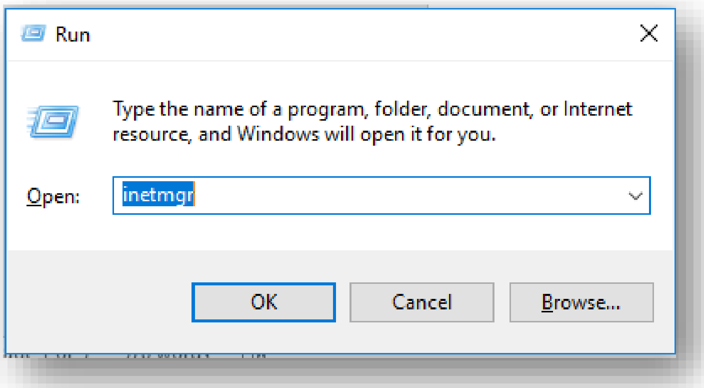
4.4.3 Solution

Copy the installer on the servers meant for Web and Application components. In this scenario, Web and Application Components are to be hosted on different servers.

1. To install iAutomate components, follow the steps mentioned in the Lab Exercise 2 on both Web and Application servers.
2. Once the installation of Web and Application components is complete on both servers, next step is to perform the load balancer configuration to enable HA mode.

Load Balancer Configuration

1. Press Win+R and type inetmgr.
2. Click OK to open IIS.



Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: inetmgr

Figure 43 – Load Balancer Configuration

3. Expand Sites in Connections section and click HCLiAutomateBaseUI.

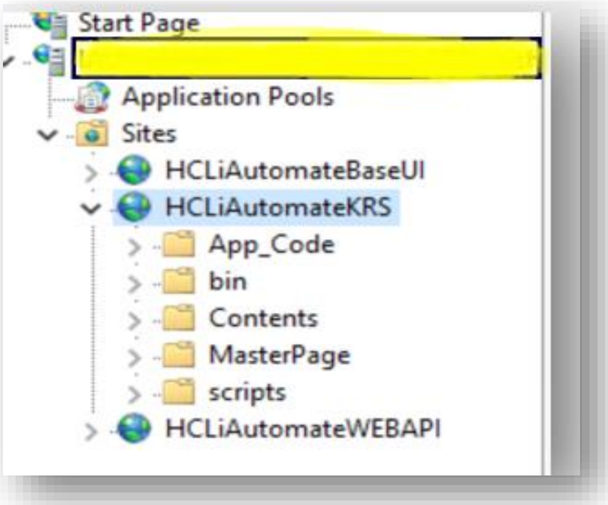


Figure 44 – Load Balancer Configuration (Cont.)

4. Click Bindings in the Edit Site section.

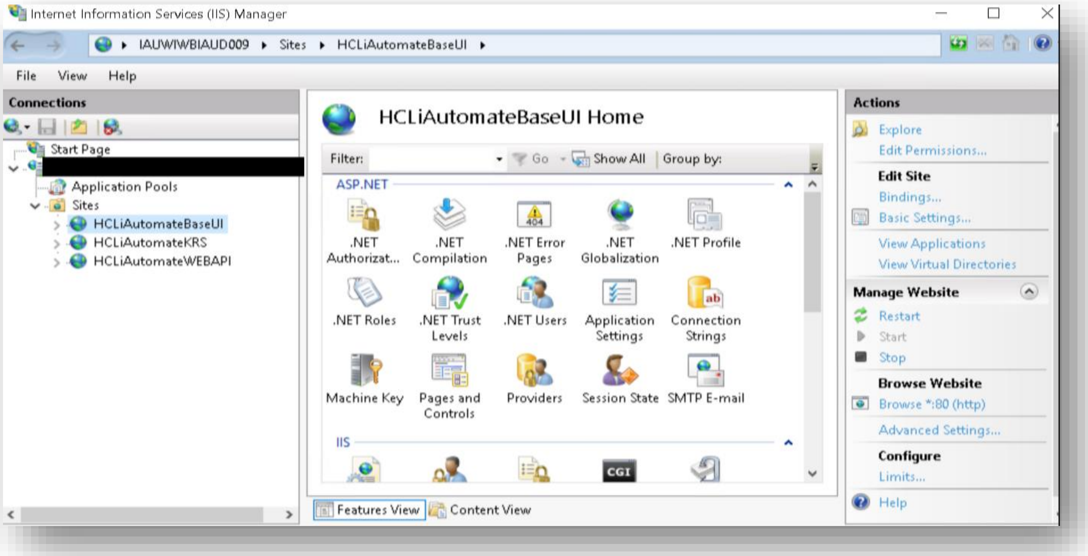
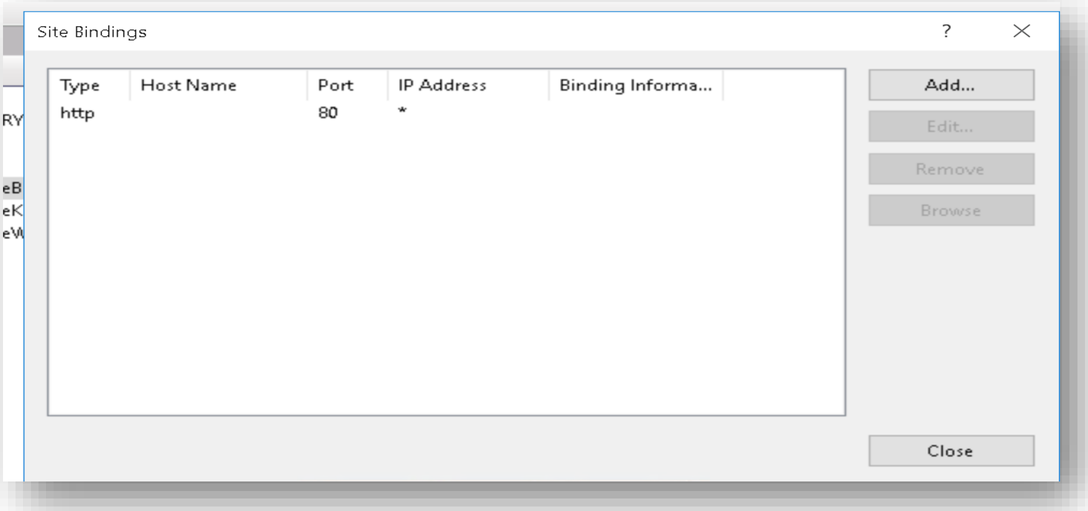


Figure 45 – Load Balancer Configuration (Cont.)



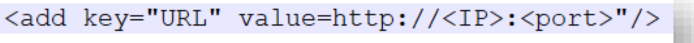
Type	Host Name	Port	IP Address	Binding Informa...
http		80	*	

Figure 46 - Load Balancer Configuration (Cont.)

5. Ensure that the value of Port mentioned is same as configured in Load Balancer. If that is not the case, click Edit to change the Port value.
6. Right-click HCLiAutomateBaseUI and click Explore.
7. Find Web.config file and open it in Notepad.

Figure 47 - Load Balancer Configuration (Cont.)

8. Within the Web.config file, search for the key 'URL' and replace the 'localhost:portnumber' with the *Load balancer IP* and *KRS Port*.



```
<add key="URL" value=http://<IP>:<port>"/>
```

Figure 48 – Load Balancer Configuration (Cont.)

9. Save the file for changes to be reflected.
10. Select the service and click Restart to restart the services.
11. Expand sites in Connections section and click HCLiAutomateWEBAPI.

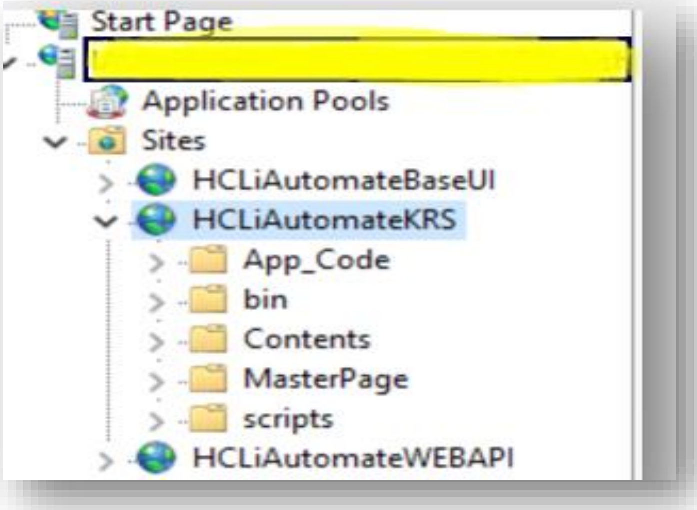


Figure 49 – Load Balancer Configuration (Cont.)

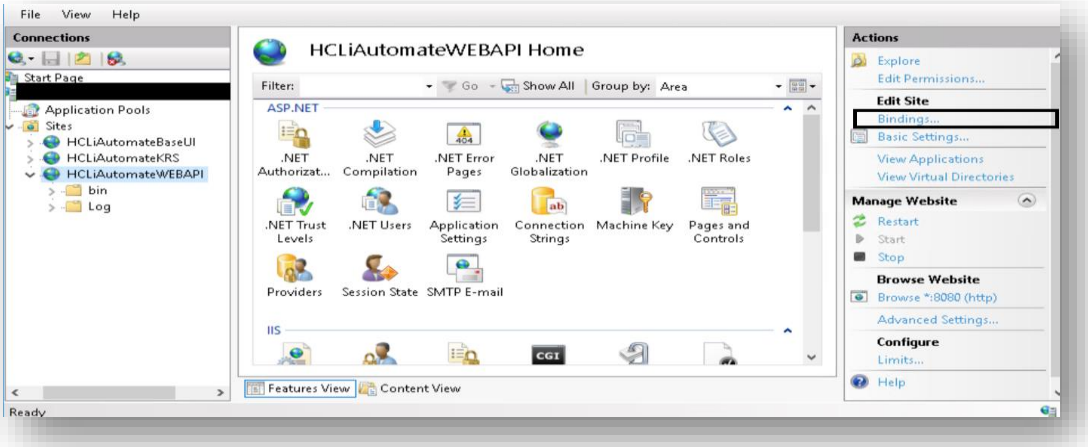


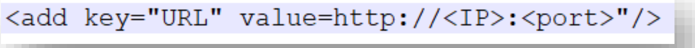
Figure 50 – Load Balancer Configuration (Cont.)

12. Right-click HCLiAutomateWEBAPI and click Explore.

13. Find Web.config file and open it in Notepad.

Figure 51 – Load Balancer Configuration (Cont.)

14. Within the Web.config file, search for the key 'URL' and replace the 'localhost:portnumber' with the *Load balancer IP* and *KRS Port*



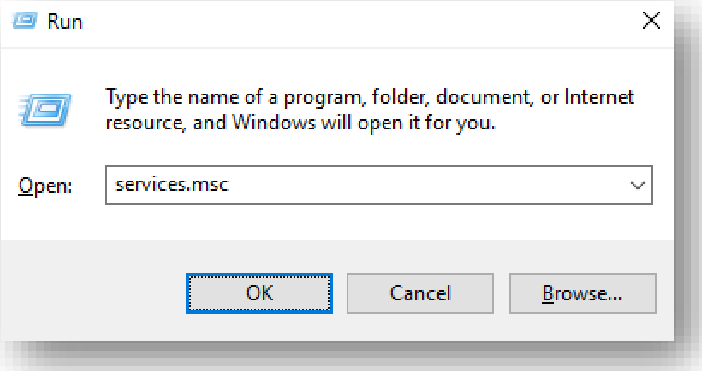
```
<add key="URL" value=http://<IP>:<port>"/>
```

Figure 52 – Load Balancer Configuration (Cont.)

15. Save the file for changes to be reflected.

16. Select the service and click Restart to restart the services.

17. Press Win+R and type services.msc.

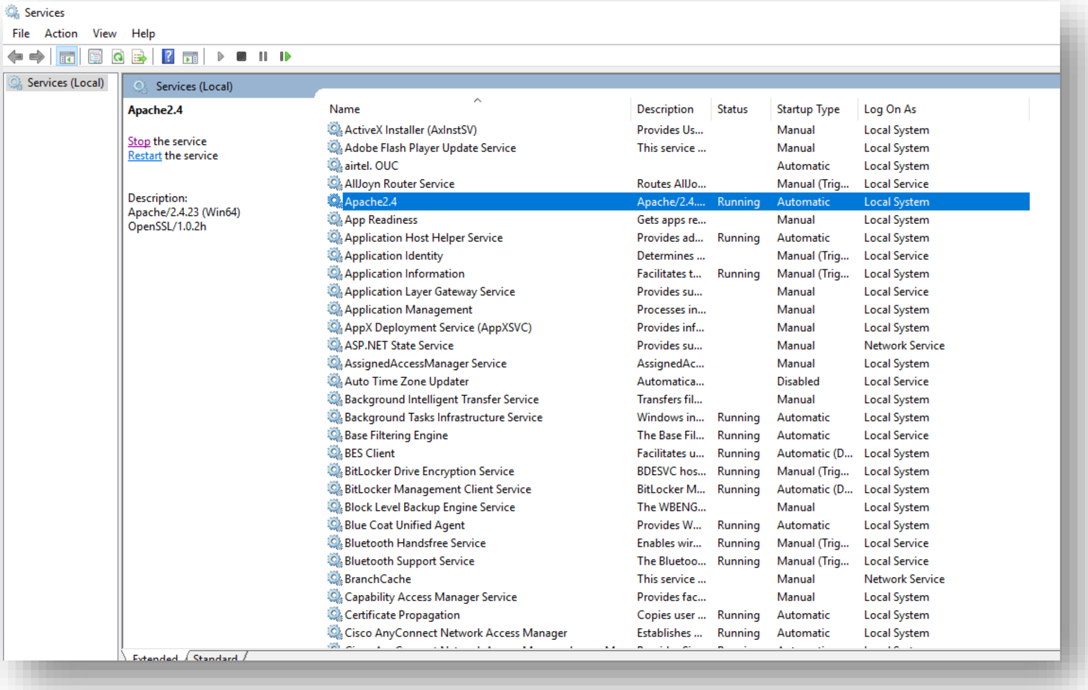


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 53 – Load Balancer Configuration (Cont.)

18. Click OK to open Windows Services.



Apache2.4

Stop the service
Restart the service

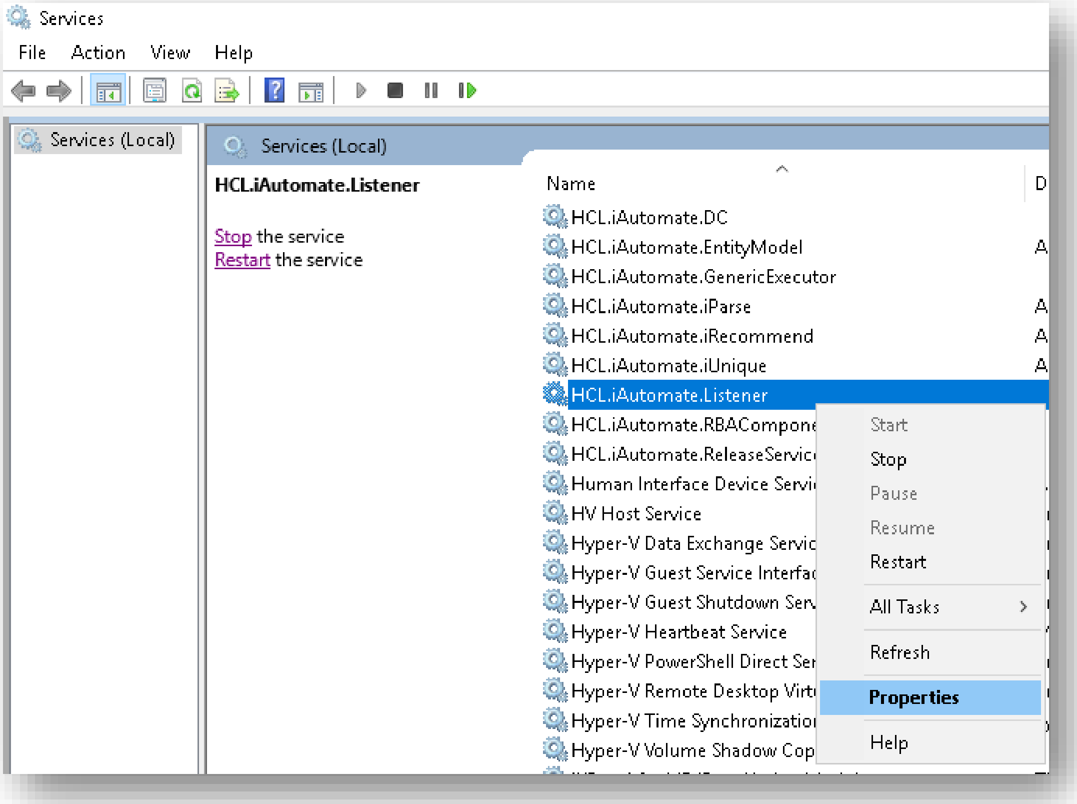
Description:
Apache/2.4.23 (Win64)
OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service
Capability Access Manager Service	Provides fac...		Manual	Local System
Certificate Propagation	Copies user ...	Running	Automatic	Local System
Cisco AnyConnect Network Access Manager	Establishes ...	Running	Automatic	Local System

Figure 54 – Load Balancer Configuration (Cont.)

19. Search for HCL.iAutomate.Listener.

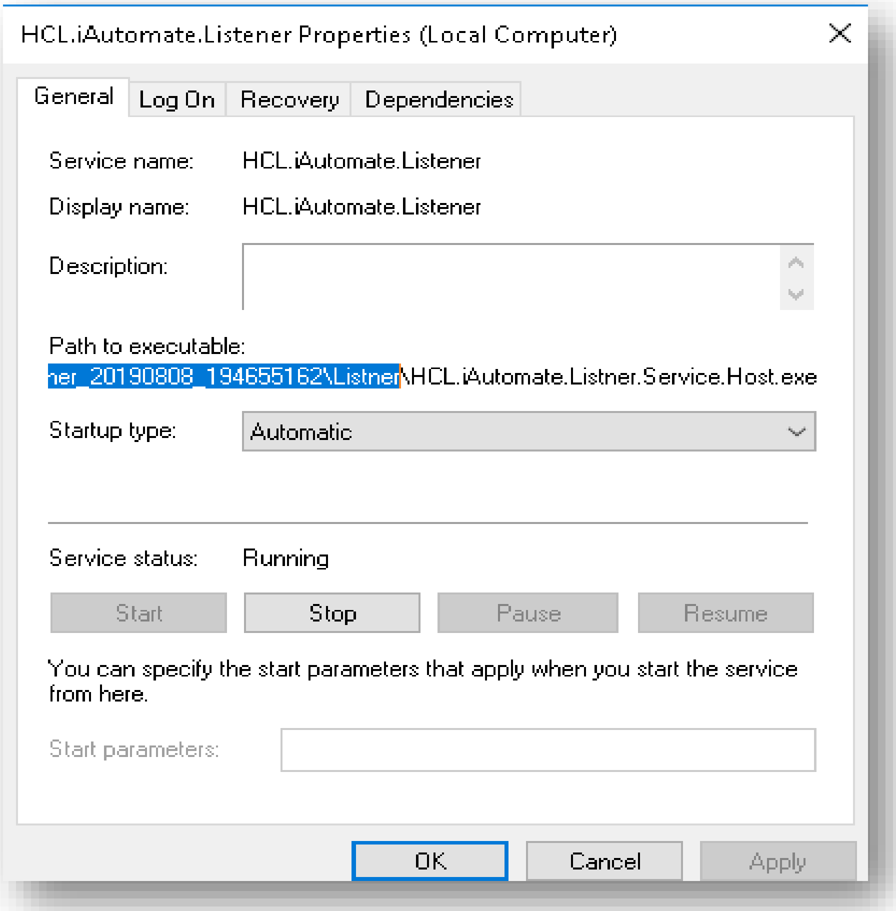
20. Right-click HCL.iAutomate.Listener service and click Properties.



Services
File Action View Help
Services (Local)
Services (Local)
HCL.iAutomate.Listener
Stop the service
Restart the service
Name
D
HCL.iAutomate.DC
HCL.iAutomate.EntityModel
HCL.iAutomate.GenericExecutor
HCL.iAutomate.iParse
HCL.iAutomate.iRecommend
HCL.iAutomate.iUnique
HCL.iAutomate.Listener
HCL.iAutomate.RBACompone
HCL.iAutomate.ReleaseServic
Human Interface Device Servi
HV Host Service
Hyper-V Data Exchange Servic
Hyper-V Guest Service Interfac
Hyper-V Guest Shutdown Serv
Hyper-V Heartbeat Service
Hyper-V PowerShell Direct Ser
Hyper-V Remote Desktop Virt
Hyper-V Time Synchronizatio
Hyper-V Volume Shadow Cop
Start
Stop
Pause
Resume
Restart
All Tasks
Refresh
Properties
Help

Figure 55 – Load Balancer Configuration (Cont.)

21. Copy the value mentioned in 'Path to executable' as shown in the image below:



HCL.iAutomate.Listener Properties (Local Computer)

Service name: HCL.iAutomate.Listener

Display name: HCL.iAutomate.Listener

Description:

Path to executable:
ner_20190808_194655162\Listner\HCL.iAutomate.Listner.Service.Host.exe

Startup type: Automatic

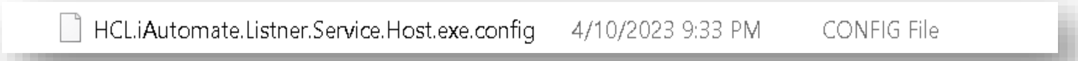
Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 56 – Low Balancer Configuration (Cont.)

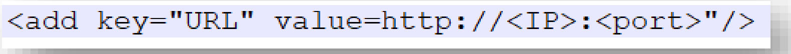
22. Open File Explorer and paste the copied path and press Enter to open the desired folder.
23. Search for HCL.iAutomate.Listner.Service.Host config file and open it in a Notepad.



HCL.iAutomate.Listner.Service.Host.exe.config 4/10/2023 9:33 PM CONFIG File

Figure 57 – Load Balancer Configuration (Cont.)

24. Within the HCL.iAutomate.Listner.Service.Host config file, search for the key 'URL' and replace the 'localhost:portnumber' with the *Load balancer IP* and *KRS Port*.



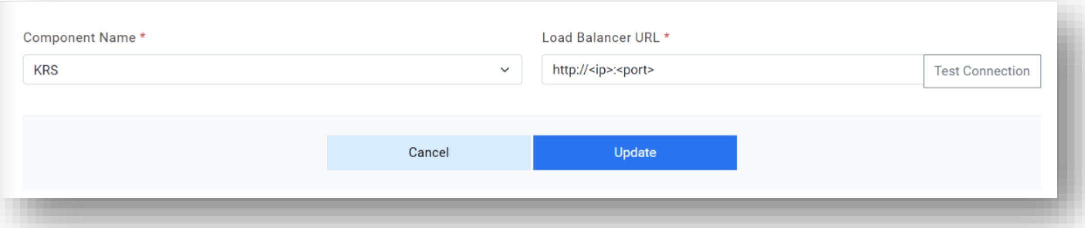
```
<add key="URL" value=http://<IP>:<port>"/>
```

Figure 58 – Load Balancer Configuration (Cont.)

25. Save the file for changes to be reflected.
26. Select the service and click Restart to restart the services.

Repeat the steps mentioned above on all the load balanced servers.

1. Login to iAutomate using the Super Admin credentials.
2. Roll-over the Advance Configuration and click Product Configuration.
3. Select Component Name as 'KRS'. Change the Load Balancer URL to the Load Balancer IP.



Component Name * KRS

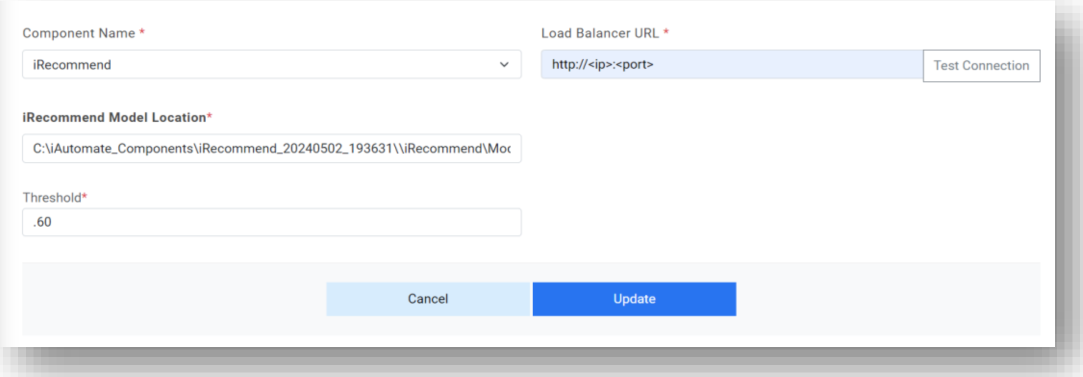
Load Balancer URL * http://<ip>:<port>

Figure 59 – Component Configuration

4. Click Update to save the changes.

Above step has to be repeated for all the components.

5. Additionally, for the Component Name i.e. Recommendation, provide the path of the shared drive location in the Recommendation Model Location field.



Component Name * iRecommend

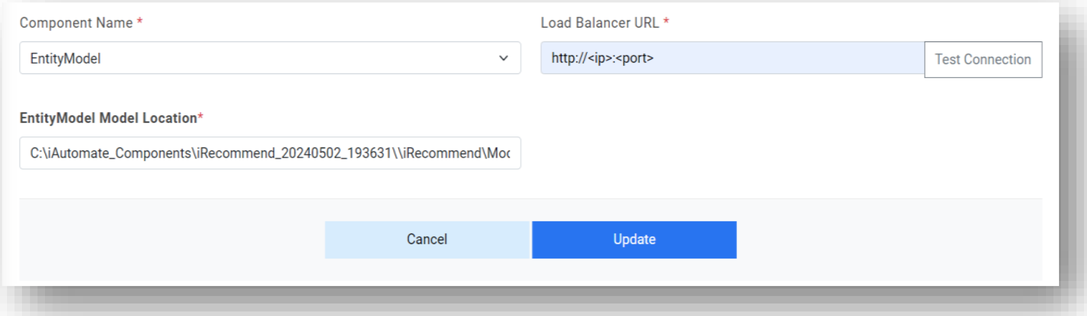
Load Balancer URL * http://<ip>:<port>

iRecommend Model Location* C:\iAutomate_Components\iRecommend_20240502_193631\\iRecommend\Moc

Threshold* .60

Figure 60 – Component Configuration (Cont.)

6. Click Update to save the changes.
7. Additionally, for the Component Name as Entity Model, provide the path of the shared drive location in the EntityModel Model Location field.



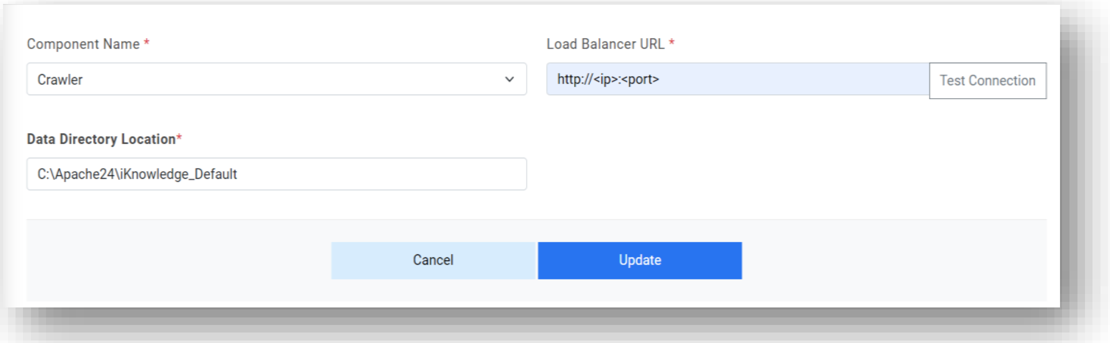
Component Name * EntityModel

Load Balancer URL * http://<ip>:<port>

EntityModel Model Location* C:\iAutomate_Components\iRecommend_20240502_193631\\iRecommend\Moc

Figure 61 – Component Configuration (Cont.)

8. Click Update to save the changes.
9. Additionally, for the Component Name i.e. Crawler, provide the path of the shared drive location in the Data Directory Location field.



Component Name *
Crawler

Load Balancer URL *
http://<ip>:<port>

Data Directory Location*
C:\Apache24\iKnowledge_Default

Figure 62 – Component Configuration (Cont.)

10. Click Update to save the changes.

4.4.4 Conclusion

After the conclusion of this exercise, you should have a thorough understanding of installation of iAutomate Web and Application components in High Availability mode.

Now, let's explore the installation procedure for other modes and scenarios.

4.5 Lab Exercise 4 – Installation of iAutomate with Document Search and Analysis in non-HA mode

4.5.1 Scenario

MyCompany organization has asked for installation of iAutomate in non-HA mode. They are looking for only ticket resolution automation along with Document Search and Analysis functionality. You are part of the implementation team who have been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing iAutomate with Document Search and Analysis in non-HA mode.

4.5.2 Prerequisites

- Hardware should be provisioned for a small environment (non-HA mode) as mentioned in the iAutomate Installation Guide – One Server for Web and Application Components, One Server for AI components and One Server for Database.
- All the prerequisites mentioned should be installed on the servers as mentioned in the prerequisite guide.
- Database credentials should be available.
- All the required ports should be opened.

- Connectivity between servers should be available.
- MongoDB and Solr access credentials should be available.
- The user should have "Write" permission on the Apache24 folder.
- The user should have access to the iAutomate installer exe.

4.5.3 Solution

Copy the installer on the both the servers meant for Web & Application components and AI components.

To install iAutomate components on Web and Application server, follow the steps mentioned in Lab Exercise 2.

1. To install the required components on AI server, locate **HCL_iAutomate_v6.4.1_Installer.exe** and click **Run** as Administrator to begin the installation. On running the installer, the following page appears.

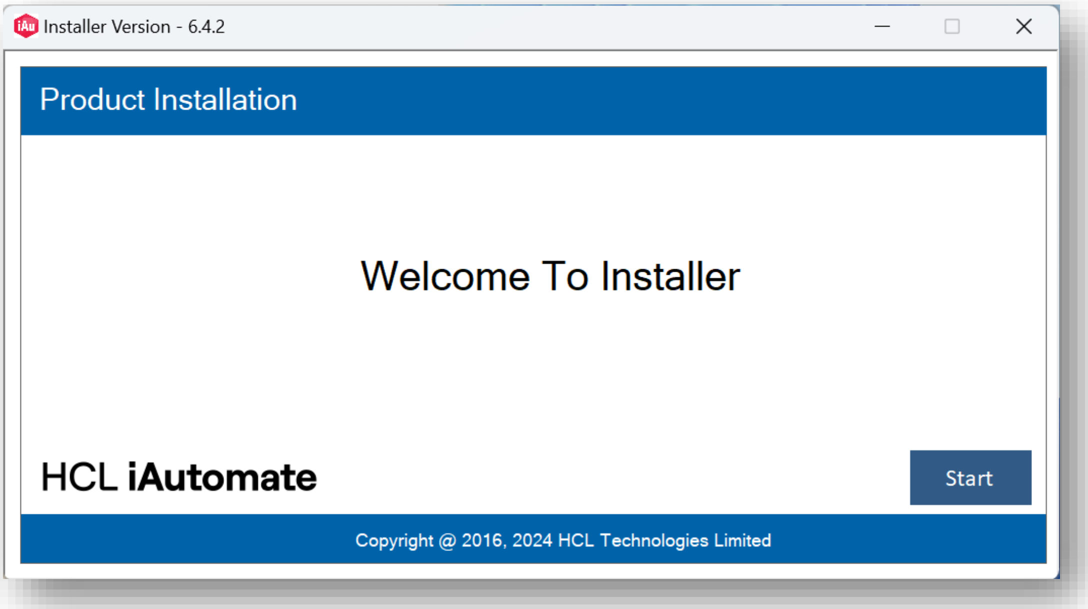
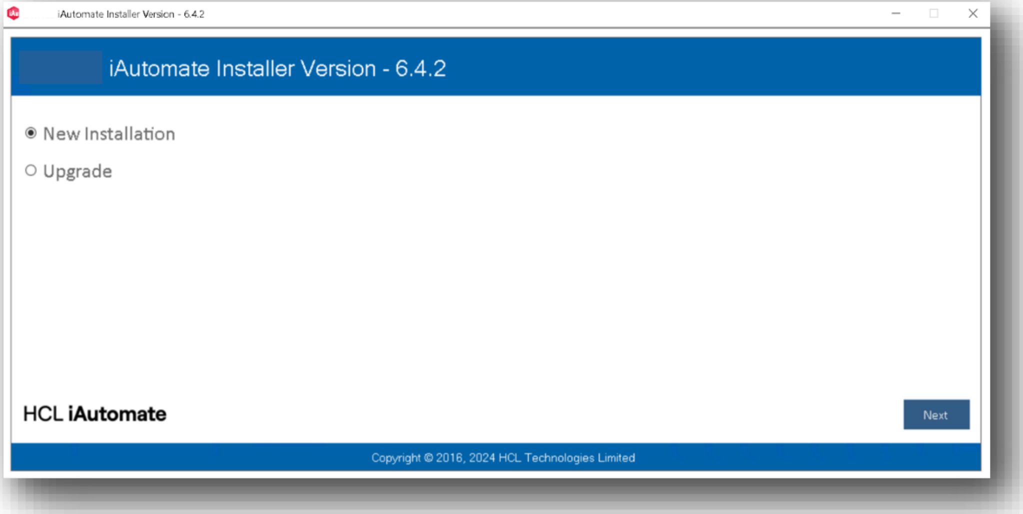

Installer Version - 6.4.2
Product Installation
Welcome To Installer
HCL iAutomate
Start
Copyright @ 2016, 2024 HCL Technologies Limited

Figure 63 – Run as Administrator

2. Click Start. It will extract required binaries; the following page appears.



iAutomate Installer Version - 6.4.2

iAutomate Installer Version - 6.4.2

● New Installation

○ Upgrade

Figure 64 – iAutomate Installation

3. Click Next.

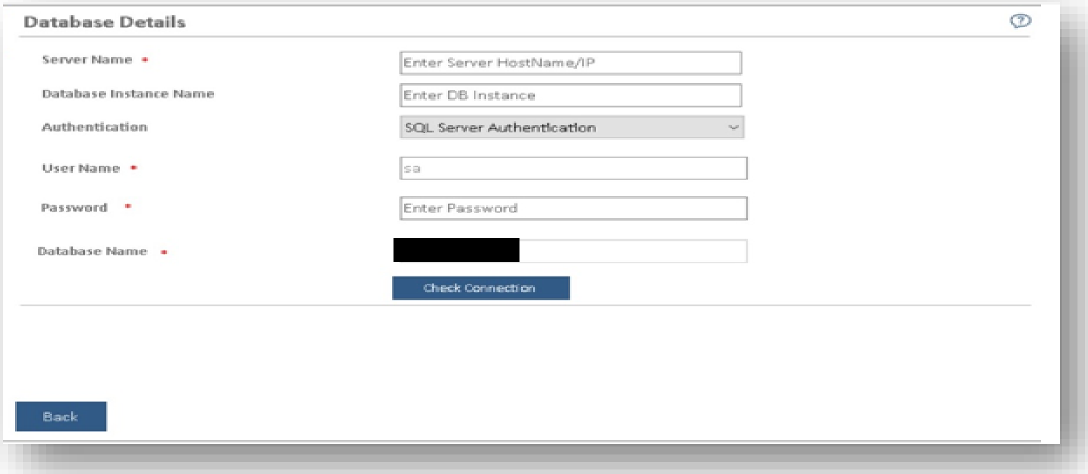
The page lists the setup required for installation in the left pane and the details of the selected setup in the right pane.

4. The next step is to populate the database details.

4.5.3.1 Database Details

For this exercise, the authentication type is considered as 'SQL Server Authentication' for database.

1. On the Database Details view, type the Server Name, and the Database Instance Name.
2. Select Authentication type as **'SQL Server Authentication'**.
3. In the Username and Password fields, type username and password to access the server.
4. In the Database Name field, Database Name is auto filled by default.
5. To check the connectivity to a server using the credentials provided, click Check Connection. This displays a message for Connection Success or Connection Failure.
6. Successful connection to the database enables the Next button.



Database Details

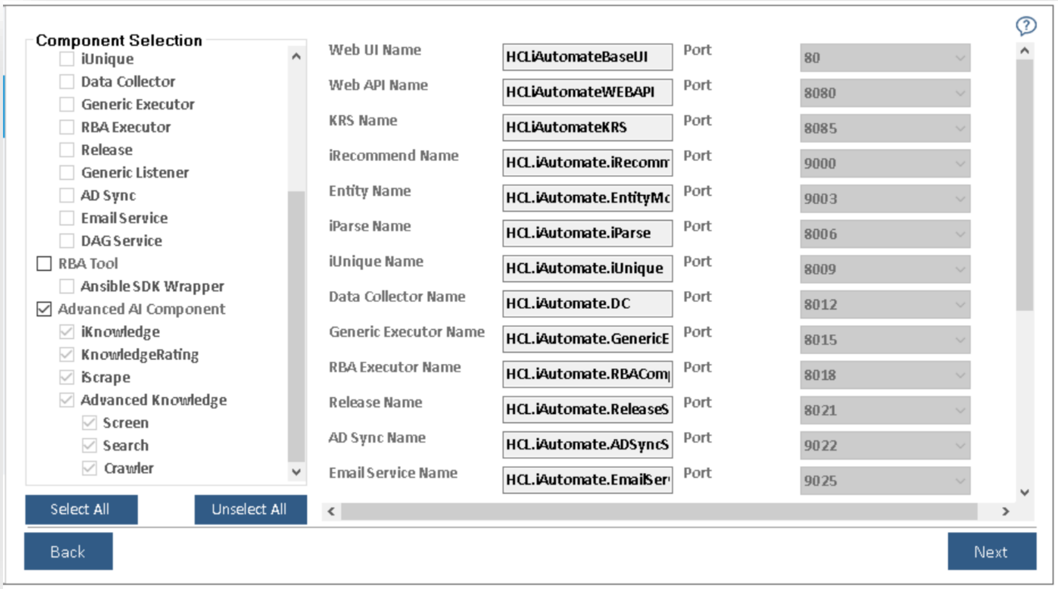
Server Name *	Enter Server HostName/IP
Database Instance Name	Enter DB Instance
Authentication	SQL Server Authentication
User Name *	sa
Password *	Enter Password
Database Name *	[redacted]

Figure 65 – Database Details

7. Click Next to get to the Component Selection view.

4.5.3.2 Component Selection

1. Under Component Selection, select Advanced AI Component.
2. Type Environment Name for identification purposes.



Component Selection

- ☐ iUnique
- ☐ Data Collector
- ☐ Generic Executor
- ☐ RBA Executor
- ☐ Release
- ☐ Generic Listener
- ☐ AD Sync
- ☐ Email Service
- ☐ DAG Service
- ☐ RBA Tool
- ☐ Ansible SDK Wrapper
- ☑ Advanced AI Component
  - ☑ iKnowledge
  - ☑ KnowledgeRating
  - ☑ iScrape
  - ☑ Advanced Knowledge
    - ☑ Screen
    - ☑ Search
    - ☑ Crawler

Web UI Name	HCLiAutomateBaseUI	Port	80
Web API Name	HCLiAutomateWEBAPI	Port	8080
KRS Name	HCLiAutomateKRS	Port	8085
iRecommend Name	HCL.iAutomate.iRecomm	Port	9000
Entity Name	HCL.iAutomate.EntityMc	Port	9003
iParse Name	HCL.iAutomate.iParse	Port	8006
iUnique Name	HCL.iAutomate.iUnique	Port	8009
Data Collector Name	HCL.iAutomate.DC	Port	8012
Generic Executor Name	HCL.iAutomate.GenericE	Port	8015
RBA Executor Name	HCL.iAutomate.RBACom	Port	8018
Release Name	HCL.iAutomate.ReleaseS	Port	8021
AD Sync Name	HCL.iAutomate.ADSyncS	Port	9022
Email Service Name	HCL.iAutomate.EmailSer	Port	9025

Figure 66 – Component Selection

The administrator can add or remove components based on their environment as decided during the planning phase.

3. Click Next, to continue with the installation.

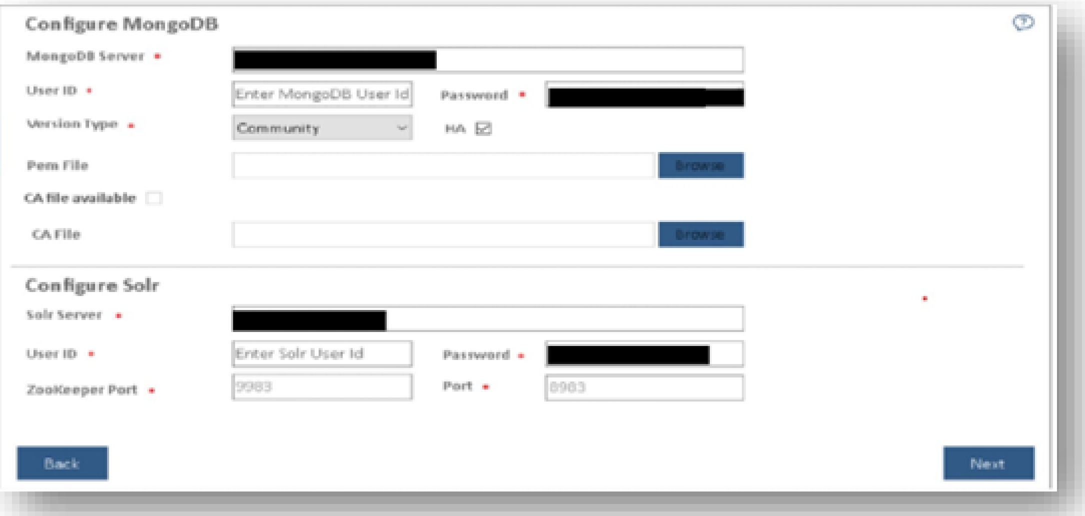
4.5.3.3 Configure MongoDB

1. Type the MongoDB Server Name (including the port details).

2. In the User ID and Password fields, type username and password to access the server.
3. Select the Version Type as Community.

4.5.3.4 Configure Solr

1. Type the Solr Server.
2. In the User ID and Password fields, type username and password to access the server.
3. The default ports are auto filled in the PORT field next to each component.



Configure MongoDB

MongoDB Server * [redacted]

User ID * Enter MongoDB User Id

Password * [redacted]

Version Type * Community

HA ☑

Pem File

CA file available □

CA File

Configure Solr

Solr Server * [redacted]

User ID * Enter Solr User Id

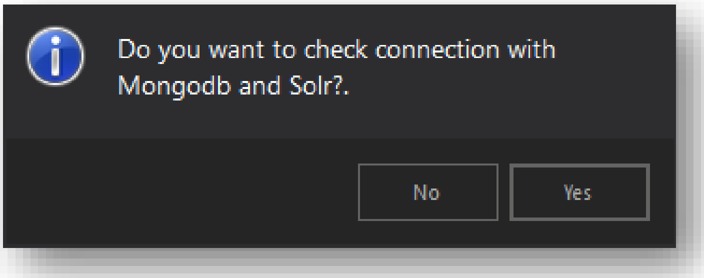
Password * [redacted]

ZooKeeper Port * 9983

Port * 8983

Figure 67 – Configure Mongo DB and Solr

4. Click Next. You will be prompted to check the connection status. Click Yes to proceed with the checking the connection status or No to continue with the Installation.



Do you want to check connection with Mongodb and Solr?.

Figure 68 – Configure Solr

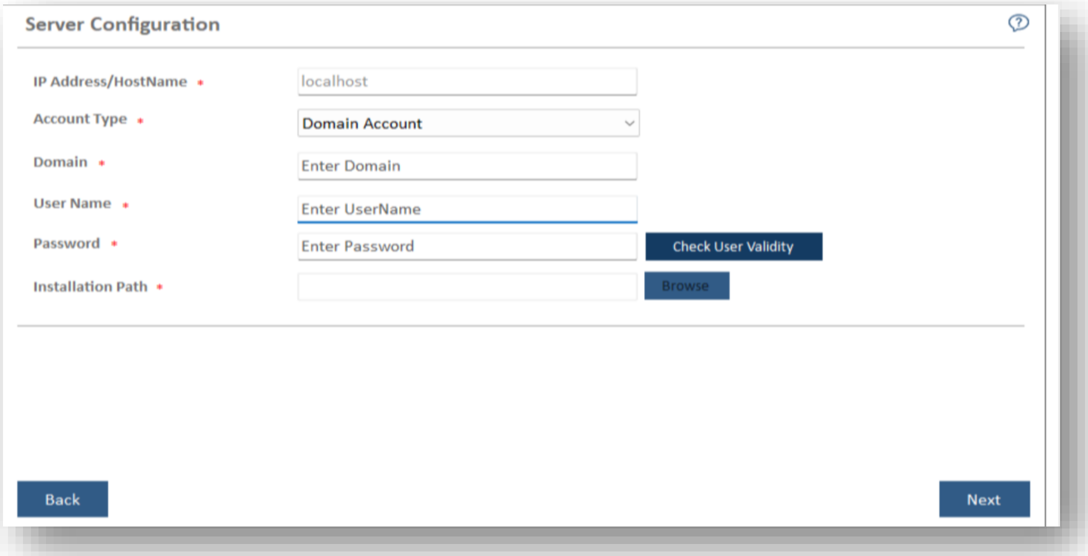
5. The Server Configuration page appears.

4.5.3.5 Server Configuration

1. The IP Address / Hostname is auto populated.
2. Select the Account Type as Domain Administrator.
3. Type in the organization domain in Domain field.
4. In the Username and Password fields, type the login credentials.
5. Click Check User Validity to ensure the following:

- User should be part of domain defined in field Domain Name
- User should have administrative privileges to install iAutomate components

6. Click Browse to specify the appropriate Installation Path to install the server components.
7. On successful connection to the server, a Validation Successful message appears beside the Password field.



Server Configuration

IP Address/HostName * localhost

Account Type * Domain Account

Domain * Enter Domain

User Name * Enter UserName

Password * Enter Password

Installation Path *

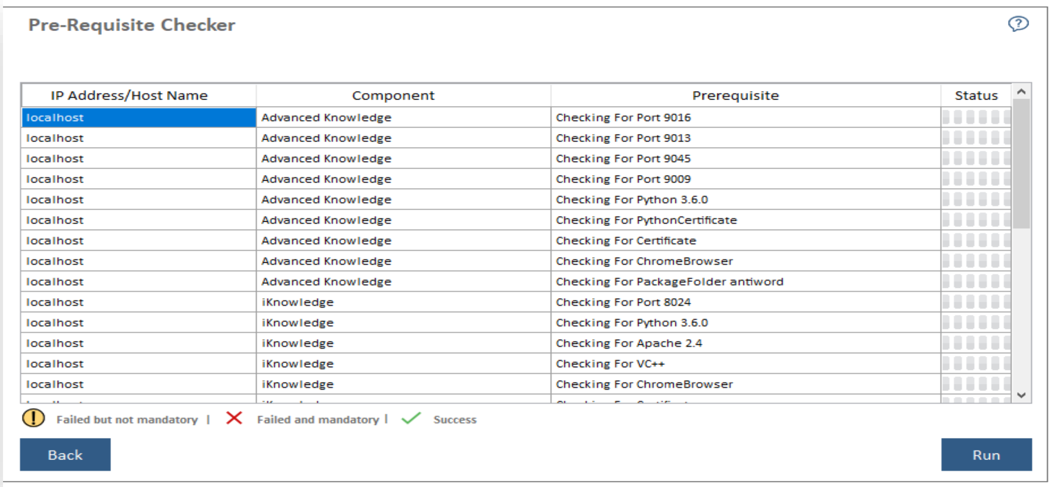
Figure 69 – Server Configuration

8. Click Next to get to the Pre-requisite Checker view.

4.5.3.6 Pre-requisite Checker

Pre-requisite Checker is responsible for checking if all iAutomate installation pre-requisites have been met before beginning the installation setup. It identifies all the missing pre-requisite software and utilities and highlights to the user. User will have to ensure that the identified pre-requisites are installed before proceeding further.

1. Click Run to begin the process.



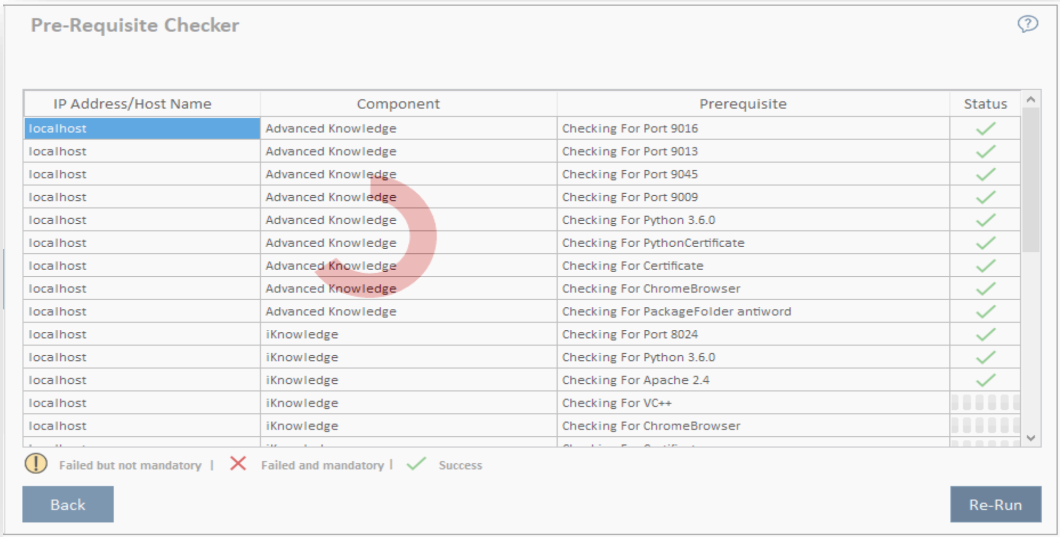
IP Address/Host Name	Component	Prerequisite	Status
localhost	Advanced Knowledge	Checking For Port 9016	
localhost	Advanced Knowledge	Checking For Port 9013	
localhost	Advanced Knowledge	Checking For Port 9045	
localhost	Advanced Knowledge	Checking For Port 9009	
localhost	Advanced Knowledge	Checking For Python 3.6.0	
localhost	Advanced Knowledge	Checking For PythonCertificate	
localhost	Advanced Knowledge	Checking For Certificate	
localhost	Advanced Knowledge	Checking For ChromeBrowser	
localhost	Advanced Knowledge	Checking For PackageFolder antiword	
localhost	iKnowledge	Checking For Port 8024	
localhost	iKnowledge	Checking For Python 3.6.0	
localhost	iKnowledge	Checking For Apache 2.4	
localhost	iKnowledge	Checking For VC++	
localhost	iKnowledge	Checking For ChromeBrowser	

! Failed but not mandatory | ✗ Failed and mandatory | ✓ Success

Figure 70 – Pre-Requisite Checker

The Pre-requisite Checker always runs as part of the iAutomate setup.

A progress bar appears while the Pre-Requisite Checker runs.

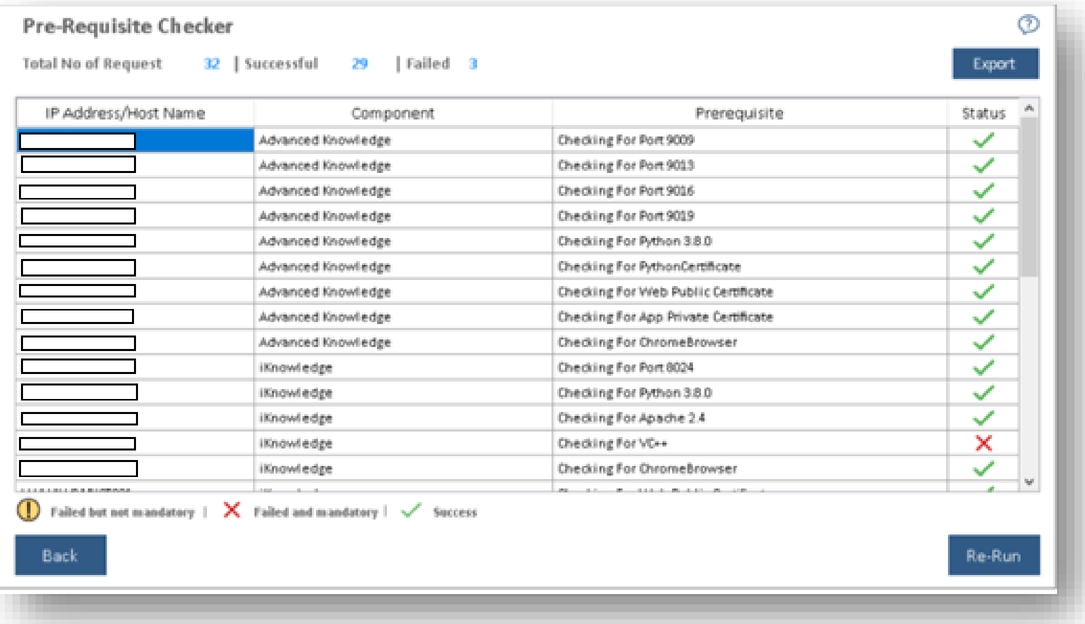


IP Address/Host Name	Component	Prerequisite	Status
localhost	Advanced Knowledge	Checking For Port 9016	✓
localhost	Advanced Knowledge	Checking For Port 9013	✓
localhost	Advanced Knowledge	Checking For Port 9045	✓
localhost	Advanced Knowledge	Checking For Port 9009	✓
localhost	Advanced Knowledge	Checking For Python 3.6.0	✓
localhost	Advanced Knowledge	Checking For PythonCertificate	✓
localhost	Advanced Knowledge	Checking For Certificate	✓
localhost	Advanced Knowledge	Checking For ChromeBrowser	✓
localhost	Advanced Knowledge	Checking For PackageFolder antiword	✓
localhost	iKnowledge	Checking For Port 8024	✓
localhost	iKnowledge	Checking For Python 3.6.0	✓
localhost	iKnowledge	Checking For Apache 2.4	✓
localhost	iKnowledge	Checking For VC++	
localhost	iKnowledge	Checking For ChromeBrowser	

! Failed but not mandatory | ✗ Failed and mandatory | ✓ Success

Figure 71 – Pre-Requisite Checker (Cont.)

2. In the Status column, each pre-requisite is marked as Success or Failure.



Pre-Requisite Checker

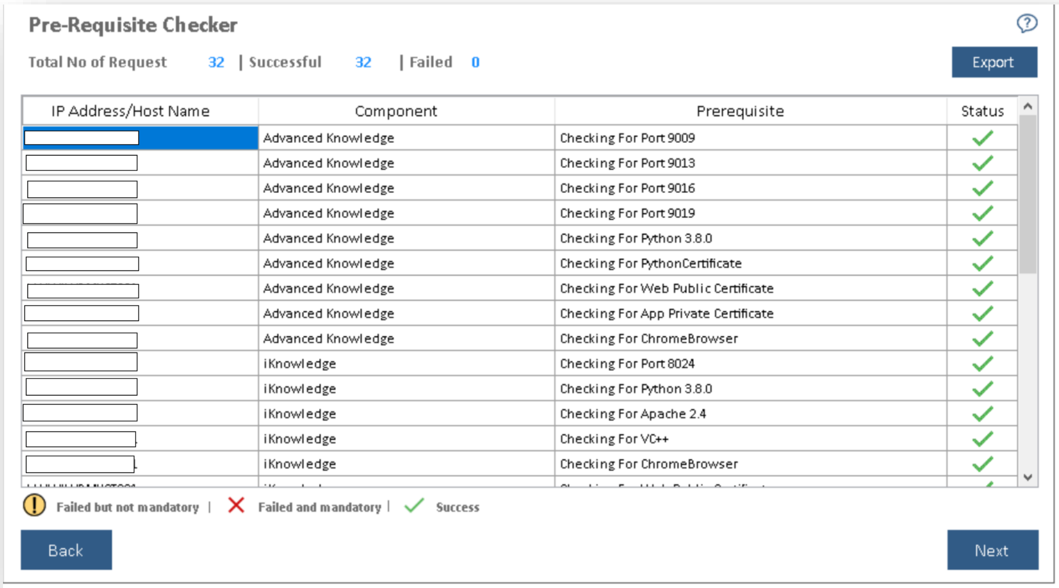
Total No of Request 32 | Successful 29 | Failed 3

IP Address/Host Name	Component	Prerequisite	Status
[redacted]	Advanced Knowledge	Checking For Port 9009	✓
[redacted]	Advanced Knowledge	Checking For Port 9013	✓
[redacted]	Advanced Knowledge	Checking For Port 9016	✓
[redacted]	Advanced Knowledge	Checking For Port 9019	✓
[redacted]	Advanced Knowledge	Checking For Python 3.8.0	✓
[redacted]	Advanced Knowledge	Checking For PythonCertificate	✓
[redacted]	Advanced Knowledge	Checking For Web Public Certificate	✓
[redacted]	Advanced Knowledge	Checking For App Private Certificate	✓
[redacted]	Advanced Knowledge	Checking For ChromeBrowser	✓
[redacted]	iKnowledge	Checking For Port 8024	✓
[redacted]	iKnowledge	Checking For Python 3.8.0	✓
[redacted]	iKnowledge	Checking For Apache 2.4	✓
[redacted]	iKnowledge	Checking For VC++	✗
[redacted]	iKnowledge	Checking For ChromeBrowser	✓

Failed but not mandatory | ✗ Failed and mandatory | ✓ Success
Back
Re-Run

Figure 72 – Pre-Requisite Checker (Cont.)

3. In case of Failure, Re-Run button appears. Please ensure that the identified issue is resolved and re-run the pre-requisite checker.
4. Please refer to the case failure as mentioned in figure. Here VC++ software is missing on the software. Simply install the software from the available pre-requisite's software.
5. Upon successful validation of all pre-requisites, Next is enabled.
6. Click Next to get to the Configure Admin Details view.



Pre-Requisite Checker

Total No of Request 32 | Successful 32 | Failed 0

IP Address/Host Name	Component	Prerequisite	Status
[redacted]	Advanced Knowledge	Checking For Port 9009	✓
[redacted]	Advanced Knowledge	Checking For Port 9013	✓
[redacted]	Advanced Knowledge	Checking For Port 9016	✓
[redacted]	Advanced Knowledge	Checking For Port 9019	✓
[redacted]	Advanced Knowledge	Checking For Python 3.8.0	✓
[redacted]	Advanced Knowledge	Checking For PythonCertificate	✓
[redacted]	Advanced Knowledge	Checking For Web Public Certificate	✓
[redacted]	Advanced Knowledge	Checking For App Private Certificate	✓
[redacted]	Advanced Knowledge	Checking For ChromeBrowser	✓
[redacted]	iKnowledge	Checking For Port 8024	✓
[redacted]	iKnowledge	Checking For Python 3.8.0	✓
[redacted]	iKnowledge	Checking For Apache 2.4	✓
[redacted]	iKnowledge	Checking For VC++	✓
[redacted]	iKnowledge	Checking For ChromeBrowser	✓

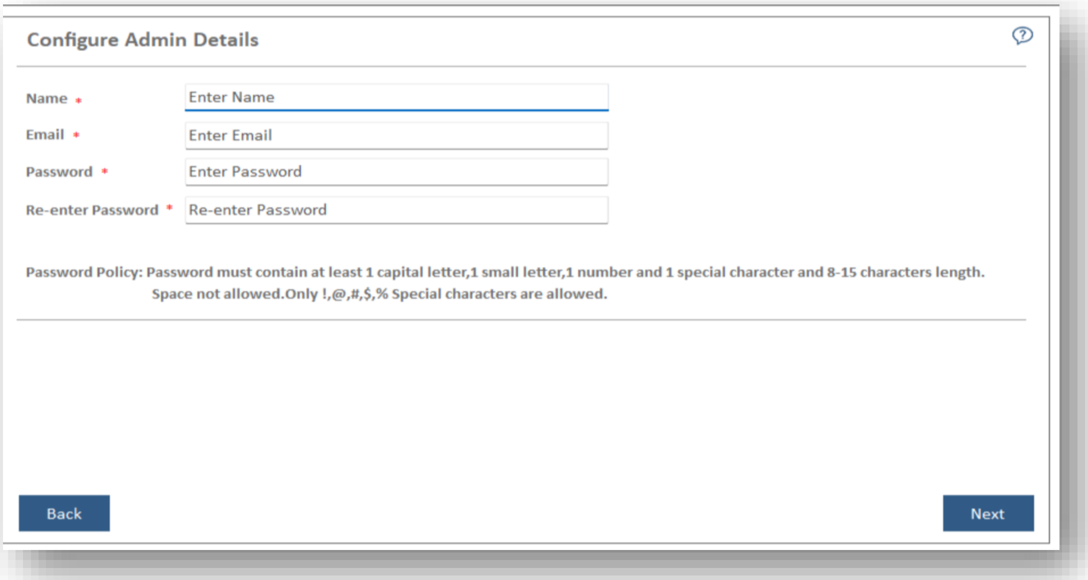
Failed but not mandatory | ✗ Failed and mandatory | ✓ Success
Back
Next

Figure 73 – Pre-Requisite Checker (Cont.)

4.5.3.7 Configure Admin Details

To configure Super Administrator user for iAutomate, perform the below steps:

1. Type the new administrator's Name, Email and Password.
2. Enter the same password again in Re-enter Password field.



Configure Admin Details

Name *	Enter Name
Email *	Enter Email
Password *	Enter Password
Re-enter Password *	Re-enter Password

Password Policy: Password must contain at least 1 capital letter,1 small letter,1 number and 1 special character and 8-15 characters length. Space not allowed.Only !,@,#,$,% Special characters are allowed.

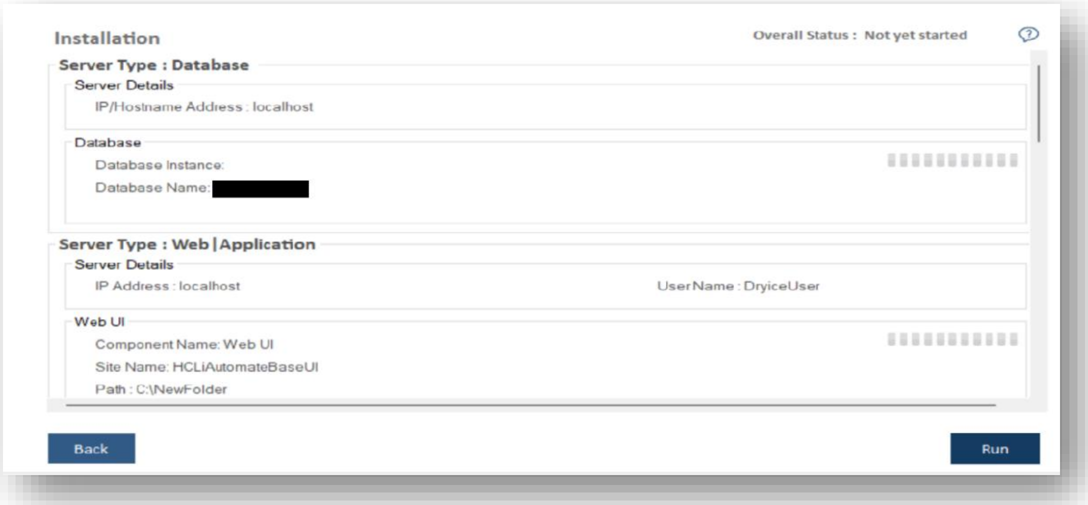
Figure 74 – Configure Admin Details

If the database provided in the Database Setup already exists at the time of installation, then the Configure Admin Details page will remain unavailable.

3. Click Next to review the information provided so far.

4.5.3.8 Installation

1. Before proceeding with installation, review the information provided so far. To make any changes, click Back to go back to previous views.
2. Click Run to begin the installation process.



Installation

Overall Status : Not yet started

Server Type : Database

Server Details

IP/Hostname Address : localhost

Database

Database Instance:

Database Name: [redacted]

Server Type : Web | Application

Server Details

IP Address : localhost

UserName : DryiceUser

Web UI

Component Name: Web UI

Site Name: HCLiAutomateBaseUI

Path : C:\NewFolder

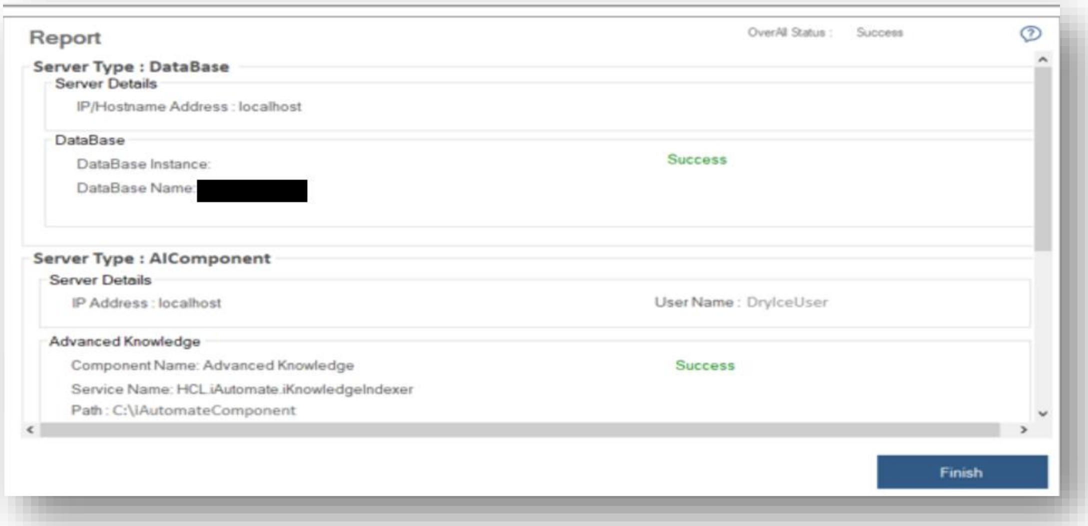
Figure 75 – Installation

The progress bar displays the installation progress.

3. In case of any installation failure, error messages for the corresponding component appear on the screen. Click Rollback button to uninstall the components and re-run the Installer after resolving the issues. To perform the cleanup, delete all the folders manually on the servers' installation path provided earlier. If there are any iAutomate services still running, remove them manually.

Contact the product team administrator for further assistance.

4. Once the installation is successful, the Finish button appears.



Report

OverAll Status : Success

Server Type : DataBase

Server Details

IP/Hostname Address : localhost

DataBase

DataBase Instance:

DataBase Name: [redacted]

Success

Server Type : AIComponent

Server Details

IP Address : localhost

User Name : DryIceUser

Advanced Knowledge

Component Name: Advanced Knowledge

Service Name: HCL.iAutomate.iKnowledgeIndexer

Path : C:\iAutomateComponent

Success

Figure 76 – Installation Report

5. Click Finish to complete the installation process.

4.5.4 Conclusion

After the conclusion of this exercise, you should have a thorough understanding of installation of iAutomate Web, Application and Advanced AI components for a small environment in non-HA mode.

Now, let's explore the installation procedure for other modes and scenarios.

4.6 Lab Exercise 5 – Installation of iAutomate with Document Search and Analysis in HA mode

4.6.1 Scenario

MyCompany organization has asked for installation of iAutomate in HA mode. They are looking for ticket resolution automation along with Document Search and Analysis functionality. You are part of the implementation team who have been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing iAutomate with Document Search and Analysis in HA mode.

4.6.2 Prerequisites

- Hardware should be provisioned for a small environment (HA mode) as mentioned in the iAutomate Installation Guide – Two servers for Web & Application components, two servers for Advanced AI components, two servers for database with cluster enabled, three Servers for MongoDB and five servers for Solr.
- All the prerequisites mentioned should be installed on the servers as mentioned in the prerequisite guide.
- Database credentials should be available.
- All the required ports should be enabled.
- Connectivity between servers should be available.
- MongoDB and Solr access credentials should be available.
- The user should have "Write" permission on the Apache24 folder.
- The user should have access to the iAutomate installer exe.

4.6.3 Solution

1. Copy the installer on all the servers meant for Web and Application components, and Advanced AI Components.
2. To install the Web and Application components on Web and Application server, follow the steps mentioned in Lab Exercise 2. Run the installer on both the servers.
3. To install the Advanced AI components on AI Server, follow the steps mentioned in Lab Exercise 4. Run the installer on both the servers.
4. To perform the load balancer configuration, follow the steps mentioned in Lab Exercise 3.

4.6.4 Conclusion

Post the conclusion of this exercise, you will have a thorough understanding of installation of iAutomate Web, Application and Advanced AI components for a small environment in HA mode.

Now, let's explore the procedure for deploying all the components in a secure mode by converting them from HTTP to HTTPS in the next exercise.

4.7 Lab Exercise 6 – Deployment of iAutomate components in a secure mode by changing HTTP to HTTPS

4.7.1 Scenario

MyCompany organization has asked for deployment of iAutomate with all its features and functionalities in a secure mode. This entails conversion of all the components from HTTP to HTTPS.

In this lab, we will showcase the detailed procedure for converting all the components from HTTP to HTTPS.

4.7.2 Prerequisites

- Availability of servers with all components installed
- Database credentials should be available

4.7.3 Solution

4.7.3.1 Enable Secure Communication (Changing HTTP to HTTPS)

This section describes how to enable secure communication by changing HTTP to HTTPS. It can be enabled for both the iAutomate website and the deployed components.

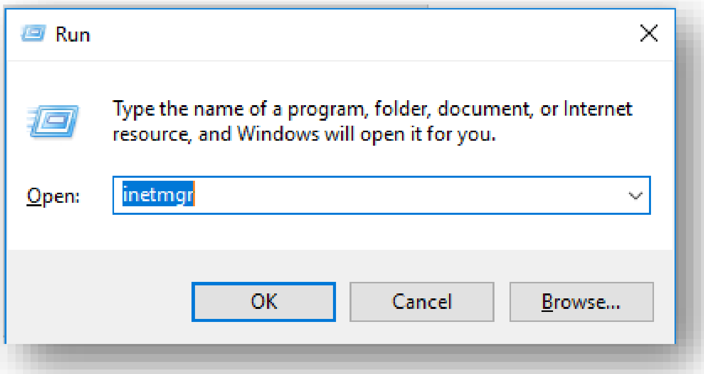
4.7.3.1.1 Website Only

This section describes how to enable the secure communication by changing HTTP to HTTPS for the iAutomate website.
Following changes are required in the underlying components to achieve the same:

Key Rotation Service (KRS)

To change the hosting of KRS from HTTP to HTTPS using the existing certificate, for e.g. 'HCL.iAutomate', please follow the below steps:

1. Press Win+R and type inetmgr.
2. Click OK to open IIS.



Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: inetmgr

Figure 77 – Hosting KRS from HTTP to HTTPS

3. Expand Sites and click HCLiAutomateKRS.

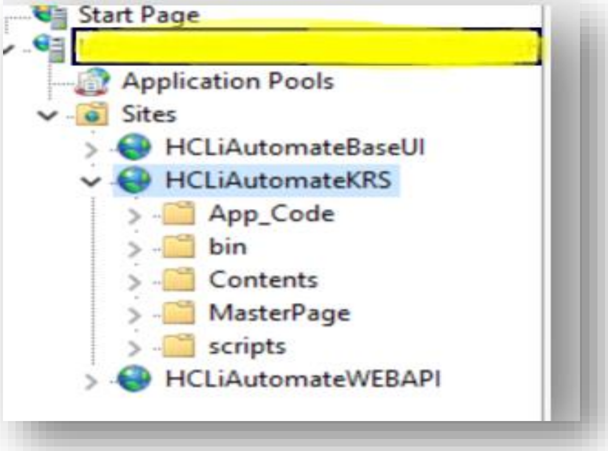


Figure 78 - Hosting KRS from HTTP to HTTPS (Cont.)

4. Click Bindings in the Edit Site section.

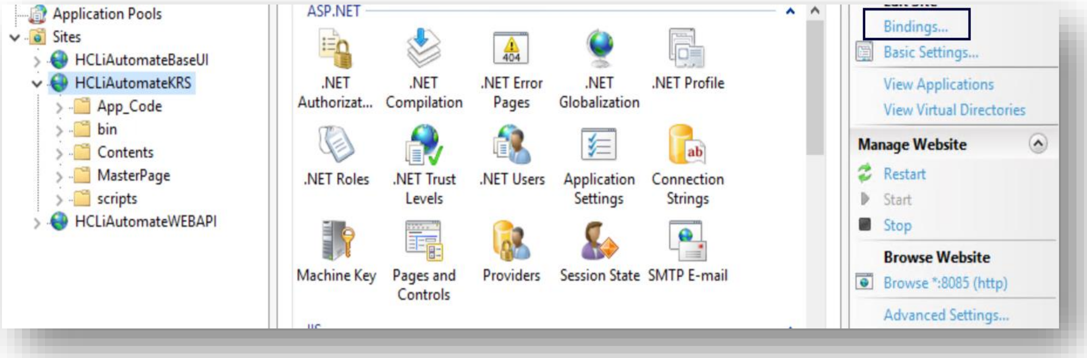
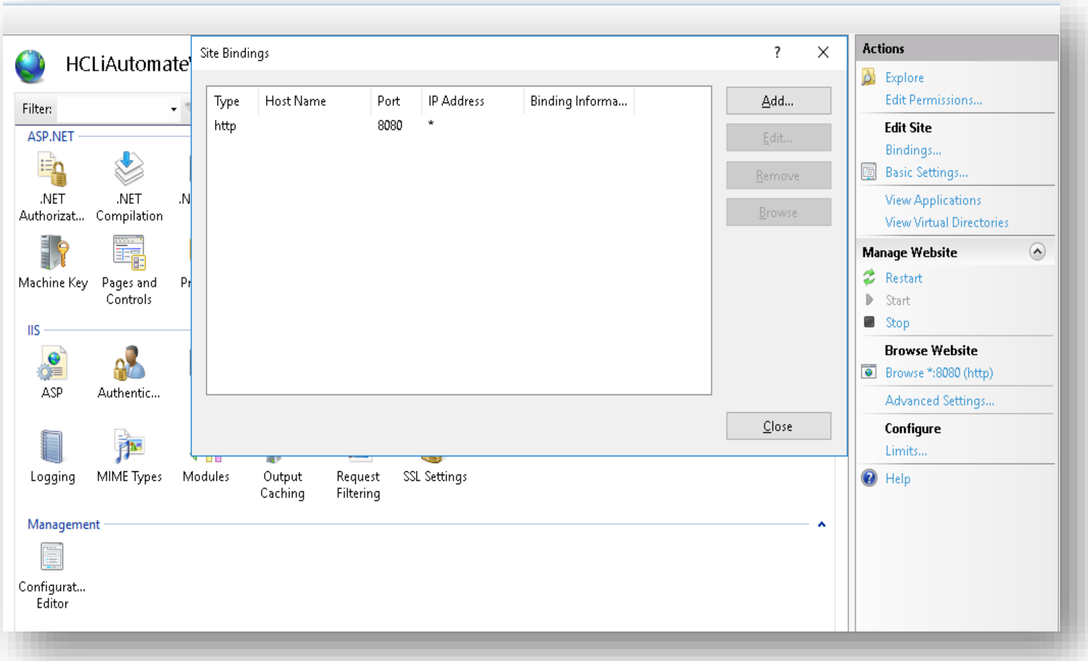


Figure 79 - Hosting KRS from HTTP to HTTPS (Cont.)

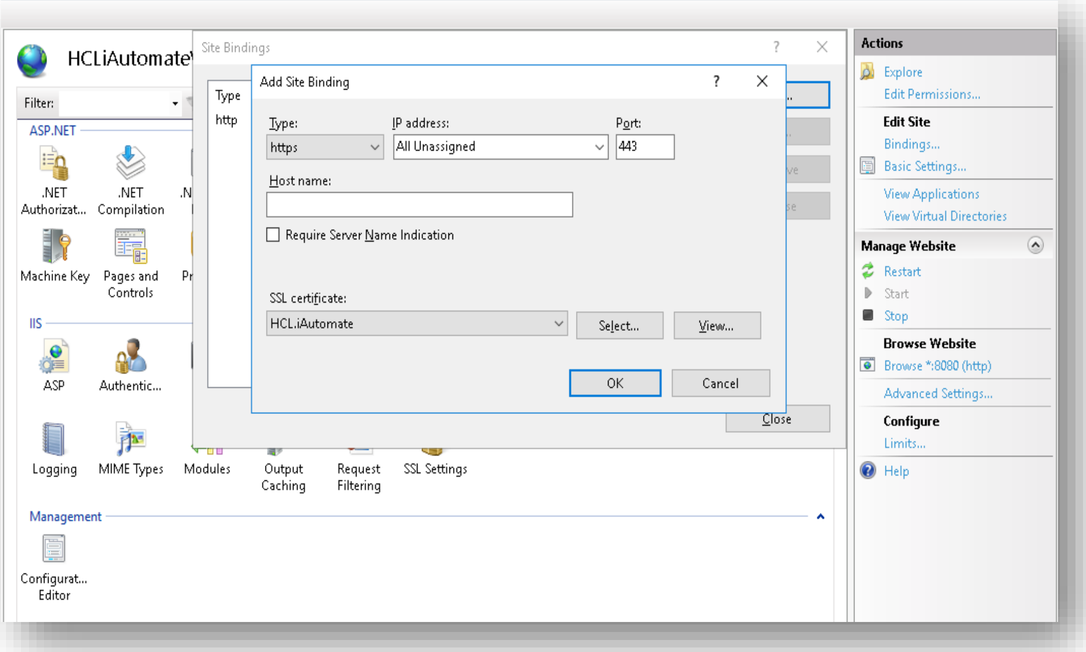


Site Bindings

Type	Host Name	Port	IP Address	Binding Informa...
http		8080	*	

Figure 80 - Hosting KRS from HTTP to HTTPS (Cont.)

5. Click Add New.
6. Select Type as 'https.' Port information is automatically populated. Select the SSL Certificate.
7. Click OK.



Add Site Binding

Type: https

IP address: All Unassigned

Port: 443

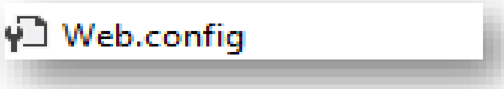
Host name:

☐ Require Server Name Indication

SSL certificate: HCL.iAutomate

Figure 81 - Hosting KRS from HTTP to HTTPS (Cont.)

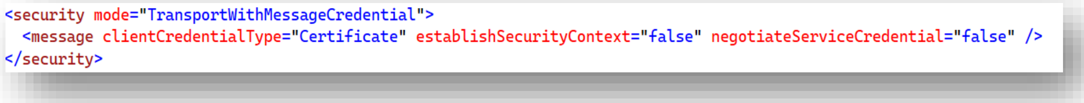
8. Select HCLiAutomateKRS
9. Right click and select Explore.
10. Find Web.config file and open it in a Notepad.



Web.config

Figure 82 - Hosting KRS from HTTP to HTTPS (Cont.)

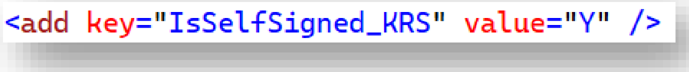
11. Within the Web.config file, find the tag *<security>* and change it to *<security mode= "TransportWithMessageCredential">*.



```
<security mode="TransportWithMessageCredential">
  <message clientCredentialType="Certificate" establishSecurityContext="false" negotiateServiceCredential="false" />
</security>
```

Figure 83 - Hosting KRS from HTTP to HTTPS (Cont.)

12. If the certificate is self-signed, find the key IsSelfSigned and change its value to Y. Else, the value will be N.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

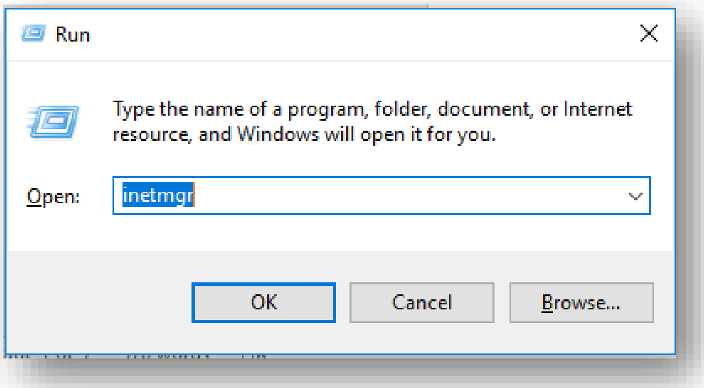
Figure 84 - Hosting KRS from HTTP to HTTPS (Cont.)

13. Save the file for changes to be reflected.
14. Select the service and click Restart to restart the services.

Base User interface

To change the hosting of BaseUI from HTTP to HTTPS using the existing certificate, for e.g. 'HCL.iAutomate', please follow the below steps:

1. Press Win+R and type inetmgr.
2. Click OK to open IIS.



Run

Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: inetmgr

Figure 85 – Hosting Base User Interface from HTTP to HTTPS

3. Expand Sites and click HCLiAutomateBaseUI.

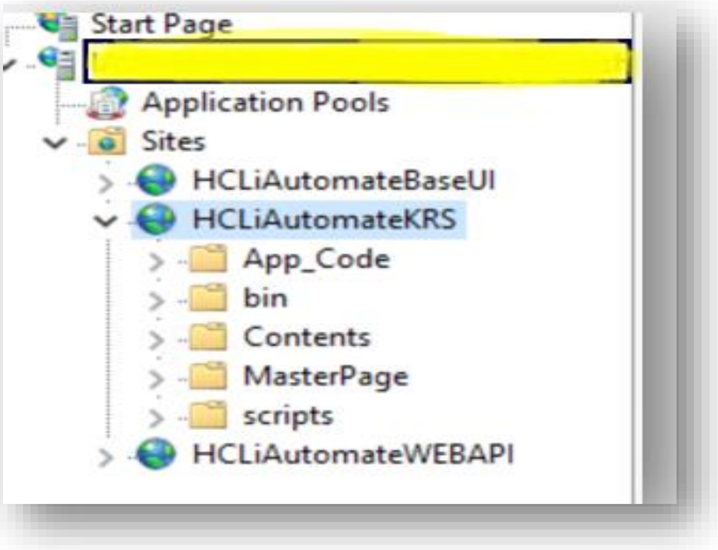


Figure 86 – Hosting Base User Interface from HTTP to HTTPS (Cont.)

4. Click Bindings in the Edit Site section.

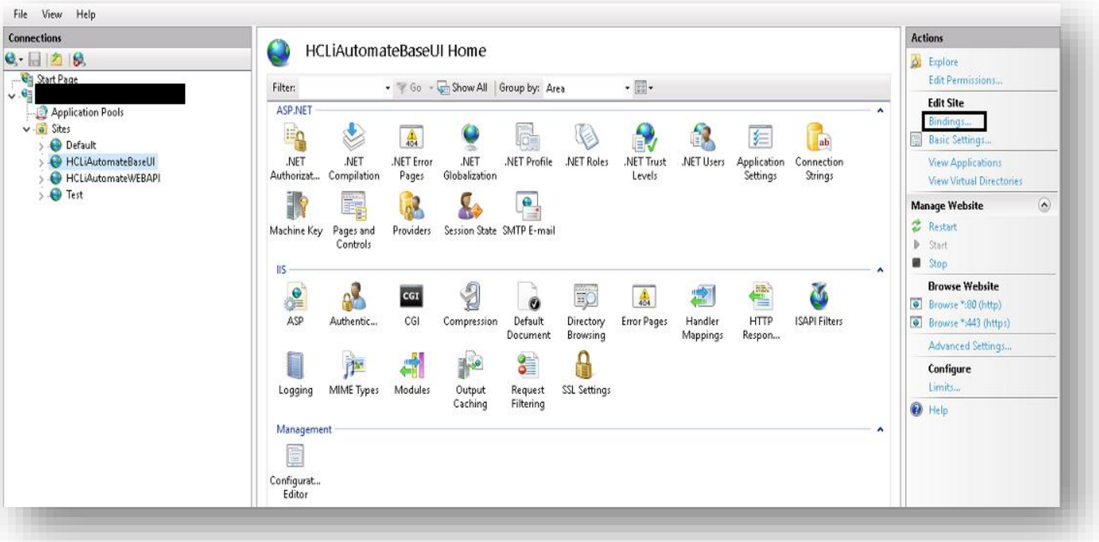
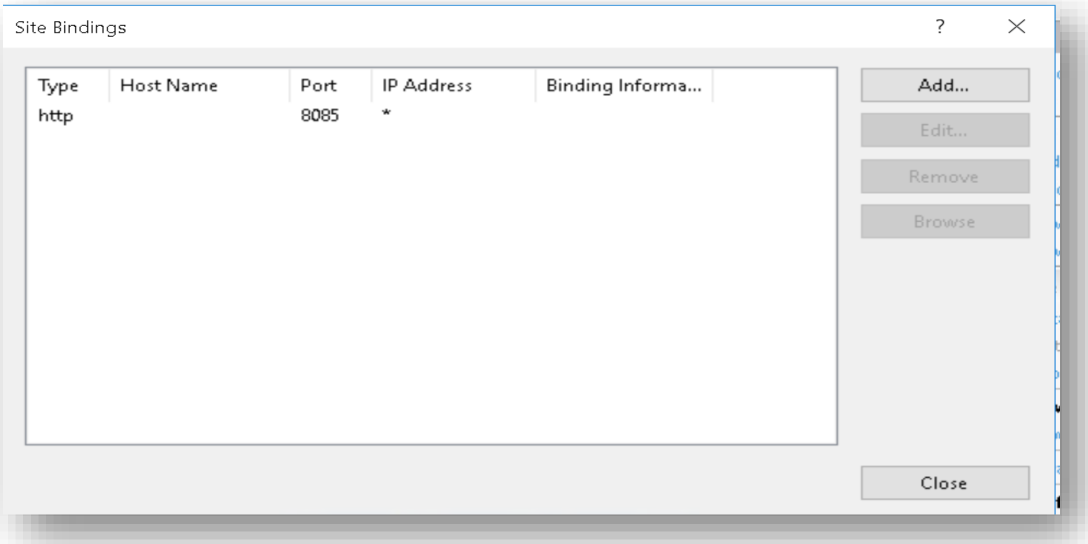


Figure 87 - Hosting Base User Interface from HTTP to HTTPS (Cont.)

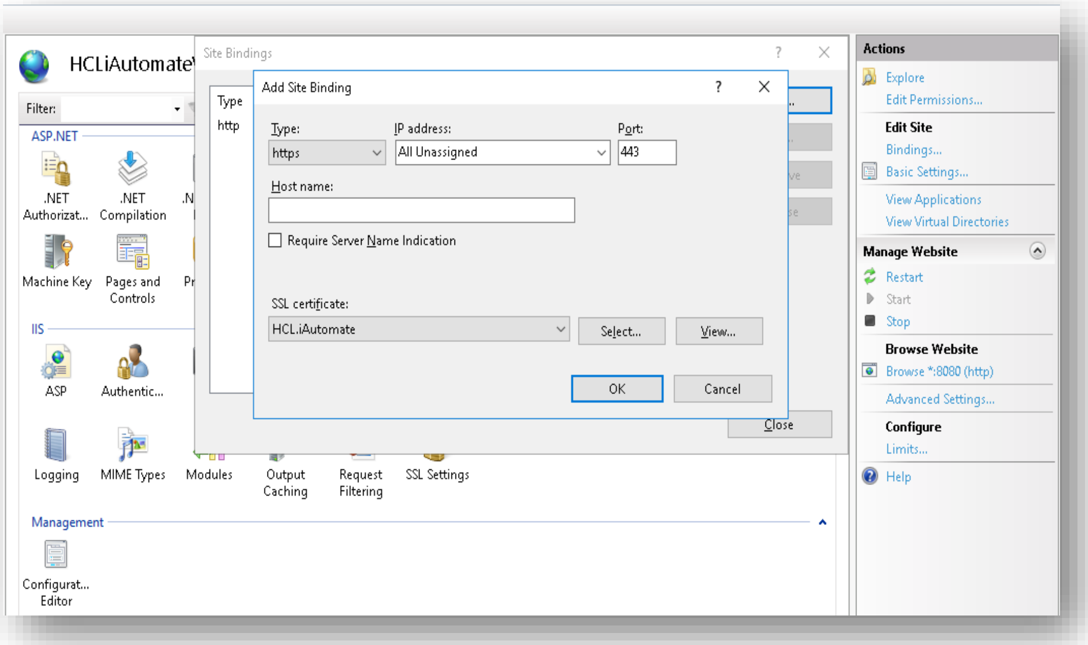


Site Bindings

Type	Host Name	Port	IP Address	Binding Informa...
http		8085	*	

Figure 88 - Hosting Base User Interface from HTTP to HTTPS (Cont.)

5. Click Add New.
6. Select Type as https. Port information gets populated automatically. Select the SSL Certificate.
7. Click OK.



Add Site Binding

Type: https

IP address: All Unassigned

Port: 443

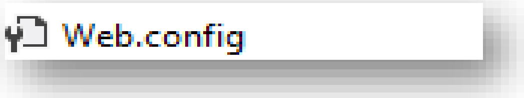
Host name:

☐ Require Server Name Indication

SSL certificate: HCL.iAutomate

Figure 89 - Hosting Base User Interface from HTTP to HTTPS (Cont.)

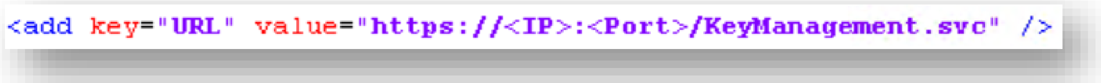
8. Right-click HCLiAutomateBaseUI and click Explore.
9. Find Web.config file and open it in a Notepad.



```
Web.config
```

Figure 90 - Hosting Base User Interface from HTTP to HTTPS (Cont.)

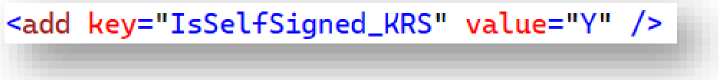
10. Within the Web.config file, find the key URL and change its value from HTTP to HTTPS.



```
<add key="URL" value="https://<IP>:<Port>/KeyManagement.svc" />
```

Figure 91 - Hosting Base User Interface from HTTP to HTTPS (Cont.)

11. If the certificate is self-signed, find the key IsSelfSigned and change its value to 'Y'. Else, the value will be 'N'.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

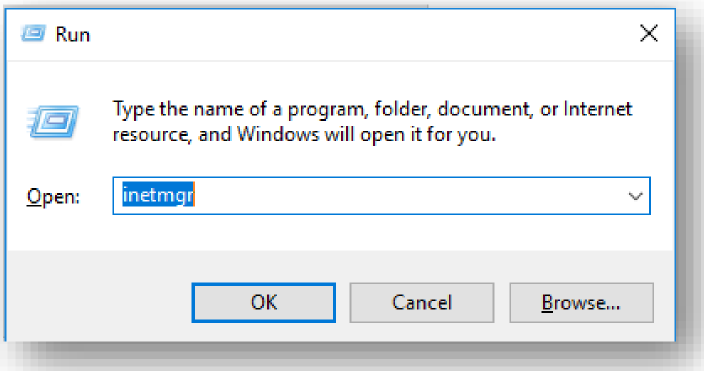
Figure 92 - Hosting Base User Interface from HTTP to HTTPS (Cont.)

12. Save the file for changes to be reflected.
13. Select the service and click Restart to restart the services.

Web API

To change the hosting of Web API from HTTP to HTTPS using the existing certificate, for e.g. 'HCL.iAutomate', please follow the below steps:

1. Press Win+R and type inetmgr.
2. Click OK to open IIS.



Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: inetmgr

Figure 93 – Hosting Web API from HTTP to HTTPS

3. Expand Sites and right-click HCLiAutomateWEBAPI.
4. Click Explore.

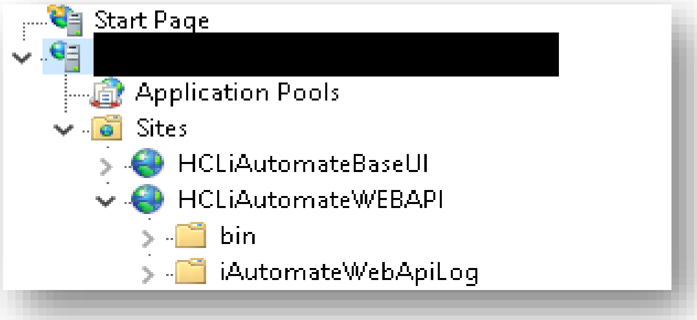


Figure 94 – Hosting Web API from HTTP to HTTPS (Cont.)

5. Find Web.config file and open it in a Notepad.

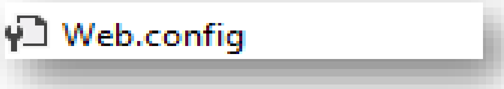
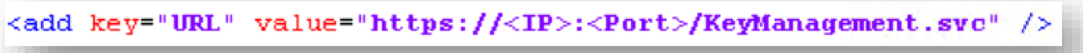


Figure 95 – Hosting Web API from HTTP to HTTPS (Cont.)

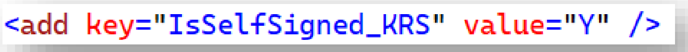
6. Within the Web.config file, find the key 'URL' and change its value from HTTP to HTTPS.



```
<add key="URL" value="https://<IP>:<Port>/KeyManagement.svc" />
```

Figure 96 – Hosting Web API from HTTP to HTTPS (Cont.)

7. If the certificate is self-signed, find the key IsSelfSigned and change its value to 'Y'. Else, the value will be 'N'.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

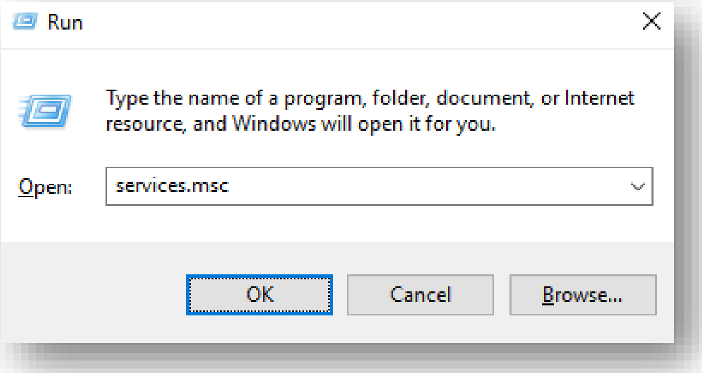
Figure 97 – Hosting Web API from HTTP to HTTPS (Cont.)

8. Save the file for changes to be reflected.
9. Select the service and click Restart to restart the services.

Listener

To change the configuration of the Listener from HTTP to HTTPS, please follow the below steps:

1. Press Win+R and type services.msc.

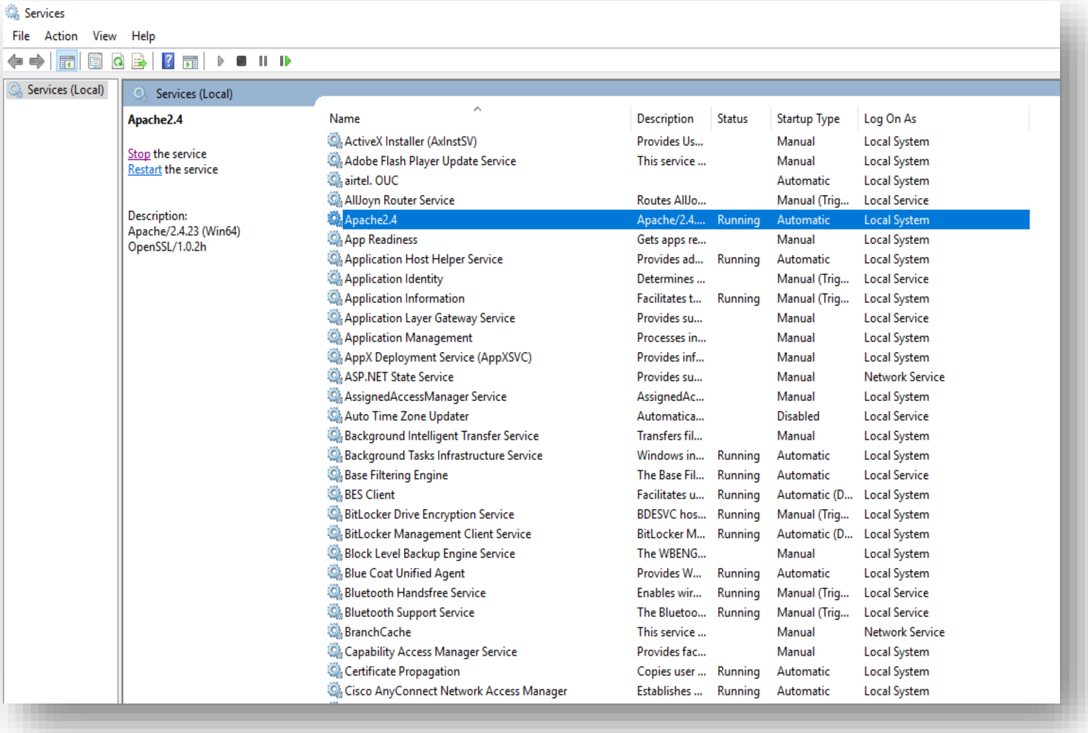


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 98 – Hosting Listener from HTTP to HTTPS

2. Click OK to open the Windows Services.



Apache2.4

Description:
Apache/2.4.23 (Win64) OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service
Capability Access Manager Service	Provides fac...		Manual	Local System
Certificate Propagation	Copies user ...	Running	Automatic	Local System
Cisco AnyConnect Network Access Manager	Establishes ...	Running	Automatic	Local System

Figure 99 – Hosting Listener from HTTP to HTTPS

3. Search for HCL.iAutomate.Listener.

4. Right-click HCL.iAutomate.Listener service and click Properties.

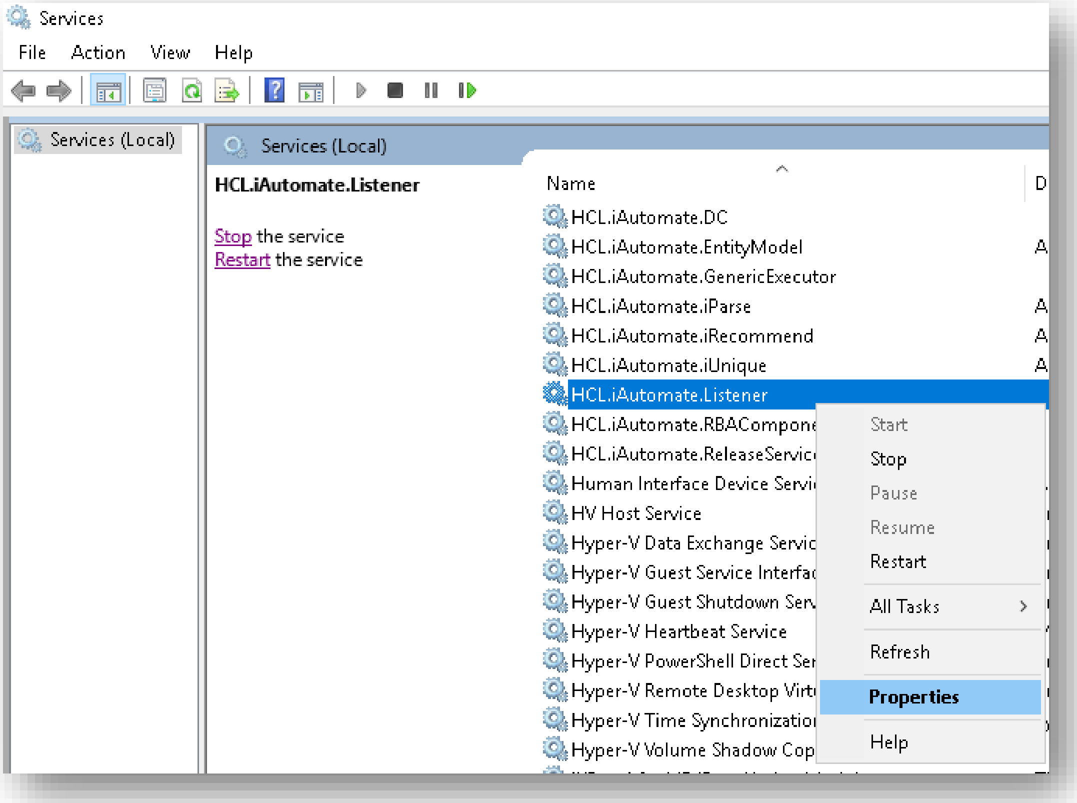
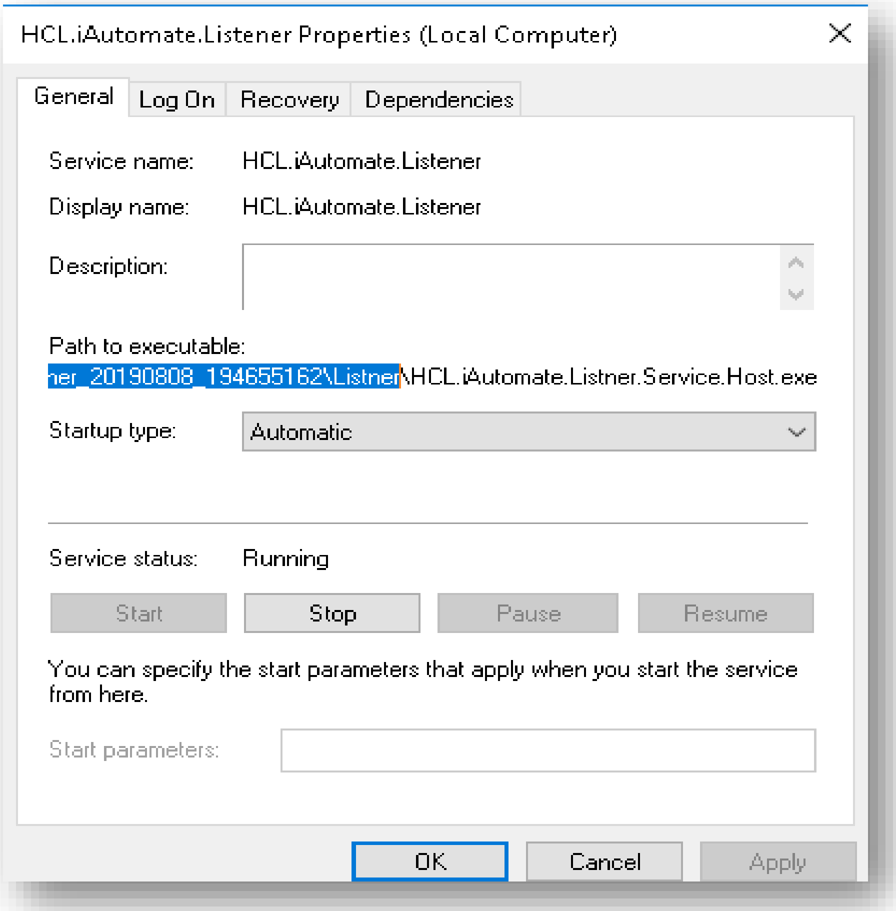

Services
File
Action
View
Help
Services (Local)
Services (Local)
HCL.iAutomate.Listener
Stop the service
Restart the service
Name
HCL.iAutomate.DC
HCL.iAutomate.EntityModel
HCL.iAutomate.GenericExecutor
HCL.iAutomate.iParse
HCL.iAutomate.iRecommend
HCL.iAutomate.iUnique
HCL.iAutomate.Listener
HCL.iAutomate.RBACompone
HCL.iAutomate.ReleaseServic
Human Interface Device Servi
HV Host Service
Hyper-V Data Exchange Servic
Hyper-V Guest Service Interfa
Hyper-V Guest Shutdown Serv
Hyper-V Heartbeat Service
Hyper-V PowerShell Direct Ser
Hyper-V Remote Desktop Virt
Hyper-V Time Synchronizatio
Hyper-V Volume Shadow Cop
Start
Stop
Pause
Resume
Restart
All Tasks
Refresh
Properties
Help

Figure 100 – Hosting Listener from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in Path to executable field as shown in the image below.


HCL.iAutomate.Listener Properties (Local Computer)

Service name: HCL.iAutomate.Listener

Display name: HCL.iAutomate.Listener

Description:

Path to executable:
ner_20190808_194655162\Listner\HCL.iAutomate.Listner.Service.Host.exe

Startup type: Automatic

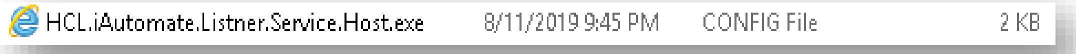
Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 101 - Hosting Listener from HTTP to HTTPS (Cont.)

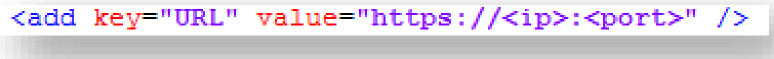
6. Open File Explorer, then paste the copied path and press Enter to open the desired folder.
7. Search for HCL.iAutomate.Listner.Service.Host config file and open it in a Notepad.



HCL.iAutomate.Listner.Service.Host.exe	8/11/2019 9:45 PM	CONFIG File	2 KB

Figure 102 - Hosting Listener from HTTP to HTTPS (Cont.)

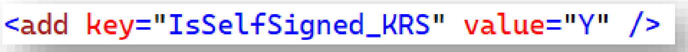
8. Within the HCL.iAutomate.Listner.Service.Host config file, find the key URL and change its value from HTTP to HTTPS.



```
<add key="URL" value="https://<ip>:<port>" />
```

Figure 103 - Hosting Listener from HTTP to HTTPS (Cont.)

9. If the certificate is self-signed, find the key IsSelfSigned and change its value to 'Y'. Else, the value will be 'N'.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

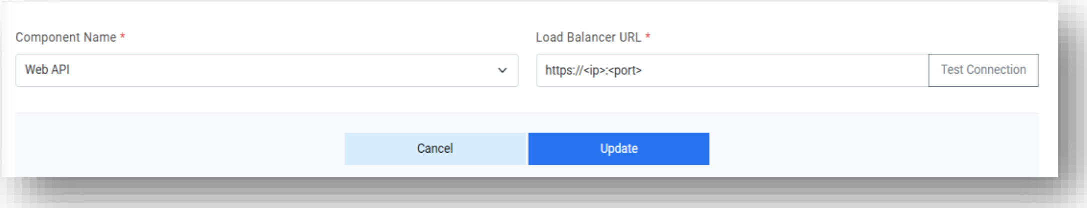
Figure 104 - Hosting Listener from HTTP to HTTPS (Cont.)

10. Save the file for changes to be reflected.
11. Select the service and click Restart to restart the services.

Configuration Changes via GUI

To change the configuration of Screen from HTTP to HTTPS, please follow the below steps:

1. Login to iAutomate using the Super Admin credentials.
2. Roll-over to the Advance Configuration and click Product Configuration.
3. Select Component Name as Web API and KRS.
4. Change the Load Balancer URL from HTTP to HTTPS.



Component Name *

Web API

Load Balancer URL *

https://<ip>:<port>

Figure 105 – Changing LB IP via GUI from HTTP to HTTPS

5. Click Update to save the changes.

4.7.3.1.2 Components

This section describes how to enable secure communication by changing HTTP to HTTPS for the iAutomate Components.

As a prerequisite, user needs to have the Thumbprint of the certificate which can be identified using the below steps:

1. Press Win+R and type mmc.

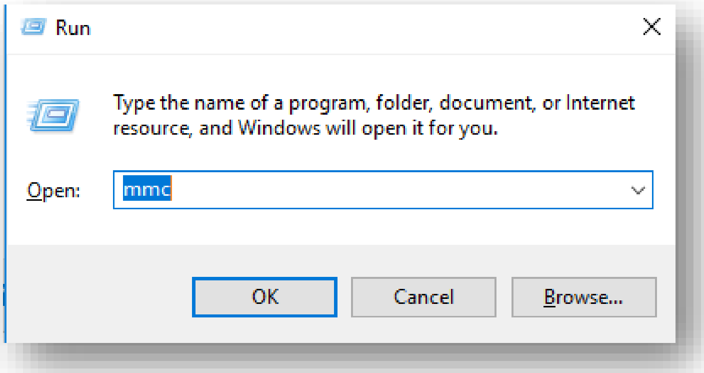

Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open: mmc
OK
Cancel
Browse...

Figure 106 – Identify Thumbprint of the Certificate

2. Click OK to open the Microsoft Management Console.

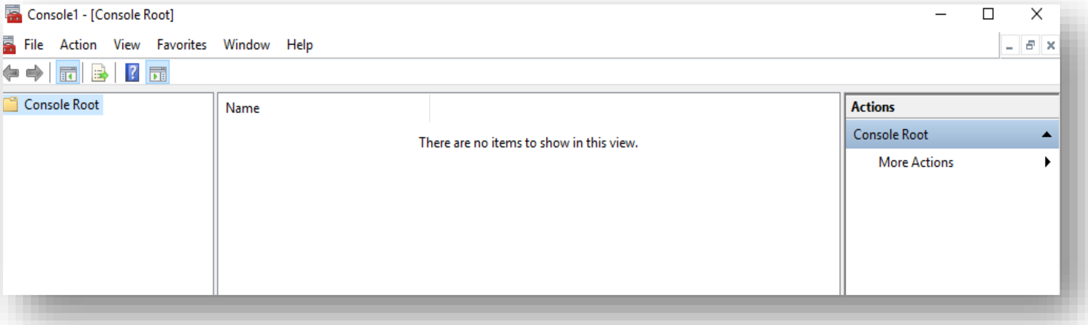


Figure 107 – Identify Thumbprint of the Certificate (Cont.)

3. From the File menu, select Add / Remove Snap-in.

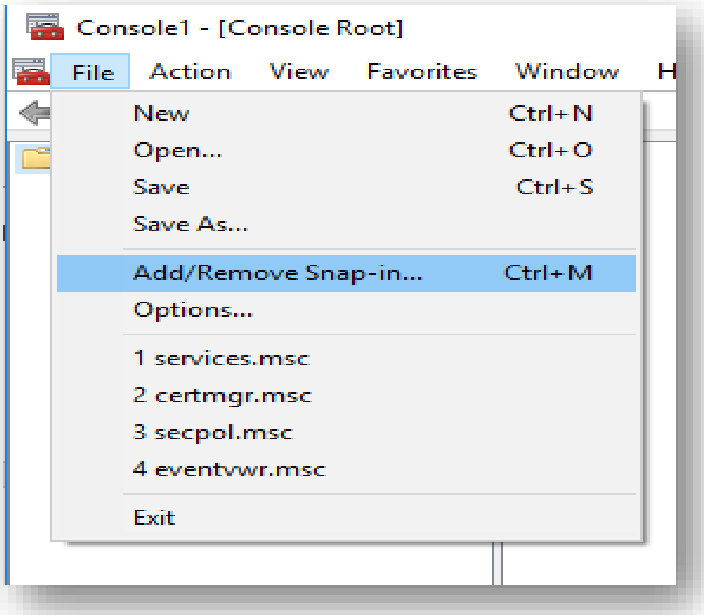
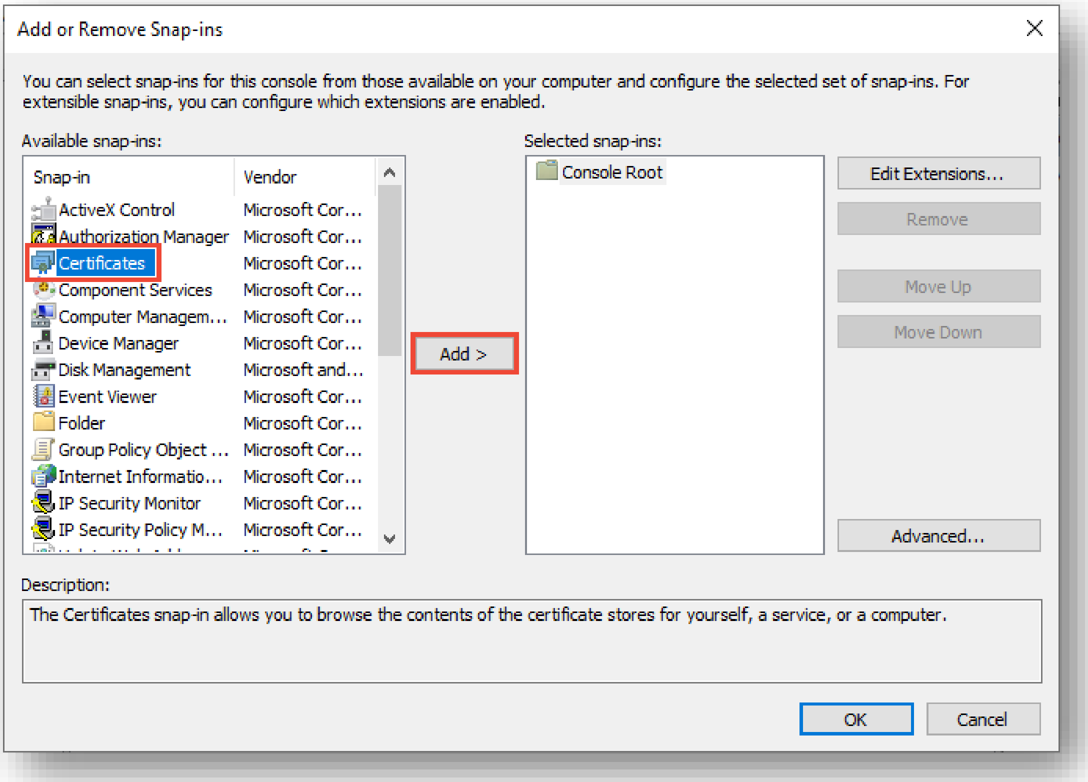


Figure 108 – Identify Thumbprint of the Certificate (Cont.)

4. From the Available snap-ins list, select Certificates, then click Add.



Add or Remove Snap-ins

You can select snap-ins for this console from those available on your computer and configure the selected set of snap-ins. For extensible snap-ins, you can configure which extensions are enabled.

Available snap-ins:

Snap-in	Vendor
ActiveX Control	Microsoft Cor...
Authorization Manager	Microsoft Cor...
Certificates	Microsoft Cor...
Component Services	Microsoft Cor...
Computer Managem...	Microsoft Cor...
Device Manager	Microsoft Cor...
Disk Management	Microsoft and...
Event Viewer	Microsoft Cor...
Folder	Microsoft Cor...
Group Policy Object ...	Microsoft Cor...
Internet Informatio...	Microsoft Cor...
IP Security Monitor	Microsoft Cor...
IP Security Policy M...	Microsoft Cor...

Selected snap-ins:

Console Root

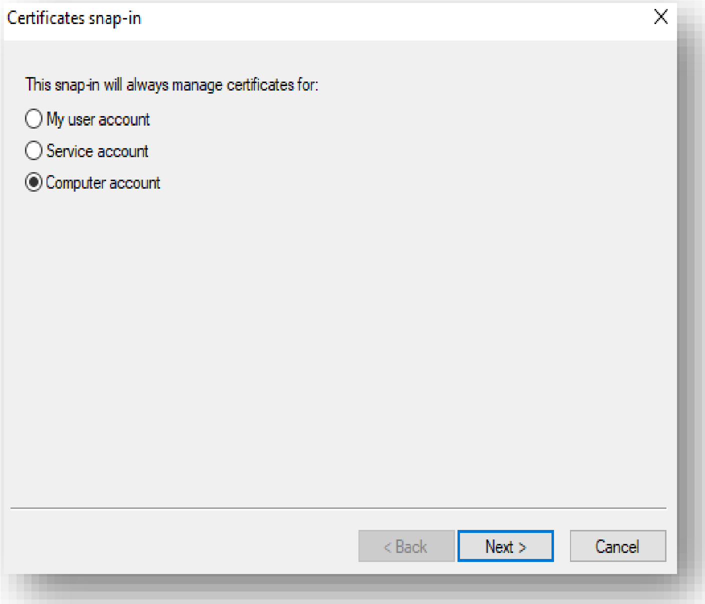
Description:

The Certificates snap-in allows you to browse the contents of the certificate stores for yourself, a service, or a computer.

Figure 109 – Identify Thumbprint of the Certificate (Cont.)

5. Click OK.

6. From the Certificates Snap-In window, select Computer Account and click Next.



Certificates snap-in

This snap-in will always manage certificates for:

○ My user account

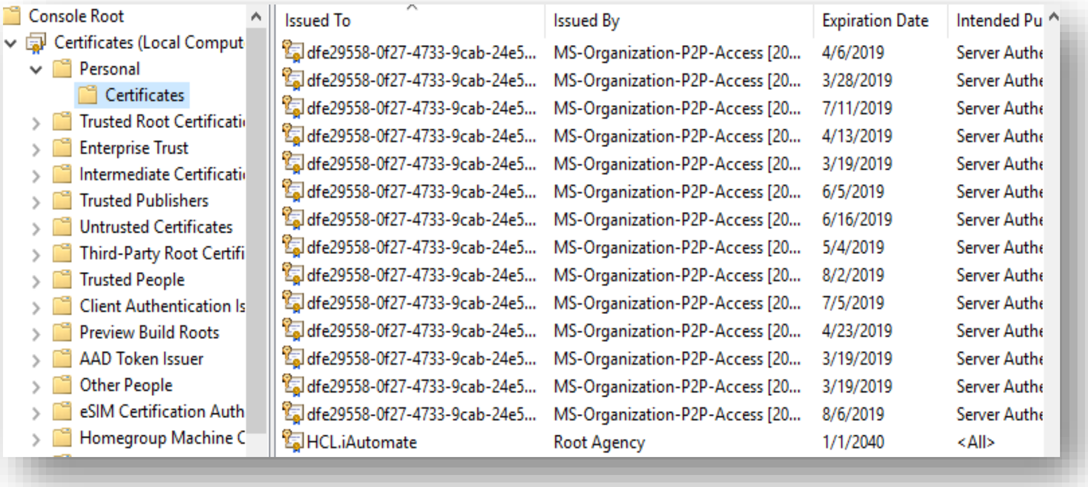
○ Service account

● Computer account

Figure 110 – Identify Thumbprint of the Certificate (Cont.)

7. In the left pane, under Console Root, click Certificates (Local Computer).

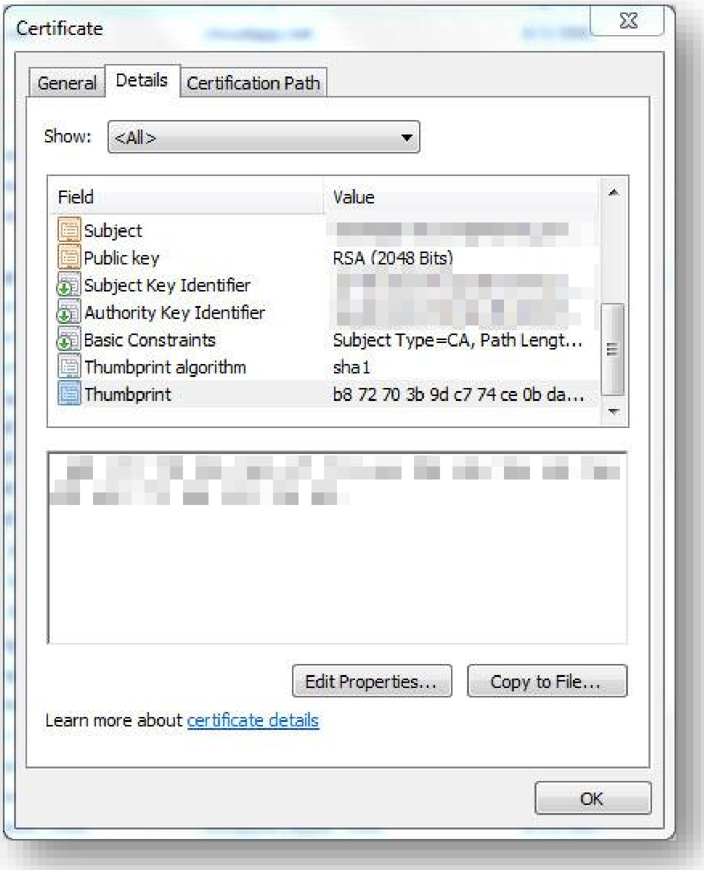
8. Click Personal folder to expand it and then click Certificates folder to expand it.



Issued To	Issued By	Expiration Date	Intended Pu
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	4/6/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/28/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	7/11/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	4/13/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/19/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	6/5/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	6/16/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	5/4/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	8/2/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	7/5/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	4/23/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/19/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/19/2019	Server Authe
dfe29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	8/6/2019	Server Authe
HCL.iAutomate	Root Agency	1/1/2040	<All>

Figure 111 - Identify Thumbprint of the Certificate (Cont.)

9. In the list of certificates, find certificate HCLTech.iautomate.Web.
10. Double-click the certificate to open the Certificate dialog box.
11. Scroll through the list of fields and click Thumbprint to display the value.



Show: <All>

Field	Value
Subject	[redacted]
Public key	RSA (2048 Bits)
Subject Key Identifier	[redacted]
Authority Key Identifier	[redacted]
Basic Constraints	Subject Type=CA, Path Lengt...
Thumbprint algorithm	sha1
Thumbprint	b8 72 70 3b 9d c7 74 ce 0b da...

[redacted]

Learn more about certificate details

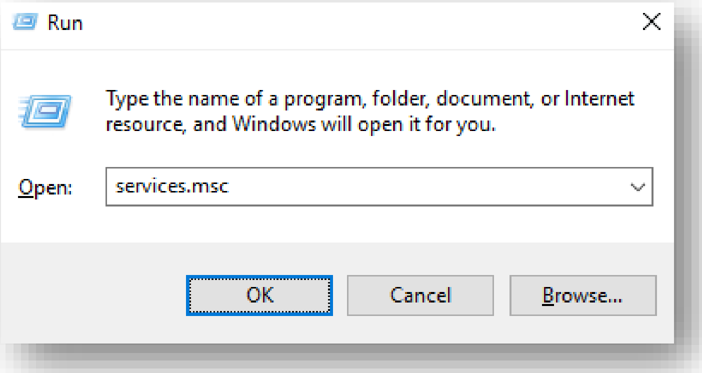
Figure 112 - Identify Thumbprint of the Certificate (Cont.)

Following changes are required in the underlying components:

Listener

To change the configuration of Listener from HTTP to HTTPS, please follow the below steps:

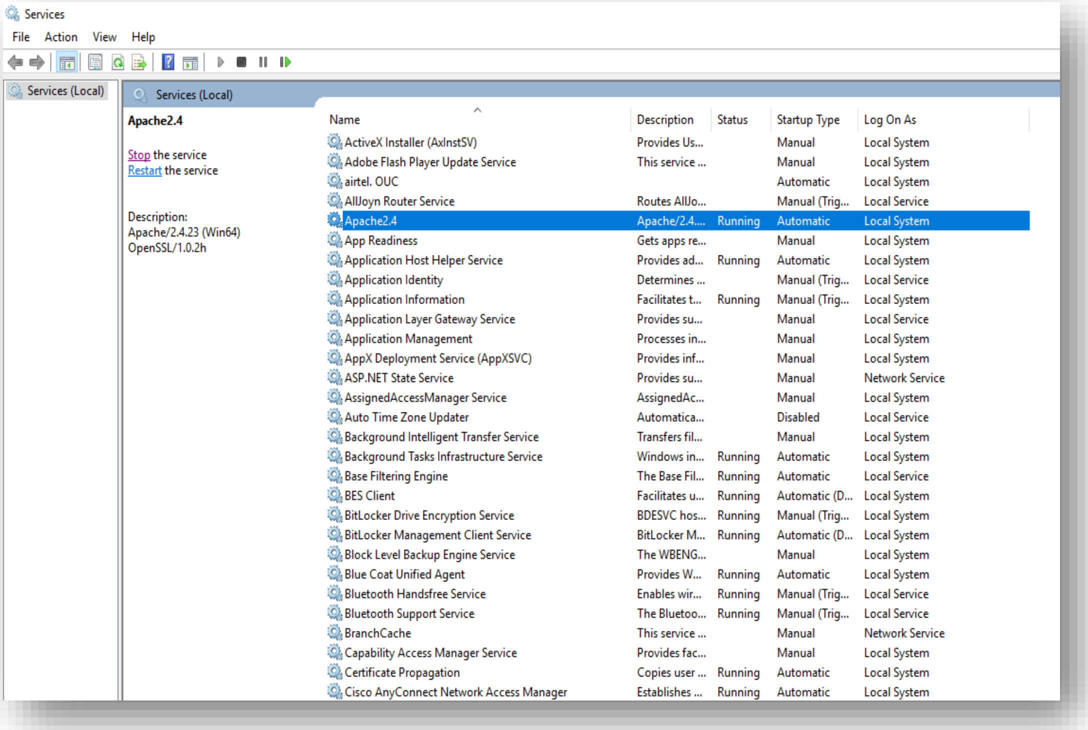
1. Press Win+R and type services.msc.


Run
Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.
Open:
OK
Cancel
Browse...

Open: services.msc

Figure 113 – Hosting Listener from HTTP to HTTPS

2. Click OK to open Windows Services.



Apache2.4

Stop the service
Restart the service

Description:
Apache/2.4.23 (Win64)
OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service
Capability Access Manager Service	Provides fac...		Manual	Local System
Certificate Propagation	Copies user ...	Running	Automatic	Local System
Cisco AnyConnect Network Access Manager	Establishes ...	Running	Automatic	Local System

Figure 114 – Hosting Listener from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.Listener.

4. Right-click HCL.iAutomate.Listener service and click Properties.

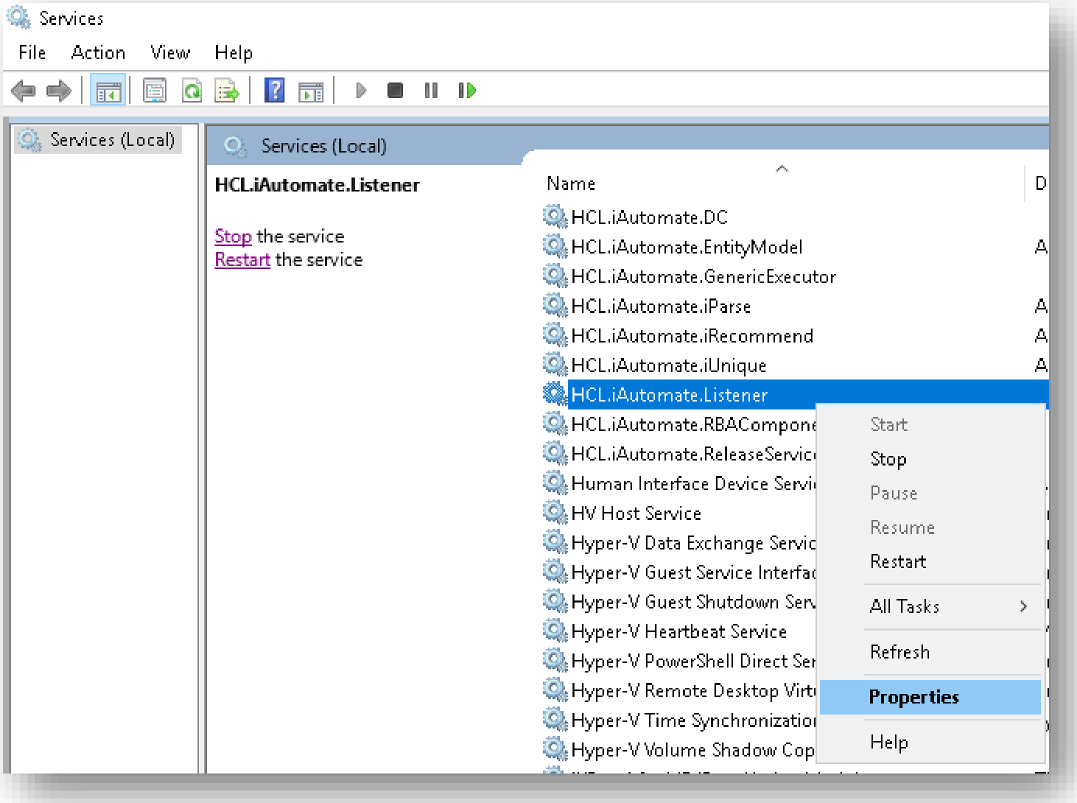
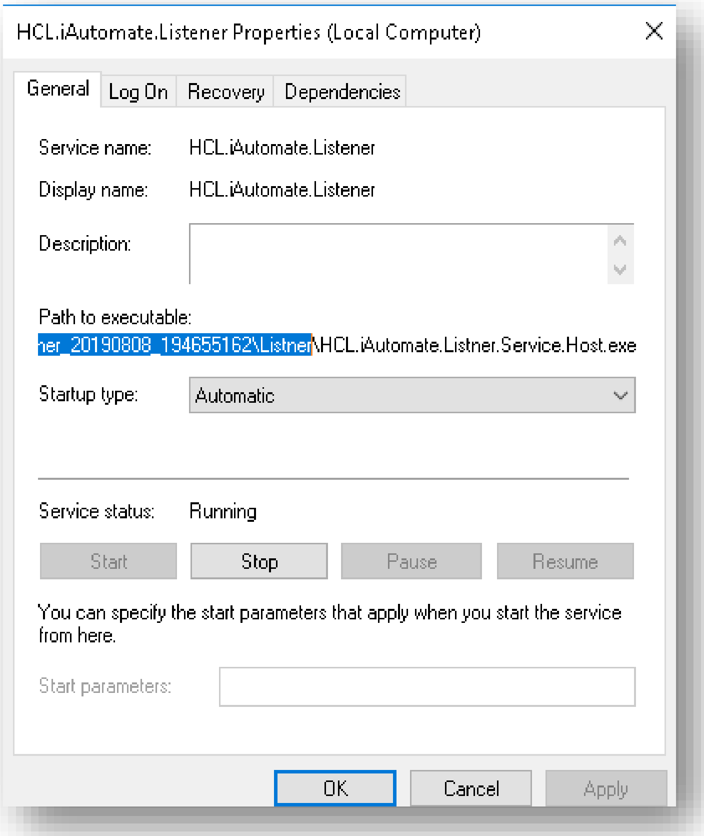

Services
File Action View Help
Services (Local)
Services (Local)
HCL.iAutomate.Listener
Stop the service
Restart the service
Name
D
HCL.iAutomate.DC
HCL.iAutomate.EntityModel
HCL.iAutomate.GenericExecutor
HCL.iAutomate.iParse
HCL.iAutomate.iRecommend
HCL.iAutomate.iUnique
HCL.iAutomate.Listener
HCL.iAutomate.RBACompone
HCL.iAutomate.ReleaseServic
Human Interface Device Servi
HV Host Service
Hyper-V Data Exchange Servic
Hyper-V Guest Service Interfac
Hyper-V Guest Shutdown Serv
Hyper-V Heartbeat Service
Hyper-V PowerShell Direct Ser
Hyper-V Remote Desktop Virt
Hyper-V Time Synchronizatio
Hyper-V Volume Shadow Cop
Start
Stop
Pause
Resume
Restart
All Tasks
Refresh
Properties
Help

Figure 115 – Hosting Listener from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in Path to executable as shown in the image below.



Service name: HCL.iAutomate.Listener

Display name: HCL.iAutomate.Listener

Description:

Path to executable:
ner_20190808_194655162\Listner\HCL.iAutomate.Listner.Service.Host.exe

Startup type: Automatic

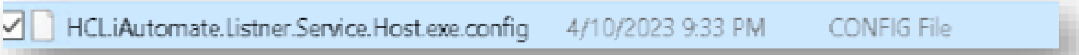
Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 116 – Hosting Listener from HTTP to HTTPS (Cont.)

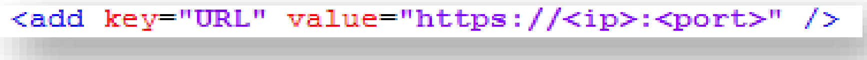
6. Open File Explorer and paste the copied path and press Enter to open the desired folder.
7. Search for HCL.iAutomate.Listner.Service.Host config file and open it in a Notepad.



☑ HCL.iAutomate.Listner.Service.Host.exe.config 4/10/2023 9:33 PM CONFIG File

Figure 117 – Hosting Listener from HTTP to HTTPS (Cont.)

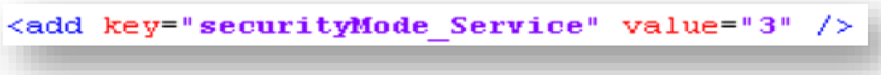
8. Within the HCL.iAutomate.Listner.Service.Host config file, find the key URL and change its value from HTTP to HTTPS.



```
<add key="URL" value="https://<ip>:<port>" />
```

Figure 118 – Hosting Listener from HTTP to HTTPS (Cont.)

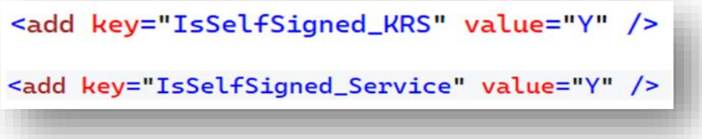
9. Within the HCL.iAutomate.Listner.Service.Host config file, find the key 'securityMode_Service' and change its value from 2 to 3.



```
<add key="securityMode_Service" value="3" />
```

Figure 119 – Hosting Listener from HTTP to HTTPS (Cont.)

10. Within the HCL.iAutomate.Listner.Service.Host config file, find the key 'IsSelfSigned' and change its value from N to Y.



```
<add key="IsSelfSigned_KRS" value="Y" />
<add key="IsSelfSigned_Service" value="Y" />
```

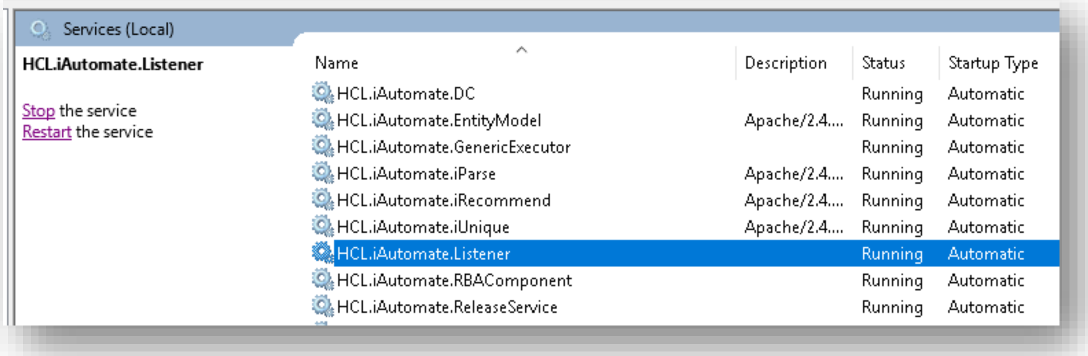
Figure 120 – Hosting Listener from HTTP to HTTPS (Cont.)

11. Save the file for changes to be reflected.
12. Open the Command Prompt as Administrator and run the following command.

```
netsh http add sslcert ipport=<ip>:<port on which service is
running> appid={      } certhash="<Thumbprint of the
certificate>"
```

Replace the < Thumbprint of the certificate> with the GUID identified earlier.

13. Select HCL.iAutomate.Listener service and click Restart to restart the service.



Services (Local)

HCL.iAutomate.Listener

Stop the service
Restart the service

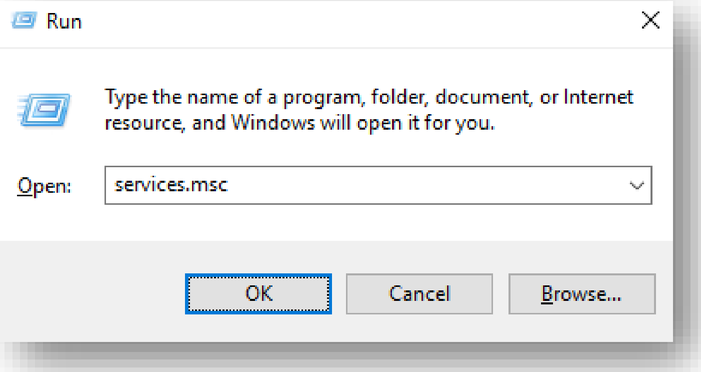
Name	Description	Status	Startup Type
HCL.iAutomate.DC		Running	Automatic
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automatic
HCL.iAutomate.GenericExecutor		Running	Automatic
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automatic
HCL.iAutomate.Listener		Running	Automatic
HCL.iAutomate.RBAComponent		Running	Automatic
HCL.iAutomate.ReleaseService		Running	Automatic

Figure 121 – Hosting Listener from HTTP to HTTPS (Cont.)

Data Collector

To change the configuration of Data Collector from HTTP to HTTPS, please follow the below steps:

1. Press Win+R and type services.msc.

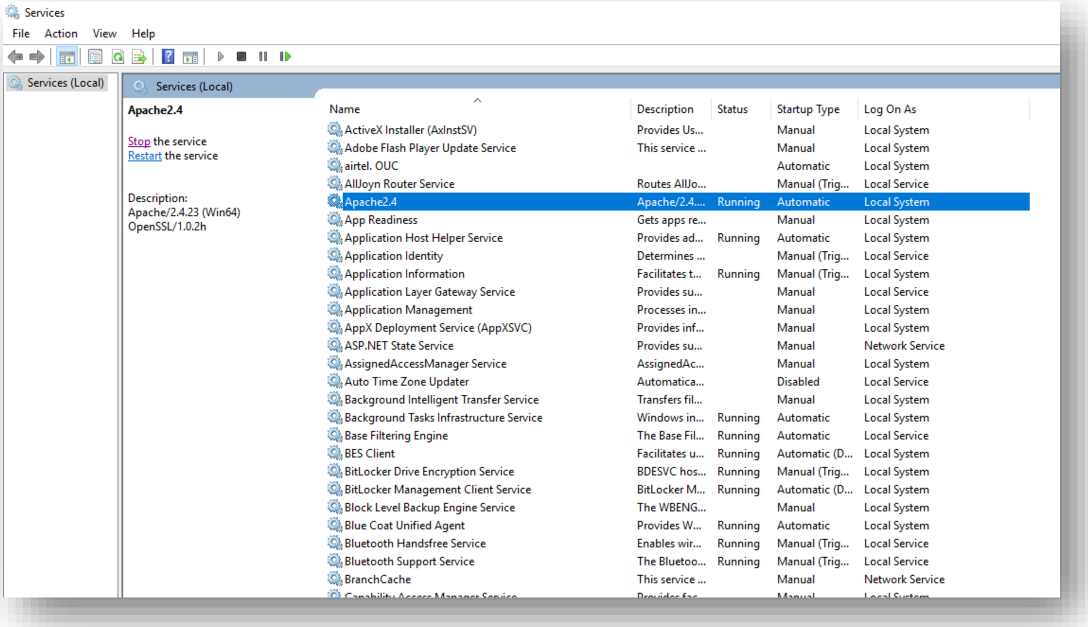


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 122 – Hosting Data Collector from HTTP to HTTPS

2. Click OK to open Windows Services.



Apache2.4

Stop the service
Restart the service

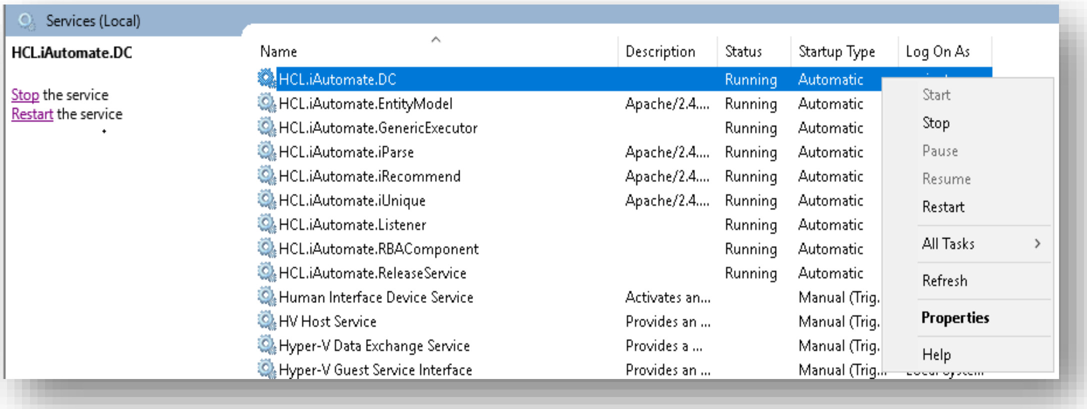
Description:
Apache/2.4.23 (Win64) OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service
Capability Access Manager Service	Provides fac...		Manual	Local System

Figure 123 – Hosting Data Collector from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.DC.

4. Right-click HCL.iAutomate.DC service and click Properties.



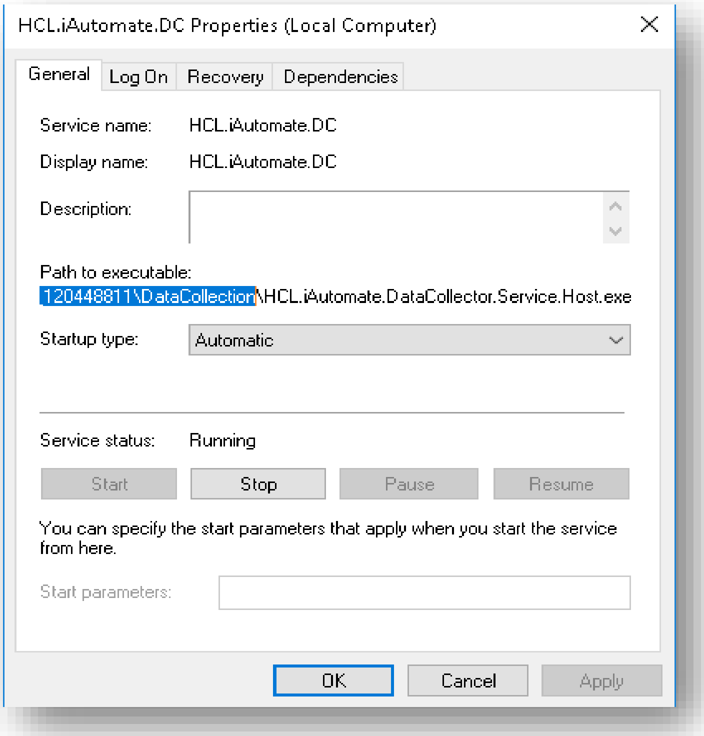
HCL.iAutomate.DC

Stop the service
Restart the service

Name	Description	Status	Startup Type	Log On As
HCL.iAutomate.DC		Running	Automatic	
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automatic	
HCL.iAutomate.GenericExecutor		Running	Automatic	
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic	
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic	
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automatic	
HCL.iAutomate.Listener		Running	Automatic	
HCL.iAutomate.RBAComponent		Running	Automatic	
HCL.iAutomate.ReleaseService		Running	Automatic	
Human Interface Device Service	Activates an...		Manual (Trig.	
HV Host Service	Provides an ...		Manual (Trig.	
Hyper-V Data Exchange Service	Provides a ...		Manual (Trig.	
Hyper-V Guest Service Interface	Provides an ...		Manual (Trig...	Local System...

Figure 124 – Hosting Data Collector from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in ‘Path to executable’ as shown in the image below.



Service name: HCL.iAutomate.DC

Display name: HCL.iAutomate.DC

Description:

Path to executable:
120448811\DataCollection\HCL.iAutomate.DataCollector.Service.Host.exe

Startup type: Automatic

Service status: Running

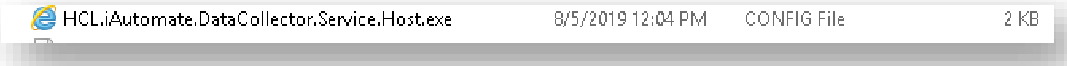
You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 125 - Hosting Data Collector from HTTP to HTTPS (Cont.)

6. Open File Explorer and paste the copied path and press Enter to open the desired folder.

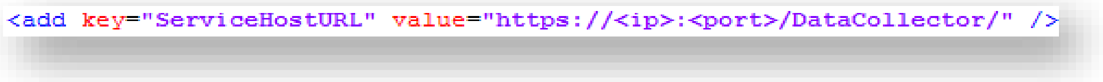
7. Search for HCL.iAutomate.DataCollector.Service.Host.exe config file and open it in a Notepad.



HCL.iAutomate.DataCollector.Service.Host.exe 8/5/2019 12:04 PM CONFIG File 2 KB

Figure 126 - Hosting Data Collector from HTTP to HTTPS (Cont.)

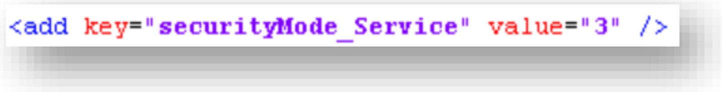
8. Within the HCL.iAutomate.DataCollector.Service.Host.exe config file, find the key ‘ServiceHostURL’ and change its value from HTTP to HTTPS.



```
<add key="ServiceHostURL" value="https://<ip>:<port>/DataCollector/" />
```

Figure 127 - Hosting Data Collector from HTTP to HTTPS (Cont.)

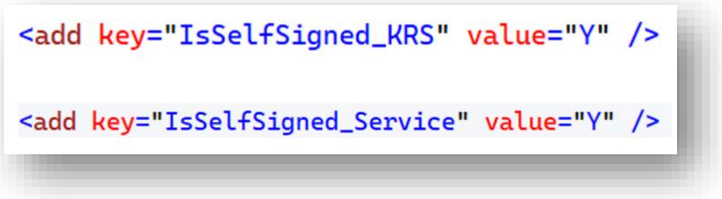
9. Within the HCL.iAutomate.DataCollector.Service.Host.exe config file, find the key 'securityMode_Service' and change its value from 2 to 3.



```
<add key="securityMode_Service" value="3" />
```

Figure 128 - Hosting Data Collector from HTTP to HTTPS (Cont.)

10. Within the HCL.iAutomate.DataCollector.Service.Host.exe config file, find the key 'IsSelfSigned' and change its value from N to Y.



```
<add key="IsSelfSigned_KRS" value="Y" />

<add key="IsSelfSigned_Service" value="Y" />
```

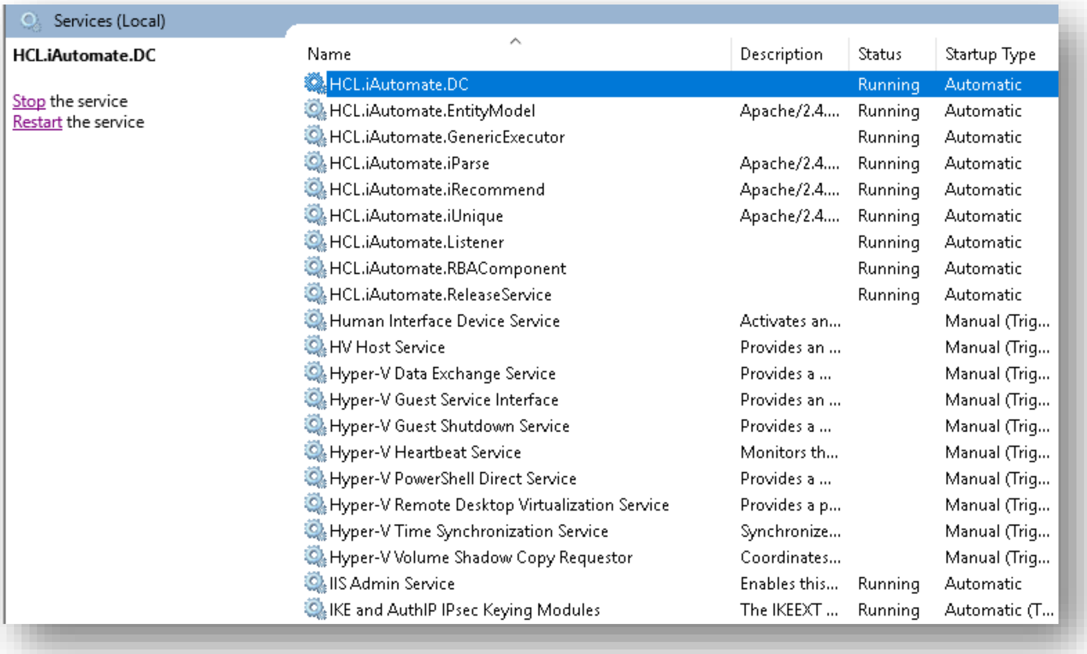
Figure 129 - Hosting Data Collector from HTTP to HTTPS (Cont.)

11. Save the file for changes to be reflected.
12. Open the Command Prompt as Administrator and run the following command.

```
netsh http add sslcert ipport=<ip>:<port on which service is
running> appid={      } certhash="<Thumbprint of the
certificate>"
```

Replace the < Thumbprint of the certificate> with the GUID identified earlier.

13. Select HCL.iAutomate.DC service and click Restart to restart the service.



Services (Local)

HCL.iAutomate.DC

Stop the service
Restart the service

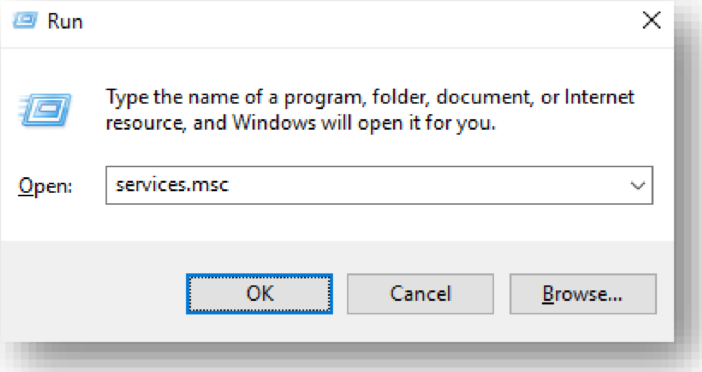
Name	Description	Status	Startup Type
HCL.iAutomate.DC		Running	Automatic
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automatic
HCL.iAutomate.GenericExecutor		Running	Automatic
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automatic
HCL.iAutomate.Listener		Running	Automatic
HCL.iAutomate.RBAComponent		Running	Automatic
HCL.iAutomate.ReleaseService		Running	Automatic
Human Interface Device Service	Activates an...		Manual (Trig...
HV Host Service	Provides an ...		Manual (Trig...
Hyper-V Data Exchange Service	Provides a ...		Manual (Trig...
Hyper-V Guest Service Interface	Provides an ...		Manual (Trig...
Hyper-V Guest Shutdown Service	Provides a ...		Manual (Trig...
Hyper-V Heartbeat Service	Monitors th...		Manual (Trig...
Hyper-V PowerShell Direct Service	Provides a ...		Manual (Trig...
Hyper-V Remote Desktop Virtualization Service	Provides a p...		Manual (Trig...
Hyper-V Time Synchronization Service	Synchronize...		Manual (Trig...
Hyper-V Volume Shadow Copy Requestor	Coordinates...		Manual (Trig...
IIS Admin Service	Enables this...	Running	Automatic
IKE and AuthIP IPsec Keying Modules	The IKEEXT ...	Running	Automatic (T...

Figure 130 - Hosting Data Collector from HTTP to HTTPS (Cont.)

Generic Service

To change the configuration of Generic Service from HTTP to HTTPS, please follow the below steps:

1. Press Win+R and type services.msc.



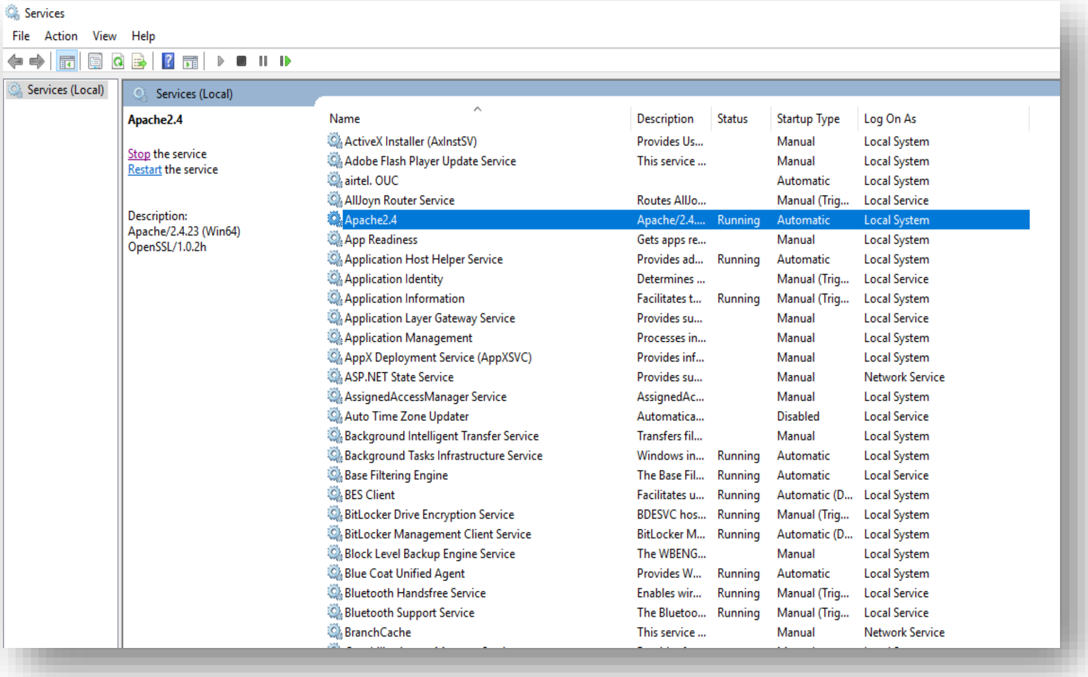
Run

Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 131 – Hosting Generic Service from HTTP to HTTPS

2. Click OK to open Windows Services.



Apache2.4

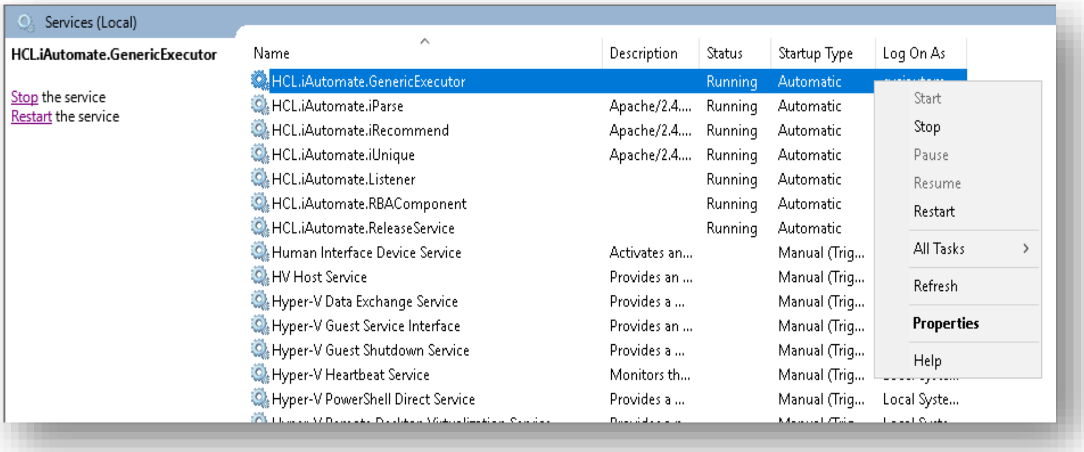
Stop the service
Restart the service

Description:
Apache/2.4.23 (Win64) OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service

Figure 132 - Hosting Generic Service from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.GenericExecutor.
4. Right-click HCL.iAutomate.GenericExecutor service and click Properties.



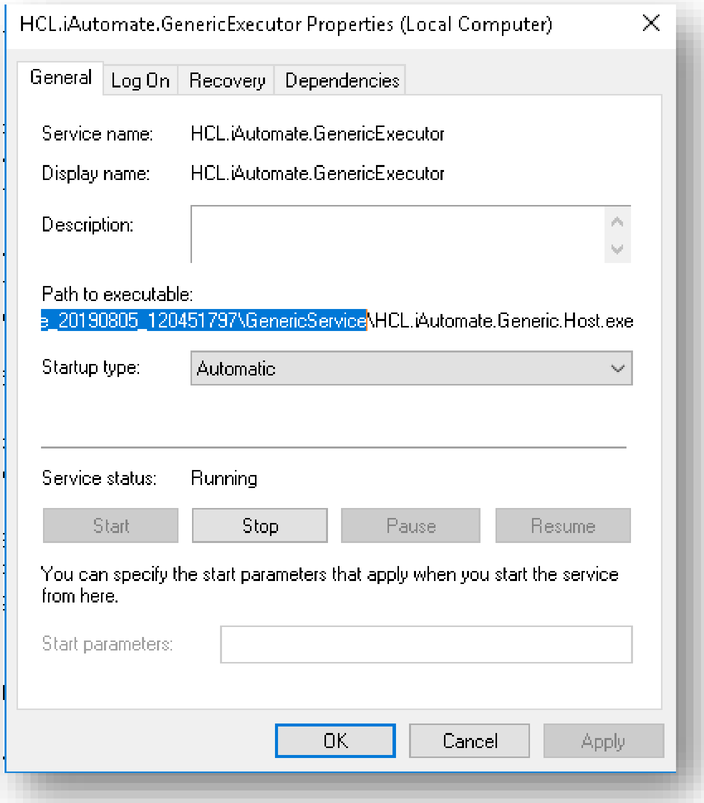
HCL.iAutomate.GenericExecutor

Stop the service
Restart the service

Name	Description	Status	Startup Type	Log On As
HCL.iAutomate.GenericExecutor		Running	Automatic	
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic	
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic	
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automatic	
HCL.iAutomate.Listener		Running	Automatic	
HCL.iAutomate.RBAComponent		Running	Automatic	
HCL.iAutomate.ReleaseService		Running	Automatic	
Human Interface Device Service	Activates an...		Manual (Trig...	
HV Host Service	Provides an ...		Manual (Trig...	
Hyper-V Data Exchange Service	Provides a ...		Manual (Trig...	
Hyper-V Guest Service Interface	Provides an ...		Manual (Trig...	
Hyper-V Guest Shutdown Service	Provides a ...		Manual (Trig...	
Hyper-V Heartbeat Service	Monitors th...		Manual (Trig...	
Hyper-V PowerShell Direct Service	Provides a ...		Manual (Trig...	Local Syste...

Figure 133 - Hosting Generic Service from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in Path to executable as shown in the image below.



Service name: HCL.iAutomate.GenericExecutor

Display name: HCL.iAutomate.GenericExecutor

Description:

Path to executable:
e_20190805_120451797\GenericService\HCL.iAutomate.Generic.Host.exe

Startup type: Automatic

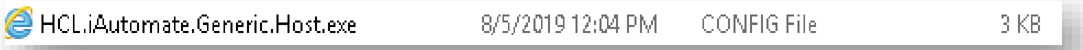
Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 134 - Hosting Generic Service from HTTP to HTTPS (Cont.)

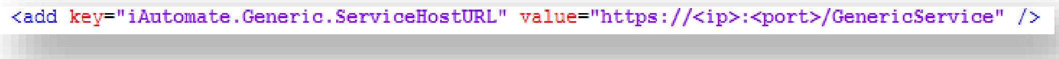
6. Open File Explorer and then paste the copied path and press Enter to open the desired folder.
7. Search for HCL.iAutomate.Generic.Host.exe config file and open it in a Notepad.



```
HCL.iAutomate.Generic.Host.exe          8/5/2019 12:04 PM     CONFIG File          3 KB
```

Figure 135 - Hosting Generic Service from HTTP to HTTPS (Cont.)

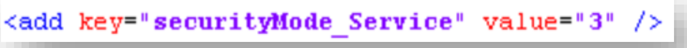
8. Within the HCL.iAutomate.Generic.Host.exe config file, find the key 'iAutomate.Generic.ServiceHostURL" and change its value from HTTP to HTTPS.



```
<add key="iAutomate.Generic.ServiceHostURL" value="https://<ip>:<port>/GenericService" />
```

Figure 136 - Hosting Generic Service from HTTP to HTTPS (Cont.)

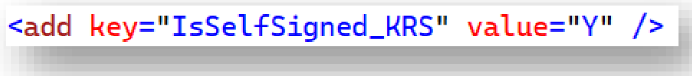
9. Within the HCL.iAutomate.Generic.Host.exe config file, find the key 'securityMode_Service' and change its value from 2 to 3.



```
<add key="securityMode_Service" value="3" />
```

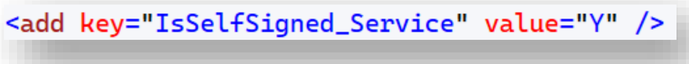
Figure 137 - Hosting Generic Service from HTTP to HTTPS (Cont.)

10. Within the HCL.iAutomate.Generic.Host.exe config file, find the key 'IsSelfSigned' and change its value from N to Y.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

Figure 138 - Hosting Generic Service from HTTP to HTTPS (Cont.)



```
<add key="IsSelfSigned_Service" value="Y" />
```

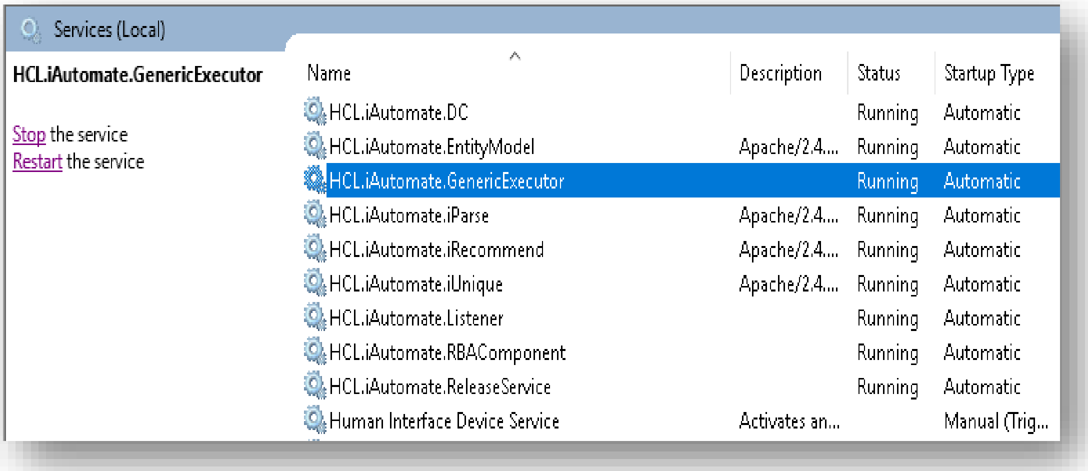
Figure 139 - Hosting Generic Service from HTTP to HTTPS (Cont.)

11. Save the file for changes to be reflected.
12. Open the Command Prompt as Administrator and run the following command.

```
netsh http add sslcert ipport=<ip>:<port on which service is
running> appid={      } certhash="<Thumbprint of the
certificate>"
```

Replace the < Thumbprint of the certificate> with the GUID identified earlier.

13. Select HCL.iAutomate.GenericExecutor service and click Restart to restart the service.



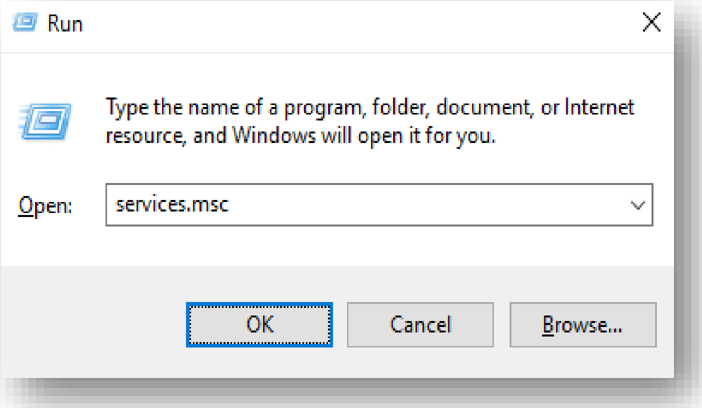
Name	Description	Status	Startup Type
HCL.iAutomate.DC		Running	Automatic
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automatic
HCL.iAutomate.GenericExecutor		Running	Automatic
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automatic
HCL.iAutomate.Listener		Running	Automatic
HCL.iAutomate.RBAComponent		Running	Automatic
HCL.iAutomate.ReleaseService		Running	Automatic
Human Interface Device Service	Activates an...		Manual (Trig...

Figure 140 - Hosting Generic Service from HTTP to HTTPS (Cont.)

RBA Component

To change the configuration of RBA Component from HTTP to HTTPS, please follow the below steps:

1. Press Win+R and type services.msc.

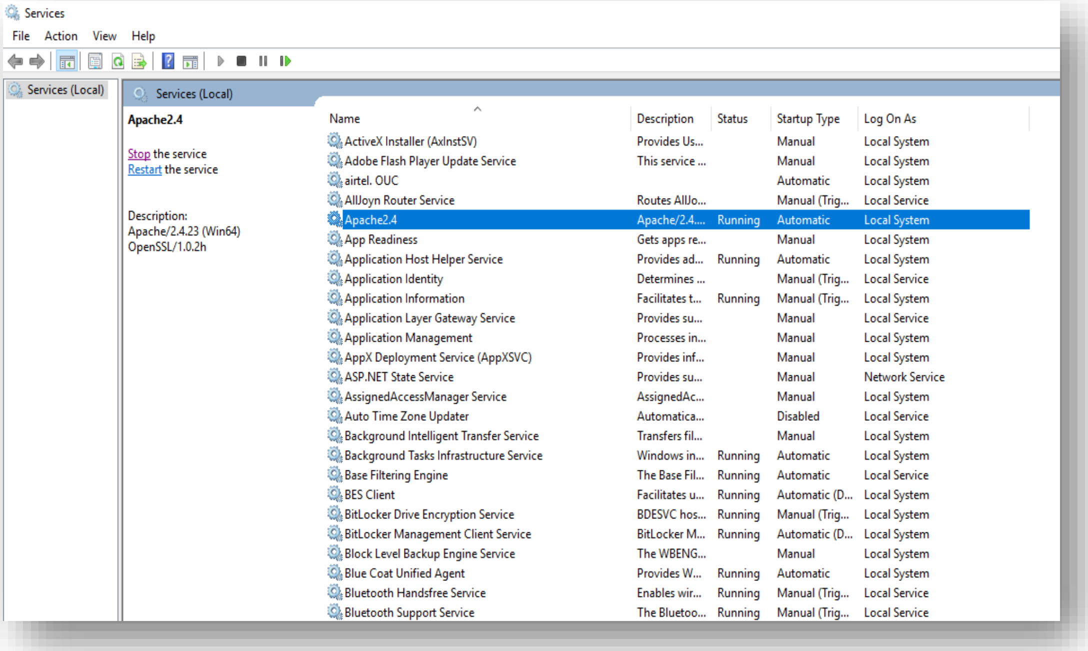


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 141 – Hosting RBA Component from HTTP to HTTPS

2. Click OK to open Windows Services.



Apache2.4

Stop the service
Restart the service

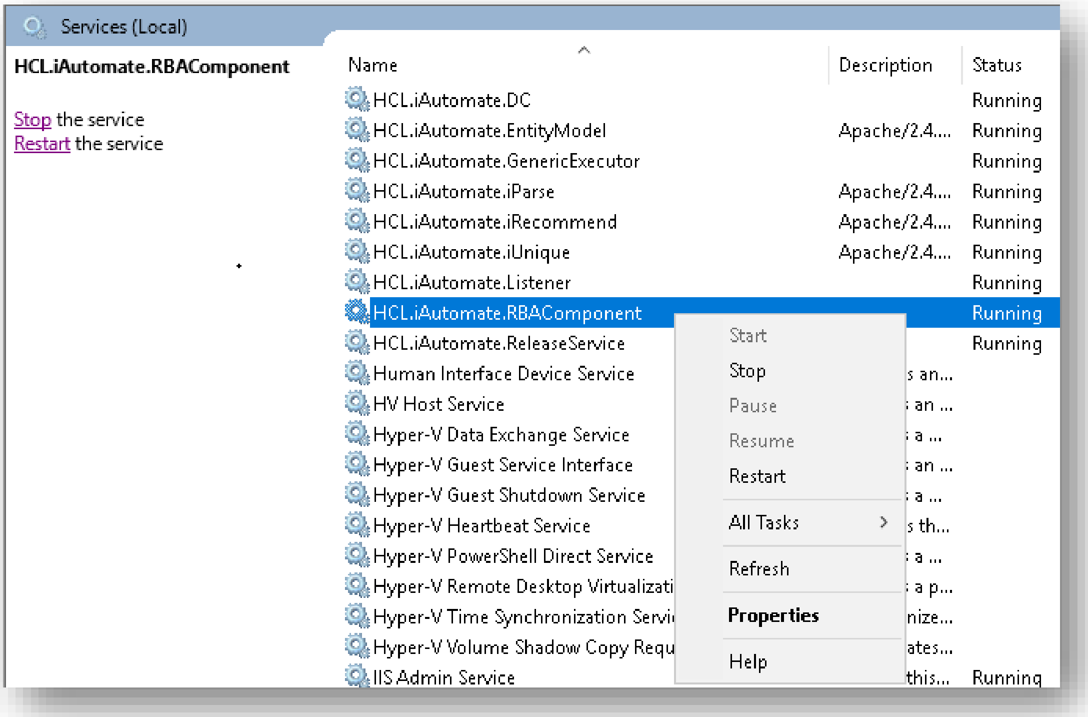
Description:
Apache/2.4.23 (Win64) OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service

Figure 142 - Hosting RBA Component from HTTP to HTTPS

3. Search for HCL.iAutomate.RBAComponent.

4. Right-click HCL.iAutomate.RBAComponent service and click Properties.



Services (Local)

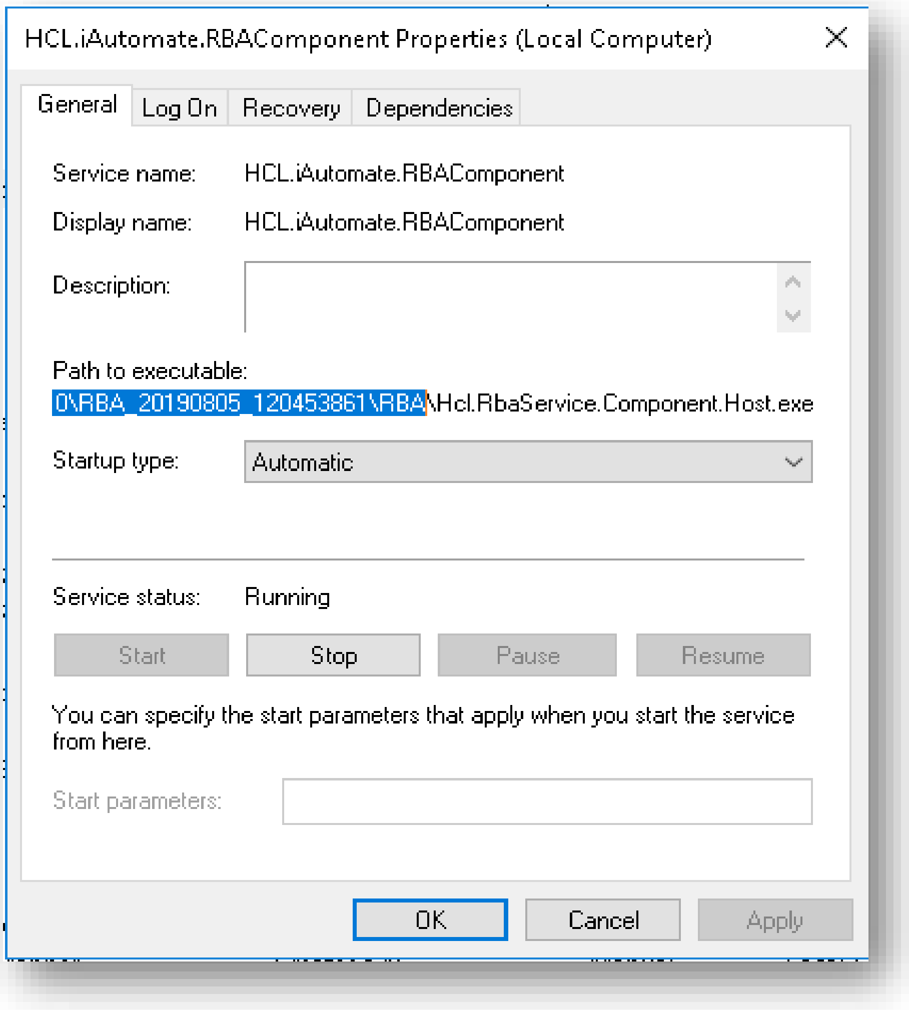
HCL.iAutomate.RBAComponent

Stop the service
Restart the service

Name	Description	Status
HCL.iAutomate.DC		Running
HCL.iAutomate.EntityModel	Apache/2.4....	Running
HCL.iAutomate.GenericExecutor		Running
HCL.iAutomate.iParse	Apache/2.4....	Running
HCL.iAutomate.iRecommend	Apache/2.4....	Running
HCL.iAutomate.iUnique	Apache/2.4....	Running
HCL.iAutomate.Listener		Running
HCL.iAutomate.RBAComponent		Running
HCL.iAutomate.ReleaseService		Running
Human Interface Device Service	s an...	
HV Host Service	: an ...	
Hyper-V Data Exchange Service	: a ...	
Hyper-V Guest Service Interface	: an ...	
Hyper-V Guest Shutdown Service	: a ...	
Hyper-V Heartbeat Service	s th...	
Hyper-V PowerShell Direct Service	: a ...	
Hyper-V Remote Desktop Virtualizati	: a p...	
Hyper-V Time Synchronization Servi	nize...	
Hyper-V Volume Shadow Copy Requ	ates...	
IIS Admin Service	this...	Running

Figure 143 - Hosting RBA Component from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in Path to executable as shown in the image below.



HCL.iAutomate.RBAComponent Properties (Local Computer)

Service name: HCL.iAutomate.RBAComponent

Display name: HCL.iAutomate.RBAComponent

Description:

Path to executable:
0\RBA_20190805_120453861\RBA\Hcl.RbaService.Component.Host.exe

Startup type: Automatic

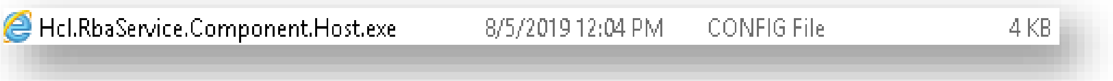
Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 144 - Hosting RBA Component from HTTP to HTTPS (Cont.)

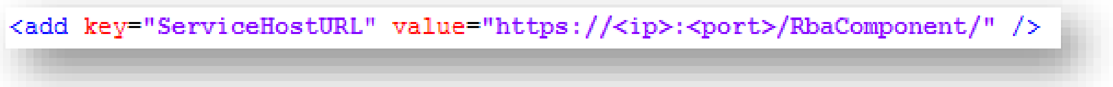
6. Open File Explorer and then paste the copied path and press Enter to open the desired folder.
7. Search for HCL.RbaService.Component.Host.exe config file and open it in a Notepad.



```
Hcl.RbaService.Component.Host.exe        8/5/2019 12:04 PM      CONFIG File          4 KB
```

Figure 145 - Hosting RBA Component from HTTP to HTTPS (Cont.)

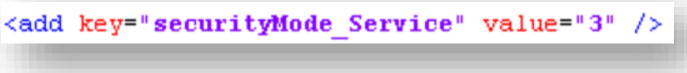
8. Within the HCL.RbaService.Component.Host.exe config file, find the key 'ServiceHostURL' and change its value from HTTP to HTTPS.



```
<add key="ServiceHostURL" value="https://<ip>:<port>/RbaComponent/" />
```

Figure 146 - Hosting RBA Component from HTTP to HTTPS (Cont.)

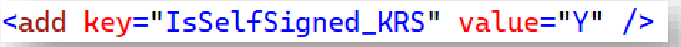
9. Within the HCL.RbaService.Component.Host.exe config file, find the key 'securityMode_Service' and change its value from 2 to 3.



```
<add key="securityMode_Service" value="3" />
```

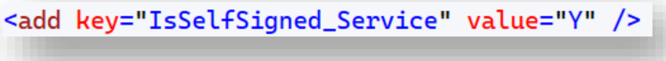
Figure 147 - Hosting RBA Component from HTTP to HTTPS (Cont.)

10. Within the HCL.RbaService.Component.Host.exe config file, find the key 'IsSelfSigned' and change its value from N to Y.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

Figure 148 - Hosting RBA Component from HTTP to HTTPS (Cont.)



```
<add key="IsSelfSigned_Service" value="Y" />
```

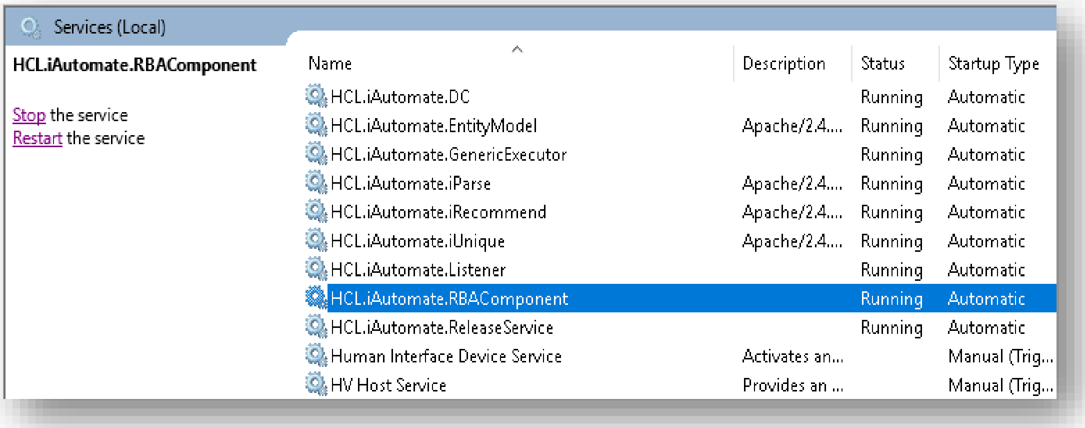
Figure 149 - Hosting RBA Component from HTTP to HTTPS (Cont.)

11. Save the file for changes to be reflected.
12. Open the Command Prompt as Administrator and run the following command:

```
netsh http add sslcert ipport=<ip>:<port on which service is
running> appid={      } certhash="<Thumbprint of the
certificate>"
```

Replace the < Thumbprint of the certificate> with the GUID identified earlier.

13. Select HCL.iAutomate.RBAComponent service and click Restart to restart the service.



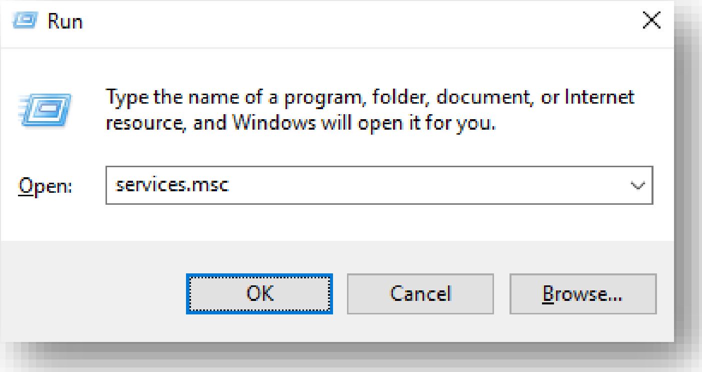
Name	Description	Status	Startup Type
HCL.iAutomate.DC		Running	Automatic
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automatic
HCL.iAutomate.GenericExecutor		Running	Automatic
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automatic
HCL.iAutomate.Listener		Running	Automatic
HCL.iAutomate.RBAComponent		Running	Automatic
HCL.iAutomate.ReleaseService		Running	Automatic
Human Interface Device Service	Activates an...		Manual (Trig...
HV Host Service	Provides an ...		Manual (Trig...

Figure 150 - Hosting RBA Component from HTTP to HTTPS (Cont.)

Release Service

To change the configuration of Release Service from HTTP to HTTPS, please follow the below steps:

1. Press Win+R and type services.msc.

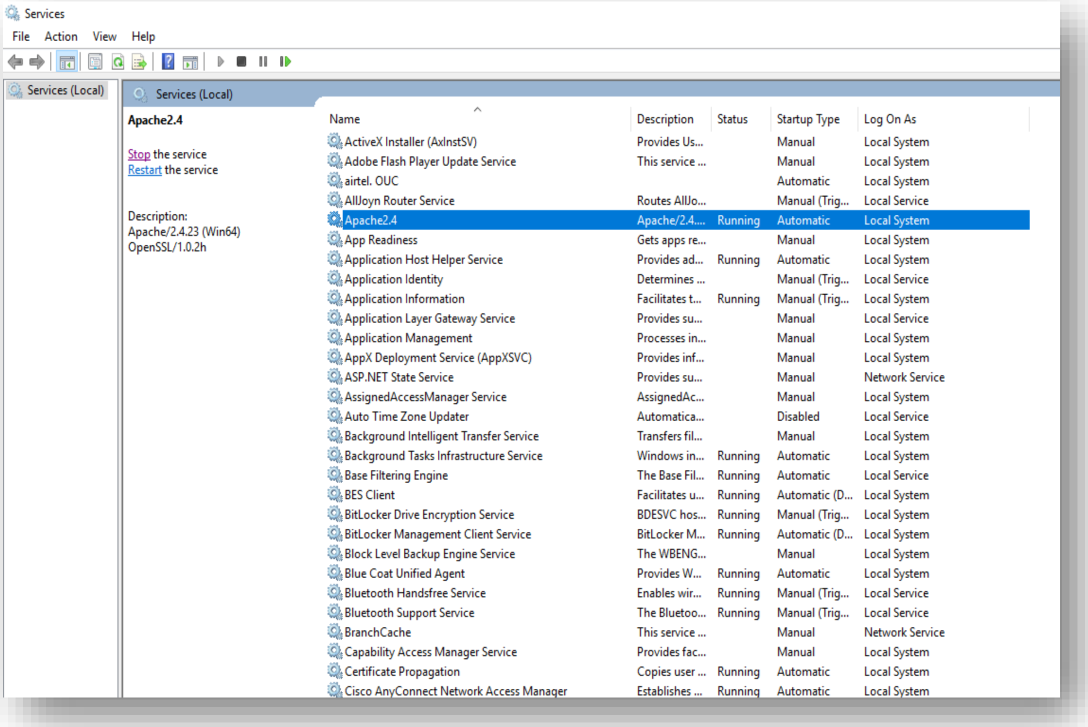


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 151 – Hosting Release Service from HTTP to HTTPS

2. Click OK to open Windows Services.



Apache2.4

Stop the service
Restart the service

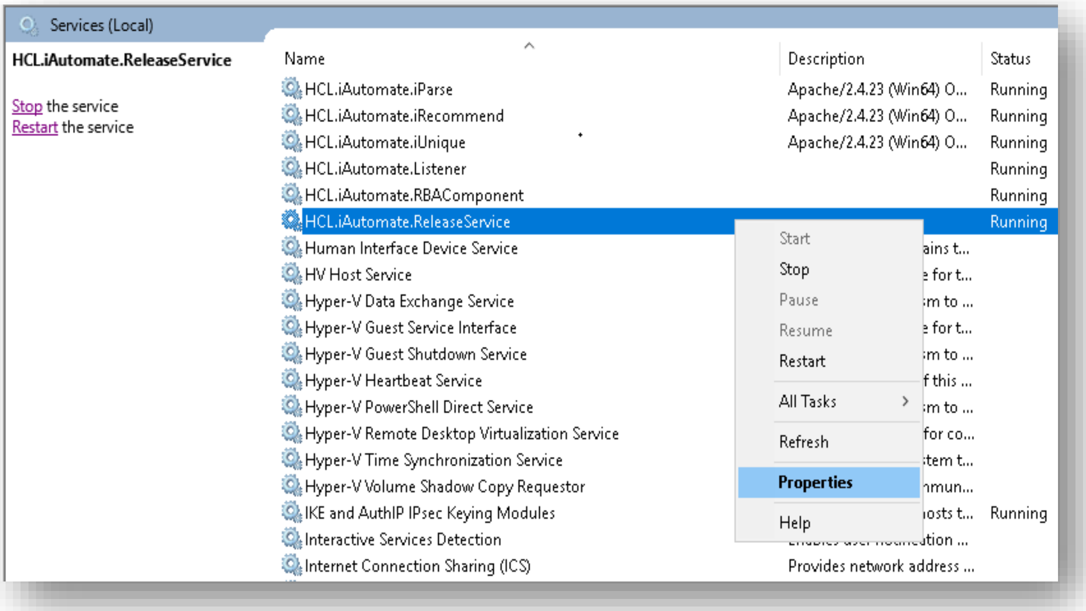
Description:
Apache/2.4.23 (Win64) OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service
Capability Access Manager Service	Provides fac...		Manual	Local System
Certificate Propagation	Copies user ...	Running	Automatic	Local System
Cisco AnyConnect Network Access Manager	Establishes ...	Running	Automatic	Local System

Figure 152 - Hosting Release Service from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.ReleaseService.

4. Right-click HCL.iAutomate.ReleaseService service and click on Properties.



Services (Local)

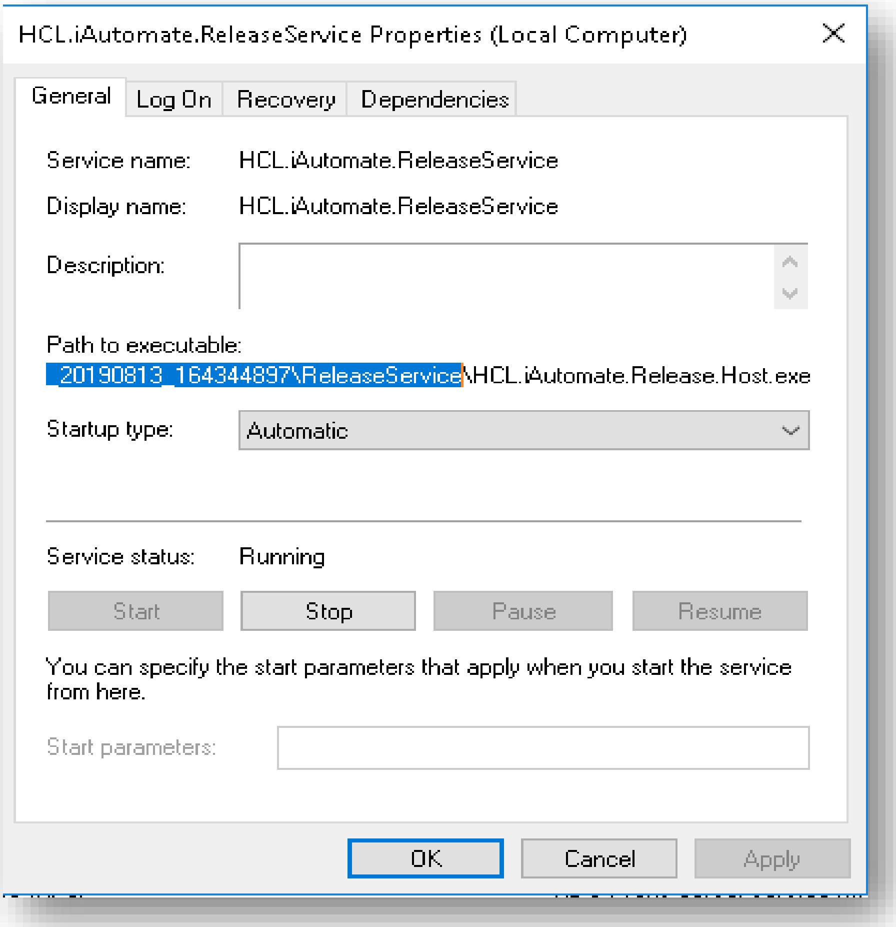
HCL.iAutomate.ReleaseService

Stop the service
Restart the service

Name	Description	Status
HCL.iAutomate.iParse	Apache/2.4.23 (Win64) O...	Running
HCL.iAutomate.iRecommend	Apache/2.4.23 (Win64) O...	Running
HCL.iAutomate.iUnique	Apache/2.4.23 (Win64) O...	Running
HCL.iAutomate.Listener		Running
HCL.iAutomate.RBAComponent		Running
HCL.iAutomate.ReleaseService		Running
Human Interface Device Service	ains t...	
HV Host Service	e for t...	
Hyper-V Data Exchange Service	m to ...	
Hyper-V Guest Service Interface	e for t...	
Hyper-V Guest Shutdown Service	m to ...	
Hyper-V Heartbeat Service	f this ...	
Hyper-V PowerShell Direct Service	m to ...	
Hyper-V Remote Desktop Virtualization Service	for co...	
Hyper-V Time Synchronization Service	tem t...	
Hyper-V Volume Shadow Copy Requestor	mmun...	
IKE and AuthIP IPsec Keying Modules	osts t...	Running
Interactive Services Detection	...ation ...	
Internet Connection Sharing (ICS)	Provides network address ...	

Figure 153 - Hosting Release Service from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in Path to executable as shown in the image below.



HCL.iAutomate.ReleaseService Properties (Local Computer)

Service name: HCL.iAutomate.ReleaseService

Display name: HCL.iAutomate.ReleaseService

Description:

Path to executable:
20190813_164344897\ReleaseService\HCL.iAutomate.Release.Host.exe

Startup type: Automatic

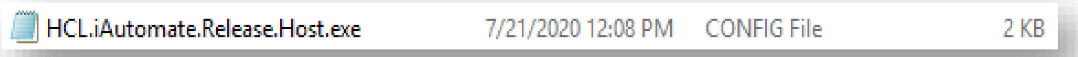
Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 154 - Hosting Release Service from HTTP to HTTPS (Cont.)

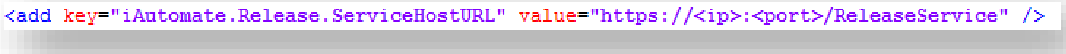
6. Open File Explorer, then paste the copied path and press Enter to open the desired folder.
7. Search for HCL.iAutomate.Release.Host.exe config file and open it in a Notepad.



HCL.iAutomate.Release.Host.exe 7/21/2020 12:08 PM CONFIG File 2 KB

Figure 155 - Hosting Release Service from HTTP to HTTPS (Cont.)

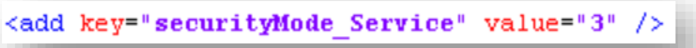
8. Within the HCL.iAutomate.Release.Host.exe config file, find the key 'iAutomate.Release.ServiceHostURL' and change its value from HTTP to HTTPS.



```
<add key="iAutomate.Release.ServiceHostURL" value="https://<ip>:<port>/ReleaseService" />
```

Figure 156 - Hosting Release Service from HTTP to HTTPS (Cont.)

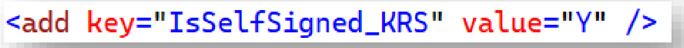
9. Within the HCL.iAutomate.Release.Host.exe config file, find the key 'securityMode_Service' and change its value from 2 to 3.



```
<add key="securityMode_Service" value="3" />
```

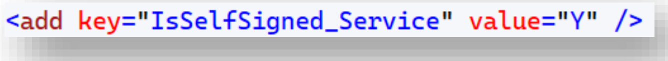
Figure 157 - Hosting Release Service from HTTP to HTTPS (Cont.)

10. Within the HCL.iAutomate.Release.Host.exe config file, find the key 'IsSelfSigned' and change its value from N to Y.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

Figure 158 - Hosting Release Service from HTTP to HTTPS (Cont.)



```
<add key="IsSelfSigned_Service" value="Y" />
```

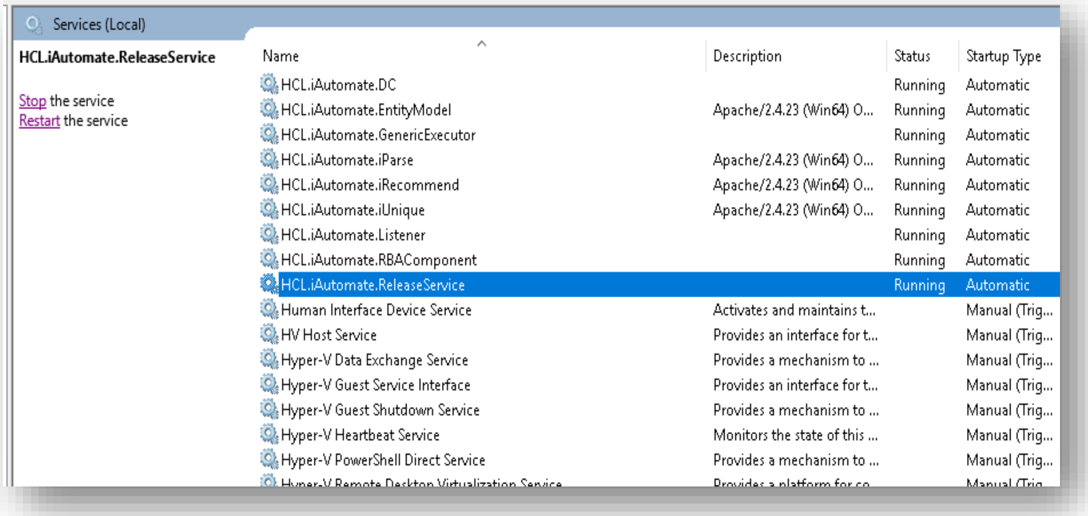
Figure 159 - Hosting Release Service from HTTP to HTTPS (Cont.)

11. Save the file for changes to be reflected.
12. Open the Command Prompt as Administrator and run the following command.

```
netsh http add sslcert ipport=<ip>:<port on which service is
running> appid=      certhash="<Thumbprint of the certificate>"
```

Replace the < Thumbprint of the certificate> with the GUID identified earlier.

13. Select HCL.iAutomate.ReleaseService service and click Restart to restart the service.



Services (Local)

HCL.iAutomate.ReleaseService

Stop the service
Restart the service

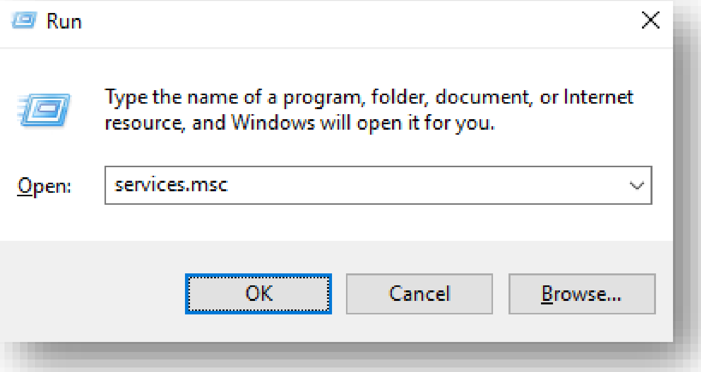
Name	Description	Status	Startup Type
HCL.iAutomate.DC		Running	Automatic
HCL.iAutomate.EntityModel	Apache/2.4.23 (Win64) O...	Running	Automatic
HCL.iAutomate.GenericExecutor		Running	Automatic
HCL.iAutomate.iParse	Apache/2.4.23 (Win64) O...	Running	Automatic
HCL.iAutomate.iRecommend	Apache/2.4.23 (Win64) O...	Running	Automatic
HCL.iAutomate.iUnique	Apache/2.4.23 (Win64) O...	Running	Automatic
HCL.iAutomate.Listener		Running	Automatic
HCL.iAutomate.RBAComponent		Running	Automatic
HCL.iAutomate.ReleaseService		Running	Automatic
Human Interface Device Service	Activates and maintains t...		Manual (Trig...
HV Host Service	Provides an interface for t...		Manual (Trig...
Hyper-V Data Exchange Service	Provides a mechanism to ...		Manual (Trig...
Hyper-V Guest Service Interface	Provides an interface for t...		Manual (Trig...
Hyper-V Guest Shutdown Service	Provides a mechanism to ...		Manual (Trig...
Hyper-V Heartbeat Service	Monitors the state of this ...		Manual (Trig...
Hyper-V PowerShell Direct Service	Provides a mechanism to ...		Manual (Trig...
Hyper-V Remote Desktop Virtualization Service	Provides a platform for co...		Manual (Trig...

Figure 160 - Hosting Release Service from HTTP to HTTPS (Cont.)

AD Sync

To change the configuration of AD Sync from HTTP to HTTPS, please follow the below steps:

1. Press Win+R and type services.msc.

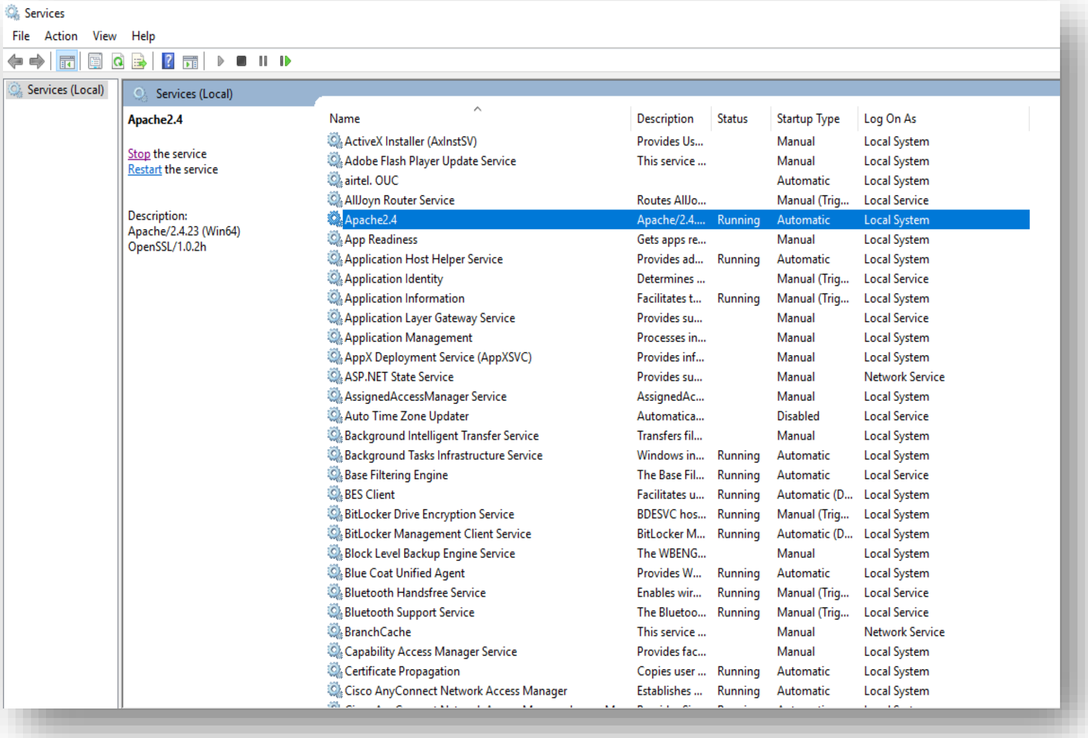


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 161 - Hosting AD Sync from HTTP to HTTPS (Cont.)

2. Click OK to open Windows Services.



Apache2.4

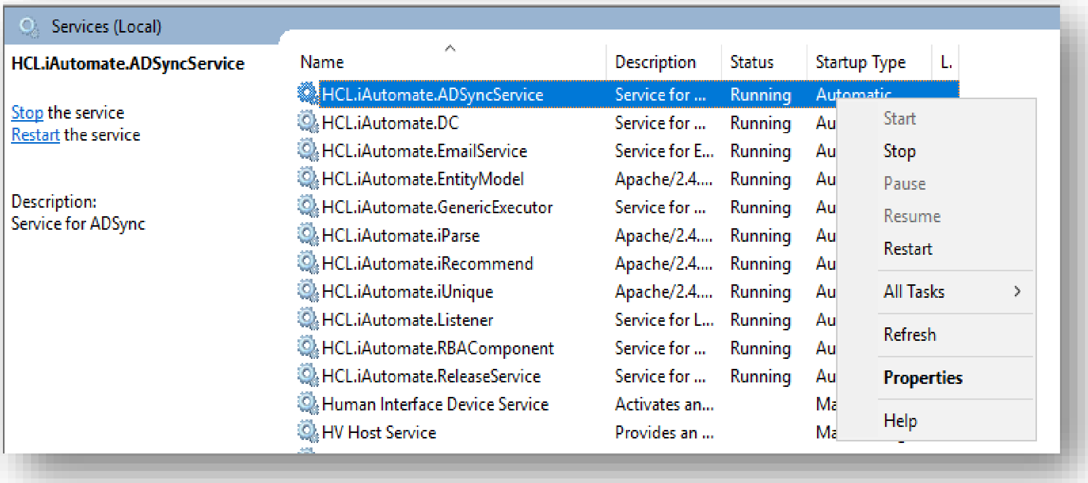
Stop the service
Restart the service

Description:
Apache/2.4.23 (Win64)
OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service
Capability Access Manager Service	Provides fac...		Manual	Local System
Certificate Propagation	Copies user ...	Running	Automatic	Local System
Cisco AnyConnect Network Access Manager	Establishes ...	Running	Automatic	Local System

Figure 162 - Hosting AD Sync from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.ADSyncService.
4. Right Click HCL.iAutomate.ADSyncService service and click Properties.



HCL.iAutomate.ADSyncService

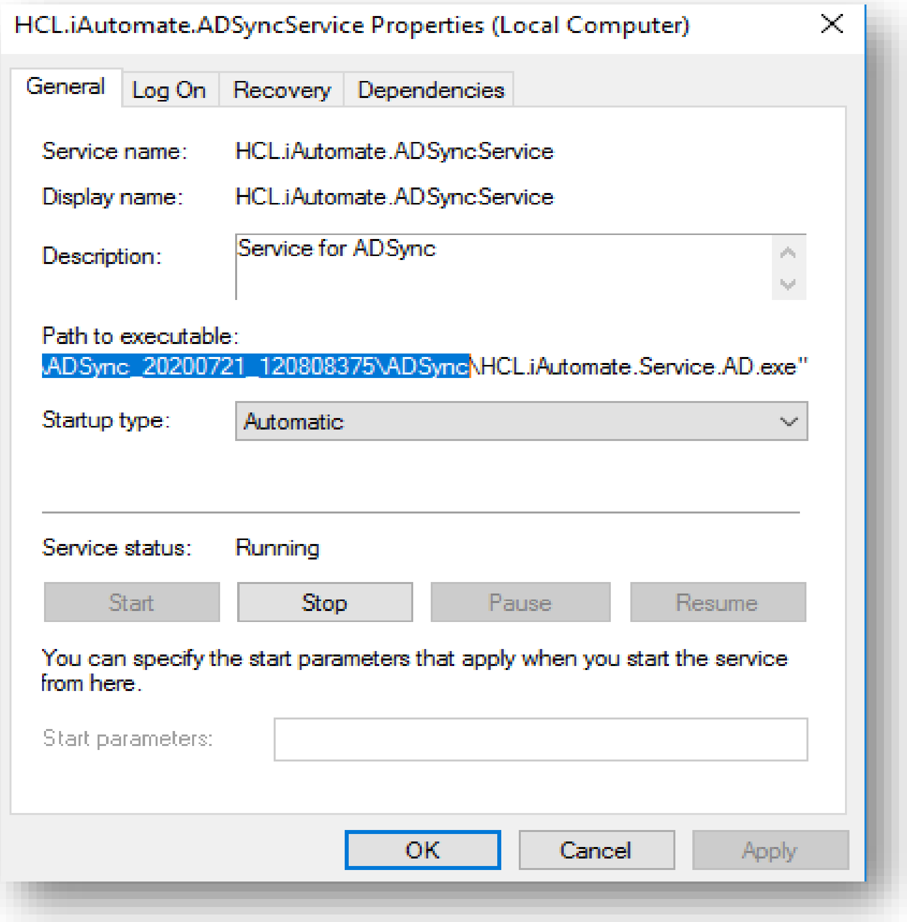
Stop the service
Restart the service

Description:
Service for ADSync

Name	Description	Status	Startup Type	L.
HCL.iAutomate.ADSyncService	Service for ...	Running	Automatic	
HCL.iAutomate.DC	Service for ...	Running	Au	
HCL.iAutomate.EmailService	Service for E...	Running	Au	
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Au	
HCL.iAutomate.GenericExecutor	Service for ...	Running	Au	
HCL.iAutomate.iParse	Apache/2.4....	Running	Au	
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Au	
HCL.iAutomate.iUnique	Apache/2.4....	Running	Au	
HCL.iAutomate.Listener	Service for L...	Running	Au	
HCL.iAutomate.RBAComponent	Service for ...	Running	Au	
HCL.iAutomate.ReleaseService	Service for ...	Running	Au	
Human Interface Device Service	Activates an...		Ma	
HV Host Service	Provides an ...		Ma	

Figure 163 - Hosting AD Sync from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in 'Path to executable' as shown in the image below.


HCL.iAutomate.ADSyncService Properties (Local Computer)

Service name: HCL.iAutomate.ADSyncService

Display name: HCL.iAutomate.ADSyncService

Description: Service for ADSync

Path to executable:
ADSync_20200721_120808375\ADSync\HCL.iAutomate.Service.AD.exe"

Startup type: Automatic

Service status: Running

You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 164 - Hosting AD Sync from HTTP to HTTPS (Cont.)

6. Open File Explorer and paste the copied path and press Enter to open the desired folder.
7. Search for HCL.iAutomate.Service.AD.exe config file and open it in a Notepad.

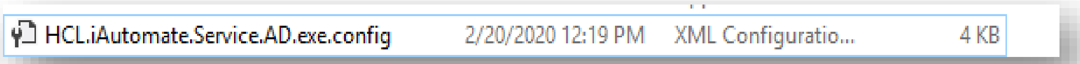

HCL.iAutomate.Service.AD.exe.config   2/20/2020 12:19 PM   XML Configuratio...   4 KB

Figure 165 - Hosting AD Sync from HTTP to HTTPS (Cont.)

8. Within the HCL.iAutomate.Service.AD.exe config file, find the key 'ServiceHostURL' and change its value from HTTP to HTTPS.

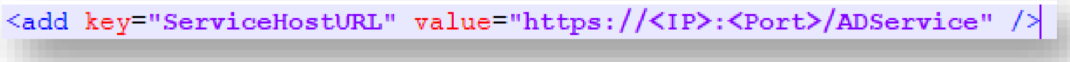
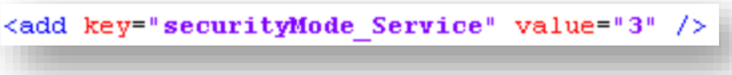

```
<add key="ServiceHostURL" value="https://<IP>:<Port>/ADService" />
```

Figure 166 - Hosting AD Sync from HTTP to HTTPS (Cont.)

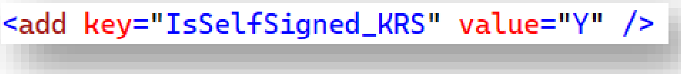
9. Within the HCL.iAutomate.Service.AD.exe config file, find the key 'securityMode_Service' and change its value from 2 to 3.



```
<add key="securityMode_Service" value="3" />
```

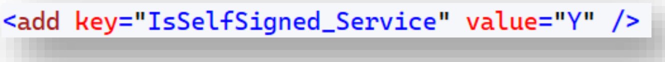
Figure 167 - Hosting AD Sync from HTTP to HTTPS (Cont.)

10. Within the HCL.iAutomate.Service.AD.exe config file, find the key 'IsSelfSigned' and change its value from N to Y.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

Figure 168 - Hosting AD Sync from HTTP to HTTPS (Cont.)



```
<add key="IsSelfSigned_Service" value="Y" />
```

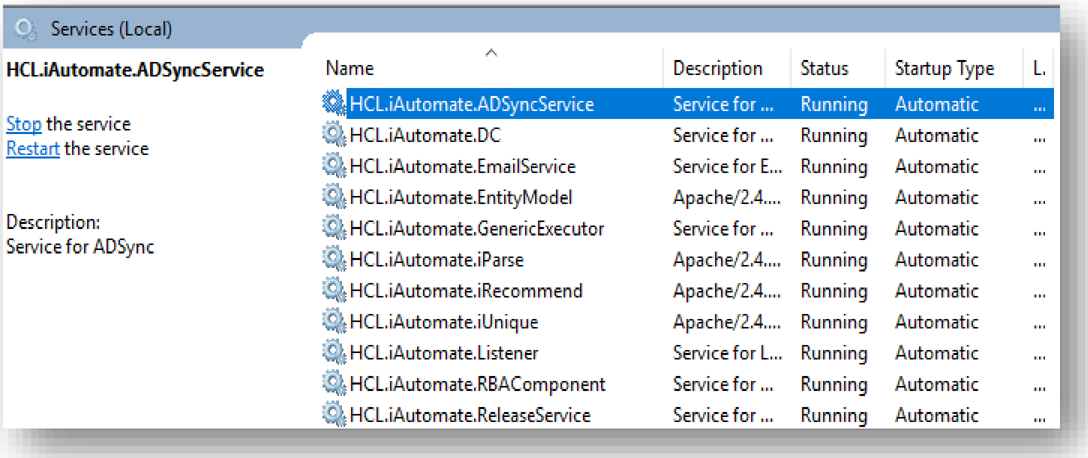
Figure 169 - Hosting AD Sync from HTTP to HTTPS (Cont.)

11. Save the file for changes to be reflected.
12. Open the command prompt as administrator and run the following command.

```
netsh http add sslcert ipport=<ip>:<port on which service is
running> appid={      certhash="<Thumbprint of the certificate>"
```

Replace the < Thumbprint of the certificate> with the GUID identified earlier.

13. Select HCL.iAutomate.ADSyncService service and click Restart to restart the service.



HCL.iAutomate.ADSyncService

Stop the service
Restart the service

Description:
Service for ADSync

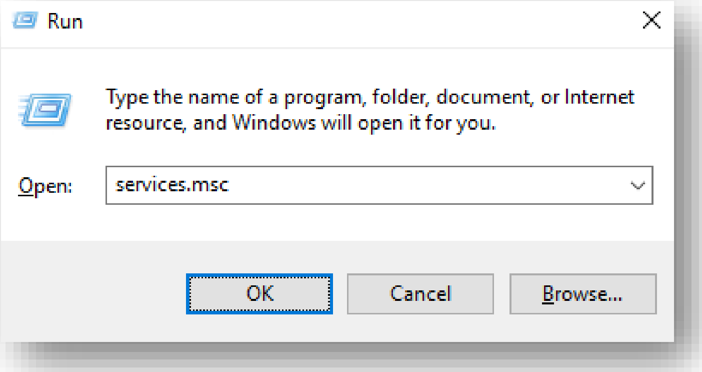
Name	Description	Status	Startup Type	L.
HCL.iAutomate.ADSyncService	Service for ...	Running	Automatic	...
HCL.iAutomate.DC	Service for ...	Running	Automatic	...
HCL.iAutomate.EmailService	Service for E...	Running	Automatic	...
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automatic	...
HCL.iAutomate.GenericExecutor	Service for ...	Running	Automatic	...
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic	...
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic	...
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automatic	...
HCL.iAutomate.Listener	Service for L...	Running	Automatic	...
HCL.iAutomate.RBAComponent	Service for ...	Running	Automatic	...
HCL.iAutomate.ReleaseService	Service for ...	Running	Automatic	...

Figure 170 - Hosting AD Sync from HTTP to HTTPS (Cont.)

Email Service

To change the configuration of Email Service from HTTP to HTTPS, please follow the below steps:

1. Press Win+R and type services.msc.

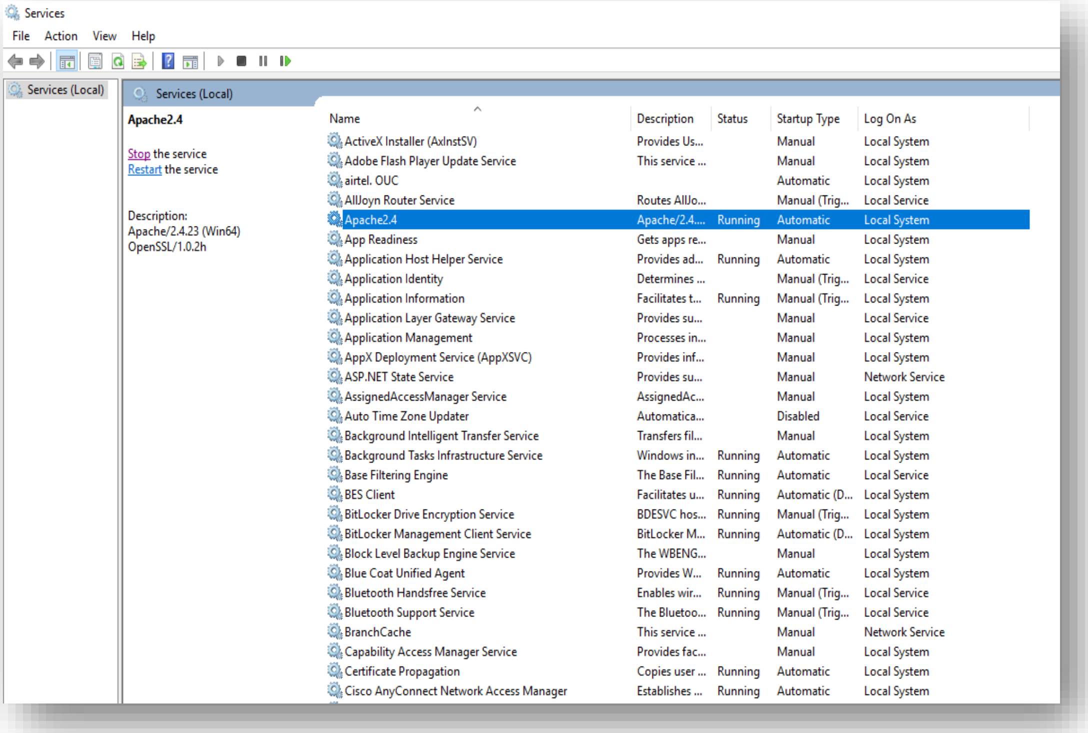


Type the name of a program, folder, document, or Internet resource, and Windows will open it for you.

Open: services.msc

Figure 171 - Hosting Email Service from HTTP to HTTPS

2. Click OK to open Windows Services.



Apache2.4

Stop the service
Restart the service

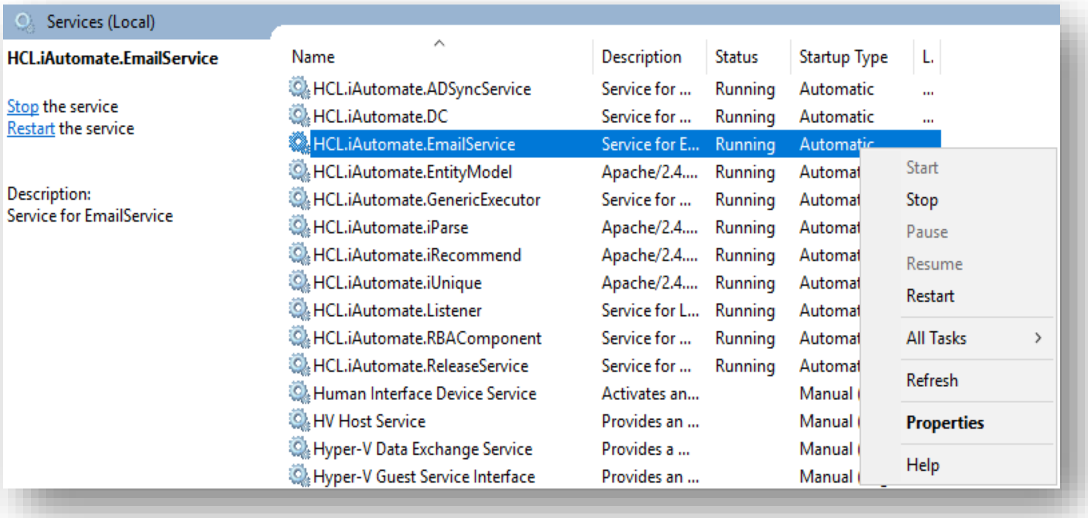
Description:
Apache/2.4.23 (Win64) OpenSSL/1.0.2h

Name	Description	Status	Startup Type	Log On As
ActiveX Installer (AxInstSV)	Provides Us...		Manual	Local System
Adobe Flash Player Update Service	This service ...		Manual	Local System
airtel. OUC			Automatic	Local System
AllJoyn Router Service	Routes AllJo...		Manual (Trig...	Local Service
Apache2.4	Apache/2.4....	Running	Automatic	Local System
App Readiness	Gets apps re...		Manual	Local System
Application Host Helper Service	Provides ad...	Running	Automatic	Local System
Application Identity	Determines ...		Manual (Trig...	Local Service
Application Information	Facilitates t...	Running	Manual (Trig...	Local System
Application Layer Gateway Service	Provides su...		Manual	Local Service
Application Management	Processes in...		Manual	Local System
AppX Deployment Service (AppXSVC)	Provides inf...		Manual	Local System
ASP.NET State Service	Provides su...		Manual	Network Service
AssignedAccessManager Service	AssignedAc...		Manual	Local System
Auto Time Zone Updater	Automatica...		Disabled	Local Service
Background Intelligent Transfer Service	Transfers fil...		Manual	Local System
Background Tasks Infrastructure Service	Windows in...	Running	Automatic	Local System
Base Filtering Engine	The Base Fil...	Running	Automatic	Local Service
BES Client	Facilitates u...	Running	Automatic (D...	Local System
BitLocker Drive Encryption Service	BDESVC hos...	Running	Manual (Trig...	Local System
BitLocker Management Client Service	BitLocker M...	Running	Automatic (D...	Local System
Block Level Backup Engine Service	The WBENG...		Manual	Local System
Blue Coat Unified Agent	Provides W...	Running	Automatic	Local System
Bluetooth Handsfree Service	Enables wir...	Running	Manual (Trig...	Local Service
Bluetooth Support Service	The Bluetoo...	Running	Manual (Trig...	Local Service
BranchCache	This service ...		Manual	Network Service
Capability Access Manager Service	Provides fac...		Manual	Local System
Certificate Propagation	Copies user ...	Running	Automatic	Local System
Cisco AnyConnect Network Access Manager	Establishes ...	Running	Automatic	Local System

Figure 172 - Hosting Email Service from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.EmailService.

4. Right click HCL.iAutomate.EmailService service and click Properties.



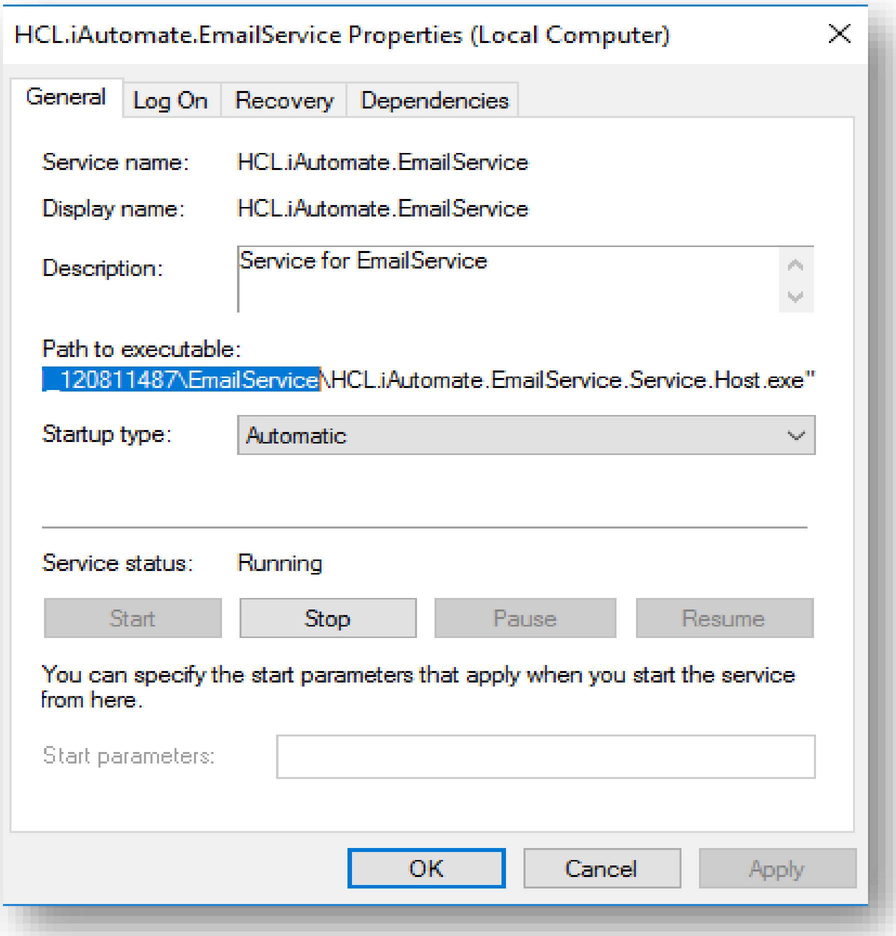
HCL.iAutomate.EmailService

Description:
Service for EmailService

Name	Description	Status	Startup Type	L.
HCL.iAutomate.ADSyncService	Service for ...	Running	Automatic	...
HCL.iAutomate.DC	Service for ...	Running	Automatic	...
HCL.iAutomate.EmailService	Service for E...	Running	Automatic	
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automat	
HCL.iAutomate.GenericExecutor	Service for ...	Running	Automat	
HCL.iAutomate.iParse	Apache/2.4....	Running	Automat	
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automat	
HCL.iAutomate.iUnique	Apache/2.4....	Running	Automat	
HCL.iAutomate.Listener	Service for L...	Running	Automat	
HCL.iAutomate.RBAComponent	Service for ...	Running	Automat	
HCL.iAutomate.ReleaseService	Service for ...	Running	Automat	
Human Interface Device Service	Activates an...		Manual (	
HV Host Service	Provides an ...		Manual (	
Hyper-V Data Exchange Service	Provides a ...		Manual (	
Hyper-V Guest Service Interface	Provides an ...		Manual (	

Figure 173 - Hosting Email Service from HTTP to HTTPS (Cont.)

5. Copy the value mentioned in ‘Path to executable’ as shown in the image below.



HCL.iAutomate.EmailService Properties (Local Computer)

Service name: HCL.iAutomate.EmailService

Display name: HCL.iAutomate.EmailService

Description: Service for EmailService

Path to executable:
_120811487\EmailService\HCL.iAutomate.EmailService.Service.Host.exe"

Startup type: Automatic

Service status: Running

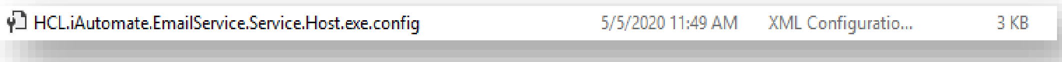
You can specify the start parameters that apply when you start the service from here.

Start parameters:

Figure 174 - Hosting Email Service from HTTP to HTTPS (Cont.)

6. Open File Explorer and paste the copied path and press Enter to open the desired folder.

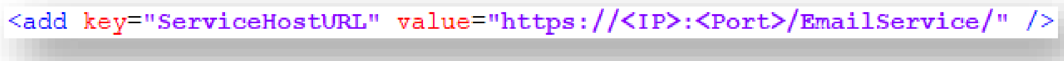
7. Search for HCL.iAutomate.EmailService.Service.Host.exe config file and open it in a Notepad.



```
HCL.iAutomate.EmailService.Service.Host.exe.config    5/5/2020 11:49 AM    XML Configuratio...    3 KB
```

Figure 175 - Hosting Email Service from HTTP to HTTPS (Cont.)

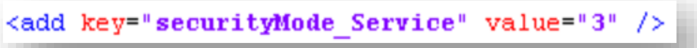
8. Within the HCL.iAutomate.EmailService.Service.Host.exe config file, find the key 'ServiceHostURL' and change its value from HTTP to HTTPS.



```
<add key="ServiceHostURL" value="https://<IP>:<Port>/EmailService/" />
```

Figure 176 - Hosting Email Service from HTTP to HTTPS (Cont.)

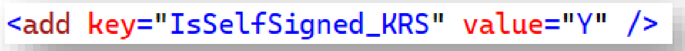
9. Within HCL.iAutomate.EmailService.Service.Host.exe config file, find the key 'securityMode_Service' and change its value from 2 to 3.



```
<add key="securityMode_Service" value="3" />
```

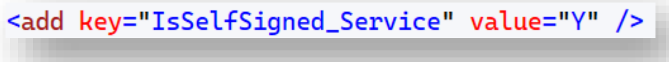
Figure 177 - Hosting Email Service from HTTP to HTTPS (Cont.)

10. Within the HCL.iAutomate.EmailService.Service.Host.exe config file, find the key 'IsSelfSigned' and change its value from N to Y.



```
<add key="IsSelfSigned_KRS" value="Y" />
```

Figure 178 - Hosting Email Service from HTTP to HTTPS (Cont.)



```
<add key="IsSelfSigned_Service" value="Y" />
```

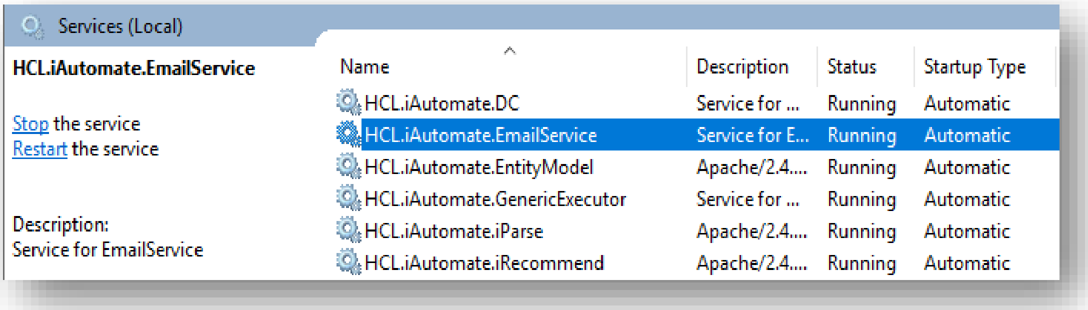
Figure 179 - Hosting Email Service from HTTP to HTTPS (Cont.)

11. Save the file for changes to be reflected.
12. Open the command prompt as administrator and run the following command.

```
netsh http add sslcert ipport=<ip>:<port on which service is
running> appid={      } certhash="<Thumbprint of the
certificate>"
```

Replace the < Thumbprint of the certificate> with the GUID identified earlier.

13. Select HCL.iAutomate.EmailService service and click Restart to restart the service.



Services (Local)

HCL.iAutomate.EmailService

Stop the service
Restart the service

Description:
Service for EmailService

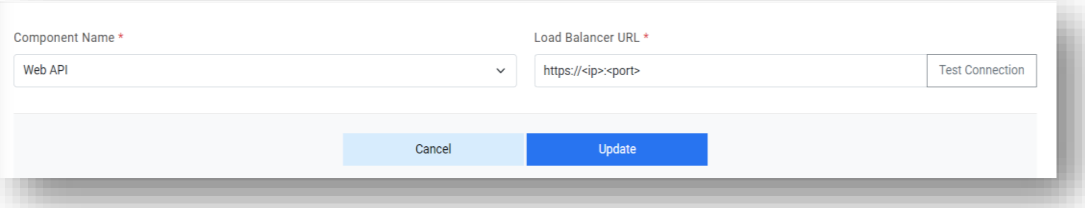
Name	Description	Status	Startup Type
HCL.iAutomate.DC	Service for ...	Running	Automatic
HCL.iAutomate.EmailService	Service for E...	Running	Automatic
HCL.iAutomate.EntityModel	Apache/2.4....	Running	Automatic
HCL.iAutomate.GenericExecutor	Service for ...	Running	Automatic
HCL.iAutomate.iParse	Apache/2.4....	Running	Automatic
HCL.iAutomate.iRecommend	Apache/2.4....	Running	Automatic

Figure 180 – Hosting Email Service from HTTP to HTTPS (Cont.)

Configuration Changes via GUI

To change the configuration for various components via GUI from HTTP to HTTPS, please follow the below steps:

1. Login to iAutomate using the Super Admin credentials.
2. Roll-over to the Advance Configuration and click Product Configuration.
3. Select Component Name as Web API.
4. Change the Load Balancer URL from HTTP to HTTPS.

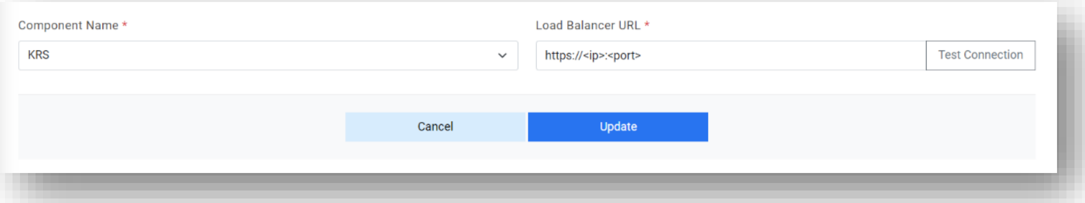


Component Name *
Web API

Load Balancer URL *
https://<ip>:<port>

Figure 181 – Configuration Changes via GUI from HTTP to HTTPS

5. Click Update to save the changes.
6. Select Component Name as KRS.
7. Change the Load Balancer URL from HTTP to HTTPS.

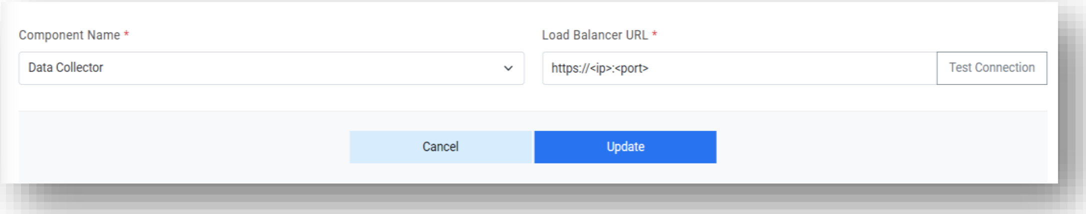


Component Name *
KRS

Load Balancer URL *
https://<ip>:<port>

Figure 182 – Configuration Changes via GUI from HTTP to HTTPS (Cont.)

8. Click Update to save the changes.
9. Select Component Name as 'Data Collector'.
10. Change the Load Balancer URL from HTTP to HTTPS.


Component Name *

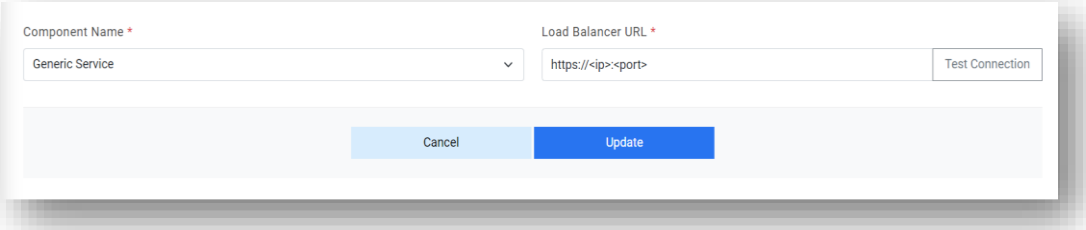
Data Collector

Load Balancer URL *

https://<ip>:<port>

Figure 183 – Configuration Changes via GUI from HTTP to HTTPS (Cont.)

11. Click Update to save the changes.
12. Select Component Name as 'Generic Service'.
13. Change the Load Balancer URL from HTTP to HTTPS.


Component Name *

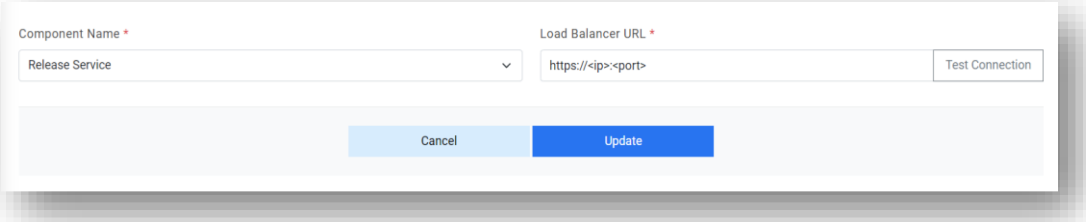
Generic Service

Load Balancer URL *

https://<ip>:<port>

Figure 184 – Configuration Changes via GUI from HTTP to HTTPS (Cont.)

14. Click Update to save the changes.
15. Select Component Name as 'Release Service'.
16. Change the Load Balancer URL from HTTP to HTTPS.


Component Name *

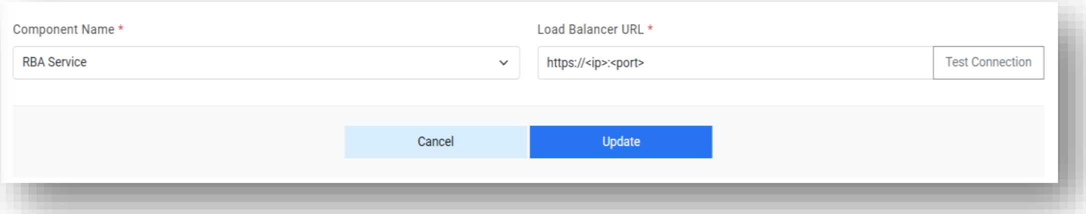
Release Service

Load Balancer URL *

https://<ip>:<port>

Figure 185 – Configuration Changes via GUI from HTTP to HTTPS (Cont.)

17. Click Update to save the changes.
18. Select Component Name as 'RBA Service'.
19. Change the Load Balancer URL from HTTP to HTTPS.


Component Name *

RBA Service

Load Balancer URL *

https://<ip>:<port>

Figure 186 – Configuration Changes via GUI from HTTP to HTTPS (Cont.)

20. Click Update to save the changes.
21. Select Component Name as 'Active Directory'.
22. Change the Load Balancer URL from HTTP to HTTPS.

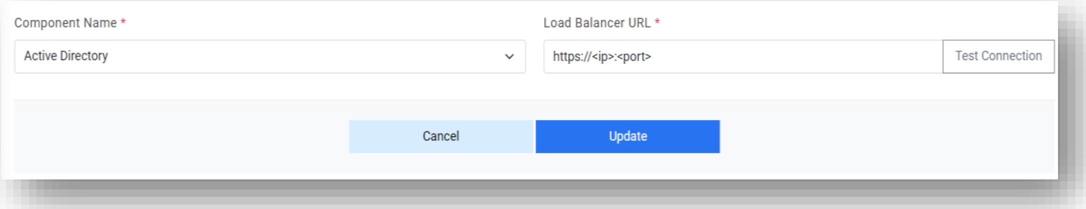

Component Name *
Active Directory
Load Balancer URL *
https://<ip>:<port>

Figure 187 – Configuration Changes via GUI from HTTP to HTTPS (Cont.)

23. Click Update to save the changes.
24. Select Component Name as 'Email Service'.
25. Change the Load Balancer URL from HTTP to HTTPS.

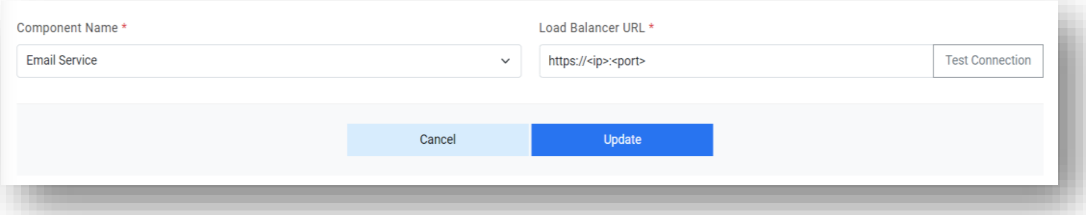

Component Name *
Email Service
Load Balancer URL *
https://<ip>:<port>

Figure 188 – Configuration Changes via GUI from HTTP to HTTPS (Cont.)

26. Click Update to save the changes.

4.7.4 Conclusion

After the conclusion of this exercise, you will have a thorough understanding of deployment of iAutomate components in a secure mode.

Now, let's discuss the configuration of iAutomate in the next module.

4.7.5 Related Documentation

- iAutomate Prerequisites Guide
- iAutomate Installation

5 Module 3 – Configuration of iAutomate

5.1 Introduction

This module covers the procedure for configuring iAutomate product thereby making it fit for use by end users for manual / automated ticket resolutions, document search and analysis, and other functionalities.

In this module, some of the lab exercises may be dependent on other ones. Please do not skip any exercise in between. You should have Super Admin user credentials to proceed with configurations that have been created in the previous exercises during Installation Lab Exercise.

Let's begin with the creation of an Organization.

5.2 Lab Exercise 1 – Create Organization

5.2.1 Scenario

Based on the analysis done earlier for identifying automation opportunities, you have identified that significant number of incidents can be automated. MyCompany organization has asked for configuration of iAutomate for resolving Incidents. Currently they are using Service Now as the ITSM tool and CA ITPAM as the runbook automation tool.

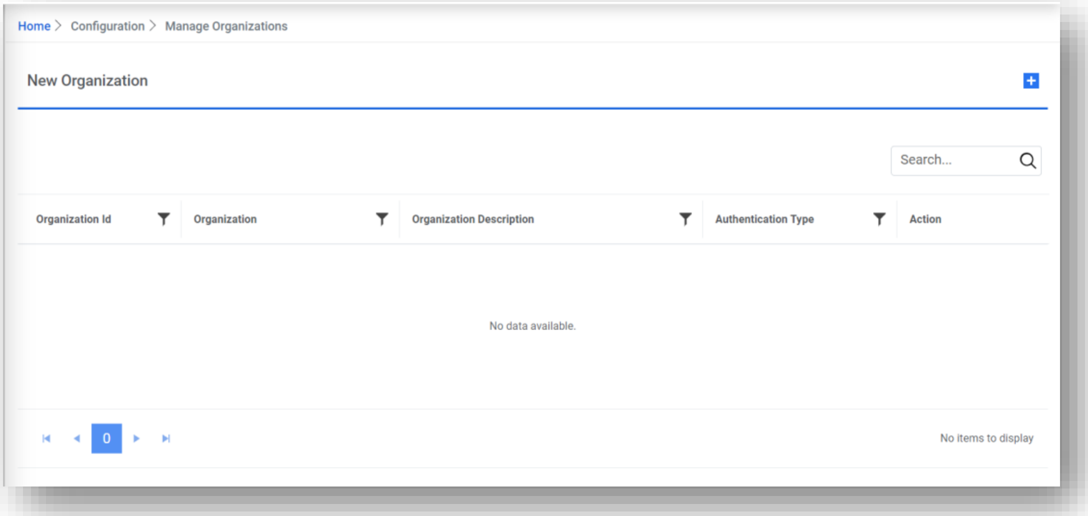
In this lab, we will showcase the detailed procedure for creating an organization for MyCompany and configuring various necessary parameters.

5.2.2 Prerequisites

- Information of the module which needs to be configured – Incident / Service Request Tasks / Change Request Tasks. In this exercise, we will consider Incident Management module.
- Information about authentication type of MyCompany organization. In this exercise, we will consider Form based authentication.
- Information about existing IT Service Management and Runbook Automation tools present in MyCompany's environment.
- Access to Super Admin credentials.

5.2.3 Solution

1. Open iAutomate Web URL and login with Super Admin credentials.
2. Go to Actions -> Manage Organizations menu and expand New Organization.

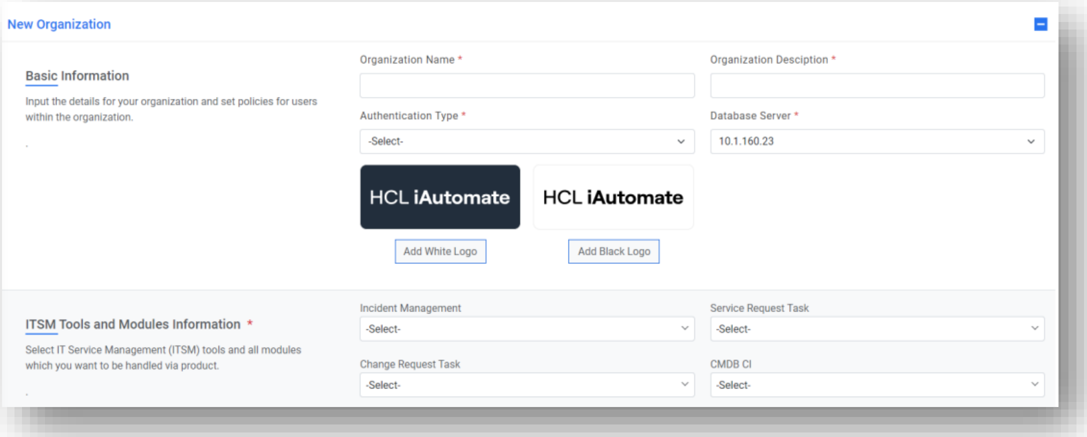


Organization Id	Organization	Organization Description	Authentication Type	Action

No data available.

Figure 189 – Organizations

3. The Create Organization form appears.
4. Enter the Organization Name as MyCompany.
5. Enter the Organization Description.
6. Click Choose File to upload the organization's Logo.
7. Select Service Now against Incident Management module.



Input the details for your organization and set policies for users within the organization.

Organization Name *

Organization Desciption *

Authentication Type * -Select-

Database Server * 10.1.160.23

Select IT Service Management (ITSM) tools and all modules which you want to be handled via product.

Incident Management -Select-

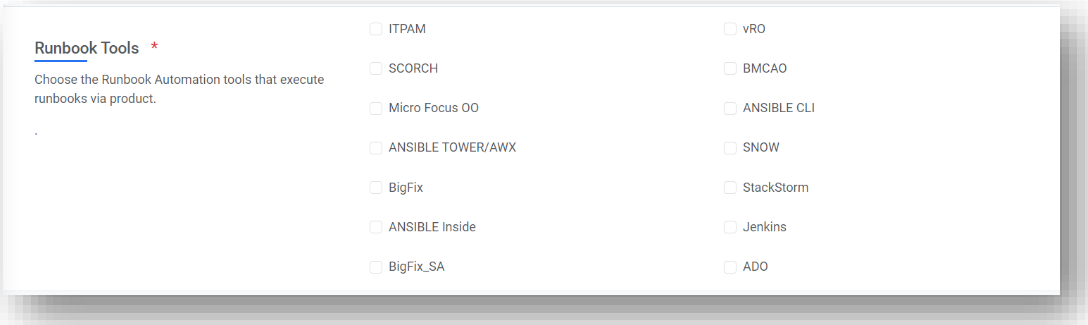
Service Request Task -Select-

Change Request Task -Select-

CMDB CI -Select-

Figure 190 – Create Organization

8. Select ITPAM as the Runbook Tool.
9. Select Database Server available from the dropdown.
10. Select the Authentication Type as Form Based.
11. Click Save once all the information is populated. The organization will be created.



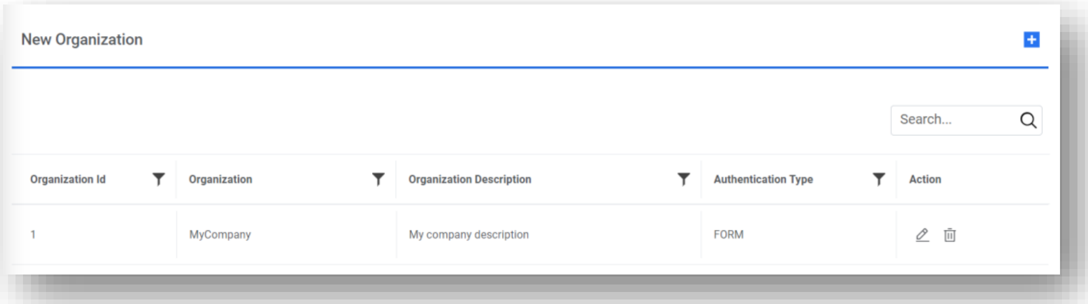
Runbook Tools *

Choose the Runbook Automation tools that execute runbooks via product.

☐ ITPAM
☐ SCORCH
☐ Micro Focus OO
☐ ANSIBLE TOWER/AWX
☐ BigFix
☐ ANSIBLE Inside
☐ BigFix_SA
☐ vRO
☐ BMCAO
☐ ANSIBLE CLI
☐ SNOW
☐ StackStorm
☐ Jenkins
☐ ADO

Figure 191 – Create Organization (Cont.)

12. To view the newly created organization and its details, go to Actions and click Manage Organizations menu option.



New Organization

Organization Id	Organization	Organization Description	Authentication Type	Action
1	MyCompany	My company description	FORM	✎ 🗑

Figure 192 – Create Organization (Cont.)

13. A list of available organizations with the newly created MyCompany organization will be visible in the list. You can edit the information or delete the organization by clicking on the respective icons under Action section.

5.2.4 Conclusion

After the completion of this exercise, you should have a good understanding of creating a new organization with the required parameters. This forms the foundation for performing the configurations covered in further exercises.

The next step is to configure the data sources for sourcing the ticket related information which will be covered in the next exercise.

5.3 Lab Exercise 2 – Create Data Source

5.3.1 Scenario

MyCompany organization wants to automate resolution of incident tickets through iAutomate for which data source needs to be created for the ITSM tool (Service Now) against the Incident Management module. This would help in pulling the tickets from Service Now into iAutomate for processing.

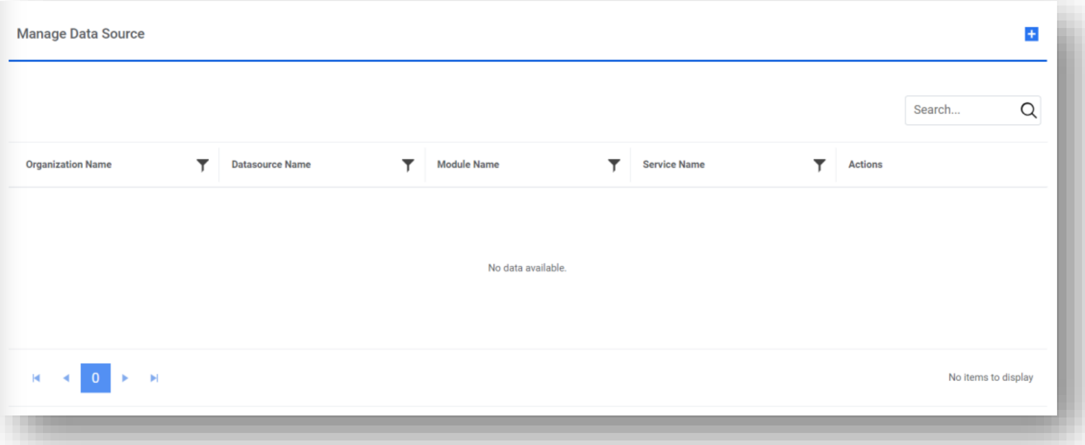
In this lab, we will showcase the detailed procedure for creating the data source for organization MyCompany for Service Now's incident management module.

5.3.2 Prerequisites

- Organization should be configured.
- Information about the ITSM module against which data source needs to be created. In this lab exercise, we will consider Incident management module.
- ITSM API (Get) along with authentication details should be available
- ITSM instance should have a dedicated assignment group for iAutomate where identified incidents will be routed. We have considered iAutomate Group in this exercise.
- ITSM user should have the following rights:
  - Read rights for incident
  - Write rights for worklogs/assignment group for incident
  - Incident routing to other resolver groups
- ITSM API should be accessible from the server where Data Collector service is installed.
- Access to Super Admin credentials.

5.3.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Actions and click Manage Data Sources then click on Create Data Source button.



Manage Data Source

Search...

Organization Name	Datasource Name	Module Name	Service Name	Actions

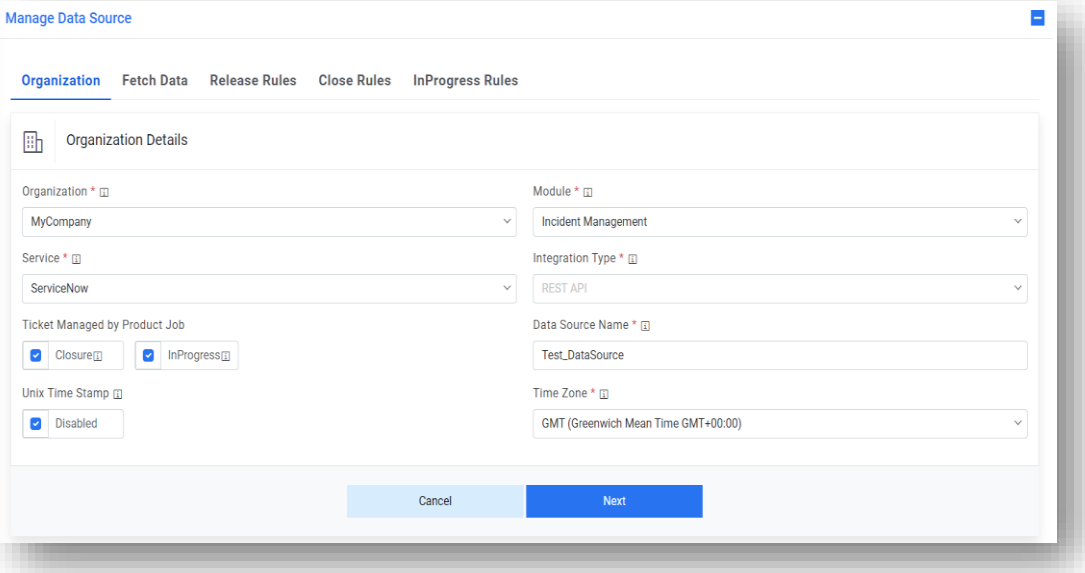
No data available.

0

No items to display

Figure 193 – Create Data Source

3. The Create Data Source page appears.
4. On the Organization tab, type in the details as per your requirement. Refer to the Lab Exercise 1 for Organization and ITSM Module information.
5. Click Next.



Organization Details

Organization * MyCompany

Module * Incident Management

Service * ServiceNow

Integration Type * REST API

Ticket Managed by Product Job ☑ Closure ☑ InProgress

Data Source Name * Test_DataSource

Unix Time Stamp ☑ Disabled

Time Zone * GMT (Greenwich Mean Time GMT+00:00)

Figure 194 – Create Data Source (Cont.)

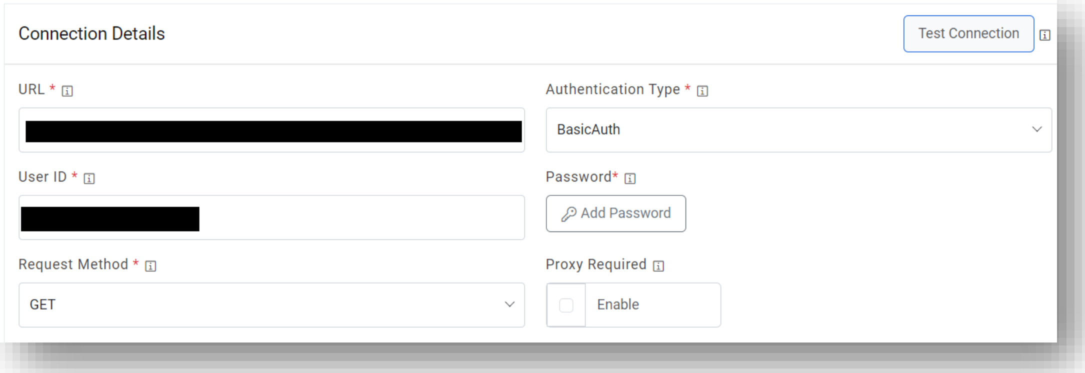
6. The data source could be named Test_DataSource.
7. Timestamp here indicate that date is in APOC format or not.
8. On the Fetch Data Configuration tab, type in the details as per your requirement. It includes multiple sections.

Connection Details

Sample information that can be populated –

- URL- https://sample.servicenow.com/api/now/v1/table/incident?sysparm_fields=#Columns#&sysparm_query=sys_updated_on>=#StartDate#^sys_updated_on<=#EndDate#^ORDERBYsys_updated_on

Authentication Type, User ID, and Password need to be provided by ITSM team. In case you are attending the classroom-based training, the instructor will provide you with the details.


Connection Details

URL * [redacted]

Authentication Type * BasicAuth

User ID * [redacted]

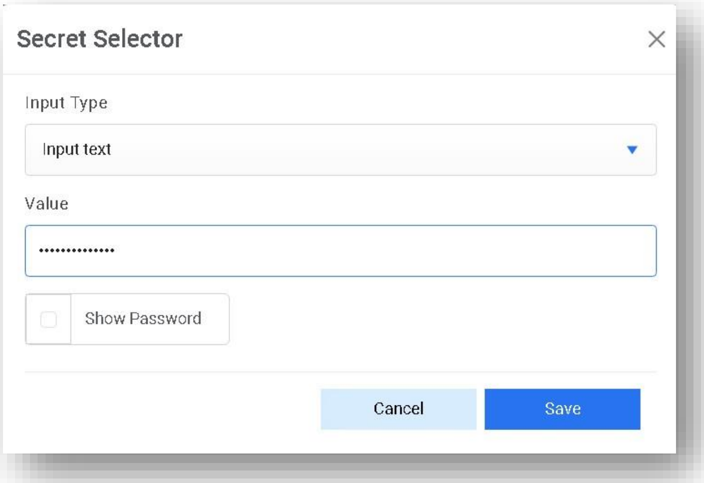
Password*

Request Method * GET

Proxy Required □ Enable

Figure 195 – Connection Details

- Password: For password, click on icon next to it. If the password is available in plaintext, then select Input type as Input Text and enter the password in Value field. Else if it is available in Azure Key Vault then select Input Type as Azure Key Vault and then select any of the configured details from the value field. Else if it is available in any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field. Else if it is available in Internal Secret Manager then select Input Type as Internal Secret Manager and then select any of the configured details from the value field.



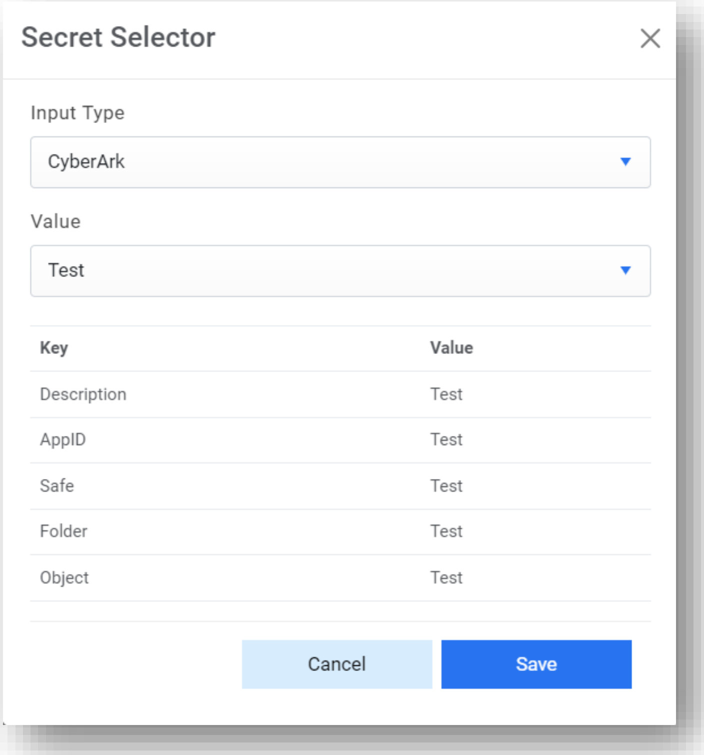
Secret Selector

Input Type: Input text

Value: ••••••••••••••

□ Show Password

Figure 196 – Password in Plaintext



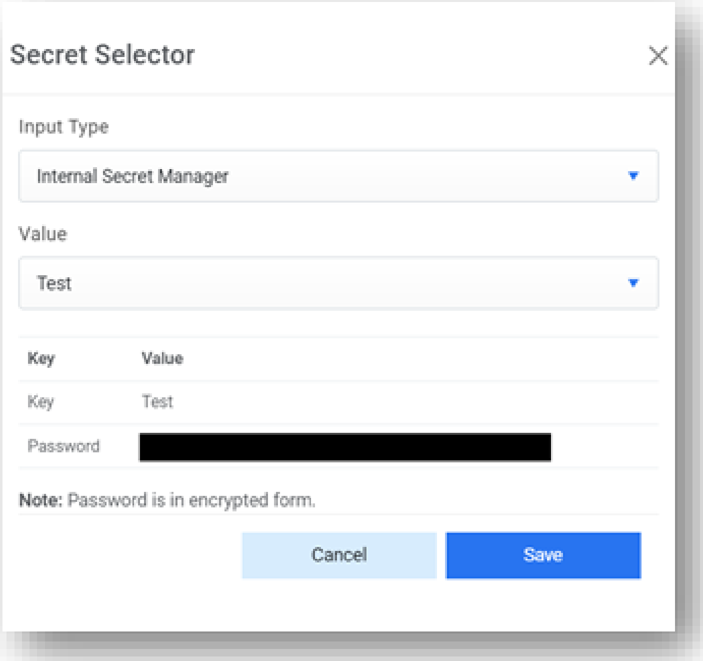
Secret Selector

Input Type: CyberArk

Value: Test

Key	Value
Description	Test
AppID	Test
Safe	Test
Folder	Test
Object	Test

Figure 197 – Password from Key Vault (CyberArk)



Secret Selector

Input Type

Internal Secret Manager

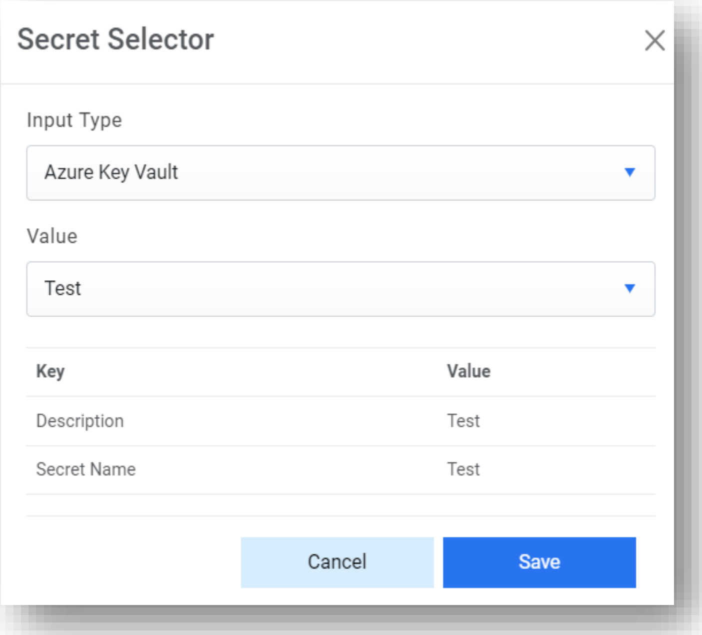
Value

Test

Key	Value
Key	Test
Password	[redacted]

Note: Password is in encrypted form.

Figure 198 - Password from Internal Secret Manager



Secret Selector

Input Type

Azure Key Vault

Value

Test

Key	Value
Description	Test
Secret Name	Test

Figure 199 - Password from Azure Key Vault

- Request Authentication Parameters and Request Header Parameters. See below the sample information:

```
Key: #Columns#
ValueType: Text
Value:
```

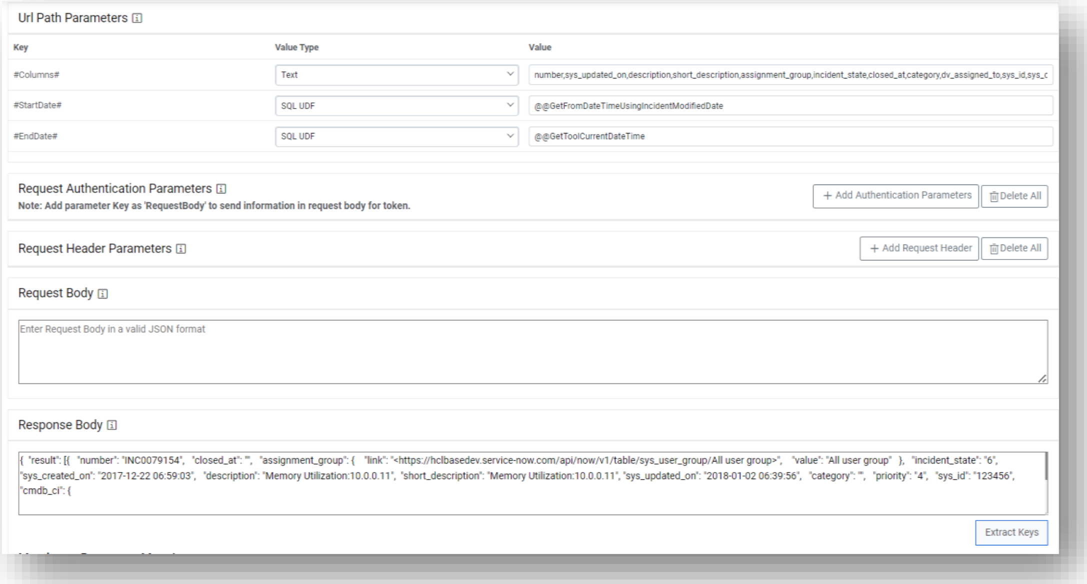
```
number,sys_updated_on,short_description,description,assignment_g
roup,incident_state,closed_at,category,dv_assigned_to,sys_id

Key: #StartDate#
ValueType: SQL UDF
VALUE: @@GetFromDateTimeUsingIncidentModifiedDate (applicable
for ITSM Tool: SNOW)

Key: #EndDate#
ValueType: SQL UDF
VALUE: @@GetToolCurrentDateTime (applicable for ITSM Tool: SNOW)


Response Body:

{  "result": [{   "number": "INC0079154",   "closed_at": "",
"assignment_group": {    "link": "<https://sample.service-
now.com/api/now/v1/table/sys_user_group/All user group>",
"value": "All user group"   },   "incident_state": "6",
"sys_created_on": "2017-12-22 06:59:03",   "description":
"Memory Utilization:10.0.0.11", "short_description": "Memory
Utilization:10.0.0.11",  "sys_updated_on": "2018-01-02
06:39:56",   "category": "",   "priority": "4",   "sys_id":
"123456"  }] }
```



Url Path Parameters

Key	Value Type	Value
#Columns#	Text	number,sys_updated_on,description,short_description,assignment_group,incident_state,closed_at,category,dv_assigned_to,sys_id,sys_c
#StartDate#	SQL UDF	@@GetFromDateTimeUsingIncidentModifiedDate
#EndDate#	SQL UDF	@@GetToolCurrentDateTime

Request Authentication Parameters

Note: Add parameter Key as 'RequestBody' to send information in request body for token.

Request Header Parameters

Request Body

Enter Request Body in a valid JSON format

Response Body

```
{  "result": [{   "number": "INC0079154",   "closed_at": "",   "assignment_group": {    "link": "<https://hclbasedev.service-now.com/api/now/v1/table/sys_user_group/All user group>",    "value": "All user group"   },   "incident_state": "6",
"sys_created_on": "2017-12-22 06:59:03",   "description": "Memory Utilization:10.0.0.11",  "short_description": "Memory Utilization:10.0.0.11", "sys_updated_on": "2018-01-02 06:39:56",   "category": "",   "priority": "4",   "sys_id": "123456",
"cmdb_ci": {
```

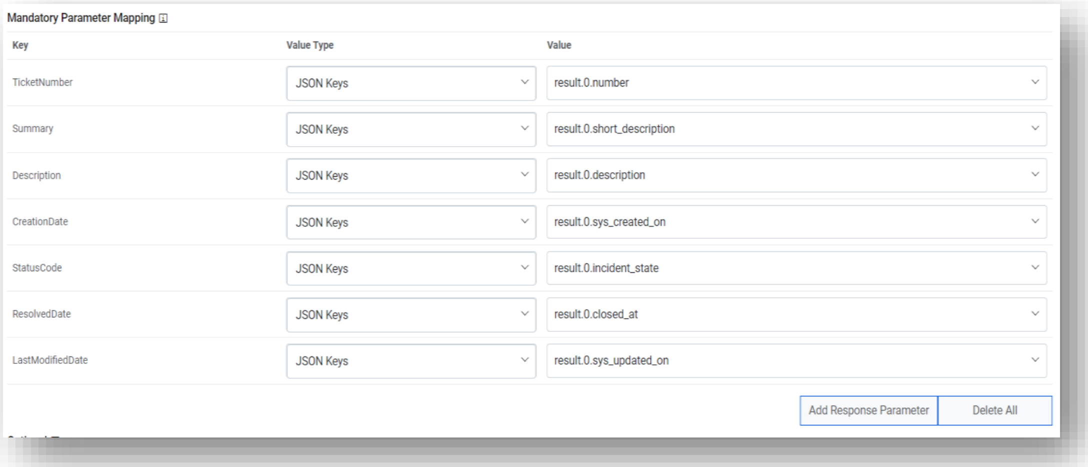
Figure 200 – Request Authentication Parameters

- Mandatory Parameter Mapping

This section maps the mandatory columns required for iAutomate with the fields available in response received. The field values are the same as the ones available in JSON added in Response Body section. Refer to below table for sample information:

Table 5 – Sample Mandatory Parameter Mapping

TicketNumber	JSON.Keys	result.0.number
Summary	JSON.Keys	result.0.short_description
Description	JSON.Keys	result.0.description
CreatedDate	JSON.Keys	result.0.sys_created_on
StatusCode	JSON.Keys	result.0.incident_state
ResolvedDate	JSON.Keys	result.0.closed_at
LastModifiedDate	JSON.Keys	result.0.sys_updated_on



Mandatory Parameter Mapping

Key	Value Type	Value
TicketNumber	JSON Keys	result.0.number
Summary	JSON Keys	result.0.short_description
Description	JSON Keys	result.0.description
CreationDate	JSON Keys	result.0.sys_created_on
StatusCode	JSON Keys	result.0.incident_state
ResolvedDate	JSON Keys	result.0.closed_at
LastModifiedDate	JSON Keys	result.0.sys_updated_on

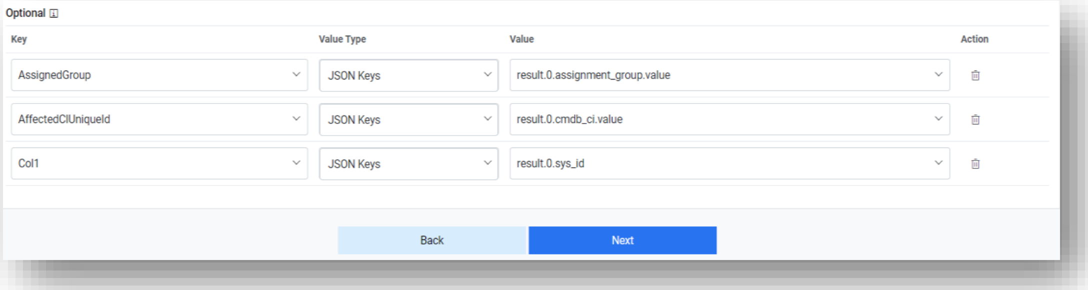
Figure 201 – Mandatory Parameter Mapping

- Optional

This section is an extension to Mandatory Parameter Mapping section. You can create additional columns in Automate database if extra parameters are to be mapped. Refer to table below for sample information:

Table 6 – Sample Extended Mandatory Parameter Mapping

AssignedGroup	JSON.Keys	result.0.assignment_group.value
Col1	JSON.Keys	result.0.sys_id



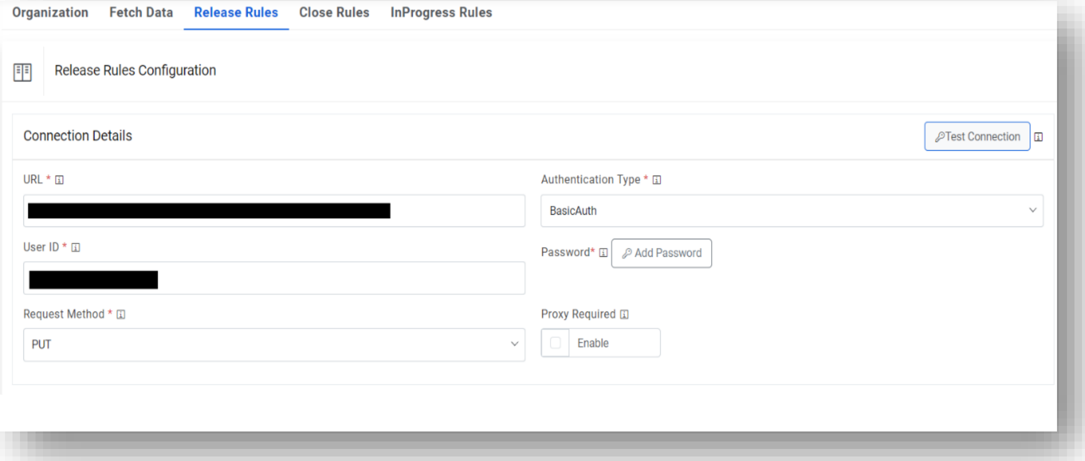
Optional

Key	Value Type	Value	Action
AssignedGroup	JSON Keys	result.0.assignment_group.value	
AffectedCIUniqueId	JSON Keys	result.0.cmdb_ci.value	
Col1	JSON Keys	result.0.sys_id	

Figure 202 – Optional Key Parameters

1. Click Next after populating all the sections in Fetch Data Configuration tab.
2. On the Release Rules Configuration tab, type in the details as per your requirement.

- ITSM (PUT) details have to be entered as shown in the screenshot below. See below the sample information:
    a. URL: https://sample.service-now.com/api/now/table/incident/#incident#
    b. AuthenticationType, UserId, Password, RequestMethod have to be provided by ITSM team. Please get in touch with lab instructor for the information.



Release Rules Configuration

Connection Details

URL * [redacted]

Authentication Type * BasicAuth

User ID * [redacted]

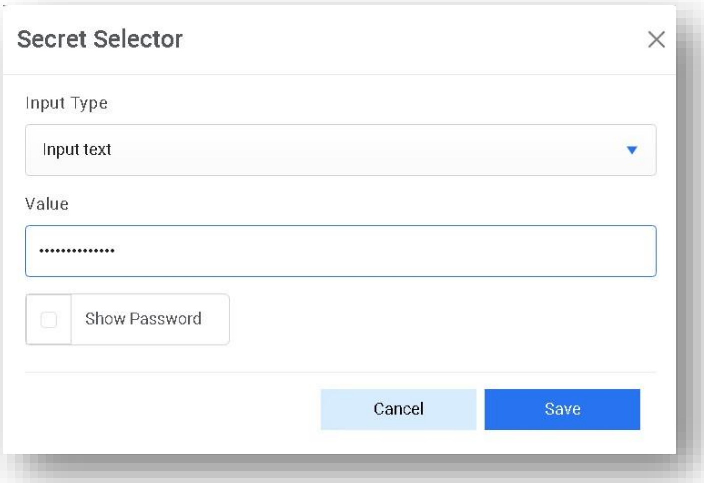
Password*

Request Method * PUT

Proxy Required □ Enable

Figure 203 – Release Rules Configuration

- Password- For password, click on icon next to it. If the password is available in plaintext, then select Input type as Input Text and enter the password in Value field. Else if it is available in Azure Key Vault then select Input Type as Azure Key Vault and then select any of the configured details from the value field. Else if it is available in any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field. Else if it is available in Internal Secret Manager then select Input Type as Internal Secret Manager and then select any of the configured details from the value field.



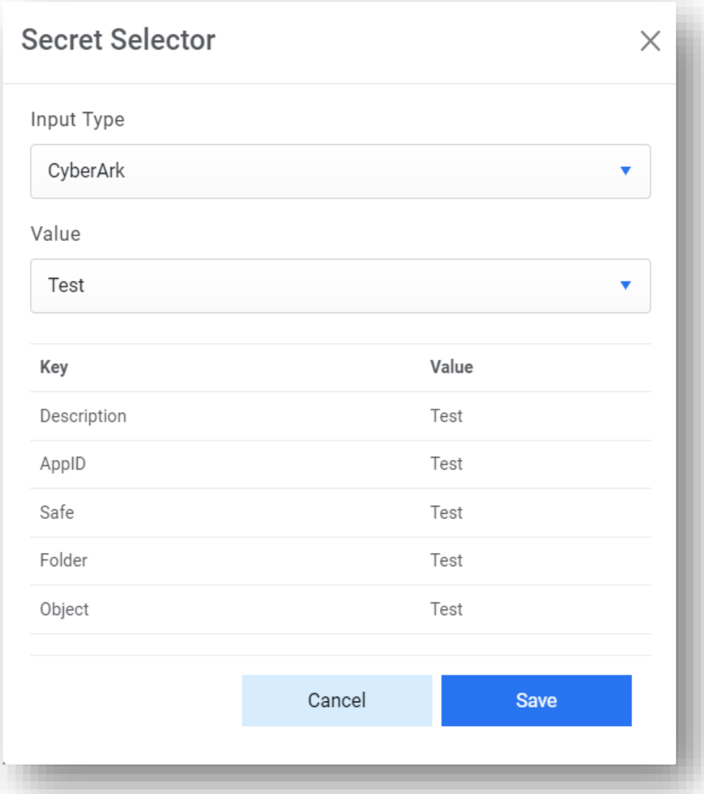
Secret Selector

Input Type: Input text

Value: ••••••••••••••

□ Show Password

Figure 204 – Password in Plaintext



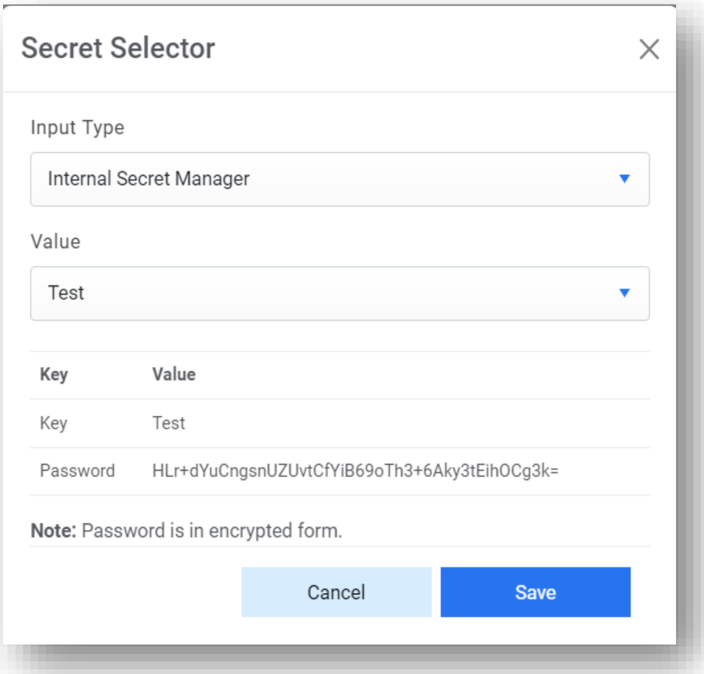
Secret Selector

Input Type: CyberArk

Value: Test

Key	Value
Description	Test
AppID	Test
Safe	Test
Folder	Test
Object	Test

Figure 205 – Password from Key Vault (CyberArk)



Secret Selector

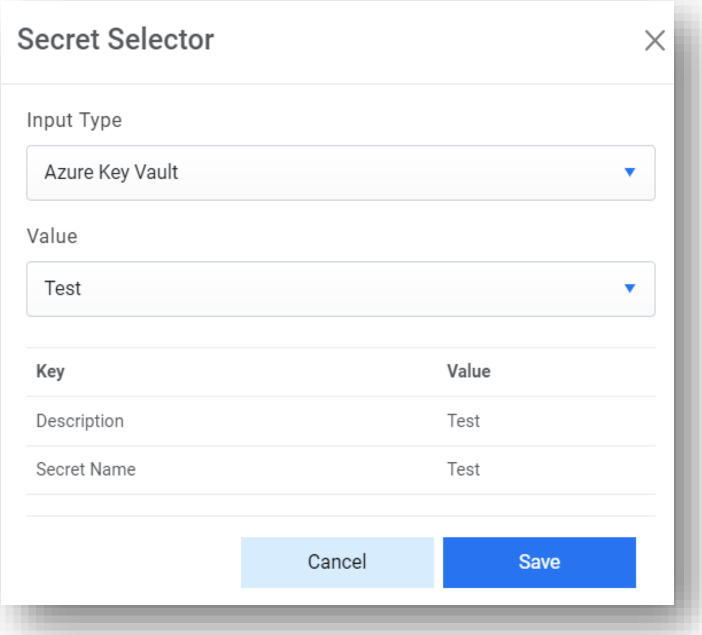
Input Type: Internal Secret Manager

Value: Test

Key	Value
Key	Test
Password	HLr+dYuCngsnUZUvtCfYiB69oTh3+6Aky3tEihOCg3k=

Note: Password is in encrypted form.

Figure 206 – Password from Internal Secret Manager



Secret Selector

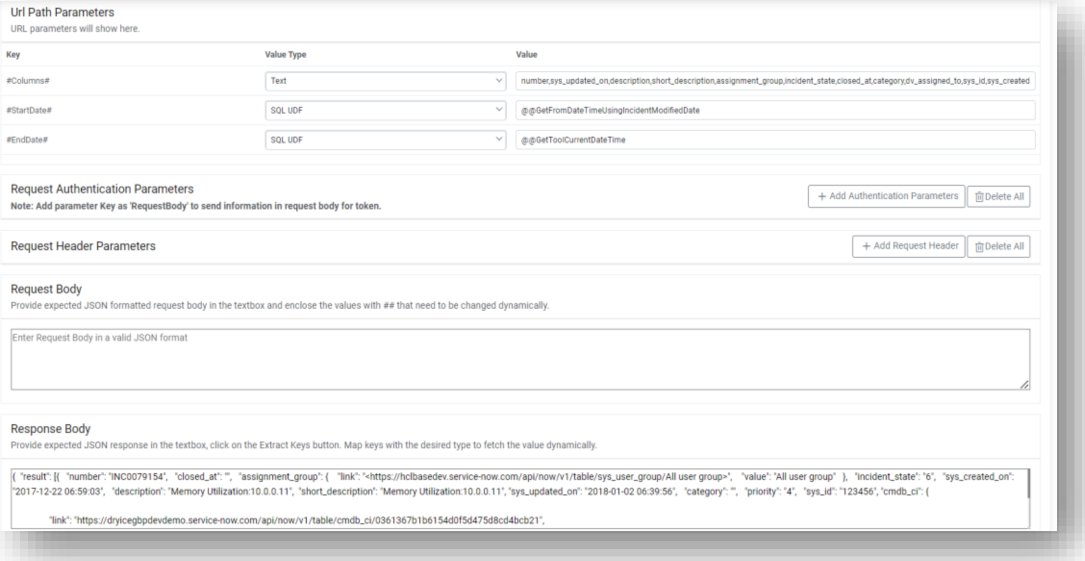
Input Type: Azure Key Vault

Value: Test

Key	Value
Description	Test
Secret Name	Test

Figure 207 – Password from Azure Key Vault

It also has other fields. Request Payload should be populated in following fields:



Url Path Parameters
URL parameters will show here.

Key	Value Type	Value
#Columns#	Text	number,sys_updated_on,description,short_description,assignment_group,incident_state,closed_at,category,dv_assigned_to,sys_id,sys_created
#StartDate#	SQL UDF	@@GetFromDateTimeUsingIncidentModifiedDate
#EndDate#	SQL UDF	@@GetToolCurrentDateTime

Request Authentication Parameters
Note: Add parameter Key as 'RequestBody' to send information in request body for token.

Request Header Parameters

Request Body
Provide expected JSON formatted request body in the textbox and enclose the values with ## that need to be changed dynamically.

Enter Request Body in a valid JSON format

Response Body
Provide expected JSON response in the textbox, click on the Extract Keys button. Map keys with the desired type to fetch the value dynamically.

```
{  "result": [{   "number": "INC0079154",   "closed_at": "",   "assignment_group": {    "link": "<https://hclbasedev.service-now.com/api/now/v1/table/sys_user_group/All user group>",    "value": "All user group"   },   "incident_state": "6",   "sys_created_on":
"2017-12-22 06:59:03",   "description": "Memory Utilization:10.0.0.11",   "short_description": "Memory Utilization:10.0.0.11", "sys_updated_on": "2018-01-02 06:39:56",   "category": "",   "priority": "4",   "sys_id": "123456", "cmdb_ci": {

        "link": "https://dryicegbpdevdemo.service-now.com/api/now/v1/table/cmdb_ci/0361367b1b6154d0f5d475d8cd4bcb21",
```

Figure 208 – URL Path Parameters

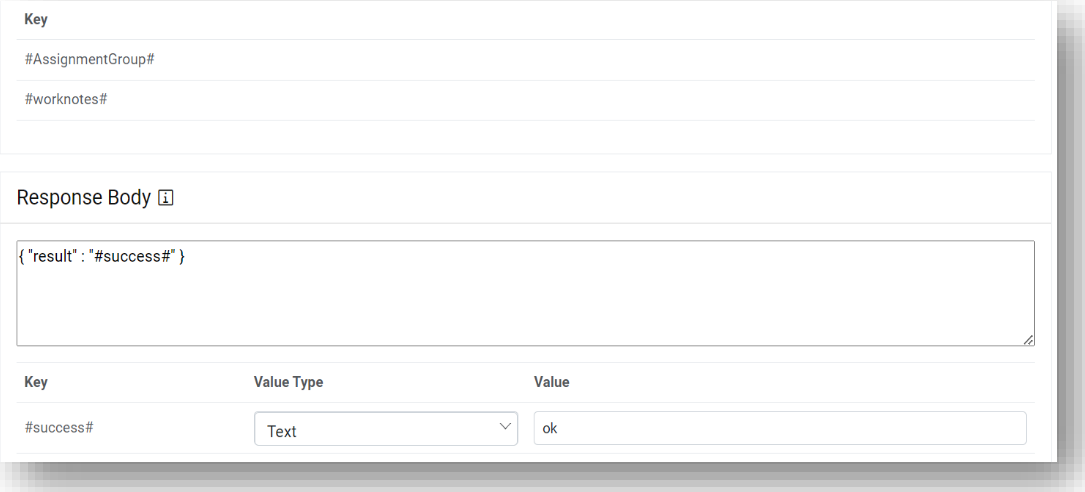
- Considering that sample information has been populated as in Figure 203 – Release Rules Configuration, URL Path parameters sample value can be referenced from the table below:

Incident	Table.Columns	Col1

- For sample Request Body, refer to following section:

```
RequestBody
{ "assignment_group" : "#AssignmentGroup#","work_notes" :
"#work_notes#" }
```

- Sample request can be captured in following fields:



Key
#AssignmentGroup#
#worknotes#

Response Body

```
{ "result" : "#success#" }
```

Key	Value Type	Value
#success#	Text	ok

Figure 209 – Key Parameters Sample Request

- For sample Response Body, refer to following section:

```
Response Body
{ "result" : "#success#" }
```

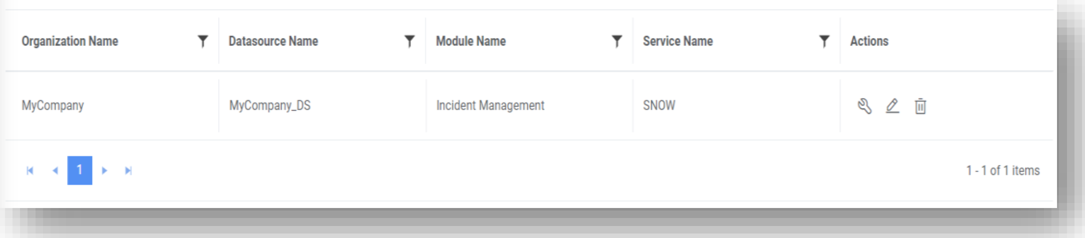
- Response Key value mapping can be done as per below table:

#success#	Text	OK

a. Click Submit to create the data source.

b. To view the data source and related information, go to Actions and click Manage Data Sources.

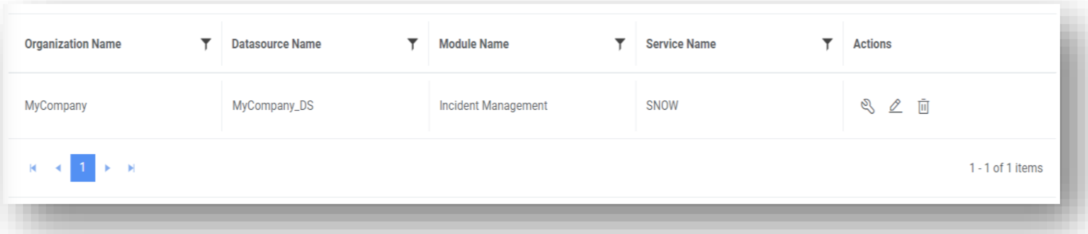
c. Ensure that the newly created data source is visible in the list.



Organization Name	Datasource Name	Module Name	Service Name	Actions
MyCompany	MyCompany_DS	Incident Management	SNOW	

Figure 210 – Data Source List

d. To manage the entry criteria, click gear icon in Action column against the data source.

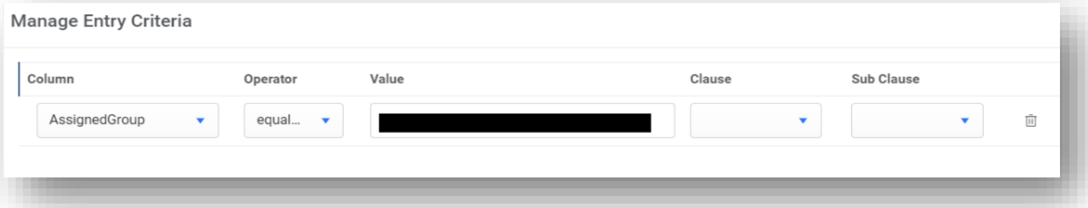


Organization Name	Datasource Name	Module Name	Service Name	Actions
MyCompany	MyCompany_DS	Incident Management	SNOW	

1 - 1 of 1 items

Figure 211 – Data Source List (Cont.)

e. The Manage Entry Criteria popup appears.



Manage Entry Criteria

Column	Operator	Value	Clause	Sub Clause
AssignedGroup	equal...	[redacted]		

Figure 212 – Manage Entry Criteria

f. Define entry criteria on this screen. For example, if you want to pull tickets for iAutomate Group Assigned group only, then you can save the same filter condition as shown in above screen.

5.3.4 Conclusion

Post the completion of this exercise, you should have a thorough understanding of creating the data sources for the respective module of the ITSM tool and defining the entry criteria for enabling iAutomate to pick the filtered tickets as per the scope.

The next step is to create the users and map them to the necessary groups which will be covered in the next exercise.

5.4 Lab Exercise 3 – Create Users

5.4.1 Scenario

MyCompany organization wants to create users who will be using the credentials for end user activities as well as configuring some parameters at the organization level. They have asked to create a user with organization admin privileges and one with end user privileges.

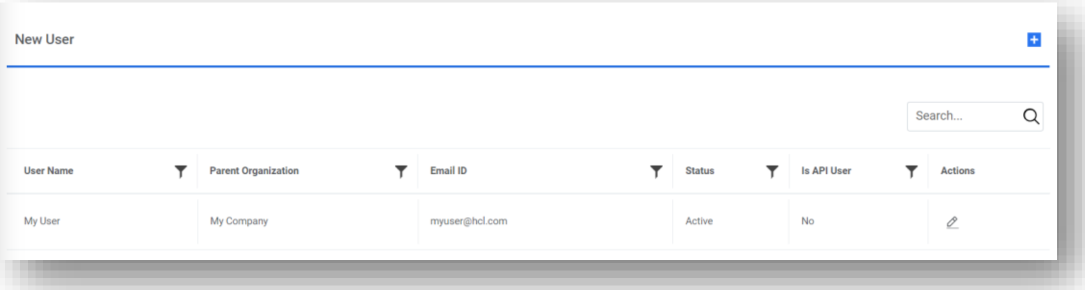
In this lab, we will showcase the detailed procedure for creating users with both organizational admin and end user privileges and mapping them to the respective groups.

5.4.2 Prerequisites

- Organization should be configured
- Access to Super Admin credentials
- Data Source should be configured

5.4.3 Solution

1. Open iAutomate Web URL and login with Super Admin credentials.
2. Create User – TestUser
3. Go to RBAC and click User Management.



User Name	Parent Organization	Email ID	Status	Is API User	Actions
My User	My Company	myuser@hcl.com	Active	No	✎

Figure 213 – User Management

4. Expand NewUser

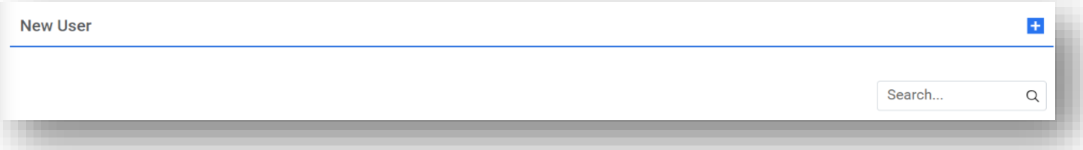
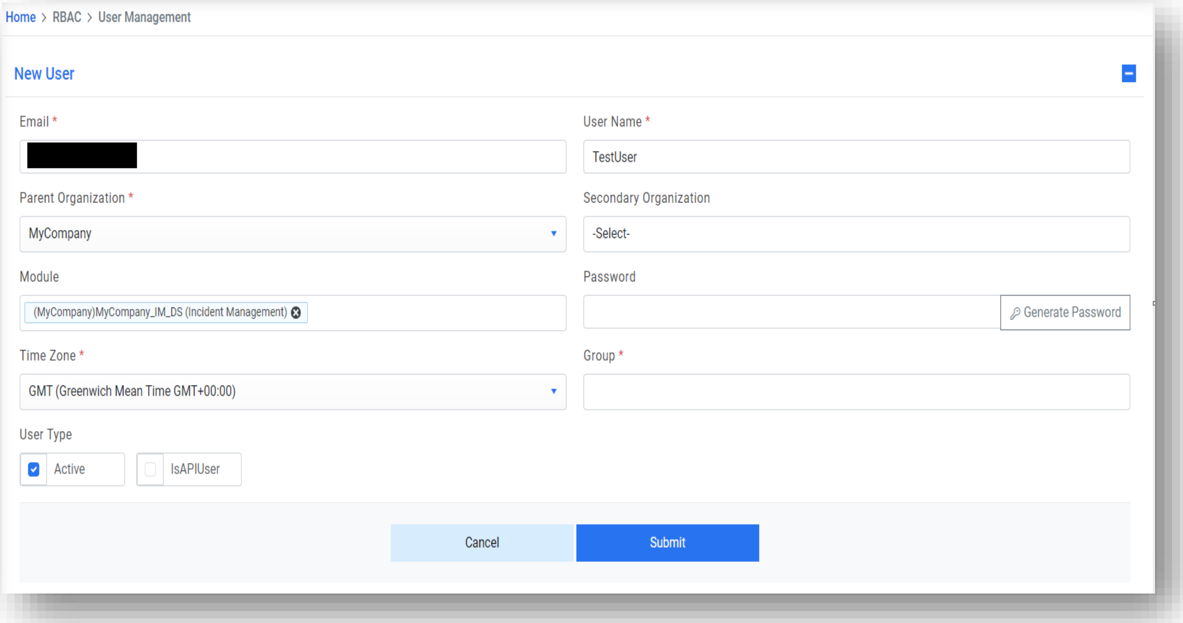


Figure 214 – User Management

5. Enter the User ID as 'TestUser', Email ID as 'TestUser@hcl.com'.
6. Select the organization created earlier from Parent Organization dropdown.
7. Enter the Username as TestUser. Password will be auto filled.

Note down the password and provide the email id and password to the user for login.

8. Select Time Zone, Select Group.



Home > RBAC > User Management

New User

Email * [redacted]

User Name * TestUser

Parent Organization * MyCompany

Secondary Organization -Select-

Module (MyCompany)MyCompany_IM_DS (Incident Management)

Password

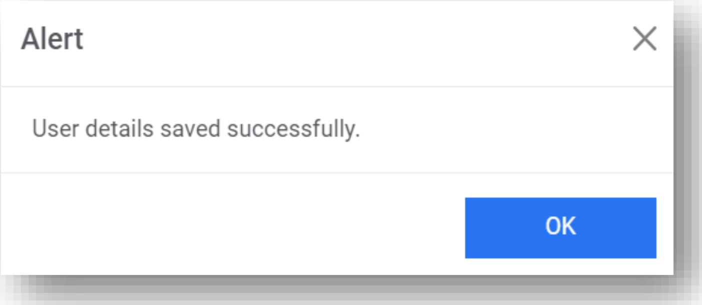
Time Zone * GMT (Greenwich Mean Time GMT+00:00)

Group *

User Type ☑ Active ☐ IsAPIUser

Figure 215 – New User

9. Click on the Submit.

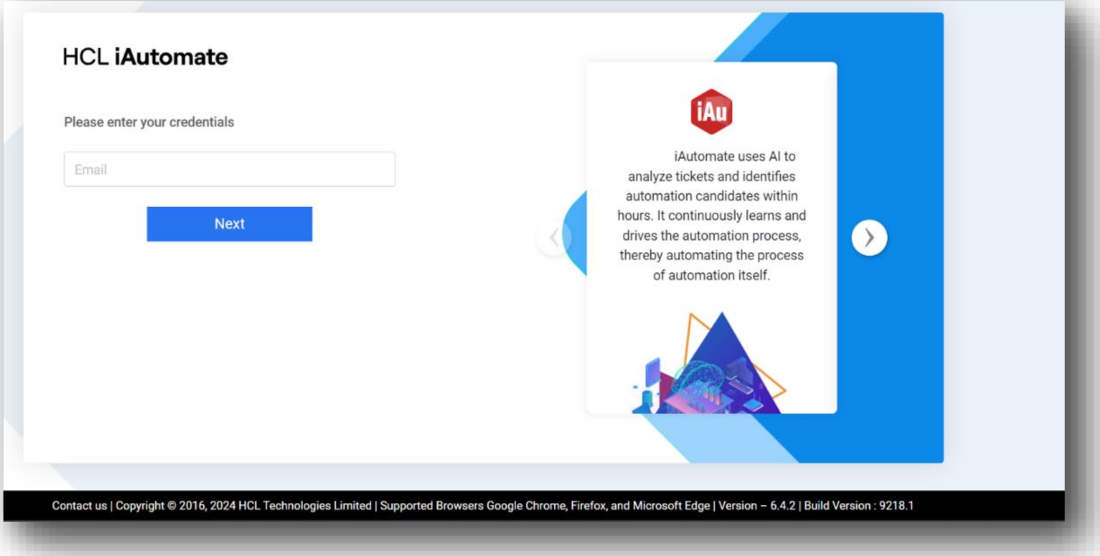


Alert

User details saved successfully.

Figure 216 – New User (Cont.)

10. User will be created successfully. E.g. TestUser
11. First time login for the new organizational admin user.
12. Open Web URL and enter provided email in Email field.
13. Click Next.



HCL iAutomate

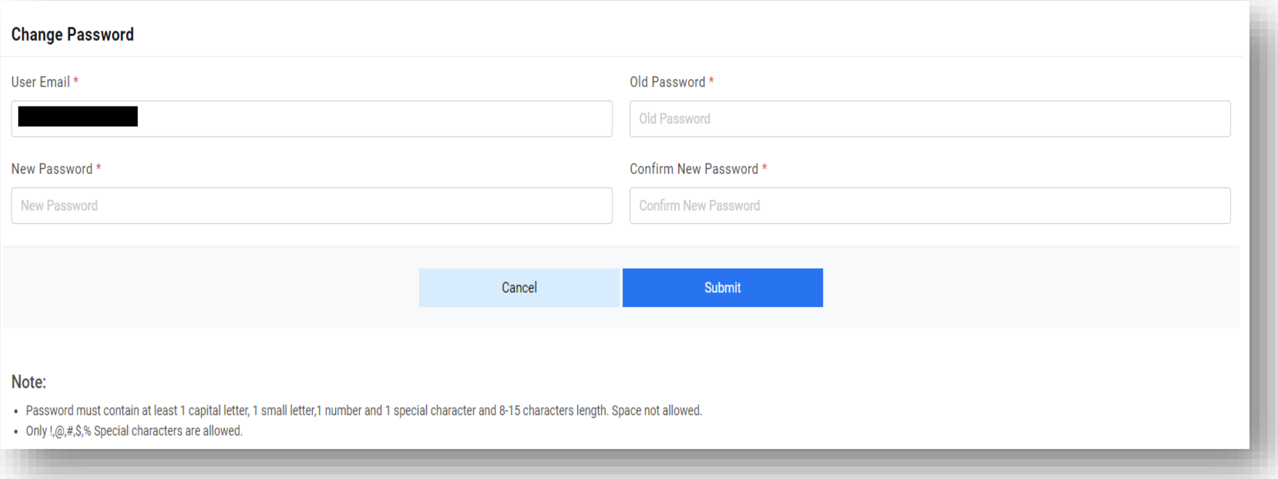
Please enter your credentials

iAutomate uses AI to analyze tickets and identifies automation candidates within hours. It continuously learns and drives the automation process, thereby automating the process of automation itself.

Contact us | Copyright © 2016, 2024 HCL Technologies Limited | Supported Browsers Google Chrome, Firefox, and Microsoft Edge | Version – 6.4.2 | Build Version : 9218.1

Figure 217 – First Time Login for the New Organizational Admin User

14. You will be redirected to Reset Password screen at the time of first login. Enter the Old Password (auto generated while creating the user), and the new password in New Password and Confirm Password fields.
15. Click Submit.



Change Password

User Email * [redacted]

Old Password *

New Password *

Confirm New Password *

Note:

- Password must contain at least 1 capital letter, 1 small letter,1 number and 1 special character and 8-15 characters length. Space not allowed.
- Only !,@,#,$,% Special characters are allowed.

Figure 218 – Reset Password Screen

16. You will be redirected to the Login page. Enter the Email ID and the new password to login.
17. You will be directed to the Organization Console.
18. First time login for the new Operations User.
19. Follow the steps mentioned in Step 5 for the user on successful login after password change, user will be directed to the Operations console.

5.4.4 Conclusion

Post the completion of this exercise, you should have a thorough understanding of creating organizational admins and operations users and mapping them to the necessary groups based on the privileges. This helps in enabling role-based access control throughout the product.

The next step is to onboard the runbook automation tool which helps in executing the runbooks for automated resolution of tickets. It will be covered in the next exercise.

5.5 Lab Exercise 4 – Onboard Runbook Automation Tool

5.5.1 Scenario

MyCompany organization currently has licenses of CA ITPAM and wants to onboard the same tool as the RBA in iAutomate for automation resolution of incident tickets.

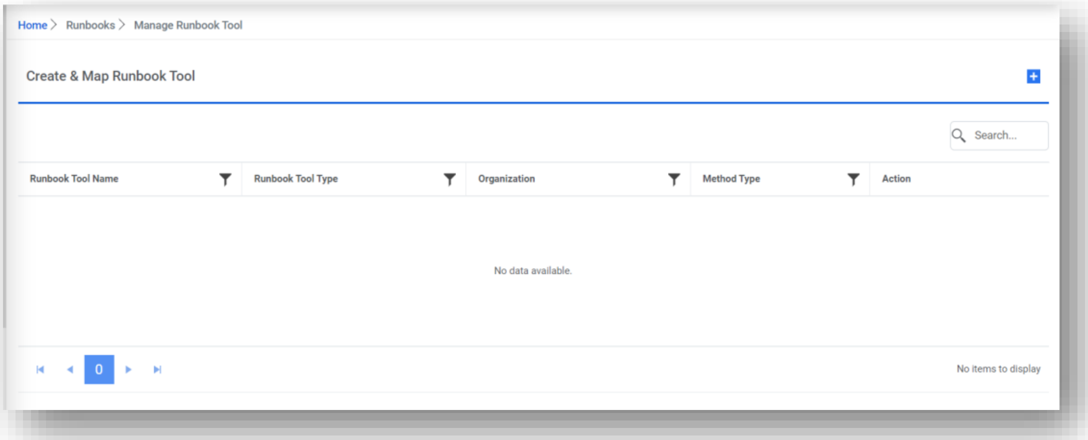
In this lab, we will showcase the detailed procedure for onboarding a Runbook Automation tool in iAutomate for automated resolution of tickets.

5.5.2 Prerequisites

- Users must have RBA API (GET) information along with credentials.
- RBA API should be accessible from the server where RBA component is installed.
- Access to Super Admin credentials.

5.5.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Runbooks and click Manage Runbook Tool.


Home > Runbooks > Manage Runbook Tool
Create & Map Runbook Tool
Search...
0
No items to display

Runbook Tool Name	Runbook Tool Type	Organization	Method Type	Action

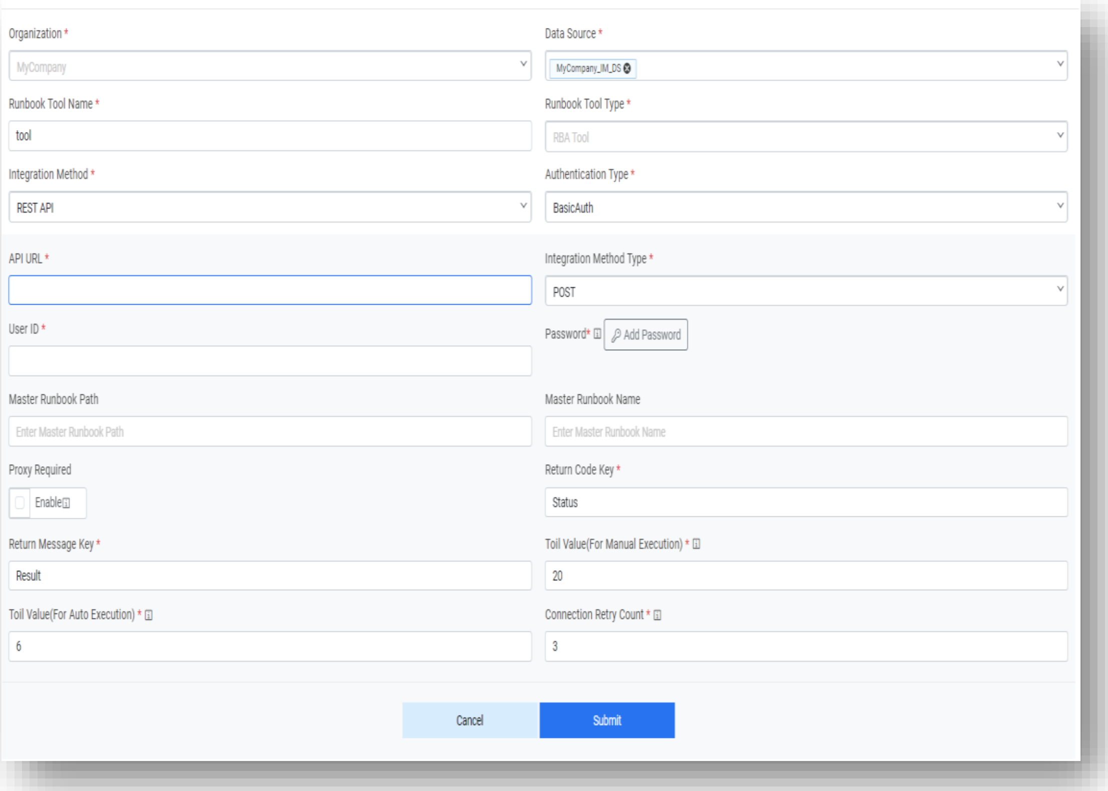
No data available.

Figure 219 – Manage Runbook Tool

3. Click Add New to add a new runbook tool.
4. Provide the information below -
   - Select the Organization.

- Enter Runbook Tool Name into the Runbook Tool Name field.
- Select 'ITPAM' as the Runbook Tool Type.
- Select 'SOAP API' as the Integration Method.
- Select 'BasicAuth' as the Authentication Type.
- Enter [http://sample_itpam.com/itpam/soap (sample)](http://sample_itpam.com/itpam/soap) in the API URL field.
- Select 'Post' as the Integration Method Type.
- Enter the User ID, Password, Master Runbook Path, Is Proxy Required, Return Code Key, Return Message Key provided by the Runbook Automation Tool team in the respective fields.
- Enter the Toil Value (For Manual Execution) which is the maximum manual execution time of runbook (in minutes). By default, it takes the value of the one configured on iAutomate Configuration page.
- Enter the Toil Value (For Auto Execution) which is the maximum Auto execution time of runbook (in minutes).
- Enter the Connection Retry Count which is the number of retries in case connection with RBA tool server is failed when a ticket is triggered for runbook execution.

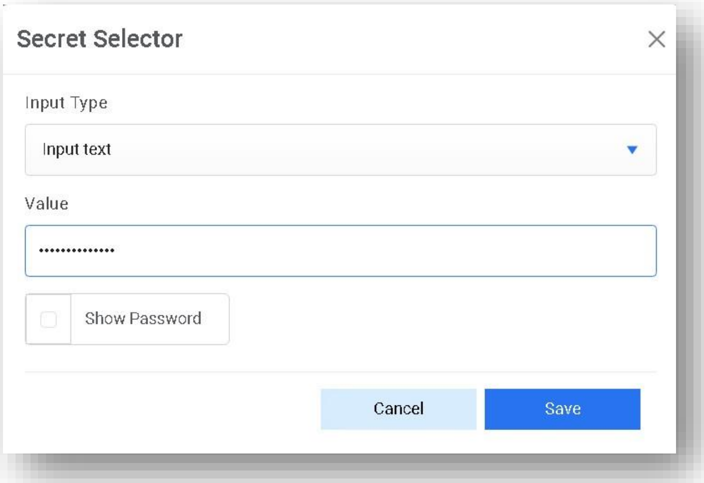
In case you are attending a classroom training, you get the above information from the instructor.



Organization *	Data Source *
MyCompany	MyCompany_IM_DS
Runbook Tool Name *	Runbook Tool Type *
tool	RBA Tool
Integration Method *	Authentication Type *
REST API	BasicAuth
API URL *	Integration Method Type *
	POST
User ID *	Password* Add Password
Master Runbook Path	Master Runbook Name
Enter Master Runbook Path	Enter Master Runbook Name
Proxy Required	Return Code Key *
□ Enable	Status
Return Message Key *	Toil Value(For Manual Execution) *
Result	20
Toil Value(For Auto Execution) *	Connection Retry Count *
6	3

Figure 220 – Manage Runbook Tool (Cont.)

- Password- For password, click on icon next to it. If the password is available in plaintext, then select Input type as Input Text and enter the password in Value field. Else if it is available in Azure Key Vault then select Input Type as Azure Key Vault and then select any of the configured details from the value field. Else if it is available in any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field. Else if it is available in Internal Secret Manager then select Input Type as Internal Secret Manager and then select any of the configured details from the value field.



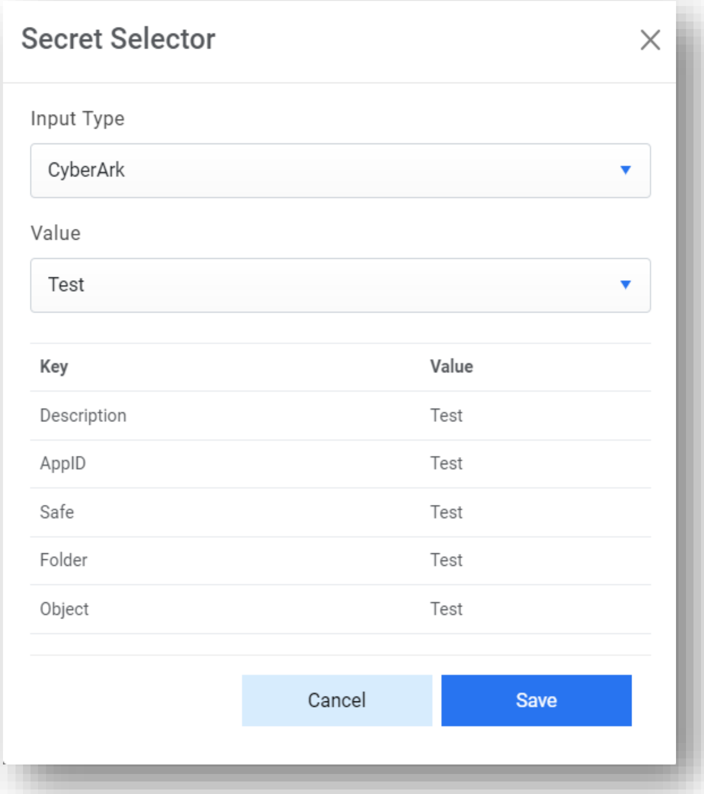
Secret Selector

Input Type: Input text

Value: ••••••••••••••

□ Show Password

Figure 221 – Password in Plaintext



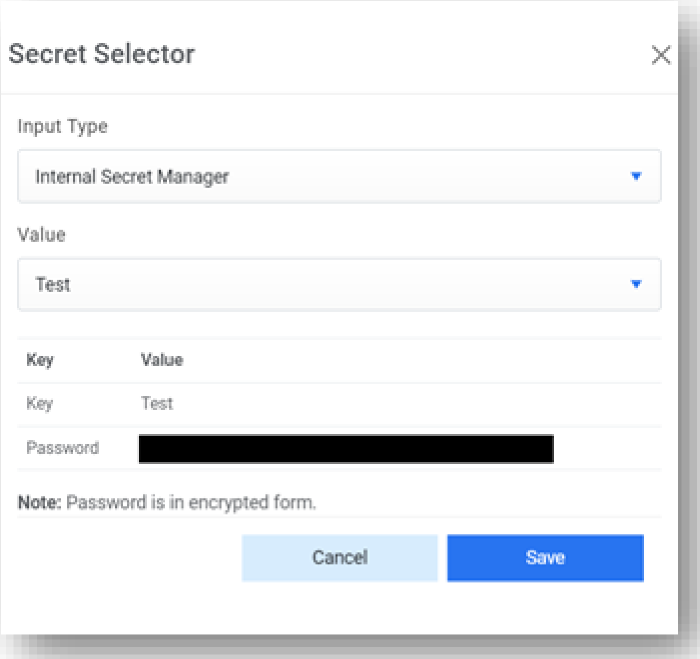
Secret Selector

Input Type: CyberArk

Value: Test

Key	Value
Description	Test
AppID	Test
Safe	Test
Folder	Test
Object	Test

Figure 222 – Password from Key Vault (CyberArk)



Secret Selector

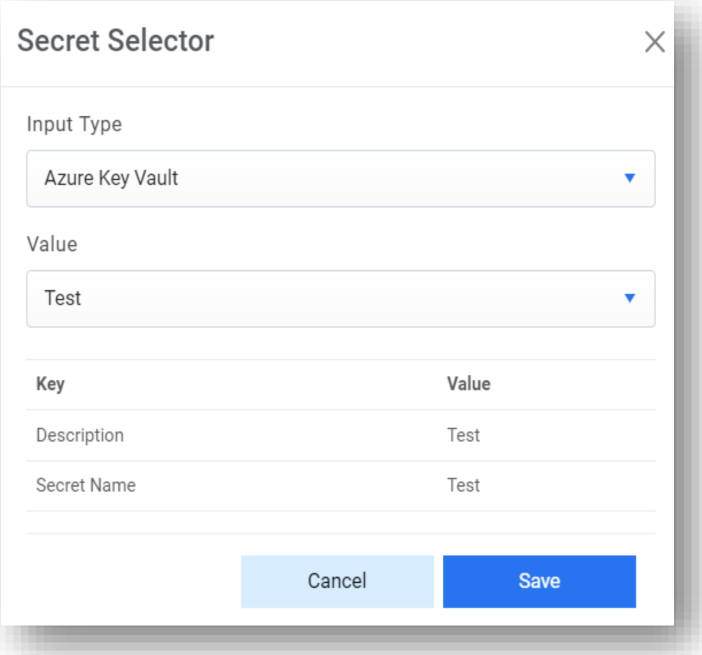
Input Type: Internal Secret Manager

Value: Test

Key	Value
Key	Test
Password	[redacted]

Note: Password is in encrypted form.

Figure 223 – Password from Internal Secret Manager



Secret Selector

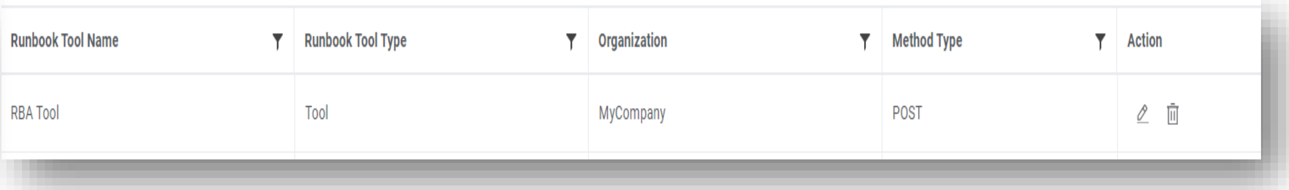
Input Type: Azure Key Vault

Value: Test

Key	Value
Description	Test
Secret Name	Test

Figure 224 – Password from Azure Key Vault

5. Click Save to create the runbook automation tool.
6. To view the newly created Runbook Tool, go to Action -> Runbooks -> Manage Runbook Tool. It will be visible in the list. You can edit/delete the tool by clicking the respective icons under the Actions column.



Runbook Tool Name	Runbook Tool Type	Organization	Method Type	Action
RBA Tool	Tool	MyCompany	POST	✎ 🗑

Figure 225 – Manage Runbook Tool (Cont.)

5.5.4 Conclusion

Post the completion of this exercise, you should have a good understanding of onboarding a new runbook tool in iAutomate. This tool will be used for automated ticket resolutions by iAutomate.

Here, the runbook tool gets mapped to an organization while creating runbook tool. The next step is to manage the execution scope which will be covered in the next exercise.

5.6 Lab Exercise 6 – Manage Execution Scope

5.6.1 Scenario

MyCompany organization is currently using ITPAM as an RBA tool which is deployed in a multi-tenant mode. In order to achieve automated executions, MyCompany has requested to configure a specific tenant id of ITPAM in iAutomate which will help in identifying and executing the required runbooks.

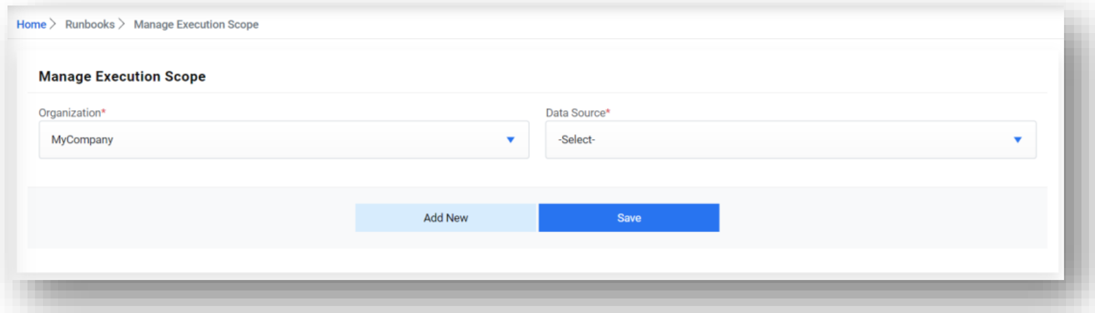
In this lab, we will showcase the detailed procedure for managing the execution scope of iAutomate for MyCompany organization.

5.6.2 Prerequisites

- Organization should be configured.
- Data Source should be configured.
- Runbook Tool should be configured and mapped with the organization and data source.
- Runbook Tool tenant id (if required) should be available for mapping the execution scope.
- Access to Super Admin / Org Admin credentials should be available.

5.6.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Actions then Runbooks and click Manage Execution Scope.



Home > Runbooks > Manage Execution Scope

Manage Execution Scope

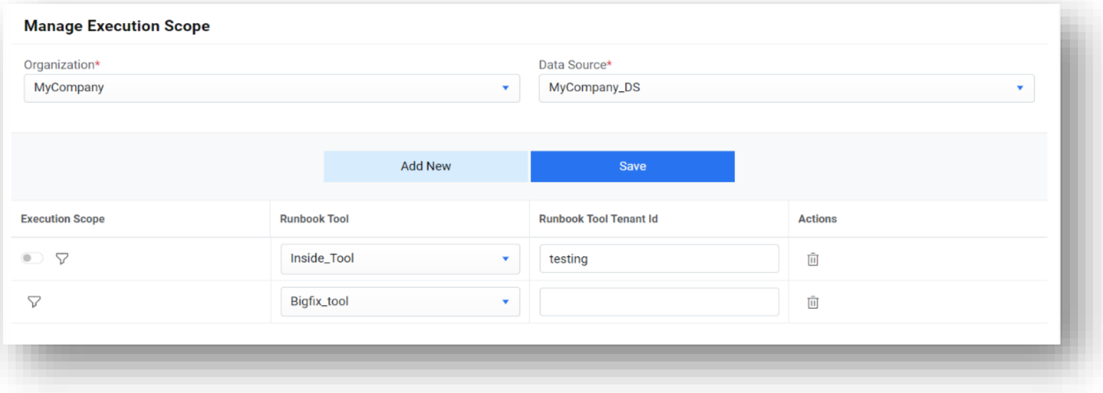
Organization*: MyCompany

Data Source*: -Select-

Figure 226 – Manage Execution Scope

3. Select Organization and Data Source from respective dropdowns.
4. Select Runbook Tool mapped with the organization and type in the Runbook Tool Tenant ID (optional).

Tenant ID is required in case of multi-tenant environment, where multiple customers are using the same RBA instance.



Manage Execution Scope

Organization*: MyCompany

Data Source*: MyCompany_DS

Execution Scope	Runbook Tool	Runbook Tool Tenant Id	Actions
○ ▽	Inside_Tool	testing	🗑
▽	Bigfix_tool		🗑

Figure 227 – Manage Execution Scope (Cont.)

5. Click Save.

5.6.4 Conclusion

Post-completion of this exercise, you should have a good understanding of managing the execution scope for an organization.

The next step is to configure the data sources for sourcing the ticket related information which will be covered in the next exercise.

5.7 Lab Exercise 6 – Release Rules Configuration

5.7.1 Scenario

MyCompany organization has come up with a requirement wherein if a particular ticket is not resolved by iAutomate or the resolution has resulted in a failure, the ticket should be routed to another queue for resolution. You as part of implementation team have been asked to perform the release rules configuration to meet this requirement.

In this lab, we will showcase the detailed procedure for configuring the release rules for MyCompany organization.

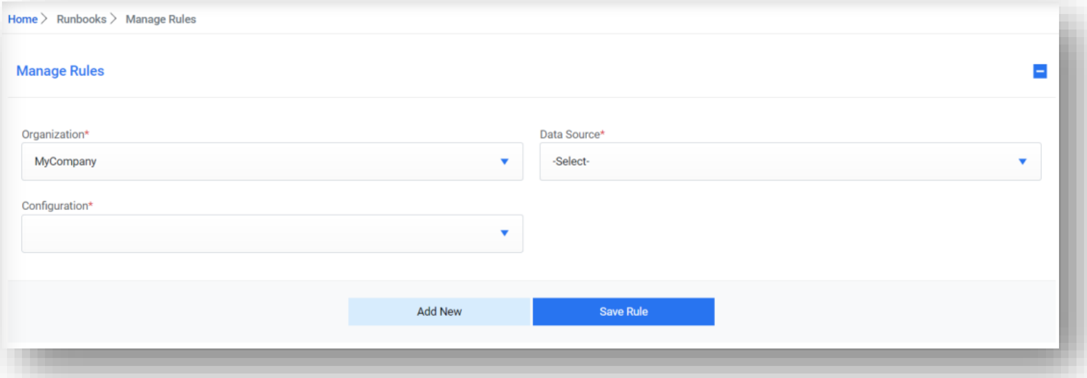
5.7.2 Prerequisites

- Organization should be configured.
- Data Source should be configured.
- Information about the resolver group and the respective message to be updated in the work notes should be available. For this exercise, we will consider "Transfer Group" as the resolver group and "Out of Scope" as the work notes message.
- Access to Super Admin / Org Admin credentials should be available.

5.7.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.

2. Go to Actions then Runbooks and click Manage Rules.



Home > Runbooks > Manage Rules

Manage Rules

Organization*: MyCompany

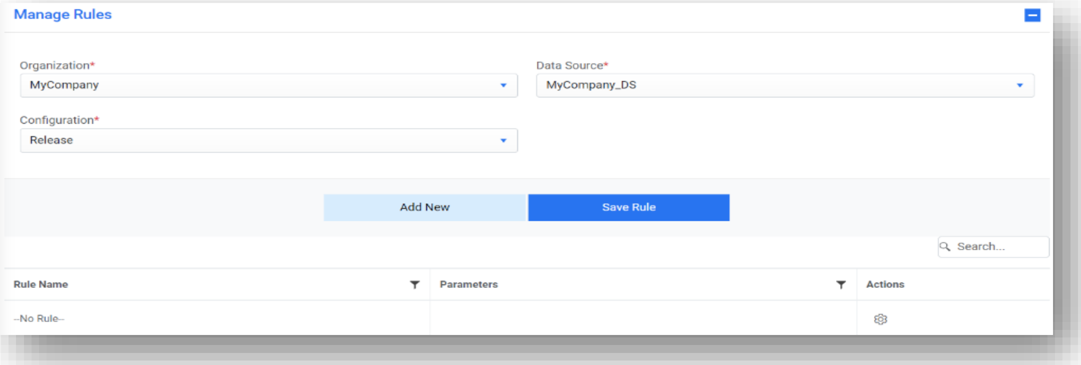
Data Source*: -Select-

Configuration*:

Figure 228 – Manage Release Rules

3. Select 'MyCompany' as the Organization.

4. Select 'MyCompany_DS' as the Data Source. Select 'Release' as the Configuration.



Manage Rules

Organization*: MyCompany

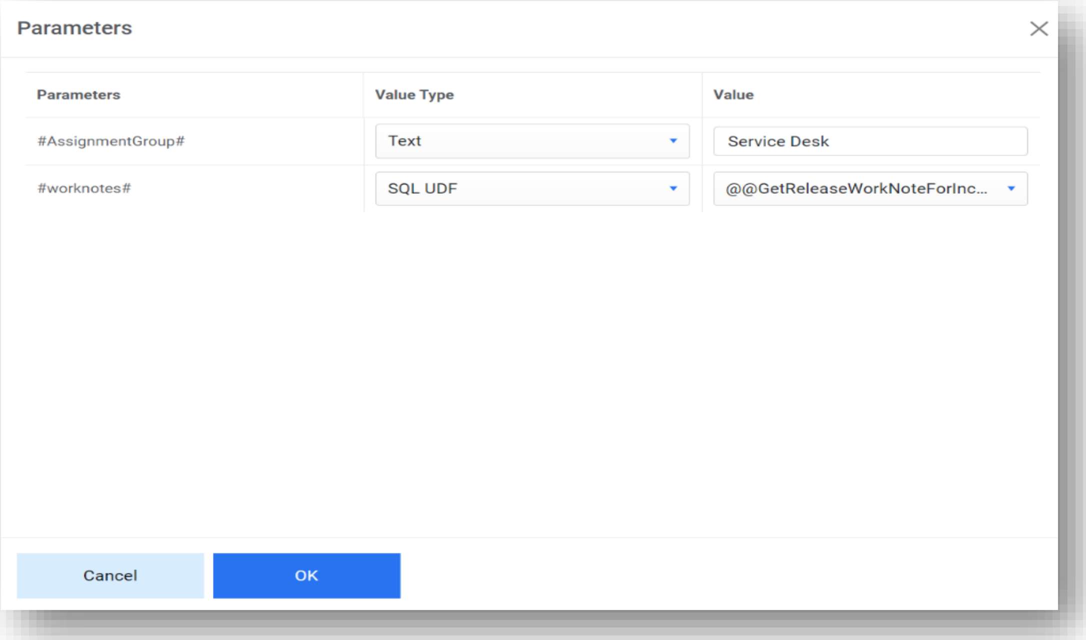
Data Source*: MyCompany_DS

Configuration*: Release

Rule Name	Parameters	Actions
--No Rule--		⚙

Figure 229 – Manage Release Rules

5. Click gear icon under the Actions column. A popup window for configuring Parameters will appear. Enter the Assignment Group as 'Transfer Group' and Work Notes as 'Out of Scope.'



Parameters	Value Type	Value
#AssignmentGroup#	Text	Service Desk
#worknotes#	SQL UDF	@@GetReleaseWorkNoteForInc...

Figure 230 – Manage Rule Parameters

6. Click OK to save the parameters.
7. Click Save Rule to save the release rule configuration.

5.7.4 Conclusion

Post the completion of this exercise, you should have a good understanding of configuring the release rules in case iAutomate is not able to resolve a ticket automatically. This feature is helpful in assigning the tickets to different resolver groups in case of resolution failures.

The next step is to configure the information which needs to be considered for enriched runbook recommendation and parsing the ticket for extracting input parameters.

5.8 Lab Exercise 8 – Manage Columns for Recommendation and Parsing

5.8.1 Scenario

To provide enriched runbook recommendations based on the ticket descriptions and extracting relevant input parameters for the runbooks, MyCompany organization has asked for adding certain fields / columns which are specific to their environment.

In this lab, we will showcase the detailed procedure for configuring the columns which will be required for enriched recommendations and parsing tickets for parameters.

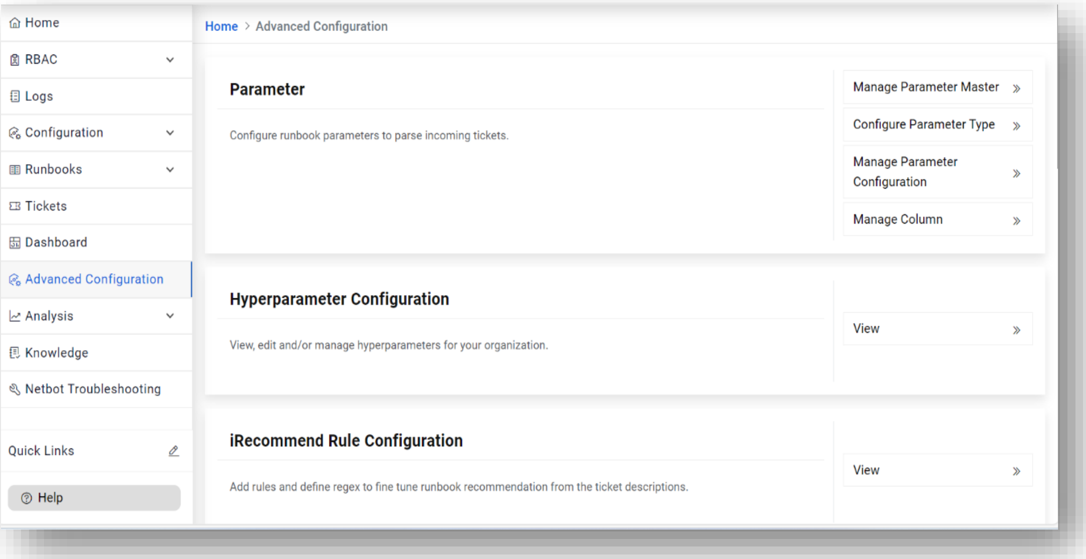
5.8.2 Prerequisites

- Organization should be configured.

- Data Source should be configured.
- Access to Super Admin / Org Admin credentials should be available.

5.8.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Advance Configuration then Parameter and click Manage Column Tab.



Parameter

Configure runbook parameters to parse incoming tickets.

Hyperparameter Configuration

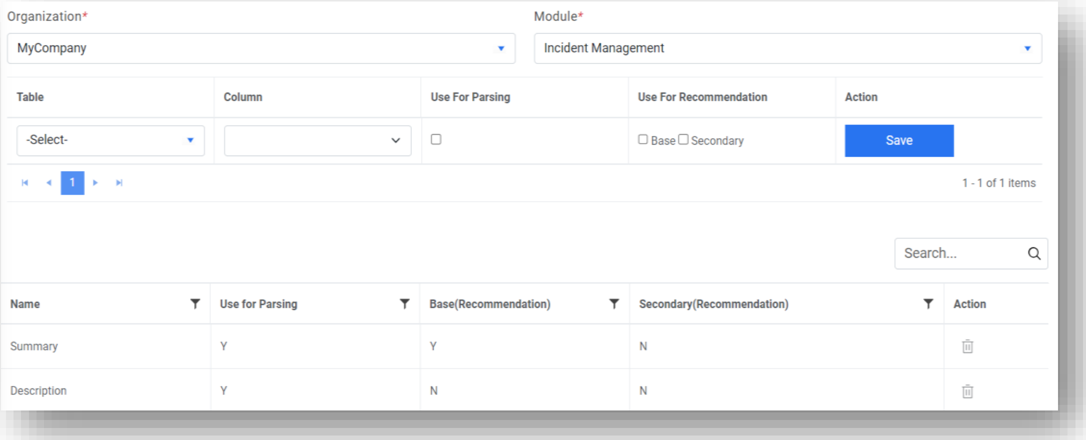
View, edit and/or manage hyperparameters for your organization.

iRecommend Rule Configuration

Add rules and define regex to fine tune runbook recommendation from the ticket descriptions.

Figure 231 – Manage Columns

3. Select Organization Name and Module.
4. Select Table from the dropdown, select one of the options available from the Column. Select the checkboxes Use For Parsing, Use For Recommendation as applicable for the selected column.



Organization*: MyCompany

Module*: Incident Management

Table	Column	Use For Parsing	Use For Recommendation	Action
-Select-		□	□ Base □ Secondary	Save

1 - 1 of 1 items

Search...

Name	Use for Parsing	Base(Recommendation)	Secondary(Recommendation)	Action
Summary	Y	Y	N	
Description	Y	N	N	

Figure 232 – Manage Columns (Cont.)

Table details are dependent on the Module and Column details are dependent on the Table.

5. Click Save.
6. Follow the steps mentioned above for all the applicable columns.

5.8.4 Conclusion

Post the completion of this exercise, you should have a good understanding of adding / removing fields / columns which need to be considered for runbook recommendation and parsing tickets for extracting inputs parameters for runbook executions.

The next step is to configure the runbooks which contain the scripts / workflow for automated resolution of tickets, which will be covered in the next exercise.

5.9 Lab Exercise 9 – Manage Runbooks

5.9.1 Scenario

Based on the analysis done earlier for identifying automation opportunities, you have identified that significant number of incidents can be automated. MyCompany organization has asked for configuration of runbooks which will enable automated resolutions of identified ticket categories. These runbooks are created for the specific RBA tool by the RBA teams and configured by implementation teams.

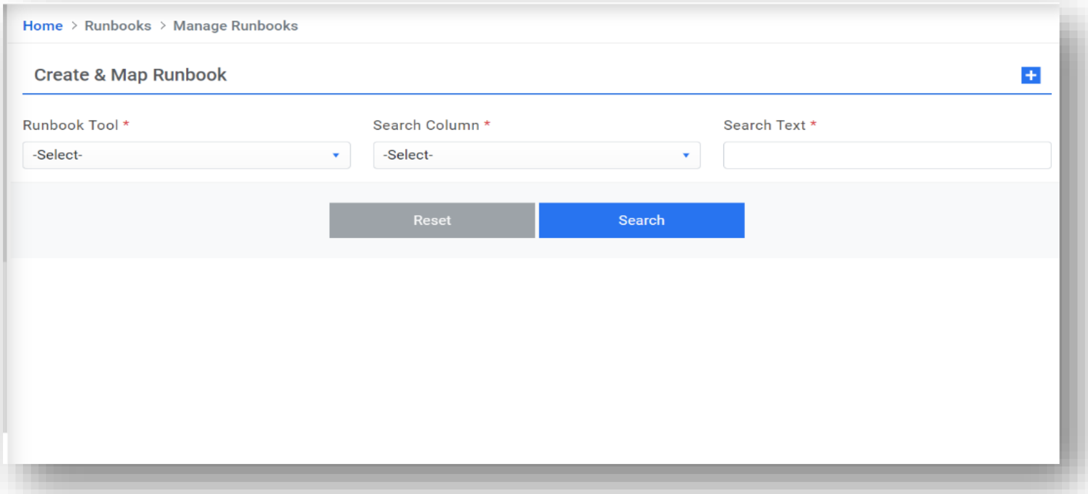
In this lab, we will showcase the detailed procedure for managing the runbooks for ITPAM in iAutomate for MyCompany organization.

5.9.2 Prerequisites

- Runbook Tool should be configured.
- Runbook metadata should be available in the prescribed format.
- Access to Super Admin / Org Admin credentials should be available.

5.9.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Actions then Runbooks and click Manage Runbooks.



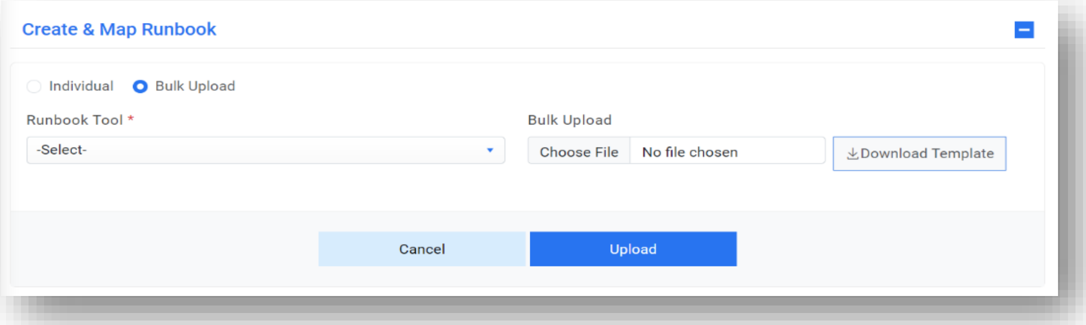
Runbook Tool * -Select-

Search Column * -Select-

Search Text *

Figure 233 – Manage Runbooks

3. Select Runbook Tool from dropdown.
4. You can download the template for filling in the metadata in Excel file by selecting Bulk Upload then clicking on Download Template.



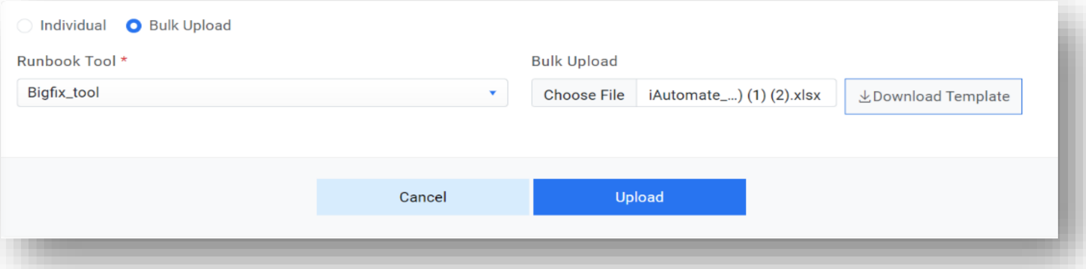
○ Individual ● Bulk Upload

Runbook Tool * -Select-

Bulk Upload No file chosen

Figure 234 – Manage Runbook (Cont.)

5. Otherwise, click Choose File to upload the runbook if metadata sheet is already available. Click the Upload button.



○ Individual ● Bulk Upload

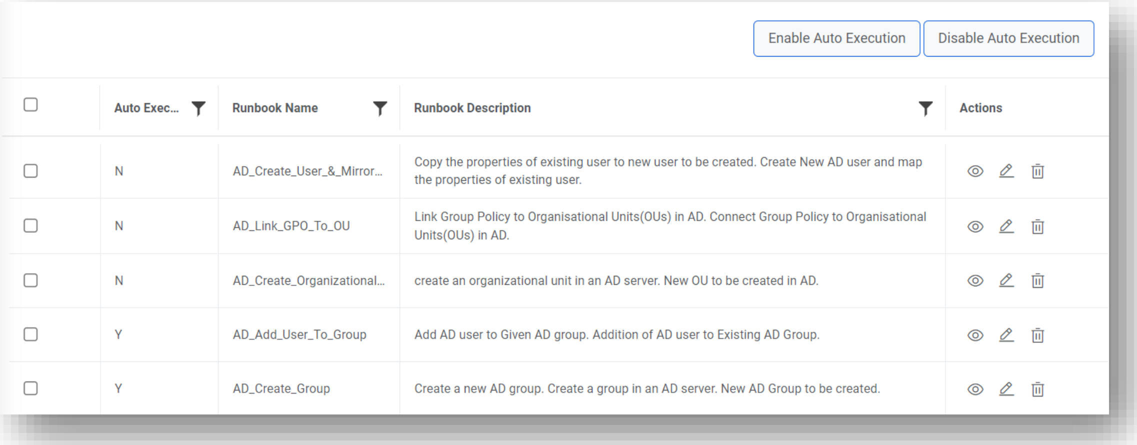
Runbook Tool * Bigfix_tool

Bulk Upload iAutomate_...) (1) (2).xlsx

Figure 235 – Import Runbook

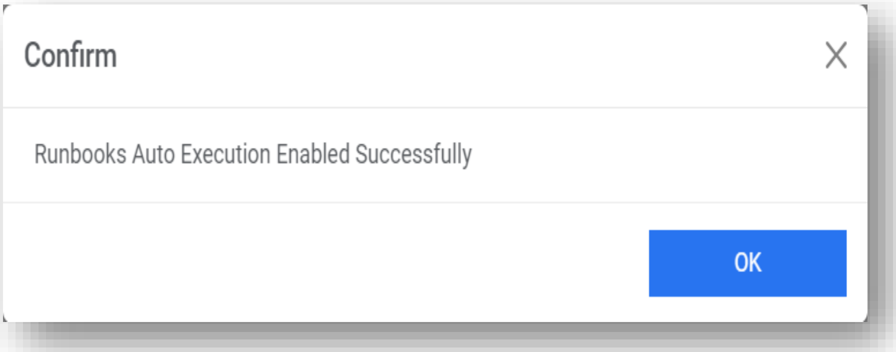
6. Users can enable or disable the automatic execution of multiple runbooks simultaneously by selecting checkboxes corresponding to Runbooks. By offering this capability, this feature enhances the flexibility

and control users have over their automation processes. It provides flexibility and control over the execution process, ensuring that users can manage and schedule their automation tasks efficiently. Upon Clicking Enable Auto Execution Runbooks Auto Execution Enabled Successfully message will come on alert popup and Upon Clicking Disable Auto Execution Runbooks Auto Execution Disabled Successfully message will come on alert popup.



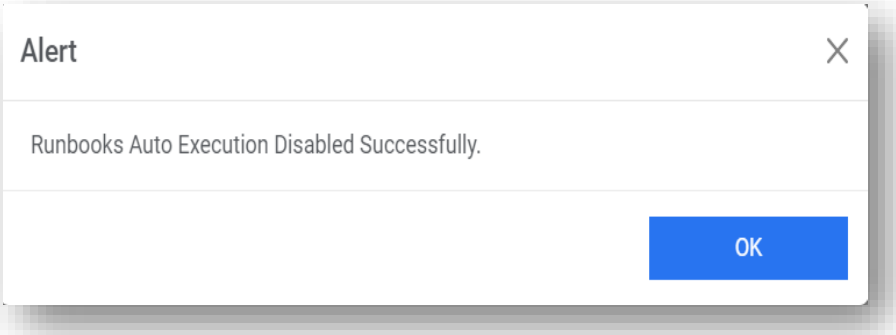
□	Auto Exec...	Runbook Name	Runbook Description	Actions
□	N	AD_Create_User_&_Mirror...	Copy the properties of existing user to new user to be created. Create New AD user and map the properties of existing user.	👁 ✎ 🗑
□	N	AD_Link_GPO_To_OU	Link Group Policy to Organisational Units(OUs) in AD. Connect Group Policy to Organisational Units(OUs) in AD.	👁 ✎ 🗑
□	N	AD_Create_Organizational...	create an organizational unit in an AD server. New OU to be created in AD.	👁 ✎ 🗑
□	Y	AD_Add_User_To_Group	Add AD user to Given AD group. Addition of AD user to Existing AD Group.	👁 ✎ 🗑
□	Y	AD_Create_Group	Create a new AD group. Create a group in an AD server. New AD Group to be created.	👁 ✎ 🗑

Figure 236 – Enable/Disable Auto Execution



Runbooks Auto Execution Enabled Successfully

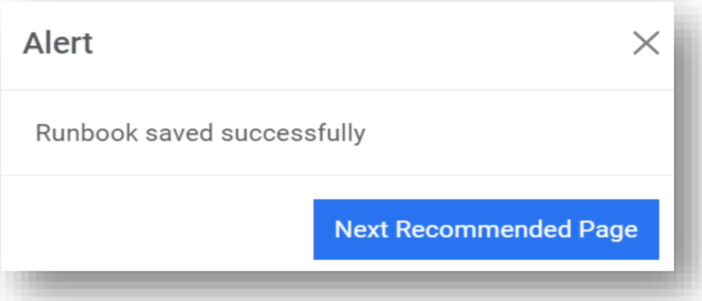
Figure 237 – Enabling Runbook Auto Execution



Runbooks Auto Execution Disabled Successfully.

Figure 238 –Disabling Runbook Auto Execution

7. Runbook Saved Successfully message will come on an alert popup.


Alert

Runbook saved successfully

Figure 236 - Runbook Saved Successfully

5.9.4 Conclusion

Post the completion of this exercise, you should have a good understanding of managing the runbooks required to automate the ticket resolutions for a specific RBA tool.

The next step is to map the map the runbooks with the organization and its data source, which will be covered in the next exercise.

5.10 Lab Exercise 10 – Map Runbooks

5.10.1 Scenario

MyCompany organization has asked for mapping the runbooks created in the previous exercise to the organization created earlier so that when a specific type of ticket is fetched from the data source, a relevant runbook is available in the repository for recommendation and execution.

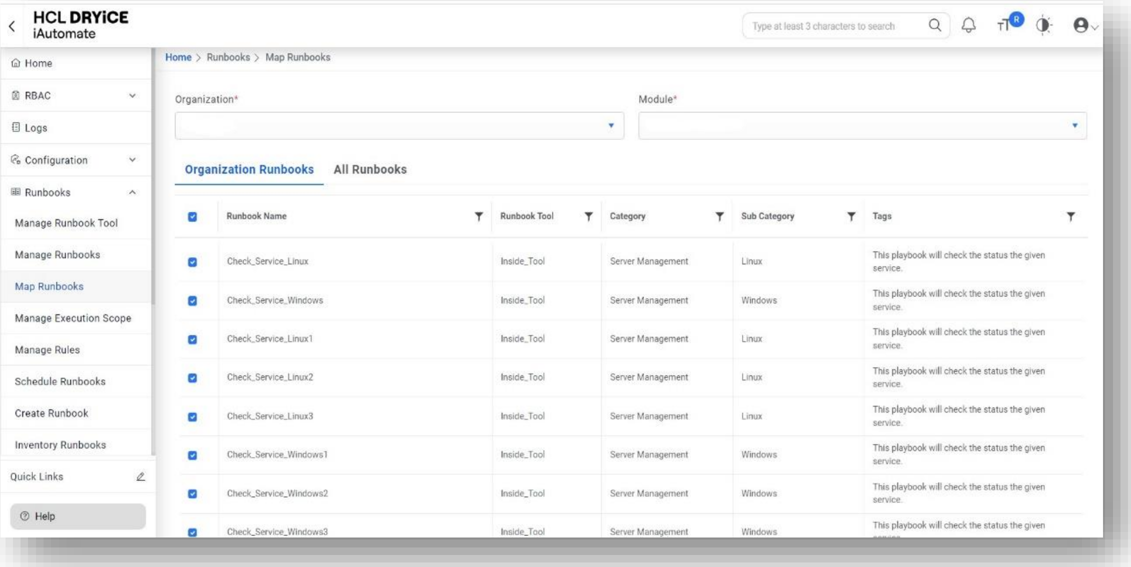
In this lab, we will showcase the detailed procedure for mapping the runbook with MyCompany organization and its data source.

5.10.2 Prerequisites

- Organization should be configured.
- Data Source should be configured.
- Runbook Tool should be mapped with the organization.
- Runbook Tool should have runbooks in the repository.
- Access to Super Admin / Org Admin credentials should be available.

5.10.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Actions then Runbooks and click Map Runbooks.



☑	Runbook Name	Runbook Tool	Category	Sub Category	Tags
☑	Check_Service_Linux	Inside_Tool	Server Management	Linux	This playbook will check the status the given service.
☑	Check_Service_Windows	Inside_Tool	Server Management	Windows	This playbook will check the status the given service.
☑	Check_Service_Linux1	Inside_Tool	Server Management	Linux	This playbook will check the status the given service.
☑	Check_Service_Linux2	Inside_Tool	Server Management	Linux	This playbook will check the status the given service.
☑	Check_Service_Linux3	Inside_Tool	Server Management	Linux	This playbook will check the status the given service.
☑	Check_Service_Windows1	Inside_Tool	Server Management	Windows	This playbook will check the status the given service.
☑	Check_Service_Windows2	Inside_Tool	Server Management	Windows	This playbook will check the status the given service.
☑	Check_Service_Windows3	Inside_Tool	Server Management	Windows	This playbook will check the status the given

Figure 237 – Map Runbooks

3. Select Organization and Module from respective dropdown list.
4. Click All Runbooks tab and select the runbooks to be mapped.
5. Once you select a runbook, it will be immediately moved to Organization Runbooks tab and removed from All Runbooks tab.

5.10.4 Conclusion

Post the completion of this exercise, you should have a good understanding of mapping the created runbooks to an organization based on the scope.

The next step is to build the model which powers the recommendation system for recommending the relevant runbooks based on incoming tickets. It will be covered in the next exercise.

5.11 Lab Exercise 11 – Build Model for Recommendation

5.11.1 Scenario

To enable the recommendation of relevant runbooks based on the incoming tickets, MyCompany organization has asked building the requisite models which powers the recommendation system.

In this lab, we will showcase the detailed procedure for building the model for powering the recommendation system.

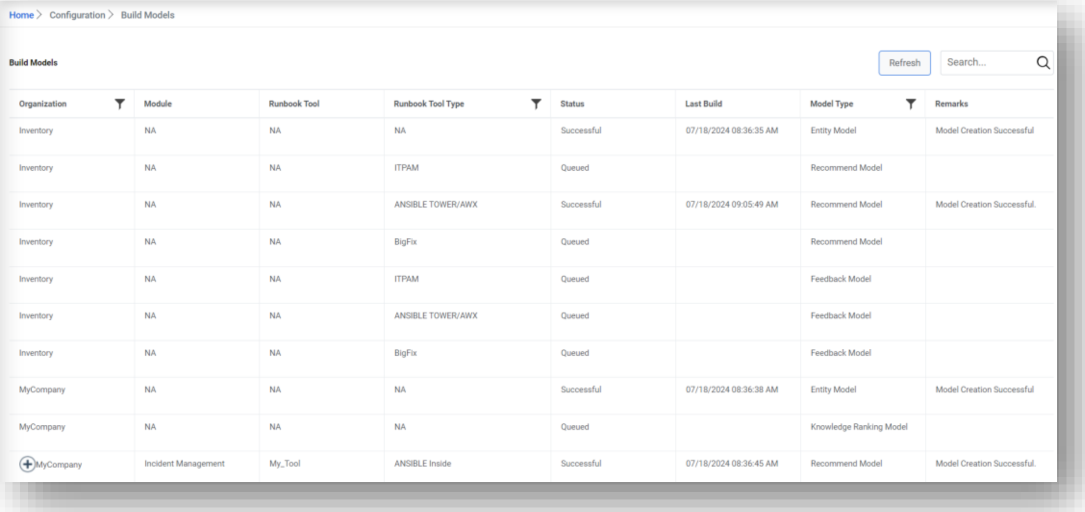
5.11.2 Prerequisites

- Organization should be configured.
- Runbook Tool should be configured.
- Data Source should be configured.

- Access to Super Admin / Org Admin credentials should be available.

5.11.3 Solution

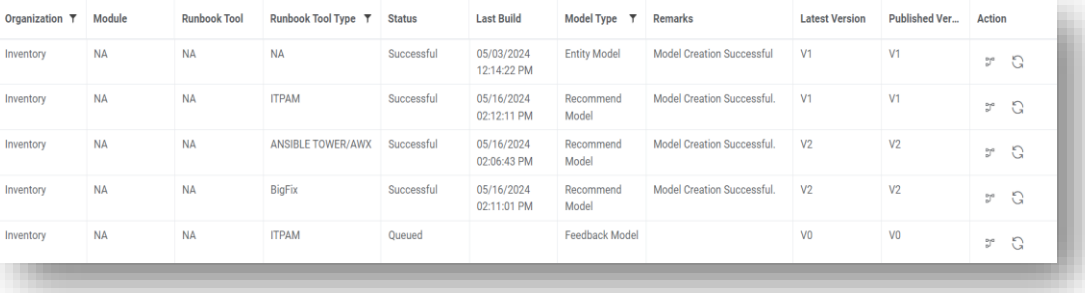
1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Configuration and click Build Models.



Organization	Module	Runbook Tool	Runbook Tool Type	Status	Last Build	Model Type	Remarks
Inventory	NA	NA	NA	Successful	07/18/2024 08:36:35 AM	Entity Model	Model Creation Successful
Inventory	NA	NA	ITPAM	Queued		Recommend Model	
Inventory	NA	NA	ANSIBLE TOWER/AWX	Successful	07/18/2024 09:05:49 AM	Recommend Model	Model Creation Successful.
Inventory	NA	NA	BigFix	Queued		Recommend Model	
Inventory	NA	NA	ITPAM	Queued		Feedback Model	
Inventory	NA	NA	ANSIBLE TOWER/AWX	Queued		Feedback Model	
Inventory	NA	NA	BigFix	Queued		Feedback Model	
MyCompany	NA	NA	NA	Successful	07/18/2024 08:36:38 AM	Entity Model	Model Creation Successful
MyCompany	NA	NA	NA	Queued		Knowledge Ranking Model	
MyCompany	Incident Management	My_Tool	ANSIBLE Inside	Successful	07/18/2024 08:36:45 AM	Recommend Model	Model Creation Successful.

Figure 238 – Build Models

3. Ensure that you have three models appearing on the Build Model screen with respect to your organization as mentioned below:
   - Entity Model having organization information only.
   - Recommendation Model having organization and module information only.
   - Recommendation Model having organization, module and runbook tool information only.



Organization	Module	Runbook Tool	Runbook Tool Type	Status	Last Build	Model Type	Remarks	Latest Version	Published Ver...	Action
Inventory	NA	NA	NA	Successful	05/03/2024 12:14:22 PM	Entity Model	Model Creation Successful	V1	V1	
Inventory	NA	NA	ITPAM	Successful	05/16/2024 02:12:11 PM	Recommend Model	Model Creation Successful.	V1	V1	
Inventory	NA	NA	ANSIBLE TOWER/AWX	Successful	05/16/2024 02:06:43 PM	Recommend Model	Model Creation Successful.	V2	V2	
Inventory	NA	NA	BigFix	Successful	05/16/2024 02:11:01 PM	Recommend Model	Model Creation Successful.	V2	V2	
Inventory	NA	NA	ITPAM	Queued		Feedback Model		V0	V0	

Figure 239 – Build Models (Cont.)

4. Click gear icon to build the Entity Model first. Once entity model build is successful, Recommendation Model Build having organization, module and runbook tool information, needs to be triggered.
5. Once the build for Recommendation model is successful, you will get recommendations for incidents landing into your console.

This actions on this screen are necessary whenever you are making changes to manage Runbook page to rebuild models.

5.11.4 Conclusion

Post the completion of this exercise, you should have a good understanding of building models for recommendation system.

The next step is to enable error logging the data sources for sourcing the ticket related information which will be covered in the next exercise.

5.12 Lab Exercise 12 – Enable Error Logging

5.12.1 Scenario

MyCompany organization has asked to enable error logging to capture the logs of all the errors for tracking and governance purposes.

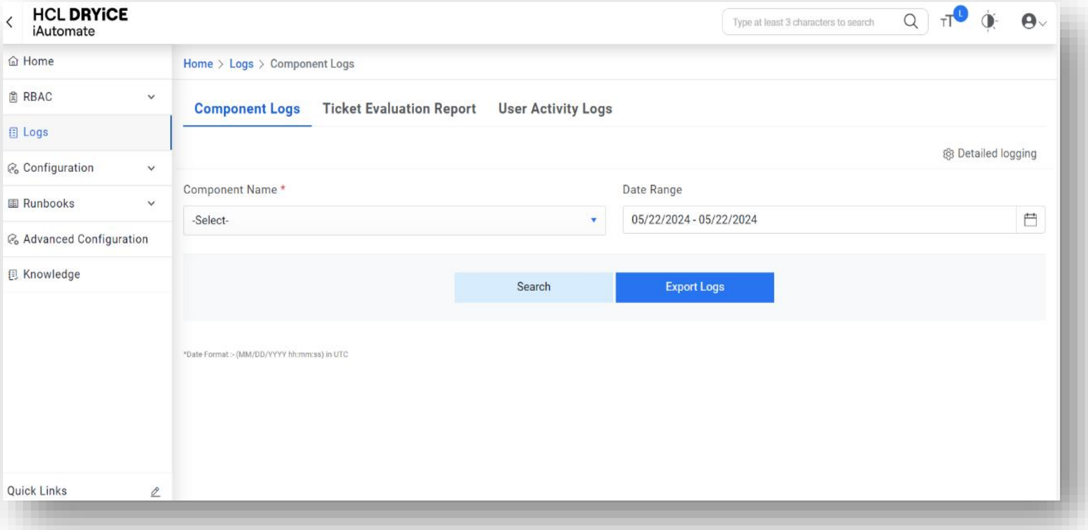
In this lab, we will showcase the detailed procedure for enabling error logging in iAutomate.

5.12.2 Prerequisites

- Access to Super Admin / Org Admin credentials should be available.
- iAutomate Web URL.

5.12.3 Solution

1. Open iAutomate Web URL and login with Super Admin credentials.
2. Go to Logs and click Detailed Logging.



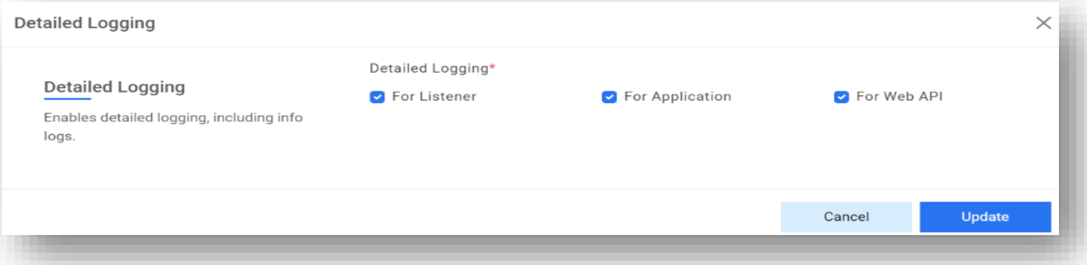
Component Name * -Select-

Date Range 05/22/2024 - 05/22/2024

*Date Format :- (MM/DD/YYYY hh:mm:ss) in UTC

Figure 240 – iAutomate Configuration

3. Select the checkbox for Detail Logging for Listener.
4. Select the checkbox for Detail Logging for Application.
5. Click Update to save the configuration.



Detailed Logging

Detailed Logging

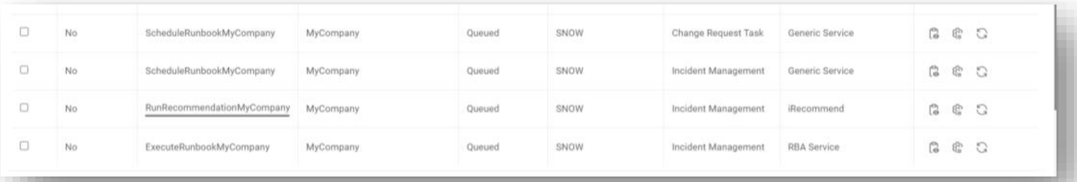
Enables detailed logging, including info logs.

Detailed Logging*

☑ For Listener ☑ For Application ☑ For Web API

Figure 241 – iAutomate Configuration (Cont.)

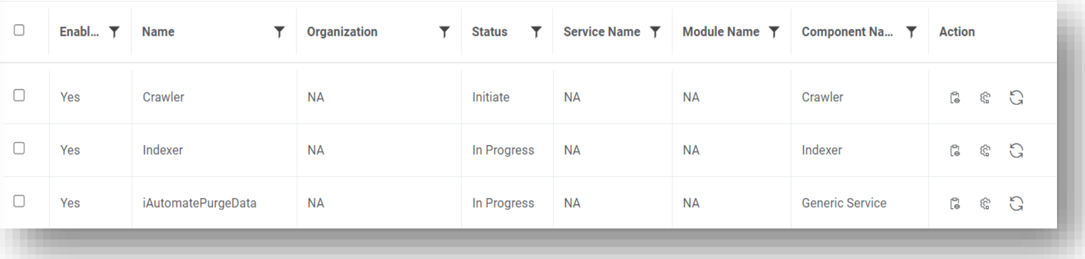
6. Go to Configurations and click Manage Jobs.



□	No	ScheduleRunbookMyCompany	MyCompany	Queued	SNOW	Change Request Task	Generic Service	
□	No	ScheduleRunbookMyCompany	MyCompany	Queued	SNOW	Incident Management	Generic Service	
□	No	RunRecommendationMyCompany	MyCompany	Queued	SNOW	Incident Management	iRecommend	
□	No	ExecuteRunbookMyCompany	MyCompany	Queued	SNOW	Incident Management	RBA Service	

Figure 242 – Manage Jobs

7. Select a job, click ⚙ icon to modify the logging mode of Jobs.



□	Enabl...	Name	Organization	Status	Service Name	Module Name	Component Na...	Action
□	Yes	Crawler	NA	Initiate	NA	NA	Crawler	
□	Yes	Indexer	NA	In Progress	NA	NA	Indexer	
□	Yes	iAutomatePurgeData	NA	In Progress	NA	NA	Generic Service	

Figure 243 – Manage Jobs Action

8. Click Parameter.

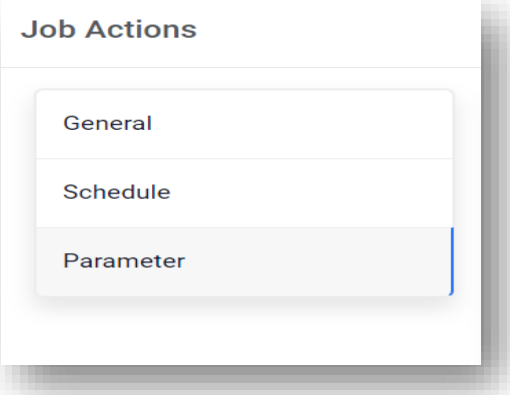
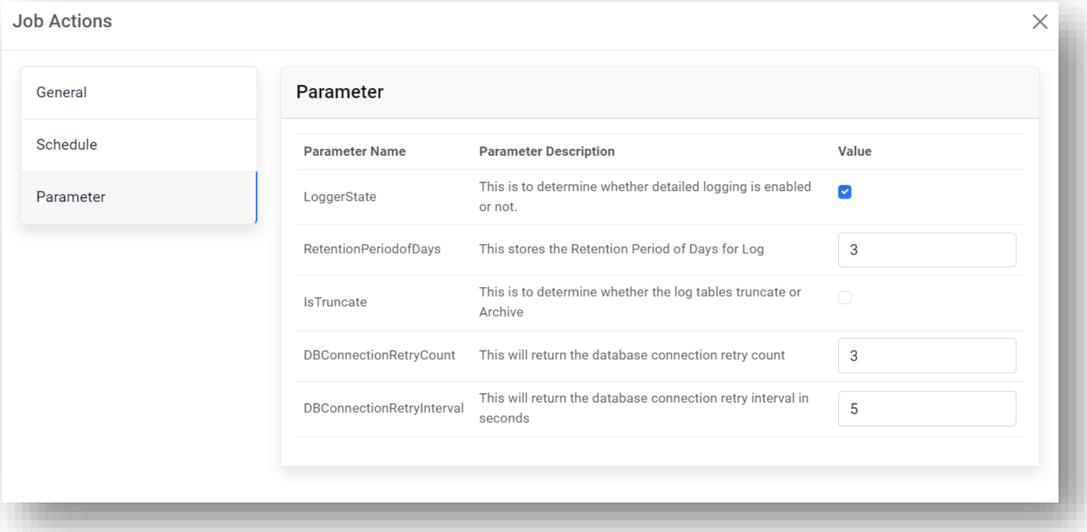


Figure 244 – Job Action

9. Check the checkbox of LoggerState for detailed logging.



Job Actions

Parameter

Parameter Name	Parameter Description	Value
LoggerState	This is to determine whether detailed logging is enabled or not.	☑
RetentionPeriodofDays	This stores the Retention Period of Days for Log	3
IsTruncate	This is to determine whether the log tables truncate or Archive	□
DBConnectionRetryCount	This will return the database connection retry count	3
DBConnectionRetryInterval	This will return the database connection retry interval in seconds	5

Figure 245 – Job Action (Cont.)

10. Click Save to apply configuration.
11. Repeat Steps 5 to 8 for all jobs.

5.12.4 Conclusion

Post the completion of this exercise, you should have a good understanding of enabling detailed logging of errors for all the jobs.

The next step is to enable access to iAutomate via a proxy, which will be covered in the next exercise.

5.13 Lab Exercise 13 – Manage Proxy

5.13.1 Scenario

MyCompany organization has internet access via proxy and needs to configure the same in iAutomate.

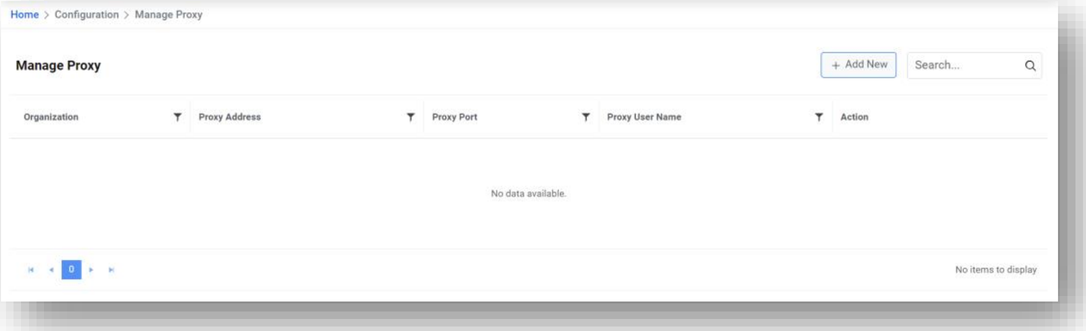
In this lab, we will showcase the detailed procedure for managing and configuring the proxy related information in iAutomate.

5.13.2 Prerequisites

- Details about proxy URL should be available.
- Details about proxy port should be available.
- Details about proxy credentials should be available.
- Access to Super Admin credentials.

5.13.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Configuration and click Manage Proxy.


Home > Configuration > Manage Proxy

Manage Proxy

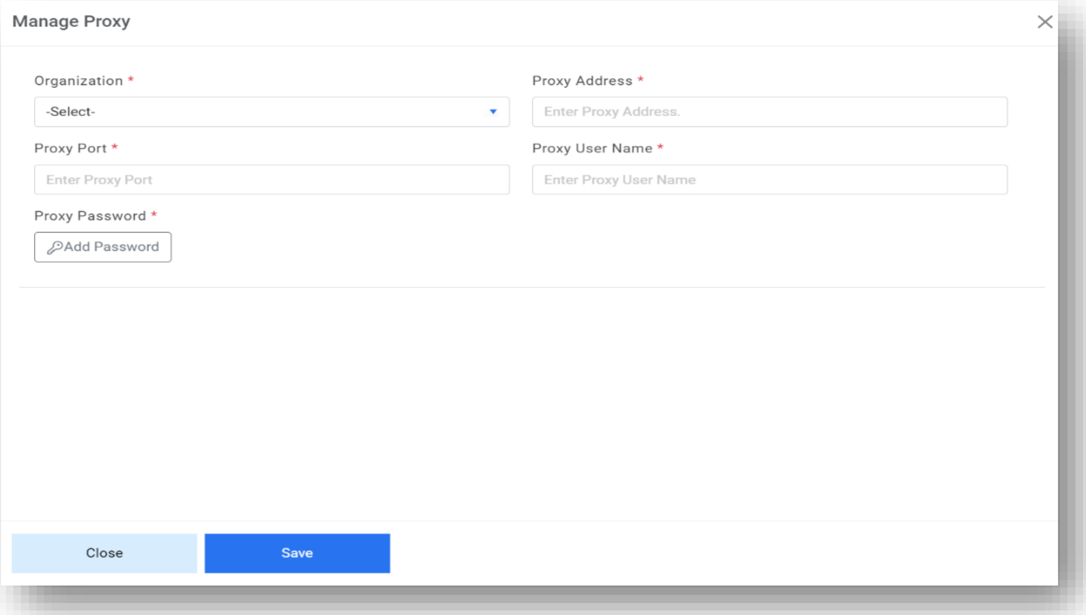
Organization	Proxy Address	Proxy Port	Proxy User Name	Action

No data available.

No items to display

Figure 246 – Manage Proxy

3. Select the Organization from the dropdown. Type in the relevant information in Proxy IP Address, Proxy Port, Proxy UserName, and Proxy Password.


Manage Proxy

Organization *
-Select-

Proxy Address *
Enter Proxy Address.

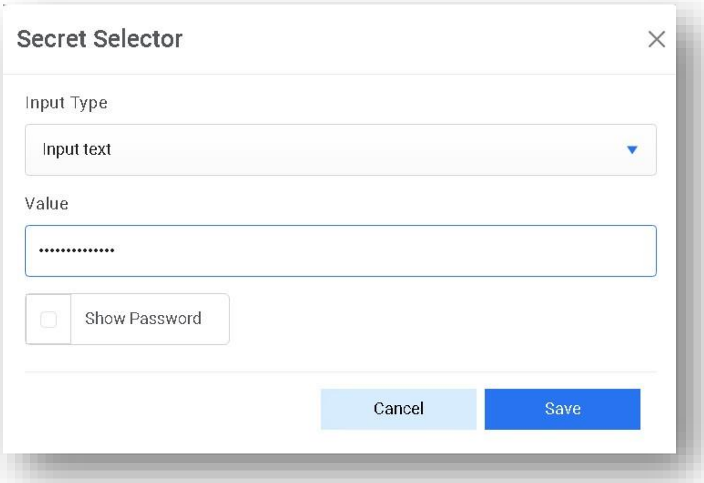
Proxy Port *
Enter Proxy Port

Proxy User Name *
Enter Proxy User Name

Proxy Password *

Figure 247 – Manage Proxy (Cont.)

- Password- For password, click on icon next to it. If the password is available in plaintext, then select Input type as Input Text and enter the password in Value field. Else if it is available in Azure Key Vault then select Input Type as Azure Key Vault and then select any of the configured details from the value field. Else if it is available in any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field. Else if it is available in Internal Secret Manager then select Input Type as Internal Secret Manager and then select any of the configured details from the value field.



Secret Selector

Input Type

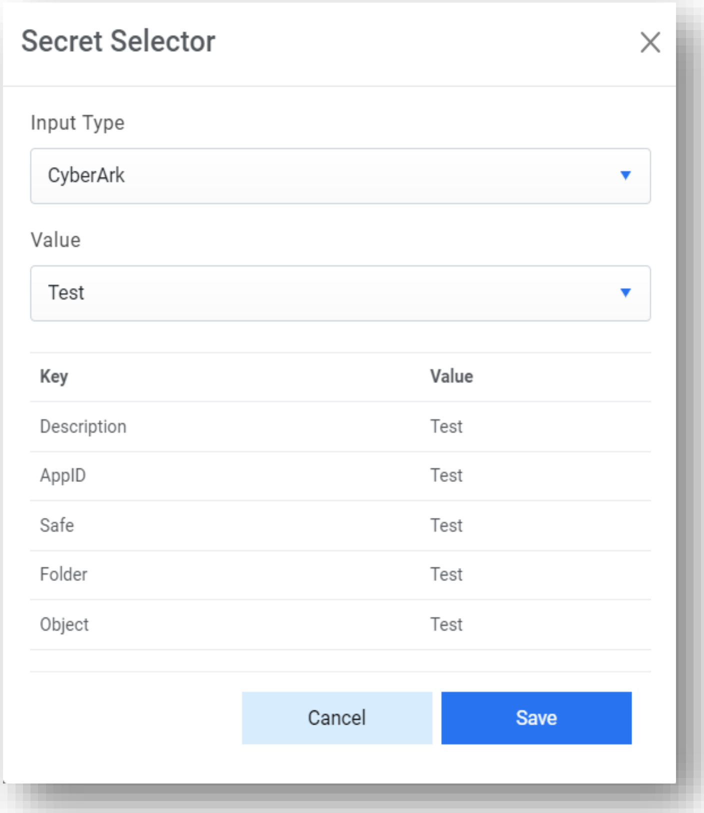
Input text

Value

••••••••••••••

□ Show Password

Figure 248 – Password in Plaintext



Secret Selector

Input Type

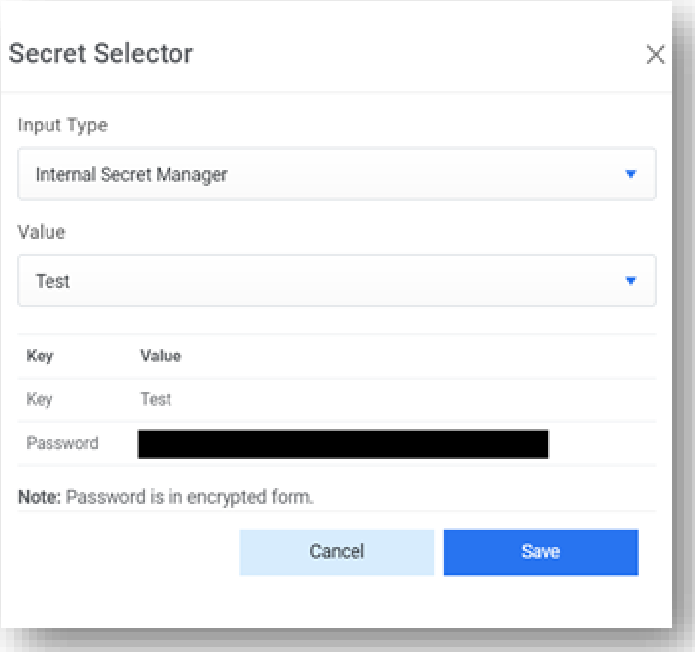
CyberArk

Value

Test

Key	Value
Description	Test
AppID	Test
Safe	Test
Folder	Test
Object	Test

Figure 249 – Password from Key Vault (CyberArk)



Secret Selector

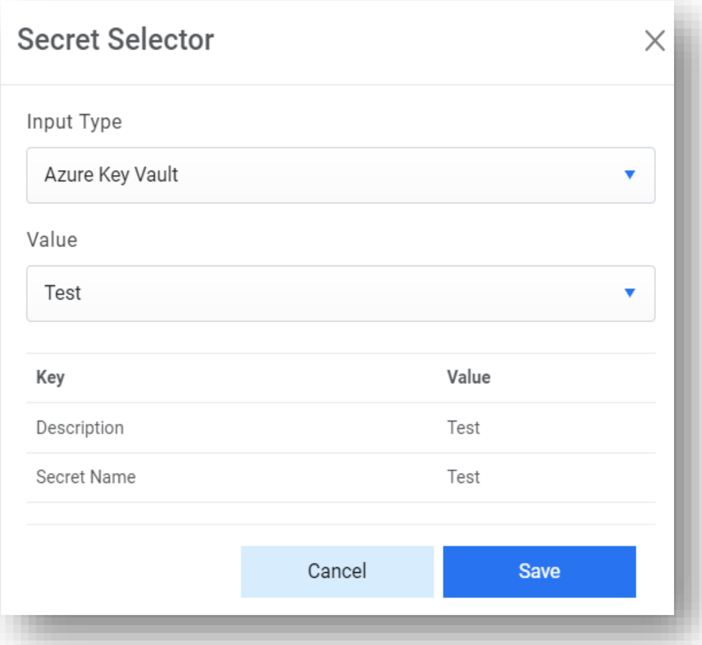
Input Type: Internal Secret Manager

Value: Test

Key	Value
Key	Test
Password	[redacted]

Note: Password is in encrypted form.

Figure 250 – Password from Internal Secret Manager



Secret Selector

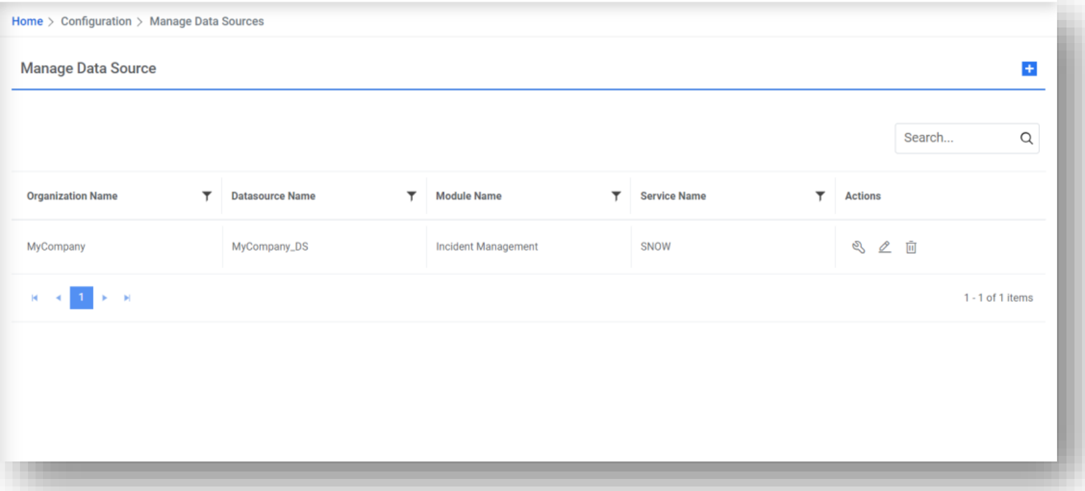
Input Type: Azure Key Vault

Value: Test

Key	Value
Description	Test
Secret Name	Test

Figure 251 – Password from Azure Key Vault

4. After adding proxy details in previous step, go to Configuration and click Manage Data Sources.



Home > Configuration > Manage Data Sources

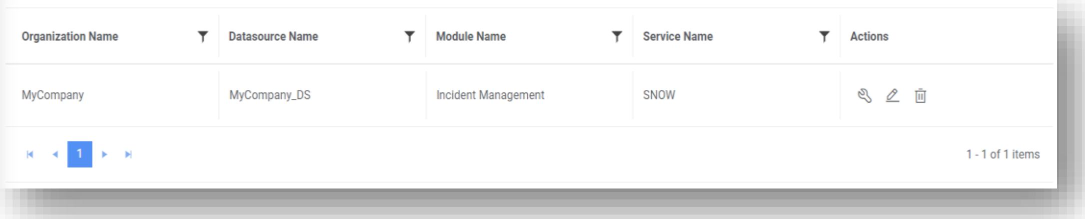
Manage Data Source

Organization Name	Datasource Name	Module Name	Service Name	Actions
MyCompany	MyCompany_DS	Incident Management	SNOW	

1 - 1 of 1 items

Figure 252 – View

5. Click Edit and go to Fetch Data Configuration.

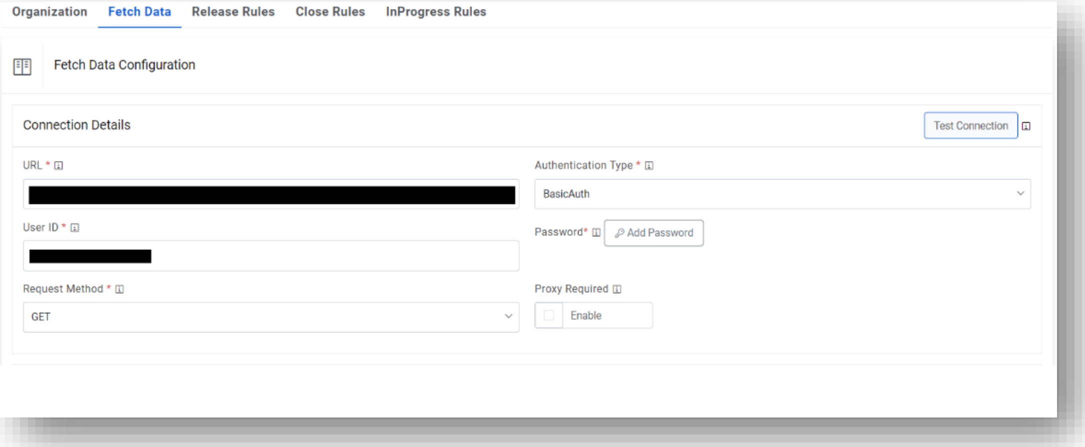


Organization Name	Datasource Name	Module Name	Service Name	Actions
MyCompany	MyCompany_DS	Incident Management	SNOW	

1 - 1 of 1 items

Figure 253 – Edit Data Source

6. Select checkbox against Proxy Required.



Fetch Data Configuration

Connection Details

URL * [redacted]

User ID * [redacted]

Request Method * GET

Authentication Type * BasicAuth

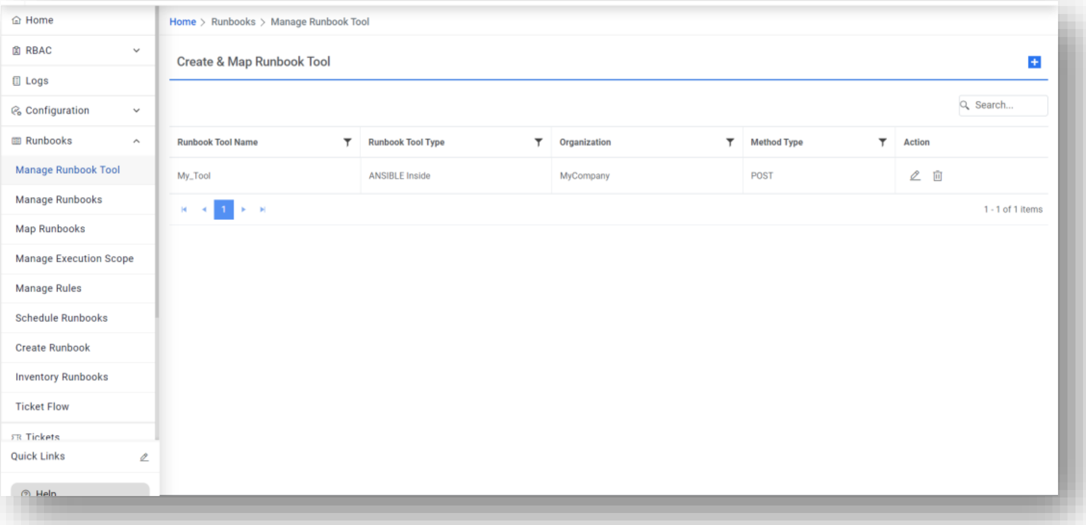
Password*

Proxy Required □ Enable

Figure 254 – Data Source: Proxy Required

7. Click Next and save Submit.

8. Go to Actions then Runbooks and click Manage Runbook Tool.

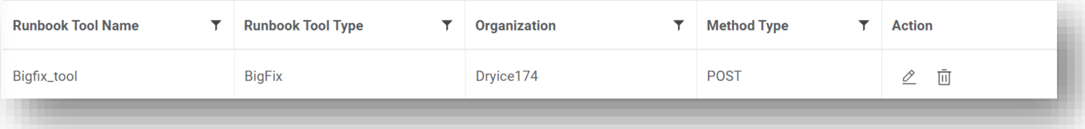


Create & Map Runbook Tool

Runbook Tool Name	Runbook Tool Type	Organization	Method Type	Action
My_Tool	ANSIBLE Inside	MyCompany	POST	

Figure 255 – Manage Runbook Tool

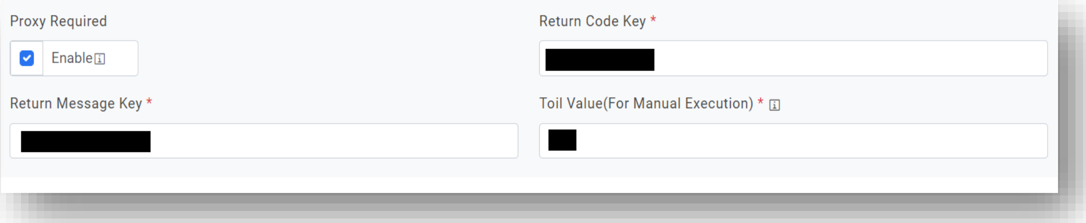
9. Click Edit.



Runbook Tool Name	Runbook Tool Type	Organization	Method Type	Action
Bigfix_tool	BigFix	Dryice174	POST	

Figure 256 – Manage Runbook Tool (Cont.)

10. Select checkbox against Is Proxy Required.



Proxy Required

☑ Enable

Return Code Key *

[redacted]

Return Message Key *

[redacted]

Toil Value(For Manual Execution) *

[redacted]

Figure 257 - Manage Runbook Tool (Cont.)

11. Click Update.

5.13.4 Conclusion

Post the completion of this exercise, you should have a good understanding of managing and configuring the proxy related information within iAutomate.

This concludes the Configuration module of iAutomate. Let's explore the end-to-end ticket flows, primarily for the operational users in the next module.

5.13.5 Related Documentation

- iAutomate Configuration Guide

- iAutomate Troubleshooting Guide

6 Module 4 – End to End Ticket Resolution Flow

6.1 Introduction

This module covers the procedure for enabling end to end ticket flow – from sourcing the ticket information from ITSM tool, recommending the relevant runbook based on ticket description and executing the runbook for automated resolution.

6.2 Lab Exercise 1 – Configure End to End Ticket Resolution Flow

6.2.1 Scenario

As part of the product implementation, iAutomate has been installed and configured within MyCompany organization. In the earlier modules, identification of commonly occurring issues and configuration of relevant runbooks has already been achieved. Now, the end-to-end ticket execution flow needs to be enabled and configured so that MyCompany's operation users can use the same for automated executions and help in building the knowledge the system needs to move to an autonomous state slowly and steadily.

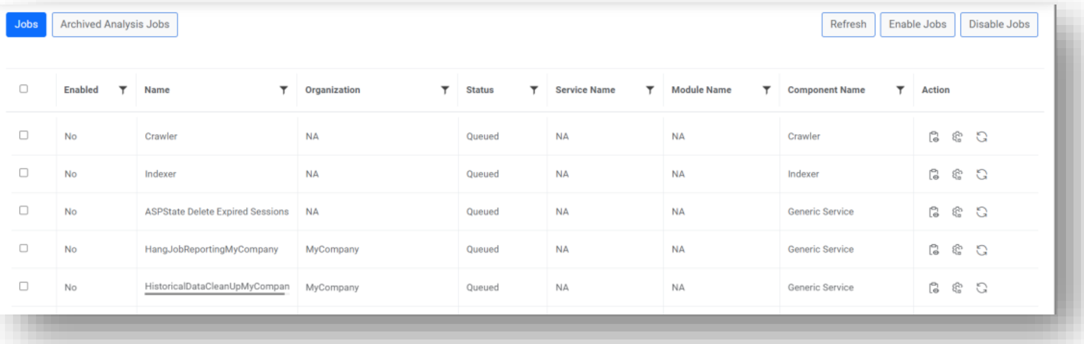
In this lab, we will showcase the detailed end to end flow for Ticket execution.

6.2.2 Prerequisites

- Users should have the roles and privileges of Organization Admin / Operational user and valid access credentials.

6.2.3 Solution

1. Open iAutomate Web URL and login with Organization Admin credentials.
2. Go to Actions and click Manage Jobs.



□	Enabled	Name	Organization	Status	Service Name	Module Name	Component Name	Action
□	No	Crawler	NA	Queued	NA	NA	Crawler	
□	No	Indexer	NA	Queued	NA	NA	Indexer	
□	No	ASPState Delete Expired Sessions	NA	Queued	NA	NA	Generic Service	
□	No	HangJobReportingMyCompany	MyCompany	Queued	NA	NA	Generic Service	
□	No	HistoricalDataCleanUpMyCompan	MyCompany	Queued	NA	NA	Generic Service	

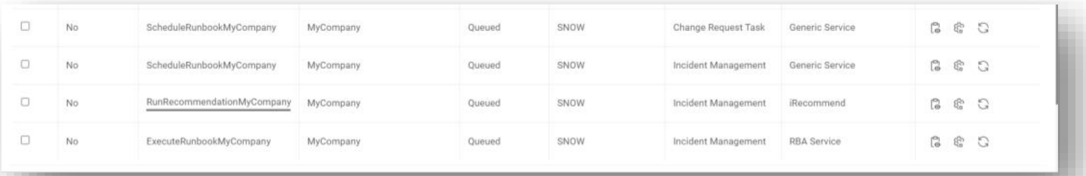
Figure 258 – Manage Jobs

3. Select the jobs mentioned in the list below and click Enable Jobs.

Table 7 – Job Types

Job	Description
CollectIncidentsMyCompany	Responsible for collecting Incidents from ITSM
RunRecommendationMyCompany	Responsible for Recommendation activity
RunParsingMyCompany	Responsible for Parsing activity
ProcessAutoMyCompany	Responsible for deciding if execution will happen in Auto or manual mode.
ExecuteRunbookMyCompany	Responsible for triggering Runbook into RBA layer
ReleaseTicketsMyCompany	Responsible for releasing Ticket from iAutomate console.

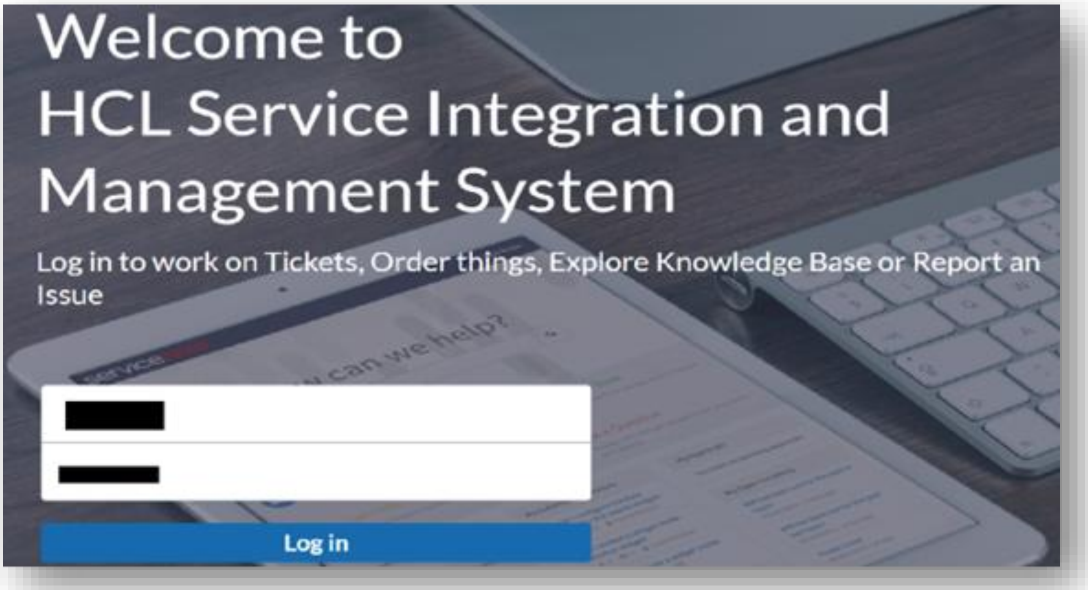
4. All jobs are suffixed with MyCompany where MyCompany is your Organization Name.



☐	No	ScheduleRunbookMyCompany	MyCompany	Queued	SNOW	Change Request Task	Generic Service
☐	No	ScheduleRunbookMyCompany	MyCompany	Queued	SNOW	Incident Management	Generic Service
☐	No	RunRecommendationMyCompany	MyCompany	Queued	SNOW	Incident Management	iRecommend
☐	No	ExecuteRunbookMyCompany	MyCompany	Queued	SNOW	Incident Management	RBA Service

Figure 259 – Manage Jobs (Cont.)

5. Logout and login with your Organizational Admin User ID.
6. To see the tickets landing in iAutomate, first we need to create a ticket in ServiceNow. Usually this is done automatically in production environments where ServiceNow is integrated with Monitoring / Event Management tools and auto-ticketing is enabled. For this lab, we will create the tickets manually in ServiceNow.
7. Open ServiceNow URL. Enter the Username and Password. Please seek the URL information and access credentials from the Instructor / ITSM team if you do not have it already.
8. Click Login.



Welcome to
HCL Service Integration and
Management System

Log in to work on Tickets, Order things, Explore Knowledge Base or Report an Issue

[redacted]

[redacted]

Figure 260 – HCL Service Integration and Management System Login Page

9. You will be redirected to the Home Page.

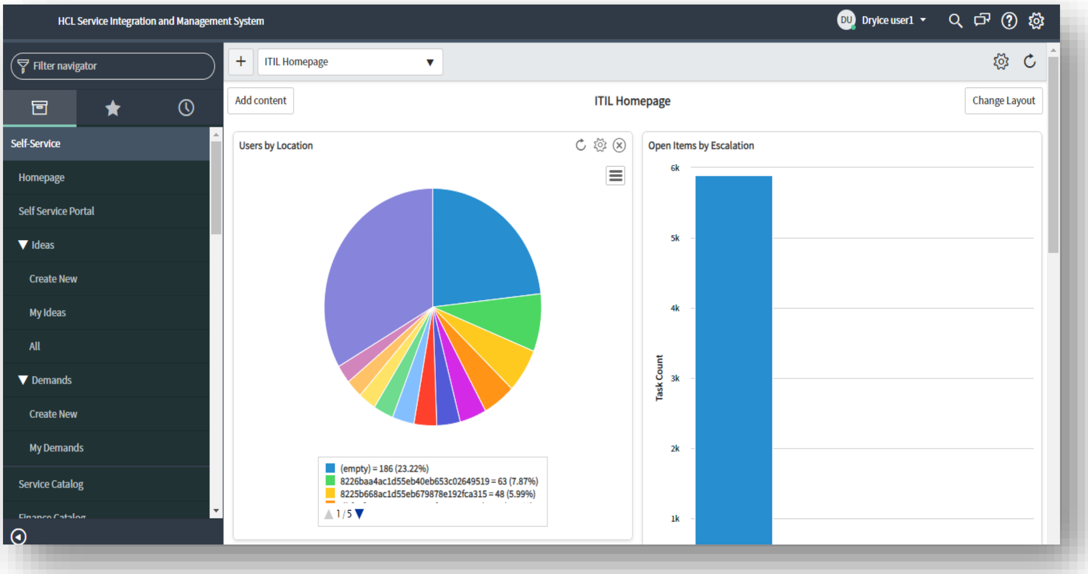
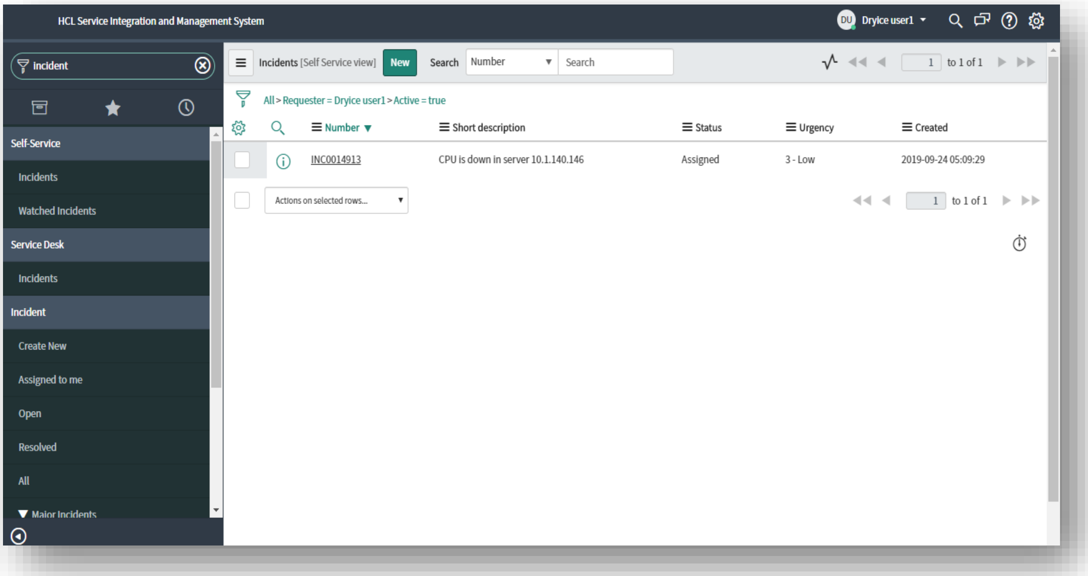


Figure 261 – HCL Service Integration and Management System Home Page

10. Search for Incident in the Filter navigator tab on top left of the page.

11. The Incidents screen appears.

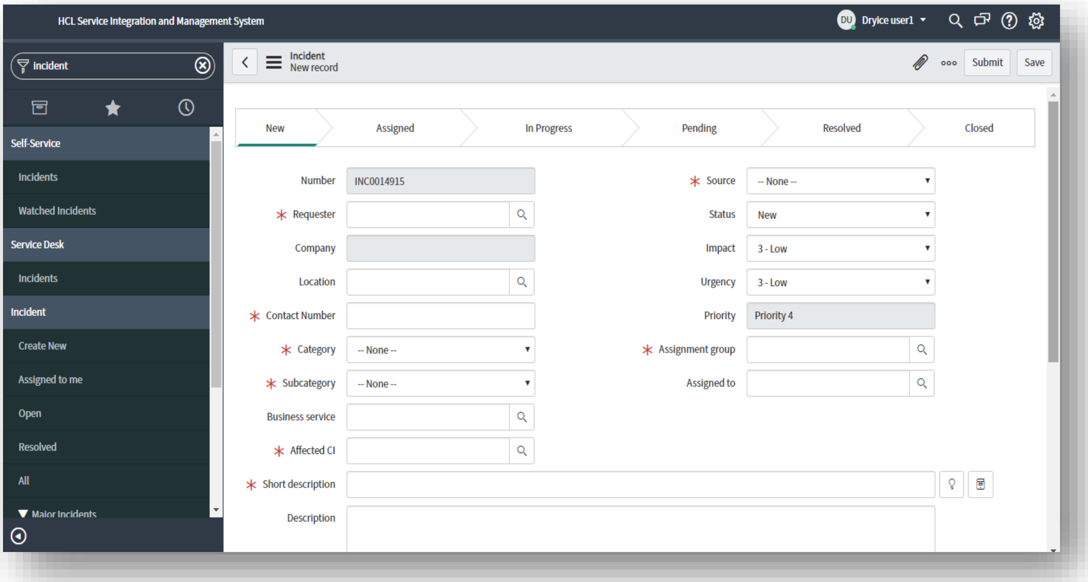


All > Requester = Dryice user1 > Active = true

Number	Short description	Status	Urgency	Created
INC0014913	CPU is down in server 10.1.140.146	Assigned	3 - Low	2019-09-24 05:09:29

Figure 262 – Incident Screen

12. Click the New button to create a new incident.
13. The Incident New Record screen appears and allows you to provide the below information.
    - Select the source of information about incident from the Source pull-down list
    - Enter the Requester
    - Enter the Contact Number
    - Enter the Category of the Incident
    - Enter the Sub-Category of the incident
    - Enter the Assignment Group
    - Enter the user to which this incident will be assigned in the Assigned To field.
    - Enter the CI details in the Affected CI.
    - Enter the Short Description of the ticket
    - Enter the detailed Description of the ticket

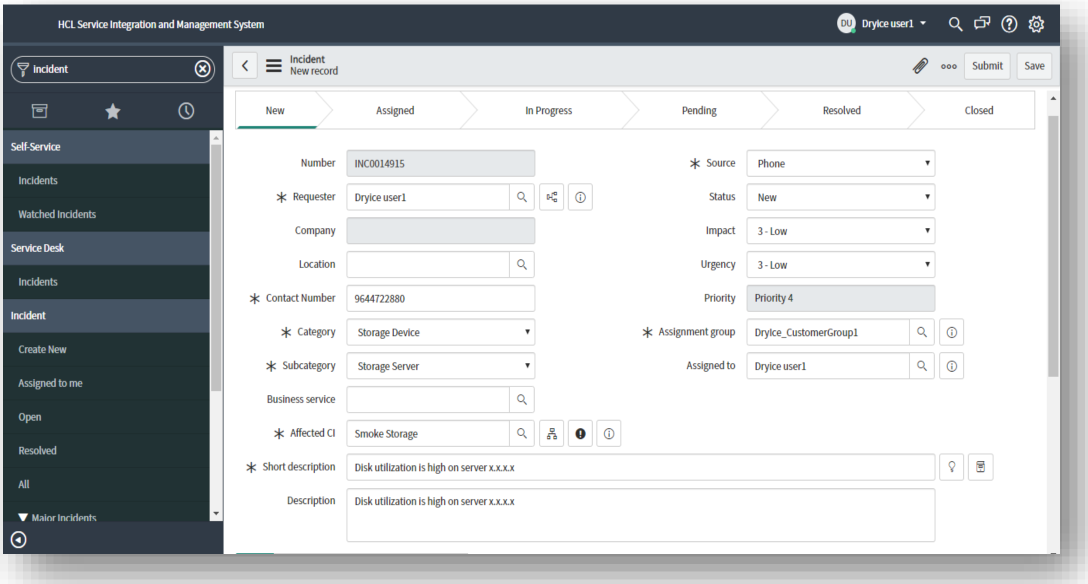


Number: INC0014915
Requester:
Company:
Location:
Contact Number:
Category: -- None --
Subcategory: -- None --
Business service:
Affected CI:
Short description:
Description:
Source: -- None --
Status: New
Impact: 3 - Low
Urgency: 3 - Low
Priority: Priority 4
Assignment group:
Assigned to:

Figure 263 – Incident New Record Screen

Please refer to the information sheet provided by the instructor which includes all the above information for the various use cases covered in this training.

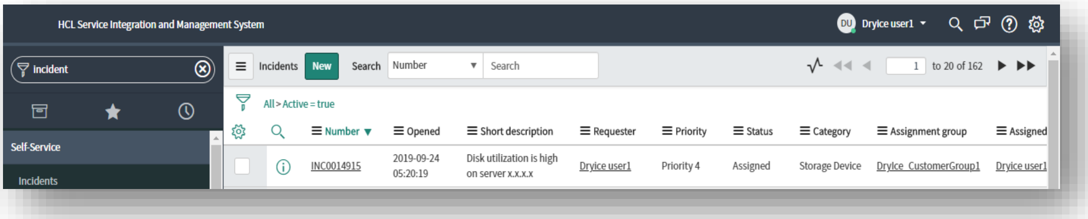
14. Click Submit.



Number: INC0014915
Requester: Dryice user1
Company:
Location:
Contact Number: 9644722880
Category: Storage Device
Subcategory: Storage Server
Business service:
Affected CI: Smoke Storage
Short description: Disk utilization is high on server x.x.x.x
Description: Disk utilization is high on server x.x.x.x
Source: Phone
Status: New
Impact: 3 - Low
Urgency: 3 - Low
Priority: Priority 4
Assignment group: Dryice_CustomerGroup1
Assigned to: Dryice user1

Figure 264 – Incident New Record Screen

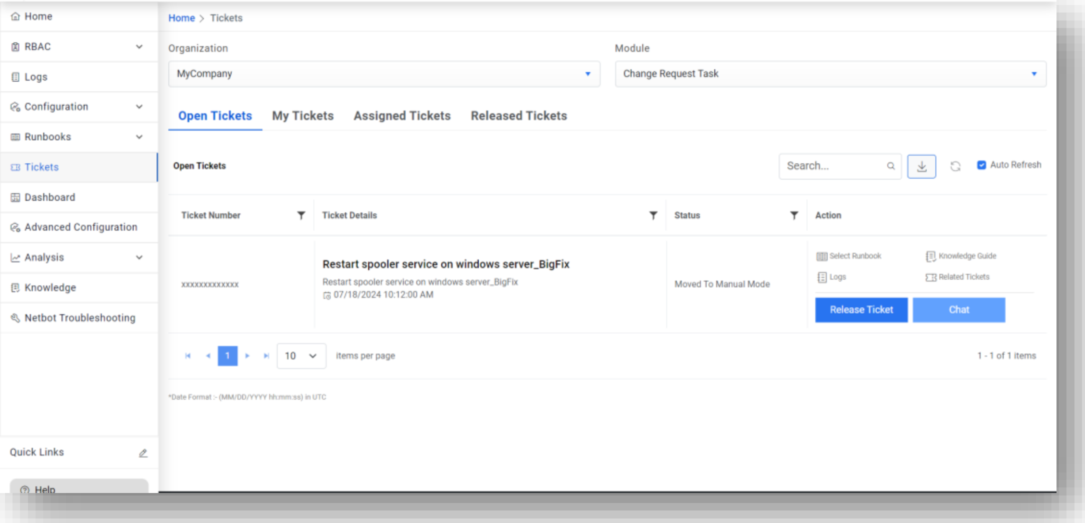
The incident is created as shown in the image below.



Number	Opened	Short description	Requester	Priority	Status	Category	Assignment group	Assigned
INC0014915	2019-09-24 05:20:19	Disk utilization is high on server x.x.x.x	Dryice user1	Priority 4	Assigned	Storage Device	Dryice_CustomerGroup1	Dryice user1

Figure 265 – Incident List

1. Once the ticket is created, login into iAutomate using the Org Admin/Operational User credentials to see the tickets.
2. Go to Actions ->Tickets.



Organization: MyCompany

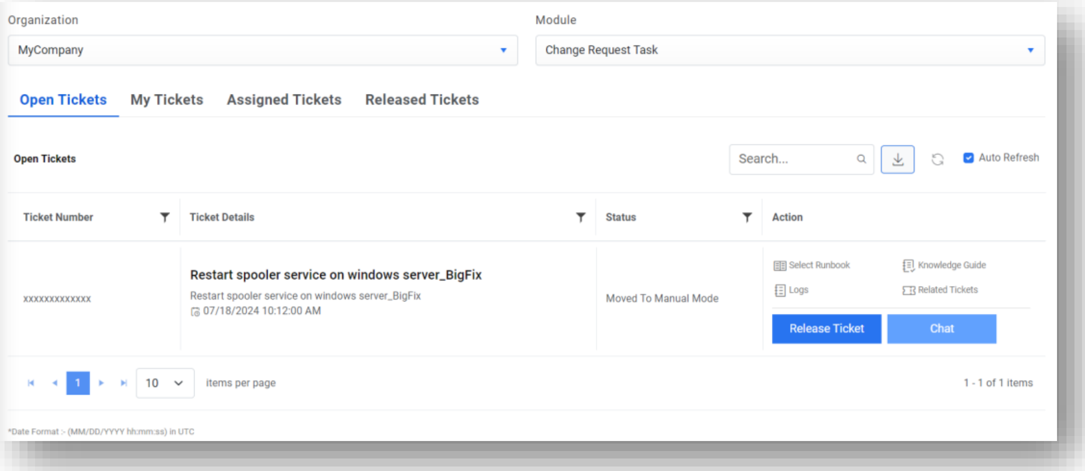
Module: Change Request Task

Ticket Number	Ticket Details	Status	Action
xxxxxxxxxxxxx	Restart spooler service on windows server_BigFix Restart spooler service on windows server_BigFix 07/18/2024 10:12:00 AM	Moved To Manual Mode	Select Runbook Knowledge Guide Logs Related Tickets Release Ticket Chat

*Date Format :- (MM/DD/YYYY hh:mm:ss) in UTC

Figure 266 – Tickets

3. Open Tickets tab appears.
4. In this section, you will see all the tickets satisfying the criteria mentioned in the Entry criteria as part of Configuration.



Organization: MyCompany

Module: Change Request Task

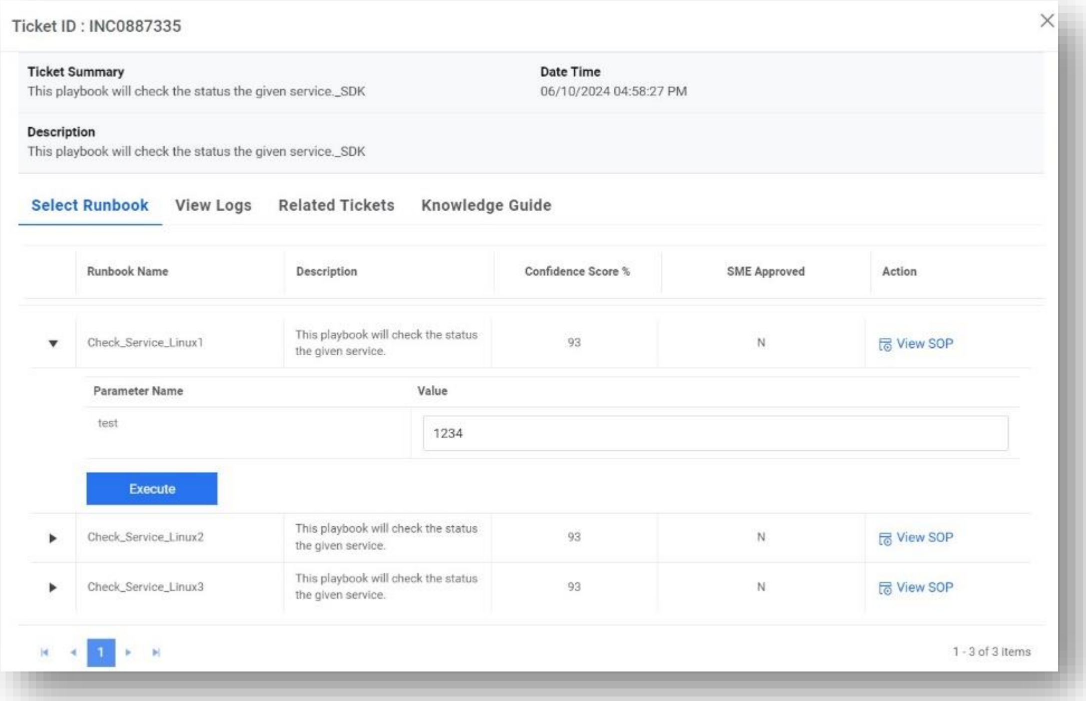
Open Tickets

Ticket Number	Ticket Details	Status	Action
xxxxxxxxxxxxx	**Restart spooler service on windows server_BigFix** Restart spooler service on windows server_BigFix 07/18/2024 10:12:00 AM	Moved To Manual Mode	Select Runbook Knowledge Guide Logs Related Tickets Release Ticket Chat

*Date Format :- (MM/DD/YYYY hh:mm:ss) in UTC

Figure 267 – Tickets (Cont.)

5. Click Release for any of the tickets in All Tickets tab, if you want to move the ticket from your queue to business defined resolver group defined in the Manage Release Rules section of Configuration.
6. Click Select Runbook for any ticket in All Tickets tab if you want to trigger the automated resolution. It will launch a popup window as shown below:



Ticket ID : INC0887335

Ticket Summary
This playbook will check the status the given service._SDK

Date Time
06/10/2024 04:58:27 PM

Description
This playbook will check the status the given service._SDK

	Runbook Name	Description	Confidence Score %	SME Approved	Action
▼	Check_Service_Linux1	This playbook will check the status the given service.	93	N	View SOP
▶	Check_Service_Linux2	This playbook will check the status the given service.	93	N	View SOP
▶	Check_Service_Linux3	This playbook will check the status the given service.	93	N	View SOP

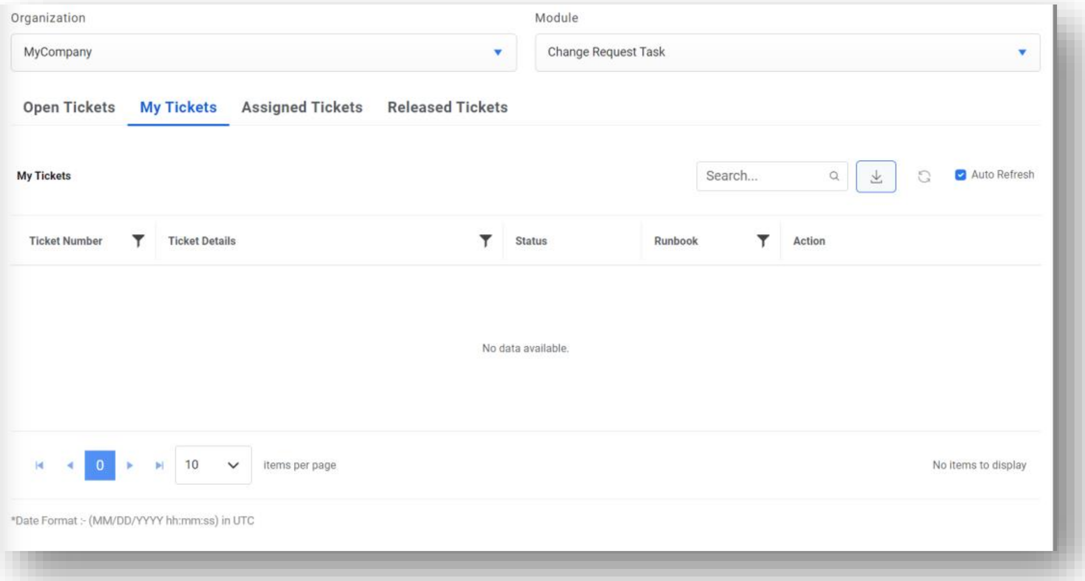
Parameter Name	Value
test	1234

Figure 268 – Pop-Up of Automated Solution

You will see the recommended list of runbooks.

7. Click the down arrow on any of the runbooks which you think is relevant and all the parameters will be automatically populated post parsing. You can go ahead and edit the parameters, if required.

8. After ensuring that the parsed and extracted parameters are correct, click the Execute button to execute the runbook. The ticket for which execution is in progress will appear in My Tickets tab.
9. Go to Tickets and click My Tickets tab.



Organization: MyCompany

Module: Change Request Task

Ticket Number	Ticket Details	Status	Runbook	Action

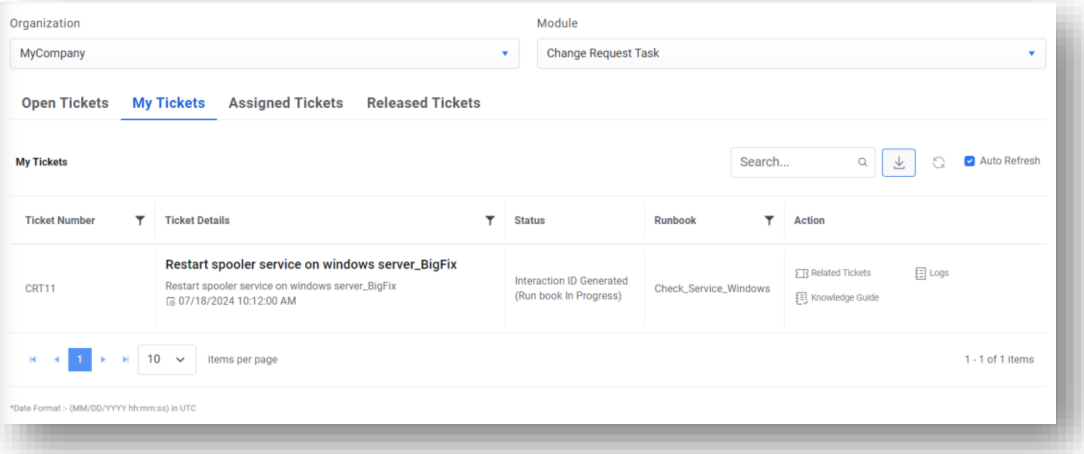
No data available.

0 | 10 items per page | No items to display

*Date Format :- (MM/DD/YYYY hh:mm:ss) in UTC

Figure 269 – My Tickets

10. Users can view the tickets which are being executed automatically on the screen below.



Organization: MyCompany

Module: Change Request Task

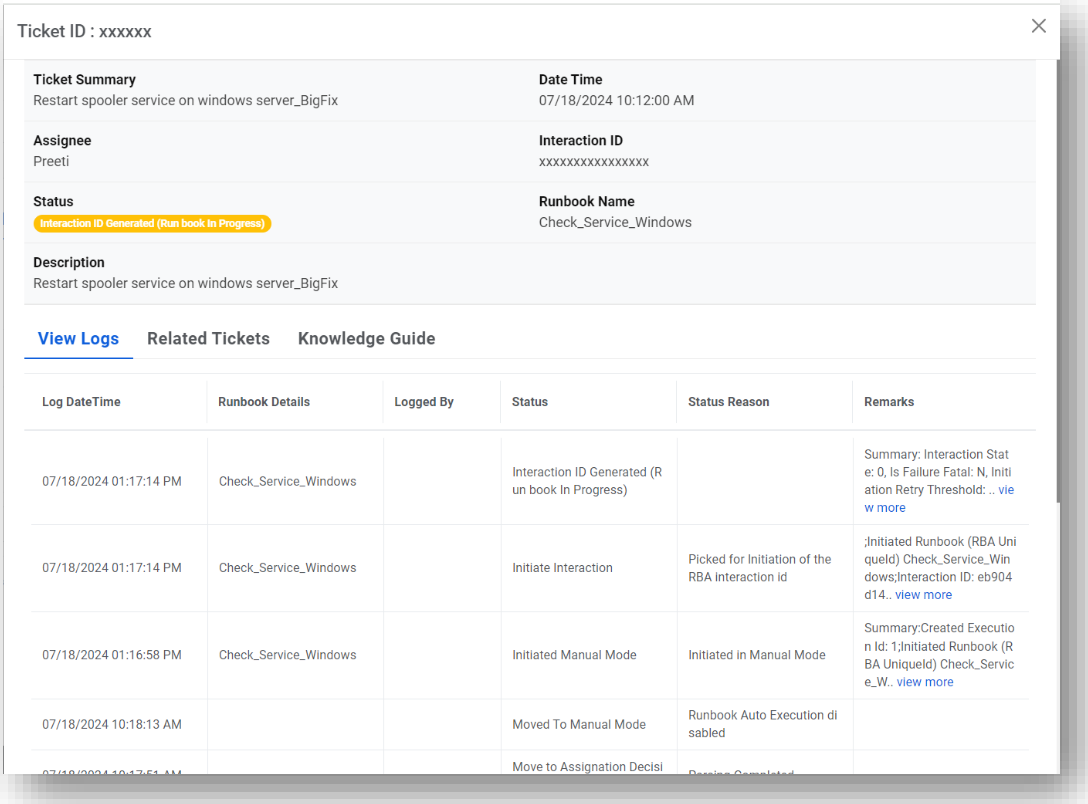
Ticket Number	Ticket Details	Status	Runbook	Action
CRT11	**Restart spooler service on windows server_BigFix** Restart spooler service on windows server_BigFix 07/18/2024 10:12:00 AM	Interaction ID Generated (Run book In Progress)	Check_Service_Windows	Related Tickets Knowledge Guide Logs

1 | 10 items per page | 1 - 1 of 1 items

*Date Format :- (MM/DD/YYYY hh:mm:ss) in UTC

Figure 270 – My Tickets (Cont.)

11. The ticket execution status can be viewed in the Logs section available at the bottom.



Ticket ID : xxxxxx

Ticket Summary
Restart spooler service on windows server_BigFix

Date Time
07/18/2024 10:12:00 AM

Assignee
Preeti

Interaction ID
xxxxxxxxxxxxxxxx

Status
Interaction ID Generated (Run book In Progress)

Runbook Name
Check_Service_Windows

Description
Restart spooler service on windows server_BigFix

Log DateTime	Runbook Details	Logged By	Status	Status Reason	Remarks
07/18/2024 01:17:14 PM	Check_Service_Windows		Interaction ID Generated (Run book In Progress)		Summary: Interaction State: 0, Is Failure Fatal: N, Initiation Retry Threshold: .. view more
07/18/2024 01:17:14 PM	Check_Service_Windows		Initiate Interaction	Picked for Initiation of the RBA interaction id	;Initiated Runbook (RBA UniqueId) Check_Service_Windows;Interaction ID: eb904d14.. view more
07/18/2024 01:16:58 PM	Check_Service_Windows		Initiated Manual Mode	Initiated in Manual Mode	Summary:Created Execution Id: 1;Initiated Runbook (RBA UniqueId) Check_Service_W.. view more
07/18/2024 10:18:13 AM			Moved To Manual Mode	Runbook Auto Execution disabled	
07/18/2024 10:17:51 AM			Move to Assignation Decisi	Parsing Completed	

Figure 271 – Ticket Logs

6.2.4 Conclusion

Post the completion of this exercise, you should have a good understanding of viewing and executing the tickets based on the recommendations provided by iAutomate.

This concludes this module. Let's see how we can optimize the models used by iAutomate for recommendation as well as ticket clustering for more accurate identification of automation opportunities.

6.2.5 Related Documentation

- iAutomate Configuration Guide
- iAutomate Troubleshooting Guide
- iAutomate User Guide

7 Module 5 – Model Optimization

7.1 Introduction

This module covers the procedure for optimizing the machine learning-based models used by iAutomate components like iRecommend and iUnique for recommendation of relevant runbooks and ticket clustering, respectively. This module becomes helpful when organizations feel that the accuracy of recommendations needs further improvement. The issues could be related to model hyperparameters where configuration manager might not have configured correct values before using the same in a production environment.

iAutomate provides configurational capabilities where user can define or select a combination of algorithms and their parameter values. These values known as hyperparameter templates are used to check their applicability in particular customer environment via Workbench Analysis. In workbench analysis, users can upload a sample set of ticket descriptions to system and verify whether configured hyperparameters for iRecommend and iUnique are providing accurate results. If results are not as expected, experimentation can be done by changing the parameter values to arrive at an optimized model.

Let's begin with the configuration of hyperparameters for iRecommend and iUnique.

7.2 Lab Exercise 1 – Configure Hyperparameters for iRecommend and iUnique

7.2.1 Scenario

MyCompany organization has requested further optimization of models for the recommendation of runbooks and ticket clustering used for identification of automation candidates. The scenario will remain the same for all the exercises covered in this module.

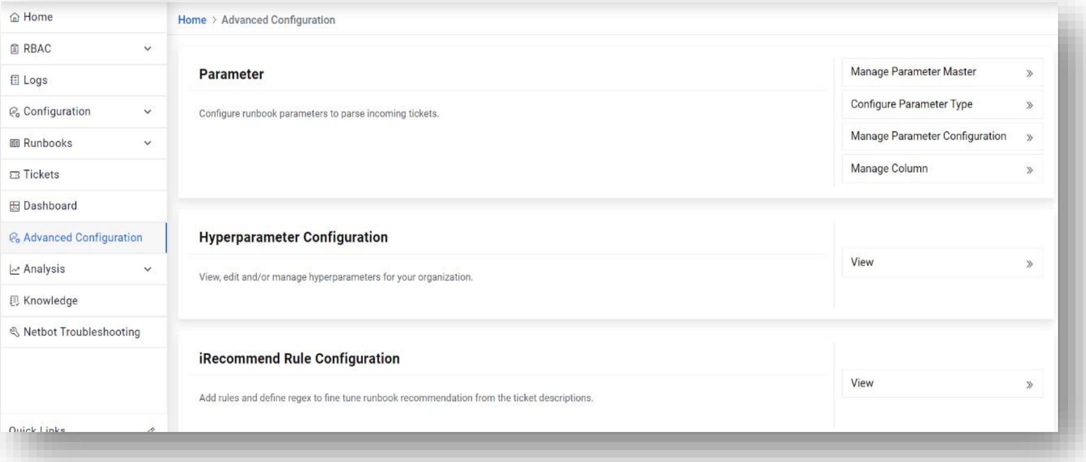
In this lab, we will showcase the detailed procedure for configuring hyperparameters for iRecommend and iUnique.

7.2.2 Prerequisites

- Users should have Organizational Admin or Super Admin credentials.

7.2.3 Solution

1. Open iAutomate Web URL and login with Super Admin credentials.
2. Go to Advance Configuration, click Hyperparameter Configuration. The Hyperparameter Configuration page appears.



Parameter

Configure runbook parameters to parse incoming tickets.

Hyperparameter Configuration

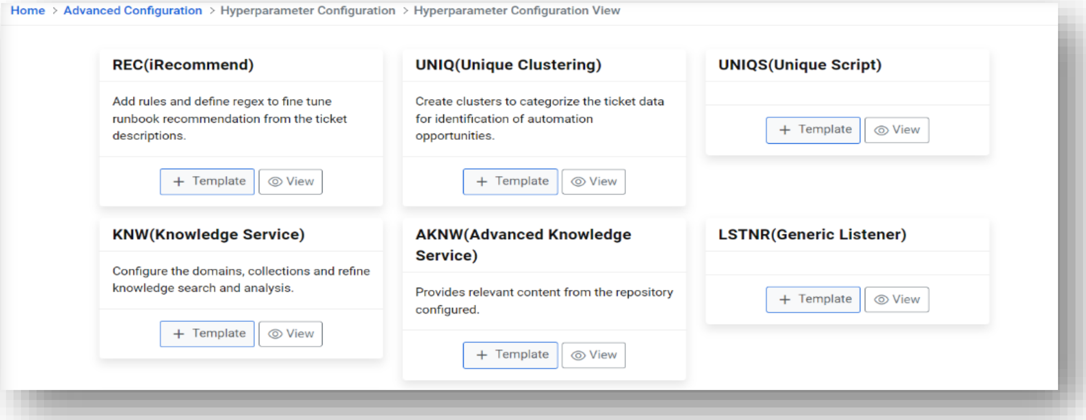
View, edit and/or manage hyperparameters for your organization.

iRecommend Rule Configuration

Add rules and define regex to fine tune runbook recommendation from the ticket descriptions.

Figure 272 – Manage Hyper Parameters

3. Select Recommendation or Unique Clustering component.


Home > Advanced Configuration > Hyperparameter Configuration > Hyperparameter Configuration View
+ Template
View

REC(iRecommend)

Add rules and define regex to fine tune runbook recommendation from the ticket descriptions.

UNIQ(Unique Clustering)

Create clusters to categorize the ticket data for identification of automation opportunities.

UNIQS(Unique Script)

KNW(Knowledge Service)

Configure the domains, collections and refine knowledge search and analysis.

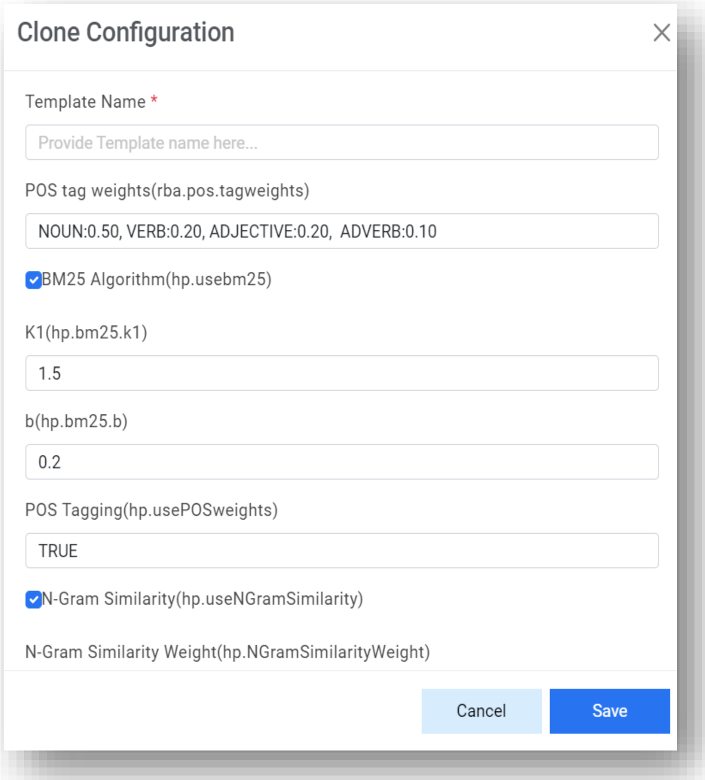
AKNW(Advanced Knowledge Service)

Provides relevant content from the repository configured.

LSTNR(Generic Listener)

Figure 273 – Hyperparameter Configuration

4. To add a new template for Recommendation, click on + Template.



Clone Configuration

Template Name *

Provide Template name here...

POS tag weights(rba.pos.tagweights)

NOUN:0.50, VERB:0.20, ADJECTIVE:0.20, ADVERB:0.10

☑ BM25 Algorithm(hp.usebm25)

K1(hp.bm25.k1)

1.5

b(hp.bm25.b)

0.2

POS Tagging(hp.usePOSweights)

TRUE

☑ N-Gram Similarity(hp.useNGramSimilarity)

N-Gram Similarity Weight(hp.NGramSimilarityWeight)

Figure 274 – Clone Configuration

5. Type the Template Name.
6. Type in the values for each of the following parameters:

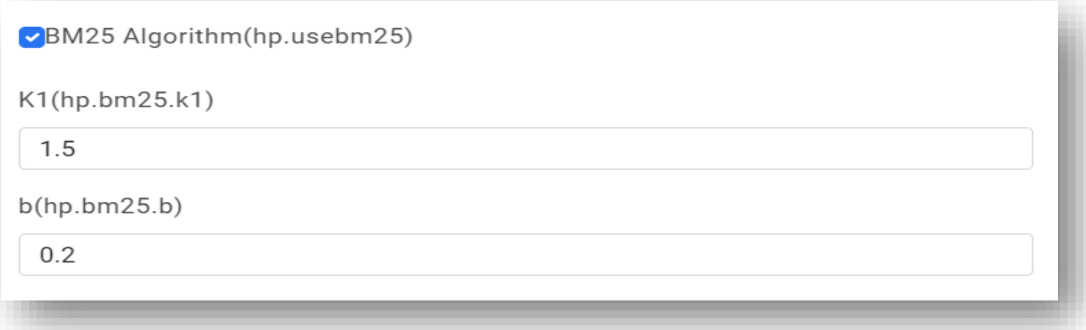
- rba.pos.tagweights: It specifies the weightage for each tag that is the part of a speech in a ticket. Refer to below table for default tag values.

Table 8 - Default Tag Values

Tag	Default Value
Noun	0.50
Verb	0.20
Adjective	0.20
Adverb	0.10

The values defined in the table represent the default values. Users can change them based on the requirement. The sum of these values must be 1.

- Usebm25: Use a toggle button with options such as True or False to enable this parameter. Enabling this parameter prompts you to specify the values following parameters.
  - K1: The user can provide any value of less than 2.0. The Default value is 1.5.
  - B: The user can provide any value of less than 1.0. The Default value is 0.2



☑ BM25 Algorithm(hp.usebm25)

K1(hp.bm25.k1)

1.5

b(hp.bm25.b)

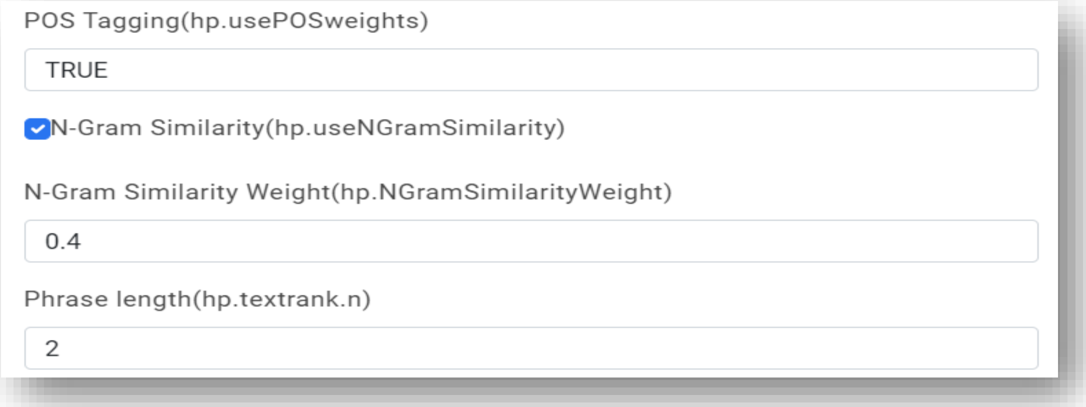
0.2

Figure 275 – Clone Configuration (Cont.)

- usePOSWeights: Uses true or false values to enable or disable rba.pos.tagweights parameter.
- NgramSimilarity: Administrators can activate or deactivate the functionality with the help of a toggle button in terms of True or False.
- Selecting True prompts highlights the following parameters:

a. SimilarityWeight: Specifies the value for the combined weightage of bm25 and textrank score. The value should be less than 1.

b. TextRank.n: Specifies the number of words to be considered for summarizing similarity weight. The number should be equal to or greater than 1.



POS Tagging(hp.usePOSweights)

TRUE

☑ N-Gram Similarity(hp.useNGramSimilarity)

N-Gram Similarity Weight(hp.NGramSimilarityWeight)

0.4

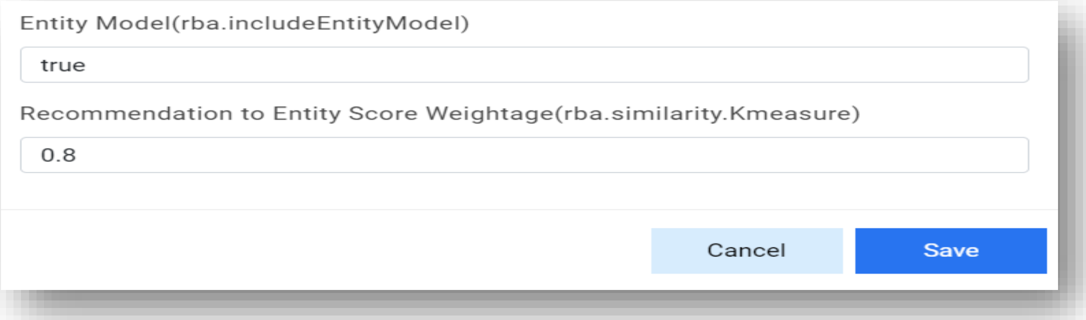
Phrase length(hp.textrank.n)

2

Figure 276 – Clone Configuration (Cont.)

- EntityModel: Specifies whether to use the entity model or as True or False conditions for runbook recommendation.
- KMeasure: Specifies the weightage given to the entity model and recommendation model for runbook recommendation.

- 0 indicates that the entity model will be used for runbook recommendation.
- 1 indicates that the recommendation model will be used for runbook recommendation.
- Between 0 and 1 indicates that the recommendation model and entity model will be used for runbook recommendation


Entity Model(rba.includeEntityModel)

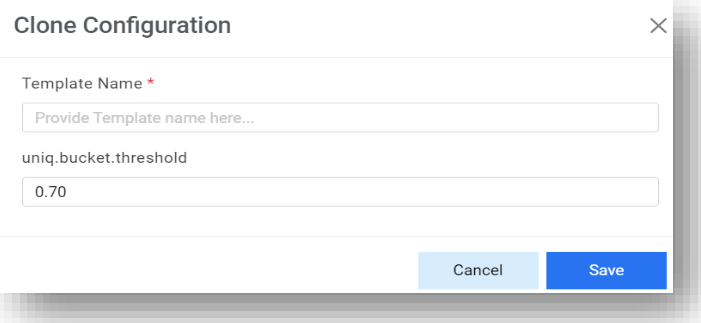
true

Recommendation to Entity Score Weightage(rba.similarity.Kmeasure)

0.8

Figure 277 – Clone Configuration (Cont.)

7. Click Save.
8. To create a template for Unique Clustering, click ⧉ next to the template selected for cloning.
9. The Clone Configuration page appears.


Clone Configuration

Template Name *

Provide Template name here...

uniq.bucket.threshold

0.70

Figure 278 – Clone Configuration

10. Type the Template Name. i.e. 'MyCompany_unique_v1'.

Type in the value for Uniq.bucket.threshold field carefully to set up the threshold value of the bucket for runbook recommendation. Value of this parameter should be between 0 and 1. If user increases the threshold value, the number of buckets will increase, and user will find more buckets with a similar description. If user decreases the threshold value, the different descriptions may be assigned to a single bucket.

11. Click Save.

The new template is added and listed at the bottom of the template list. The templates created will be used on the Workbench.

7.2.4 Conclusion

Post the completion of this exercise, you should have a good understanding of configuring the hyperparameter templates for recommendation and Unique Clustering.

The next step is to perform the analysis to arrive at the optimal values of hyperparameters for iUnique which will be covered in the next exercise.

7.3 Lab Exercise 2 – Identify Optimal Values of Hyperparameters for iUnique

7.3.1 Scenario

MyCompany organization has requested further optimization of models for recommendation of runbooks and ticket clustering used for identification of automation candidates. The scenario will remain the same for all the exercises covered in this module.

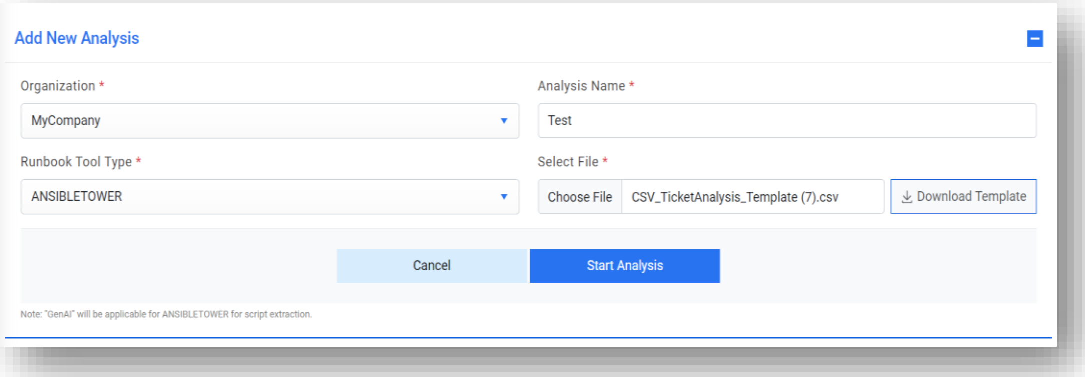
In this lab, we will showcase the detailed procedure for analyzing and identifying optimal values of hyper parameters for iUnique (Unique Clustering).

7.3.2 Prerequisites

- Users should have Organizational Admin credentials.

7.3.3 Solution

1. Open iAutomate Web URL and login with Super Admin credentials.
2. Go to Advance Configuration -> Workbench and click Unique Analysis.
3. Click Add New Analysis. It will bring up Upload Workbench Data page.


Add New Analysis

Organization * MyCompany

Analysis Name * Test

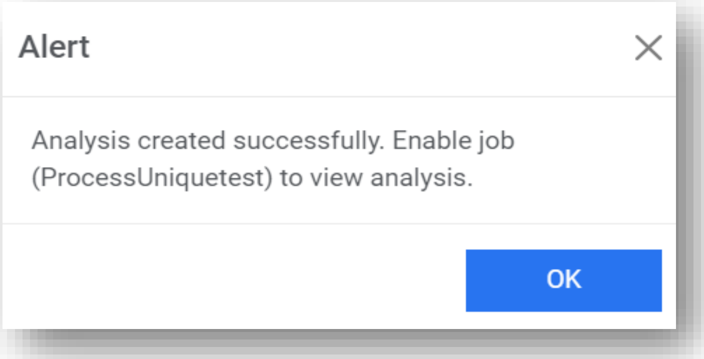
Runbook Tool Type * ANSIBLETOWER

Select File * Choose File CSV_TicketAnalysis_Template (7).csv

Note: "GenAI" will be applicable for ANSIBLETOWER for script extraction.

Figure 279 – Upload Workbench Data

4. Click Save.
5. Select Module as 'Incident'.
6. Type the Analysis Name.
7. Click Choose File to upload the sample tickets as per the provided template. The template can be downloaded by clicking Download Template.
8. Select Hyper Parameter Template Version from the dropdown.
9. Click Start Analysis to begin the analysis for Unique Clustering.



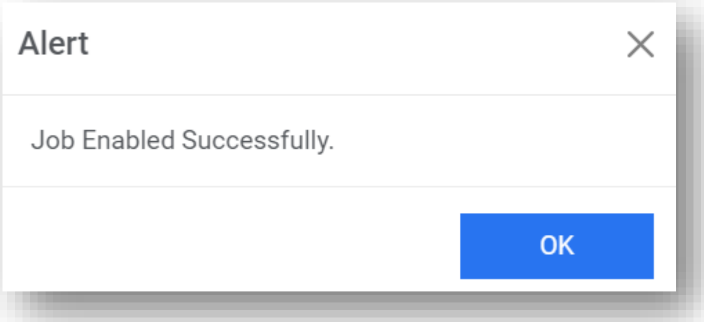
Alert

Analysis created successfully. Enable job (ProcessUniquetest) to view analysis.

Figure 280 – Analysis Created Successfully

On clicking Start Analysis, one job is created for Unique Analysis and another for Recommendation Analysis. Newly added analysis is listed on the Manage Jobs page.

1. To enable a job to view analysis, go to Actions -> Manage Jobs.
2. Select the newly added job for unique analysis with status as Queued.
3. Click Enable Jobs.
4. A confirmation message appears.

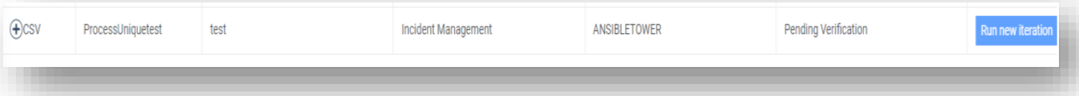


Alert

Job Enabled Successfully.

Figure 281 – Confirmation Message

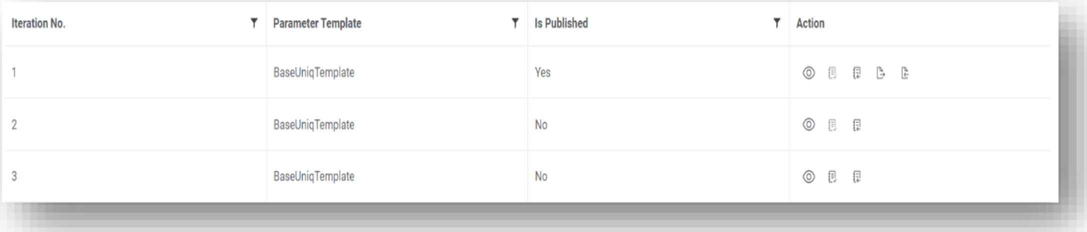
5. This adds the analysis and lists it in Unique Analysis page with status as In Progress.
6. Once the analysis is complete, status changes to Pending Verification. You can now validate the results.



⊕CSV	ProcessUniquetest	test	Incident Management	ANSIBLETOWER	Pending Verification	Run new iteration

Figure 282 – Unique Analysis

7. To analyze the added unique analysis data, click ⊕ next to analysis to be verified.



Iteration No.	Parameter Template	Is Published	Action
1	BaseUniqTemplate	Yes	◎ ▤ ▤ ▤ ▤
2	BaseUniqTemplate	No	◎ ▤ ▤
3	BaseUniqTemplate	No	◎ ▤ ▤

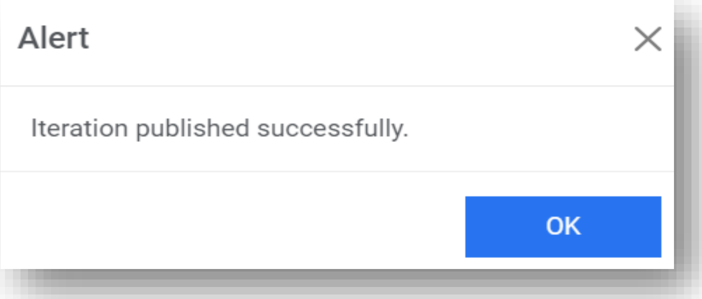
Figure 283 – Unique Analysis (Cont.)

Once you have verified the analysis results, you can publish the most optimized hyperparameter template.

8. Go to Advance Configuration -> Workbench -> Unique Analysis, click ▤ next to the analysis user want to publish.

Users can publish only successful iterations.

9. A confirmation dialog box appears. Click OK.



Alert

Iteration published successfully.

Figure 284 – Confirmation Message

7.3.4 Conclusion

Post the completion of this exercise, you should have a good understanding of identifying the most optimal values of hyperparameters for Unique Clustering Analysis following multiple iterations.

The next step is to perform the analysis to arrive at the optimal values of hyperparameters for iRecommend which will be covered in the next exercise.

7.4 Lab Exercise 3 – Identify Optimal Values of Hyperparameters for iRecommend

7.4.1 Scenario

MyCompany organization has requested further optimization of models for recommendation of runbooks and ticket clustering used for identification of automation candidates. The scenario will remain the same for all the exercises covered in this module.

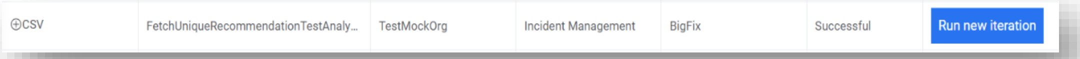
In this lab, we will showcase the detailed procedure for analyzing and identifying optimal values of hyper parameters for iRecommend (Recommendation).

7.4.2 Prerequisites

- Users should have Organizational Admin credentials.

7.4.3 Solution

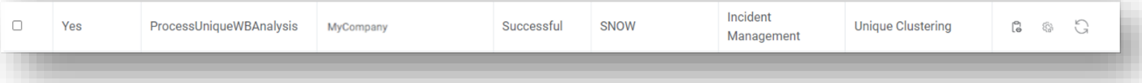
1. Open iAutomate Web URL and login with Super Admin credentials.
2. Go to Advance Configuration -> Workbench and click Recommends Analysis.



⊕CSV	FetchUniqueRecommendationTestAnaly...	TestMockOrg	Incident Management	BigFix	Successful	Run new iteration

Figure 285 – Workbench Recommendation Analysis

3. Go to Actions -> Manage Jobs and enable the Recommendation Job. It starts with prefix FetchUniqueRecommendation and includes your organization name.

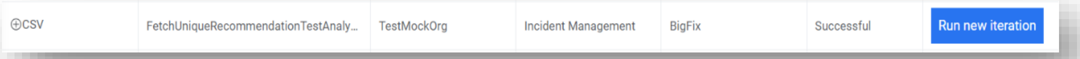


□	Yes	ProcessUniqueWBAnalysis	MyCompany	Successful	SNOW	Incident Management	Unique Clustering	

Figure 286 – Recommendation Analysis (Cont.)

Before enabling recommendation job, ensure that the unique analysis for the organization for whom you are adding the new iteration, is published. Then enable the recommendation job from the Manage Jobs page.

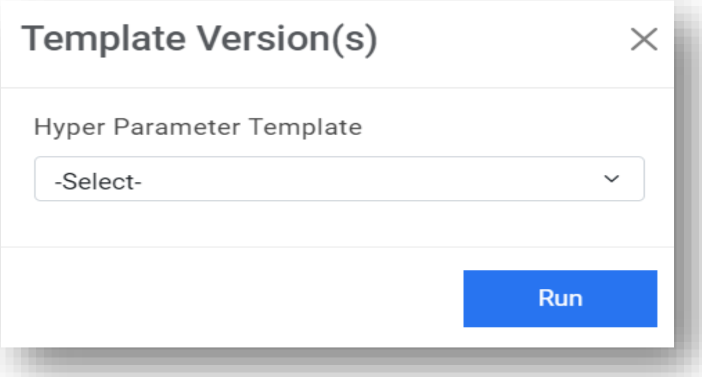
4. Go to Advance Configuration -> Workbench and click Recommendation Analysis.
5. Click Run new Iteration to run a new iteration for Recommendation Analysis for MyCompany.



⊕CSV	FetchUniqueRecommendationTestAnaly...	TestMockOrg	Incident Management	BigFix	Successful	Run new iteration

Figure 287 – Recommendation Analysis (Cont.)

6. A popup window for Template Version(s) appears.



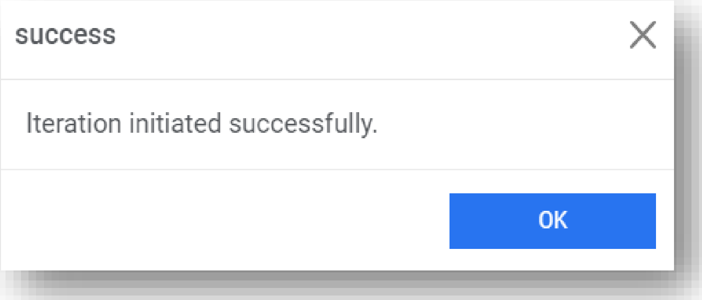
Template Version(s)

Hyper Parameter Template: -Select-

Figure 288 - Template Version

7. Select a template from the Hyperparameter Template dropdown list.

8. Click Run. A confirmation dialog box appears.

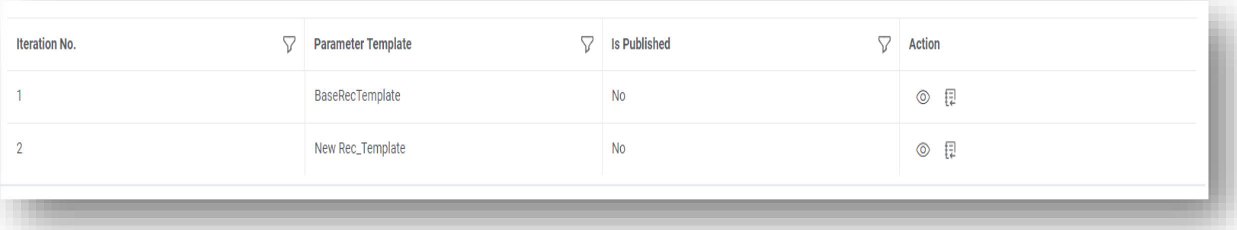


success

Iteration initiated successfully.

Figure 289 – Confirmation Message

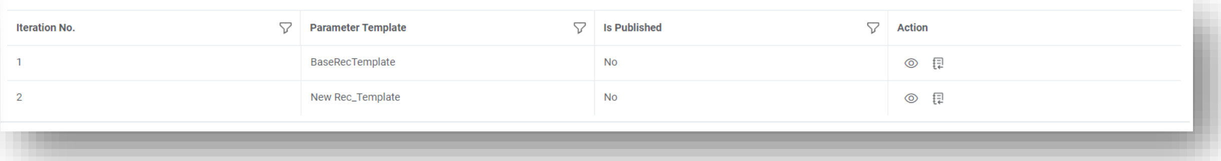
The new iteration is added and appears at the bottom of the list in the grid below-



Iteration No.	Parameter Template	Is Published	Action
1	BaseRecTemplate	No	◎ ▤
2	New Rec_Template	No	◎ ▤

Figure 290 – Addition of New Iteration

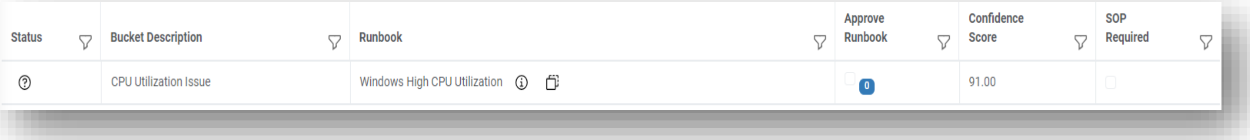
9. To view the recommendation analysis results, click 👁 next to analysis for MyCompany.



Iteration No.	Parameter Template	Is Published	Action
1	BaseRecTemplate	No	👁 ▤
2	New Rec_Template	No	👁 ▤

Figure 291 – View Analysis

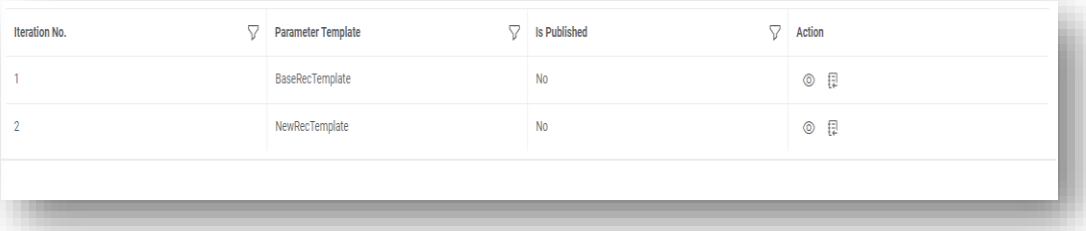
10. Users can even validate and enrich recommendation results. Below figure shows list of relevant runbooks for corresponding ticket categories. If you are fine with the recommendation results, then proceed with publishing a hyperparameter configuration template.



Status	Bucket Description	Runbook	Approve Runbook	Confidence Score	SOP Required
?	CPU Utilization Issue	Windows High CPU Utilization ⓘ ⎘	□ 0	91.00	□

Figure 292 – Enrich Recommendation

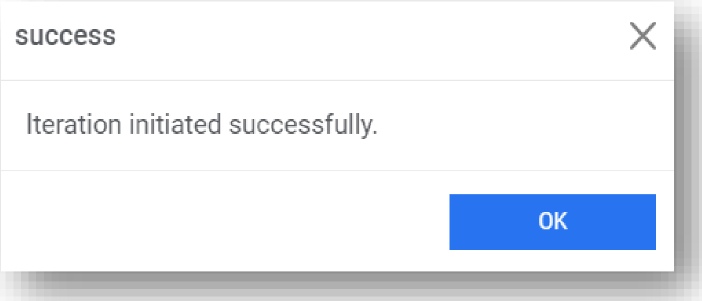
11. Go to Advance Configuration -> Workbench -> Recommendation Analysis. Click ▤ next to the analysis for MyCompany to publish.



Iteration No.	Parameter Template	Is Published	Action
1	BaseRecTemplate	No	◎
2	NewRecTemplate	No	◎

Figure 293 – Publish Analysis

12. A confirmation dialog box appears.
13. Click OK.



success

Iteration initiated successfully.

Figure 294 – Confirmation Message

7.4.4 Conclusion

Post the completion of this exercise, you should have a good understanding of identifying the optimal values of hyperparameters for Recommendation Analysis following multiple iterations.

This concludes this module covering the identification of optimal values of hyperparameters for Recommendation and Unique Clustering.

Let's see how a user can configure and use the Document Process and Analysis functionality in the next module.

7.4.5 Related Documentation

- iAutomate Configuration Guide
- iAutomate Troubleshooting Guide

8 Module 6 – Document Processing & Analysis

8.1 Introduction

This module covers the procedure for configuring internal and external knowledge repositories for knowledge consumption. It helps all different types of users in performing knowledge search and analysis to reduce MTTR for issues. iAutomate helps in exploring multiple data repositories and presenting relevant knowledge articles based on the ticket descriptions or the user search queries for further consumption. Let's begin with the Configuration of Collections for Knowledge Search.

8.2 Lab Exercise 1 – Configuration of Collections for Knowledge Search

8.2.1 Scenario

MyCompany organization is using Service Now as an internal knowledge repository which stores multiple knowledge articles published over the years. MyCompany's operational users have been finding it difficult to search for relevant documents and the results are not relevant information based on user search queries which is impacting the MTTR for incidents.

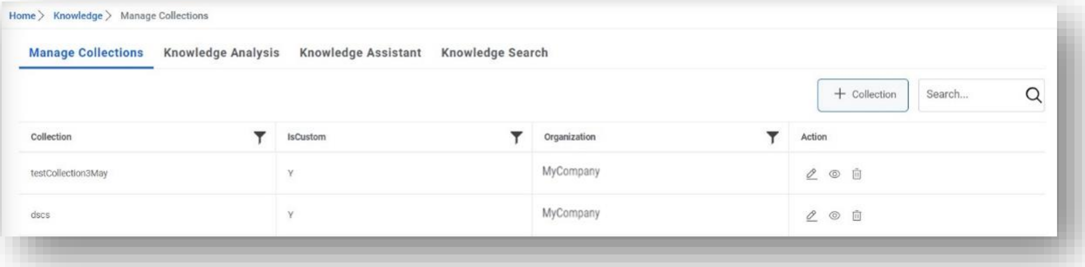
In this lab, we will showcase the detailed procedure for configuring knowledge sources and providing relevant documentation for user search queries. We will create two collections – one for Service Now (internal repository) and another for open domain sites (e.g. stackoverflow.com)

8.2.2 Prerequisites

- Users should have Super Admin credentials.
- Information about the Service Now repository and valid URL and access credentials.
- Information about the open domain websites which needs to be configured.

8.2.3 Solution

1. Open iAutomate Web URL and login with Super Admin credentials.
2. Go to Advance Configuration -> Knowledge and click Manage Collections.

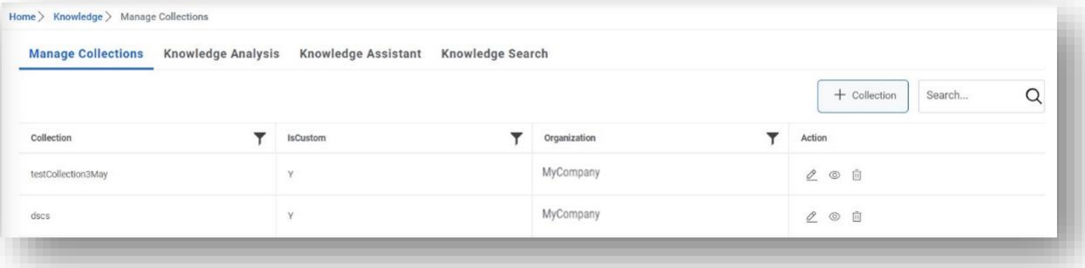


Collection	IsCustom	Organization	Action
testCollection3May	Y	MyCompany	✎ 👁 🗑
dscs	Y	MyCompany	✎ 👁 🗑

Figure 295 – Manage Collections

3. Click on Collections.

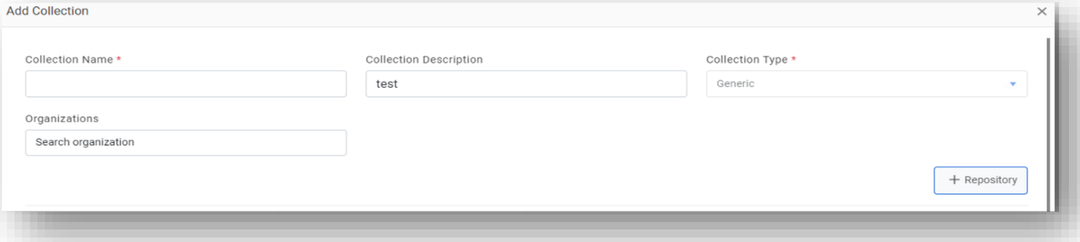
4. Select Collection Type as Custom from list of collection types.
5. Select the Organization for which you are configuring the collections.



Collection	IsCustom	Organization	Action
testCollection3May	Y	MyCompany	
dscs	Y	MyCompany	

Figure 296 – Manage Collections (Cont.)

6. Click +Collection tab.
7. The Add/Edit Collection page appears.



Collection Name *

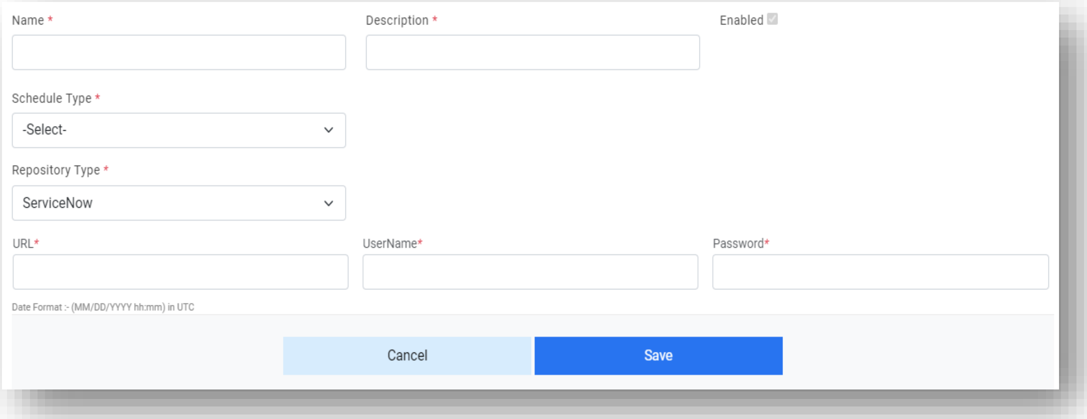
Collection Description: test

Collection Type *: Generic

Organizations: Search organization

Figure 297 – Add/Edit Collection

8. Type the Collection Name and Collection Description.
9. Click Save.
10. Repeat Steps 2 to 6 for creating a collection for open domain websites as well.
11. For configuring the ServiceNow Collection, perform the following steps –
    a. On Add Collection pop up, click on Repository.



Name *

Description *

Enabled ☑

Schedule Type *: -Select-

Repository Type *: ServiceNow

URL*

UserName*

Password*

Date Format :- (MM/DD/YYYY hh:mm) in UTC

Figure 298 – Manage Repository

    b. Click Add Repository.
    c. Select Repository Type as ServiceNow. It will ask for additional details:

- URL
- Username
- Password

d. After providing the information, click Save.

12. For configuring the Open Domain Sites Collection, perform the following steps:

a. On Manage Collections page, click next to collection corresponding to Service Now.

b. The Manage Repository page appears.

c. Click Add Repository.

d. Select Repository Type as WebURL. It will ask for additional details:

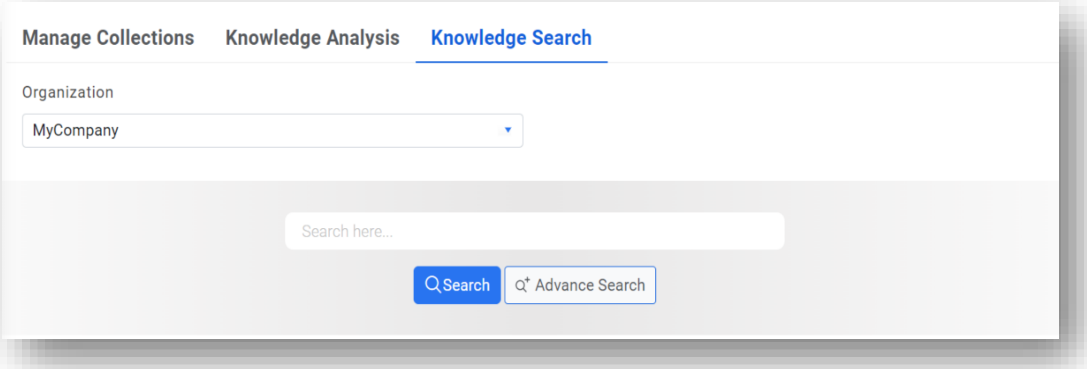
- URL: Enter the URL of website to be crawled
- Depth Level: Specify the depth to which documents should be crawled
- RestrictDomain: Select this checkbox to filter for documents of same domain as mentioned in URL
- After providing the information, click Save.

13. Once the collections are configured, you need to enable and start the crawler and indexer jobs. It will start crawling and processing documents for configured repository.

Look for color code for configured repository. If it is green, then it has been crawled and processed successfully.

14. Once configured repositories have been crawled and processed successfully, then user can search for relevant documents based on search queries. To do that, go to Advance Configuration -> Knowledge.

15. Click Knowledge Search.

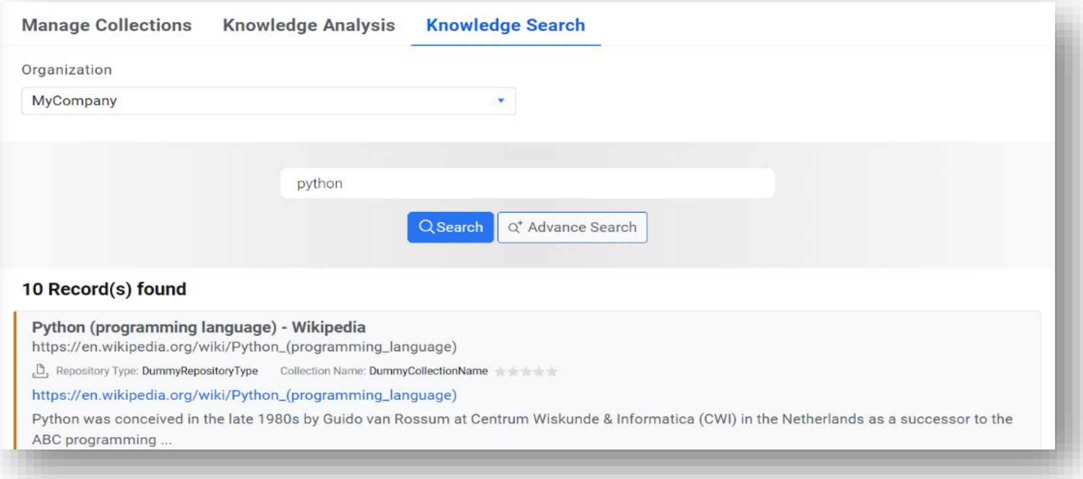


Organization: MyCompany

Figure 299 – Knowledge Search

16. Select Organization from the drop-down list, then type the search string (e.g. Machine) in the Search box, and then click 🔍 .

The search results are displayed in a grid below.



Organization

MyCompany

python

10 Record(s) found

Python (programming language) - Wikipedia
https://en.wikipedia.org/wiki/Python_(programming_language)
Repository Type: DummyRepositoryType Collection Name: DummyCollectionName
https://en.wikipedia.org/wiki/Python_(programming_language)
Python was conceived in the late 1980s by Guido van Rossum at Centrum Wiskunde & Informatica (CWI) in the Netherlands as a successor to the ABC programming ...

Figure 300 – Knowledge Search Result

8.2.4 Conclusion

Post the completion of this exercise, you should have a good understanding of creating collections and configuring the knowledge repositories, both internal and external.

In the next exercise, let's see how admins can analyze the documents or knowledge articles which are present in Service Now and govern what all sites users are accessing to search for information.

8.3 Lab Exercise 2 – Configuration of Knowledge Analysis

8.3.1 Scenario

MyCompany organization is using Service Now as an internal knowledge repository which stores multiple knowledge articles published over the years. MyCompany has requested a functionality through which its admin users can analyze the documents or knowledge articles which are present in Service Now and govern all sites are users accessing to search for information.

In this lab, we will showcase the detailed procedure for performing Knowledge Analysis. We will configure the system to provide three different kinds of views to the admin user:

- Cluster View – depicts how similar documents have been clustered together.
- Document Similarity View – presents the list of similar documents to the selected document.
- Topic/Concept View – lists the conceptually relevant documents from the repository.

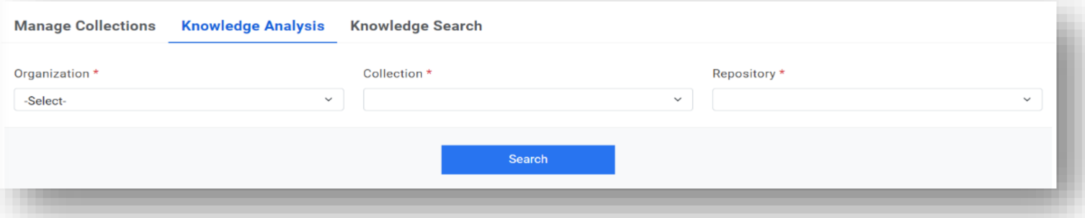
8.3.2 Prerequisites

- Users should have Super Admin credentials.
- Collections and Repositories should be configured in the system.

8.3.3 Solution

1. Open iAutomate Web URL and login with Super Admin credentials.

2. Go to Advance Configuration -> Knowledge and click Knowledge Analysis.



Manage Collections | Knowledge Analysis | Knowledge Search

Organization * -Select-

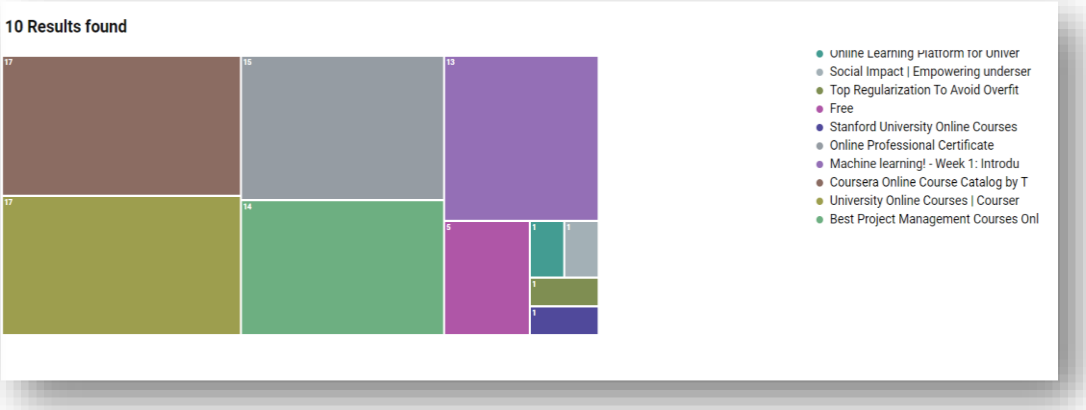
Collection *

Repository *

Search

Figure 301 – Knowledge Analysis

3. Select the Organization for which you want to visualize the data (for e.g. MyCompany). Select the Collection from where you want to fetch the data.
4. Select the Repository from the dropdown list and click Search.
5. The Search provides a clustered view of the documents present in the selected repository. The left pane displays the cluster, and the cluster topics are displayed on the right pane as legends. The counts appearing on each cluster represent the number of documents in each cluster.

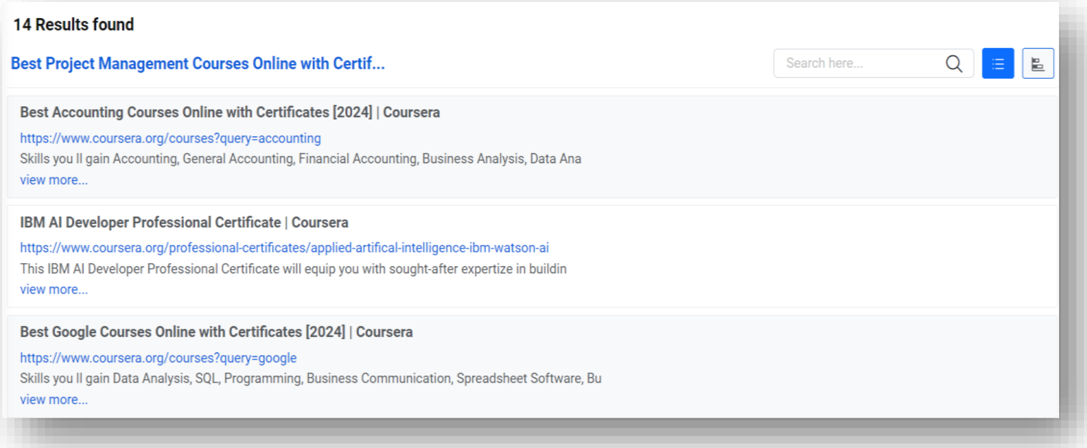


10 Results found

- ● Online Learning Platform for Univer
- ● Social Impact | Empowering underser
- ● Top Regularization To Avoid Overfit
- ● Free
- ● Stanford University Online Courses
- ● Online Professional Certificate
- ● Machine learning! - Week 1: Introdu
- ● Coursera Online Course Catalog by T
- ● University Online Courses | Courser
- ● Best Project Management Courses Onl

Figure 302 – Knowledge Search Repository

Selecting a cluster lists the documents associated with the selected cluster. These document details include Document Title, Source URL of the documents, and the Document Summary.



14 Results found

Best Project Management Courses Online with Certif...

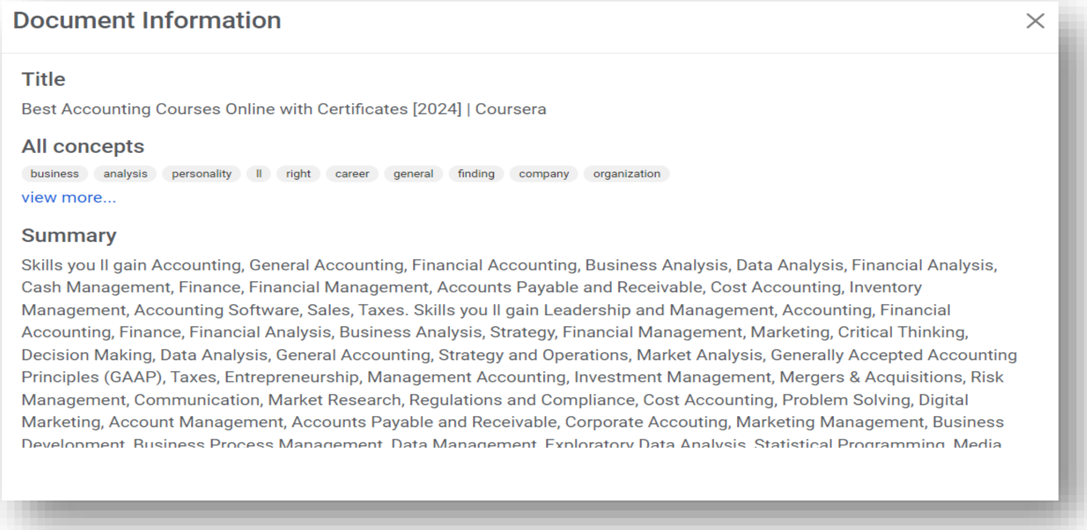
Best Accounting Courses Online with Certificates [2024] | Coursera
https://www.coursera.org/courses?query=accounting
Skills you ll gain Accounting, General Accounting, Financial Accounting, Business Analysis, Data Ana
view more...

IBM AI Developer Professional Certificate | Coursera
https://www.coursera.org/professional-certificates/applied-artifical-intelligence-ibm-watson-ai
This IBM AI Developer Professional Certificate will equip you with sought-after expertize in buildin
view more...

Best Google Courses Online with Certificates [2024] | Coursera
https://www.coursera.org/courses?query=google
Skills you ll gain Data Analysis, SQL, Programming, Business Communication, Spreadsheet Software, Bu
view more...

Figure 303 – Knowledge Search Results (Cont.)

Selecting a Document Title presents Similar Documents view, where it shows document information including relevant Topics and Tags, Summary, and the List of all similar documents along with their similarity percentage.



Document Information

Title

Best Accounting Courses Online with Certificates [2024] | Coursera

All concepts

business analysis personality ll right career general finding company organization

view more...

Summary

Skills you ll gain Accounting, General Accounting, Financial Accounting, Business Analysis, Data Analysis, Financial Analysis, Cash Management, Finance, Financial Management, Accounts Payable and Receivable, Cost Accounting, Inventory Management, Accounting Software, Sales, Taxes. Skills you ll gain Leadership and Management, Accounting, Financial Accounting, Finance, Financial Analysis, Business Analysis, Strategy, Financial Management, Marketing, Critical Thinking, Decision Making, Data Analysis, General Accounting, Strategy and Operations, Market Analysis, Generally Accepted Accounting Principles (GAAP), Taxes, Entrepreneurship, Management Accounting, Investment Management, Mergers & Acquisitions, Risk Management, Communication, Market Research, Regulations and Compliance, Cost Accounting, Problem Solving, Digital Marketing, Account Management, Accounts Payable and Receivable, Corporate Accouting, Marketing Management, Business Development, Business Process Management, Data Management, Exploratory Data Analysis, Statistical Programming, Media

Figure 304 – Document Information

You can also get the topic view for all documents for the selected cluster by clicking on the search result bar. This view represents list of relevant Topics arranged by order of their relevance in selected cluster. This also allows you to find/select documents for a particular topic.

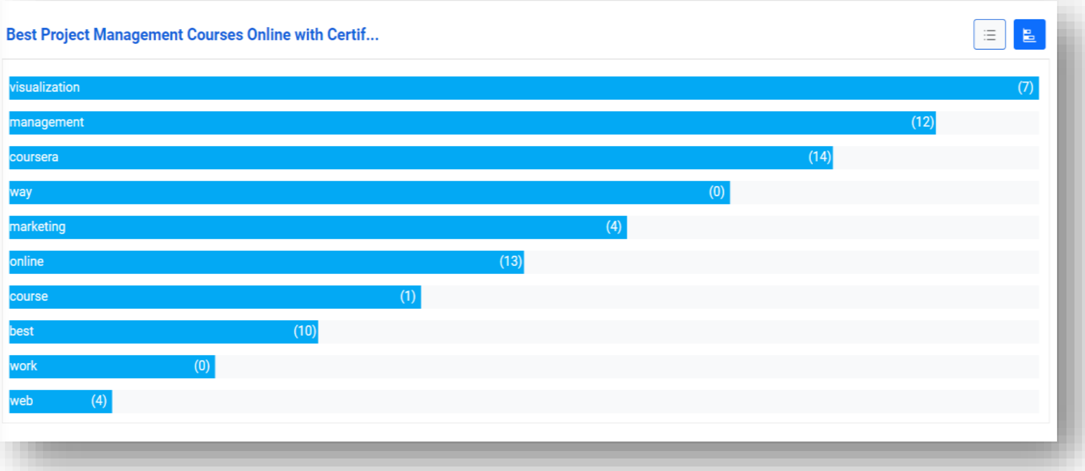
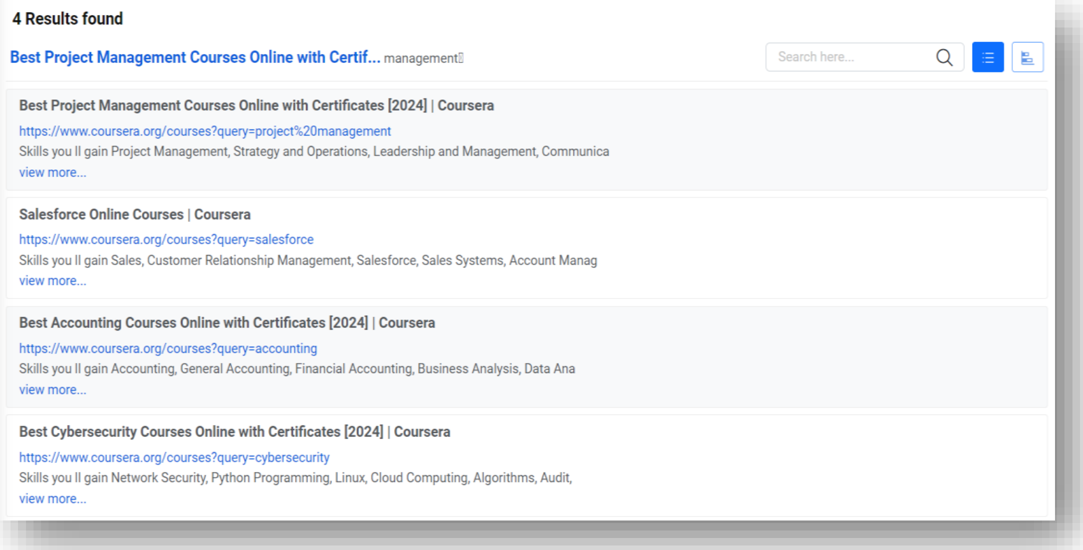


Figure 305 – Document Selection

The numerical value against each term represents the frequency of occurrence of a particular term or topic in a cluster.

Selecting a term list all the available documents containing the selected term.



4 Results found

Best Project Management Courses Online with Certif... management

Best Project Management Courses Online with Certificates [2024] | Coursera
https://www.coursera.org/courses?query=project%20management
Skills you ll gain Project Management, Strategy and Operations, Leadership and Management, Communica
view more...

Salesforce Online Courses | Coursera
https://www.coursera.org/courses?query=salesforce
Skills you ll gain Sales, Customer Relationship Management, Salesforce, Sales Systems, Account Manag
view more...

Best Accounting Courses Online with Certificates [2024] | Coursera
https://www.coursera.org/courses?query=accounting
Skills you ll gain Accounting, General Accounting, Financial Accounting, Business Analysis, Data Ana
view more...

Best Cybersecurity Courses Online with Certificates [2024] | Coursera
https://www.coursera.org/courses?query=cybersecurity
Skills you ll gain Network Security, Python Programming, Linux, Cloud Computing, Algorithms, Audit,
view more...

Figure 306 – View the list of Knowledge

8.3.4 Conclusion

Post the completion of this exercise, you should have a good understanding of performing analysis on collections, repositories and the included documents and knowledge articles.

8.3.5 Related Documentation

- iAutomate Configuration Guide
- iAutomate Troubleshooting Guide
- iAutomate User Guide

9 Module 7 – Configuration of Runbook Parameters

9.1 Introduction

This module covers the procedure for configuring runbook parameters. This is helpful in scenarios where the runbook parameters are not being parsed and extracted correctly.

9.2 Lab Exercise 1 – Configuration of Runbook Parameters

9.2.1 Scenario

MyCompany organization has already installed and configured iAutomate and it is running in production. Based on the issues reported by the Operational users, they have observed that for some of the runbooks the input parameter, IP address, is not being extracted in an accurate manner. They have requested to resolve the issue.

In this lab, we will showcase the detailed procedure for solving this issue by changing the configuration of runbook parameters.

9.2.2 Prerequisites

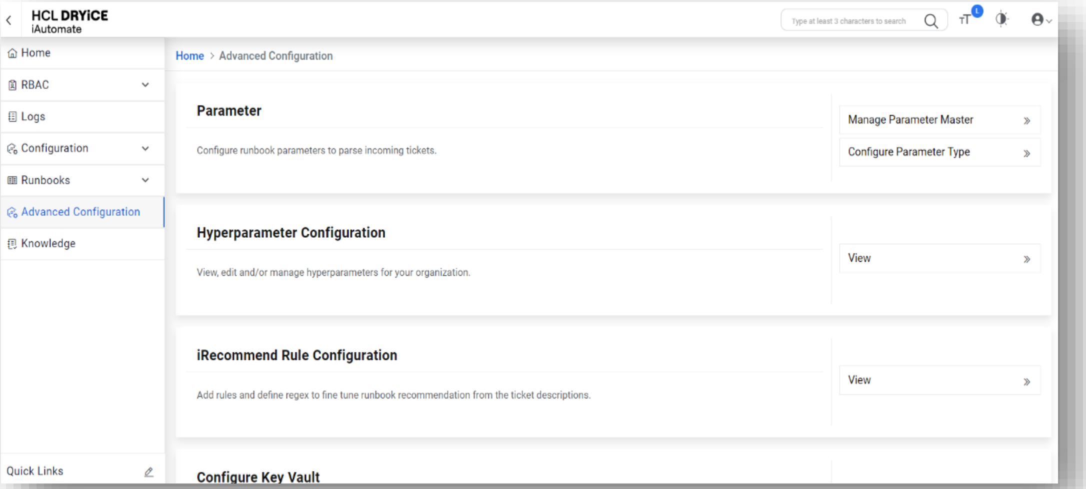
- Availability of regex expression for parsing an IP address - xxxxxxxx
- Users should have the requisite role, privileges and access credentials.

9.2.3 Solution

To resolves such issues, configurational changes are required to be done in following sections:

- Manage Parameter Master – Defines regular expression for parameter to be parsed. It should be unique to parameter type.
- Configure Parameter Type – Defines type of parameter i.e. for IP address, parameter type is IP.
- Manage Parameter Configuration – Configure actual parameter which is being used in runbook and should be parsed from ticket description.
- Update Runbook – Make changes to runbook configuration to whom parameter is associated.

1. Open iAutomate Web URL and login with Super Admin credentials.
2. To make the changes in Manage Parameter Master, perform the steps below:
   a. Go to Advance Configuration->Parameter and click Manage Parameter Master.



Parameter

Configure runbook parameters to parse incoming tickets.

Hyperparameter Configuration

View, edit and/or manage hyperparameters for your organization.

iRecommend Rule Configuration

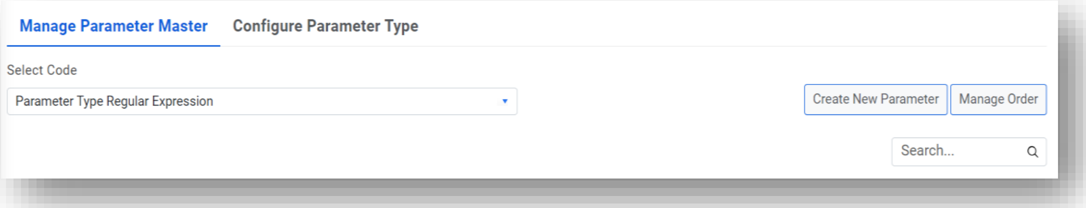
Add rules and define regex to fine tune runbook recommendation from the ticket descriptions.

Configure Key Vault

Figure 307 – Manage Parameter Master

b. Select Code from the drop-down list.

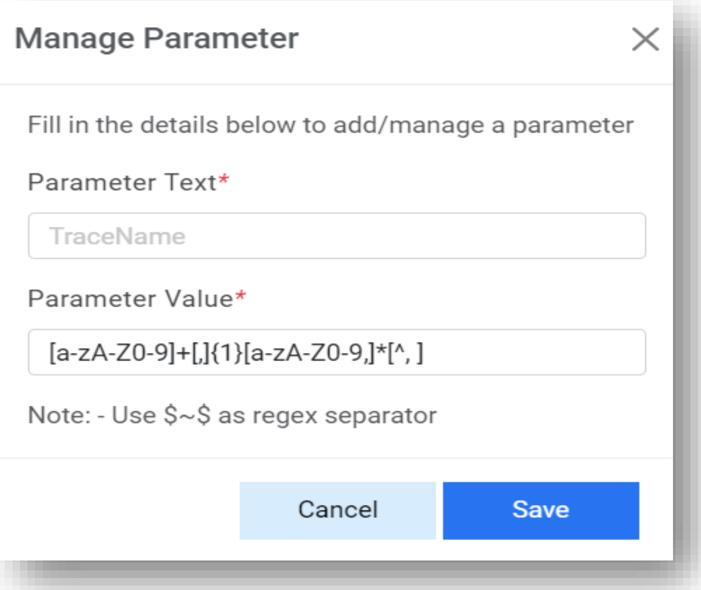
c. Click Create New Parameter.



Select Code: Parameter Type Regular Expression

Figure 308 – Create New Parameter

d. The Manage Parameter page appears.


Manage Parameter

Fill in the details below to add/manage a parameter

Parameter Text*: TraceName

Parameter Value*: [a-zA-Z0-9]+[,]{1}[a-zA-Z0-9,]*[^,]

Note: - Use $~$ as regex separator

Figure 309 – Create New Parameter (Cont.)

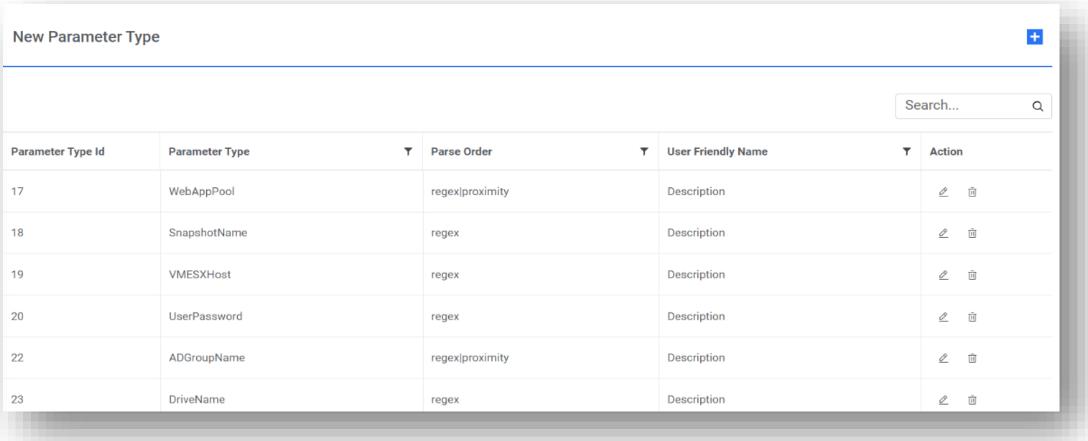
e. Enter the below mentioned attributes:

- Parameter Text - This is used to identify a new parameter i.e. GenericIPAddress
- Parameter Value – This describes the regular expression for a parameter under the selected code i.e. xxxxxxxx

f. Click Save.

3. To make the changes in Configure Parameter Type, perform the steps below:

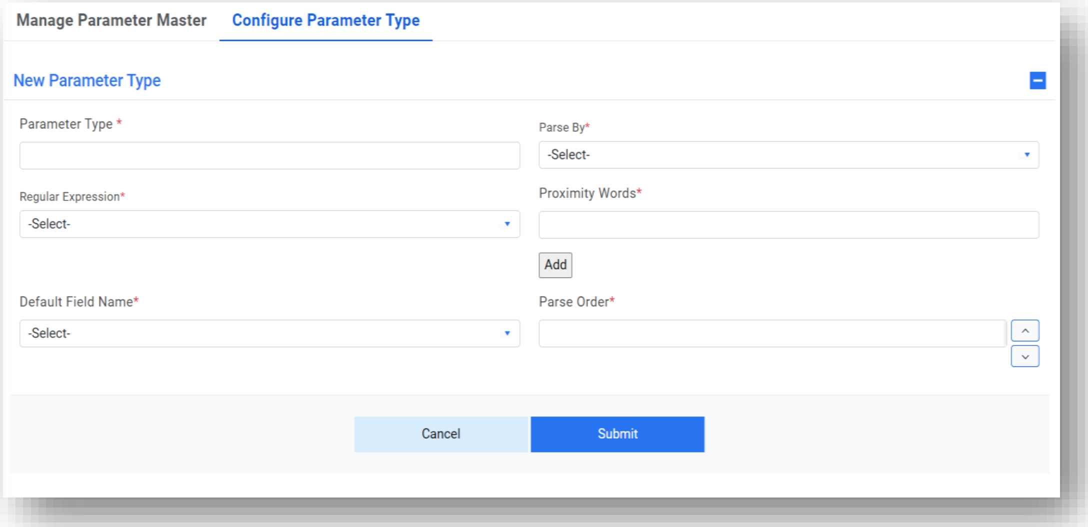
a. Go to Advance Configuration->Parameter and click Configure Parameter Type.



Parameter Type Id	Parameter Type	Parse Order	User Friendly Name	Action
17	WebAppPool	regex|proximity	Description	✎ 🗑
18	SnapshotName	regex	Description	✎ 🗑
19	VMESXHost	regex	Description	✎ 🗑
20	UserPassword	regex	Description	✎ 🗑
22	ADGroupName	regex|proximity	Description	✎ 🗑
23	DriveName	regex	Description	✎ 🗑

Figure 310 – Configure Parameter Type

b. Expand New Parameter Type. The Configure Parameter Type page appears.



Parameter Type *

Parse By* -Select-

Regular Expression* -Select-

Proximity Words*

Default Field Name* -Select-

Parse Order*

Figure 311 – Configure Parameter Type (Cont.)

c. Enter the following information:

- Define Parameter Type as ‘IP Address‘.
- Select Parse by field value as “Only Regex” i.e. tickets will be parsed only using regular expression.

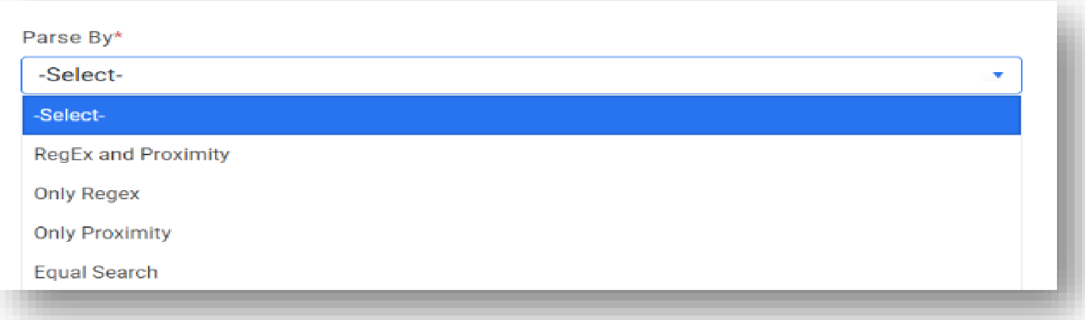


Figure 312 – Configure Parameter Type (Cont.)

- Select value for Regular Expression field as "GenericIPAddress" which was added in section Manage Parameter Master.

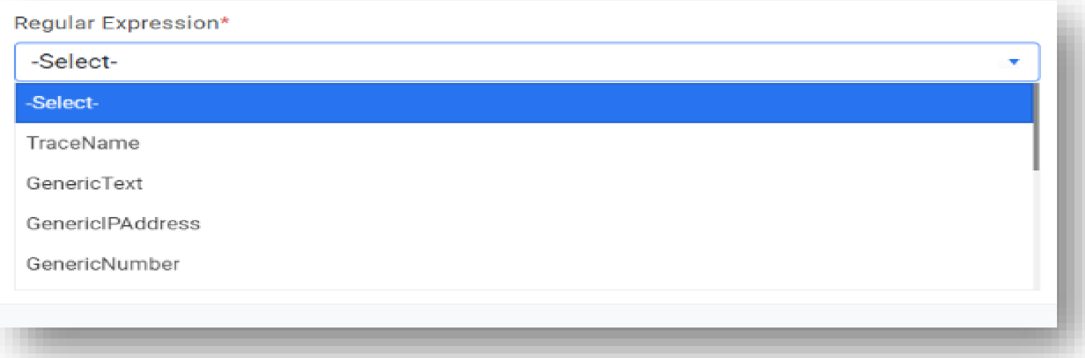


Figure 313 – Configure Parameter Type (Cont.)

- Value for Proximity Words field is optional as parse by type is "Only Regex"

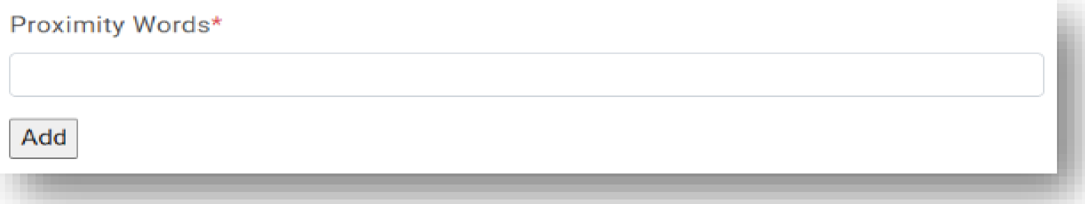
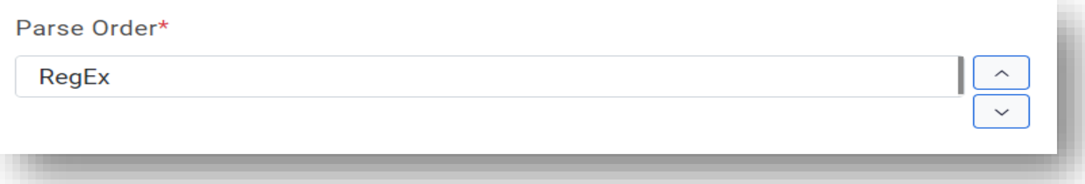


Figure 314 – Proximity Words

- Select the Parse Order to prioritize the parsing methods i.e. In our case, Regex should come before than proximity.

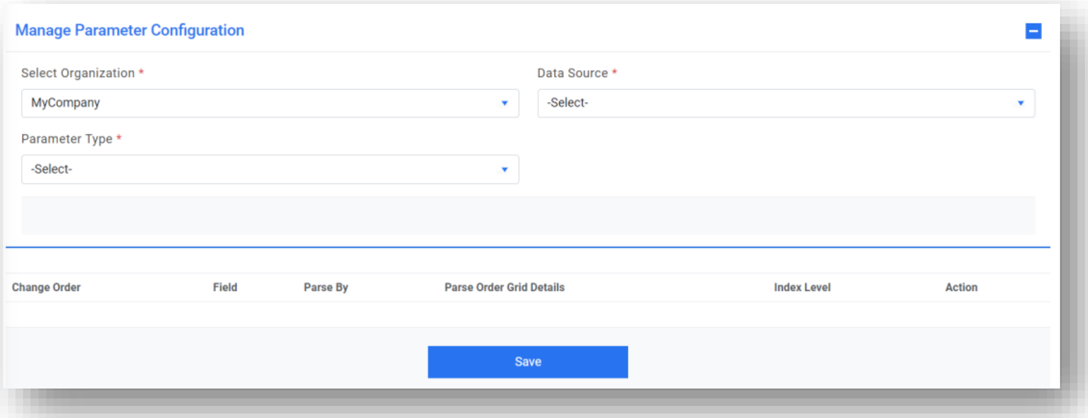

Parse Order*

RegEx

Figure 315 – Parse Order

- Select value for Default Field Name as “Description” as this will be used for parsing IP address from ticket description.
- Click Submit to save the new parameter.

4. To make the changes for configuration of an IP address for MyCompany organization in Manage Parameter Configuration, perform the following steps:
   a. Login with Organization Admin credential and Go to Advance Configuration->Parameter and click Manage Parameter Configuration.



Manage Parameter Configuration

Select Organization *: MyCompany

Data Source *: -Select-

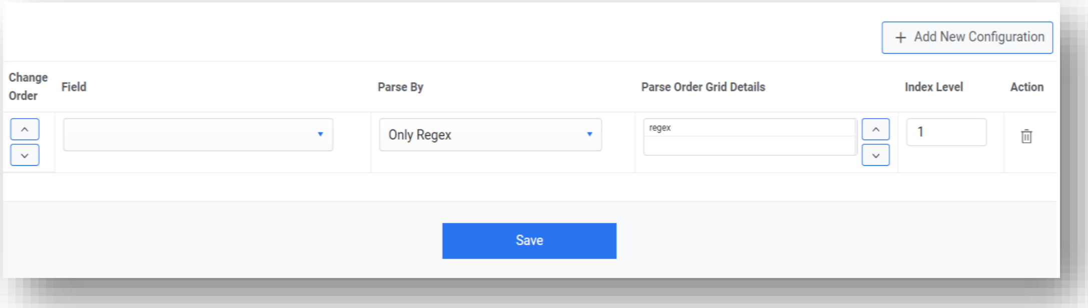
Parameter Type *: -Select-

Change Order	Field	Parse By	Parse Order Grid Details	Index Level	Action

Figure 316 – Manage Parameter Configuration

   b. Select Organization from Organization field.
   c. Select the Data Source from where the data will be fetched for parsing.
   d. Select the Parameter Type as GenericIPAddress, to be used for data parsing.

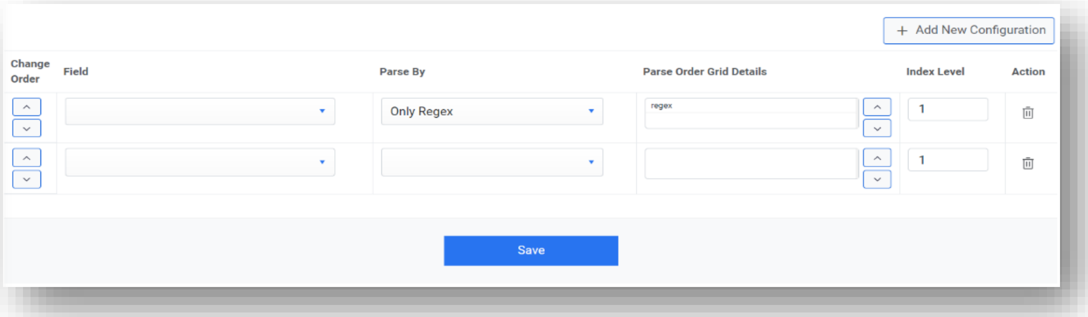
This populates the existing configuration for the selected organization in a grid.



Change Order	Field	Parse By	Parse Order Grid Details	Index Level	Action
^ v		Only Regex	regex	1	

Figure 317 – Existing Configuration

5. Click Add New Configuration. This adds a new row below the existing parameter configurations.



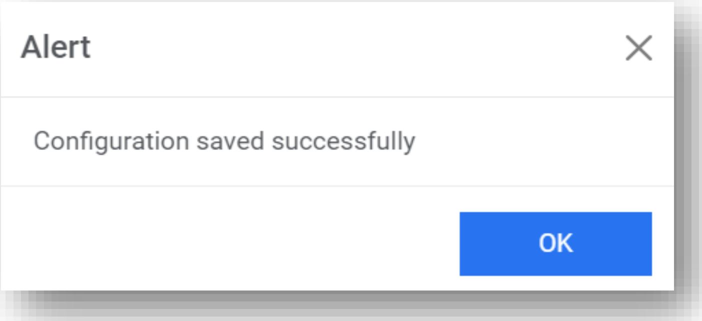
Change Order	Field	Parse By	Parse Order Grid Details	Index Level	Action
^ ˅		Only Regex	regex	1	🗑
^ ˅				1	🗑

Figure 318 – Add New Configuration (Cont.)

6. Select a value for column Field. It defines what ticket information needs to be processed. It may be a description or a short description.
7. Select a value for Parse By column value as Only Regex.
8. Select a value for Parse Order Grid Details columns as Regex.
9. Select Index Level value as 1.
10. Click Save to update the configured parameter.

Users can rearrange the order of parameter configuration using Change Order in the left column of the parameter grid.

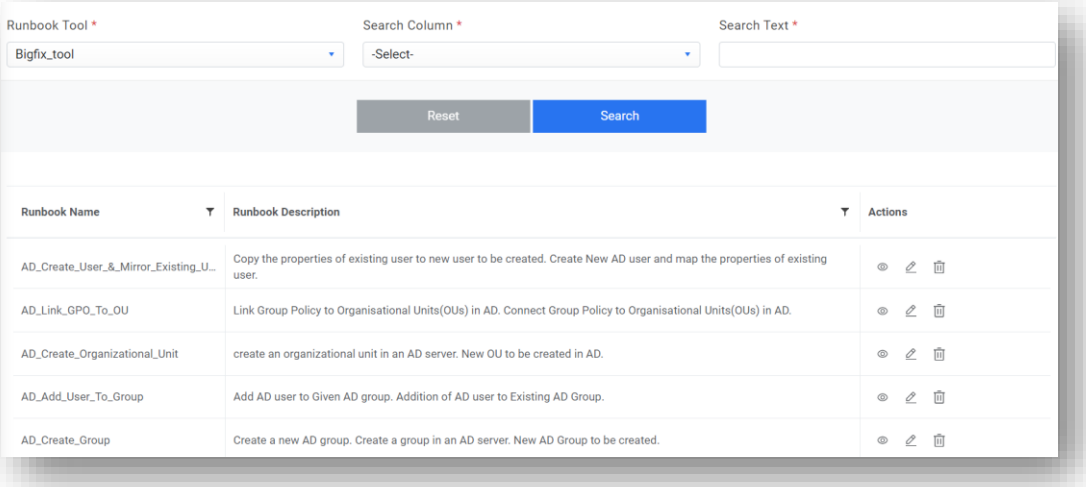
11. A confirmation dialog box appears. Click OK.


Alert

Configuration saved successfully

Figure 319 – Confirmation Message

12. To update the runbook corresponding to the newly configured parameter i.e. IP Address, perform the following steps:
    a. Go to Runbooks and click Manage Runbooks.



Runbook Tool *

Bigfix_tool

Search Column *

-Select-

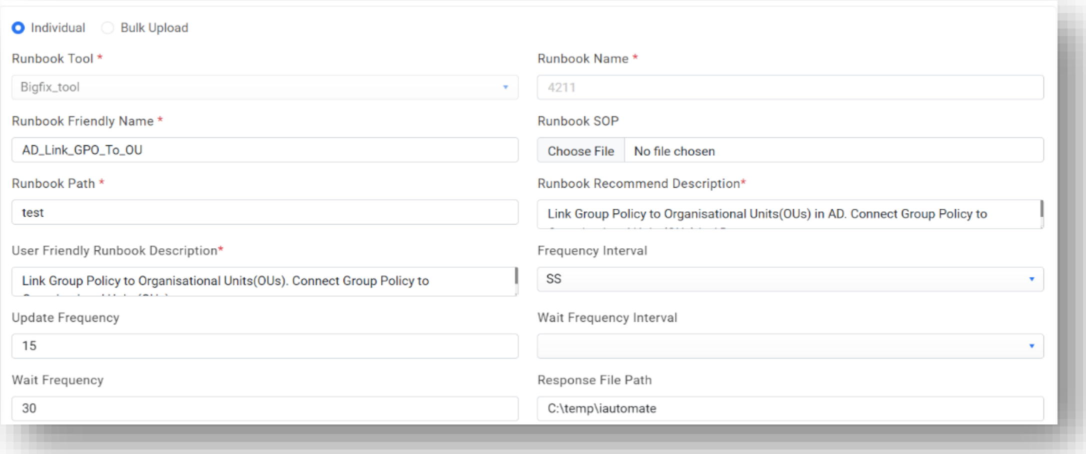
Search Text *

Runbook Name	Runbook Description	Actions
AD_Create_User_&_Mirror_Existing_U...	Copy the properties of existing user to new user to be created. Create New AD user and map the properties of existing user.	👁 ✎ 🗑
AD_Link_GPO_To_OU	Link Group Policy to Organisational Units(OUs) in AD. Connect Group Policy to Organisational Units(OUs) in AD.	👁 ✎ 🗑
AD_Create_Organizational_Unit	create an organizational unit in an AD server. New OU to be created in AD.	👁 ✎ 🗑
AD_Add_User_To_Group	Add AD user to Given AD group. Addition of AD user to Existing AD Group.	👁 ✎ 🗑
AD_Create_Group	Create a new AD group. Create a group in an AD server. New AD Group to be created.	👁 ✎ 🗑

Figure 320 – Manage Runbooks

b. Select value for Runbook Tool.

c. Click ✎ next to the runbook which need to be updated.



● Individual ○ Bulk Upload

Runbook Tool *: Bigfix_tool

Runbook Name *: 4211

Runbook Friendly Name *: AD_Link_GPO_To_OU

Runbook SOP: Choose File No file chosen

Runbook Path *: test

Runbook Recommend Description*: Link Group Policy to Organisational Units(OUs) in AD. Connect Group Policy to

User Friendly Runbook Description*: Link Group Policy to Organisational Units(OUs). Connect Group Policy to

Frequency Interval: SS

Update Frequency: 15

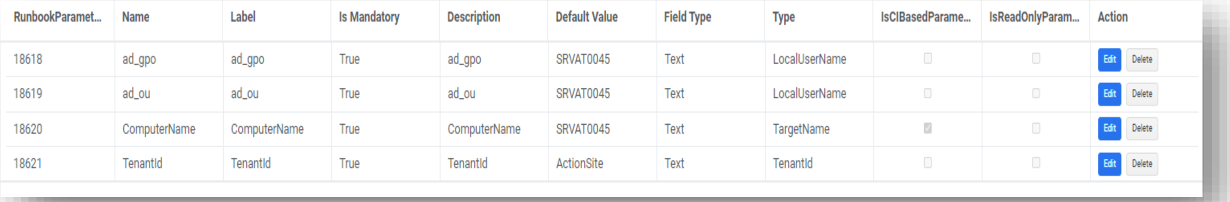
Wait Frequency Interval:

Wait Frequency: 30

Response File Path: C:\temp\iautomate

Figure 321 – Manage Runbooks (Cont.)

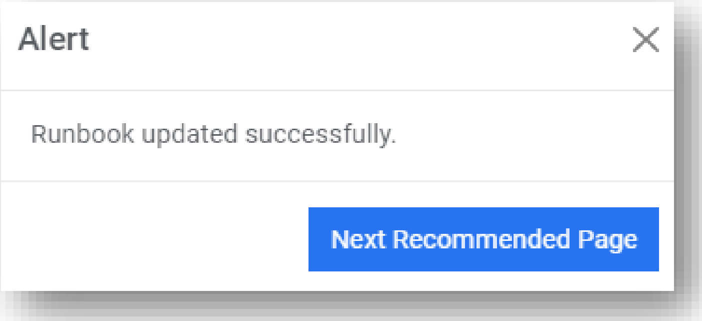
d. Add required parameter i.e., IP Address as shown in below figure.



RunbookParamet...	Name	Label	Is Mandatory	Description	Default Value	Field Type	Type	IsCIBasedParame...	IsReadOnlyParam...	Action
18618	ad_gpo	ad_gpo	True	ad_gpo	SRVAT0045	Text	LocalUserName	□	□	Edit Delete
18619	ad_ou	ad_ou	True	ad_ou	SRVAT0045	Text	LocalUserName	□	□	Edit Delete
18620	ComputerName	ComputerName	True	ComputerName	SRVAT0045	Text	TargetName	☑	□	Edit Delete
18621	TenantId	TenantId	True	TenantId	ActionSite	Text	TenantId	□	□	Edit Delete

Figure 322 – Add Parameter

e. Click Update to save the changes. A confirmation dialog box appears.


Alert

Runbook updated successfully.

Figure 323 – Confirmation Message

9.2.4 Conclusion

Post the completion of this exercise, you should have a good understanding of re-configuring the runbook parameters for more accurate extraction of input parameters from the relevant ticket fields, for passing it to the runbook for execution.

9.2.5 Related Documentation

- iAutomate Configuration Guide
- iAutomate Troubleshooting Guide

10 Module 8 – Reporting Dashboard

10.1 Introduction

This module covers the procedure for configuring the dashboard which provides a complete view of the system in your environment and helps spot trends in real-time. Each dashboard User Interface (UI) element can instantly provide additional data insights, including a platform to create reports using the preconfigured widgets available on the dashboard.

10.2 Lab Exercise 1 – Configuration of Runbook Parameters

10.2.1 Scenario

MyCompany organization has been using iAutomate for some time now. They are interested in knowing how the product has been performing and other metrics like –

- Percentage of automated executions,
- Top used runbooks,
- Percentage of Successful executions, and many more.

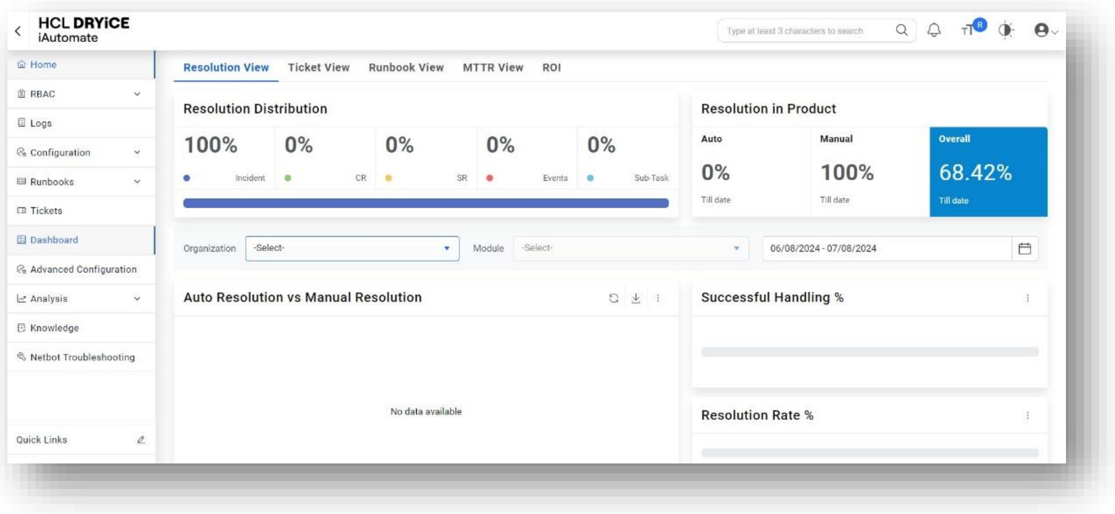
In this lab, we will showcase the detailed procedure for viewing the details of dashboard and how end users can consume the same.

10.2.2 Prerequisites

- User should have the requisite role (Super Admin/Organizational Admin), privileges and access credentials.

10.2.3 Solution

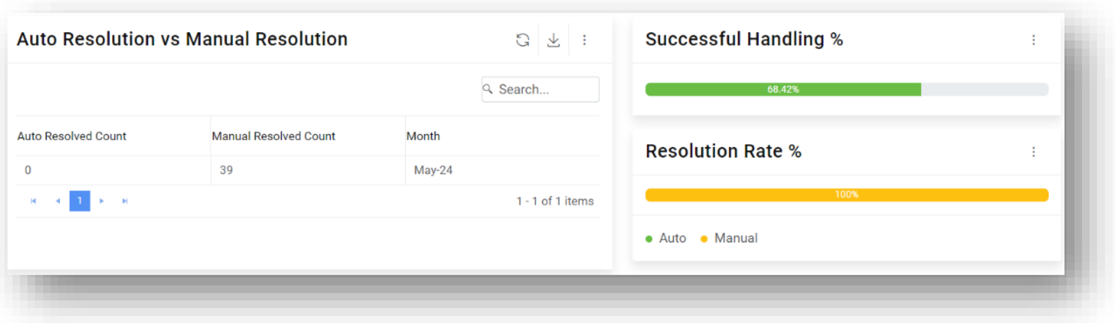
1. Open iAutomate Web URL and login with Organization Admin credentials.
2. On the main menu bar, click Dashboard.



Organization -Select- Module -Select- 06/08/2024 - 07/08/2024

Figure 324 – Dashboard Menu

3. The Dashboard appears.

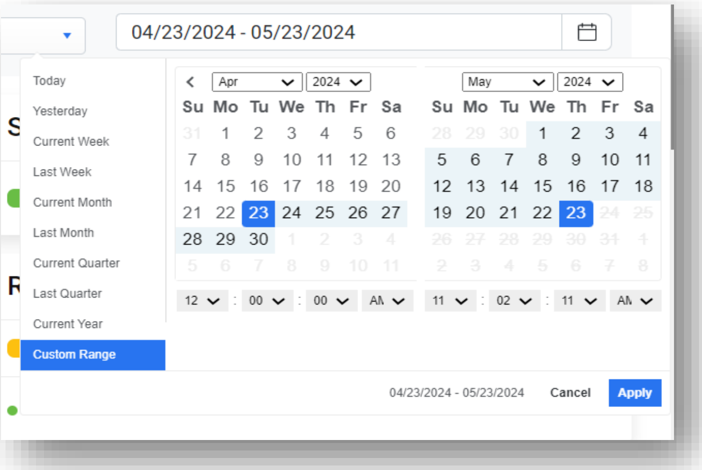


Auto Resolved Count	Manual Resolved Count	Month
0	39	May-24

1 - 1 of 1 items

Figure 325 – Dashboard View

4. The Dashboard Filters allow users to narrow the range of one or more reports on the active Dashboard tab. This filter lets you select a specific time frame, such as last month, current month, last quarter, or a range of dates.
5. To configure a specific report, select the Organization from the drop-down list, then select the time frame from the drop-down list of the Period, and then select the date range in the From Date and To Date fields. For this exercise, select the current month.



04/23/2024 - 05/23/2024

Su	Mo	Tu	We	Th	Fr	Sa
31	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	1	2	3	4
5	6	7	8	9	10	11

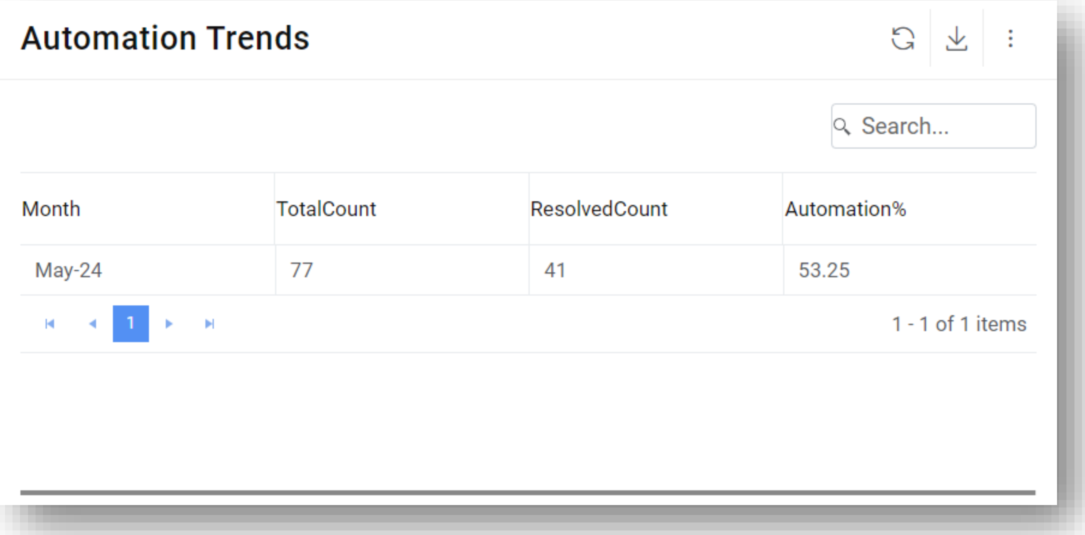
Apr 2024, 12 : 00 : 00 AM

Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

May 2024, 11 : 02 : 11 AM

04/23/2024 - 05/23/2024

Figure 326 – Dashboard



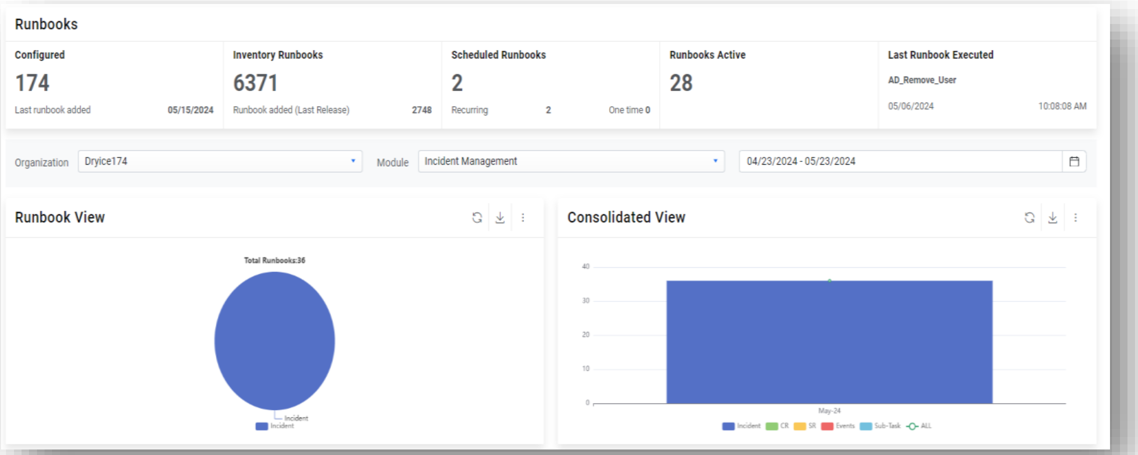
Automation Trends

Month	TotalCount	ResolvedCount	Automation%
May-24	77	41	53.25

1 - 1 of 1 items

Figure 327 – Dashboard (Cont.)

6. Widgets under Dashboard Filters are now divided into parts and placed across the screen in new UI. To check each one user can now directly go to that section and view the detailed description.



Runbooks

Configured: 174 — Last runbook added 05/15/2024

Inventory Runbooks: 6371 — Runbook added (Last Release) 2748

Scheduled Runbooks: 2 — Recurring 2 — One time 0

Runbooks Active: 28

Last Runbook Executed: AD_Remove_User — 05/06/2024 10:08:08 AM

Organization: Dryice174 — Module: Incident Management — 04/23/2024 - 05/23/2024

Figure 328 – Dashboard

7. You can view Ticket Handling details of report appearing on the UI. To the Ticket Handling Details, perform the following steps –

   a. Click any visualization to view details of the Ticket Handling. .

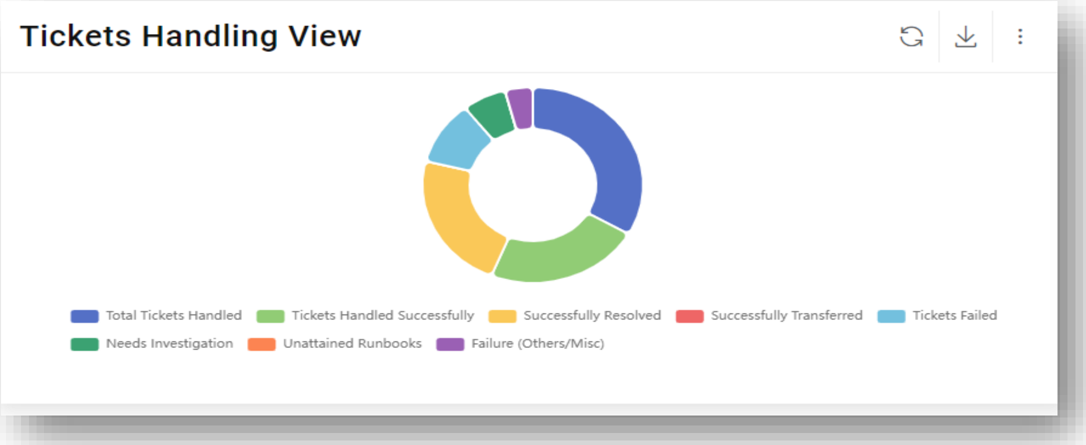
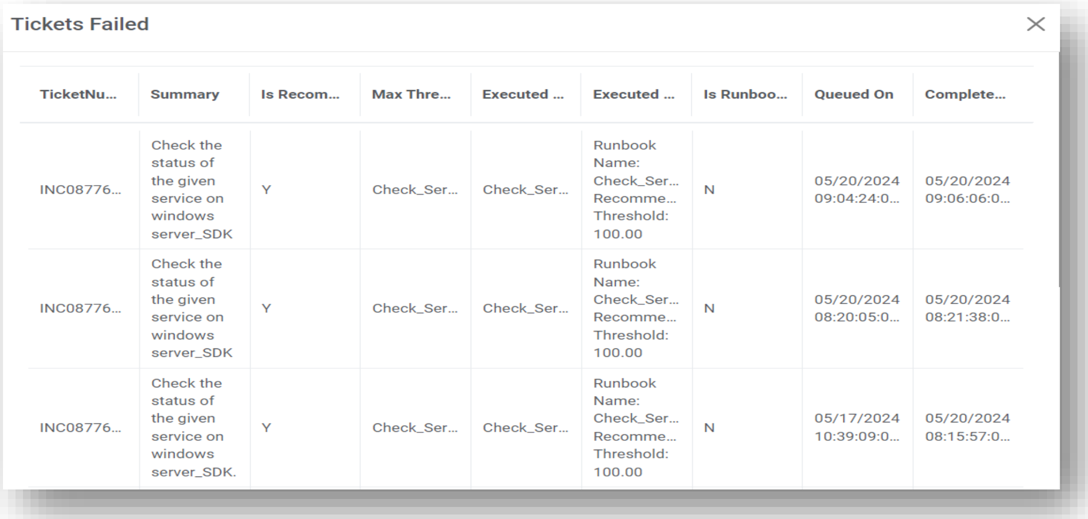


Figure 329 – Tickets Handling View

   b. The Ticket Handling View is displayed.



Tickets Failed

TicketNu...	Summary	Is Recom...	Max Thre...	Executed ...	Executed ...	Is Runboo...	Queued On	Complete...
INC08776...	Check the status of the given service on windows server_SDK	Y	Check_Ser...	Check_Ser...	Runbook Name: Check_Ser... Recomme... Threshold: 100.00	N	05/20/2024 09:04:24:0...	05/20/2024 09:06:06:0...
INC08776...	Check the status of the given service on windows server_SDK	Y	Check_Ser...	Check_Ser...	Runbook Name: Check_Ser... Recomme... Threshold: 100.00	N	05/20/2024 08:20:05:0...	05/20/2024 08:21:38:0...
INC08776...	Check the status of the given service on windows server_SDK.	Y	Check_Ser...	Check_Ser...	Runbook Name: Check_Ser... Recomme... Threshold: 100.00	N	05/17/2024 10:39:09:0...	05/20/2024 08:15:57:0...

Figure 330 – Tickets Handling View (Cont.)

10.2.4 Conclusion

Post the completion of this exercise, you should have a good understanding of configuring the dashboard by selecting from various preconfigured widgets from the Dashboard filters section.

10.2.5 Related Documentation

- iAutomate Configuration Guide
- iAutomate Troubleshooting Guide

11 Support

To get support for this product, go to https://support.dryice.ai.

For any additional queries, please reach out to us at iAuto-Product-Supp@hcl.com.

12 Appendix

12.1 List of Abbreviations

Table 9 - List of Abbreviations

Abbreviation	Expansion
AD	Active Directory
AI	Artificial Intelligence
ITOPS	IT Operations
ITSMS	IT Service Management System
KEDB	Known Error Database
SNOW	ServiceNow

HCLSoftware

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