

BigFix Runbook AI  
Lab Manual  
Version 6.3



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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
July, 2023	BigFix Runbook AI v6.3 Lab Manual

# 1 Preface

This section provides information about the BigFix Runbook AI 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 BigFix Runbook AI, administrators responsible for installation & configuration of BigFix Runbook AI and end users responsible for working towards resolution of tickets with the help of BigFix Runbook AI.

## 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 BigFix 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 BigFix Runbook AI 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 BigFix Runbook AI](#)
- [Configuration of BigFix Runbook AI](#)
- [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 BigFix Runbook AI platform.

- BigFix Runbook AI User Guide
- BigFix Runbook AI Pre-Requisite Guide
- BigFix Runbook AI Troubleshooting Guide

## 1.5 Conventions

The following typographic conventions are used in this document:

Table 1 - Conventions

Convention	Element
<b>Boldface</b>	Indicates graphical user interface elements associated with an action, or terms defined in text or the glossary
<u>Underlined Blue Face</u>	Indicates cross-reference and links
<i>Italic</i>	Indicates document titles, occasional emphasis, or glossary terms
<code>Courier New(Font)</code>	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 **DRYiCE Labs VPN (Virtual Private Network)** to access the BigFix Runbook AI 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**.

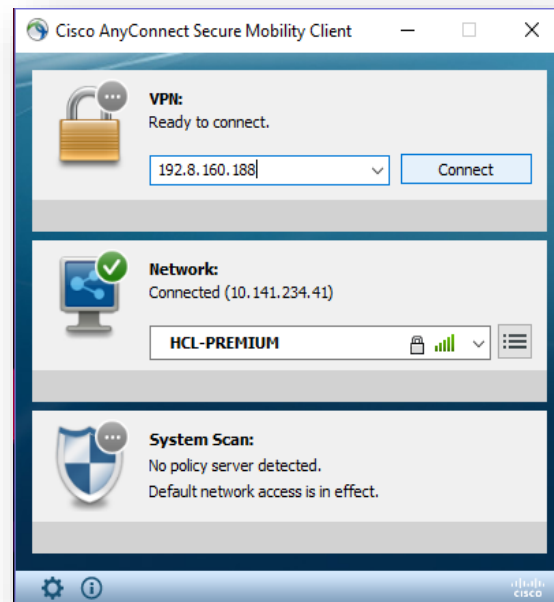


Figure 1 - Setup the VPN connectivity

A security warning message will pop-up.

3. Click Connect Anyway.

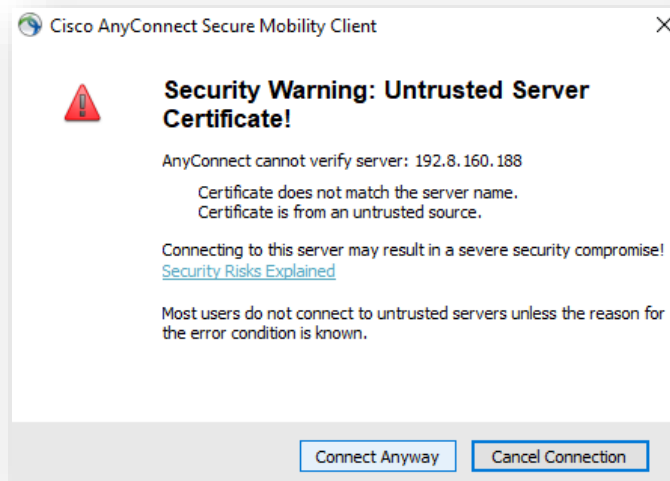


Figure 2 – Connectivity to VPN

4. Enter the username in **Username** and **Password** in the respective fields.

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

5. Click **OK**.

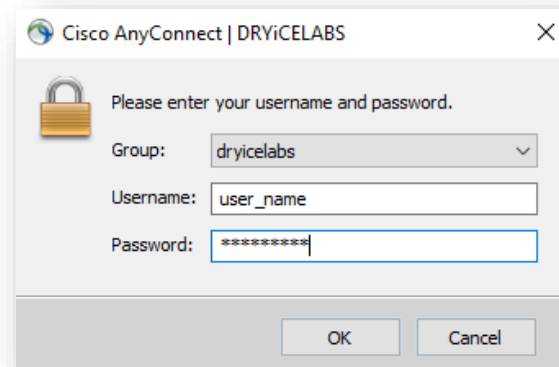


Figure 3 - Connectivity to VPN (Cont.)

User will be connected to the **VPN**.

6. Open a browser using the URL provided during the training.

It redirects you to the BigFix Runbook AI Login Page.

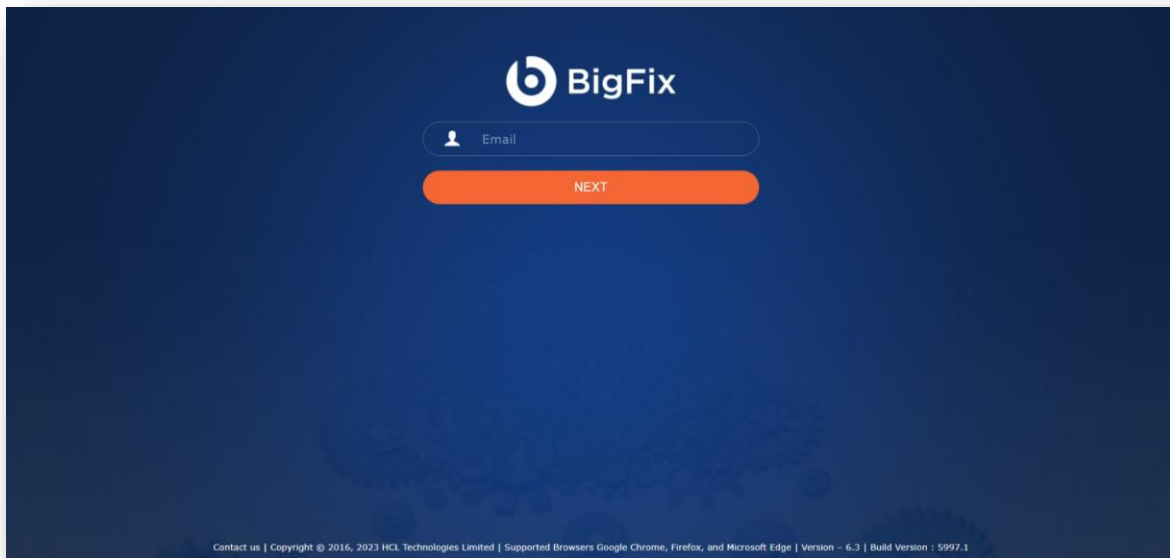


Figure 4 – BigFix Runbook AI Login Page

## 2 BigFix Runbook AI Overview

BigFix Runbook AI 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 expert to validate, customize, approve and publish for the future use.

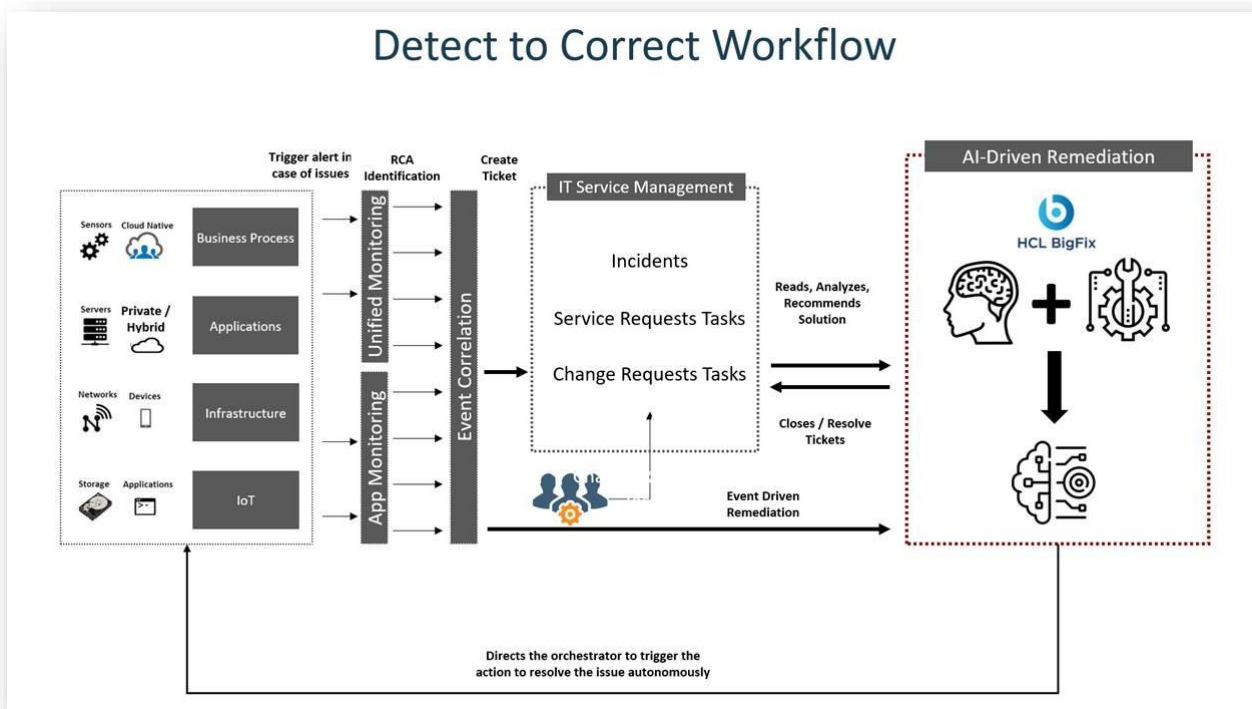


Figure 5 - BigFix Runbook AI Workflow

Intelligent automation powered by BigFix Runbook AI 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 MTTR
- **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 300+ 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

BigFix Runbook AI 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 BigFix Runbook AI for bringing in automation.

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

#### 3.2.1 Scenario

A company named BigFixRunbookAI, hereby referred to as Organization, 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. With mutual agreement, Organization has also agreed to share required information with 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 BigFix Runbook AI 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 BigFix Runbook AI.
- User should be part of an Organization.

Please note that the ticket dump may include different type 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 **BigFix Runbook AI Web Portal URL**.

The **BigFix Runbook AI Login Page** appears as shown in Figure 2 – BigFix Runbook AI Login Page.

2. On **BigFix Runbook AI Login** page, type the **Login ID**. If unavailable, then ask your trainer to provide the login credentials.

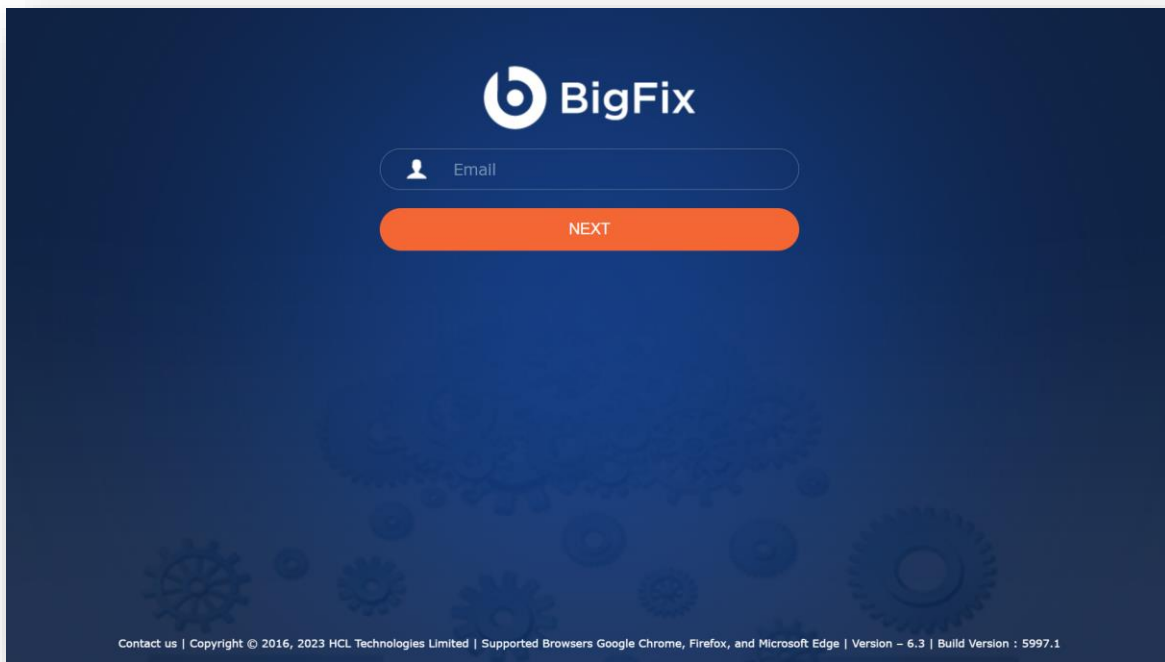


Figure 6 – BigFix Runbook AI Login Page

3. Click **Next**.
4. Type password in the **Password** field.

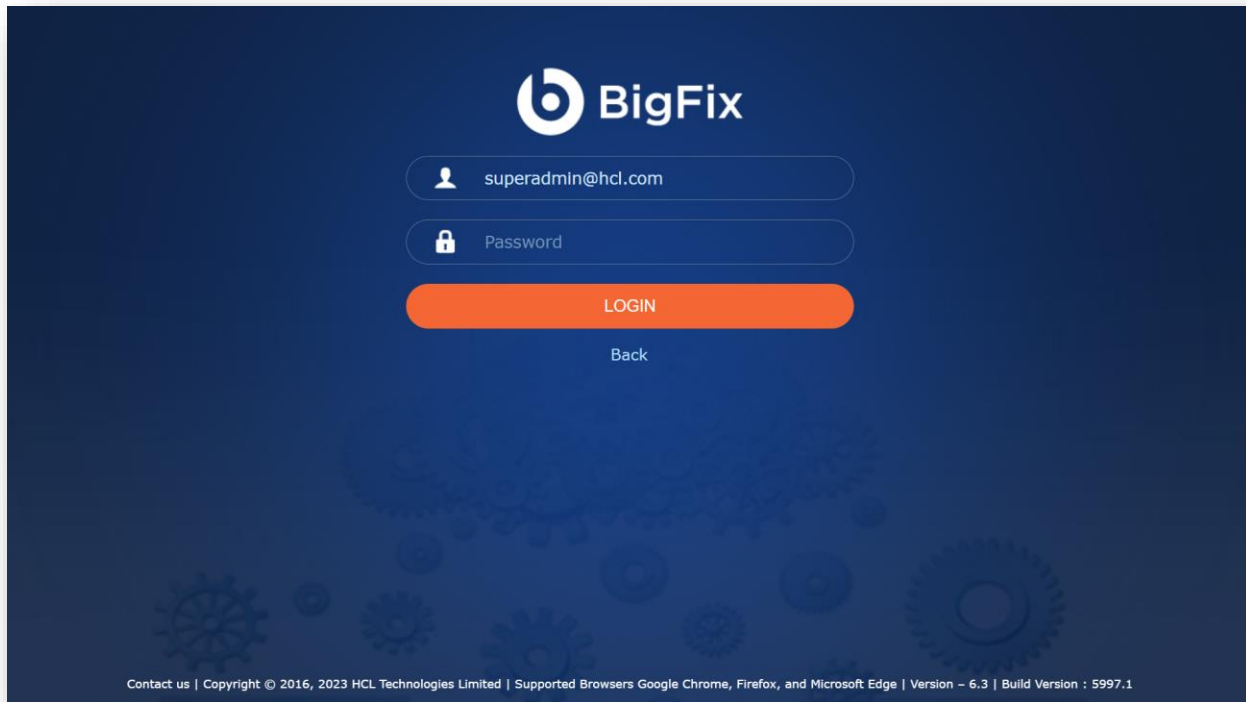


Figure 7 – Enter Login Credentials

5. Click Login. The BigFix Runbook AI User Console page appears.

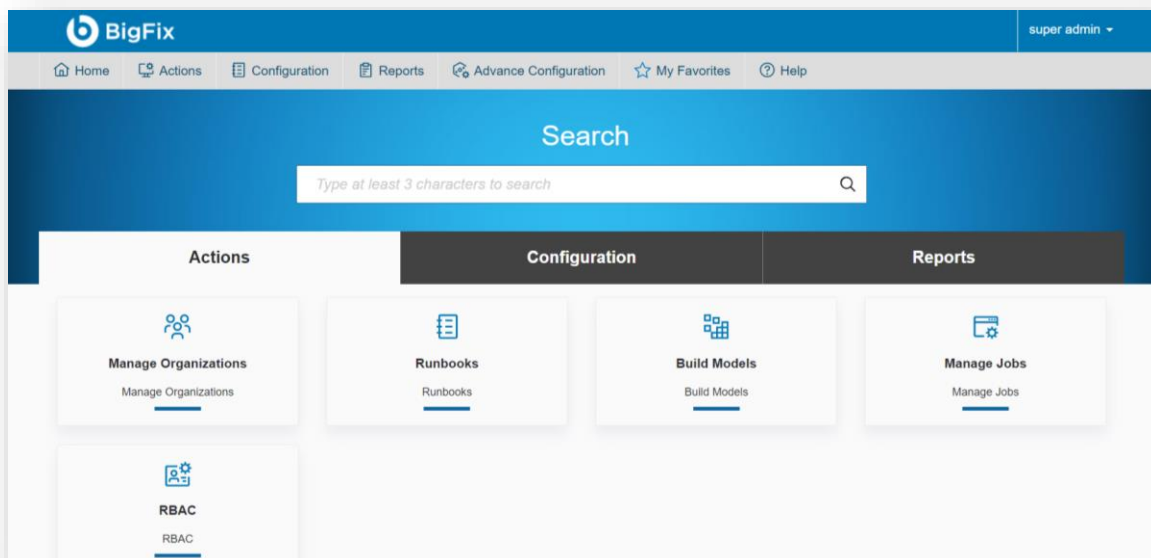


Figure 8 – BigFix Runbook AI Admin Console

6. Go to **Actions** → **Analysis** sub menu and select **Ticket Analysis**.

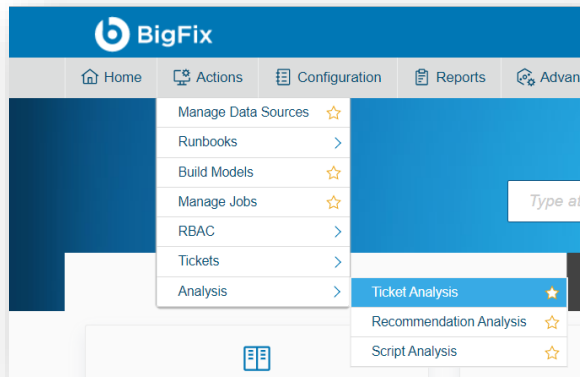


Figure 9 – Ticket Analysis Selection

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



Figure 10 – Ticket Analysis

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

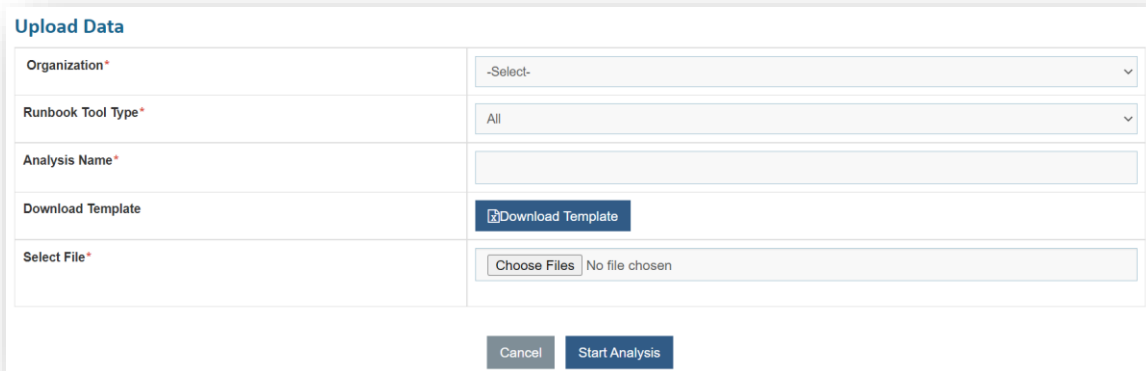
Table 2 – Ticket Dump Template

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.

- On clicking **Add Analysis**, the **Upload Data** page appears.

10. Select **Organization** from the **Organization** drop-down list.



Upload Data	
Organization*	-Select- ▼
Runbook Tool Type*	All ▼
Analysis Name*	<input type="text"/>
Download Template	<a href="#">Download Template</a>
Select File*	<a href="#">Choose Files</a> No file chosen
<a href="#">Cancel</a> <a href="#">Start Analysis</a>	

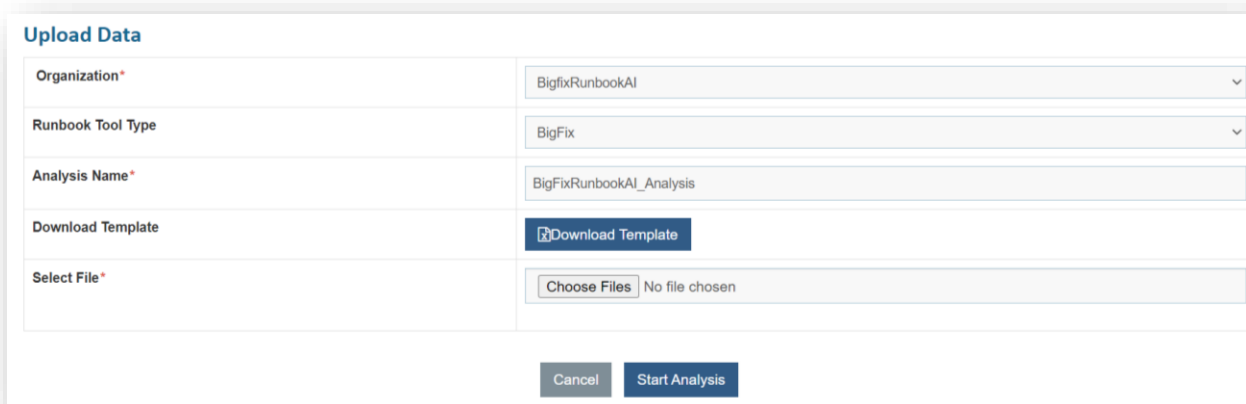
Figure 11 – Upload Data

11. Type in the **Analysis Name**. You can use the naming convention:

**“OrganizationName\_ModuleType”**. For e.g. in this case, organization name is BigFixRunbookAI and module type is *Incidents*, so the name could be mentioned as *“BigFixRunbookAI\_Incidents”*. We have considered BigFixRunbookAI\_Analysis for this exercise.

12. Click on **Choose Files** to select the CSV file and upload it as per the format mentioned earlier.

13. Click Start Analysis.



Upload Data	
Organization*	BigfixRunbookAI ▼
Runbook Tool Type	BigFix ▼
Analysis Name*	BigFixRunbookAI_Analysis
Download Template	<a href="#">Download Template</a>
Select File*	<a href="#">Choose Files</a> No file chosen
<a href="#">Cancel</a> <a href="#">Start Analysis</a>	

Figure 12 – Start Analysis

User will be prompted with the success message as depicted in the below.

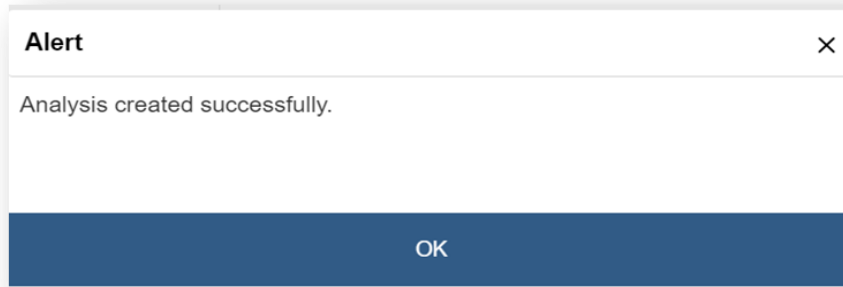


Figure 13 – Analysis Created Successfully

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.

14. Go to Actions and click Manage Jobs.

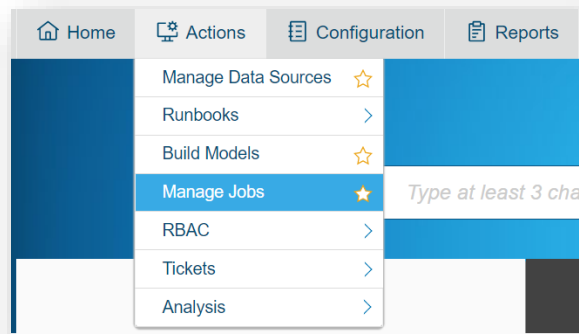


Figure 14 – Manage Jobs

15. On **Manage Jobs** screen, click filter icon next to **Organization** and search for "BigFixRunbookAI" for which analysis has to be done.



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

Jobs | Archived Analysis Jobs Refresh | Enable Jobs | Disable Jobs

Enabled	Name	JobId	Organization	Status	Service Name	Module Name	Component Name	Next Run	Action
<input type="checkbox"/> Yes	PurgeDataBigfixRunbookAI	293	BigfixRunbookAI	Successfull	ServiceNow	Incident Management	Generic Service	04/05/2023 11:23:00	
<input type="checkbox"/> Yes	HangJobReportingBigfixRunbookAI	294	BigfixRunbookAI	Successfull	ServiceNow	Incident Management	Generic Service	04/04/2023 14:22:37	
<input type="checkbox"/> Yes	HistoricalDataCleanUpBigfixRunbookAI	295	BigfixRunbookAI	Successfull	ServiceNow	Incident Management	Generic Service	04/21/2023 14:49:11	
<input type="checkbox"/> Yes	CollectIncidentsBigfixRunbookAI	296	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Data Collector	04/04/2023 14:22:12	
<input type="checkbox"/> Yes	RunParsingBigfixRunbookAI	297	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Parsing	04/04/2023 14:22:00	
<input type="checkbox"/> Yes	ProcessAutoBigfixRunbookAI	298	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Generic Service	04/04/2023 14:22:50	

Figure 15 - Manage Jobs (Cont.)

16. 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 BigFix Runbook AI.

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

Jobs | Archived Analysis Jobs Refresh | Enable Jobs | Disable Jobs

Enabled	Name	JobId	Organization	Status	Service Name	Module Name	Component Name	Next Run	Action
<input type="checkbox"/> No	FetchUniqueRecommendationBigfixRunbookAI	300	BigfixRunbookAI	Queued	ServiceNow	Incident Management	iRecommend	03/21/2023 11:41:14	
<input type="checkbox"/> No	FetchScriptForUniqueBigfixRunbookAI	301	BigfixRunbookAI	Queued	ServiceNow	Incident Management	Unique Script	03/21/2023 11:41:14	
<input type="checkbox"/> No	FetchClusterIdBigfixRunbookAI	304	BigfixRunbookAI	Queued	ServiceNow	Incident Management	Fetch Unique Cluster	03/21/2023 11:41:14	

Figure 16 - - Manage Jobs (Cont.)

17. Select the checkbox for **ProcessUnique** job and click **Enable Jobs**.

**Manage Jobs** \*Date Format - (MM/DD/YYYY hh:mm:ss) In UTC

Jobs | Archived Analysis Jobs Refresh | Enable Jobs | Disable Jobs

Enabled	Name	JobId	Organization	Status	Service Name	Module Nam	Component Name	Next Run	Action
<input type="checkbox"/> Yes	ProcessAutoBigfixRunbookAI	298	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Generic Service	04/04/2023 14:22:50	
<input type="checkbox"/> Yes	ProcessUniqueBigfixRunbookAI	299	BigfixRunbookAI	Pending Verification	ServiceNow	Incident Management	Unique Clustering	03/21/2023 11:41:14	

Figure 17 - Manage Jobs (Cont.)

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

18. Go back to **Actions** → **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.

**Ticket Analysis** Refresh | Add New Analysis

Search:

Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Action
CSV	ProcessUniqueBigfixRunbookAI	BigfixRunbookAI	Incident Management	ALL	Verified and Pending Merge	

Figure 18 - Manage Jobs (Cont.)

Next step is to build / approve the analysis.

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

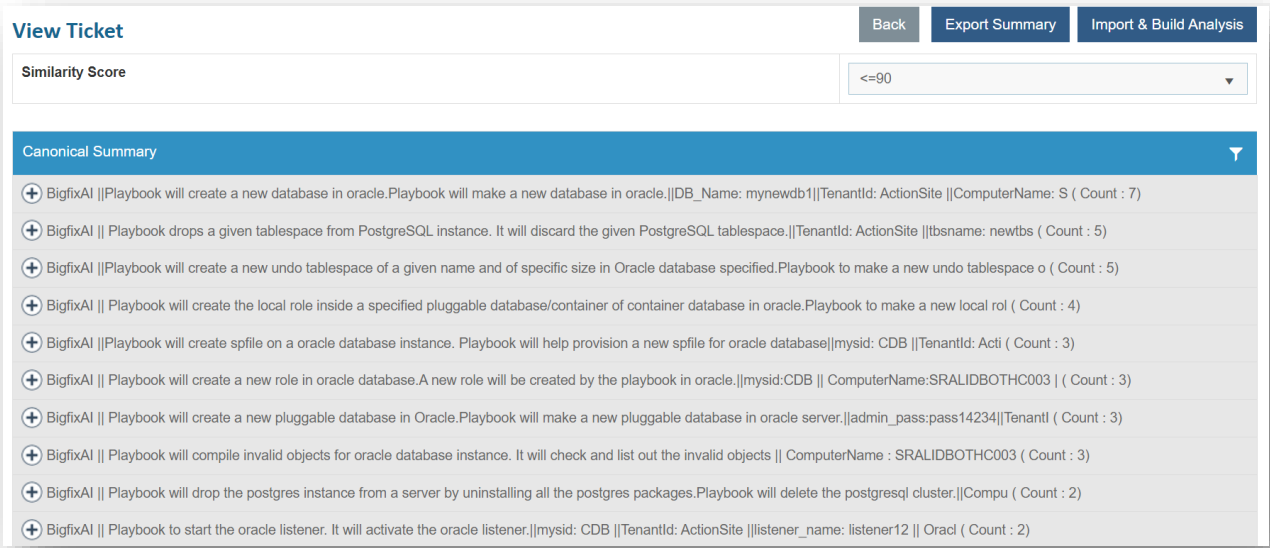


Figure 19 - Manage Jobs (Cont.)

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 **BigFix Runbook AI Configuration Guide** for more details.

20. User will be redirected to **Ticket Analysis** screen and status of the analysis should be **Verified and Pending Merge**.



Figure 20- Manage Jobs (Cont.)

21. In the action column, click (**Click to Merge Analysis**) icon. It will take you to **Merge Analysis** screen.

22. Scroll down to the bottom of the page and click **Final Submission**.

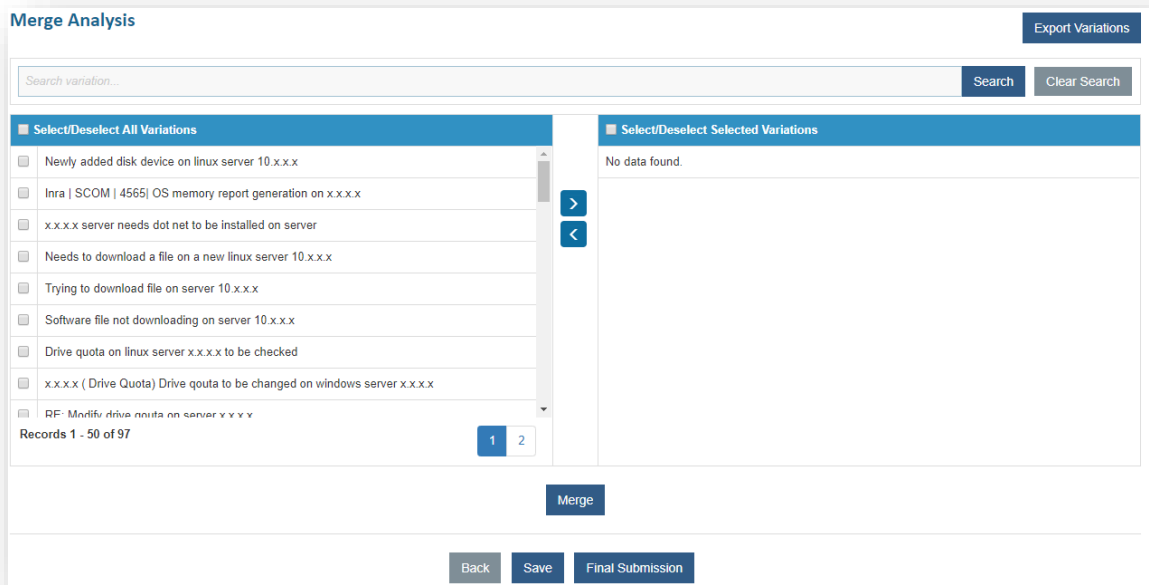


Figure 21 - Manage Jobs (Cont.)

23. 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**.



Figure 22 - Manage Jobs (Cont.)

24. 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.

25. Go to Actions → Manage Jobs. Filter the jobs for BigFixRunbookAI.

26. Click icon under the **Action** column corresponding to the **Recommendation** component.







Component Name	Next Run	Action
iRecommend	03/21/2023 11:41:14	  
iRecommend	04/04/2023 14:55:31	  

Figure 23 - - Manage Jobs (Cont.)

27. In the popup window, click **Parameters** and change the values of **FetchTicketCount** and **ReturnRunbookCount** as shown below:

Job Actions
✕

- General
- Schedule
- Parameter >

### Parameter

Parameter Name	Parameter Description	Value
IsRebind	This determines whether we need to rebind or not	<input type="checkbox"/>
FetchTicketCount	This is the number to restricts the number of tickets to be returned	<input type="text" value="2500"/>
ReturnRunbookCount	This is the number of run books to be returned	<input type="text" value="5"/>
UseRepositoryRunbook	This is used to identify from where we have to pick the run books	<input checked="" type="checkbox"/>
LoggerState	This is to determine whether detailed logging	<input type="checkbox"/>

Save

Note \* : - All dates on this page are in GMT.

Figure 24 - Manage Jobs (Cont.)

28. Click **Save**.

29. Select checkbox for **Recommendation (FetchUniqueRecommendation)** for that analysis and click **Enable Jobs**.

**Manage Jobs**

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

Jobs	Archived Analysis Jobs	Refresh	Enable Jobs	Disable Jobs								
Enabled	Name	JobId	Organization	Status	Service Name	Module Name	Component Name	Next Run	Action			
<input type="checkbox"/>	Yes	CollectIncidentsBigfixRunbookAI	296	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Data Collector	03/25/2023 11:15:26			
<input type="checkbox"/>	Yes	RunParsingBigfixRunbookAI	297	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Parsing	03/25/2023 11:15:15			
<input type="checkbox"/>	Yes	ProcessAutoBigfixRunbookAI	298	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Generic Service	03/25/2023 11:15:14			
<input type="checkbox"/>	No	ProcessUniqueBigfixRunbookAI	299	BigfixRunbookAI	Queued	ServiceNow	Incident Management	Unique Clustering	03/21/2023 11:41:14			
<input type="checkbox"/>	No	FetchUniqueRecommendationBigfixRunbookAI	300	BigfixRunbookAI	Queued	ServiceNow	Incident Management	iRecommend	03/21/2023 11:41:14			
<input type="checkbox"/>	No	FetchScriptForUniqueBigfixRunbookAI	301	BigfixRunbookAI	Queued	ServiceNow	Incident Management	Unique Script	03/21/2023 11:41:14			
<input type="checkbox"/>	Yes	ReleaseTicketsBigfixRunbookAI	302	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Release Service	03/25/2023 11:15:58			

Figure 25- Manage Jobs (Cont.)

30. 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.

**Recommendation Analysis**

Analysis Type	Analysis Name	Organization Name	Module	Status	Action	
CSV	FetchUniqueRecommendationBigfixRunbookAI	BigfixRunbookAI	Incident Management	Successful		

Figure 26 - Manage Jobs (Cont.)

31. Click icon in **Action** column for the recommendation analysis. A popup window **Recommendation Details** appears.

32. Click **Show Details** to view detailed analysis.

33. Click **Export** to download the analysis.

**Enrich Recommendation**

**Export** **Back**

Status	Bucket Description	Runbook	Approve Runbook	Confidence Score	SOP Required
	add DNS A type record for host name dryi...more	Hyper-V_HostStateVM_LoadBalancing	<input type="checkbox"/>	45.00	<input type="checkbox"/>
	application needs dot net to be installe...more	Hyper-V_HostStateVM_LoadBalancing	<input type="checkbox"/>	61.00	<input type="checkbox"/>
	Azure   Health check   check the status ...more	documentDB_loop	<input type="checkbox"/>	63.00	<input type="checkbox"/>
	Check DNS server diagnostic and logging ...more	Hyper-V_HostStateVM_LoadBalancing	<input type="checkbox"/>	45.00	<input type="checkbox"/>
	check installed drivers   x.x.x.x	Hyper-V_HostStateVM_LoadBalancing	<input type="checkbox"/>	66.00	<input type="checkbox"/>
	check OS memory configuration   x.x.x.x	VDI_Memory_Uplift_Request	<input type="checkbox"/>	81.00	<input type="checkbox"/>

Figure 27 - Manage Jobs (Cont.)

34. 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).
35. To calculate the automation percentage, user can filter on Similarity field i.e.  $\geq 0.60$ . 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.  $\geq 0.60$  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 BigFix Runbook AI doesn't 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 BigFix Runbook AI for enhancing automation within their environment.

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

### 3.2.5 Related Documentation

- BigFix Runbook AI Configuration Guide

## 4 Module 2 – Installation of BigFix Runbook AI

### 4.1 Introduction

BigFix Runbook AI 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 BigFix Runbook AI product in various scenarios, including mandatory and optional components based on requirements. We will also cover the installation of BigFix Runbook AI 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 an organization has inquired about the various deployment options and respective hardware sizing in order to prepare for the deployment of BigFix Runbook AI 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 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 on a monthly basis
- **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*
<b>Small</b>	Less than 30,000	Less than 500	Less than 1,000	Less than 5,000	up to 100	6 months
<b>Medium</b>	30,000 to 60,000	500 to 1,000	1,000 to 3,000	5,000 to 10,000	up to 200	6 months
<b>Large</b>	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 BigFix Runbook AI.

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 BigFix Runbook AI	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.

BigFix Runbook AI 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 BigFix Runbook AI for enhancing automation within their environment.

Now, let's explore the installation procedure for BigFix Runbook AI.

## 4.3 Lab Exercise 2 – Installation of BigFix Runbook AI without Document Search and Analysis in non-HA mode

### 4.3.1 Scenario

An Organization has asked for installation of BigFix Runbook AI in non-HA mode. They are looking for only automation of IT operations without Document Search and Analysis functionality. You are part of the implementation team who has been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing BigFix Runbook AI 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 BigFix Runbook AI 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 BigFix Runbook AI installer exe

### 4.3.3 Solution

1. The user should have access to the **BigFix Runbook AI 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. Browse the **Installer.exe** in the folder and click **Run as administrator** to start installation. On running the exe, the following page appears.

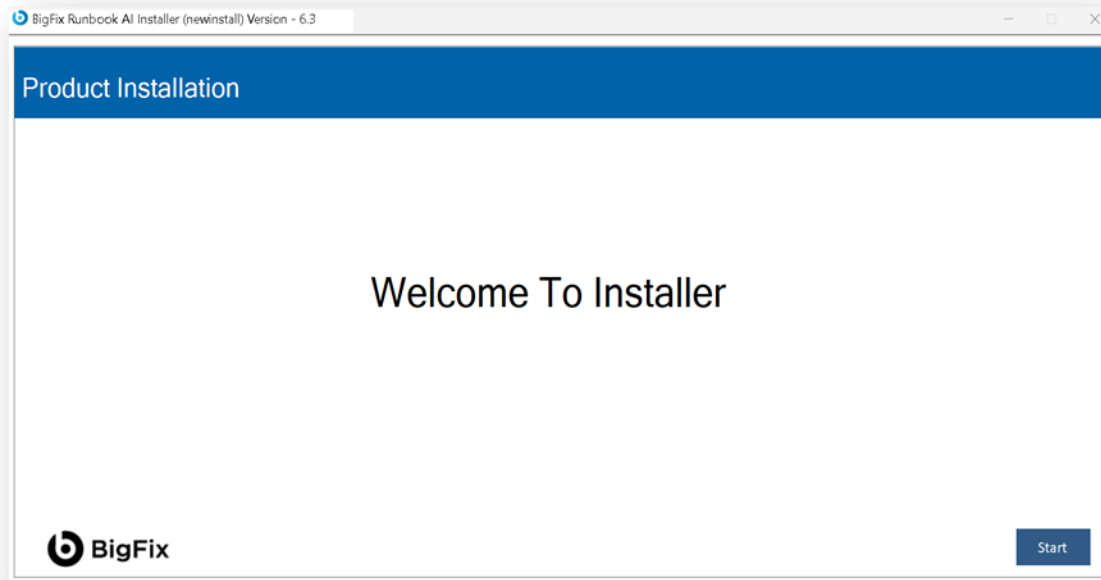


Figure 28 – iAutomate Implementation

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

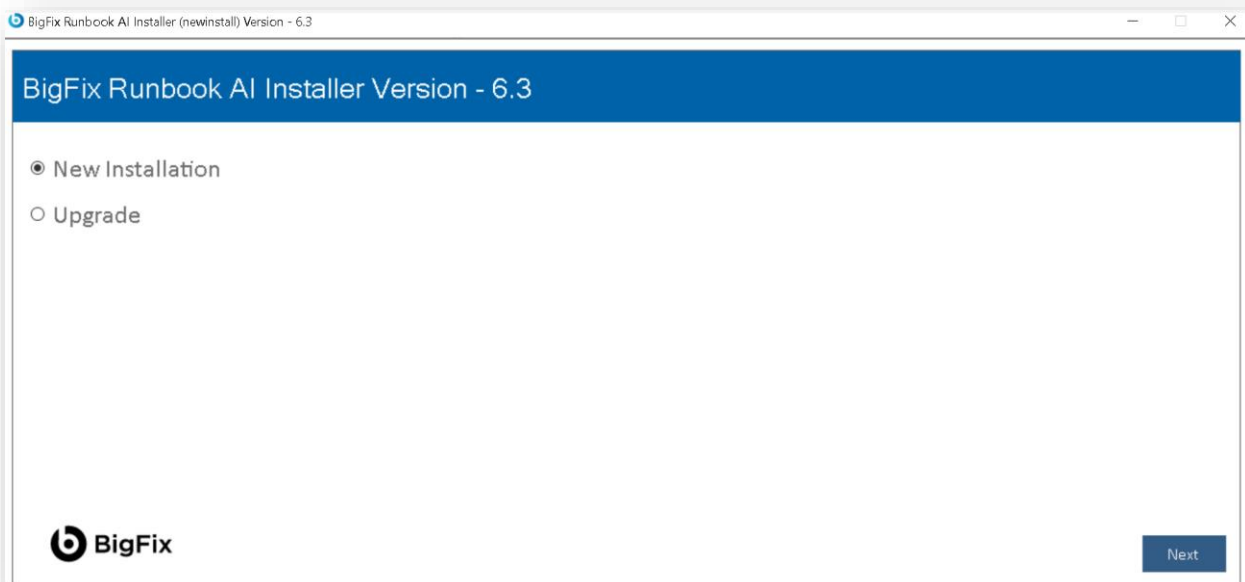


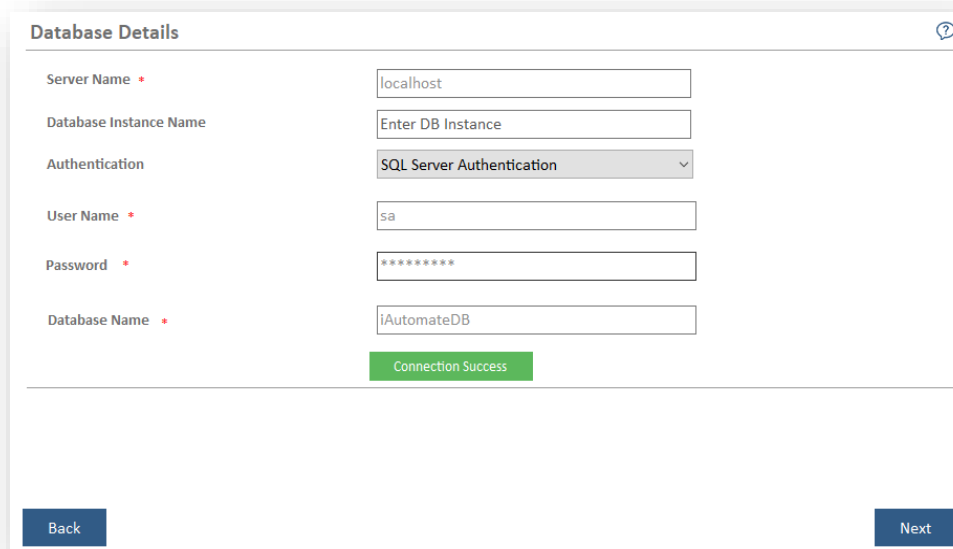
Figure 29 – BigFix Runbook AI Installer Welcome Page

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, iAutomateDB is auto filled by default.
5. To check the connectivity to a server using the credentials provided, click **Check Connection**.
6. This displays a message for **Connection Success** or **Connection Failure**. Successful connection to the database enables the **Next** button.



The screenshot shows a 'Database Details' form with the following fields and values:

- Server Name: localhost
- Database Instance Name: Enter DB Instance
- Authentication: SQL Server Authentication
- User Name: sa
- Password: \*\*\*\*\*
- Database Name: iAutomateDB

A green button labeled 'Connection Success' is visible below the form fields. At the bottom of the form, there are 'Back' and 'Next' buttons.

Figure 30- Database Details

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

### 4.3.3.2 Component Selection

1. Select Web Component and Application Component.

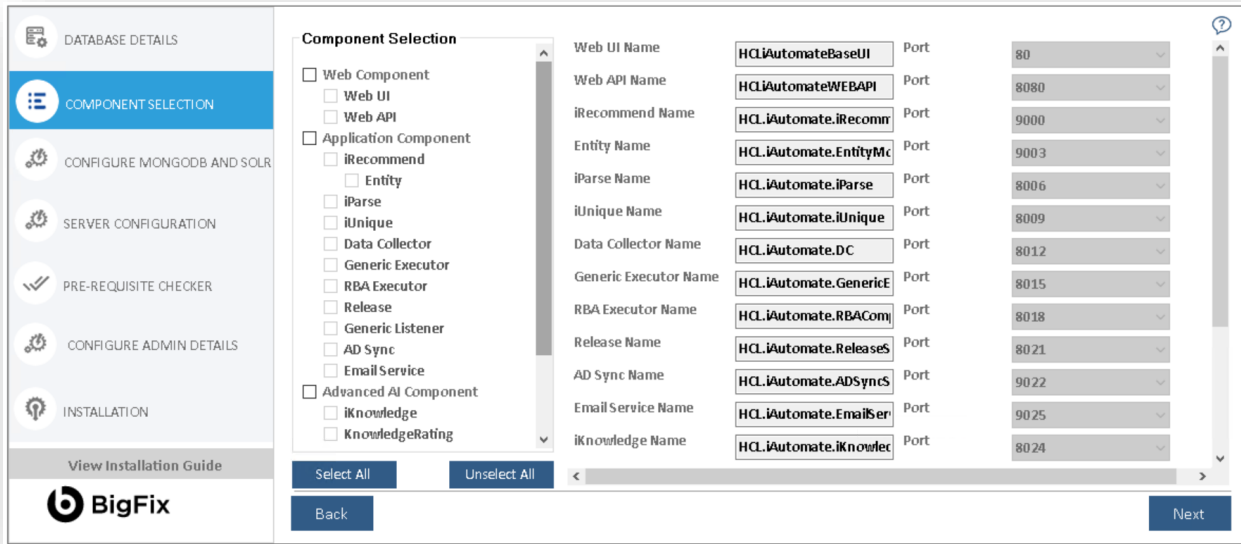


Figure 31 – Component Selection

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 BigFix Runbook AI 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.

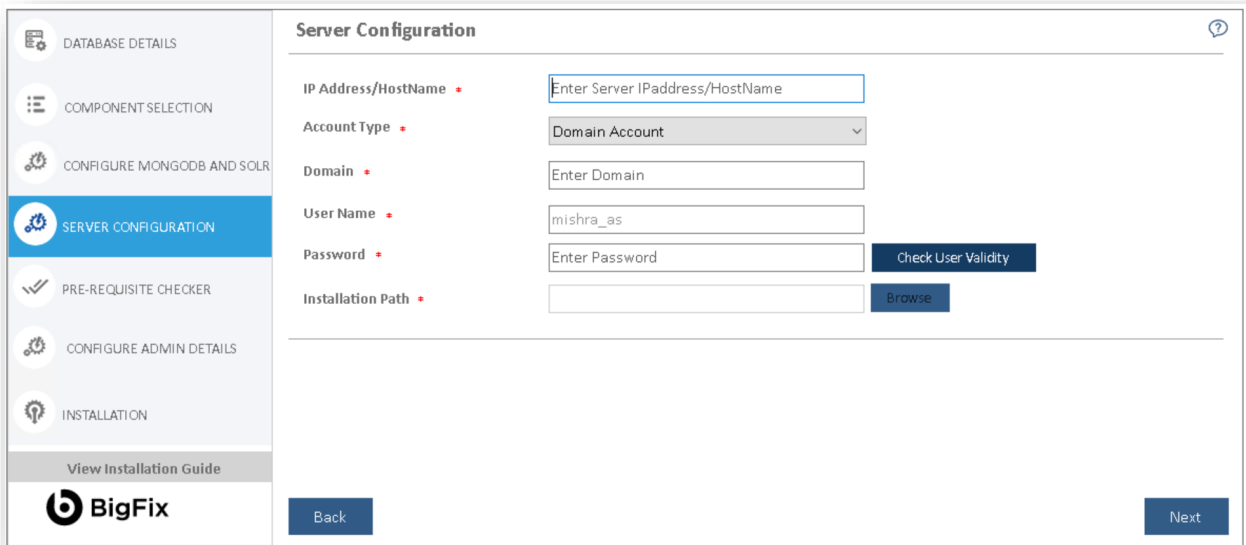


Figure 32 - Server Configuration

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 BigFix Runbook AI 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.

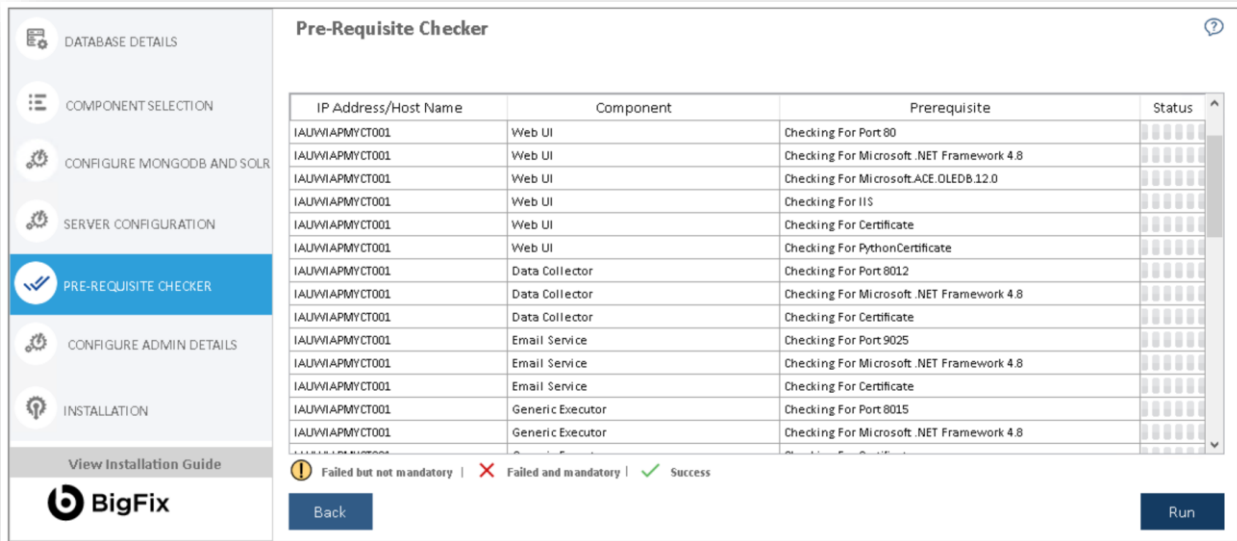


Figure 33 - Pre-Requirement Checker

The **Pre-requisite Checker** always runs as part of the BigFix Runbook AI setup.

A progress bar appears while the **Pre-Requirement Checker** runs.

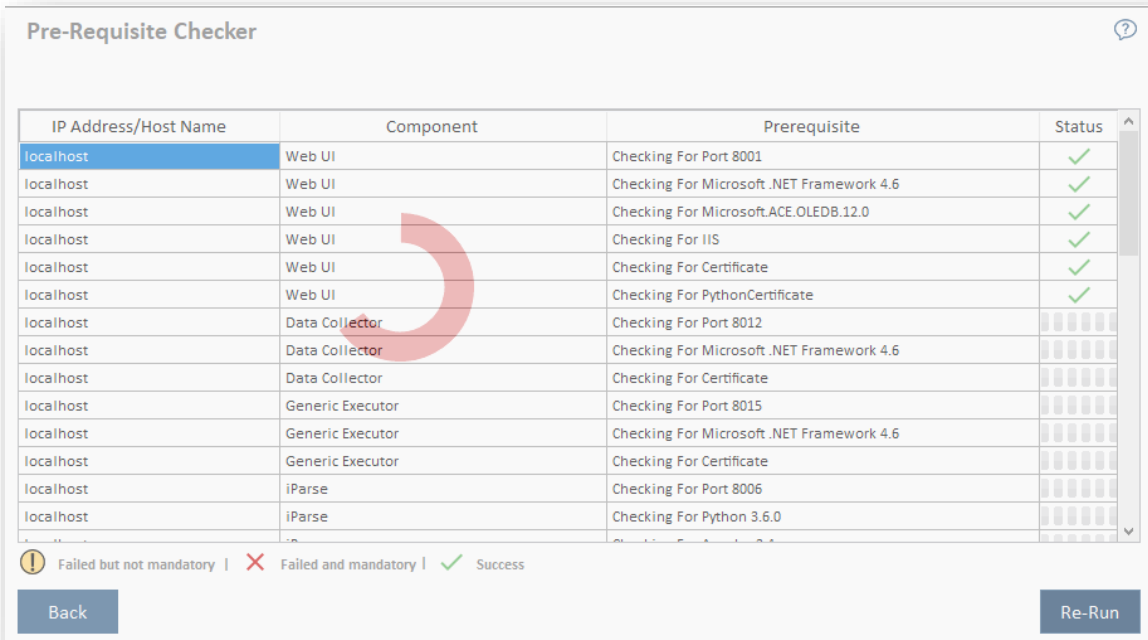


Figure 34 - Pre-Requirement Checker (cont.)

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** Export

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	✓

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

Back Re-Run

Figure 35 - Pre-Requisite Checker (cont.)

- In case of Failure, **Re-Run** button appears. Please ensure that the identified issue is resolved and re-run the pre-requisite checker.
- Please refer 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.
- Upon successful validation of all pre-requisites, **Next** is enabled. Click **Next** to get to the **Configure Admin Details** view.

**Pre-Requisite Checker** ?

Total No of Request **46** | Successful **46** | Failed **0** Export

IP Address/Host Name	Component	Prerequisite	Status
localhost	Web UI	Checking For Microsoft.ACE.DLEDB.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 36 - Pre-Requisite Checker (cont.)

### 4.3.3.5 Configure Admin Details

To configure Super Administrator user for BigFix Runbook AI, 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.

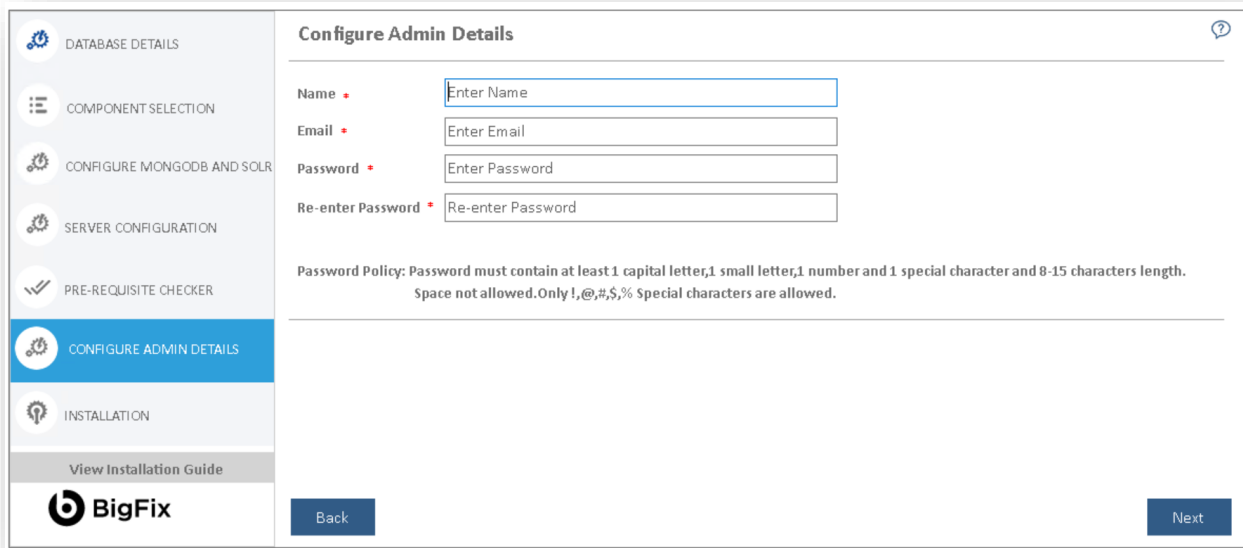


Figure 37 - Configure Admin Details

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 least 6 characters; and Password and Re-enter Password should match. Post installation, the administration console can be accessed by this Super Administrator user.

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.

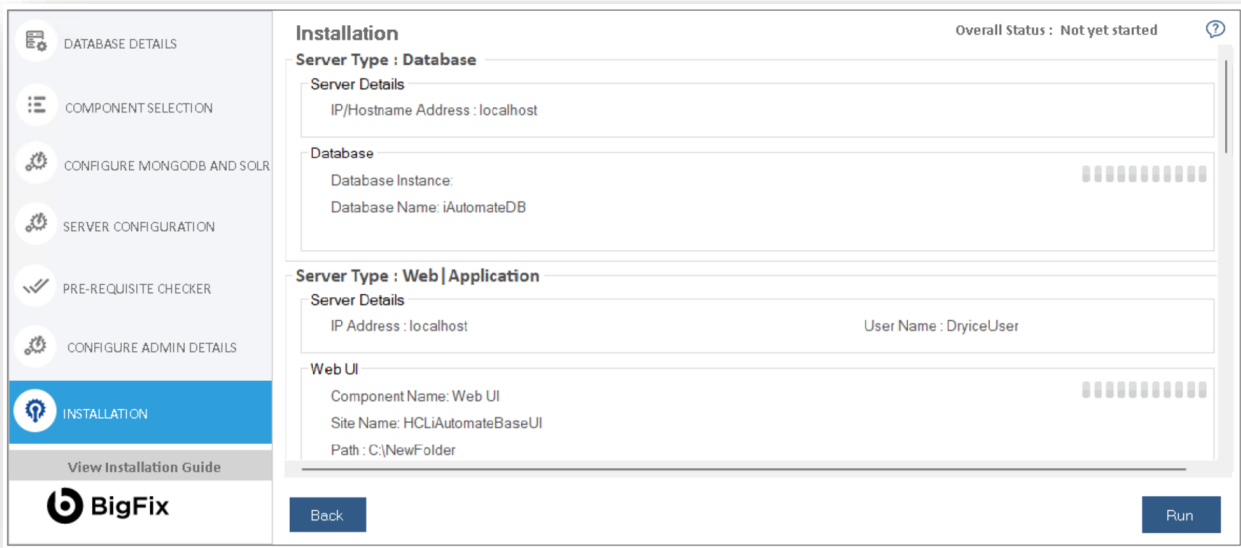


Figure 38 – Installation

3. The progress bar displays the installation progress.

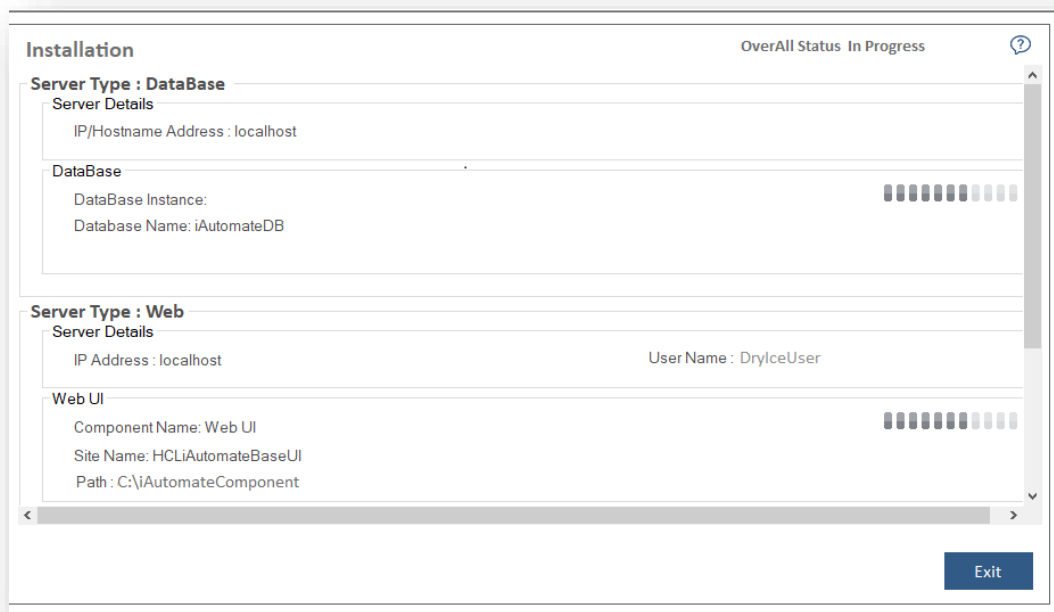


Figure 39 – Installation (cont.)

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.

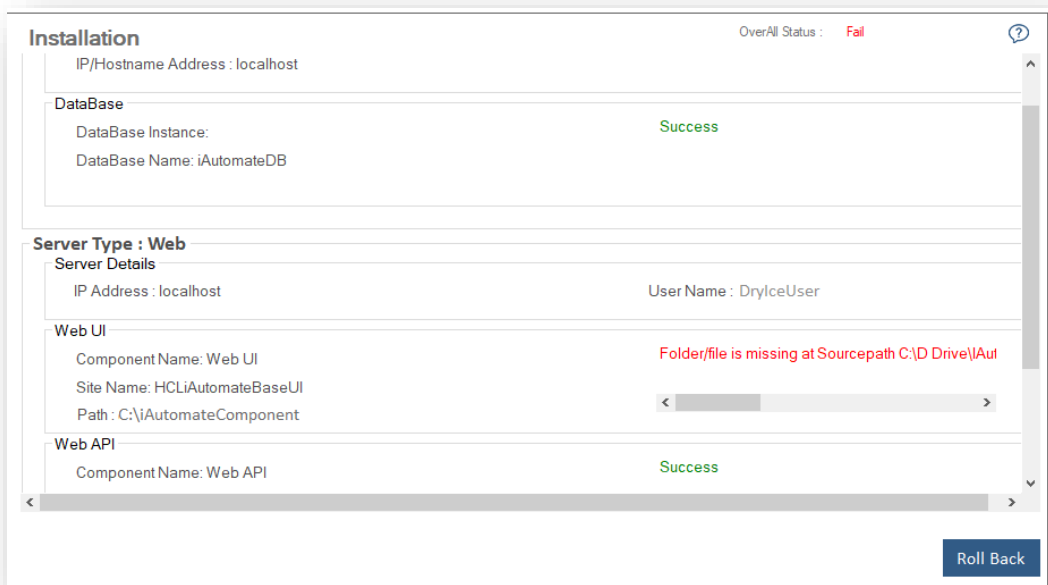


Figure 40 - Installation (cont.)

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

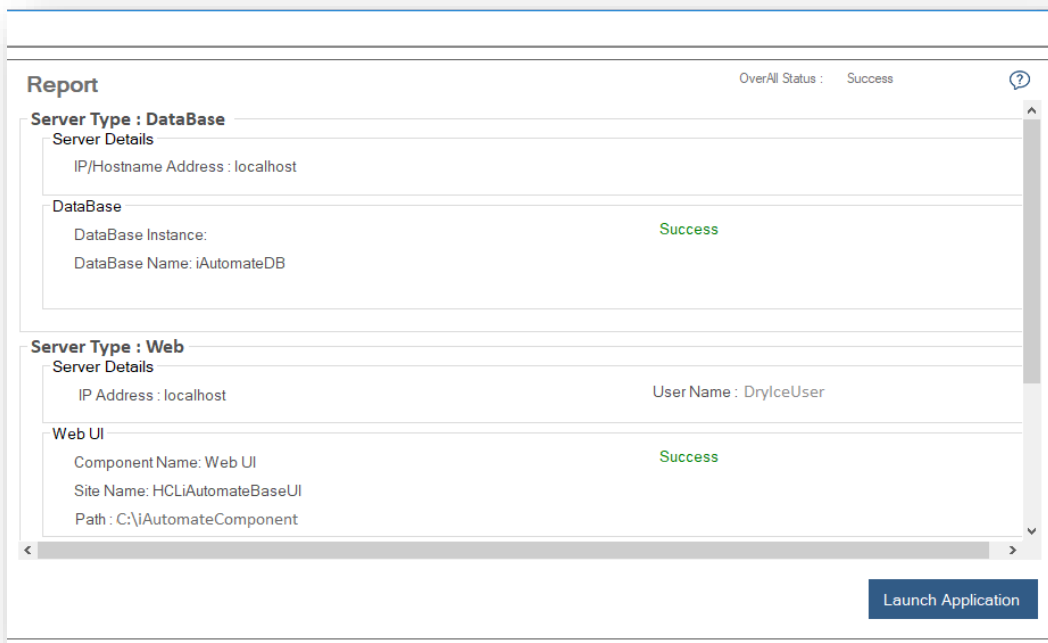


Figure 41 - Installation (cont.)

- Click **Launch Application** to launch BigFix Runbook AI website.

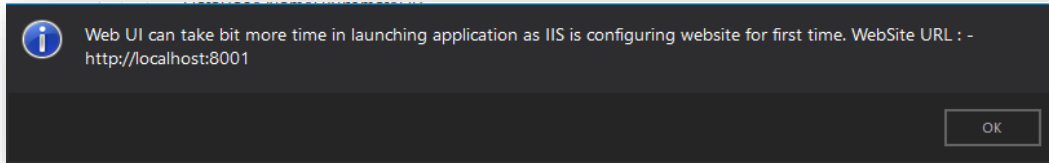


Figure 42 – Launch Application

Navigate to the {PythonHome}/Lib/site-packages/pkg\_resources/\_vendor folder and Delete the below marked folders.

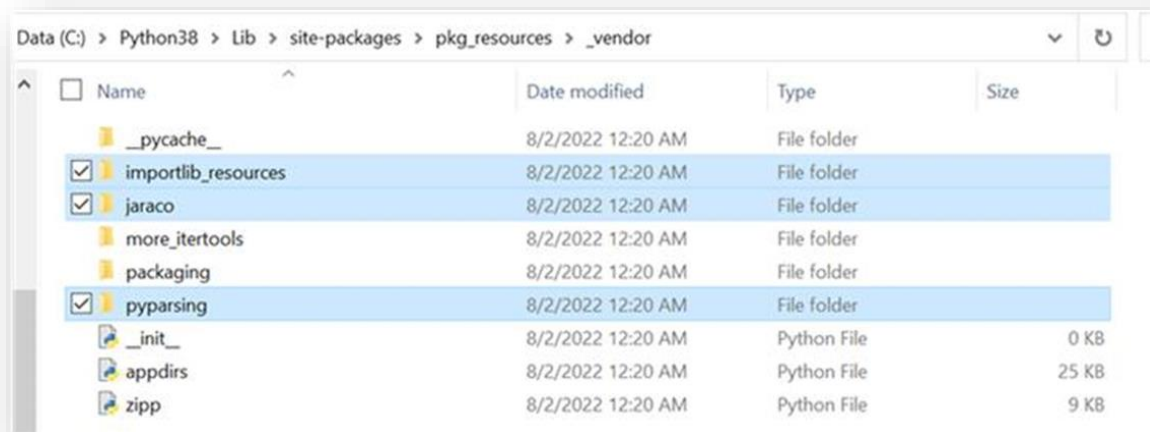


Figure 43- Delete Folders before launch

- Restart all Apache/ Python component services.
- Click **Launch Application** button to start BigFix Runbook AI.

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

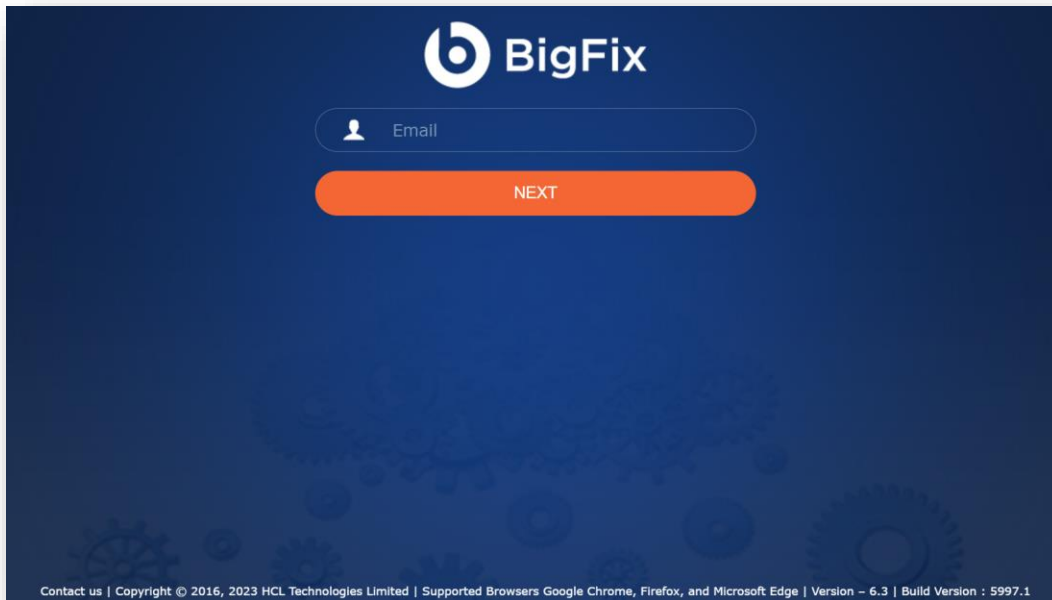


Figure 44 – BigFix Runbook AI Login Page

### 4.3.4 Conclusion

Post the conclusion of this exercise, you should have a thorough understanding of the installation of Bigfix Runbook AI Web and Application components 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 BigFix Runbook AI without Document Search and Analysis in HA mode

### 4.4.1 Scenario

An organization has asked for installation of BigFix Runbook AI 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 has been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing BigFix Runbook AI 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 BigFix Runbook AI 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 BigFix Runbook AI 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 **BigFix Runbook AI components**, follow the steps mentioned in the [Lab Exercise 2](#) on both Web and Application servers.

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 **services.msc**.
2. Click **OK** to open IIS.



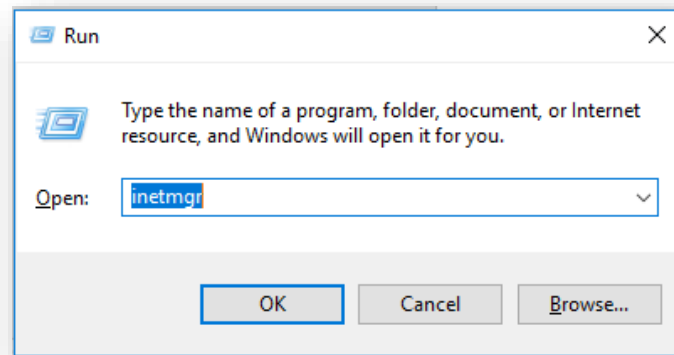


Figure 45 - Load Balancer Configuration

3. Expand Sites in Connections section and click HCLiAutomateBaseUI.

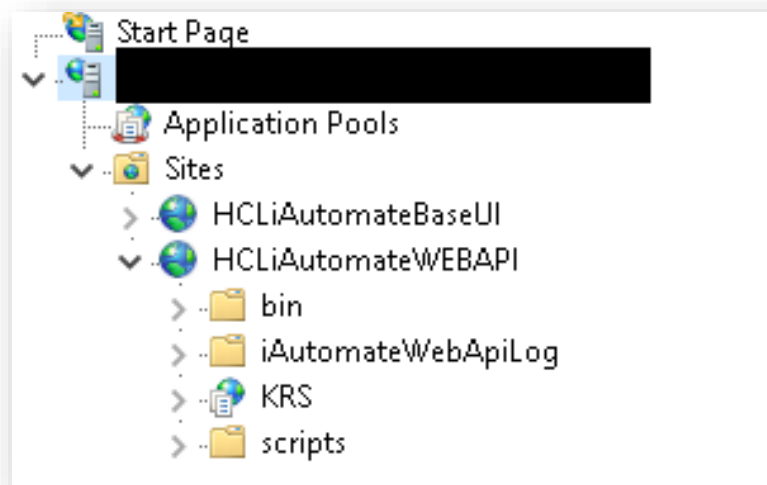


Figure 46 - Load Balancer Configuration (cont.)

4. Click **Bindings** in the **Edit Site** section.

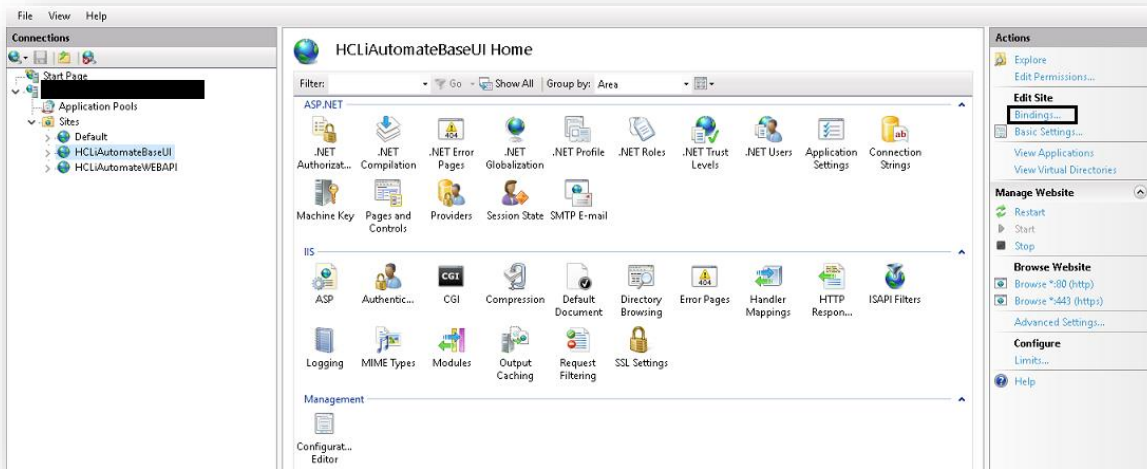


Figure 47 - Load Balancer Configuration (cont.)

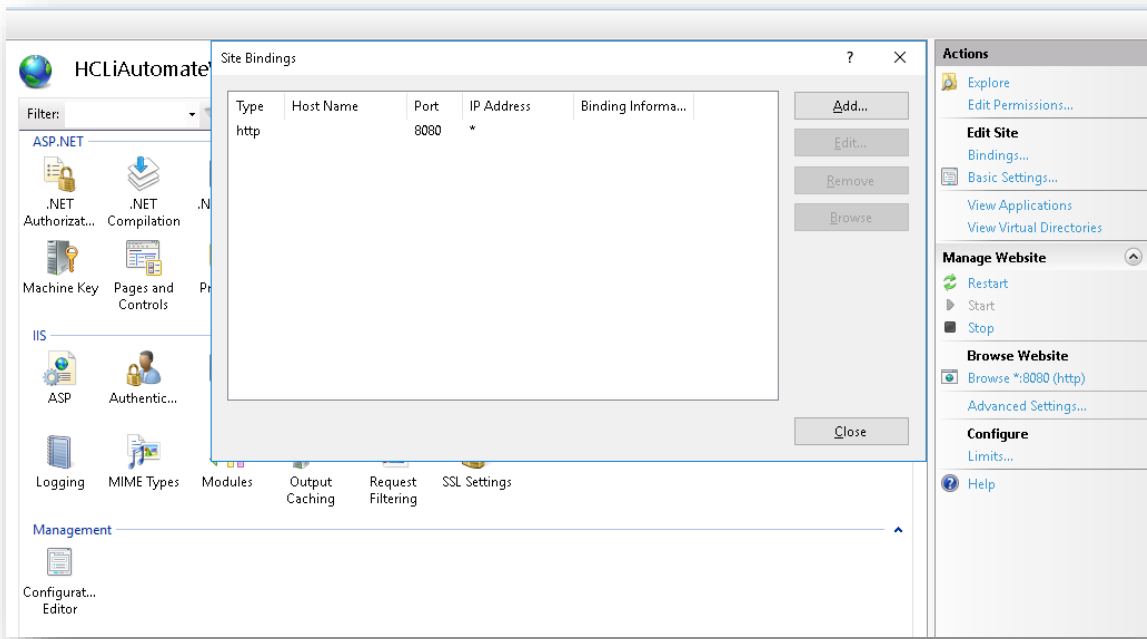


Figure 48 - Load Balancer Configuration (cont.)

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 49 - 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 *Web API Port*.

```
<add key="URL" value="http://localhost:8080/KRS/KeyManagement.svc" />
```

Figure 50 - 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**.

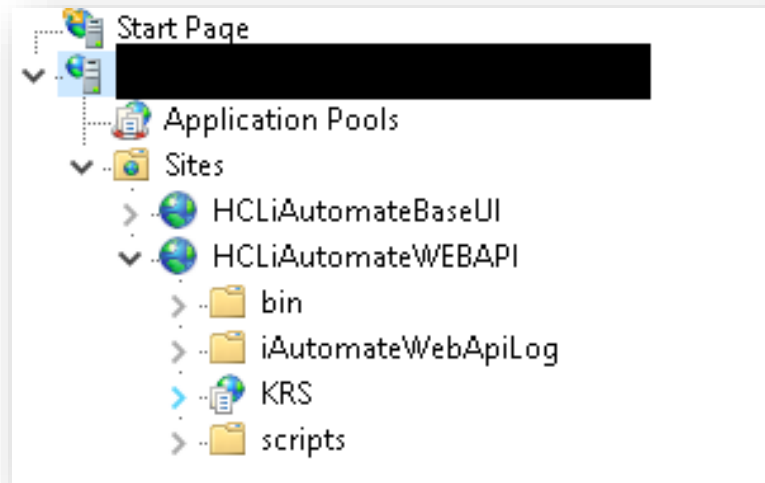


Figure 51 - Load Balancer Configuration (cont.)

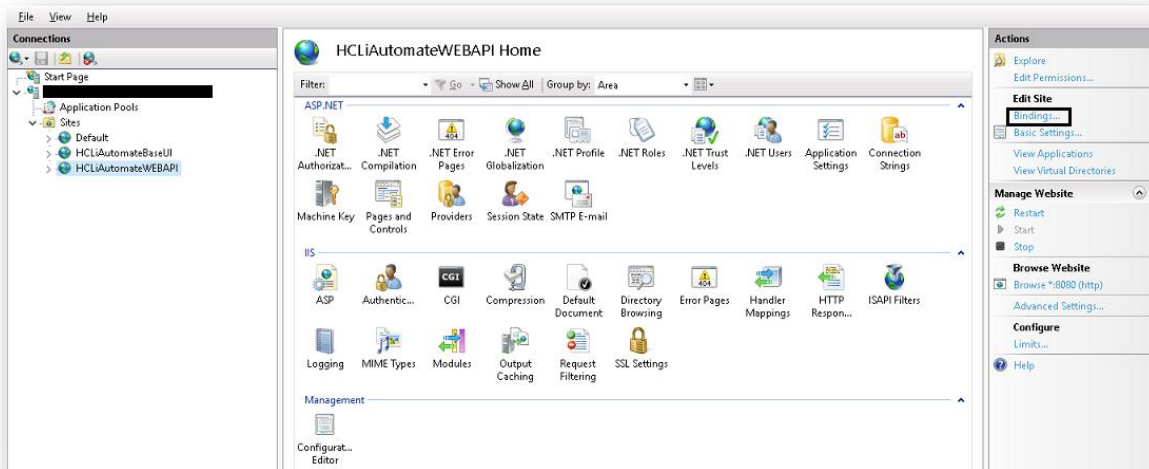


Figure 52 - Load Balancer Configuration (cont.)

12. Right-click HCLiAutomateWEBAPI and click Explore.

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



Figure 53 - 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 *Web API Port*

```
<add key="URL" value="http://localhost:8080/KRS/KeyManagement.svc" />
```

Figure 54 - 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**.

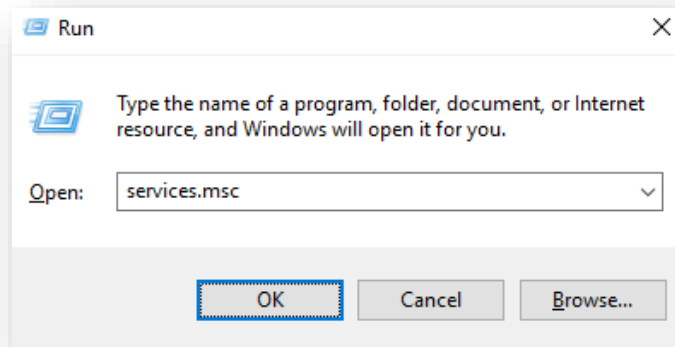


Figure 55 - Load Balancer Configuration (cont.)

18. Click OK to open Windows Services.

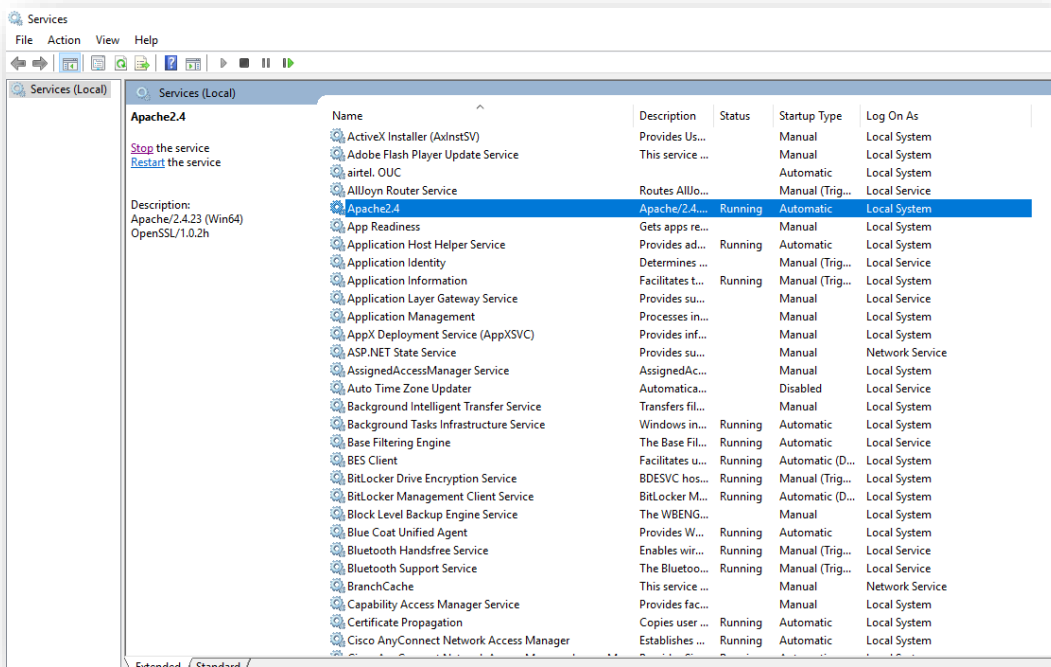


Figure 56 - Load Balancer Configuration (cont.)

19. Search for HCL.iAutomate.Listener.

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

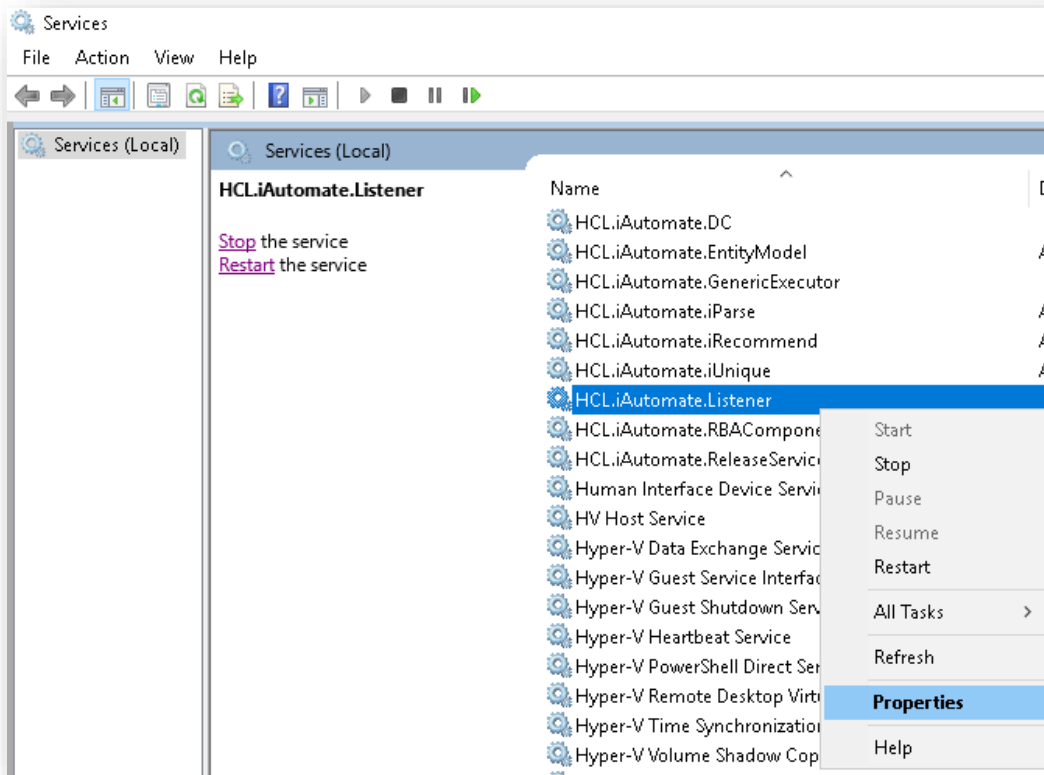


Figure 57 - Load Balancer Configuration (cont.)

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

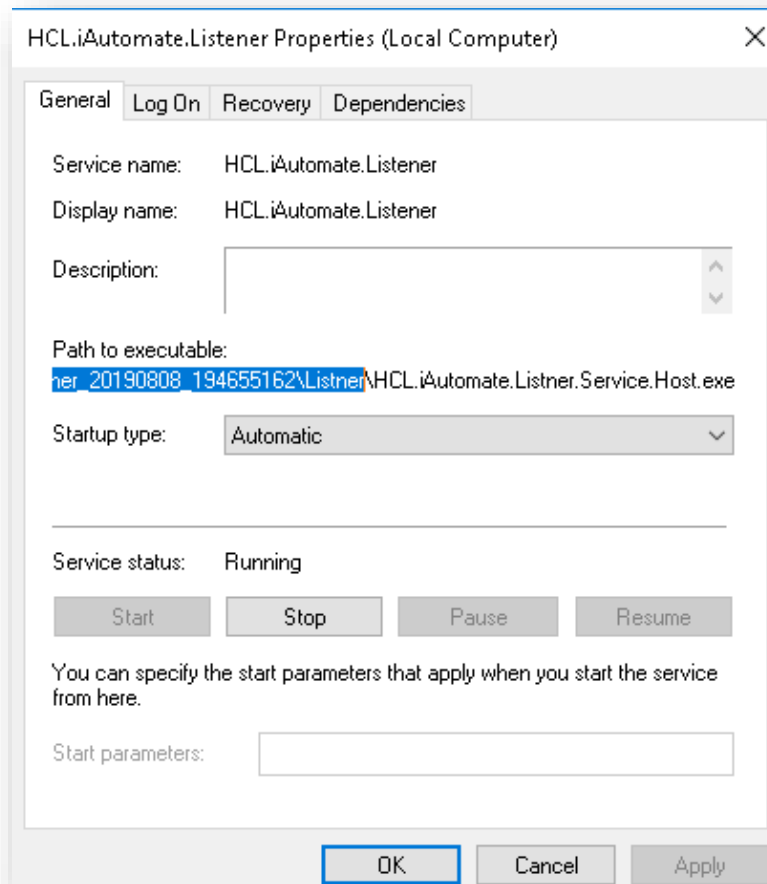


Figure 58 - Load Balancer Configuration (cont.)

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

23. Search for **HCL.iAutomate.Listener.Service.Host** config file and open it in a Notepad.



Figure 59 - Load Balancer Configuration (cont.)

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

```
<add key="URL" value="http://localhost:8080" />
```

Figure 60 - Load Balancer Configuration (cont.)

25. Save the file for changes to be reflected.

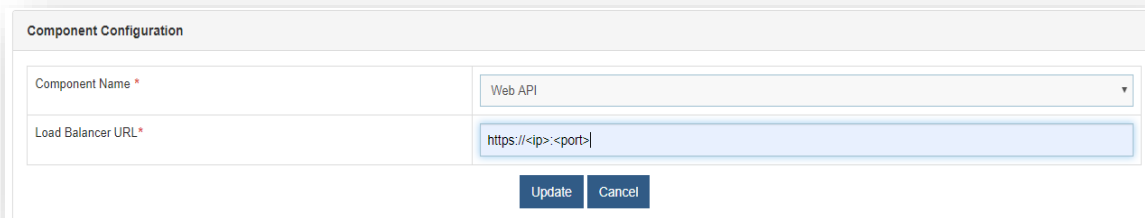
26. Select the service and click **Restart** to restart the services.

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

27. Login to BigFix Runbook AI using the **Super Admin** credentials.

28. Roll-over the Environment and click Configuration.

29. Select **Component Name** as '**Web API**'. Change the Load Balancer URL to the Load Balancer IP.



Component Configuration

Component Name \* Web API

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

Update Cancel

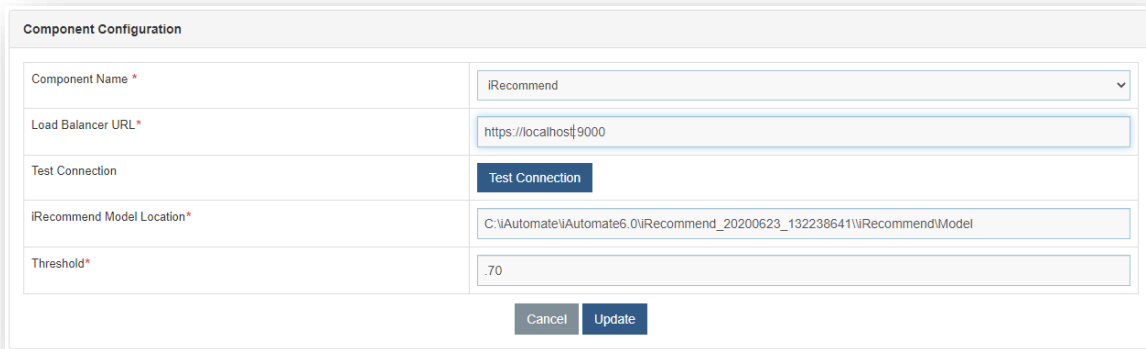
Figure 61 – Component Configuration

30. Click **Update** to save the changes.

Above step has to be repeated for all the components.

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





The screenshot shows a 'Component Configuration' window. It contains the following fields and controls:

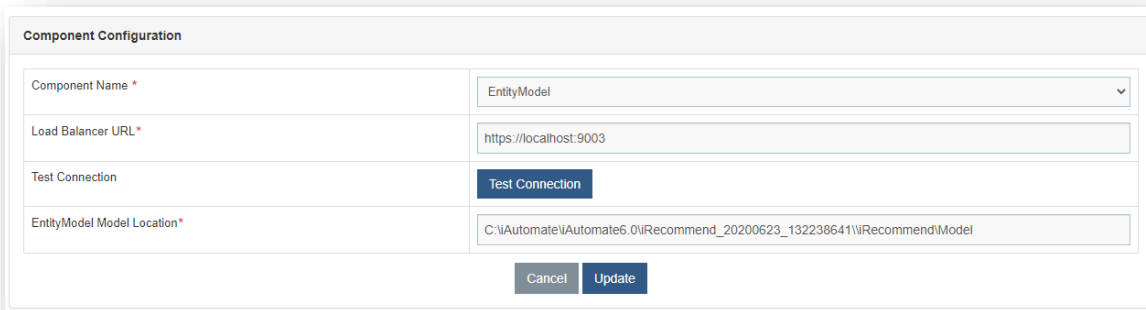
- Component Name \***: A dropdown menu with 'iRecommend' selected.
- Load Balancer URL \***: A text input field containing 'https://localhost:9000'.
- Test Connection**: A blue button labeled 'Test Connection'.
- iRecommend Model Location \***: A text input field containing 'C:\Automate\Automate6.0\iRecommend\_20200623\_132238641\iRecommend\Model'.
- Threshold\***: A text input field containing '.70'.

At the bottom of the form are two buttons: 'Cancel' and 'Update'.

Figure 62 - Component Configuration (cont.)

32. Click **Update** to save the changes.

33. Additionally, for the **Component Name** as **Entity Model**, provide the path of the shared drive location in the **EntityModel Model Location** field.



The screenshot shows the 'Component Configuration' window with the following changes:

- Component Name \***: The dropdown menu now shows 'EntityModel'.
- Load Balancer URL \***: The text input field now contains 'https://localhost:9003'.
- EntityModel Model Location \***: The text input field now contains 'C:\Automate\Automate6.0\iRecommend\_20200623\_132238641\iRecommend\Model'.

The 'Test Connection' button and the 'Cancel'/'Update' buttons at the bottom remain the same.

Figure 63 - Component Configuration (cont.)

34. Click **Update** to save the changes.

35. Additionally, for the **Component Name** i.e. **Crawler**, provide the path of the shared drive location in the **Data Directory Location** field.

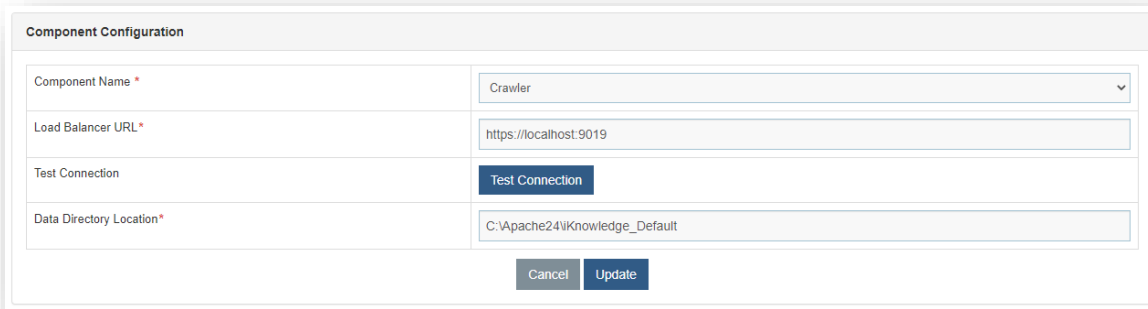


Figure 64 - Component Configuration (cont.)

36. 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 BigFix Runbook AI 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 BigFix Runbook AI with Document Search and Analysis in non-HA mode

### 4.5.1 Scenario

An Organization has asked for installation of BigFix Runbook AI 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 has been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing BigFix Runbook AI 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 BigFix Runbook AI 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 BigFix Runbook AI installer exe

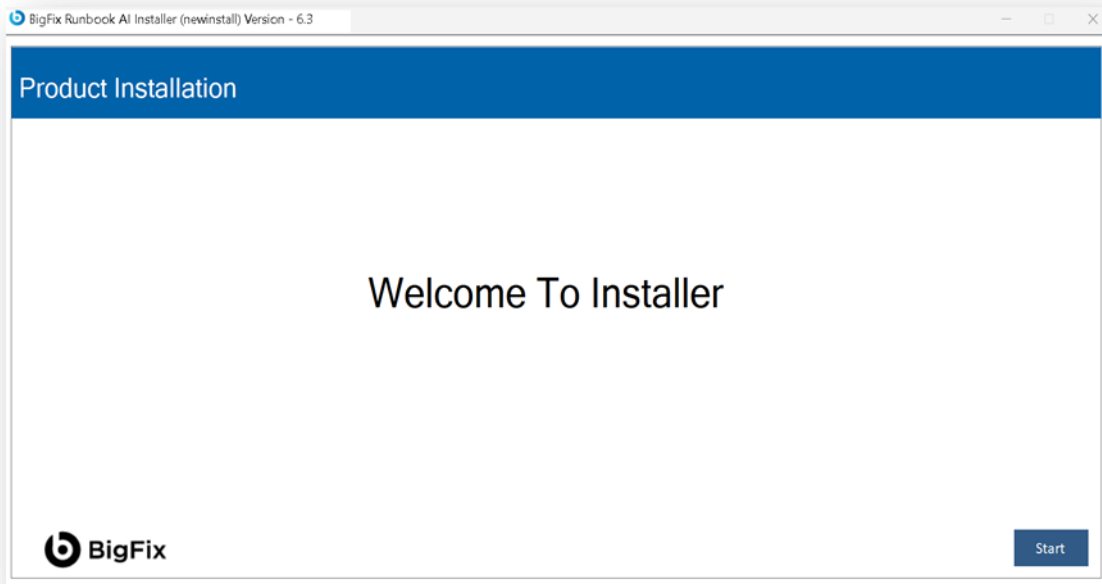
## 4.5.3 Solution

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

To install BigFix Runbook AI components on Web and Application server, follow the steps mentioned in

[Lab Exercise 2.](#)

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



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

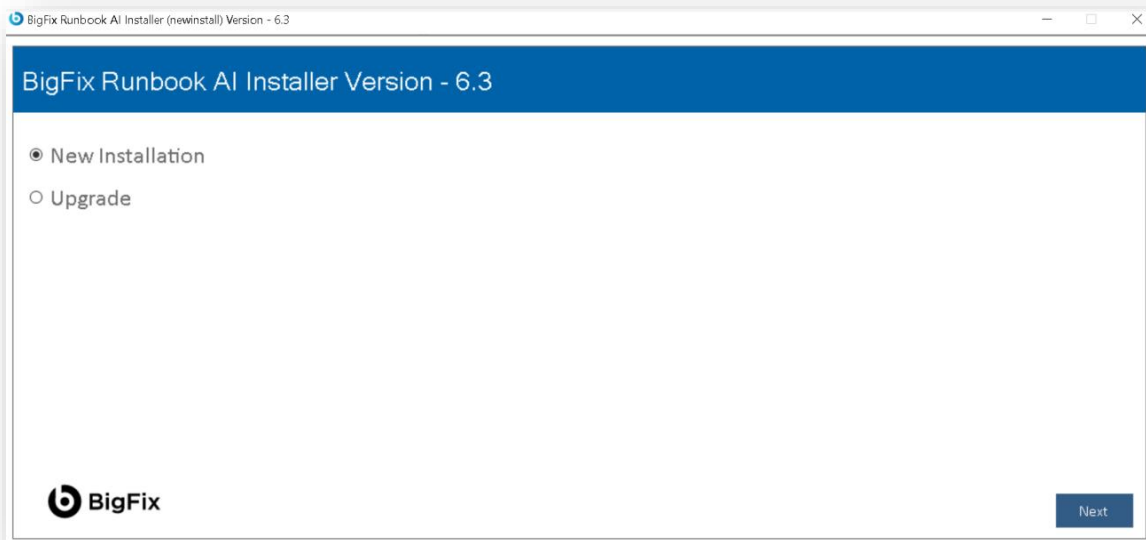


Figure 65 – BigFix Runbook AI Installation

3. Click **Next**.

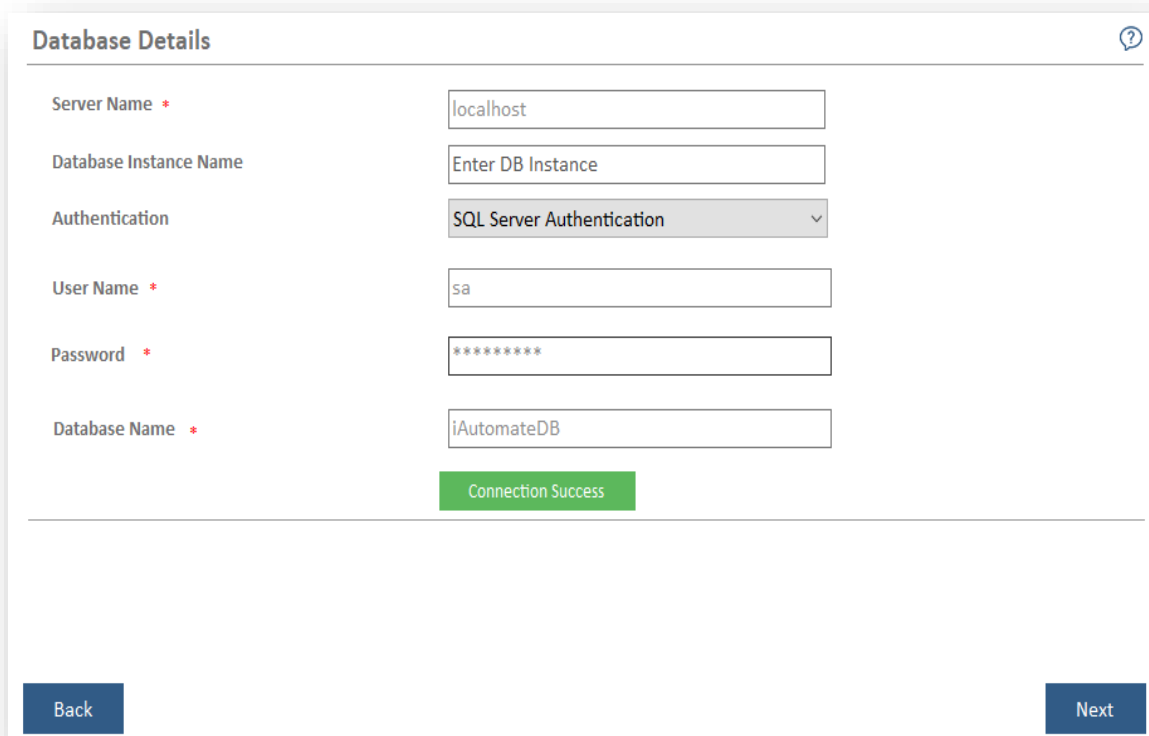
The page lists the setup required for installation in the left pane and the details of the selected setup in the right pane.

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, **iAutomateDB** 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.



The screenshot shows a web form titled "Database Details" with a help icon in the top right corner. The form contains the following fields and values:

- Server Name \***: localhost
- Database Instance Name**: Enter DB Instance
- Authentication**: SQL Server Authentication (dropdown menu)
- User Name \***: sa
- Password \***: \*\*\*\*\*
- Database Name \***: iAutomateDB

Below the fields, a green button labeled "Connection Success" is visible. At the bottom of the form, there are two blue buttons: "Back" on the left and "Next" on the right.

Figure 66 – 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.

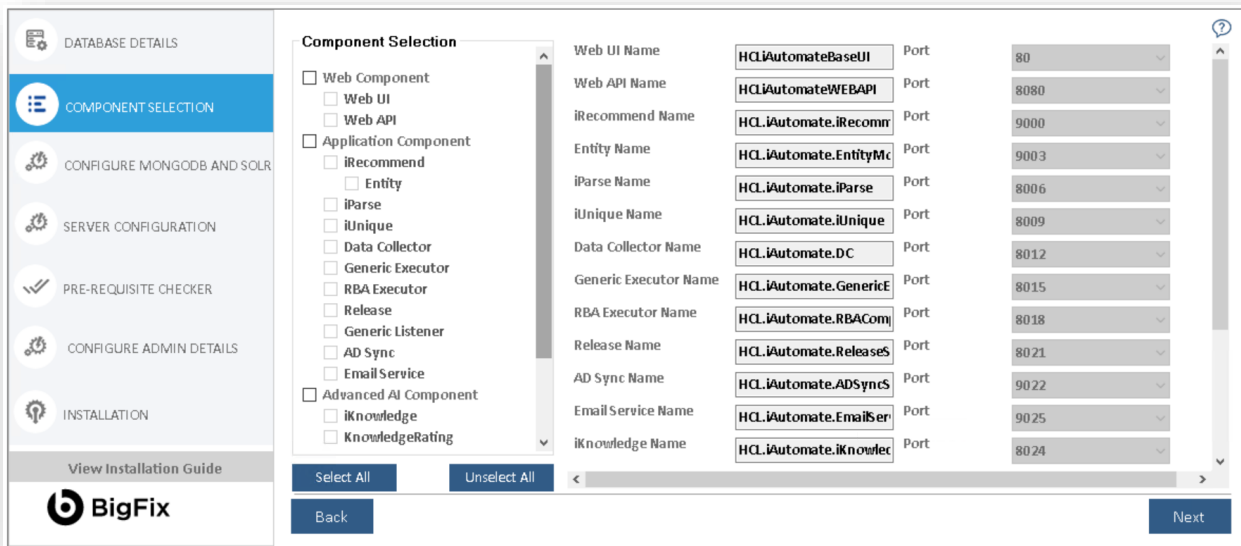


Figure 67 – Component Selection

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

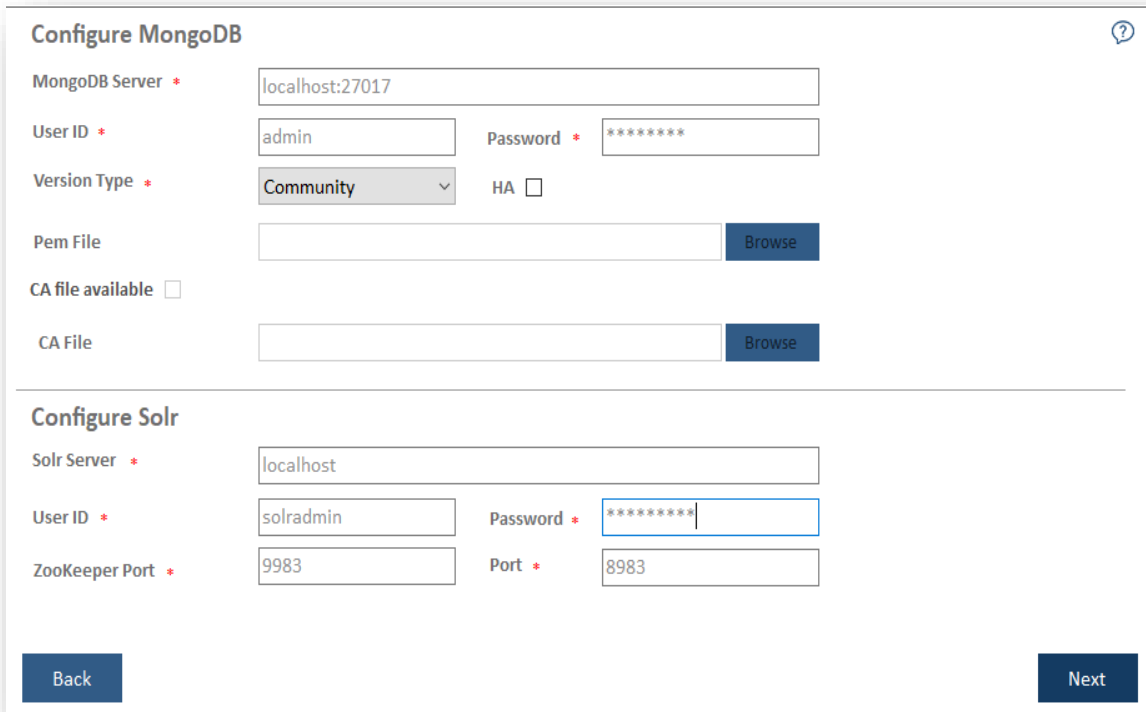
3. Click **Next**, to continue with the installation.

### 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.



The screenshot shows a configuration window with two main sections: "Configure MongoDB" and "Configure Solr".

**Configure MongoDB:**

- MongoDB Server: localhost:27017
- User ID: admin
- Password: \*\*\*\*\*
- Version Type: Community (dropdown menu)
- HA:
- Pem File: [empty field] with a "Browse" button
- CA file available:
- CA File: [empty field] with a "Browse" button

**Configure Solr:**

- Solr Server: localhost
- User ID: solradmin
- Password: \*\*\*\*\*
- ZooKeeper Port: 9983
- Port: 8983

At the bottom of the window, there are "Back" and "Next" buttons.

Figure 68 – 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.

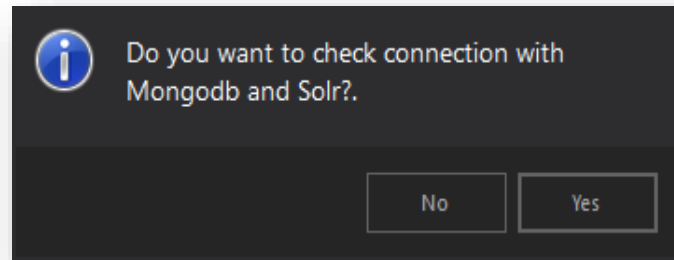


Figure 69 - Configure Solr

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 BigFix Runbook AI 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.



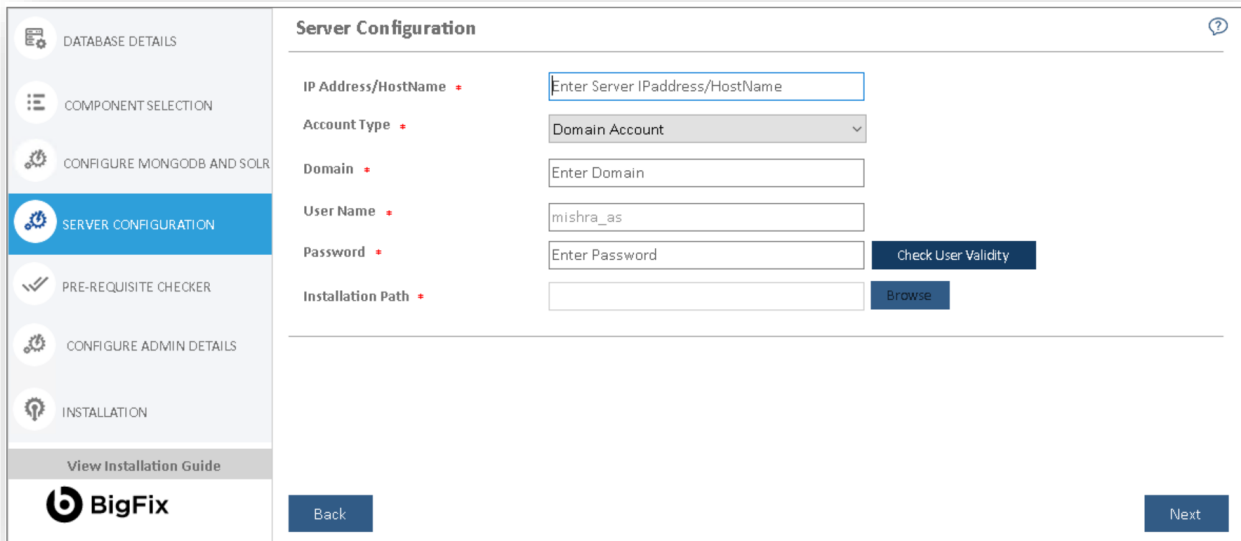


Figure 70 – Server Configuration

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 BigFix Runbook AI 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.

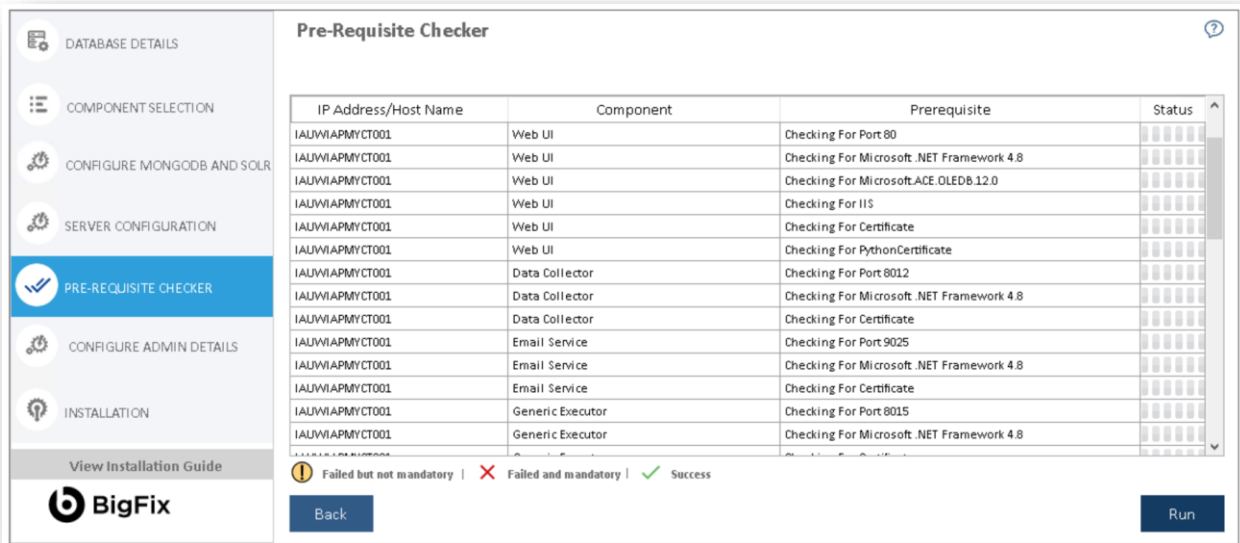


Figure 71 – Pre-Requirement Checker

The Pre-requisite Checker always runs as part of the BigFix Runbook AI setup.

A progress bar appears while the **Pre-Requirement Checker** runs.

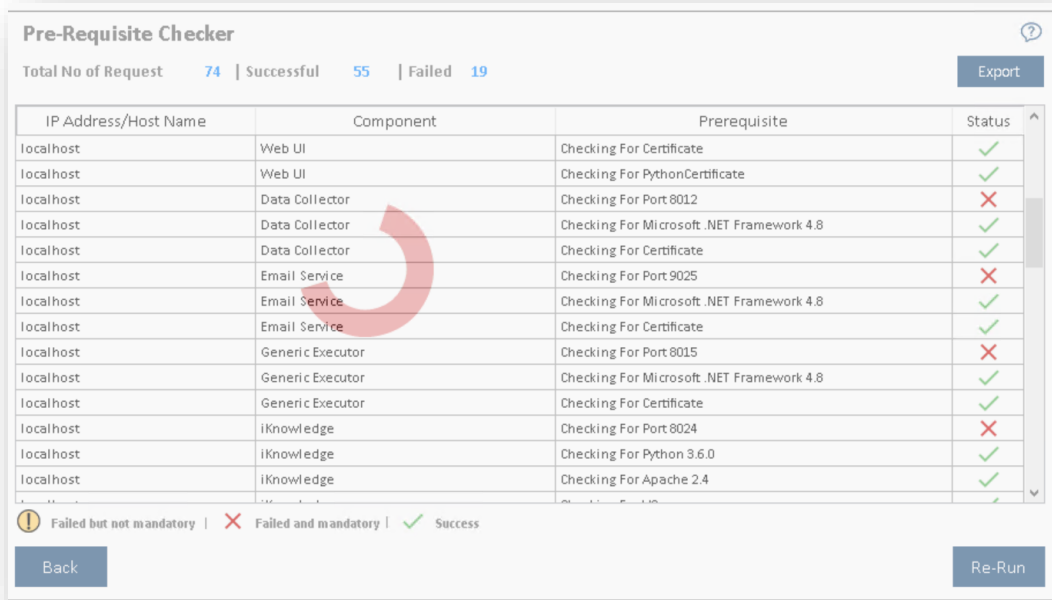


Figure 72 - Pre-Requirement Checker (cont.)

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

**Pre-Requisite Checker** ?

Total No of Request **46** | Successful **46** | Failed **0** Export

IP Address/Host Name	Component	Prerequisite	Status
localhost	Web UI	Checking For Microsoft.ACE.DLEDB.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 73 - Pre-Requisite Checker (cont.)

- In case of Failure, **Re-Run** button appears. Please ensure that the identified issue is resolved and re-run the pre-requisite checker.

Please refer 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.

- Upon successful validation of all pre-requisites, **Next** is enabled.
- Click **Next** to get to the **Configure Admin Details** view.

**Pre-Requisite Checker** ?

Total No of Request **46** | Successful **46** | Failed **0** Export

IP Address/Host Name	Component	Prerequisite	Status
localhost	Web UI	Checking For Microsoft.ACE.DLEDB.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 74 - Pre-Requisite Checker (cont.)

### 4.5.3.7 Configure Admin Details

To configure Super Administrator user for BigFix Runbook AI, 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.

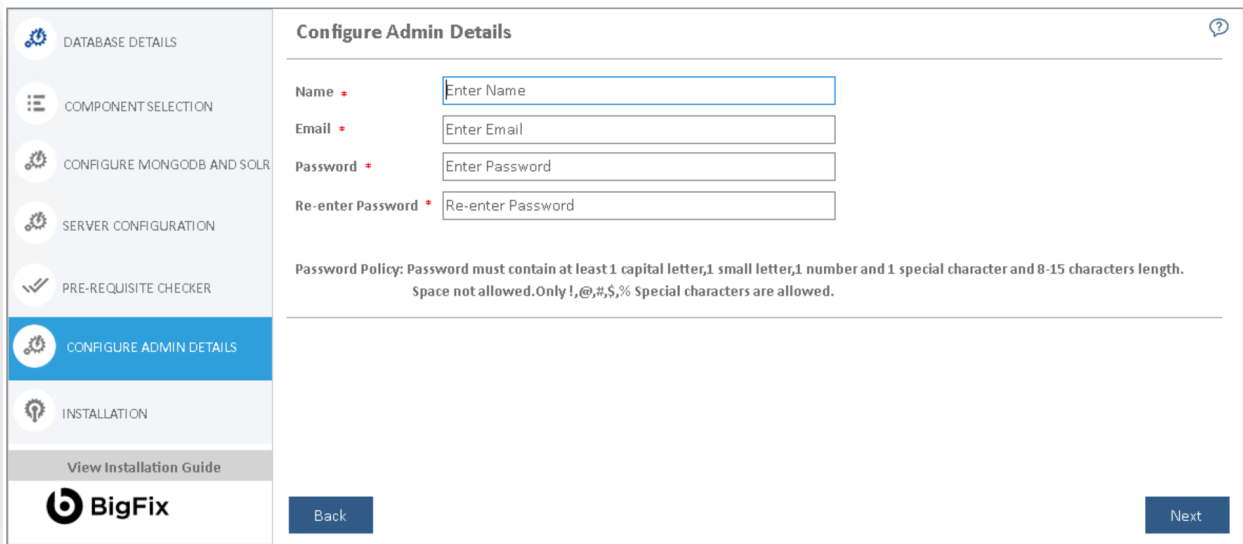


Figure 75 - Configure Admin Details

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.

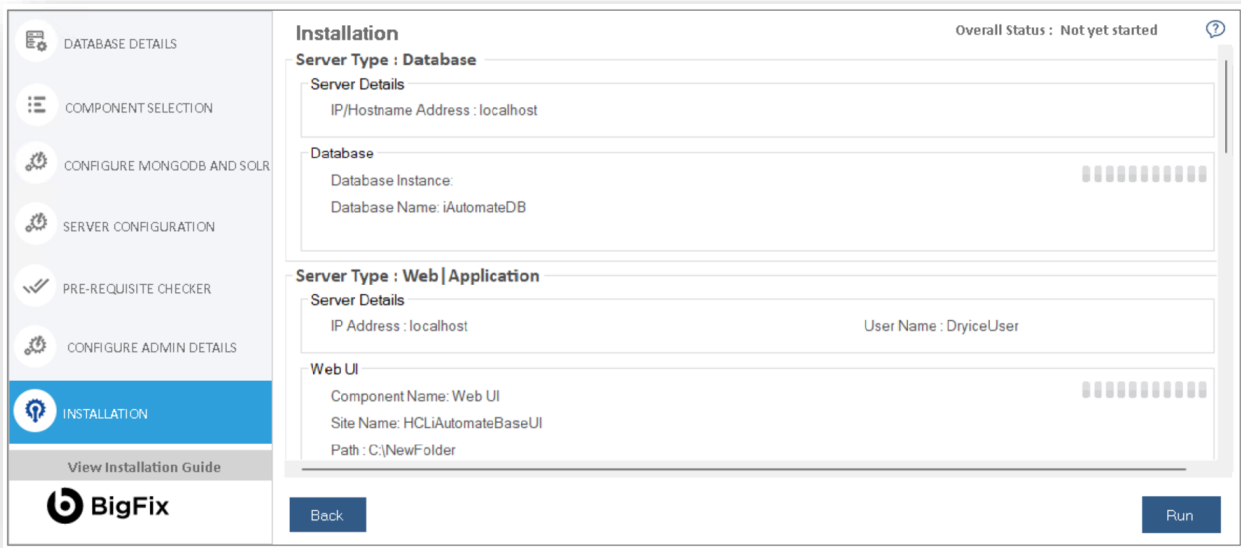


Figure 76 – Installation

The progress bar displays the installation progress.

3. In case of any installation failure, error messages for the corresponding component appears 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 BigFix Runbook AI services still running, remove them manually.

Contact the product team administrator for further assistance.

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

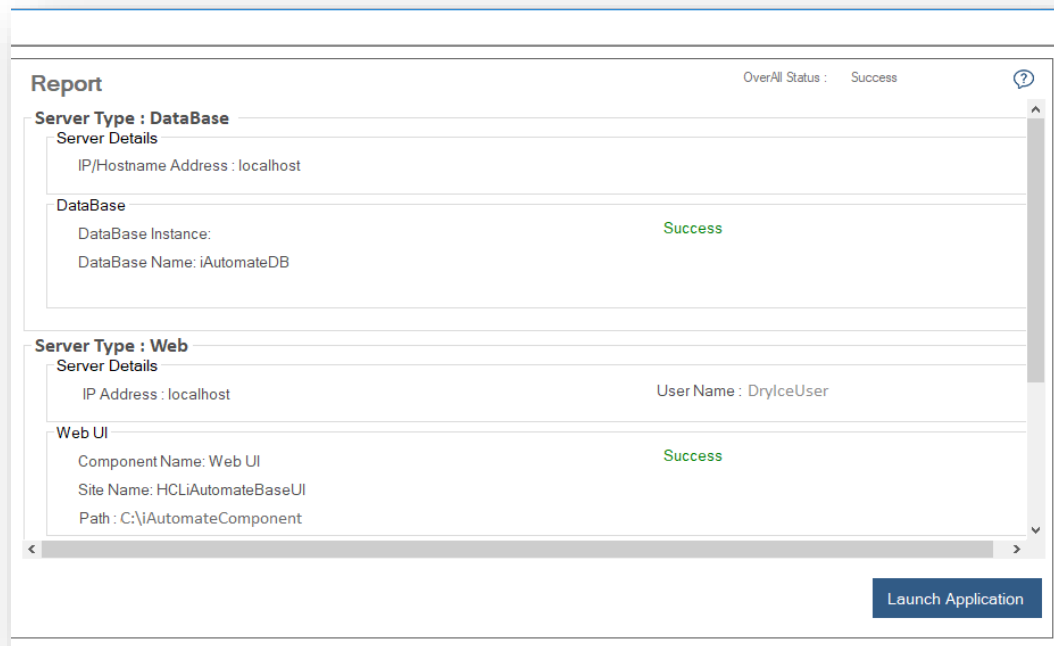


Figure 77 – Installation Report

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 BigFix Runbook AI 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 BigFix Runbook AI with Document Search and Analysis in HA mode

### 4.6.1 Scenario

An organization has asked for installation of BigFix Runbook AI 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 has been asked to prepare the environment based on the requirements.

In this lab, we will showcase the detailed procedure for installing BigFix Runbook AI 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 BigFix Runbook AI 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 pre-requisites 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 BigFix Runbook AI 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 BigFix Runbook AI 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 BigFix Runbook AI components in a secure mode by changing HTTP to HTTPS

### 4.7.1 Scenario

An organization has asked for deployment of BigFix Runbook AI 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 the secure communication by changing HTTP to HTTPS. It can be enabled for both the BigFix Runbook AI 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 BigFix Runbook AI 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. 'HCLiAutomate', please follow the below steps:

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

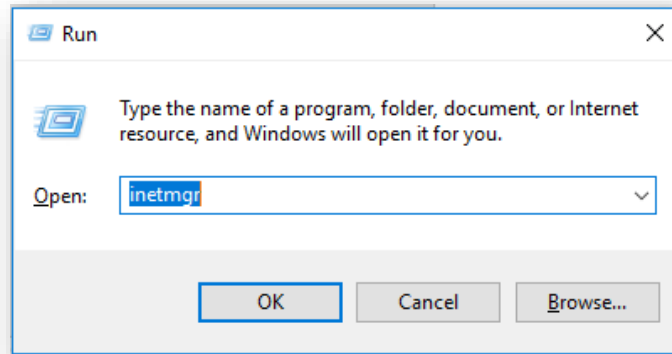


Figure 78 - Hosting KRS from HTTP to HTTPS

3. Expand Sites and click HCLiAutomateKRS.

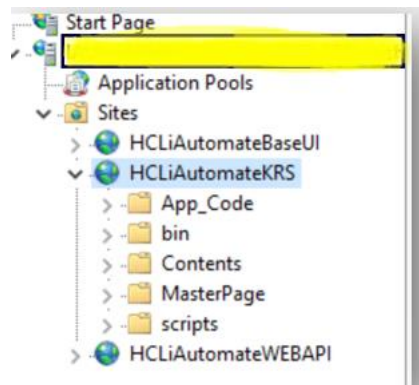


Figure 79 - Hosting KRS from HTTP to HTTPS (cont.)

4. Click **Bindings** in the **Edit Site** section.

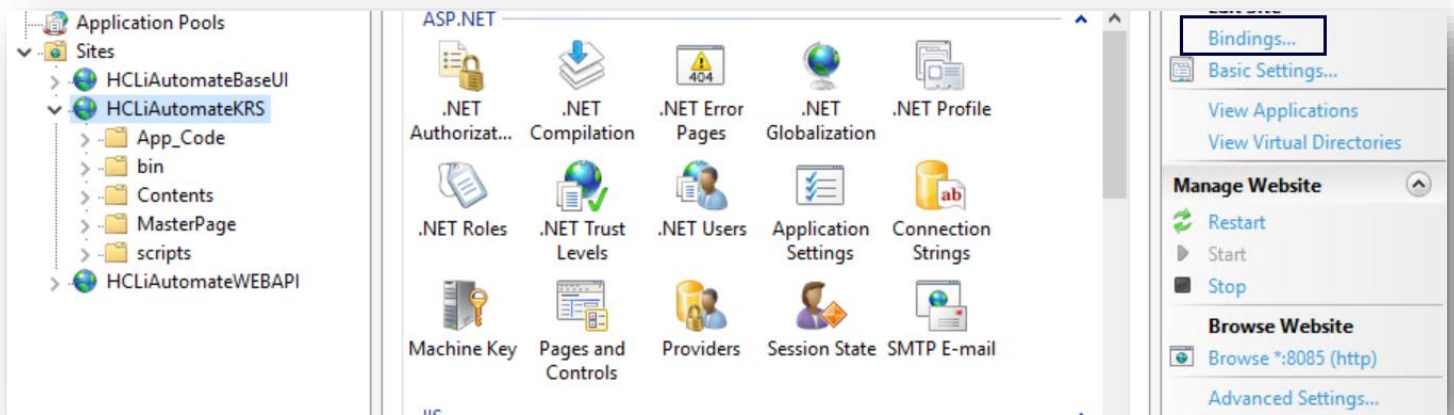


Figure 80 - Hosting KRS from HTTP to HTTPS (cont.)

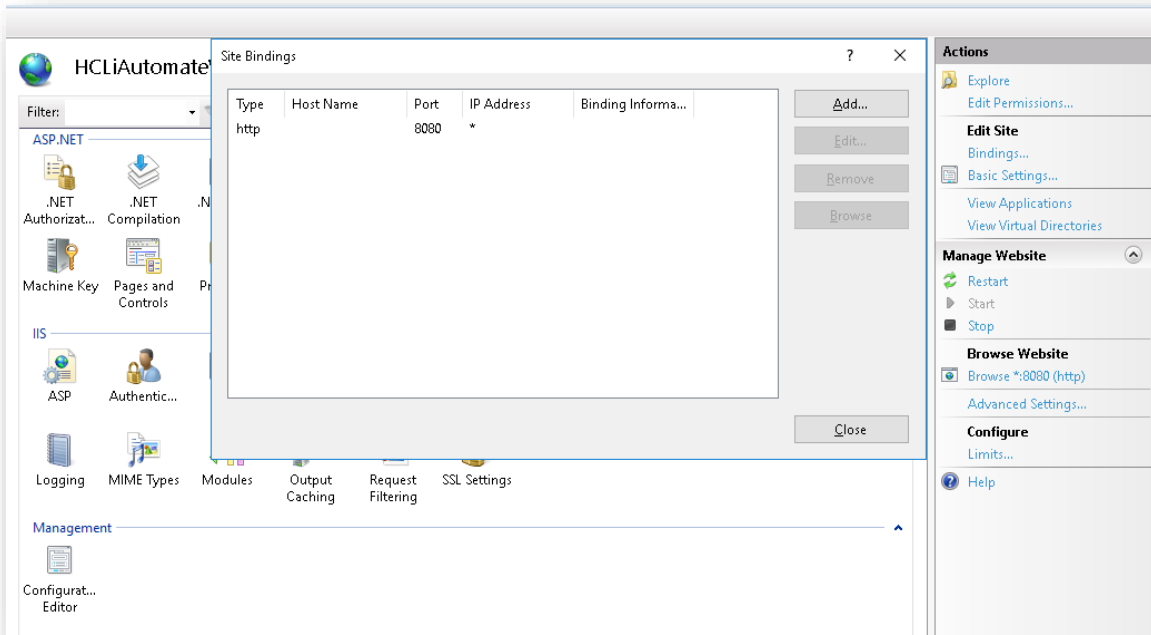


Figure 81 - Hosting KRS from HTTP to HTTPS (cont.)

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

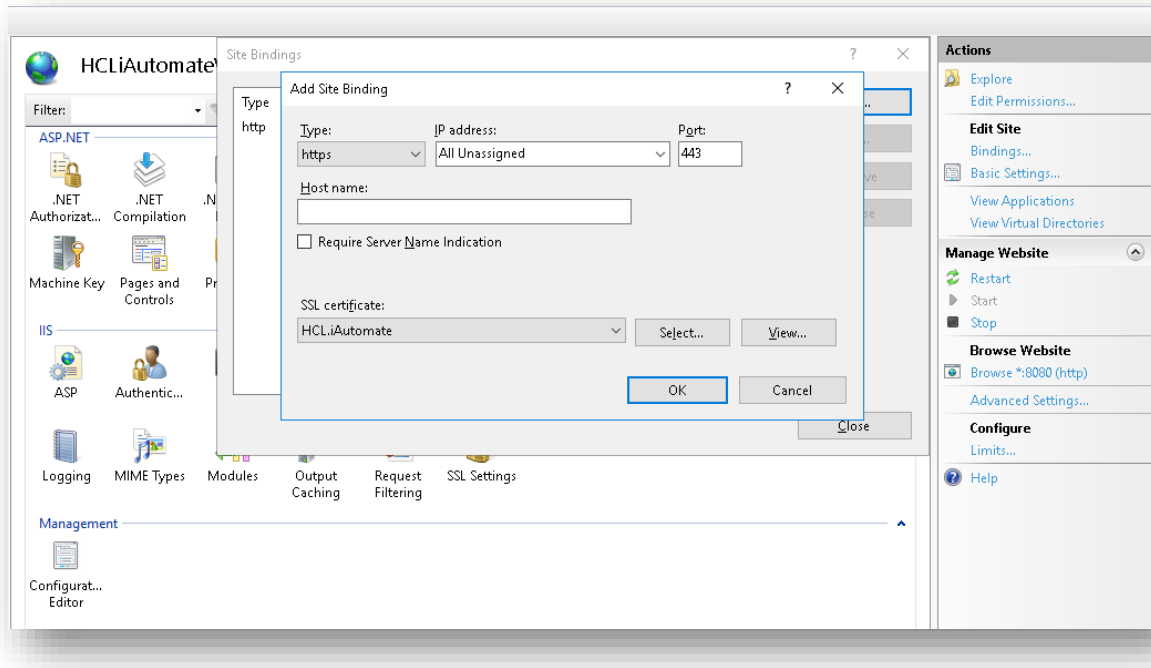


Figure 82 - Hosting KRS from HTTP to HTTPS (cont.)

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



Figure 83 - 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 84 - 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 85 - 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. 'HCLiAutomate', please follow the below steps:

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

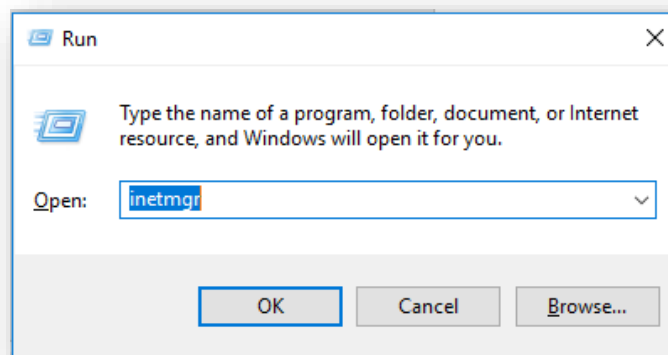


Figure 86 - Hosting Base user interface from HTTP to HTTPS

3. Expand Sites and click HCLiAutomateBaseUI.

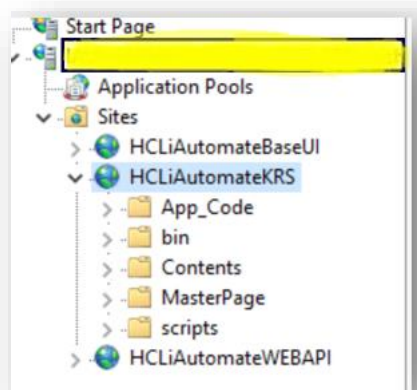


Figure 87 - Hosting Base user interface from HTTP to HTTPS (cont.)

4. Click **Bindings** in the **Edit Site** section.

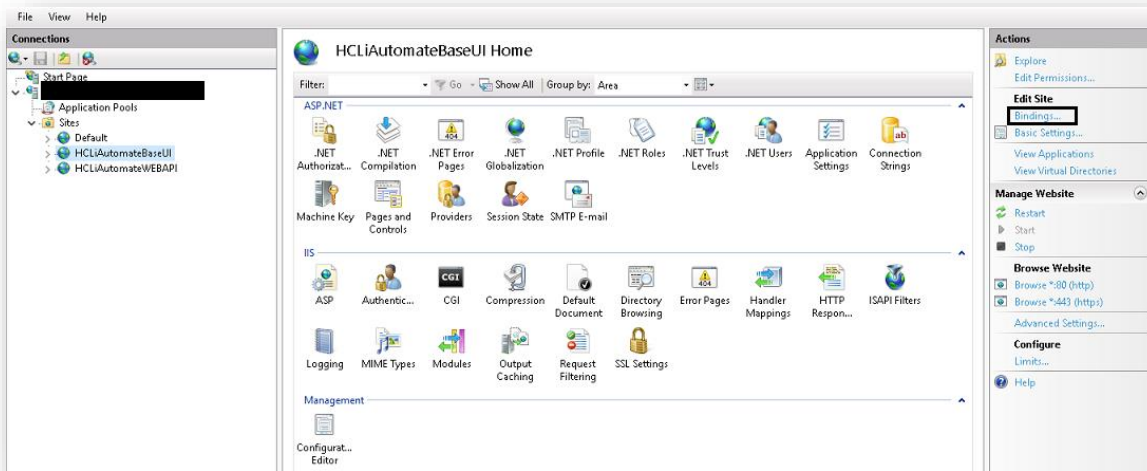


Figure 88 - HostingBase user interface from HTTP to HTTPS (cont.)

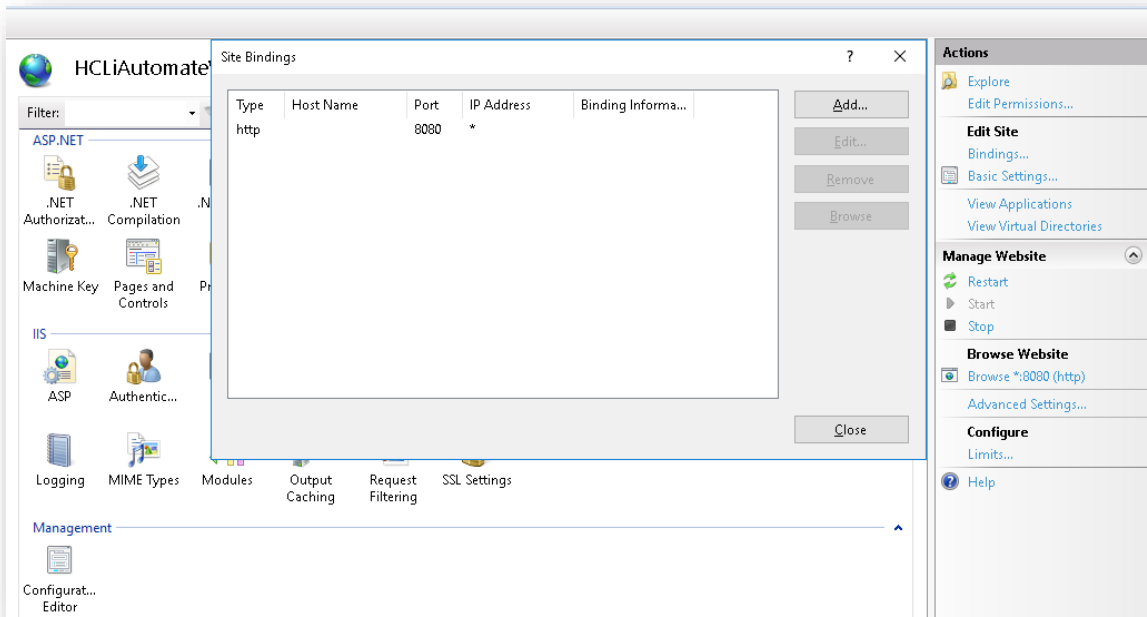


Figure 89 - Hosting Base user interface from HTTP to HTTPS (cont.)

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

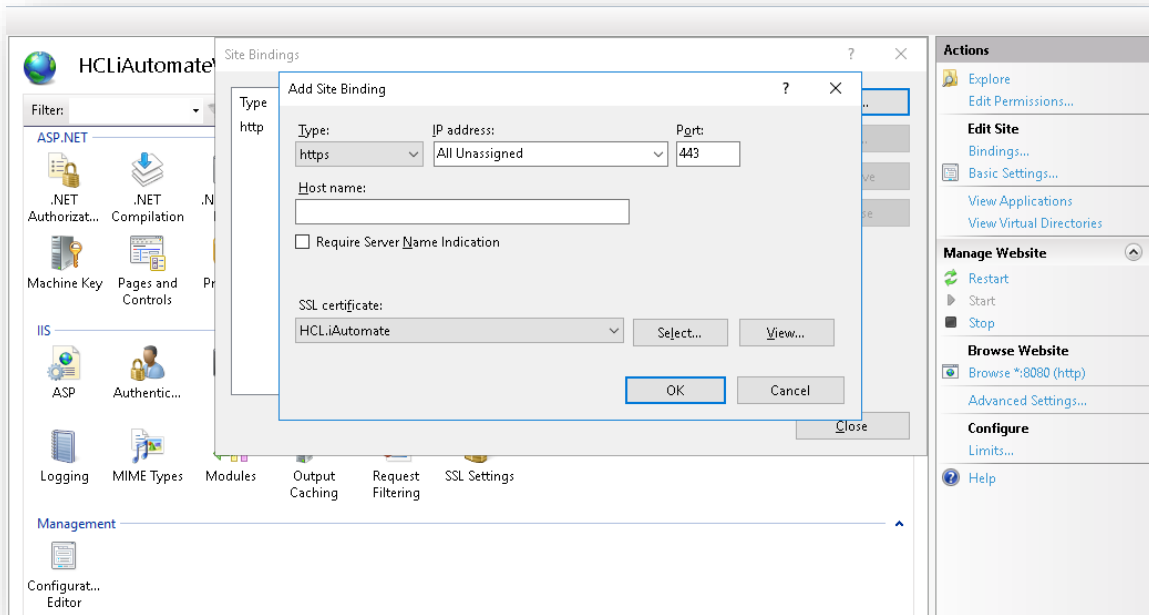


Figure 90 - Hosting Base user interface from HTTP to HTTPS (cont.)

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



Figure 91 - 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="http://<IP>:<Port>/KRS/KeyManagement.svc" />
```

Figure 92 - 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 93 - 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. 'HCLiAutomate', please follow the below steps:

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

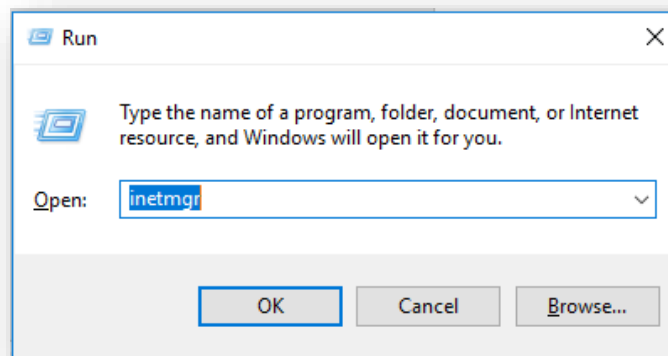


Figure 94 - Hosting Web API from HTTP to HTTPS

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

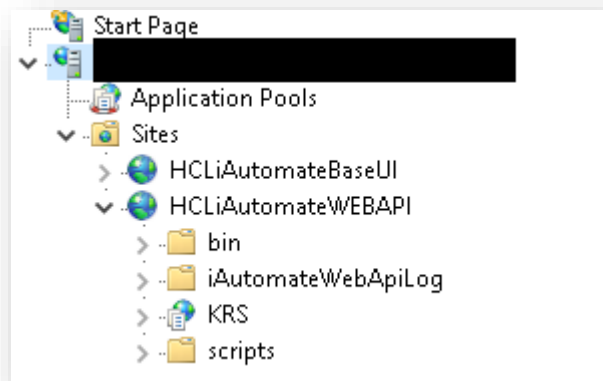


Figure 95 - Hosting Web API from HTTP to HTTPS (Cont.)

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





Figure 96 - 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="http://<IP>:<Port>/KRS/KeyManagement.svc" />
```

Figure 97 - 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 98 - 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**.

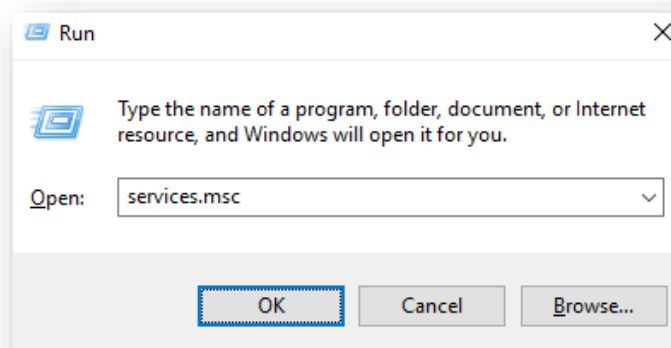


Figure 99 - Hosting Listener from HTTP to HTTPS

2. Click **OK** to open the **Windows Services**.

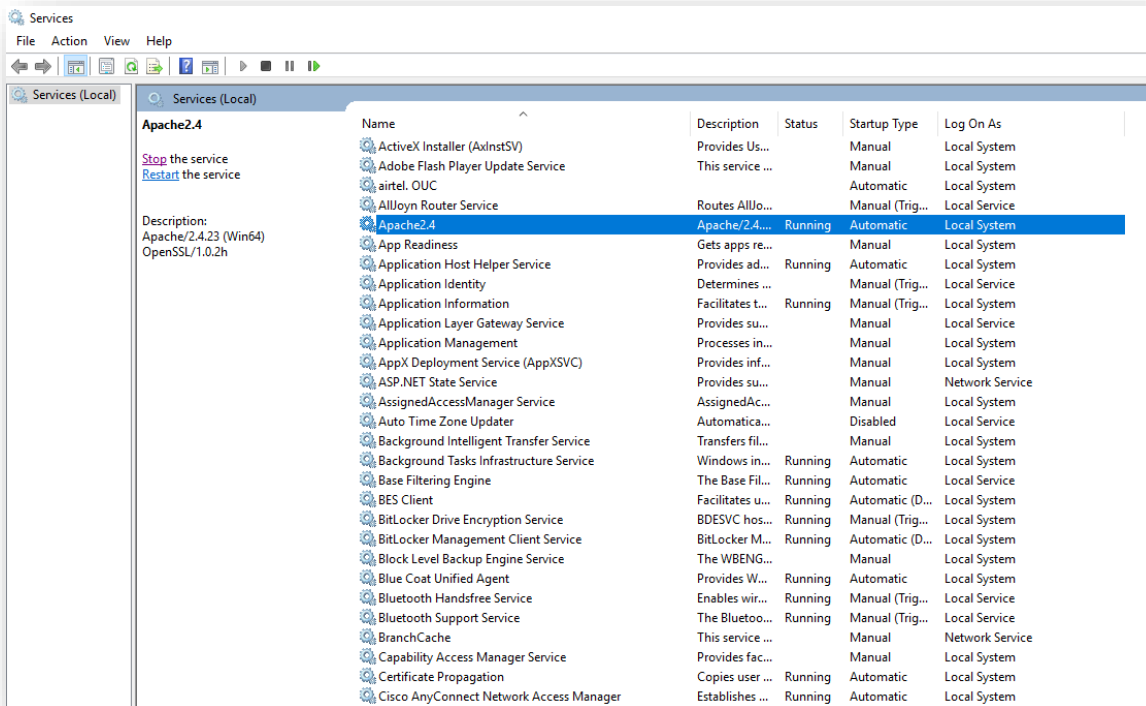


Figure 100 - Hosting Listener from HTTP to HTTPS

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

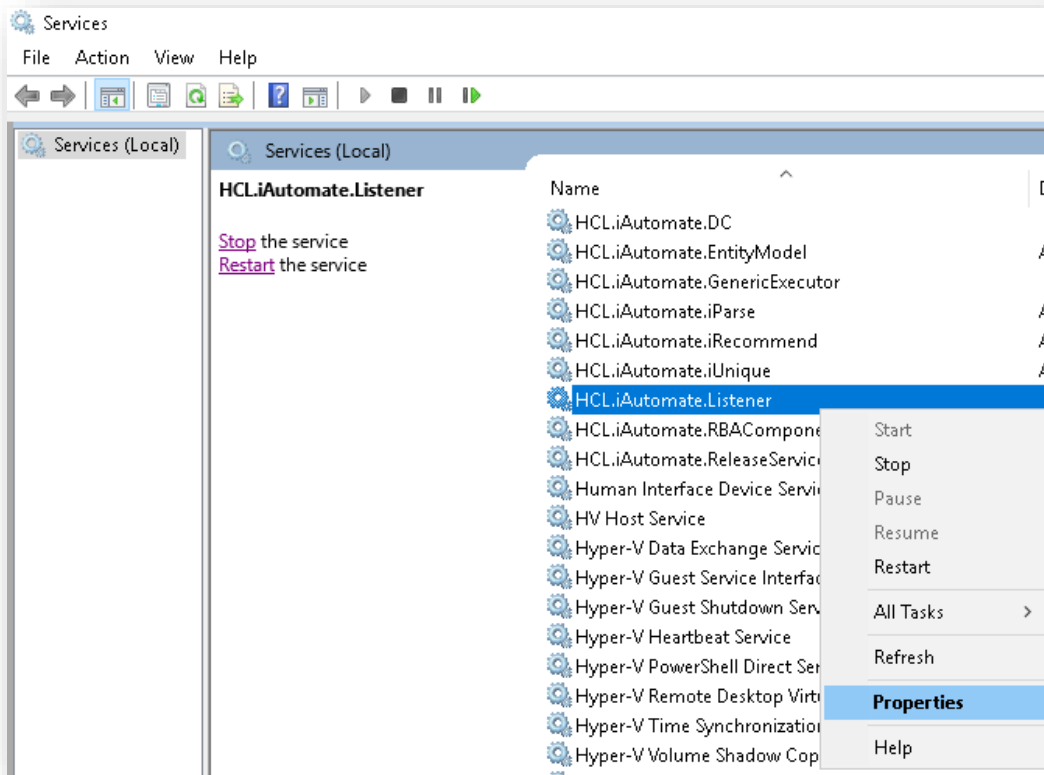


Figure 101 - Hosting Listener from HTTP to HTTPS (cont.)

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

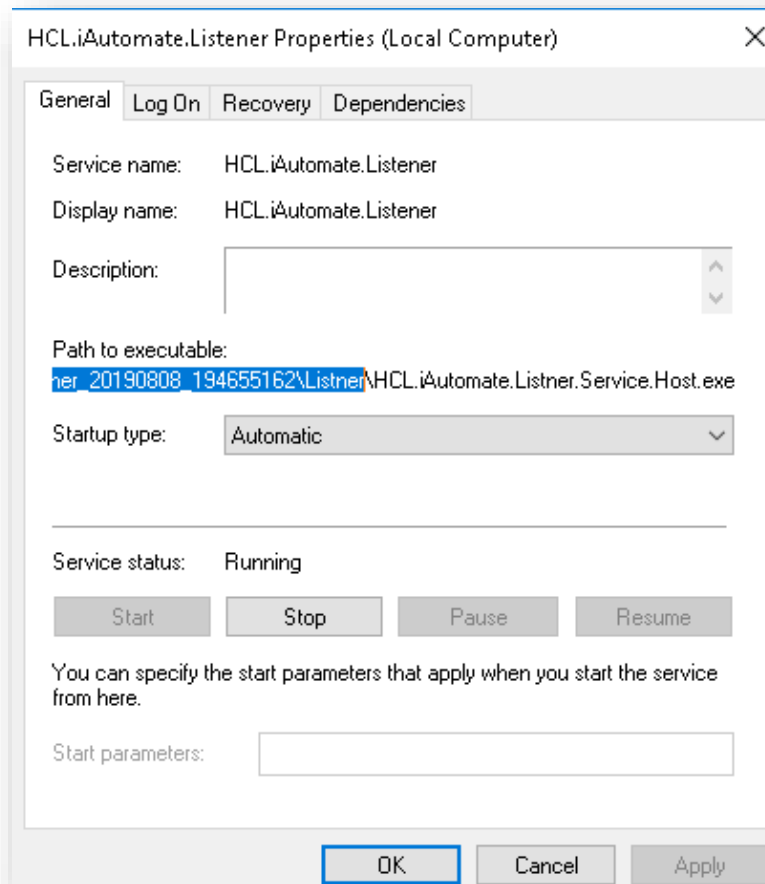


Figure 102 - Hosting Listener from HTTP to HTTPS (cont.)

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.



Figure 103 - 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 104 - Hosting Listener from HTTP to HTTPS (cont.)

- 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" />
```

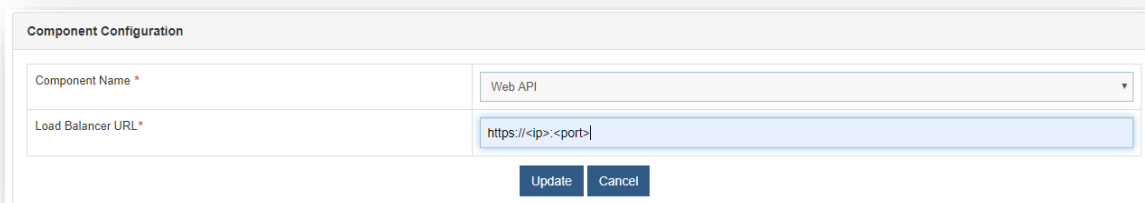
Figure 105- Hosting Web API from HTTP to HTTPS (Cont.)

- Save the file for changes to be reflected.
- 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:

- Login to BigFix Runbook AI using the **Super Admin** credentials.
- Roll-over to the **Environment** and click **Configuration**.
- Select **Component Name** as **Web API** and KRS.
- Change the **Load Balancer URL** from HTTP to HTTPS.



The screenshot shows a 'Component Configuration' dialog box. It has two main input fields: 'Component Name \*' and 'Load Balancer URL \*'. The 'Component Name \*' field is a dropdown menu with 'Web API' selected. The 'Load Balancer URL \*' field is a text input containing the template 'https://<ip>:<port>'. Below the input fields are two buttons: 'Update' and 'Cancel'.

Figure 106 - Changing LB IP via GUI from HTTP to HTTPS

- Click **Update** to save the changes.

### 4.7.3.1.2 Components

This section describes how to enable the secure communication by changing HTTP to HTTPS for the BigFix Runbook AI 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**.

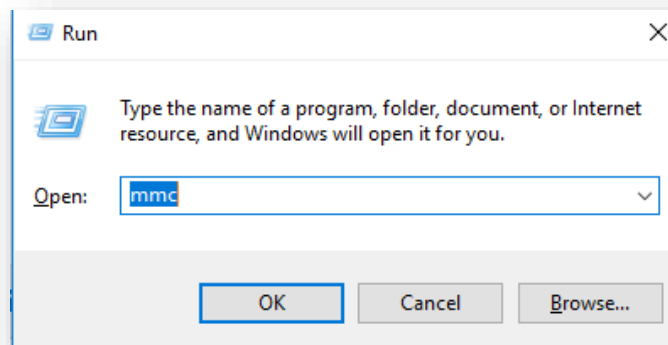


Figure 107 - Identify Thumbprint of the Certificate

2. Click OK to open the Microsoft Management Console.

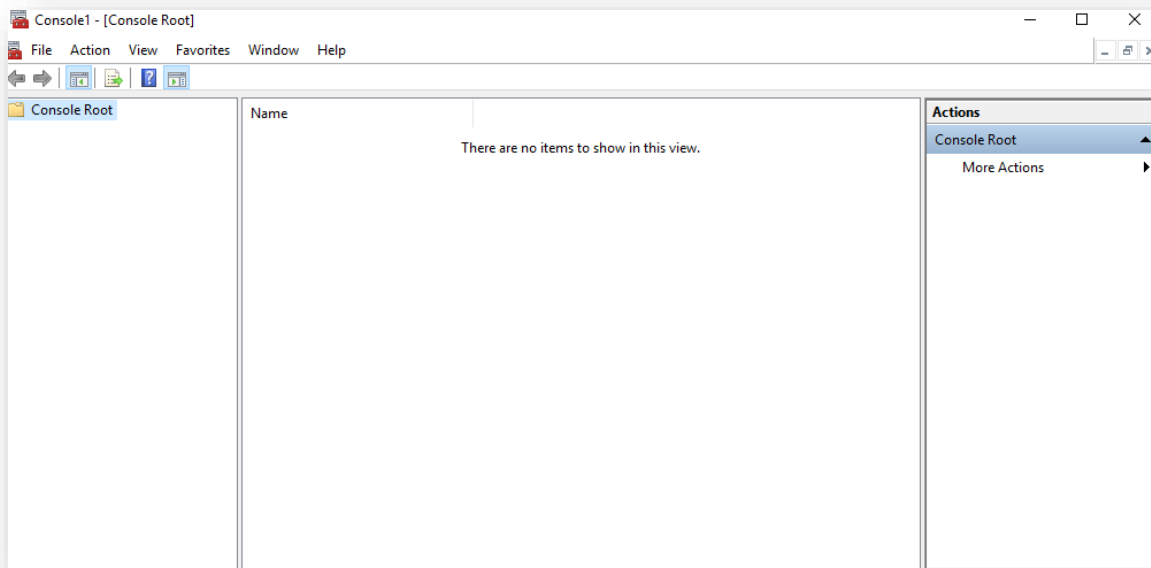


Figure 108 - Identify Thumbprint of the Certificate (cont.)

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

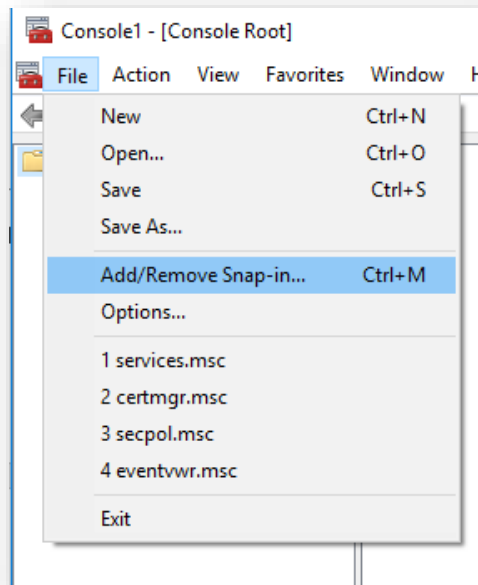


Figure 109 - Identify Thumbprint of the Certificate (cont.)

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

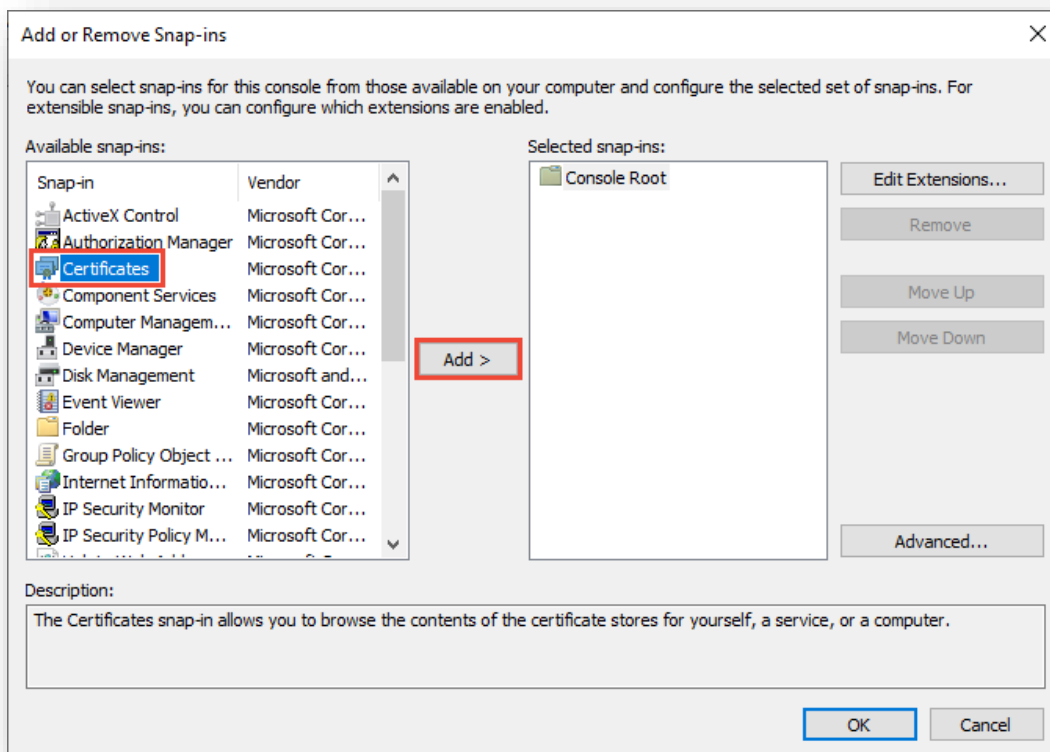


Figure 110 - Identify Thumbprint of the Certificate (cont.)

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

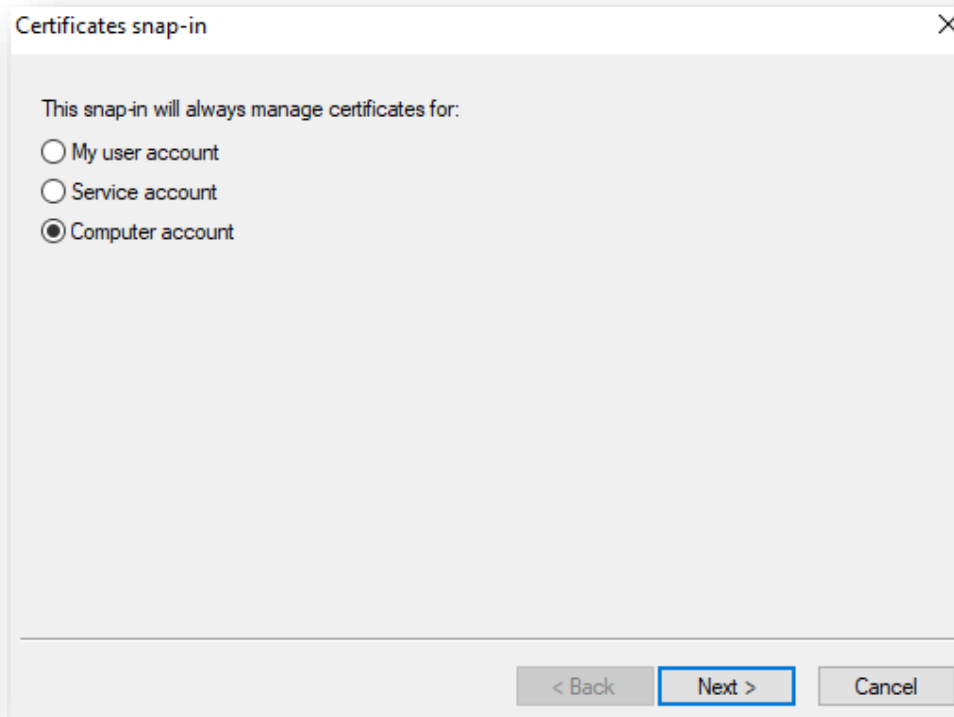
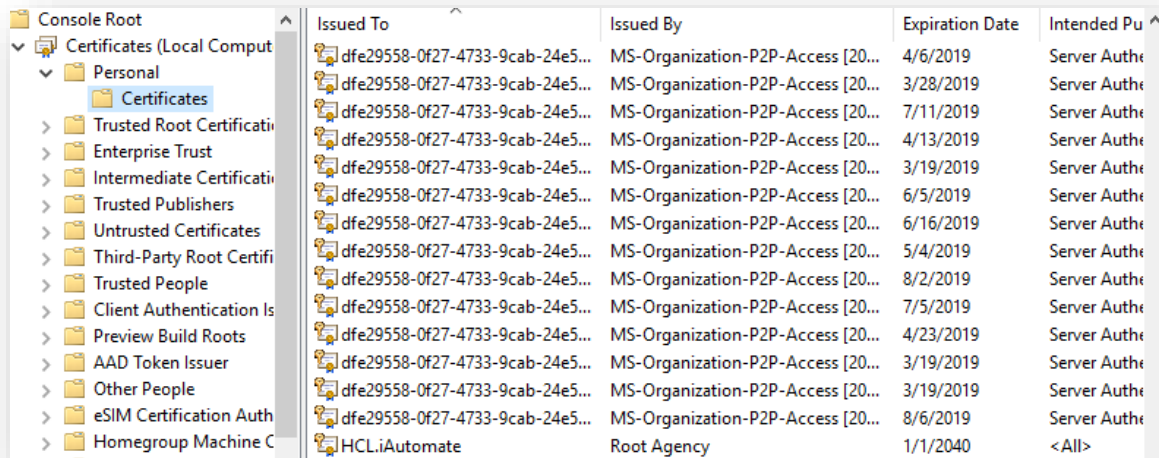


Figure 111 - Identify Thumbprint of the Certificate (cont.)

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
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	4/6/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/28/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	7/11/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	4/13/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/19/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	6/5/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	6/16/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	5/4/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	8/2/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	7/5/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	4/23/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/19/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	3/19/2019	Server Auth
dfе29558-0f27-4733-9cab-24e5...	MS-Organization-P2P-Access [20...	8/6/2019	Server Auth
HCLiAutomate	Root Agency	1/1/2040	<All>

Figure 112 - 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.

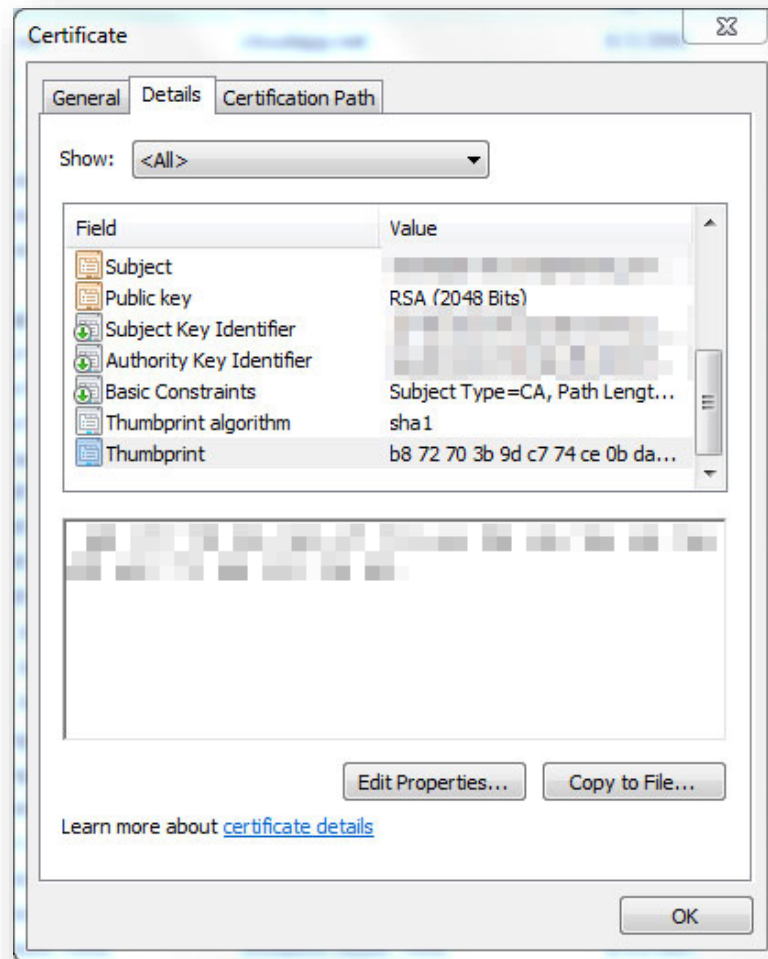


Figure 113 - Identify Thumbprint of the Certificate (cont.)

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**.

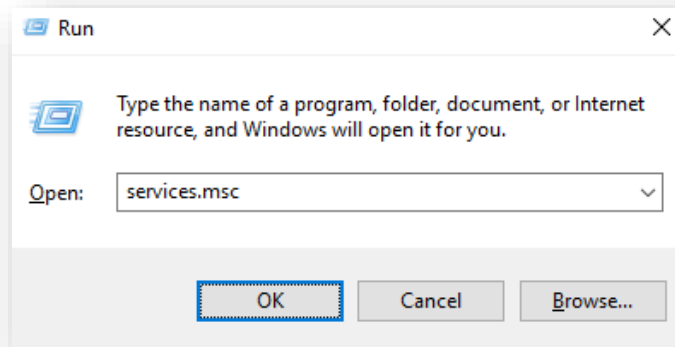


Figure 114 - Hosting Listener from HTTP to HTTPS

2. Click OK to open Windows Services.

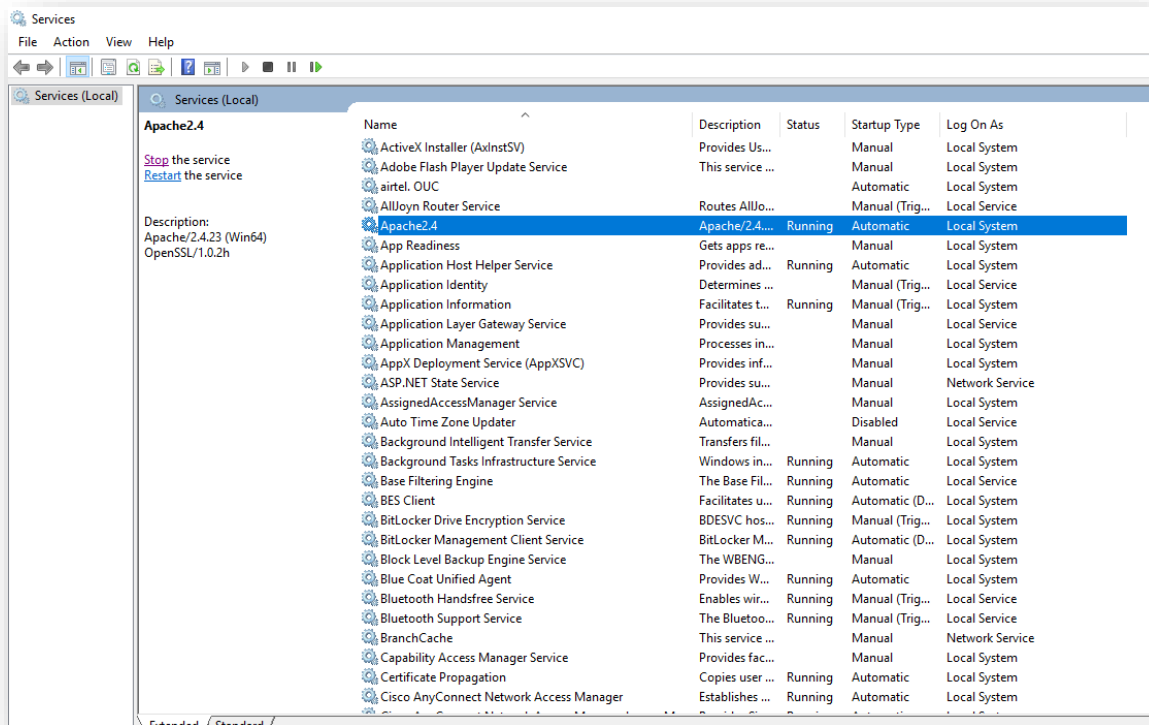


Figure 115 - Hosting Listener from HTTP to HTTPS (cont.)

3. Search for **HCL.iAutomate.Listener**.

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

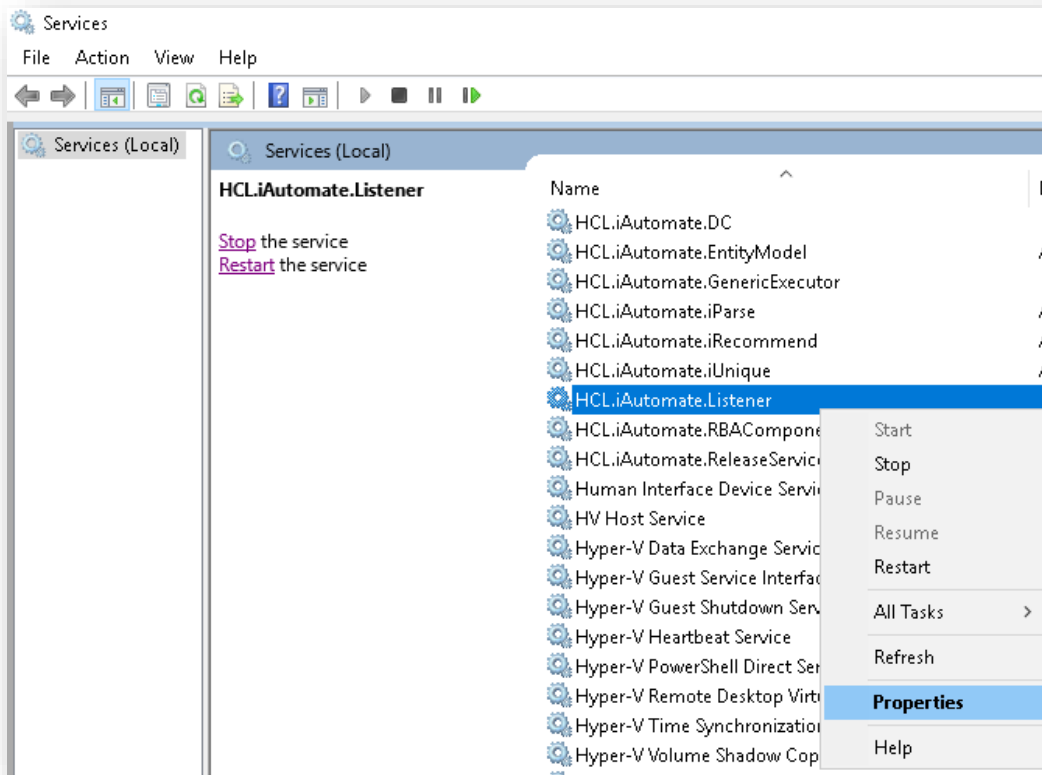


Figure 116 - Hosting Listener from HTTP to HTTPS (cont.)

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

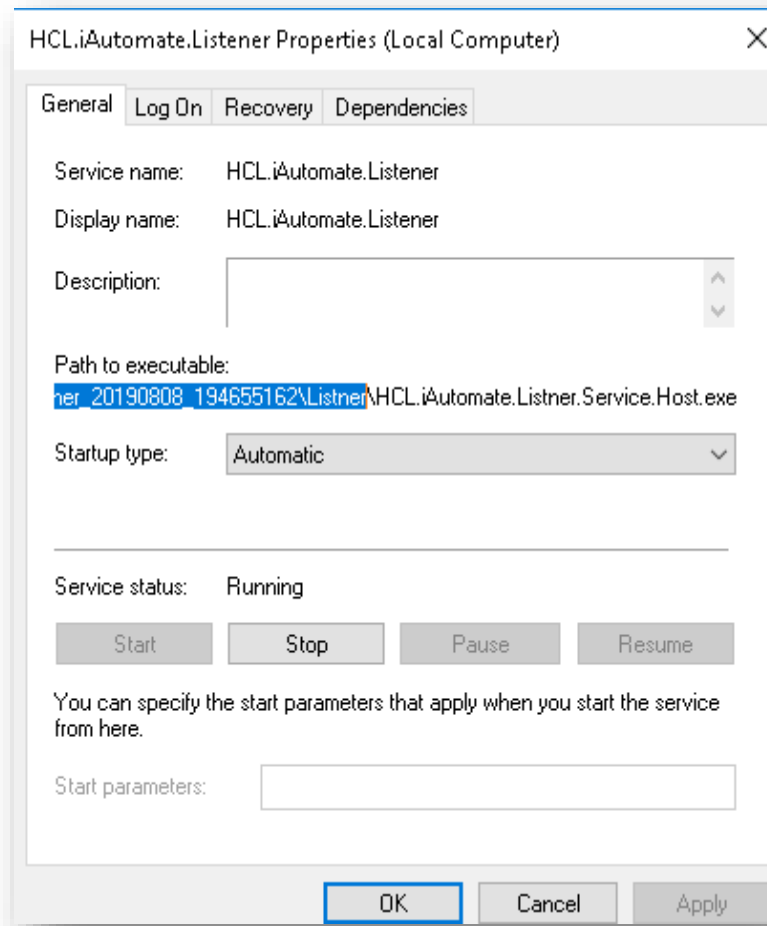


Figure 117 - Hosting Listener from HTTP to HTTPS (cont.)

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

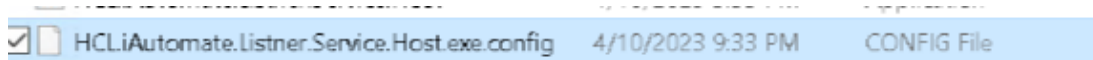


Figure 118 - Hosting Listener from HTTP to HTTPS (cont.)

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

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

Figure 119 - Hosting Listener from HTTP to HTTPS (cont.)

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

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

Figure 120 - 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" />
```

Figure 121 - 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={fa605232-f580-4d28-895e-3e021ffed82d} 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.

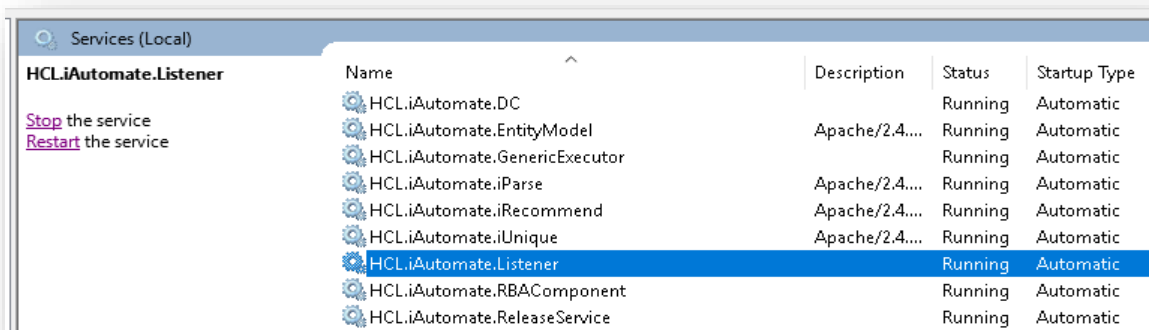


Figure 122 - Hosting Listener from HTTP to HTTPS (cont.)

### 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**.

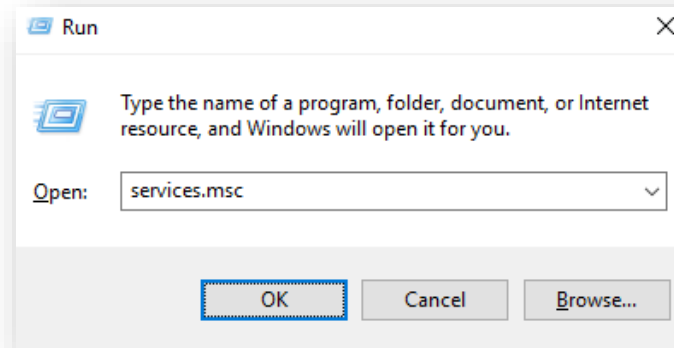


Figure 123 - Hosting Data Collector from HTTP to HTTPS

2. Click OK to open Windows Services.

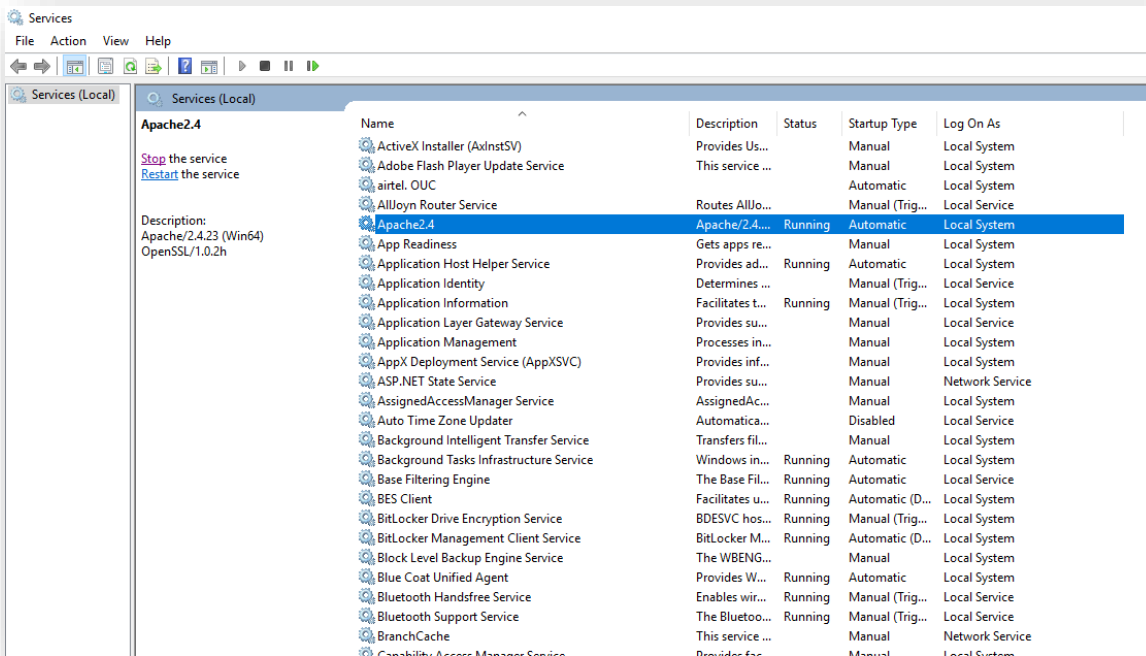


Figure 124 - Hosting Data Collector from HTTP to HTTPS (cont.)

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

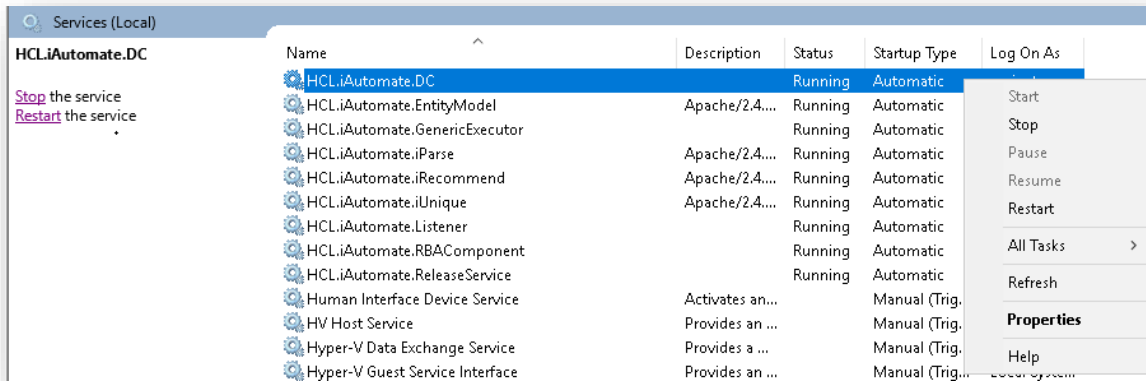


Figure 125 - Hosting Data Collector from HTTP to HTTPS (cont.)

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

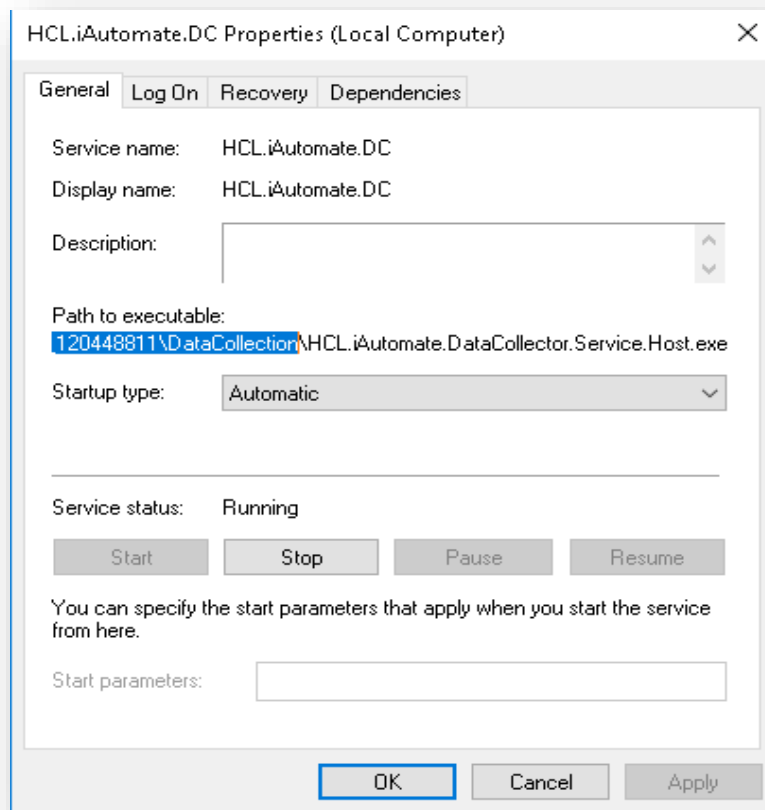


Figure 126 - Hosting Data Collector from HTTP to HTTPS (cont.)

- Open **File Explorer** and paste the **copied path** and press **Enter** to open the desired folder.
- Search for `HCL.iAutomate.DataCollector.Service.Host.exe` config file and open it in a Notepad.



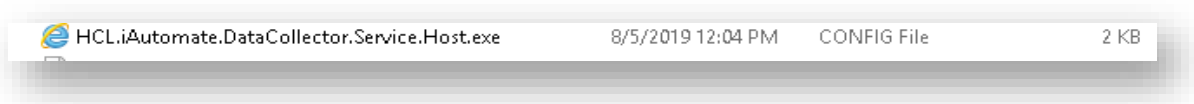


Figure 127 - Hosting Data Collector from HTTP to HTTPS (cont.)

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

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

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

Figure 129 - 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 130 - 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={dcd67c7b-c67a-4956-b4cc-6545ace1d2e9}
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.

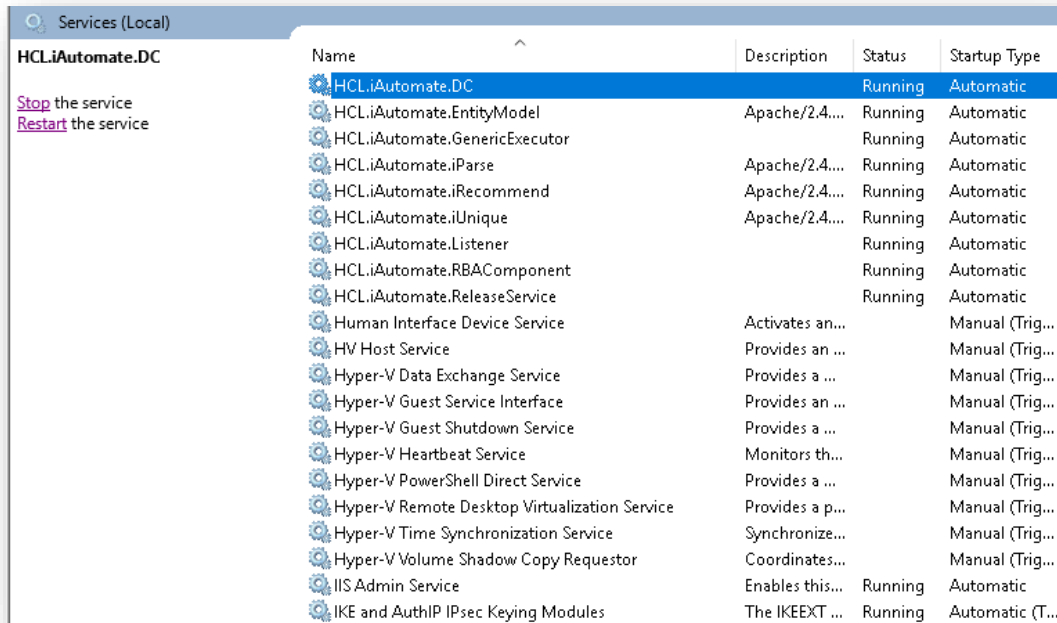


Figure 131 - Hosting Data Collector from HTTP to HTTPS (cont.)

### 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**.

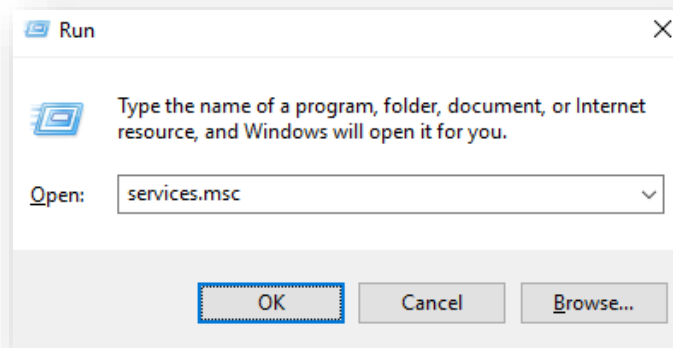


Figure 132 - Hosting Generic Service from HTTP to HTTPS

2. Click OK to open Windows Services.

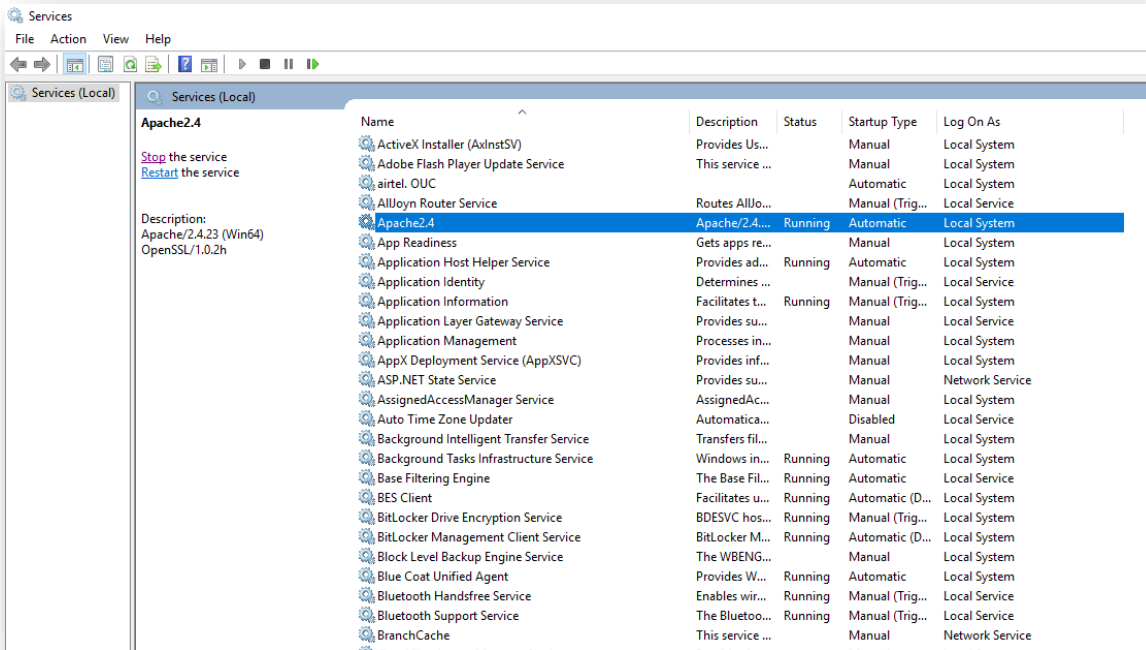


Figure 133 - Hosting Generic Service from HTTP to HTTPS (Cont.)

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

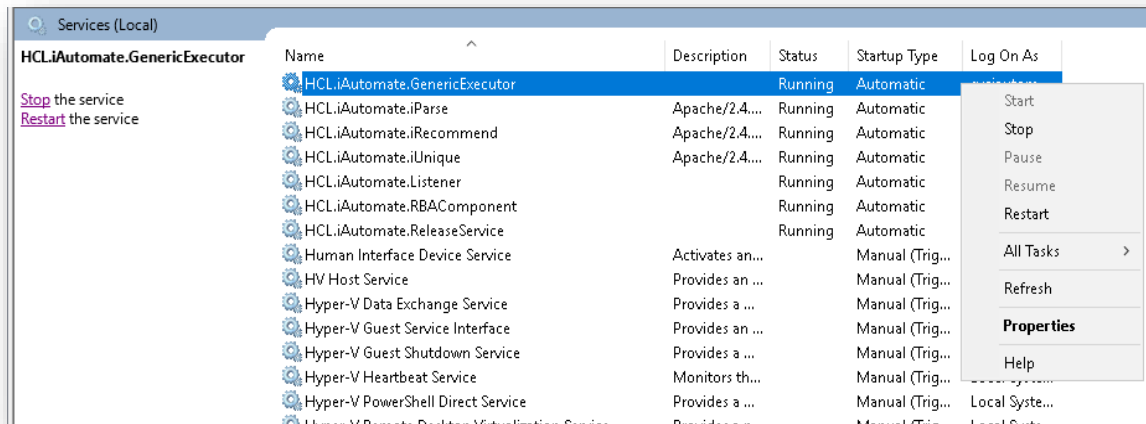


Figure 134 - Hosting Generic Service from HTTP to HTTPS (Cont.)

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

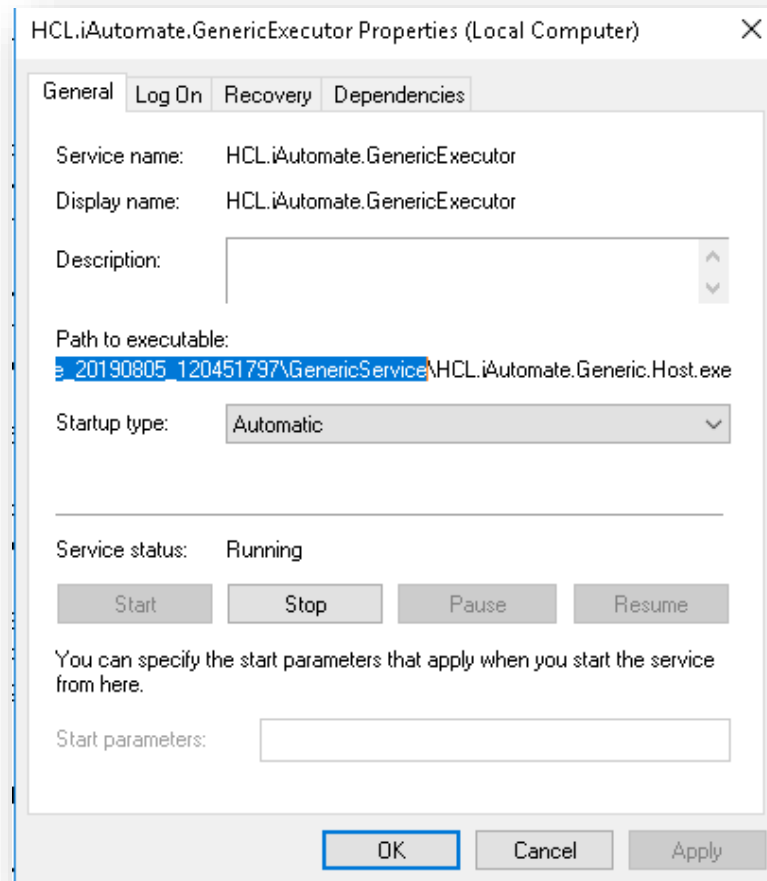


Figure 135 - Hosting Generic Service from HTTP to HTTPS (Cont.)

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.



Figure 136 - 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 137- Hosting Generic Service from HTTP to HTTPS (Cont.)

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

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

Figure 138 - 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" />
```

```
<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={c60c3690-7b58-4c68-8590-e2fd061edd23} 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.

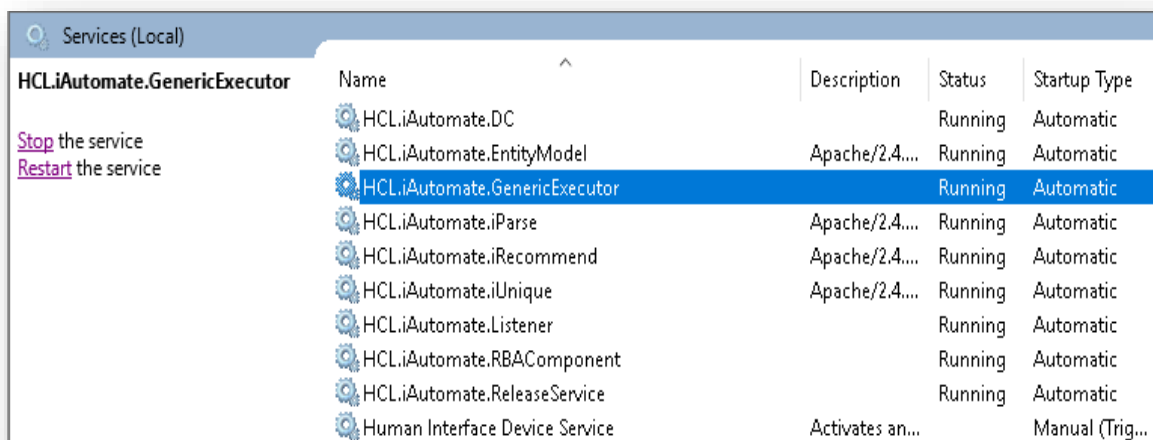


Figure 140 - Hosting Generic Service from HTTP to HTTPS (Cont.)

### 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**.

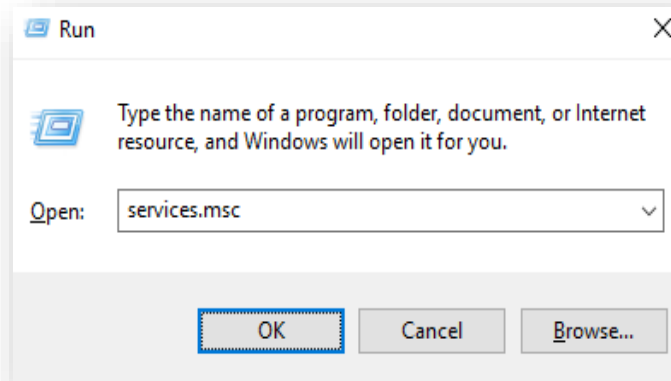


Figure 141 - Hosting RBA Component from HTTP to HTTPS

2. Click OK to open Windows Services.

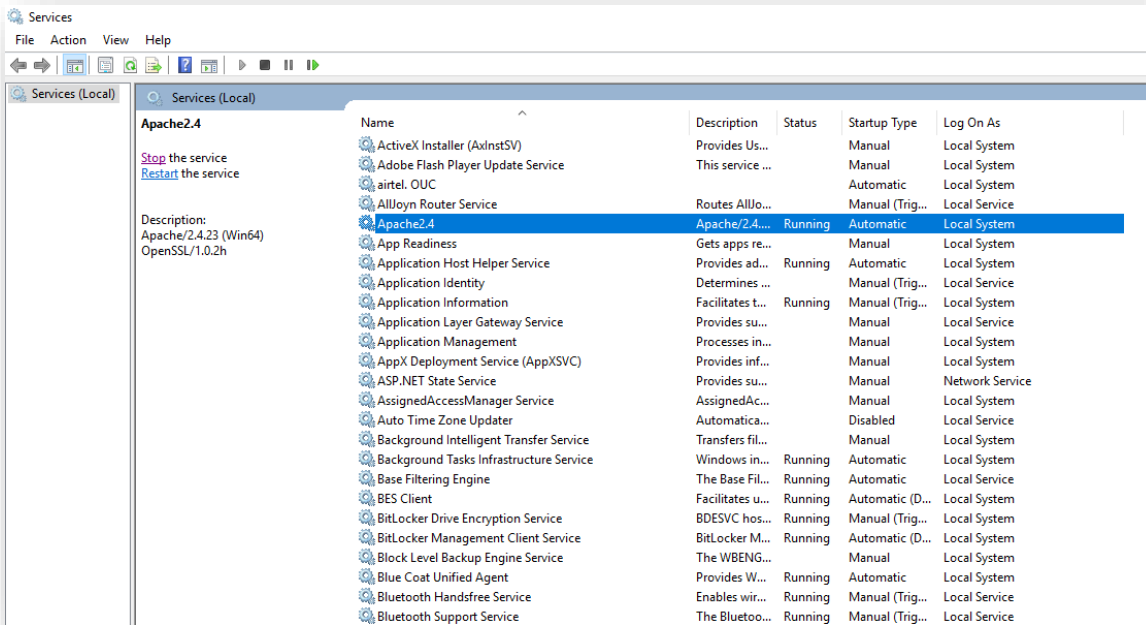


Figure 142 - Hosting RBA Component from HTTP to HTTPS

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

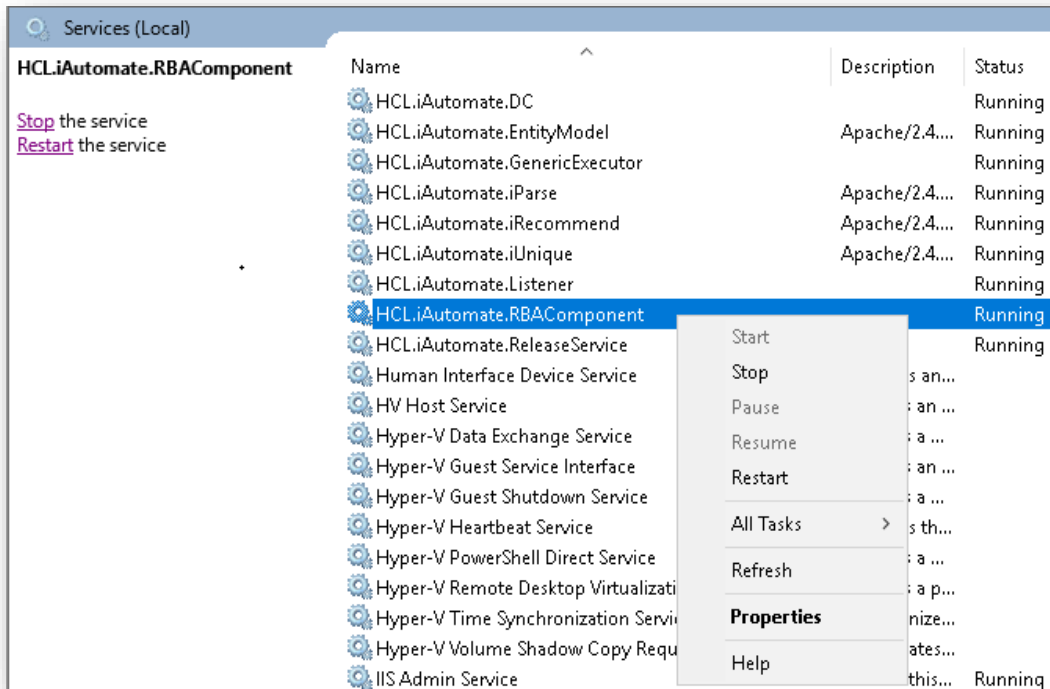


Figure 143 - Hosting RBA Component from HTTP to HTTPS (Cont.)

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

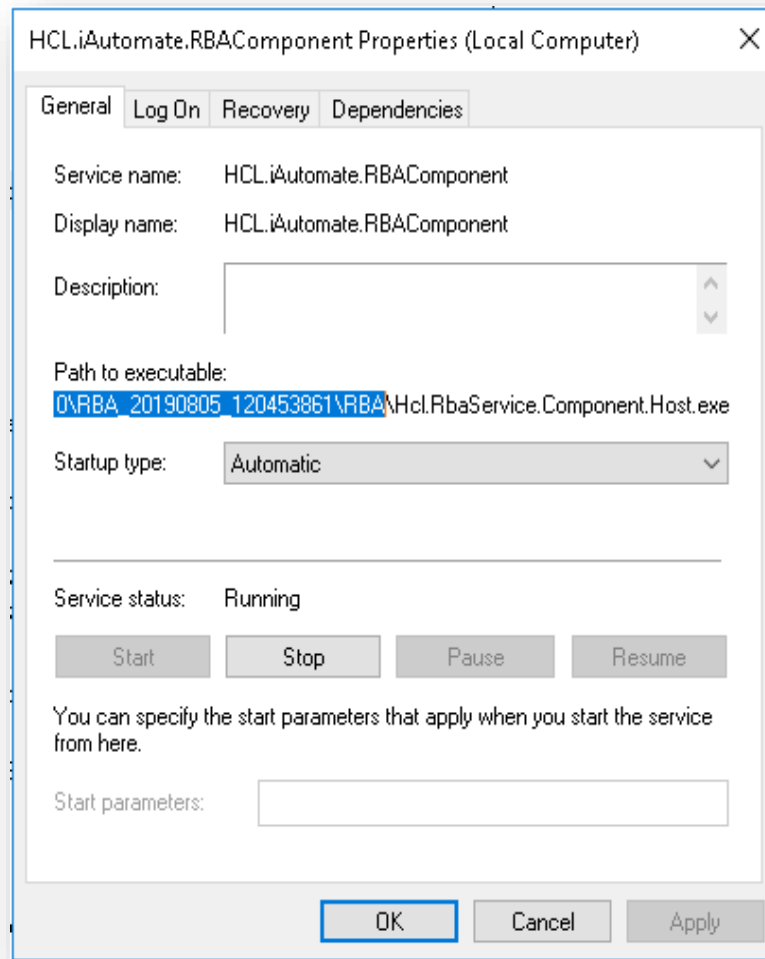


Figure 144 - Hosting RBA Component from HTTP to HTTPS (Cont.)

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.



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'** and change its value from 2 to 3.

```
<add key="ServiceSecurityMode_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" />
```

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

Figure 148 - 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={11f43d84-3d5c-47cf-b29e-0dd38c0e8f85}
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.

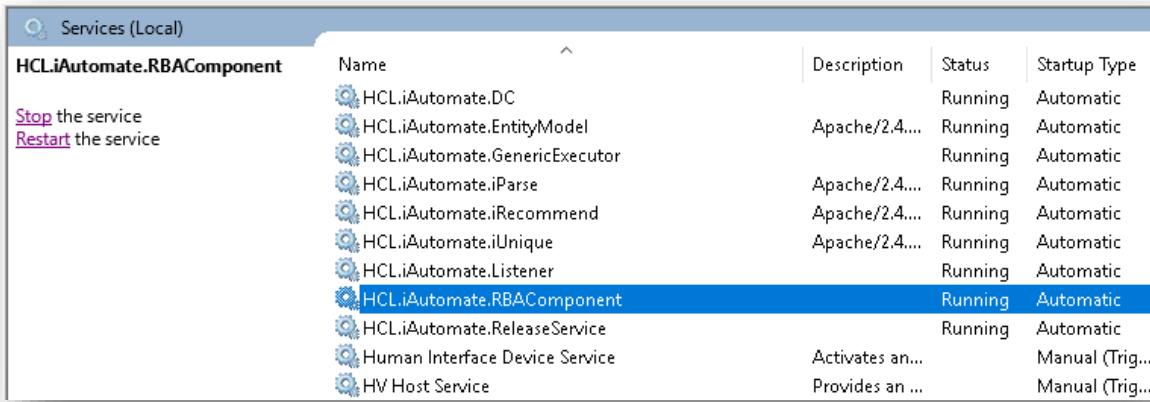


Figure 149 - Hosting RBA Component from HTTP to HTTPS (Cont.)

### 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**.

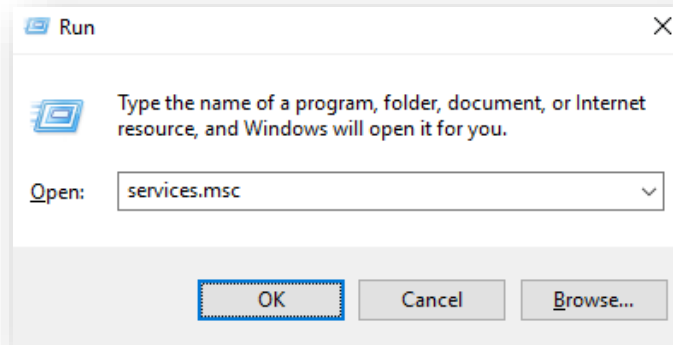


Figure 150 - Hosting Release Service from HTTP to HTTPS

2. Click OK to open Windows Services.

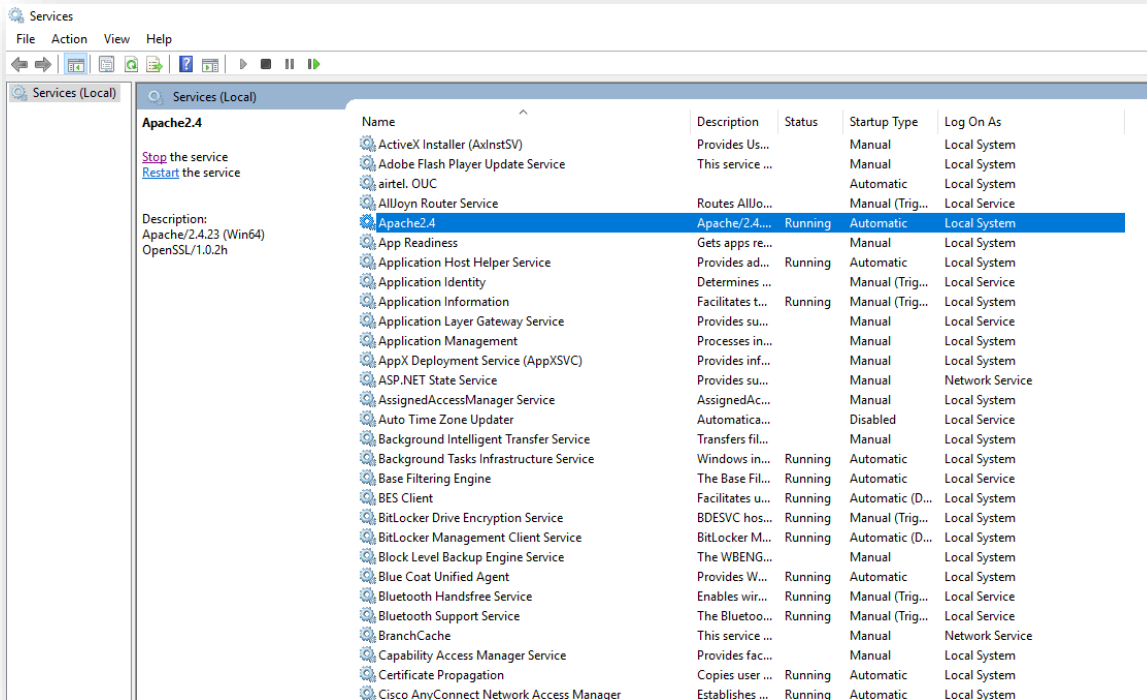


Figure 151 - Hosting Release Service from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.ReleaseService.
4. Right-click **HCL.iAutomate.ReleaseService** service and click on **Properties**.

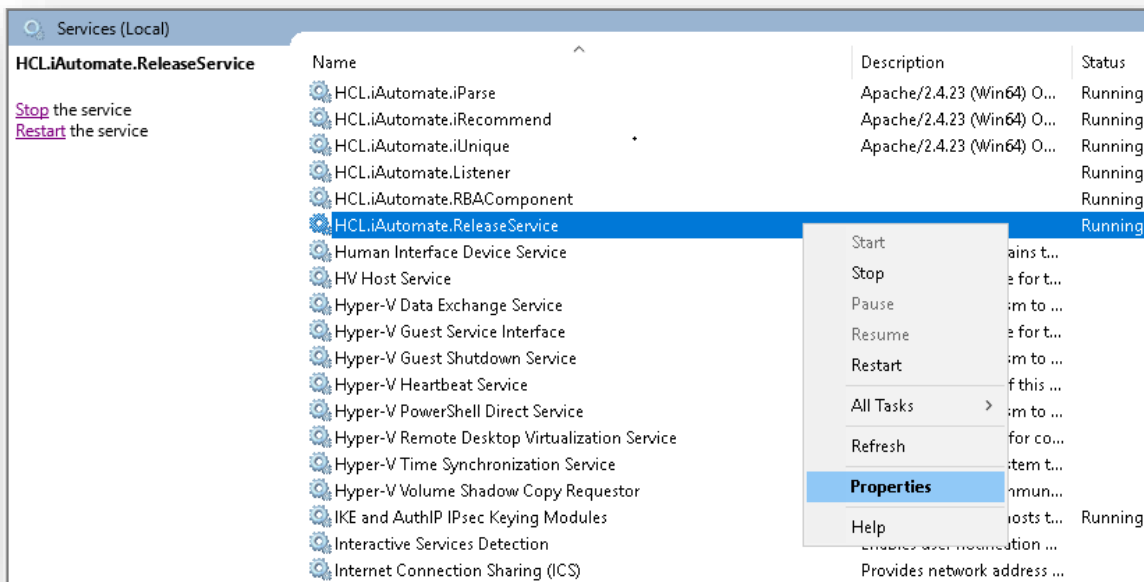


Figure 152 - Hosting Release Service from HTTP to HTTPS (Cont.)

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

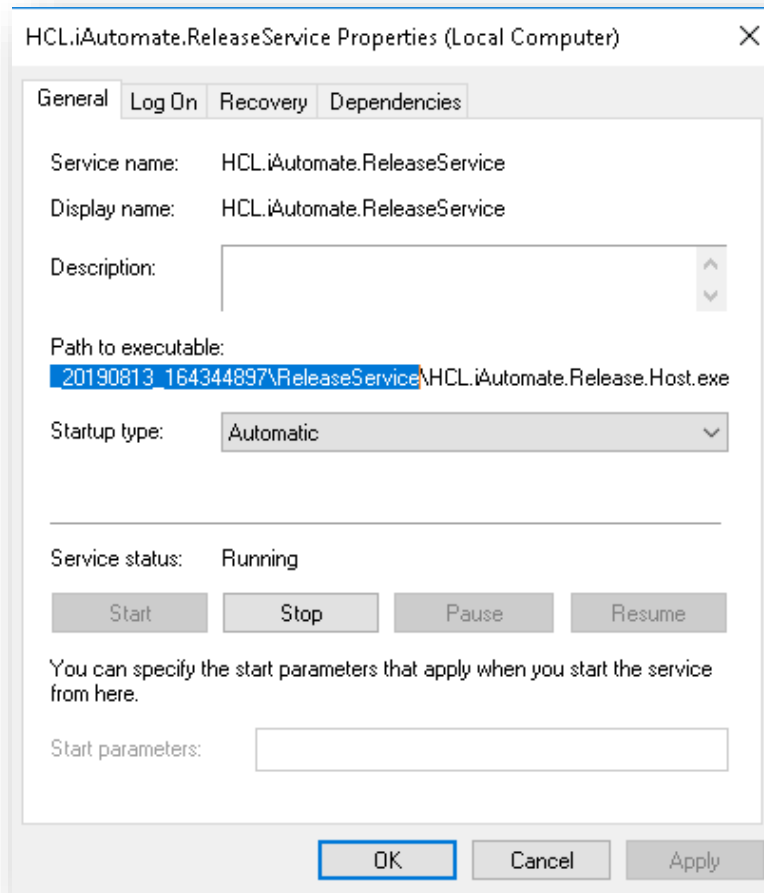


Figure 153 - Hosting Release Service from HTTP to HTTPS (Cont.)

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



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

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

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

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

Figure 156 - 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" />
```

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

Figure 157 - 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={d32cb30c-7e1a-4549-a2e2-32bf01a1d345}
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.

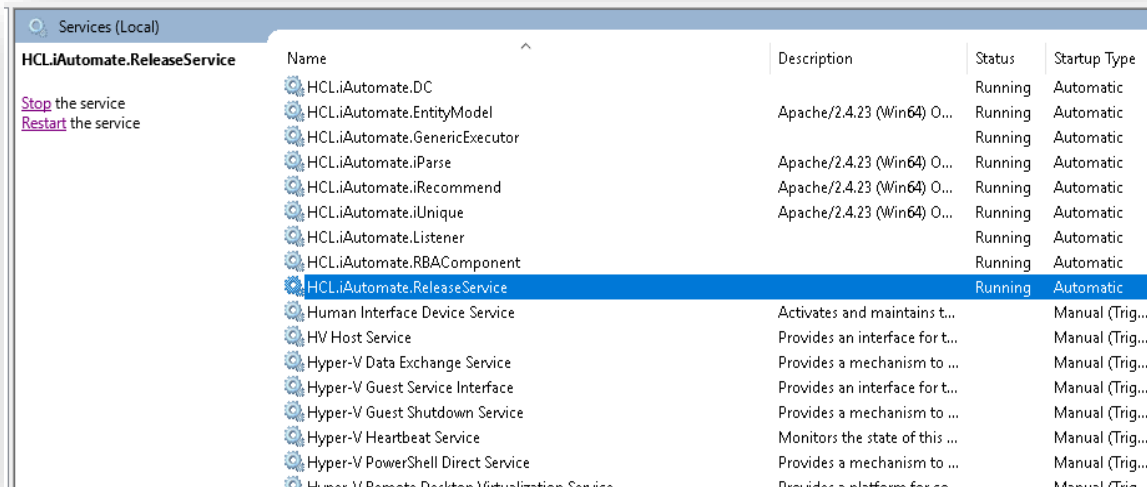


Figure 158 - Hosting Release Service from HTTP to HTTPS (Cont.)

### 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**.

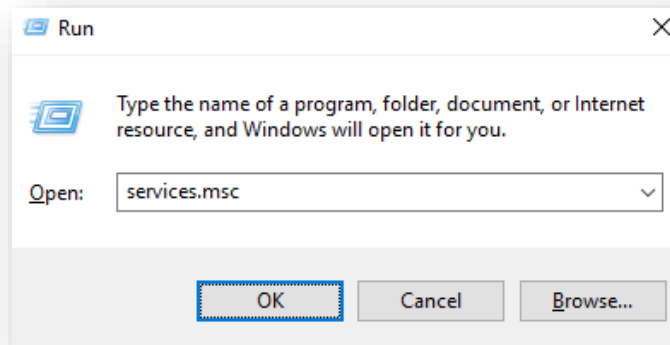


Figure 159 - Hosting AD Sync from HTTP to HTTPS (cont.)

2. Click OK to open Windows Services.

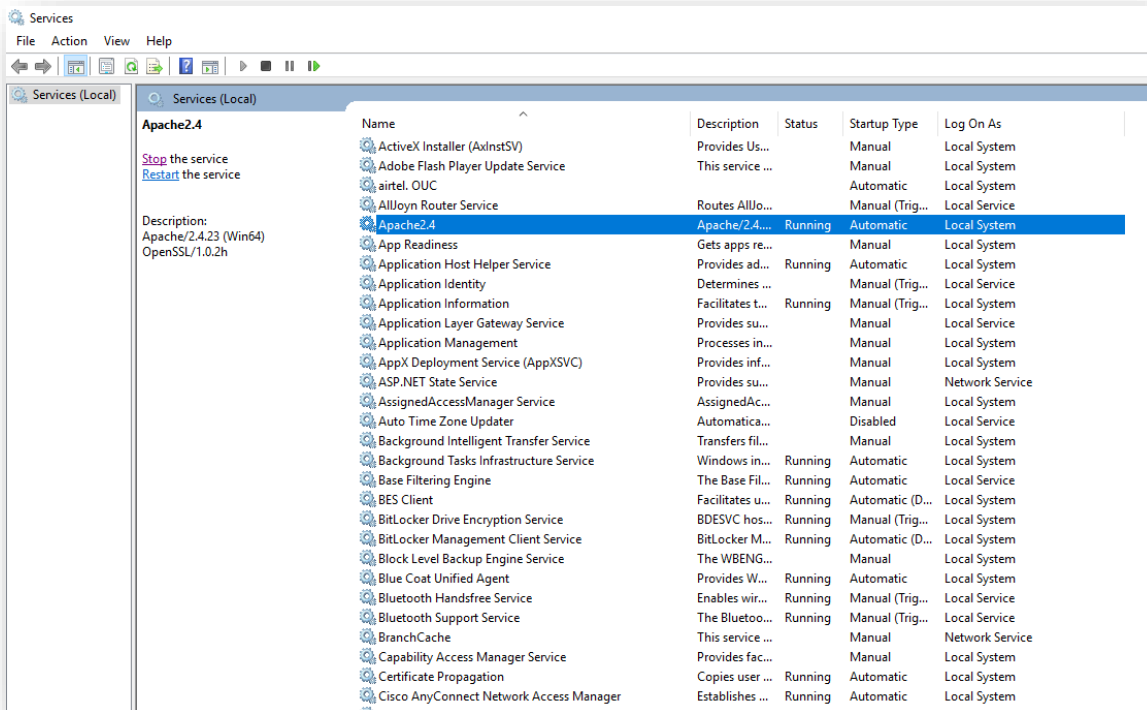


Figure 160 - Hosting AD Sync from HTTP to HTTPS (cont.)

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

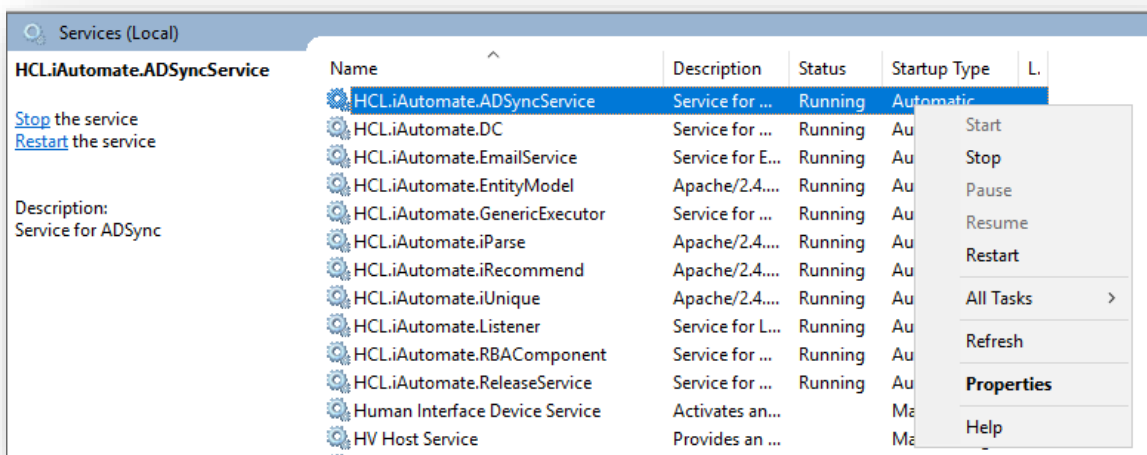


Figure 161 - Hosting AD Sync from HTTP to HTTPS (cont.)

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

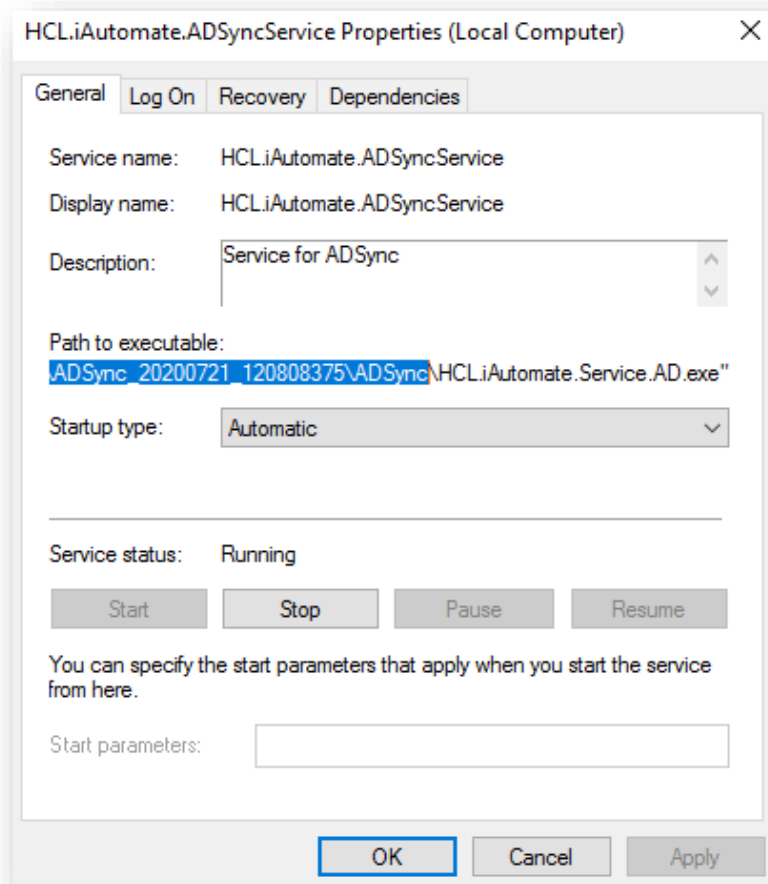


Figure 162 - Hosting AD Sync from HTTP to HTTPS (cont.)

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.

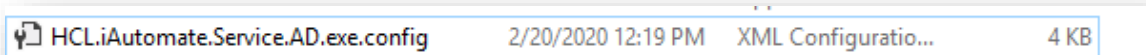


Figure 163 - Hosting AD Sync from HTTP to HTTPS (cont.)

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

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

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

Figure 165 - 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" />
```

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

Figure 166 - 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={8c00e29d-1a3e-439b-a449-7e26b64b9d27}
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.

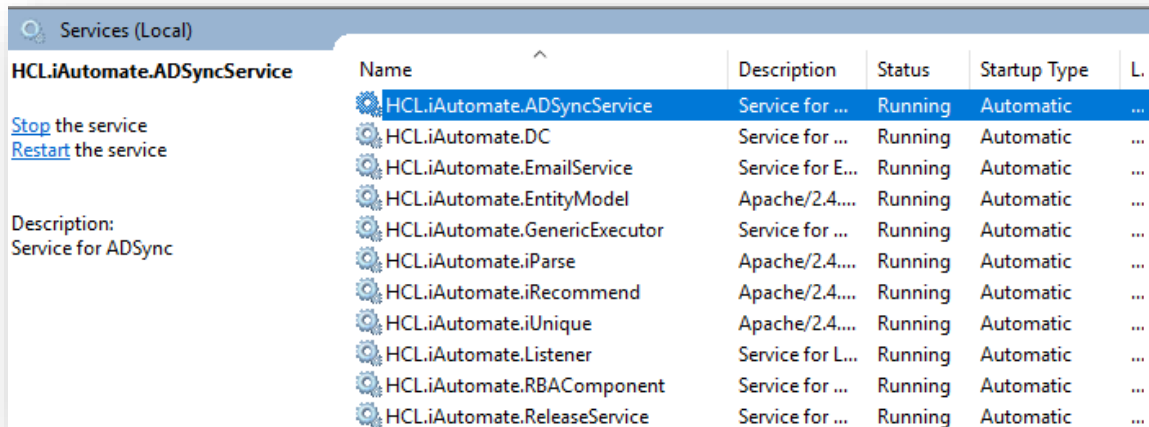


Figure 167 - Hosting AD Sync from HTTP to HTTPS (cont.)

### 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**.

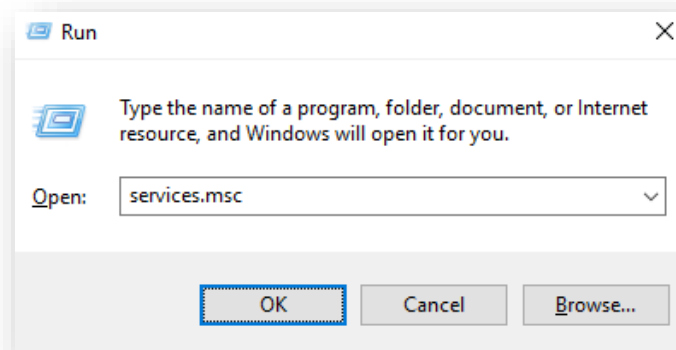


Figure 168 - Hosting Email Service from HTTP to HTTPS

2. Click OK to open Windows Services.

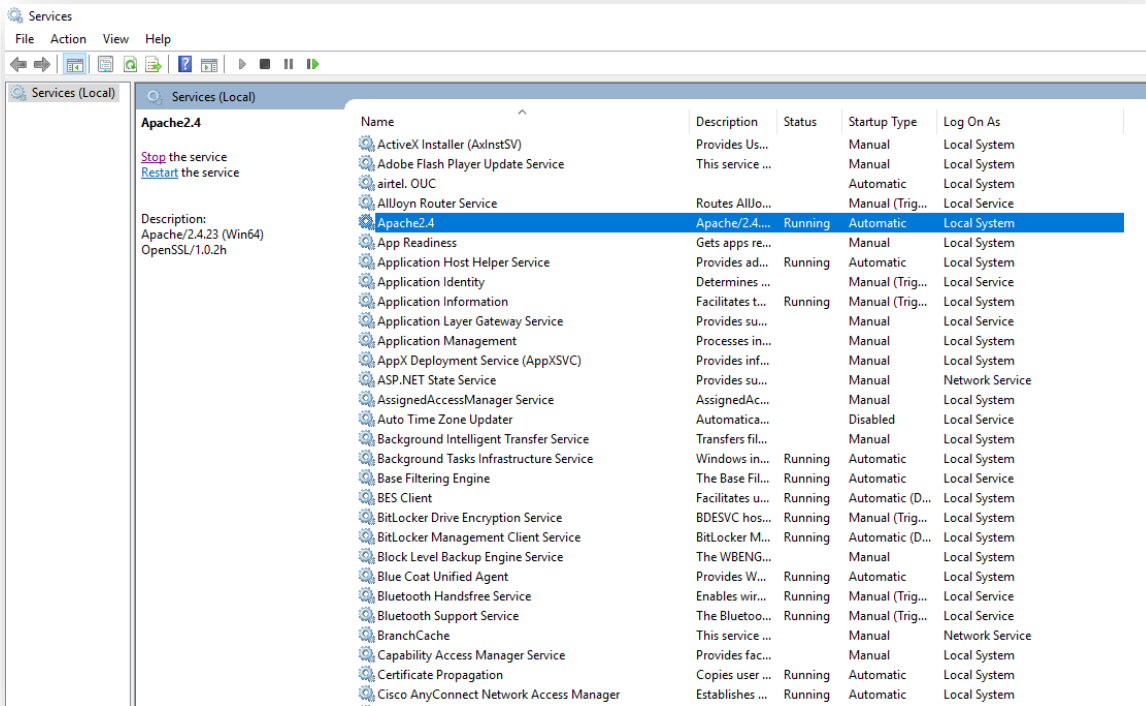


Figure 169 - Hosting Email Service from HTTP to HTTPS (cont.)

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

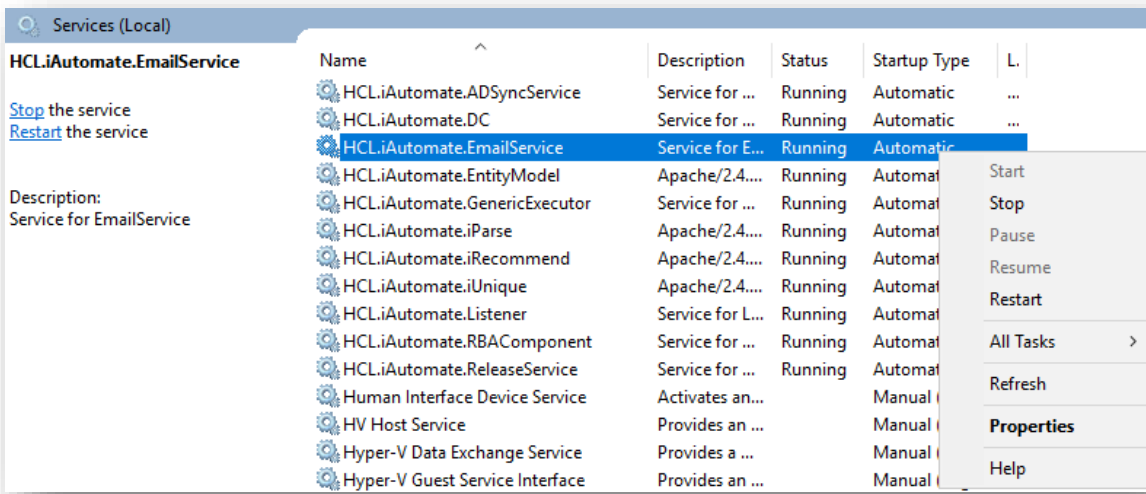


Figure 170 - Hosting Email Service from HTTP to HTTPS (cont.)

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

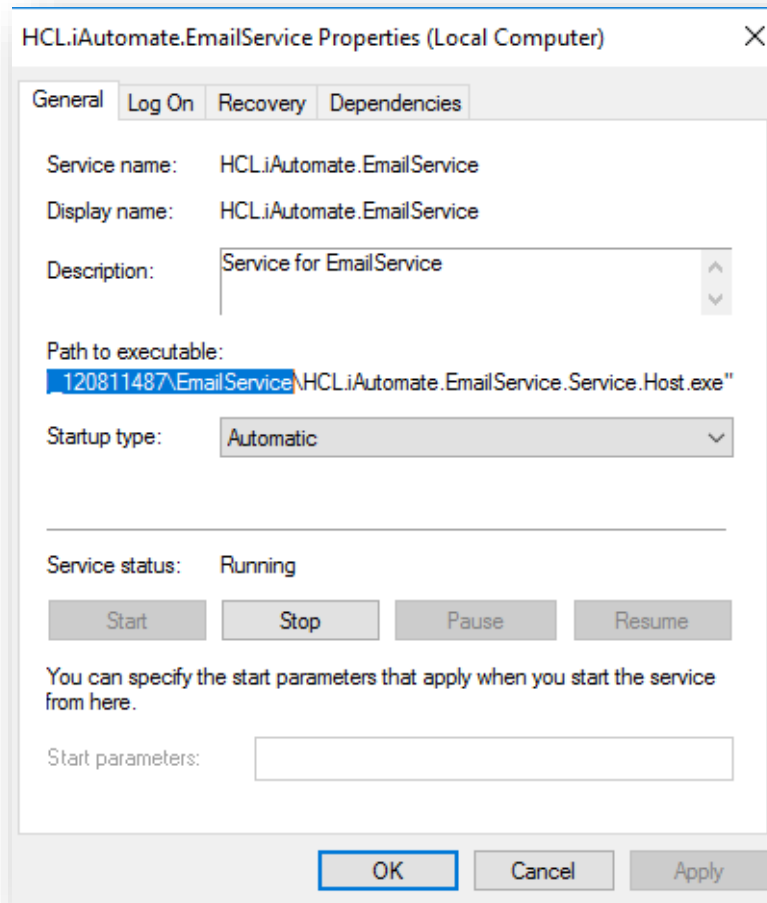


Figure 171 - Hosting Email Service from HTTP to HTTPS (cont.)

- Open **File Explorer** and paste the **copied path** and press **Enter** to open the desired folder.
- Search for **HCL.iAutomate.EmailService.Service.Host.exe** config file and open it in a Notepad.

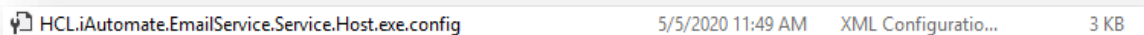


Figure 172 - Hosting Email Service from HTTP to HTTPS (cont.)

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

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

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

Figure 174 - 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" />
```

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

Figure 175 - 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={21fa9088-0c69-479e-8fdc-a81eb836e264} certhash="<Thumbprint of the certificate>"
```

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

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

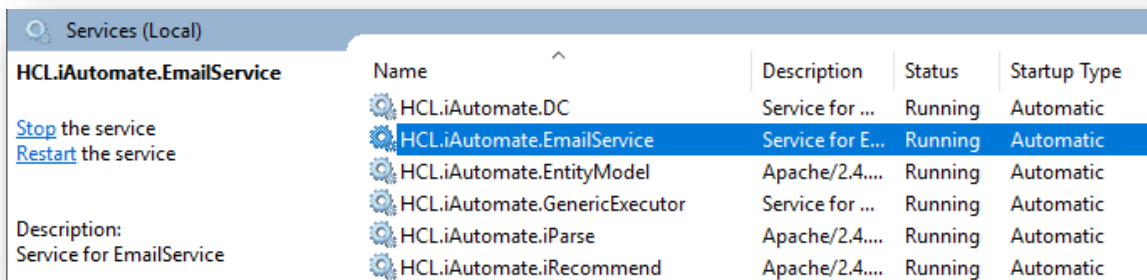
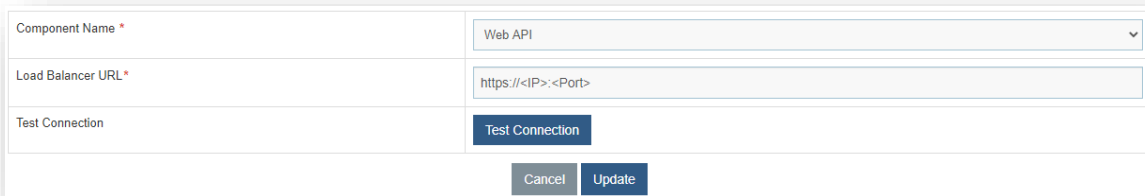


Figure 176 - Hosting Email Service from HTTP to HTTPS (cont.)

### Configuration Changes via GUI

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

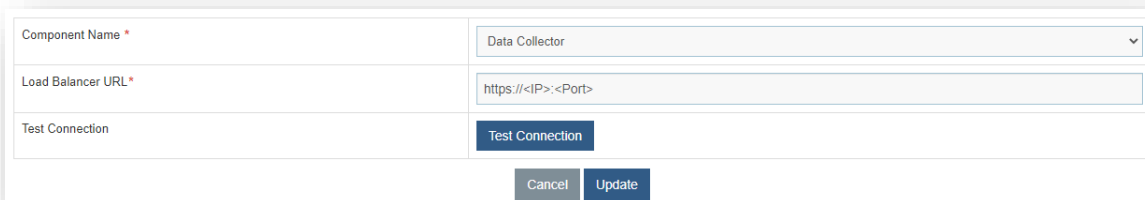
1. Login to **BigFix Runbook AI** using the Super Admin credentials.
2. Roll-over to the Advance Configuration and click Product Configuration.
3. Select **Component Name** as **Web API**.
4. Change the **Load Balancer URL** from HTTP to HTTPS.



Component Name *	Web API
Load Balancer URL *	https://<IP>:<Port>
Test Connection	Test Connection
<input type="button" value="Cancel"/> <input type="button" value="Update"/>	

Figure 177 - Configuration Changes via GUI from HTTP to HTTPS

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



Component Name *	Data Collector
Load Balancer URL *	https://<IP>:<Port>
Test Connection	Test Connection
<input type="button" value="Cancel"/> <input type="button" value="Update"/>	

Figure 178 - Configuration Changes via GUI from HTTP to HTTPS (Cont.)

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

Component Name *	Generic Service
Load Balancer URL *	https://<IP>:<Port>
Test Connection	<input type="button" value="Test Connection"/>
<input type="button" value="Cancel"/> <input type="button" value="Update"/>	

Figure 179 - Configuration Changes via GUI from HTTP to HTTPS (Cont.)

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

Component Name *	Release Service
Load Balancer URL *	https://<IP>:<Port>
Test Connection	<input type="button" value="Test Connection"/>
<input type="button" value="Cancel"/> <input type="button" value="Update"/>	

Figure 180 - Configuration Changes via GUI from HTTP to HTTPS (Cont.)

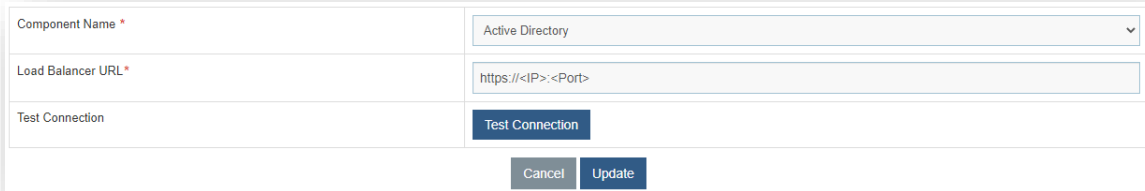
14. Click **Update** to save the changes.
15. Select Component Name as 'RBA Service'.
16. Change the Load Balancer URL from HTTP to HTTPS.

Component Name *	RBA Service
Load Balancer URL *	https://<IP>:<Port>
Test Connection	<input type="button" value="Test Connection"/>
<input type="button" value="Cancel"/> <input type="button" value="Update"/>	

Figure 181 - Configuration Changes via GUI from HTTP to HTTPS (Cont.)

17. Click **Update** to save the changes.
18. Select **Component Name** as 'Active Directory'.

19. Change the Load Balancer URL from HTTP to HTTPS.



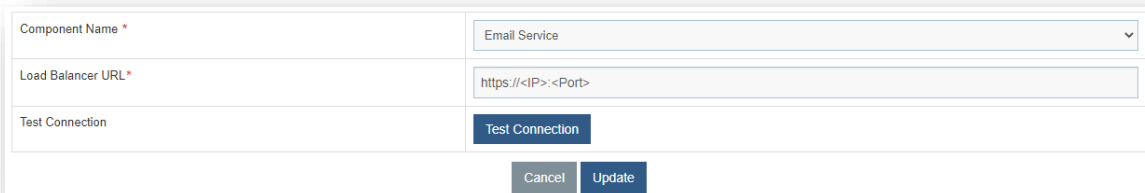
Component Name *	Active Directory
Load Balancer URL *	https://<IP>:<Port>
Test Connection	<input type="button" value="Test Connection"/>
<input type="button" value="Cancel"/> <input type="button" value="Update"/>	

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

20. Click **Update** to save the changes.

21. Select **Component Name** as 'Email Service'.

22. Change the **Load Balancer URL** from HTTP to HTTPS.



Component Name *	Email Service
Load Balancer URL *	https://<IP>:<Port>
Test Connection	<input type="button" value="Test Connection"/>
<input type="button" value="Cancel"/> <input type="button" value="Update"/>	

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

23. 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 BigFix Runbook AI components in a secure mode.

Now, let's discuss the configuration of BigFix Runbook AI in the next module.

## 4.7.5 Related Documentation

- BigFix Runbook AI Prerequisites Guide
- BigFix Runbook AI Installation



## 5 Module 3 – Configuration of BigFix Runbook AI

### 5.1 Introduction

This module covers the procedure for configuring BigFix Runbook AI 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 which has 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. An organization has asked for configuration of BigFix Runbook AI for resolving Incidents. Currently they are using Service Now as the ITSM tool and BigFix as the runbook automation tool.

In this lab, we will showcase the detailed procedure for creating an organization 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 An organization. In this exercise, we will consider Form based authentication
- Information about existing IT Service Management and Runbook Automation tools present in Organization's environment.
- Access to Super Admin credentials.

## 5.2.3 Solution

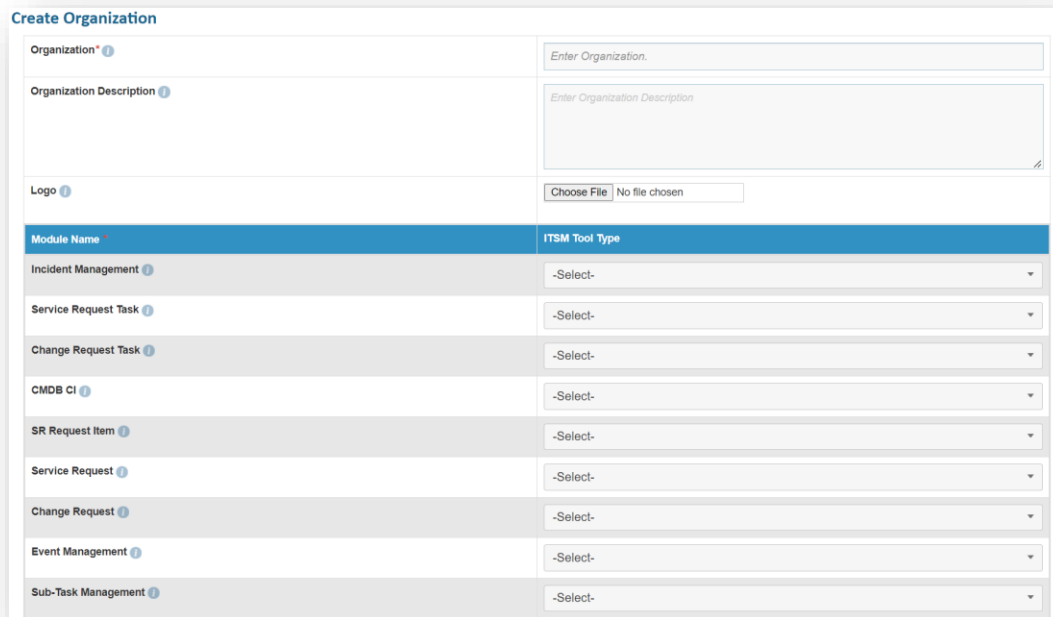
1. Open BigFix Runbook AI Web URL and login with Super Admin credentials.
2. Go to Actions → Manage Organizations menu and click Create Organization.



Figure 184 - Organizations

The Create Organization form appears.

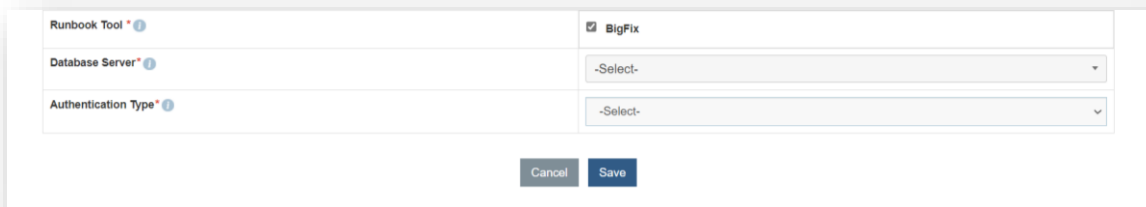
3. Enter the **Organization Name** as BigFixRunbookAI.
4. Enter the Organization Description.
5. Click **Choose File** to upload the organization's **Logo**.
6. Select Service Now against Incident Management module.



Module Name	ITSM Tool Type
Incident Management	-Select-
Service Request Task	-Select-
Change Request Task	-Select-
CMDB CI	-Select-
SR Request Item	-Select-
Service Request	-Select-
Change Request	-Select-
Event Management	-Select-
Sub-Task Management	-Select-

Figure 185 – Create Organization

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



Runbook Tool *	<input checked="" type="checkbox"/> BigFix
Database Server *	-Select-
Authentication Type *	-Select-

Figure 186 – Create Organization (Cont.)

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

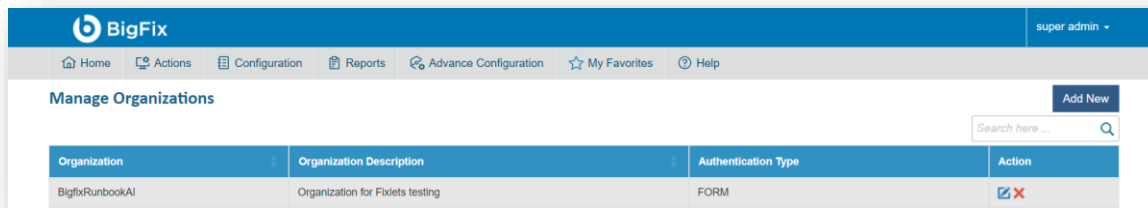


Figure 187 - Create Organization (Cont.)

12. A list of available organization with the newly created 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

An organization wants to automate resolution of incident tickets through BigFix Runbook AI 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 BigFix Runbook AI for processing. In this lab, we will showcase the detailed procedure for creating the data source for organization 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 BigFix Runbook AI where identified incidents will be routed. We have considered **BigFix Runbook AI 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 BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions and click Manage Data Sources then click on Create Data Source button

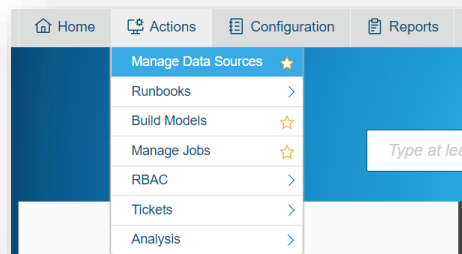


Figure 188 – Create Data Source

The **Create Data Source** page appears.

3. On the **Organization** tab, type in the details as per your requirement. Refer to the [Lab Exercise 1](#) for Organization and **ITSM Module** information.
4. Click **Next**.

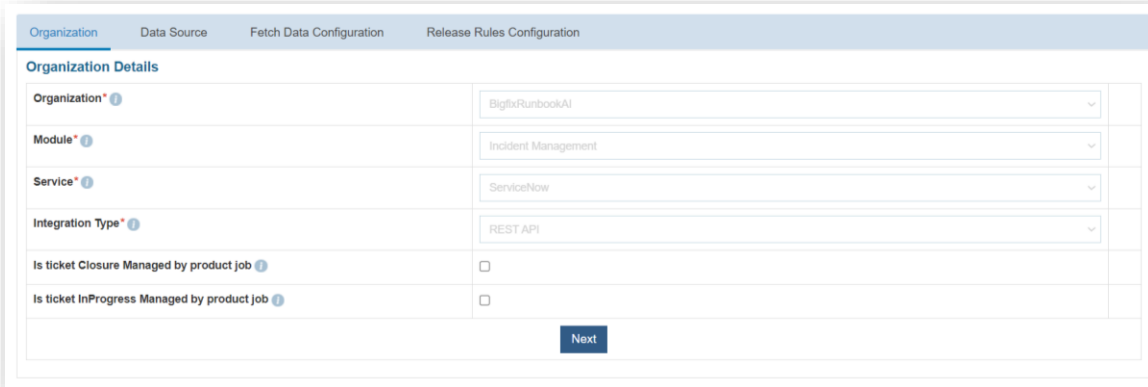


Figure 189 - Create Data Source (cont.)

5. On the **Data Source** tab, type in the details as per your requirement. The data source could be named as **DataSource\_BigFixRunbookAI**.
6. **Timestamp** here indicate that date is in APOC format or not.
7. Click Next.

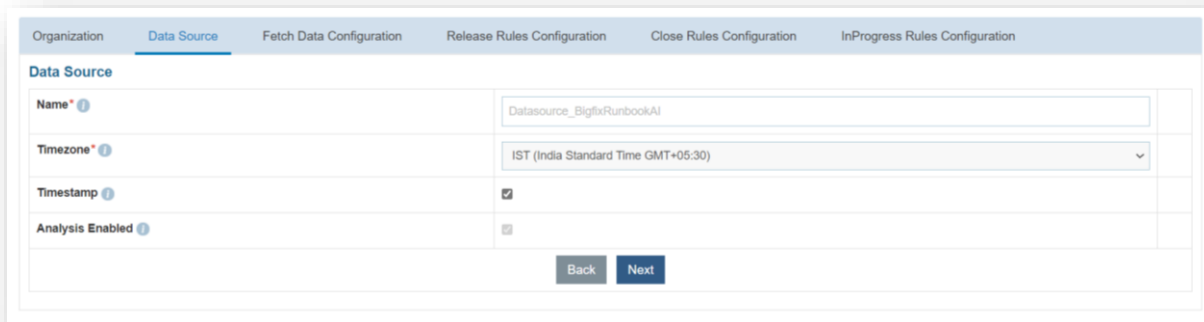


Figure 190 - Create Data Source (cont.)

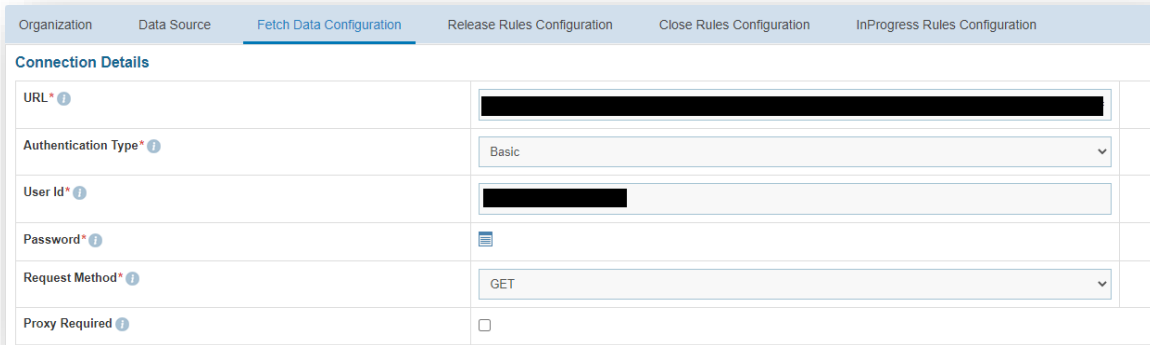
8. On the **Fetch Data Configuration** tab, type in the details as per your requirement. It includes multiple sections.

**Connection Details**

Sample information that can be populated –

- URL - [https://sample.service-now.com/api/now/v1/table/incident?sysparm\\_fields=#Columns#&sysparm\\_query=sys\\_updated\\_on>=#StartDate#^sys\\_updated\\_on<=#EndDate#^ORDERBYsys\\_updated\\_on](https://sample.service-now.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** needs to be provided by ITSM team. In case you are attending the classroom-based training, the instructor will provide you the details.




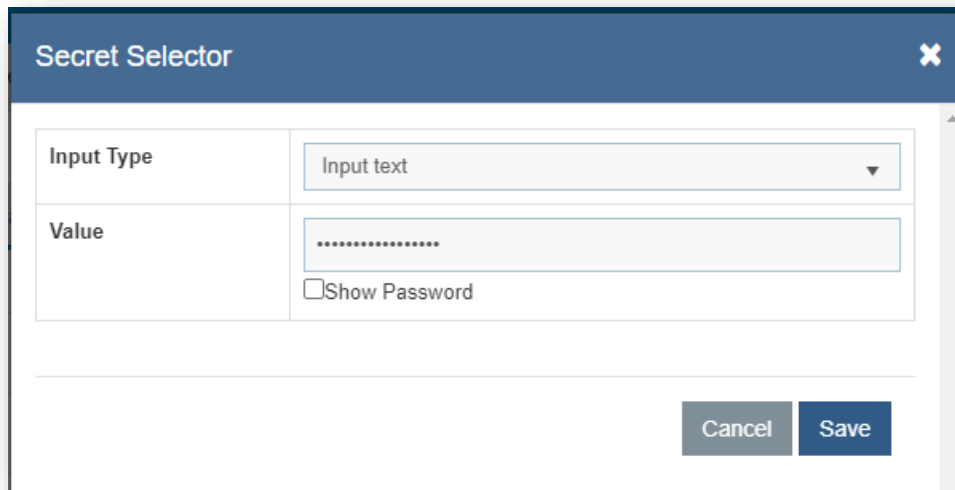
Connection Details	
URL*	[Redacted]
Authentication Type*	Basic
User Id*	[Redacted]
Password*	[Redacted] 
Request Method*	GET
Proxy Required	<input type="checkbox"/>

Figure 191 – 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 any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field.



**Secret Selector** ✕

Input Type	Input text
Value	<div style="border: 1px solid #ccc; padding: 2px;">             .....           </div> <input type="checkbox"/> Show Password

Cancel
Save

Figure 192 - Password in plaintext

Secret Selector
✕

Input Type	CyberArk
Value	SNOWPassword

Key	Value
Description	██████████
AppID	██████████
Safe	██████████
Folder	████
Object	██████████

Cancel
Save

Figure 193 - Password from Key Vault (CyberArk)

- 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_group,incident_state,closed_at,category,dv_assigned_to,sys_id

Key: #StartDate#
ValueType: SQL UDF
VALUE: @@GetFromDateUsingIncidentModifiedDate (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" }] }
```

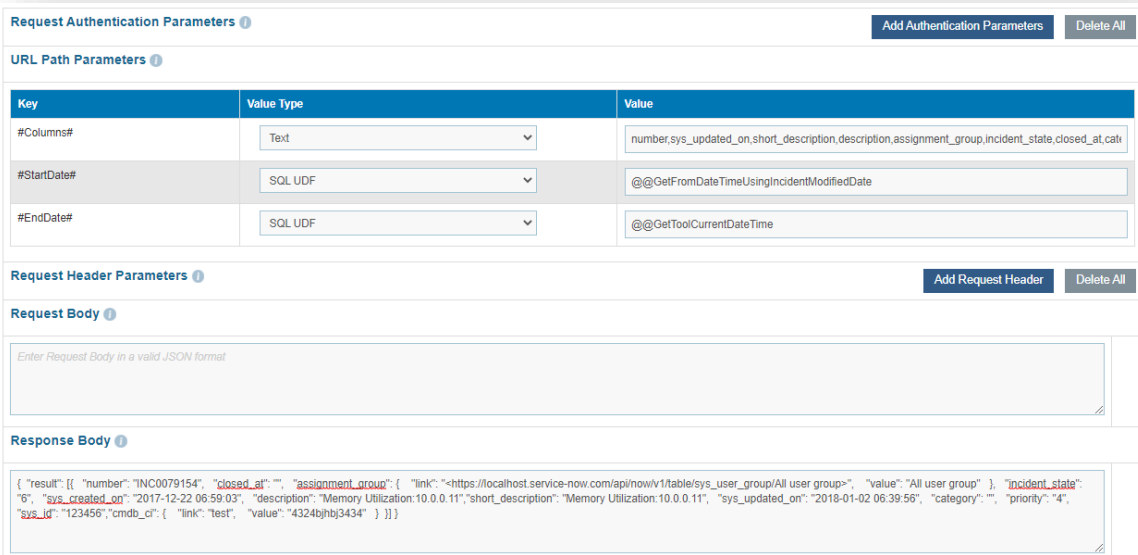


Figure 194 - Request Authentication Parameters

– Mandatory Parameter Mapping

This section maps the mandatory columns required for BigFix Runbook AI 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

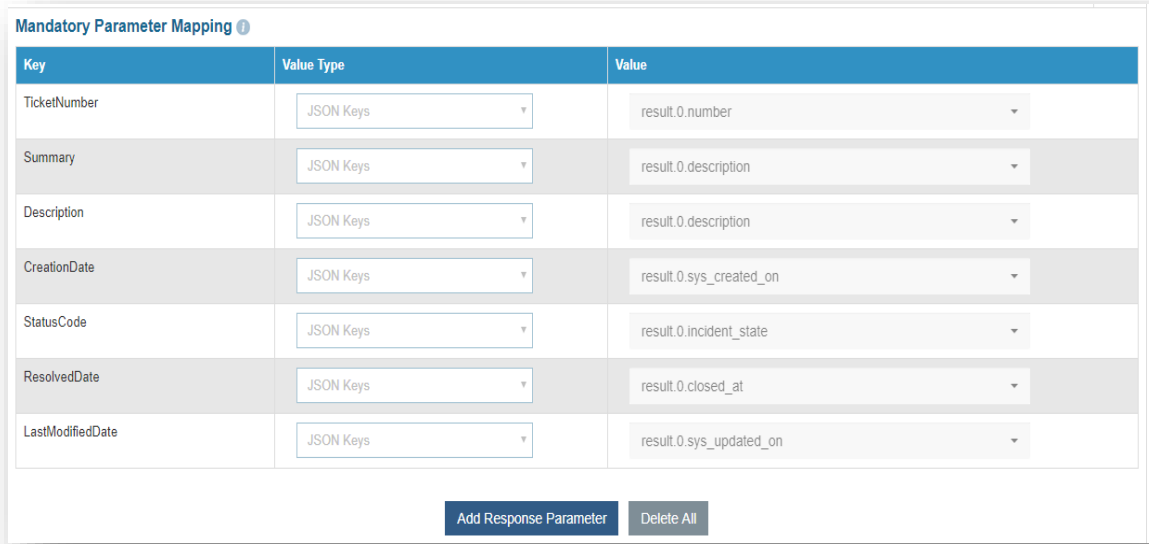


Figure 195 - Mandatory Parameter Mapping

– 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

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

Figure 196 – Optional Key Parameters

9. Click **Next** after populating all the sections in **Fetch Data Configuration** tab.
10. On the **Release Rules Configuration** tab, type in the details as per your requirement.
  - **ITSM (PUT)** details have to be entered as shown in below screenshot. See below the sample information:
    - a. **URL:** <https://sample.service-now.com/api/now/table/incident/#incident#>
    - b. **AuthenticationType, UserId, Password, RequestMethod** has to be provided by ITSM team. Please get in touch with lab instructor for the information.

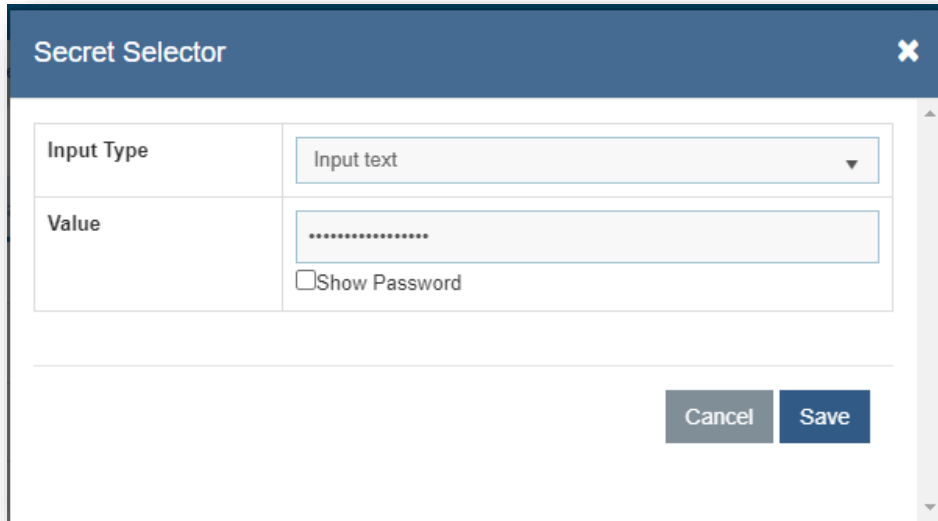
The screenshot shows the 'Release Rules Configuration' tab with the following fields:

- URL:** [Redacted]
- Authentication Type:** Basic
- User Id:** [Redacted]
- Password:** [Redacted]
- Request Method:** PUT
- Proxy Required:**
- Test Connection:**

Below the form are sections for 'Request Authentication Parameters' (with 'Add Authentication Parameters' and 'Delete All' buttons) and 'URL Path Parameters'.

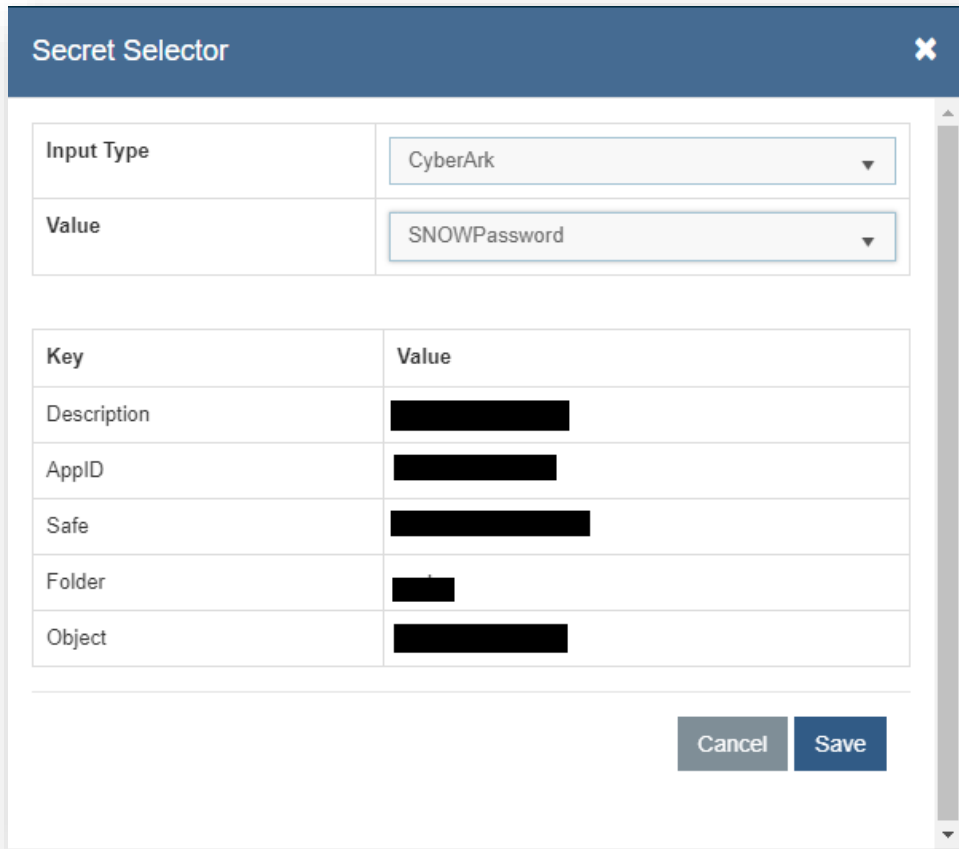
Figure 197 – Release Rules Configuration

- c. **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 any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field.



The screenshot shows a 'Secret Selector' dialog box. It has a title bar with a close button. Below the title bar, there are two main sections. The first section has 'Input Type' set to 'Input text'. The second section has 'Value' set to a masked password (represented by dots) and a 'Show Password' checkbox which is currently unchecked. At the bottom right, there are 'Cancel' and 'Save' buttons.

Figure 198 - Password in plaintext

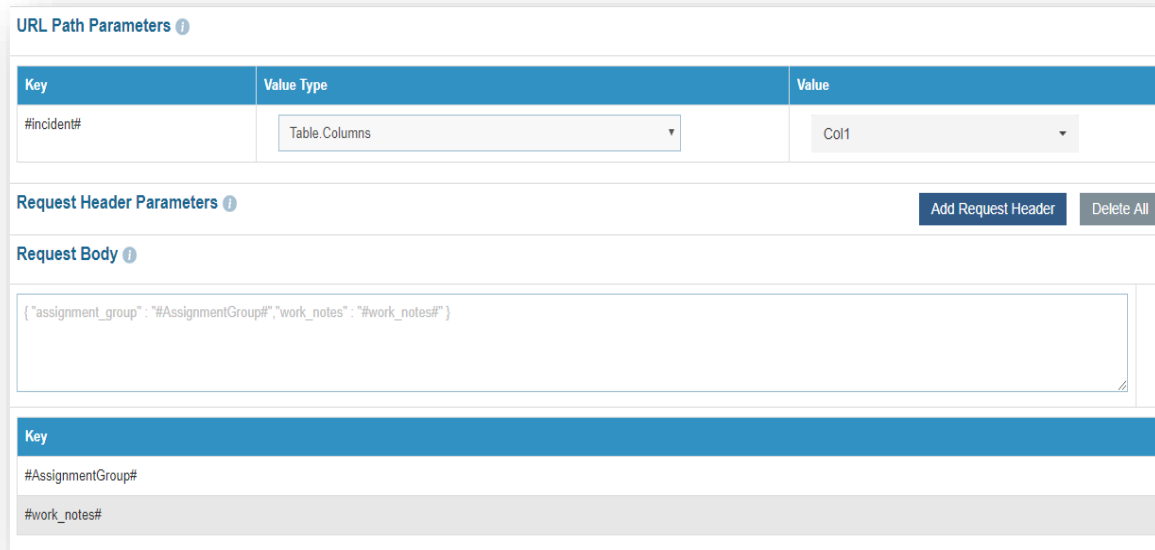


The screenshot shows a 'Secret Selector' dialog box. It has a title bar with a close button. Below the title bar, there are two main sections. The first section has 'Input Type' set to 'CyberArk'. The second section has 'Value' set to 'SNOWPassword'. Below these sections is a table with two columns: 'Key' and 'Value'. The 'Value' column contains redacted information (black bars). At the bottom right, there are 'Cancel' and 'Save' buttons.

Key	Value
Description	[Redacted]
AppID	[Redacted]
Safe	[Redacted]
Folder	[Redacted]
Object	[Redacted]

Figure 199 - Password from Key Vault(CyberArk)

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



The screenshot shows a configuration window with three main sections:

- URL Path Parameters:** A table with columns 'Key', 'Value Type', and 'Value'. One entry is visible: Key '#incident#', Value Type 'Table Columns', and Value 'Col1'.
- Request Header Parameters:** A section with 'Add Request Header' and 'Delete All' buttons.
- Request Body:** A text area containing a JSON object: `{"assignment_group": "#AssignmentGroup#", "work_notes": "#work_notes#"}`.

Below the Request Body section, there is a 'Key' section with a list of parameters: '#AssignmentGroup#' and '#work\_notes#'.

Figure 200 – URL Path Parameters

- d. Considering that sample information has been populated as in Figure 197 – Release Rules Configuration, URL Path parameters sample value can be referenced from the table below:

Incident	Table.Columns	Col1
----------	---------------	------

- e. For sample **Request Body**, refer to following section:

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

- f. Sample request can be captured in following fields:

Key	Value Type	Value
#success#	Text	OK

Figure 201 – Key Parameters Sample Request

g. For sample **Response Body**, refer to following section:

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

h. **Response Key value** mapping can be done as per below table:

#success#	Text	OK
-----------	------	----

- i. Click **Submit** to create the data source.
- j. To view the data source and related information, go to **Organization** and click **View Data Source**.
- k. Ensure that the newly created data source is visible in the list.

Organization	Data Source	Module	Service	Action
BigfixRunbookAI	Datasource_BigfixRunbookAI	Incident Management	SNOW	

Figure 202 – Data Source List

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



Figure 203 - Data Source List (Cont.)

m. The **Manage Entry Criteria** popup appears.

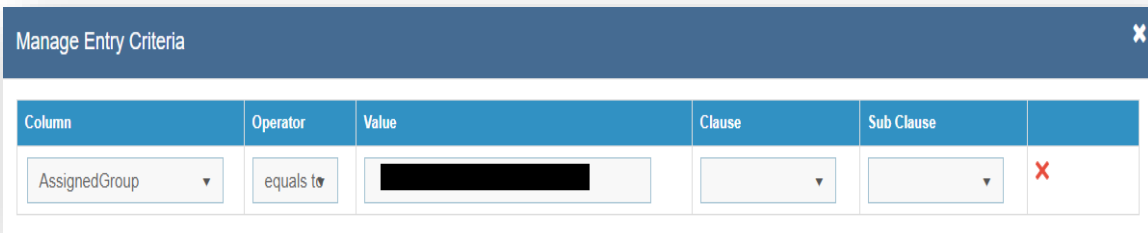


Figure 204 – Manage Entry Criteria

n. Define entry criteria on this screen. For example, if you want to pull tickets for **BigFix Runbook AI 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 BigFix Runbook AI to pick the filtered tickets as per the scope.

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

## 5.4 Lab Exercise 3 – Create Users

### 5.4.1 Scenario

An 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 **BigFix Runbook AI Web URL** and login with Super Admin credentials.
2. **Create User – TestUser**
  - a. Go to **Actions-> RBAC** and click **User Management**.

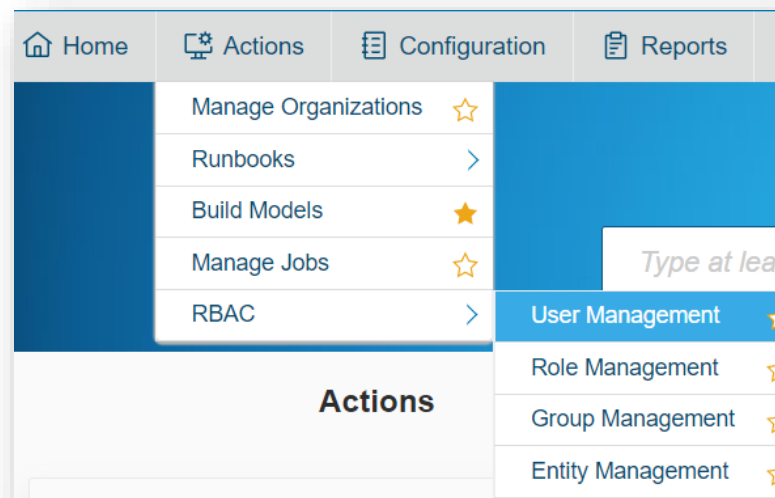
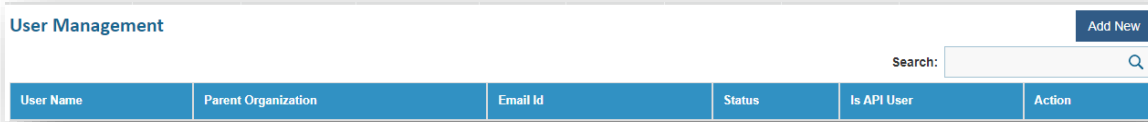


Figure 205 – Organization

- b. Click **Add New**.





User Name	Parent Organization	Email Id	Status	Is API User	Action
-----------	---------------------	----------	--------	-------------	--------

Figure 206 – User Management

- c. Enter the **Email ID** as 'Testuser@hcl.com'.
- d. Select the organization created earlier from **Parent Organization** dropdown.
- e. Enter the **User Name** as 'TestUser'. **Password** will be auto filled.

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

- f. Select **Time Zone** and click **Next**.

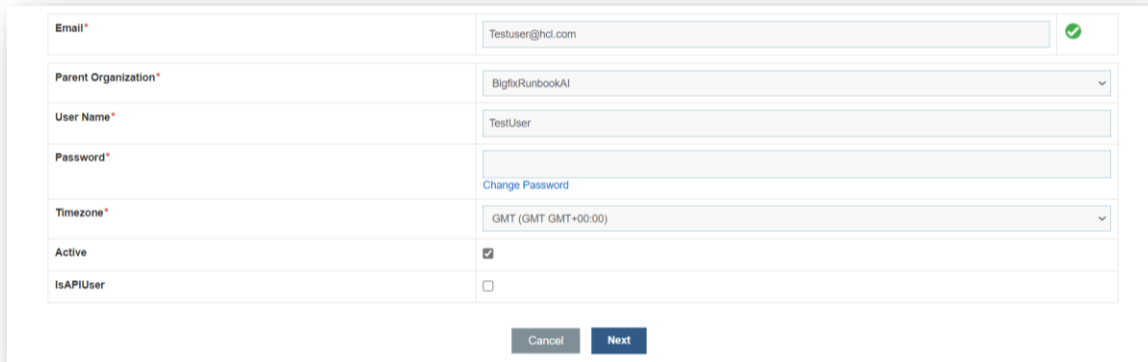


Figure 207 – Add User

- g. Select **Organization** as created in previous exercise and click **Next**.

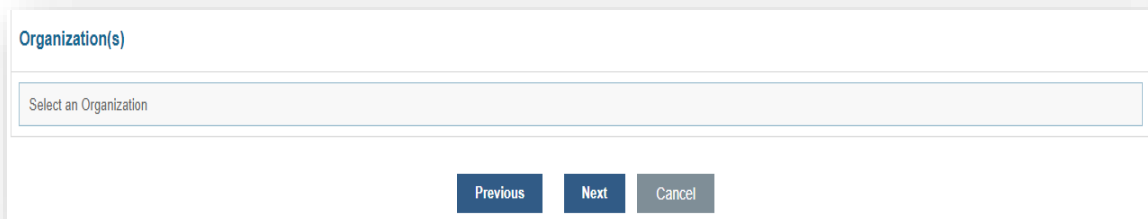


Figure 208 - User Management (cont.)

- h. Click the checkbox under **Select** column and click **Save**.

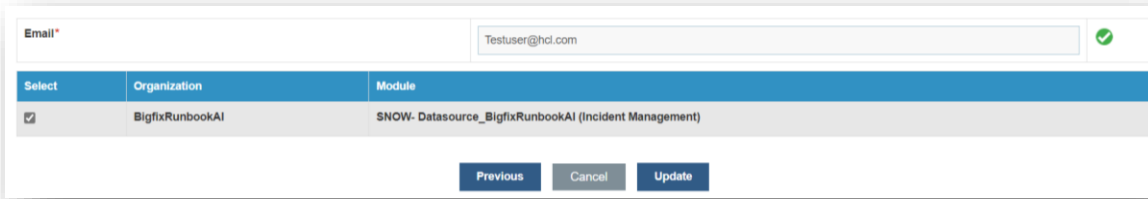


Figure 209 – Add User (cont.)

3. **Create User** – BigFixRunbookAI\_EndUser

- a. Follow all the steps mentioned in [Step 2](#) to create another **BigFixRunbookAI\_EndUser** having emailed as **BigFixRunbookAI\_EndUser@hcl.com**.

4. **Map User to the Group** – Organization Admin

To map the users to the group, perform the following steps:

- a. Go to **RBAC** and click **Group Management**.

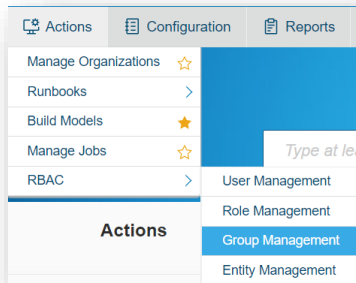


Figure 210 – RBAC

- b. Click **Add User** for Organization Admin row.
- c. Type **TestUser@hcl.com** in the Email field and click **Search**.
- d. Select **Organization Admin User** from Available users(s).

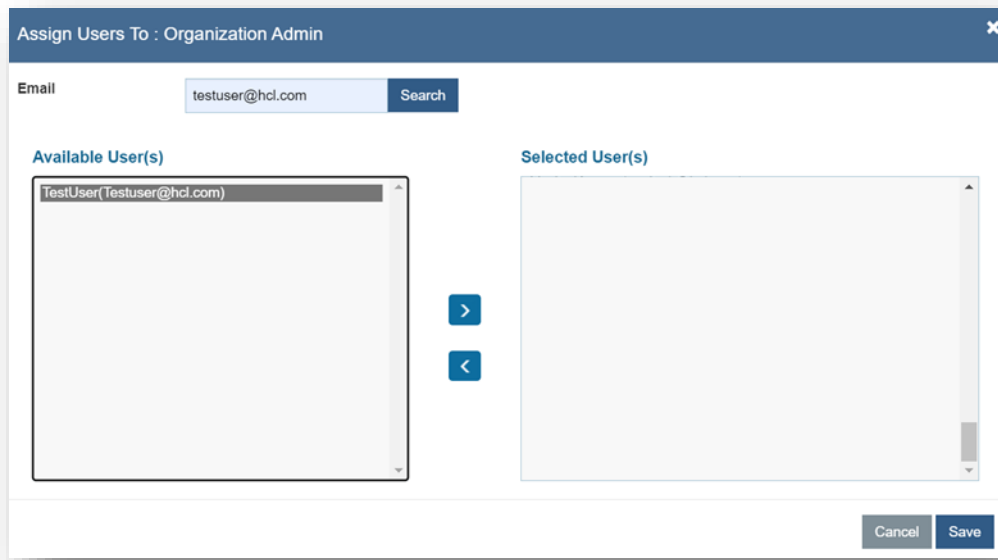



Figure 211 – Assign User To: Organization Admin

- e. Click  and user will move to **Selected user(s)**.

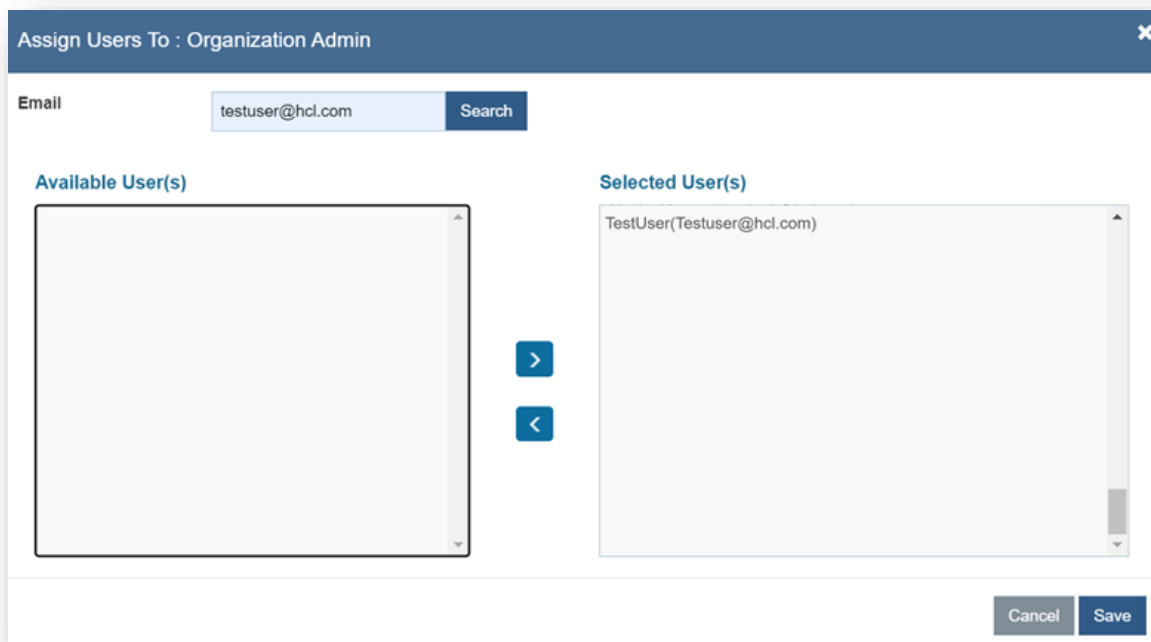


Figure 212 - Assign User To: Organization Admin (cont.)

- f. Click **Save**.

## 5. Map User to the Group – Operations Users

- a. Follow steps mentioned in [Step 4](#) to add user BigFixRunbookAI\_EndUser to **Operations Users** group.
6. First time login for the new organizational admin user.
- a. Open BigFix Runbook AI Web URL and enter testuser@hcl.com in **Email** field.
  - b. Click **Next**.

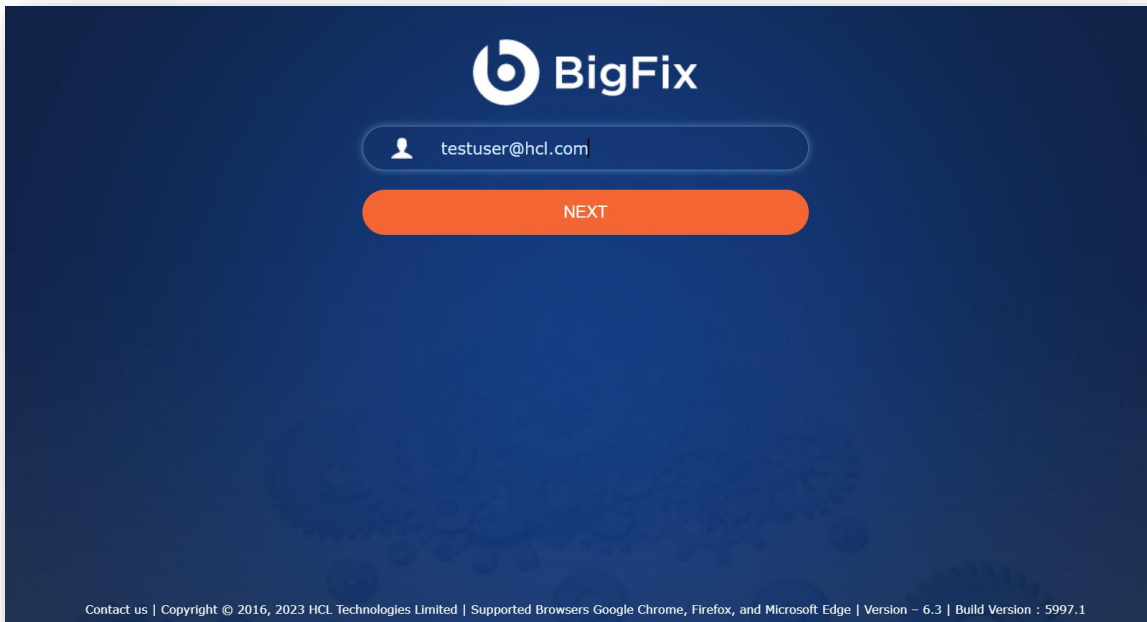


Figure 213 - First time login for the new organizational admin user

- c. 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.
- d. Click **Submit**.

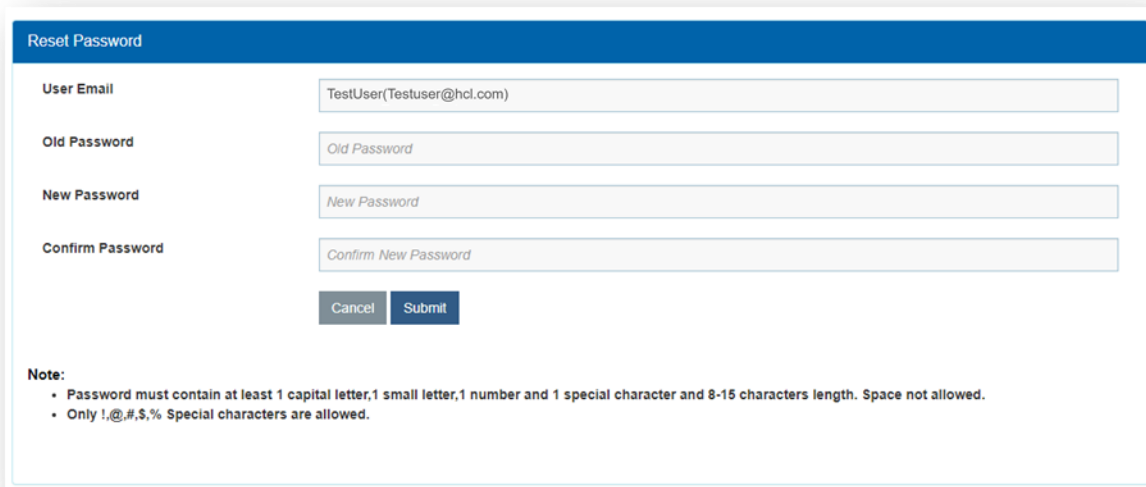


Figure 214 – Reset Password Screen

- e. You will be redirected to the **Login** page. Enter the **Email ID** and the new password to login.

You will be directed to the **Organization Console**.

7. First time login for the new Operations User.
  - a. Follow the steps mentioned in [Step 5](#) for the user *BigFixRunbookAI\_EndUser@hcl.com*. 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

An organization currently has licenses of BigFix and wants to onboard the same tool as the RBA in BigFix Runbook AI for automation resolution of incident tickets.

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

### 5.5.2 Prerequisites

- User 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 BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions-> Runbooks and click Manage Runbook Tool.

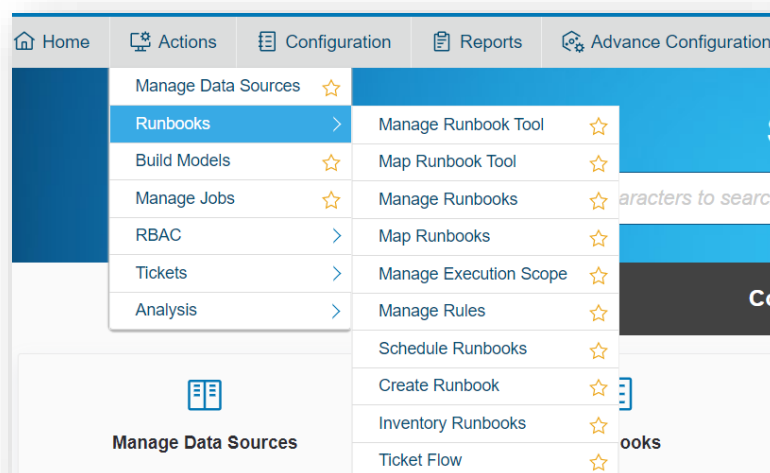


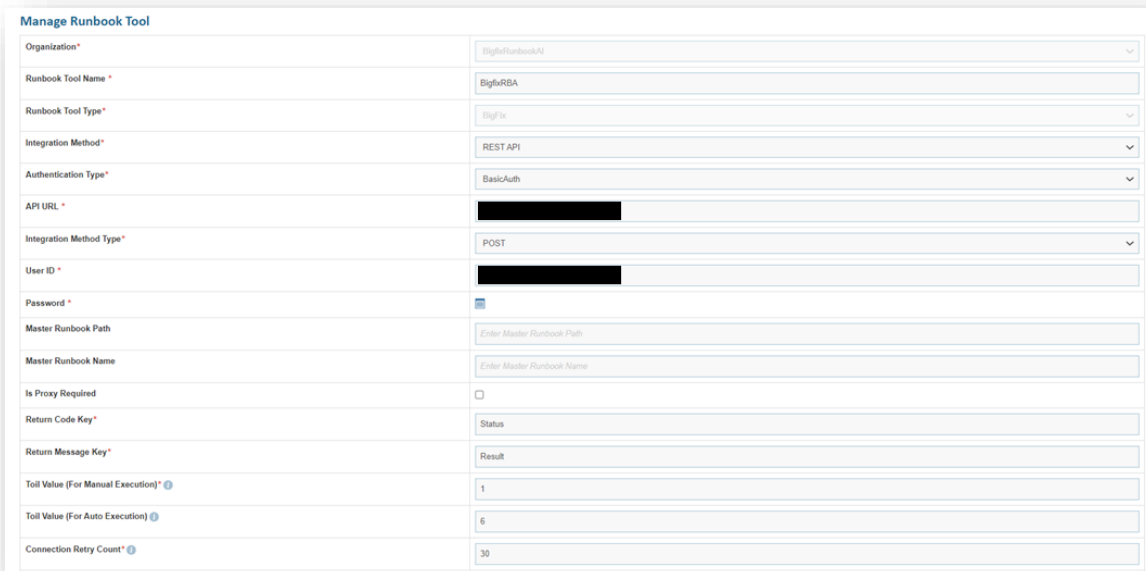
Figure 215 – Manage Runbook Tool

3. Click **Add New** to add a new runbook tool.

4. Provide the information below.

- Select ‘BigFixRunbookAI’ as the **Organization**.
- Enter ‘BigFixRBA’ into the **Runbook Tool Name** field.
- Select ‘BigFix’ as the **Runbook Tool Type**.
- Select ‘REST API’ as the **Integration Method**.
- Select ‘BasicAuth’ as the **Authentication Type**.
- Enter the **API URL** 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 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.

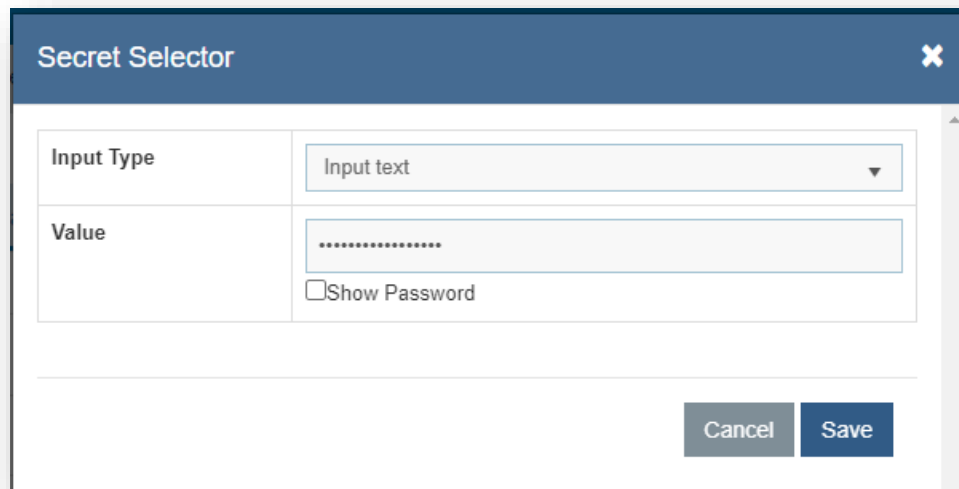


Manage Runbook Tool	
Organization*	BigFixRunbookAI
Runbook Tool Name *	BigFixRBA
Runbook Tool Type*	BigFix
Integration Method*	REST API
Authentication Type*	BasicAuth
API URL *	[REDACTED]
Integration Method Type*	POST
User ID *	[REDACTED]
Password *	[REDACTED]
Master Runbook Path	Enter Master Runbook Path
Master Runbook Name	Enter Master Runbook Name
Is Proxy Required	<input type="checkbox"/>
Return Code Key*	Status
Return Message Key*	Result
Toil Value (For Manual Execution)* ⓘ	1
Toil Value (For Auto Execution) ⓘ	6
Connection Retry Count* ⓘ	30

Figure 216 – Manage Runbook Tool (cont.)

5. **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 any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field.



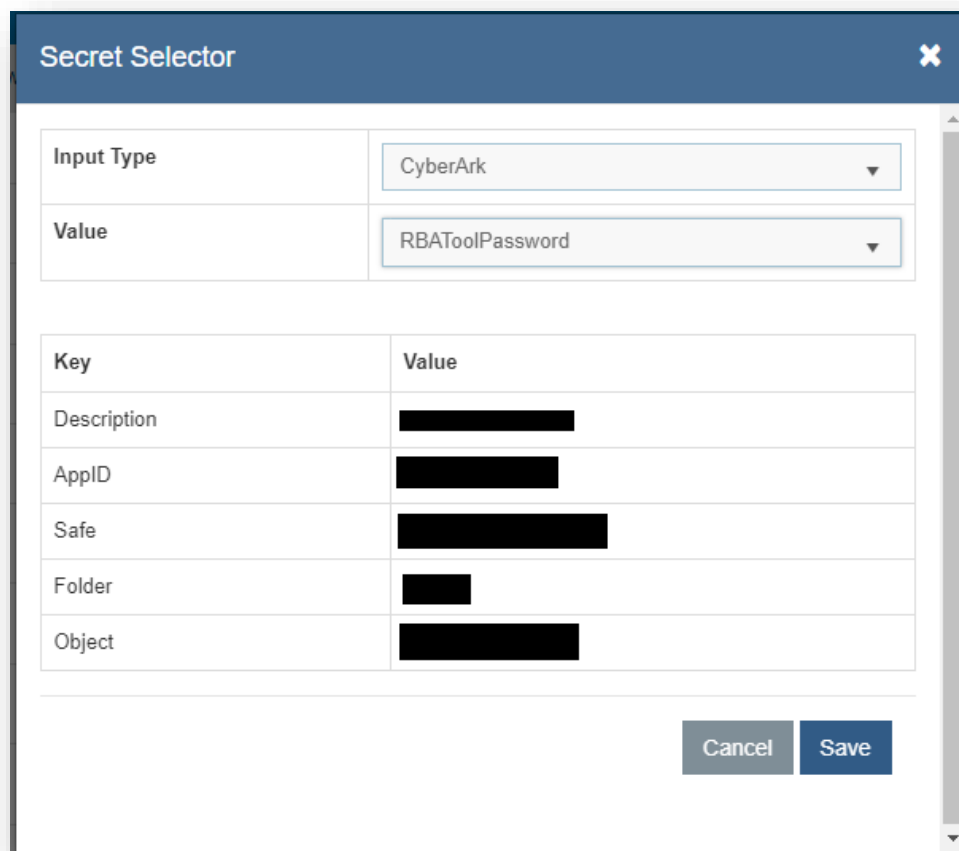


The dialog box titled "Secret Selector" has a close button (X) in the top right corner. It contains two main sections:

- Input Type:** A dropdown menu with "Input text" selected.
- Value:** A text input field containing a series of dots (password masked). Below it is a checkbox labeled "Show Password" which is currently unchecked.

At the bottom right, there are two buttons: "Cancel" and "Save".

Figure 217 - Password in plaintext



The dialog box titled "Secret Selector" has a close button (X) in the top right corner. It contains two main sections:

- Input Type:** A dropdown menu with "CyberArk" selected.
- Value:** A dropdown menu with "RBAToolPassword" selected.

Below these sections is a table with two columns: "Key" and "Value".

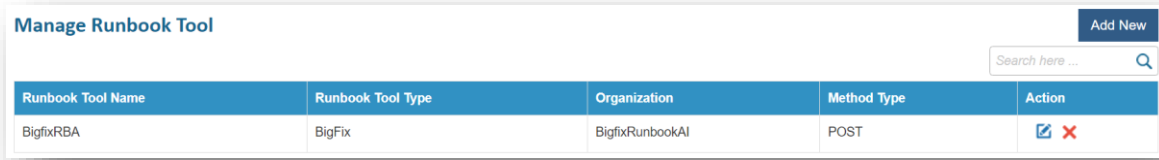
Key	Value
Description	[REDACTED]
AppID	[REDACTED]
Safe	[REDACTED]
Folder	[REDACTED]
Object	[REDACTED]

At the bottom right, there are two buttons: "Cancel" and "Save".

Figure 218 - Password from Key Vault (CyberArk)

6. Click **Save** to create the runbook automation tool.

7. To view the newly created **Runbook Tool**, go to **Actions**→**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
BigfixRBA	BigFix	BigfixRunbookAI	POST	 

Figure 219- 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 BigFix Runbook AI. This tool will be used for automated ticket resolutions by BigFix Runbook AI.

The next step is to map the runbook tool to an organization which will be covered in the next exercise.

## 5.6 Lab Exercise 5 – Map Runbook Tool to an Organization

### 5.6.1 Scenario

To automate the resolution of most common occurring issues/tasks in BogFixRunbookAI’s environment, the runbook tool created in previous exercise must be mapped with an organization and the respective data source. An organization has requested for the same to be enabled.

In this lab, we will showcase the detailed procedure for mapping the runbook tool with organization and data source created in previous exercises.

### 5.6.2 Prerequisites

- Organization should be configured
- Data Source should be configured
- Runbook Tool should be configured
- Access to Super Admin / Org Admin credentials should be available

## 5.6.3 Solution

1. Open **BigFix Runbook AI Web URL** and login with Organization Admin credentials.
2. Go to Action → Runbook and click Map Runbook Tool.
3. Select Organization Name, Data Source Name and Runbook Tool from respective dropdowns.

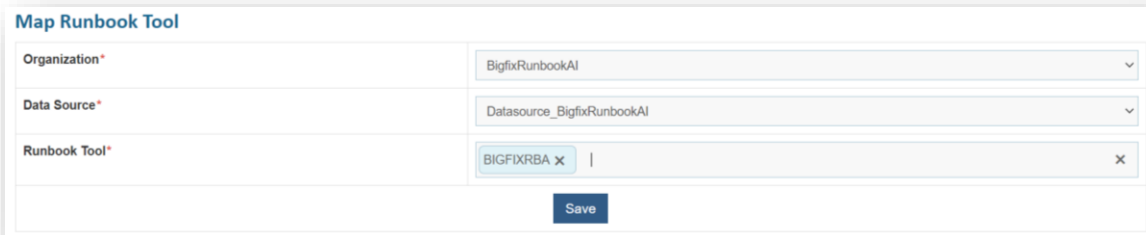


Figure 220 - Manage Runbook Tool (cont.)

4. Click **Save** to do the mapping.

## 5.6.4 Conclusion

Post the completion of this exercise, you should have a good understanding of mapping the runbook tool with an organization and data source.

The next step is to manage the execution scope which will be covered in the next exercise.

## 5.7 Lab Exercise 6 – Manage Execution Scope

### 5.7.1 Scenario

An organization is currently using BigFix as a RBA tool which is deployed in a multi-tenant mode. In order to achieve the automated executions, Organization has requested to configure a specific tenant id of BigFix in BigFix Runbook AI 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 BigFix Runbook AI for organization.

## 5.7.2 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

## 5.7.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions → Runbooks and click Manage Execution Scope.

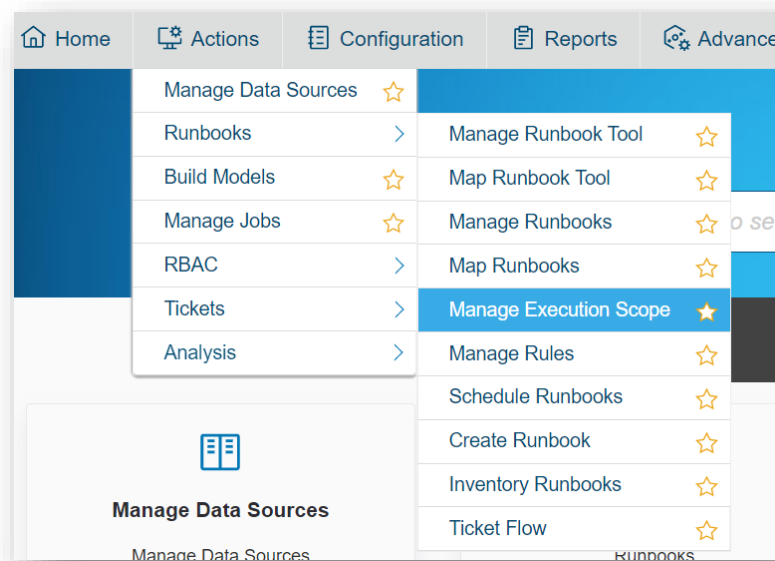
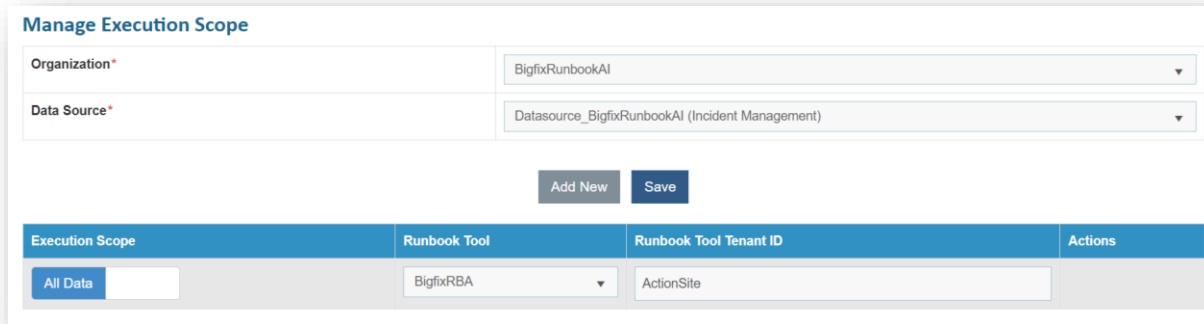


Figure 221 – Manage Execution Scope

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.



Execution Scope	Runbook Tool	Runbook Tool Tenant ID	Actions
All Data	BigfixRBA	ActionSite	

Figure 222 - Manage Execution Scope (cont.)

5. Click **Save**.

## 5.7.4 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.

## 5.8 Lab Exercise 6 – Release Rules Configuration

### 5.8.1 Scenario

An organization has come up with a requirement wherein if a particular ticket is not resolved by BigFix Runbook AI 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 organization.

### 5.8.2 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

### 5.8.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions → Runbooks and click Manage Rules.

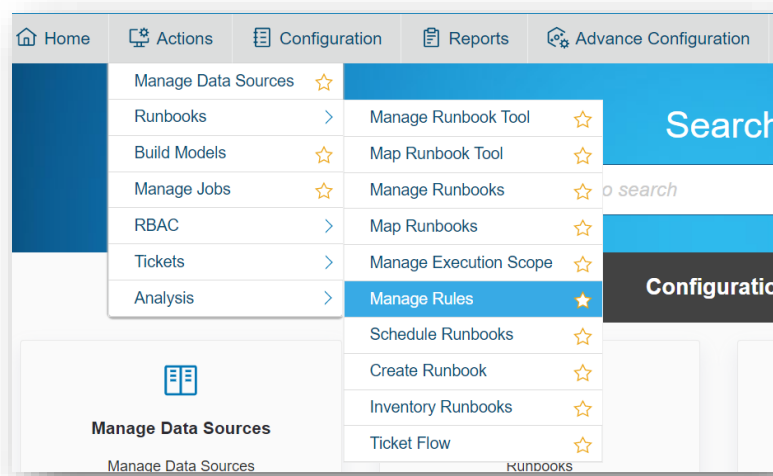
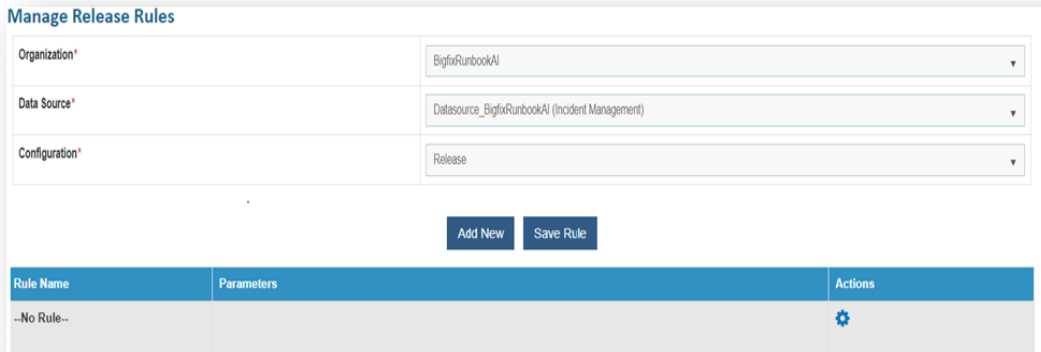


Figure 223 - Manage Release Rules

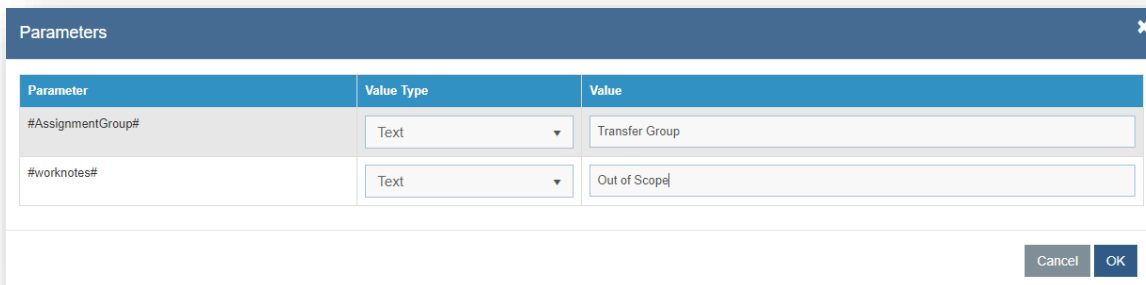
3. Select ‘BigFixRunbookAI’ as the **Organization**.
4. Select ‘Datasource\_BigFixRunbookAI’ as the **Data Source**. Select ‘Release’ as the **Configuration**.



Rule Name	Parameters	Actions
--No Rule--		⚙️

Figure 224 - Manage Release Rules

- 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'.



Parameter	Value Type	Value
#AssignmentGroup#	Text	Transfer Group
#worknotes#	Text	Out of Scope

Figure 225 – Manage Rule Parameters

- Click **OK** to save the parameters.
- Click **Save Rule** to save the release rule configuration.

## 5.8.4 Conclusion

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

## 5.9 Lab Exercise 8 – Manage Columns for Recommendation and Parsing

### 5.9.1 Scenario

To provide enriched runbook recommendations based on the ticket descriptions and extracting relevant input parameters for the runbooks, 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.

### 5.9.2 Prerequisites

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

### 5.9.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Advance Configuration -> Parameter and click Manage Column.



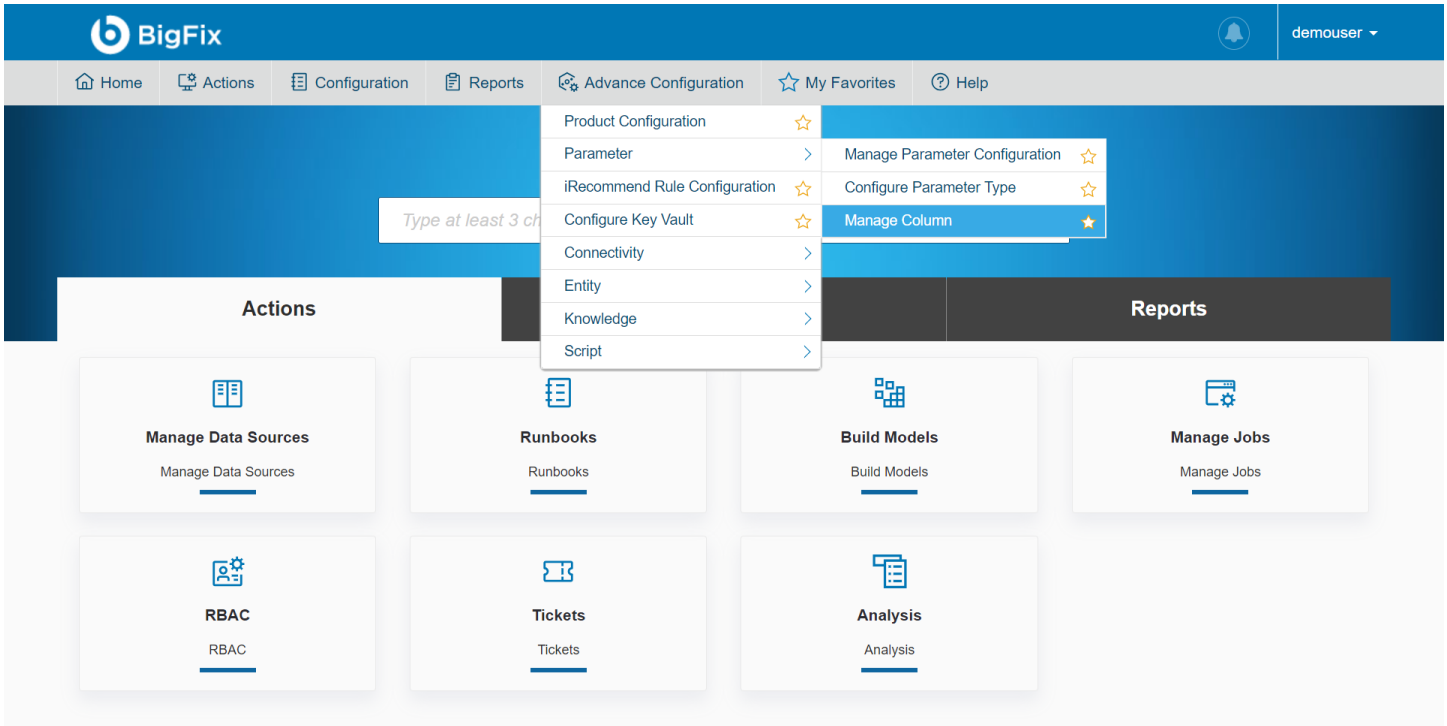


Figure 226 – Manage Columns

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.

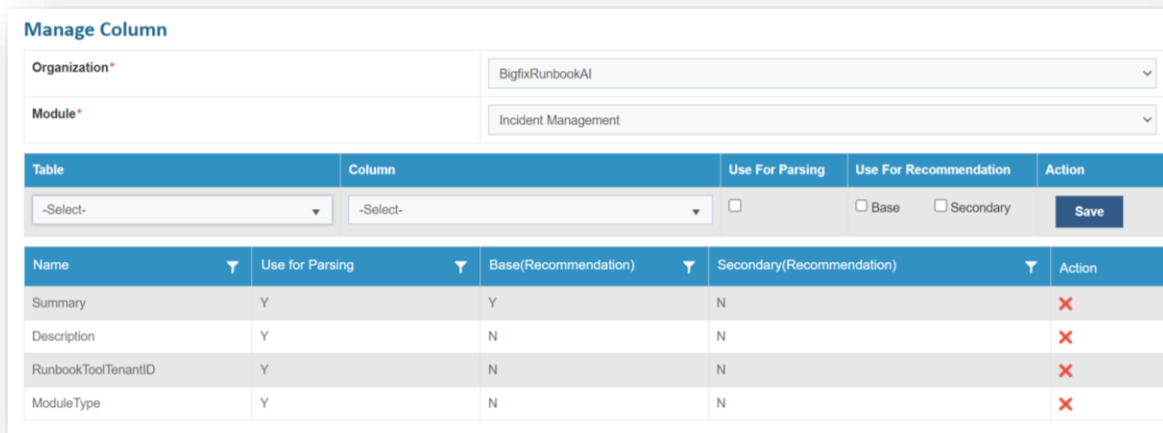


Figure 227 – Manage Columns (cont.)

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.

## 5.9.4 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 contains the scripts / workflow for automated resolution of tickets, which will be covered in the next exercise.

## 5.10 Lab Exercise 9 – Manage Runbooks

### 5.10.1 Scenario

Based on the analysis done earlier for identifying automation opportunities, you have identified that significant number of incidents can be automated. An 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 BigFix in BigFix Runbook AI for organization.

### 5.10.2 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

### 5.10.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions → Runbooks and click Manage Runbooks.

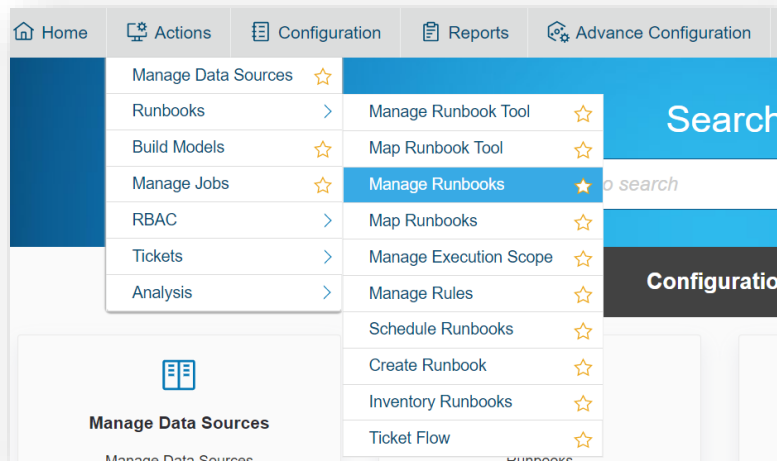


Figure 228 – Manage Runbook

3. Select **Runbook Tool** from dropdown.
4. You can download the template for filling in the metadata in Excel file by clicking the download icon.

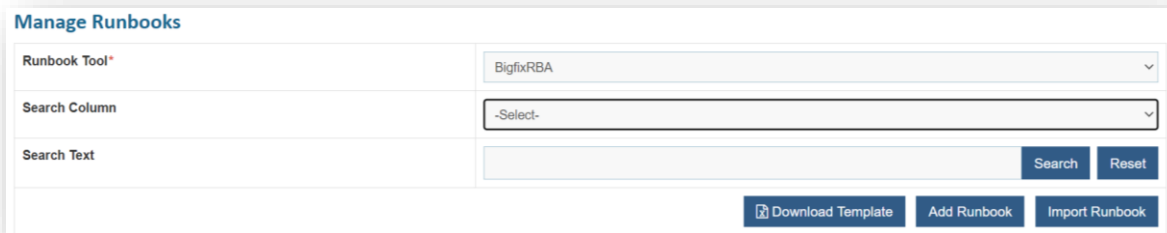


Figure 229 - Manage Runbook(cont.)

5. Otherwise, click **Import Runbook** to import the runbook if metadata sheet is already available. A popup appears to upload the excel file. Click **Choose File** to provide the source URL and click **OK** to save the configuration.

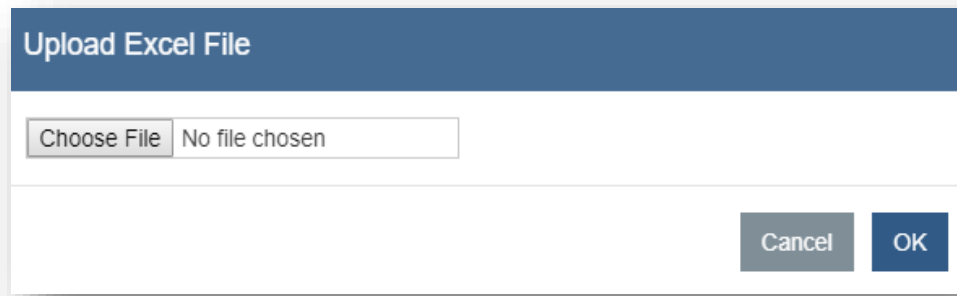


Figure 230 – Import Runbook

## 5.10.4 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.

## 5.11 Lab Exercise 10 – Map Runbooks

### 5.11.1 Scenario

An 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 organization and its data source.

### 5.11.2 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

### 5.11.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions → Runbooks and click Map Runbooks.

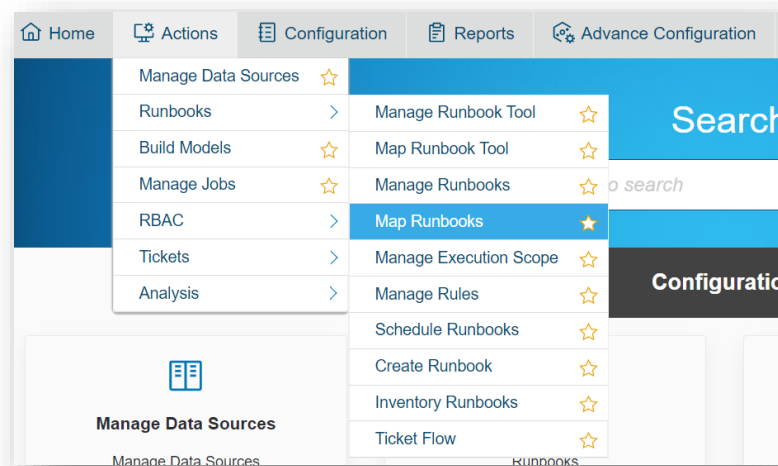


Figure 231 – Map Runbooks

3. Select **Organization** and **Module** from respective dropdown list.
4. Click **All Runbooks** tab and select the runbooks to be mapped.

Once you select a runbook, it will be immediately moved to **Organization Runbooks** tab and removed from **All Runbooks** tab.

### 5.11.4 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.

## 5.12 Lab Exercise 11 – Build Model for Recommendation

### 5.12.1 Scenario

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

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

### 5.12.2 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

### 5.12.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions and click Build Models.

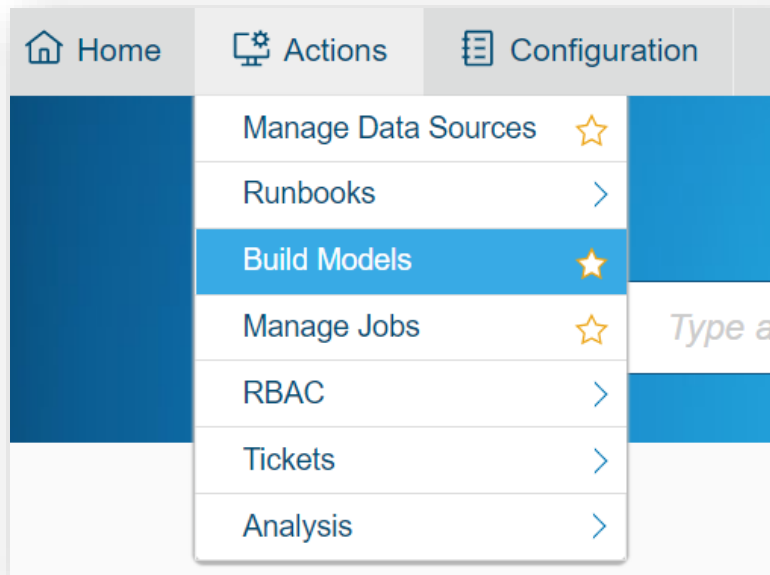


Figure 232 – Build Models

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.

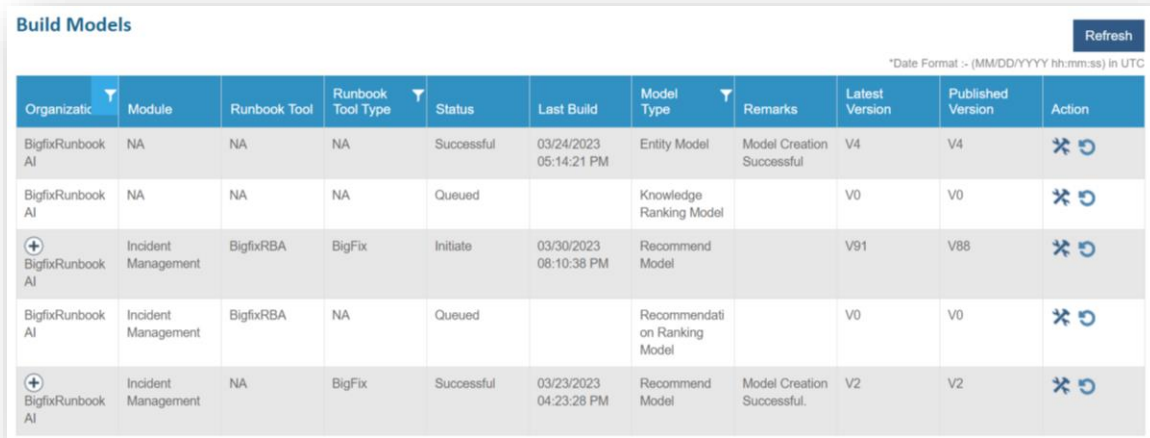
**Build Models** Refresh

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

Organizatic	Module	Runbook Tool	Runbook Tool Type	Status	Last Build	Model Type	Remarks	Latest Version	Published Version	Action
BigfixRunbook AI	NA	NA	NA	Successful	03/24/2023 05:14:21 PM	Entity Model	Model Creation Successful	V4	V4	✕ ↻
BigfixRunbook AI	NA	NA	NA	Queued		Knowledge Ranking Model		V0	V0	✕ ↻
BigfixRunbook AI	Incident Management	BigfixRBA	BigFix	Successful	03/27/2023 03:23:28 PM	Recommend Model	Model Creation Successful.	V91	V88	✕ ↻
BigfixRunbook AI	Incident Management	BigfixRBA	NA	Queued		Recommendati on Ranking Model		V0	V0	✕ ↻
BigfixRunbook AI	Incident Management	NA	BigFix	Successful	03/23/2023 04:23:28 PM	Recommend Model	Model Creation Successful.	V2	V2	✕ ↻

Figure 233 - 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 recommendation for incidents landing into your console.



Organizatic	Module	Runbook Tool	Runbook Tool Type	Status	Last Build	Model Type	Remarks	Latest Version	Published Version	Action
BigfixRunbook AI	NA	NA	NA	Successful	03/24/2023 05:14:21 PM	Entity Model	Model Creation Successful	V4	V4	✕ ↻
BigfixRunbook AI	NA	NA	NA	Queued		Knowledge Ranking Model		V0	V0	✕ ↻
BigfixRunbook AI	Incident Management	BigfixRBA	BigFix	Initiate	03/30/2023 08:10:38 PM	Recommend Model		V91	V88	✕ ↻
BigfixRunbook AI	Incident Management	BigfixRBA	NA	Queued		Recommendation Ranking Model		V0	V0	✕ ↻
BigfixRunbook AI	Incident Management	NA	BigFix	Successful	03/23/2023 04:23:28 PM	Recommend Model	Model Creation Successful.	V2	V2	✕ ↻

Figure 234 - Build Models (cont.)

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

### 5.12.4 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.



## 5.13 Lab Exercise 12 – Enable Error Logging

### 5.13.1 Scenario

An 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 BigFix Runbook AI

### 5.13.2 Prerequisites

- Access to Super Admin / Org Admin credentials should be available
- BigFix Runbook AI Web URL.

### 5.13.3 Solution

1. Open BigFix Runbook AI Web URL and login with Super Admin credentials.
2. Go to Advance Configuration and click Product Configuration.

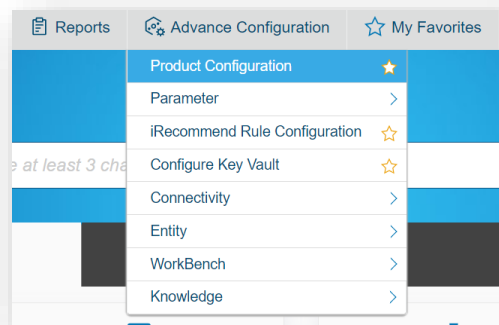


Figure 235 - Configuration

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.

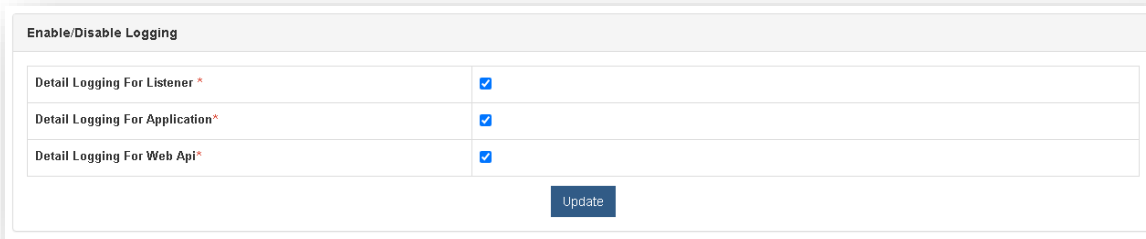


Figure 236 - Configuration (cont.)

6. Go to Actions and click Manage Jobs.

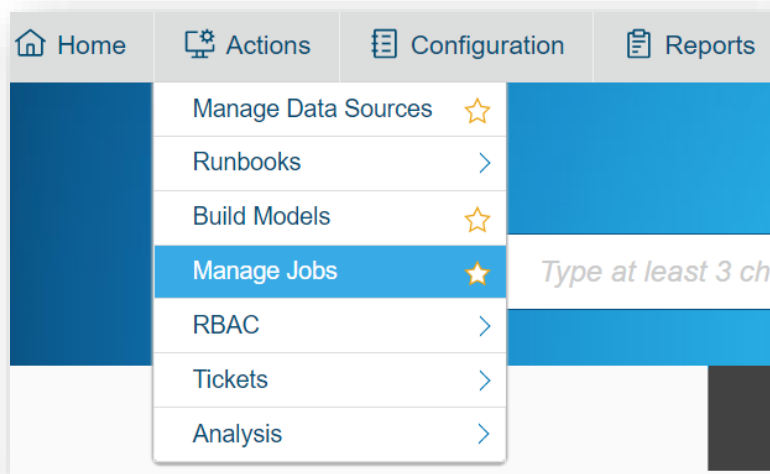


Figure 237 – Manage Jobs

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

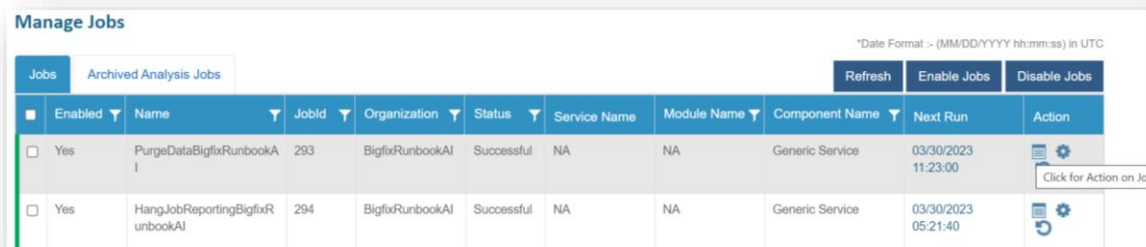


Figure 238 – Manage Jobs Action

8. Click Parameter.

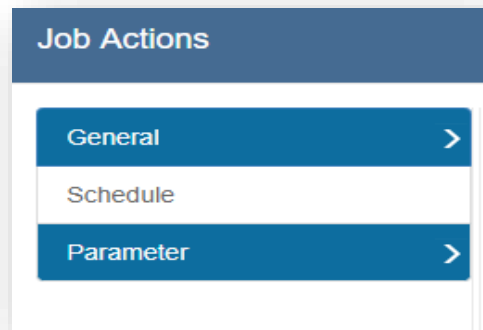


Figure 239 – Job Action

9. Change **LoggerState** from **OFF** to **ON** for detailed logging.

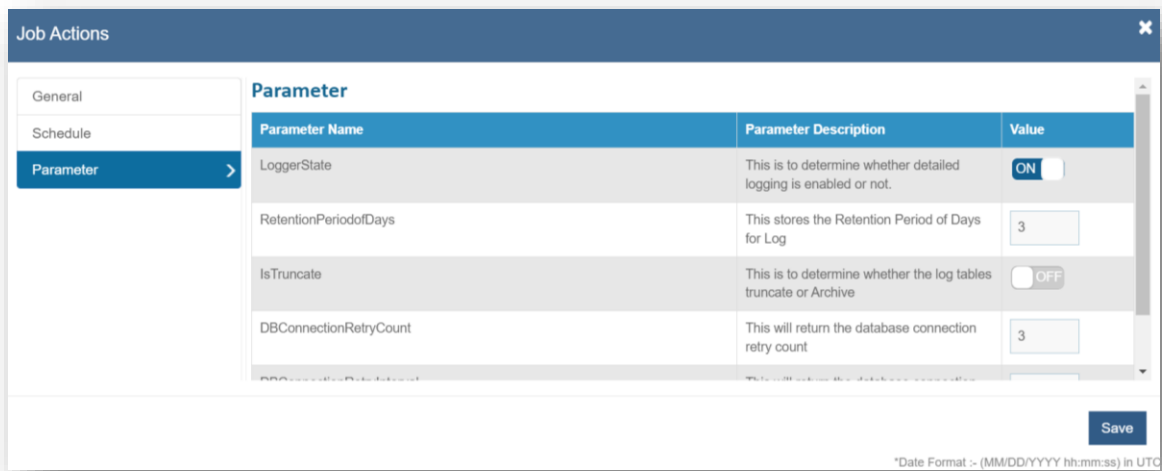


Figure 240 – Job Action (cont.)

10. Click **Save** to apply configuration.
11. Repeat [Steps 5 to 8](#) for all jobs.

## 5.13.4 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 BigFix Runbook AI via a proxy, which will be covered in the next exercise.

## 5.14 Lab Exercise 13 – Manage Proxy

### 5.14.1 Scenario

An organization has internet access via proxy and needs to configure the same in BigFix Runbook AI.

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

### 5.14.2 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

### 5.14.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Configuration and click Manage Proxy.

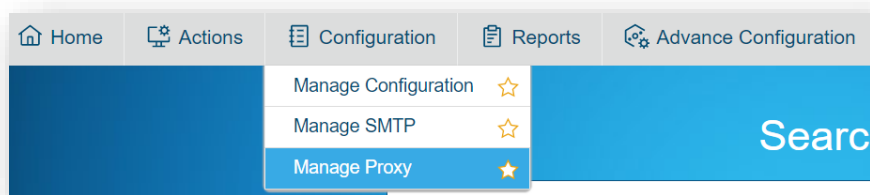


Figure 241 - Manage Proxy

3. Select the **Organization** from the dropdown. Type in the relevant information in **Proxy IP Address**, **Proxy Port**, **Proxy UserName**, and **Proxy Password**.

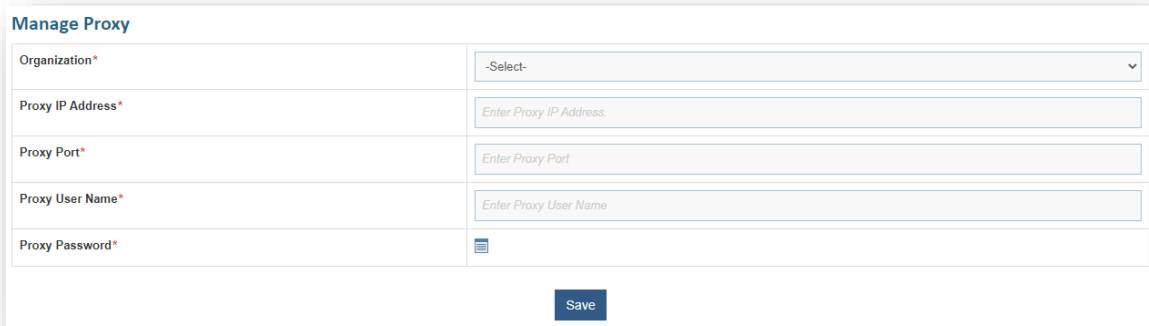


Figure 242 - Manage Proxy (cont.)

4. **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 any Key Vault such as CyberArk then select Input Type as CyberArk and then select any of the configured details from the value field.

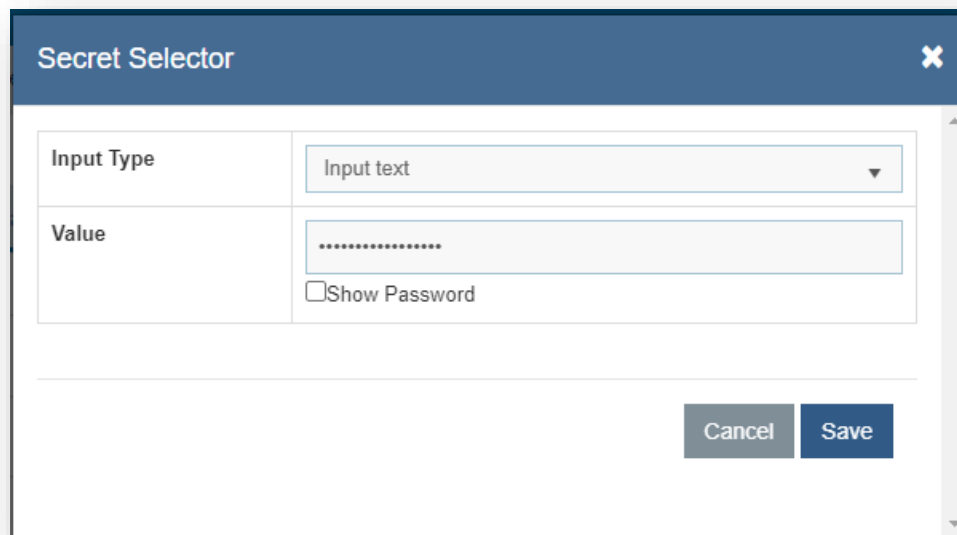
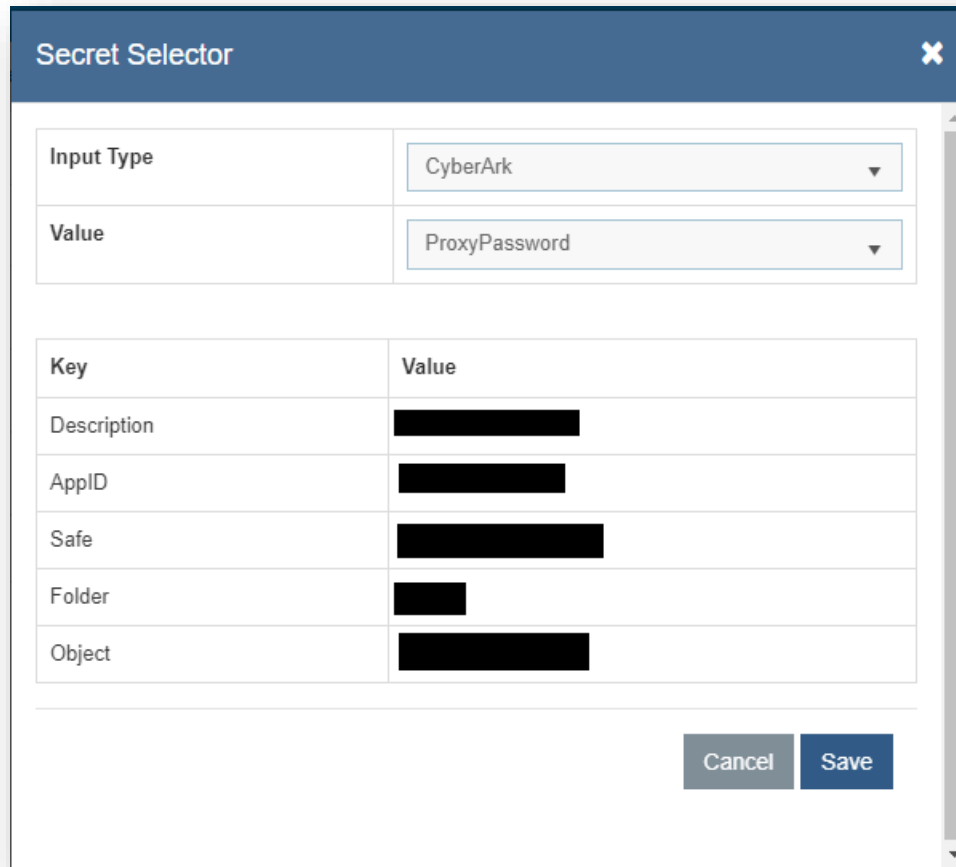


Figure 243 - Password in plaintext



Key	Value
Description	[REDACTED]
AppID	[REDACTED]
Safe	[REDACTED]
Folder	[REDACTED]
Object	[REDACTED]

Figure 244 - Password from Key Vault (CyberArk)

- After adding proxy details in previous step, go to **Actions** and click **Manage Data Sources**.

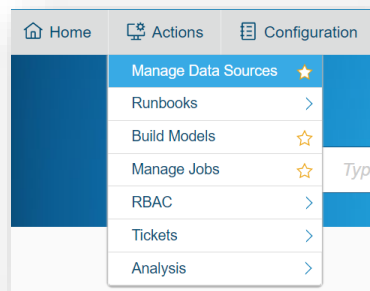


Figure 245 – View

- Click Edit and go to Fetch Data Configuration.



Figure 246 – Edit Data Source

7. Select checkbox against **Proxy Required**.

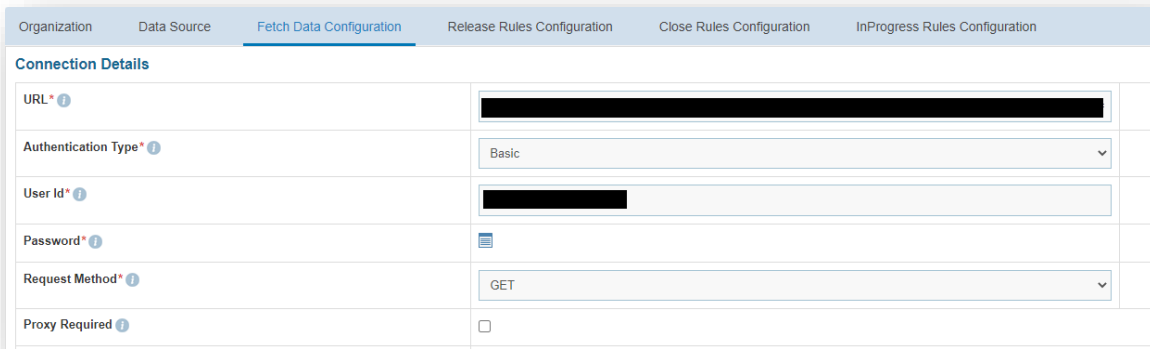


Figure 247 – Data Source: Proxy Required

8. Click **Next** and save **Submit**.

9. Go to Actions→Runbooks and click **Manage Runbook Tool**.

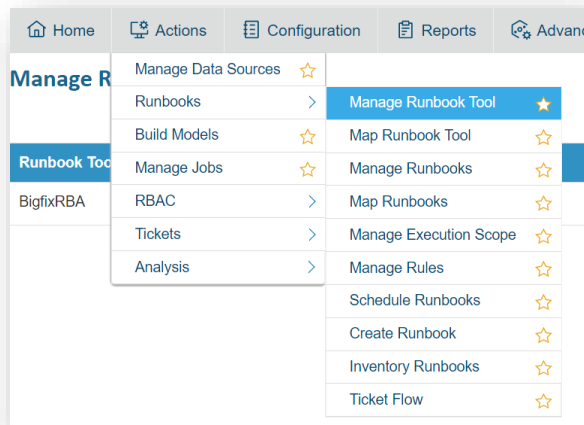


Figure 248 – Manage Runbook Tool

10. Click **Edit**.

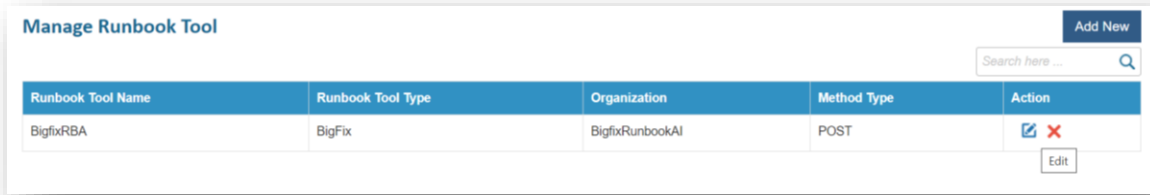


Figure 249 - Manage Runbook Tool (cont.)

11. Select checkbox against **Is Proxy Required**.

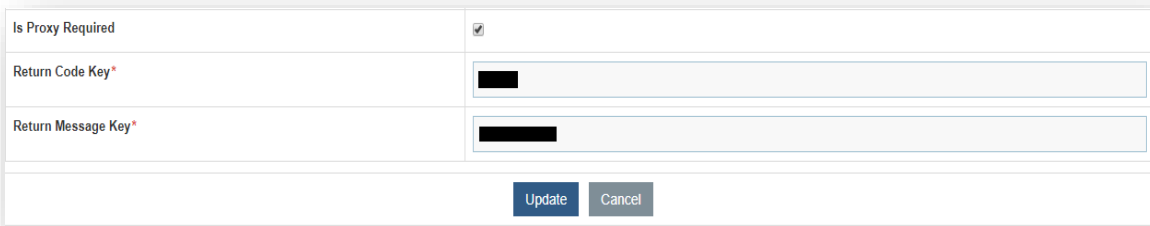


Figure 250 - Manage Runbook Tool (cont.)

12. Click **Update**.

## 5.14.4 Conclusion

Post the completion of this exercise, you should have a good understanding of managing and configuring the proxy related information within BigFix Runbook AI.

This concludes the Configuration module of BigFix Runbook AI. Let’s explore the end to end ticket flows, primarily for the operational users in the next module.

## 5.14.5 Related Documentation

- BigFix Runbook AI Configuration Guide
- BigFix Runbook AI 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, BigFix Runbook AI has been installed and configured within 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 organization's operation users can use the same for automated executions and help in building the knowledge the system needs to slowly and steadily move to an autonomous state.

In this lab, we will showcase the detailed end to end flow for Ticket execution.

#### 6.2.2 Prerequisites

- User should have the roles and privileges of Organization Admin / Operational user and the valid access credentials.

#### 6.2.3 Solution

1. Open BigFix Runbook AI Web URL and login with Organization Admin credentials.
2. Go to Actions and click Manage Jobs.

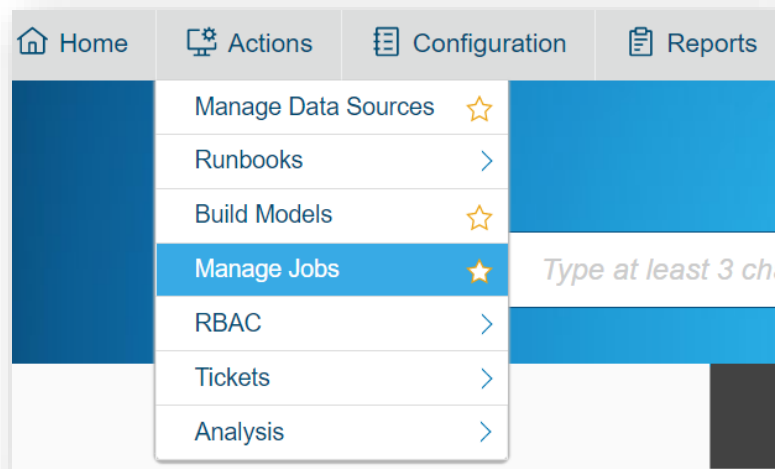


Figure 251 – Manage Jobs

3. Select the jobs mentioned in the below list and click **Enable Jobs**.

Table 7 – Types of Jobs with their description

CollectIncidentsBigFixRunbookAI	Responsible for collecting Incidents from ITSM
RunRecommendationBigFixRunbookAI	Responsible for Recommendation activity
RunParsingBigFixRunbookAI	Responsible for Parsing activity
ProcessAutoBigFixRunbookAI	Responsible for deciding if execution will happen in Auto or manual mode.
ExecuteRunbookBigFixRunbookAI	Responsible for triggering Runbook into RBA layer
ReleaseTicketsBigFixRunbookAI	Responsible for releasing Ticket from BigFix Runbook AI console.

4. All jobs are suffixed with BigFixRunbookAI where BigFixRunbookAI is your **Organization Name**.

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

Jobs | Archived Analysis Jobs Refresh | Enable Jobs | Disable Jobs

Enabled	Name	JobId	Organization	Status	Service Name	Module Narr	Component Name	Next Run	Action
<input type="checkbox"/>	CollectIncidentsBigfixRunbookAI	296	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Data Collector	03/30/2023 05:21:41	
<input type="checkbox"/>	RunParsingBigfixRunbookAI	297	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Parsing	03/30/2023 05:21:53	
<input type="checkbox"/>	ProcessAutoBigfixRunbookAI	298	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Generic Service	03/30/2023 05:22:04	
<input type="checkbox"/>	ProcessUniqueBigfixRunbookAI	299	BigfixRunbookAI	Pending Verification	ServiceNow	Incident Management	Unique Clustering	03/21/2023 11:41:14	
<input type="checkbox"/>	FetchUniqueRecommendationBigfixRunbookAI	300	BigfixRunbookAI	Queued	ServiceNow	Incident Management	iRecommend	03/21/2023 11:41:14	
<input type="checkbox"/>	FetchScriptForUniqueBigfixRunbookAI	301	BigfixRunbookAI	Queued	ServiceNow	Incident Management	Unique Script	03/21/2023 11:41:14	
<input type="checkbox"/>	ReleaseTicketsBigfixRunbookAI	302	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Release Service	03/30/2023 05:21:51	
<input type="checkbox"/>	CreateHistoryAndPopulateFactBigfixRunbookAI	303	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Generic Service	03/30/2023 11:41:00	
<input type="checkbox"/>	FetchClusterIdBigfixRunbookAI	304	BigfixRunbookAI	Queued	ServiceNow	Incident Management	Fetch Unique Cluster	03/21/2023 11:41:14	
<input type="checkbox"/>	CloseTicketsBigfixRunbookAI	305	BigfixRunbookAI	Successful	ServiceNow	Incident Management	Release Service	03/30/2023 05:21:07	

1 - 10 of 14 items

Figure 252 - Manage Jobs (cont.)

- Logout and login with your **Organizational Admin User ID**.
- In order to see the tickets landing in BigFix Runbook AI, 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 the purpose of this lab, we will create the tickets manually in **ServiceNow**.
- Open **ServiceNow URL**. Enter the **Username** and **Password**. Please seek the URL information and access credentials from the Instructor / ITSM team, if you don't have it already.
- Click **Login**.

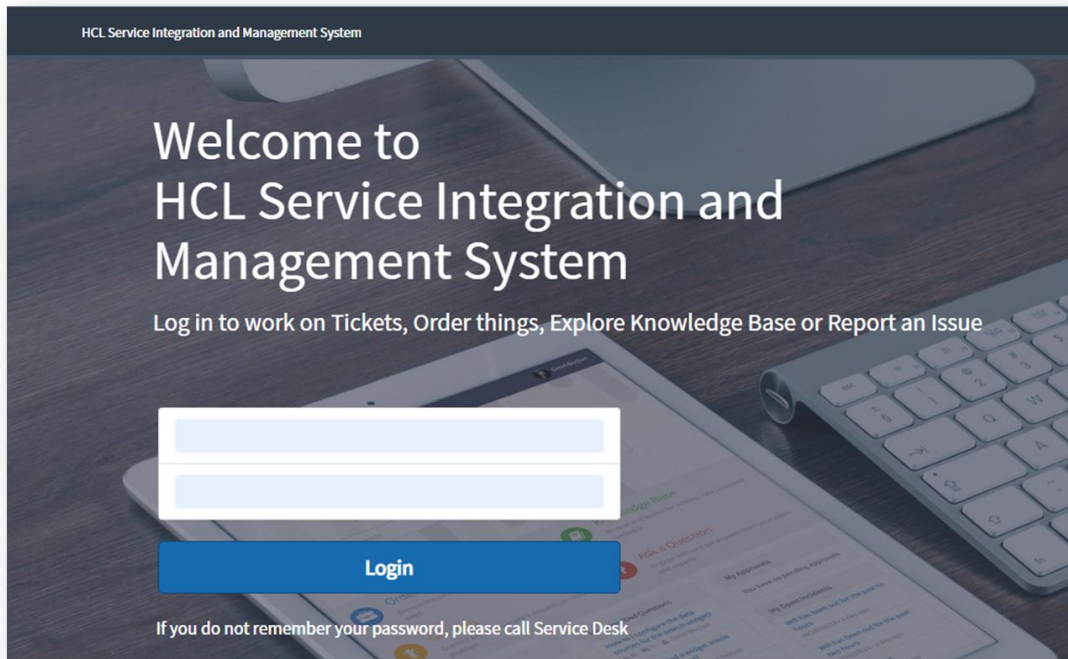


Figure 253 – HCL Service Integration and Management System Login page

9. You will be redirected to the **Home Page**.

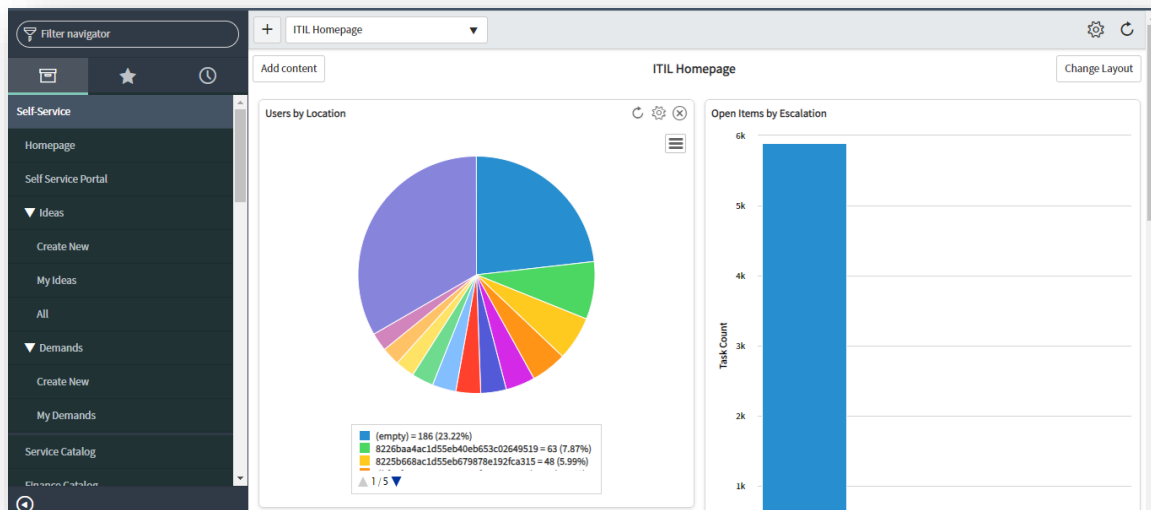


Figure 254 - HCL Service Integration and Management System Home Page

10. Search for **Incident** in the **Filter** navigator tab on top left of the page.

The **Incidents** screen appears.

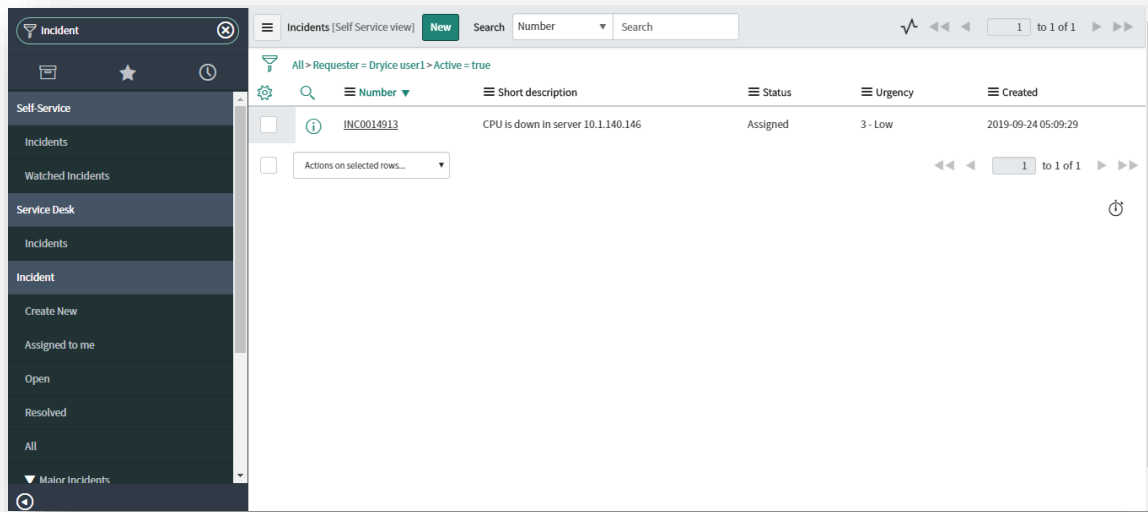


Figure 255 – Incident Screen

11. Click the **New** button to create a new incident.

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

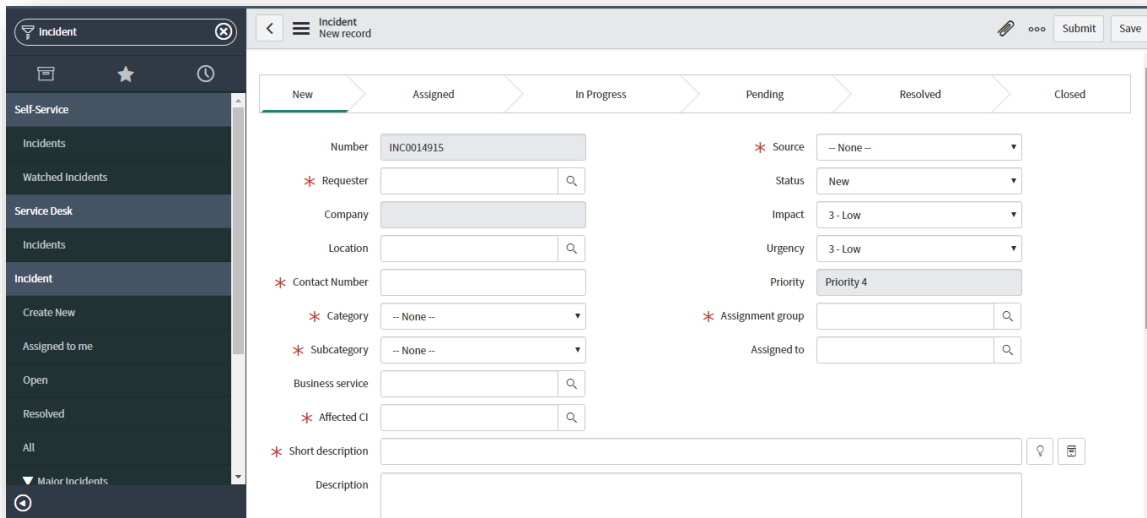


Figure 256 – Incident New Record screen

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.

12. Click **Submit**.

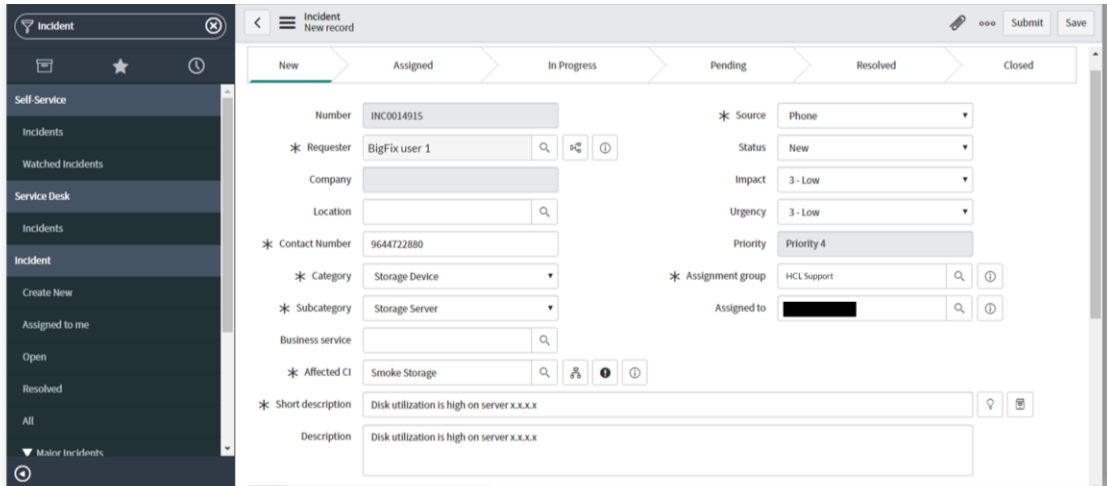


Figure 257 - Incident New Record screen

The incident is created as shown in the image below.

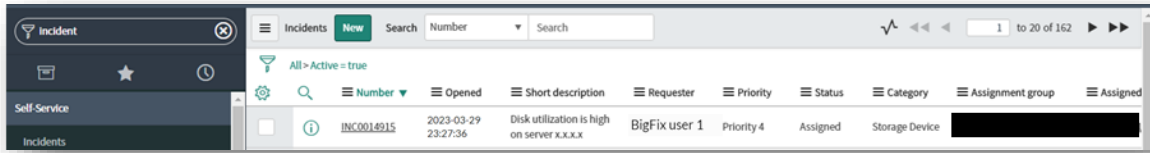


Figure 258 – Incident List

Once the ticket is created, login into BigFix Runbook AI using the Org Admin/Operational User credentials to see the tickets.

13. Go to Actions → Tickets and click Actionable Tickets.

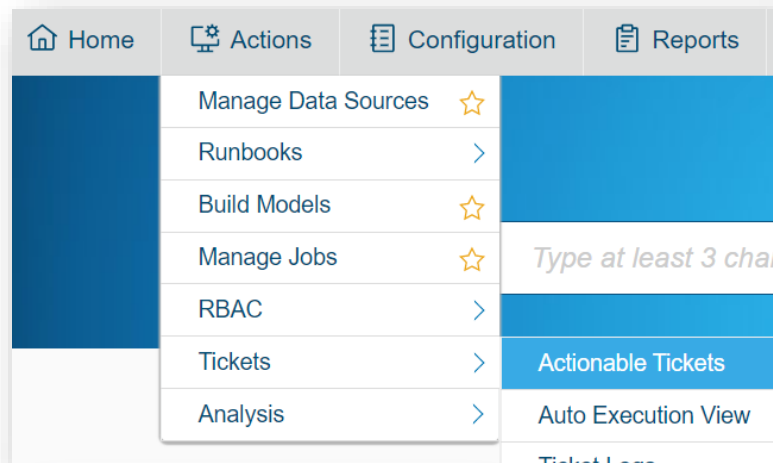


Figure 259 – Actionable Tickets

14. Click **All Tickets** tab.

In this section, you will see all the tickets satisfying the criteria mentioned in the Entry criteria as part of Configuration.

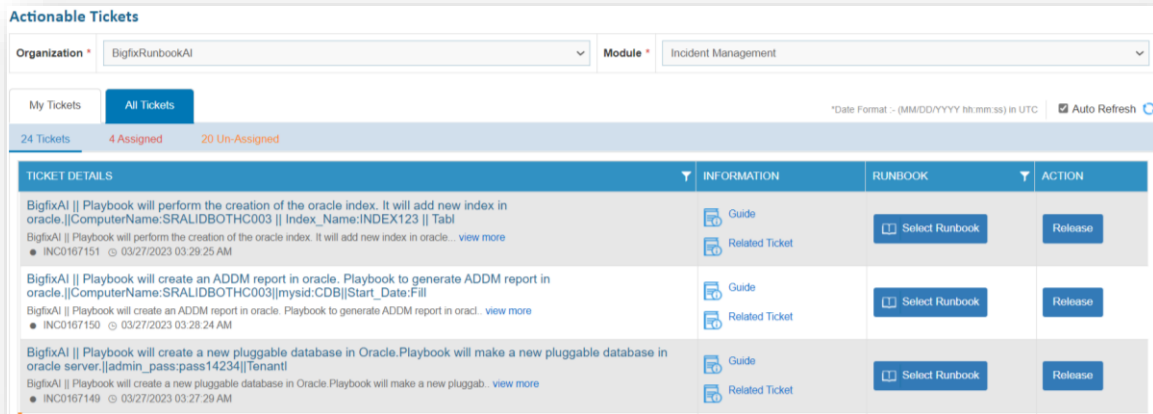


Figure 260– Actionable Tickets (cont.)

- 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.
- 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:

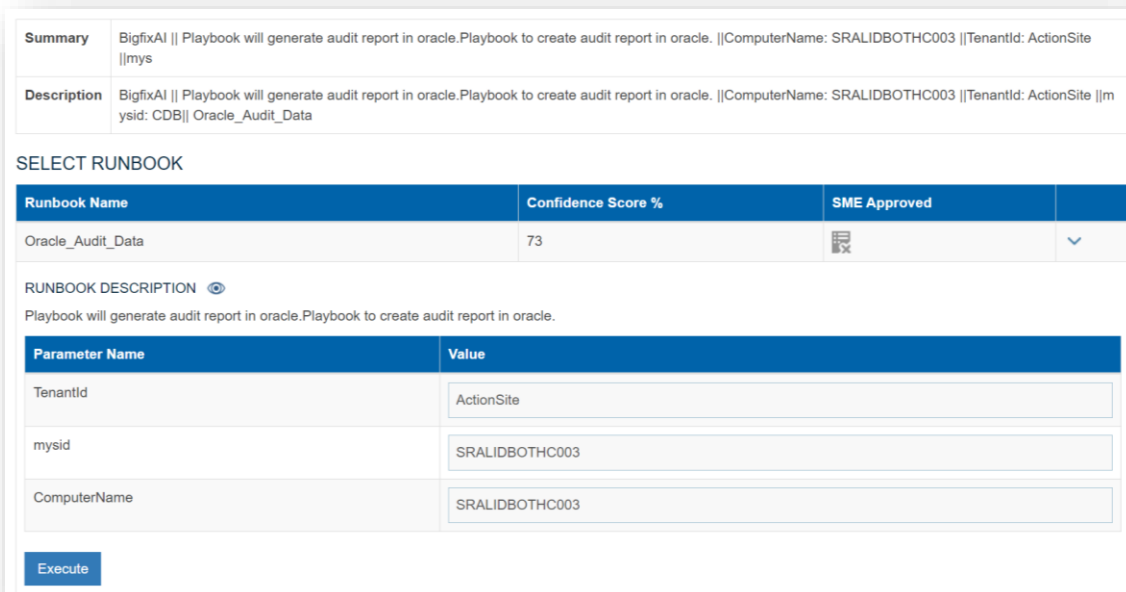


Figure 261 - Pop-Up of automated solution

You will see the recommended list of runbooks.



- c. 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.
- d. 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.
- e. Go to **Tickets** and click **Auto Execution View**.

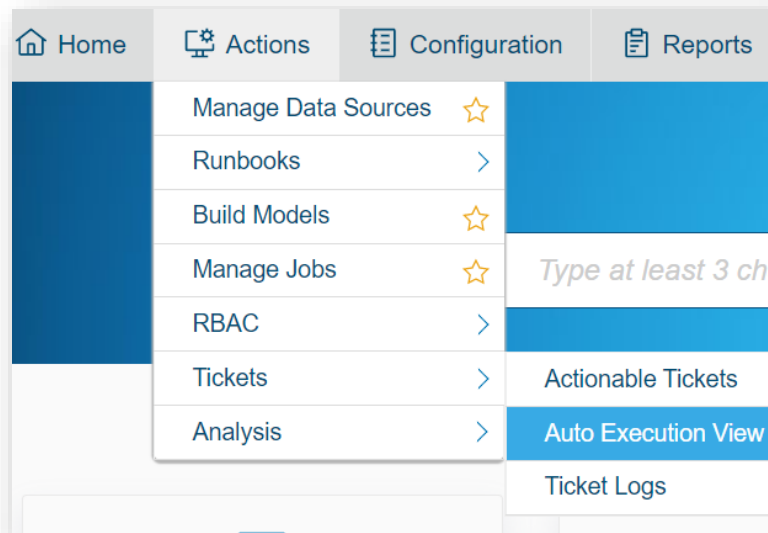


Figure 262 – Auto Execution View

User can view the tickets which are being executed automatically in the screen below.

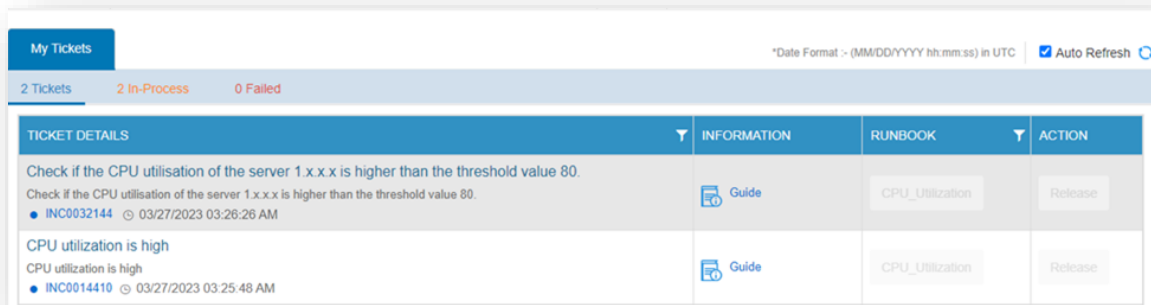
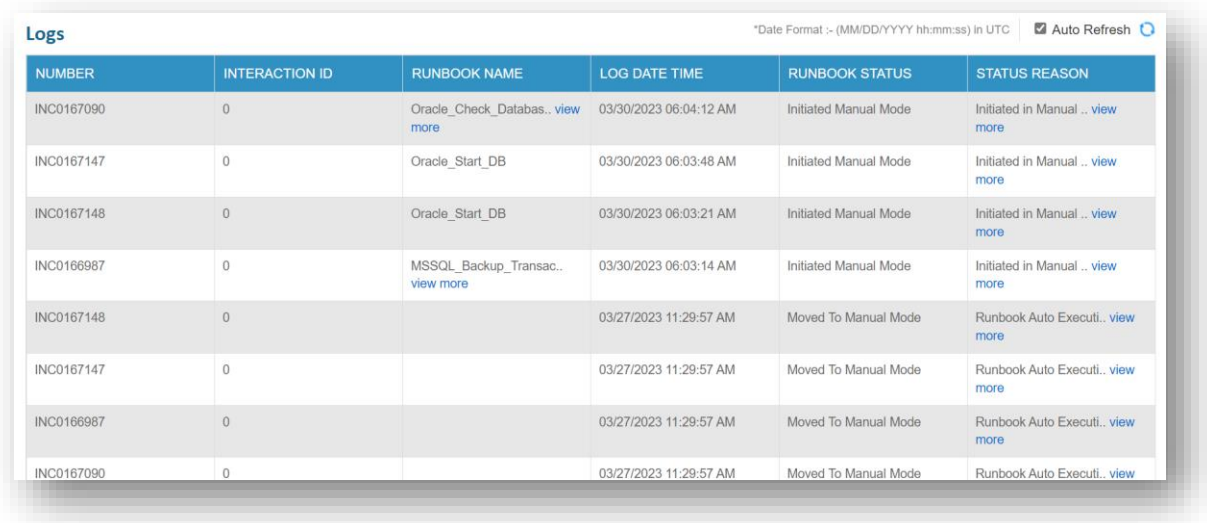


Figure 263 – Actionable Ticket

- f. The ticket execution status can be viewed on **Logs** section available at the bottom.



NUMBER	INTERACTION ID	RUNBOOK NAME	LOG DATE TIME	RUNBOOK STATUS	STATUS REASON
INC0167090	0	Oracle_Check_Databas... <a href="#">view more</a>	03/30/2023 06:04:12 AM	Initiated Manual Mode	Initiated in Manual .. <a href="#">view more</a>
INC0167147	0	Oracle_Start_DB	03/30/2023 06:03:48 AM	Initiated Manual Mode	Initiated in Manual .. <a href="#">view more</a>
INC0167148	0	Oracle_Start_DB	03/30/2023 06:03:21 AM	Initiated Manual Mode	Initiated in Manual .. <a href="#">view more</a>
INC0166987	0	MSSQL_Backup_Transac... <a href="#">view more</a>	03/30/2023 06:03:14 AM	Initiated Manual Mode	Initiated in Manual .. <a href="#">view more</a>
INC0167148	0		03/27/2023 11:29:57 AM	Moved To Manual Mode	Runbook Auto Executi... <a href="#">view more</a>
INC0167147	0		03/27/2023 11:29:57 AM	Moved To Manual Mode	Runbook Auto Executi... <a href="#">view more</a>
INC0166987	0		03/27/2023 11:29:57 AM	Moved To Manual Mode	Runbook Auto Executi... <a href="#">view more</a>
INC0167090	0		03/27/2023 11:29:57 AM	Moved To Manual Mode	Runbook Auto Executi... <a href="#">view more</a>

Figure 264 – Job Logs

## 6.2.4 Conclusion

Post the completion of this exercise, you should have a good understanding of viewing, executing the tickets based on the recommendations provided by BigFix Runbook AI.

This concludes this module. Let’s see how we can optimize the models used by BigFix Runbook AI for recommendation as well as ticket clustering for more accurate identification of automation opportunities.

## 6.2.5 Related Documentation

- BigFix Runbook AI Configuration Guide
- BigFix Runbook AI Troubleshooting Guide
- BigFix Runbook AI User Guide

## 7 Module 5 – Model Optimization

### 7.1 Introduction

This module covers the procedure for optimizing the machine learning-based models used by BigFix Runbook AI 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.

BigFix Runbook AI 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, user can upload a sample set of ticket descriptions to system and verify whether configured hyperparameters for iRecommend and iUnique is 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

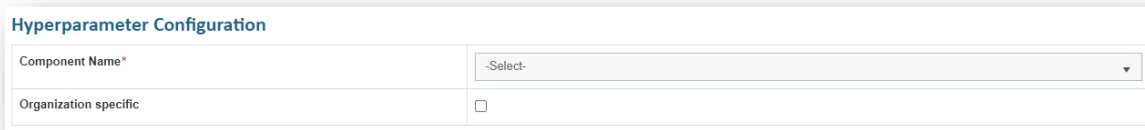
An organization has requested for further optimization of models for the recommendation of runbooks and ticket clustering used for identification of automation candidates. The scenario will remain the same for all the exercises covered in this module.

## 7.2.2 In this lab, we will showcase the detailed procedure for configuring hyperparameters for iRecommend and iUniquePrerequisites

- User should have **Organizational Admin** or **Super Admin** credentials.

## 7.2.3 Solution

1. Open **BigFix Runbook AI Web URL** and login with Super Admin credentials.
2. Go to Advance Configuration -> Parameter and click Hyperparameter Configuration. The Hyperparameter Configuration page appears.

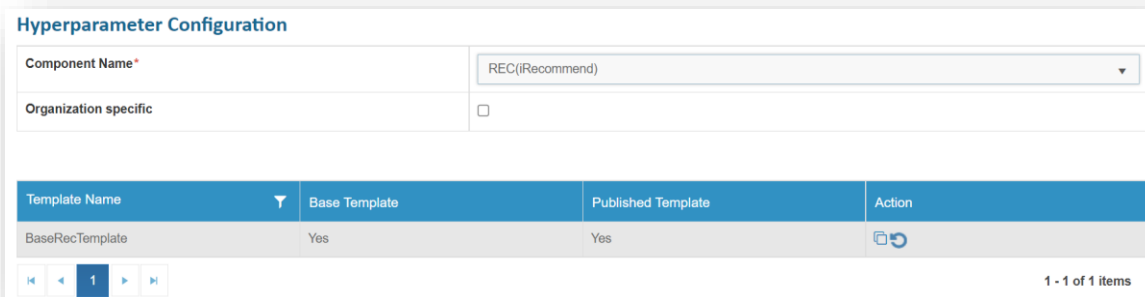


**Hyperparameter Configuration**

Component Name*	-Select-
Organization specific	<input type="checkbox"/>


Figure 265 - Manage Hyper Parameters

3. Select **Recommendation** or **Unique Clustering** component from the drop-down list next to the **Component Name** field.



**Hyperparameter Configuration**

Component Name*	REC(iRecommend)
Organization specific	<input type="checkbox"/>

Template Name	Base Template	Published Template	Action
BaseRecTemplate	Yes	Yes	

1 - 1 of 1 items

Figure 266 - Hyperparameter Configuration


4. To add a new template for **Recommendation**, click  next to the template selected for cloning. The **Clone Configuration** page appears.



Figure 267 - Clone Configuration

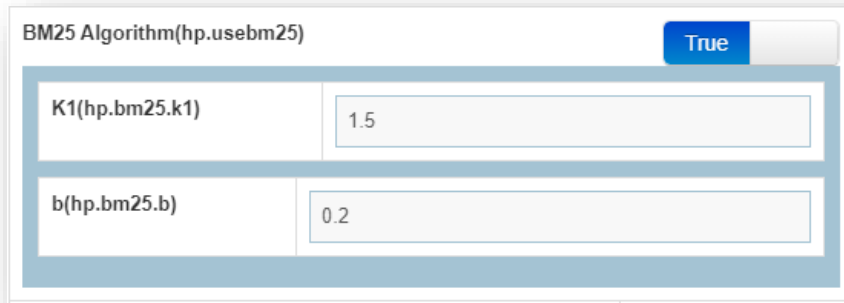
5. Type the Template Name.
6. Type in the values for each of the following parameters:
  - **rba.pos.tagweights:** It specifies the weightage for each tag that is the part of a speech in a ticket. Refer to below table for default tag values.

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. User can change them based on the requirement. The sum of these values must be 1.

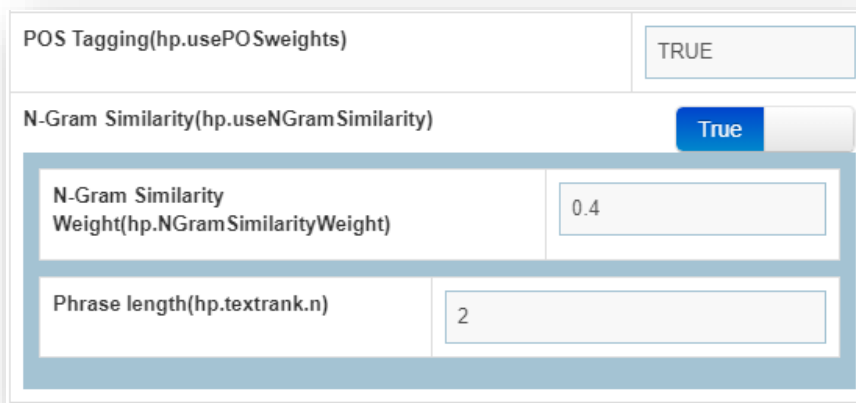
- **Usebm25:** Use a toggle button with options such as True or False to enable this parameter. Enabling this parameter prompts you to specify the values following parameters.
  - **K1:** The user can provide any value of less than 2.0. The Default value is 1.5.
  - **B:** The user can provide any value of less than 1.0. The Default value is 0.2



BM25 Algorithm(hp.usebm25) <input checked="" type="checkbox"/>	
K1(hp.bm25.k1)	1.5
b(hp.bm25.b)	0.2

Figure 268 - 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, the following parameters:
  - **SimilarityWeight:** Specifies the value for the combined weightage of bm25 and textrank score. The value should be less than 1.
  - **TextRank.n:** Specifies the number of words to be considered for summarizing similarity weight. The number should be equal to or greater than 1.

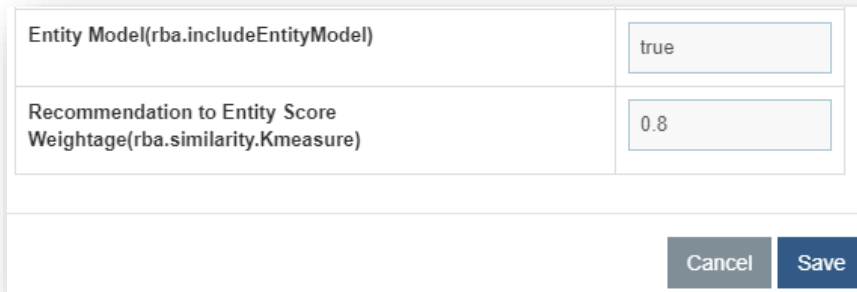


POS Tagging(hp.usePOSweights)	TRUE
N-Gram Similarity(hp.useNGramSimilarity) <input checked="" type="checkbox"/>	
N-Gram Similarity Weight(hp.NGramSimilarityWeight)	0.4
Phrase length(hp.textrank.n)	2

Figure 269 - 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



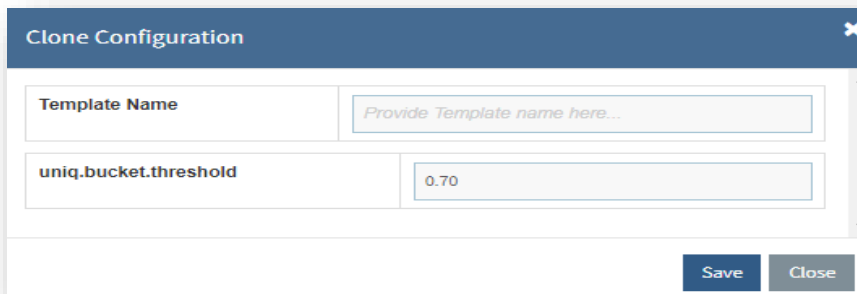
Entity Model(rba.includeEntityModel)	true
Recommendation to Entity Score Weightage(rba.similarity.Kmeasure)	0.8

Cancel Save

Figure 270 - Clone Configuration (cont.)

7. Click **Save**.
8. To create a template for **Unique Clustering**, click  next to the template selected for cloning.

The Clone Configuration page appears.



Clone Configuration

Template Name	Provide Template name here...
uniq.bucket.threshold	0.70

Save Close

Figure 271 - Clone Configuration

9. Type the **Template Name**. i.e. 'BigFixRunbookAI\_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.

10. Click **Save**.

The new template is added and listed at the bottom of the template list. The templates created will be used in 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

An organization has requested for 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 hyperparameters for iUnique (Unique Clustering).

### 7.3.2 Prerequisites

- User should have Organizational Admin credentials.

### 7.3.3 Solution

1. Open **BigFix Runbook AI 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.



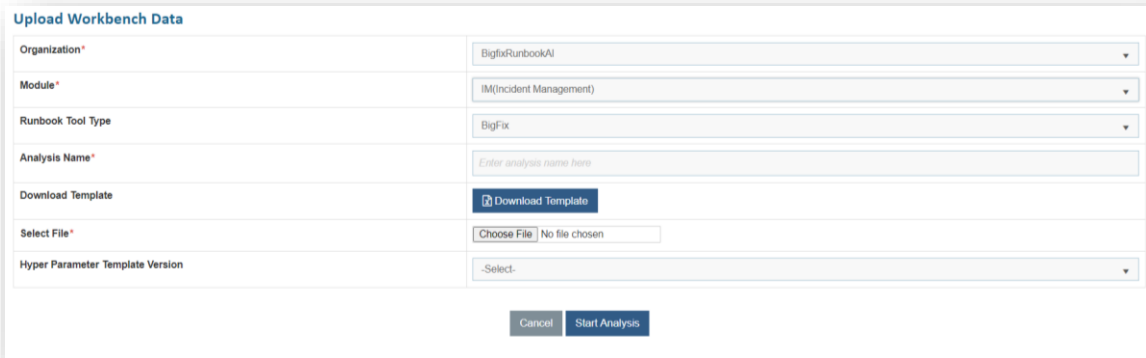


Figure 272 - Upload Workbench Data

4. Select **Organization** and click **Add Mock Organization**. It prompts user to enter the **Organization Name**.

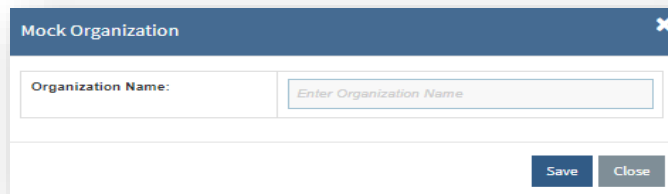


Figure 273 – Mock Organization

5. Click **Save**.
6. Select **Module** as 'Incident'.
7. Type the Analysis Name.
8. Click **Choose File** to upload the sample tickets as per the provided template. The template can be downloaded by clicking **Download Template**.
9. Select Hyper Parameter Template Version from the dropdown.
10. Click **Start Analysis** to begin the analysis for **Unique Clustering**.

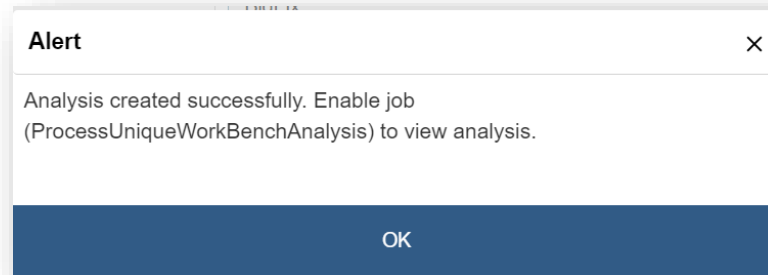


Figure 274 – Analysis Created Successfully

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.

A confirmation message appears.

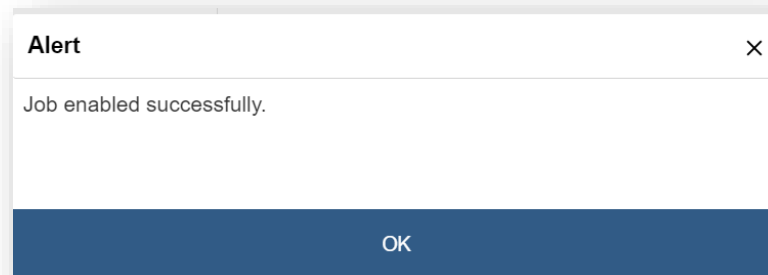


Figure 275 - Confirmation Message

This adds the analysis and lists it in **Unique Analysis** page with status as **In Progress**.

4. Once the analysis is complete, status changes to **Pending Verification**. You can now validate the results.

Unique Analysis							Refresh	Add New Analysis
Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Action		
⊕ CSV	ProcessUniqueWorkBenchAnalysis	BigFixOrg	Incident Management	BigFix	Successful	Run new iteration		

Figure 276 – Unique Analysis

5. To analyze the added unique analysis data, click ⊕ next to analysis to be verified.





Unique Analysis							Refresh	Add New Analysis
Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Action		
⊖ CSV	ProcessUniqueWorkBenchAnalysis	BigFixOrg	Incident Management	BigFix	Queued	Run new iteration		
Iteration No.	Parameter Template	Is Published	Action					
1	BaseUniqTemplate	No	  					

Figure 277 - Unique Analysis (cont.)

Once you have verified the analysis results, you can publish the most optimized hyperparameter template.

6. Go to **Advance Configuration** → **Workbench** → **Unique Analysis**, click  next to the analysis user want to publish.




Unique Analysis							Refresh	Add New Analysis
Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Action		
⊖ CSV	ProcessUniqueWorkBenchAnalysis	BigFixOrg	Incident Management	BigFix	Successful	Run new iteration		
Iteration No.	Parameter Template	Is Published	Action					
1	BaseUniqTemplate	No	  					

Figure 278 - Unique Analysis (cont.)

User can publish only successful iterations.

7. A confirmation dialog box appears. Click **OK**.

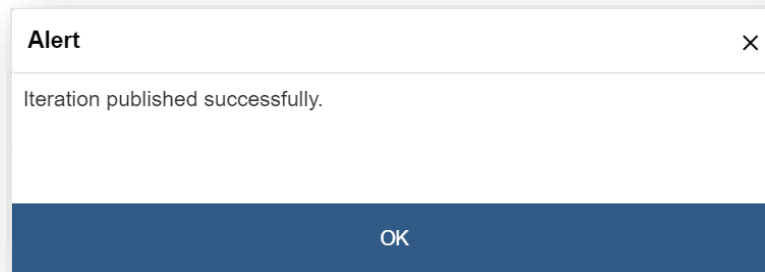







Figure 279 – Confirmation Message

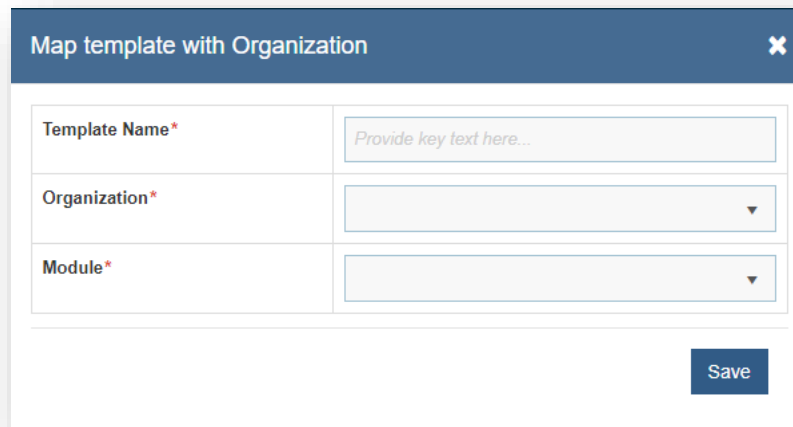
- Publish the selected **hyperparameter** configuration template and map the published hyperparameter configuration template to organization under analysis. Click  to map it to *organization*.

Unique Analysis						Refresh	Add New Analysis
Analysis Type	Analysis Name	Organization Name	Module	Status	Action		
⊖ CSV	ProcessUniqueWorkBenchAnalysis	BigFixOrg	Incident Management	Successful	Run new iteration		
IterationNo	ParameterTemplate	Is Published		Action			
1	BaseUniqTemplate	Yes		   			

Showing Export Parameter Template

Figure 280 - Unique Analysis (cont.)

- Select the **Template Name**, **Organization** and **Module** from respective dropdowns.
- Click **Save**.



Map template with Organization	
Template Name*	<input type="text" value="Provide key text here..."/>
Organization*	<input type="text"/>
Module*	<input type="text"/>
Save	

Figure 281 – Map Template with Organization

11. After successful mapping of hyperparameter configuration template with organization.

### 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

An organization has requested for 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 hyperparameters for iRecommend (Recommendation).

## 7.4.2 Prerequisites

- User should have Organizational Admin credentials.

## 7.4.3 Solution

1. Open **BigFix Runbook AI Web URL** and login with Super Admin credentials.
2. Go to Advance Configuration → Workbench and click **Recommend Analysis**.

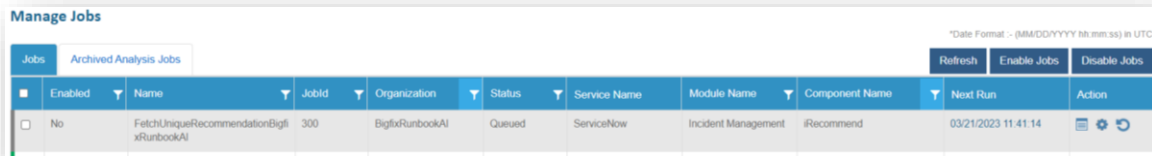


The screenshot shows a table titled "Recommendation Analysis" with a search bar and a refresh button. The table contains three rows of analysis data.

Analysis Type	Analysis Name	Organization	Module	Runbook Tool Type	Status	Action
CSV	FetchUniqueRecommendationBigfixTest	BigfixOrg	NA	BigFix	Successful	 
CSV	FetchUniqueRecommendationBigfix200	BigfixOrg	NA	BigFix	Successful	 
Environment	FetchUniqueRecommendationBigfixOrg	BigfixOrg	Incident Management	BigFix	Successful	 

Figure 282 – Workbench Recommendation Analysis

3. Go to **Actions** → **Manage Jobs** and enable the **Recommendation Job**. It starts with prefix **FetchUniqueRecommendation** and includes your organization name.



The screenshot shows a table titled "Manage Jobs" with tabs for "Jobs" and "Archived Analysis Jobs". It includes a date format note, refresh, enable jobs, and disable jobs buttons. The table contains one row of job data.



Enabled	Name	JobId	Organization	Status	Service Name	Module Name	Component Name	Next Run	Action
<input type="checkbox"/>	FetchUniqueRecommendationBigfixRunbookAI	300	BigfixRunbookAI	Queued	ServiceNow	Incident Management	iRecommend	03/21/2023 11:41:14	 

Figure 283 - 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 Workbench and click Recommendation Analysis.
5. Click **Run new Iteration** to run a new iteration for **Recommendation Analysis** for Organization.

Recommend Analysis						Refresh
Analysis Type	Analysis Name	Organization Name	Module	Runbook Tool Type	Status	Action
+ CSV	FetchUniqueRecommendationWorkBenchAnalysis	BigFixOrg	Incident Management	BigFix	Queued	Run new iteration

Figure 284 - Recommendation Analysis (cont.)

6. A popup window for **Template Version(s)** appears.

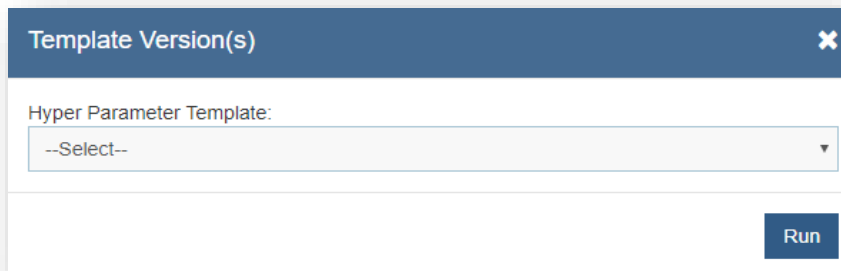


Figure 285 – Template Version

7. Select a template form the **Hyperparameter Template** dropdown list.

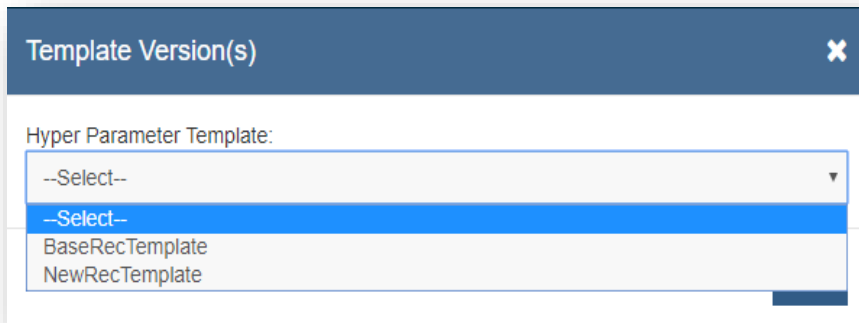


Figure 286 – Template Selection

8. Click **Run**. A confirmation dialog box appears.

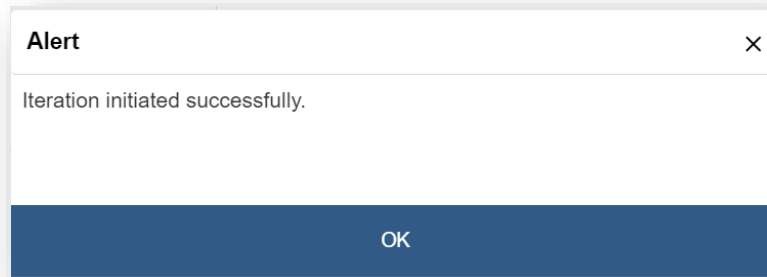


Figure 287 – Confirmation Message

The new iteration is added and appears at the bottom of the list in the grid below.





IterationNo	Parameter Template	Is Published	Action
1	BaseRecTemplate	No	 
2	NewRecTemplate	No	 

Figure 288 – Addition of New Iteration

9. To view the recommendation analysis results, click  next to analysis for Organization.

IterationNo	Parameter Template	Is Published	Action
1	BaseRecTemplate	No	 
2	NewRecTemplate	No	 Click to View Analysis

Showing 1 to 2 of 2 entries

Figure 289 – View Analysis

10. User 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 of hyperparameter configuration template.



**Enrich Recommendation** Export Back

Status	Bucket Description	Runbook	Approve Runbook	Confidence Score	SOP Required
	10.x.x.x    health metric of DNS server	DNSserverDiagnostics	<input type="checkbox"/> 0	52.00	<input type="checkbox"/>
	add DNS A type record for host name dryl... <a href="#">more</a>	Hyper-V_HostStateVM_LoadBalancing	<input type="checkbox"/> 0	45.00	<input type="checkbox"/>
	application needs dot net to be install... <a href="#">more</a>	Hyper-V_HostStateVM_LoadBalancing	<input type="checkbox"/> 0	61.00	<input type="checkbox"/>
	Azure   Health check   check the status ... <a href="#">more</a>	documentDB_loop	<input type="checkbox"/> 0	63.00	<input type="checkbox"/>
	Check DNS server diagnostic and logging ... <a href="#">more</a>	Hyper-V_HostStateVM_LoadBalancing	<input type="checkbox"/> 0	45.00	<input type="checkbox"/>

Figure 290 – Enrich Recommendation

11. Go to **Advance Configuration** → **Workbench** → **Recommendation Analysis**. Click next to the analysis for Organization to publish.

**Recommend Analysis** Refresh

Analysis Type	Analysis Name	Organization Name	Module	Runbook Tool Type	Status	Action
CSV	FetchUniqueRecommendationWorkBenchAnalysis	BigFixOrg	Incident Management	BigFix	Queued	<a href="#">Run new iteration</a>

Iteration No.	Parameter Template	Is Published	Action
1	BaseRecTemplate	No	
2	NewRecTemplate	No	

Showing 2 entries [Click to Publish](#)

Figure 291 - Publish Analysis

A confirmation dialog box appears.

12. Click **OK**.

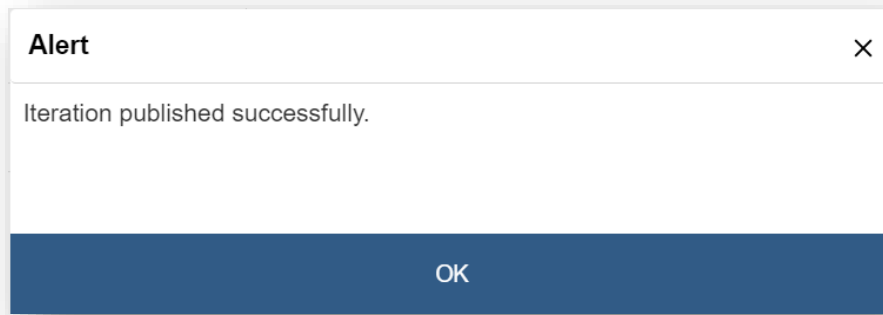









Figure 292 – Confirmation Message

13. To publish the selected hyperparameter configuration template and map it with organization, click on  icon.

WorkBench Recommendation Analysis Refresh

Analysis Type	Analysis Name	Organization Name	Module	Status	Action
[-] CSV	FetchUniqueRecommendationWorkBenchAnalysis	BigFixOrg	Incident Management	Successful	Run new iteration

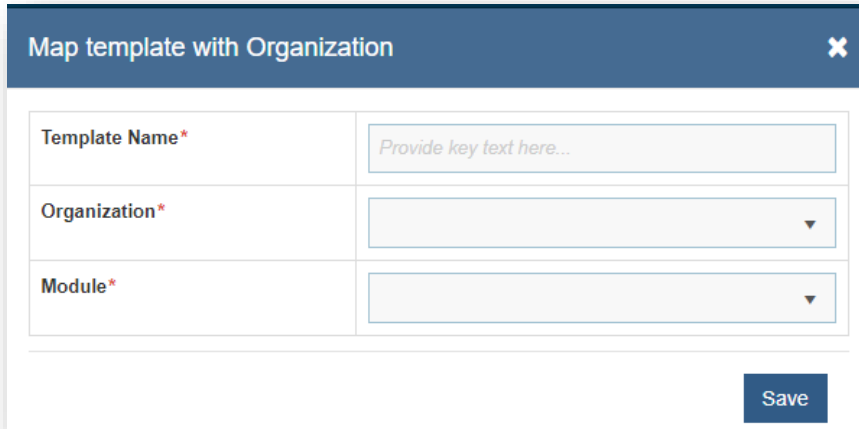
IterationNo	Parameter Template	Is Published	Action
1	BaseRecTemplate	No	 
2	NewRecTemplate	Yes	   

Showing Import Parameter Template

Figure 293 – Import Parameter Template

14. Select the **Template Name**, **Organization** and **Module** from the respective dropdown lists for mapping.

15. Click **Save**.



Map template with Organization <span style="float: right;">✕</span>	
Template Name*	<input type="text" value="Provide key text here..."/>
Organization*	<input type="text"/>
Module*	<input type="text"/>
<input type="button" value="Save"/>	

Figure 294 – Map Template with Organization

## 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

- [BigFix Runbook AI Configuration Guide](#)
- [BigFix Runbook AI 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. BigFix Runbook AI 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

An organization is using Service Now as an internal knowledge repository which stores multiple knowledge articles published over the years. Organization'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.

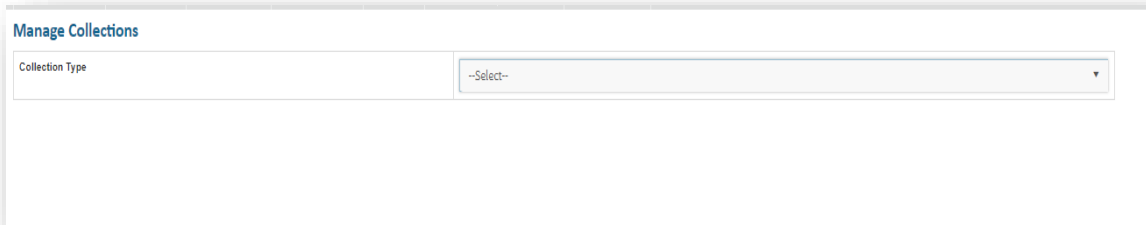
In this lab, we will showcase the detailed procedure for configuring knowledge sources and providing relevant documentation for user search queries. We will create two collections – one for Service Now (internal repository) and another for open domain sites (e.g. stackoverflow.com)

#### 8.2.2 Prerequisites

- User 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

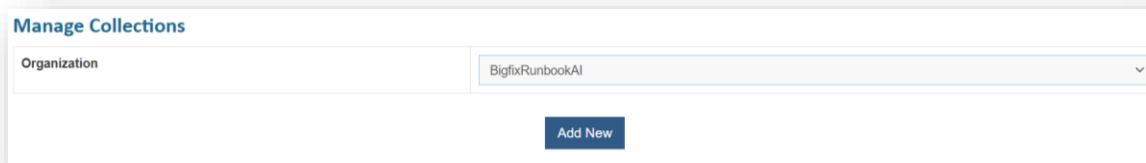
1. Open BigFix Runbook AI Web URL and login with Super Admin credentials.
2. Go to Advance configurations → Knowledge and click Manage Collections.



The screenshot shows the 'Manage Collections' interface. At the top left, the title 'Manage Collections' is displayed. Below it, there is a form with a label 'Collection Type' and a dropdown menu currently showing '--Select--'.

Figure 295 - Manage Collections

3. Select **Collection Type** as **Custom** from list of collection types.
4. Select the **Organization** for which you are configuring the collections.

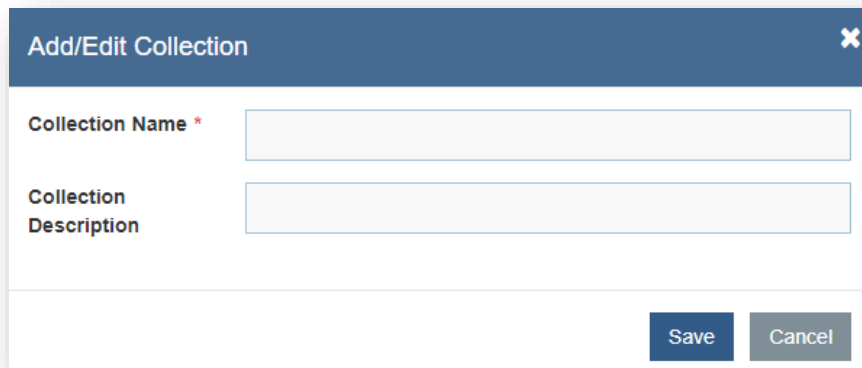


The screenshot shows the 'Manage Collections' interface. The 'Organization' dropdown menu is now populated with 'BigfixRunbookAI'. Below the dropdown, there is a blue button labeled 'Add New'.

Figure 296 - Manage Collections (cont.)

5. Click **Add New**.

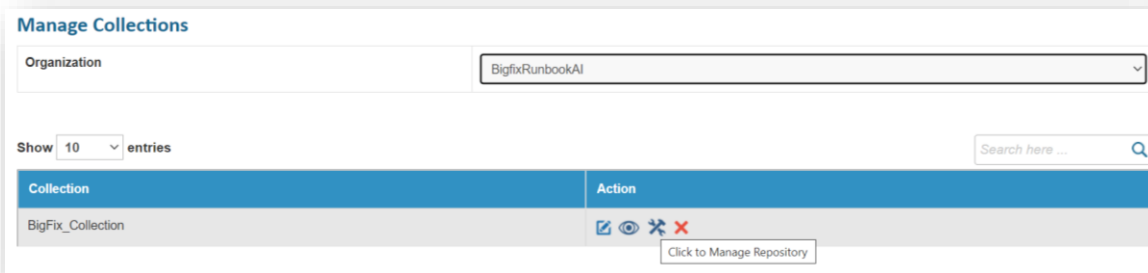
The **Add/Edit Collection** page appears.



The dialog box titled "Add/Edit Collection" has a close button (X) in the top right corner. It contains two text input fields: "Collection Name \*" and "Collection Description". At the bottom right, there are two buttons: "Save" and "Cancel".

Figure 297 – Add/Edit Collection

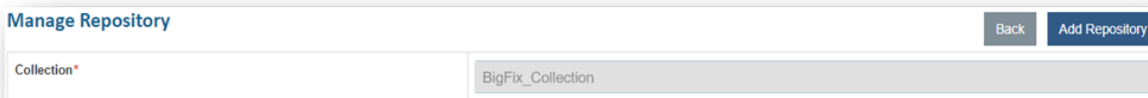
6. Type the Collection Name and Collection Description.
7. Click **Save**.
8. Repeat [Steps 2 to 6](#) for creating a collection for open domain websites as well.
9. For configuring the **ServiceNow Collection**, perform the following steps –
  - a. On **Manage Collections** page, click ✕ next to collection corresponding to Service Now. The **Manage Repository** page appears.



The "Manage Collections" page shows an "Organization" dropdown menu set to "BigfixRunbookAI". Below it, there is a "Show 10 entries" filter and a search bar. A table lists collections, with one entry "BigFix\_Collection" having a "Manage Repository" icon (✕) and a tooltip that says "Click to Manage Repository".

Figure 298 - Manage Repository

- b. Click **Add Repository**.

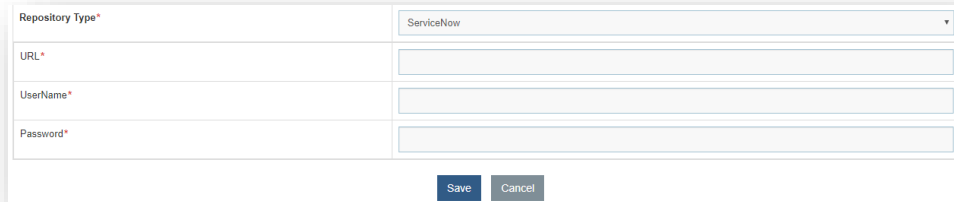


The "Manage Repository" page has "Back" and "Add Repository" buttons at the top right. Below, there is a "Collection\*" dropdown menu set to "BigFix\_Collection".

Figure 299 - Manage Repository (cont.)

- c. Select **Repository Type** as **ServiceNow**. It will ask for additional details:

- URL
- UserName
- Password




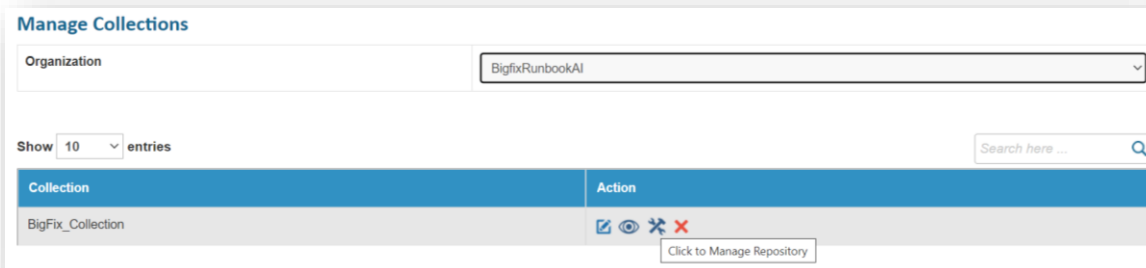
Repository Type*	ServiceNow
URL*	
UserName*	
Password*	

Figure 300 - Manage Repository (cont.)

d. After providing the information, click **Save**.

10. For configuring the **Open Domain Sites Collection**, perform the following steps:





- a. On **Manage Collections** page, click  next to collection corresponding to Service Now. The **Manage Repository** page appears.



**Manage Collections**

Organization: BigFixRunbookAI

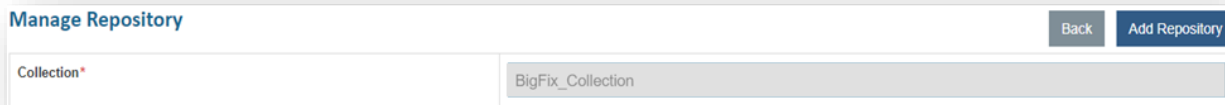
Show 10 entries

Collection	Action
BigFix_Collection	   

Click to Manage Repository

Figure 301 - Manage Repository (cont.)

b. Click **Add Repository**.



**Manage Repository** Back Add Repository

Collection\* BigFix\_Collection

Figure 302 - Manage Repository (cont.)

c. 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

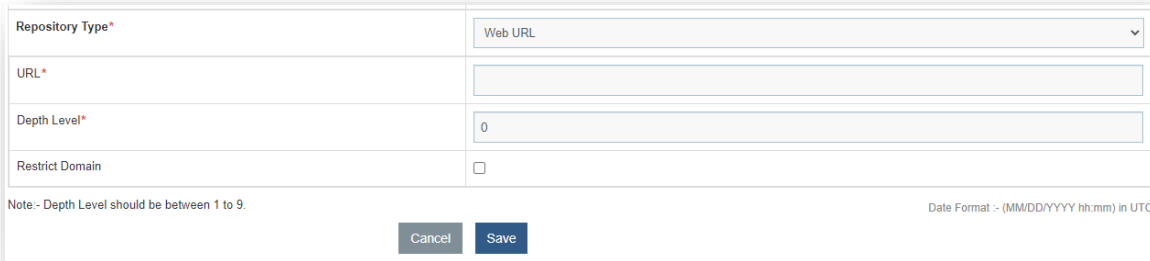
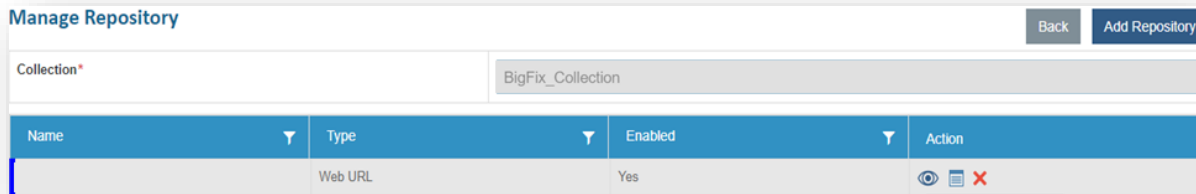


Figure 303 - Manage Repository (cont.)

d. After providing the information, click **Save**.

11. 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.






Name	Type	Enabled	Action
Web URL	Web URL	Yes	  

Figure 304 - Manage Repository (cont.)

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.

12. Click Knowledge Search.



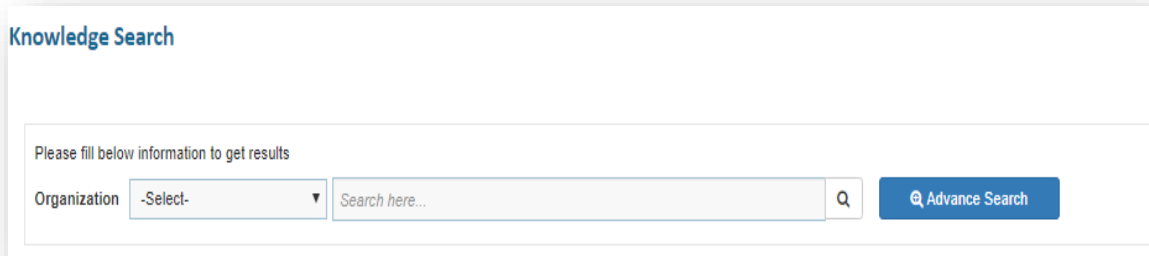


Figure 305 - Knowledge Search

13. Select **Organization** from the drop-down list, then type the search string (e.g. **Machine**) in the **Search** box, and then click <sup>Ⓐ</sup>.

The search results are displayed in a grid below.

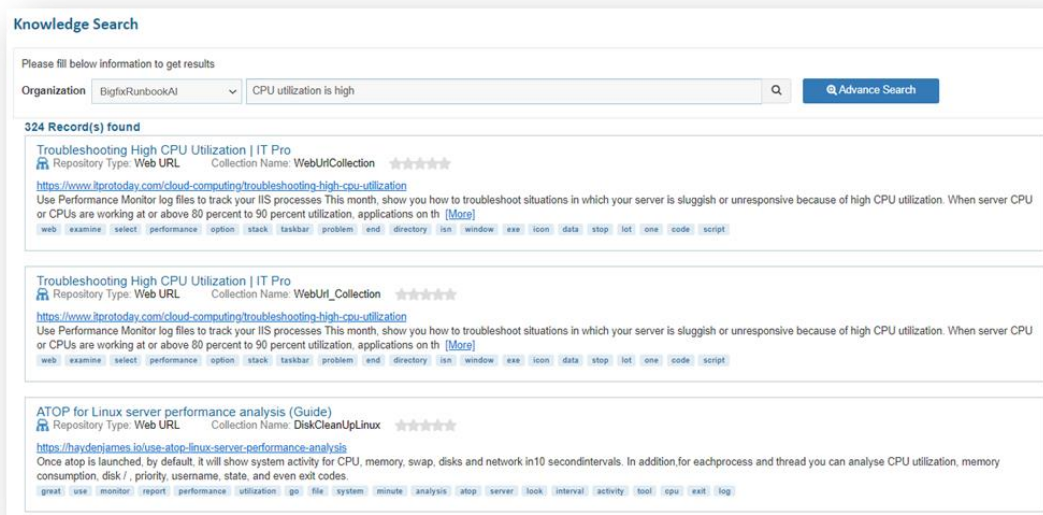


Figure 306 - Knowledge Search Result

## 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 are users accessing to search for information.

## 8.3 Lab Exercise 2 – Configuration of Knowledge Analysis

### 8.3.1 Scenario

An organization is using Service Now as an internal knowledge repository which stores multiple knowledge articles published over the years. Organization 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

- User should have Super Admin credentials
- Collections and Repositories should be configured in the system

### 8.3.3 Solution

1. Open BigFix Runbook AI Web URL and login with Super Admin credentials.
2. Go to Advance Configuration → Knowledge and click Knowledge Analysis.

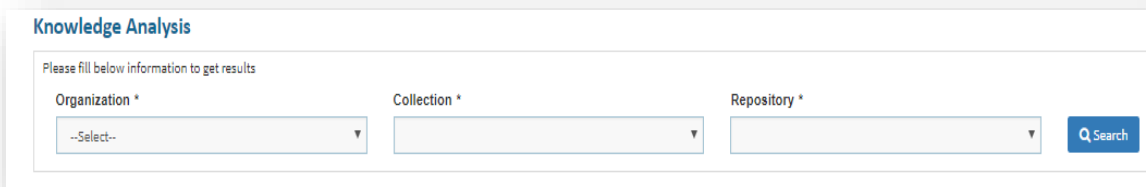


Figure 307 – Knowledge Analysis

3. Select the **Organization** for which you want to visualize the data (for e.g. BigFixRunbookAI). Select the **Collection** from where you want to fetch the data.

4. Select the **Repository** from the dropdown list and click **Search**.

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.

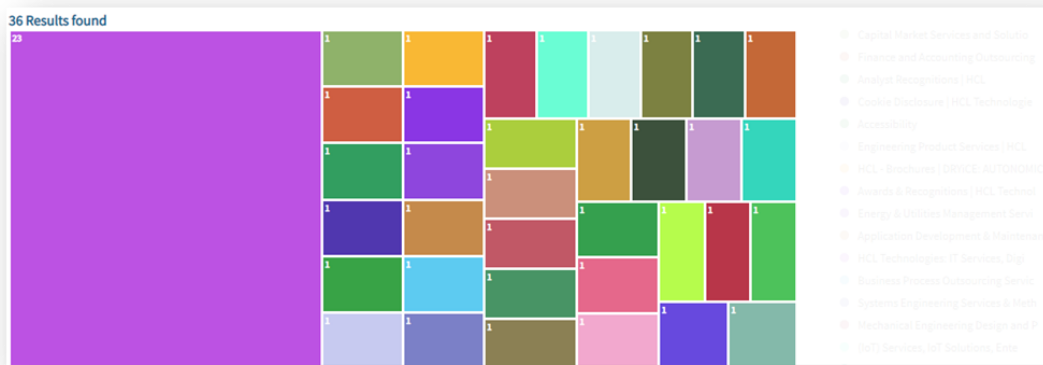


Figure 308 - Knowledge Search Repository

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**.

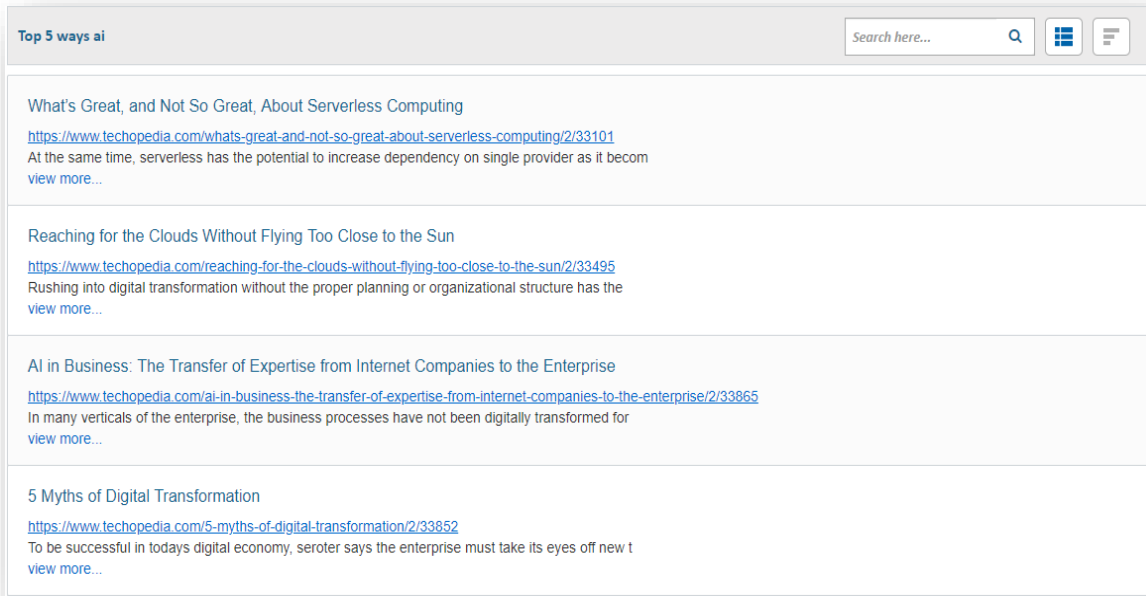


Figure 309 - Knowledge Search Results (cont.)

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**

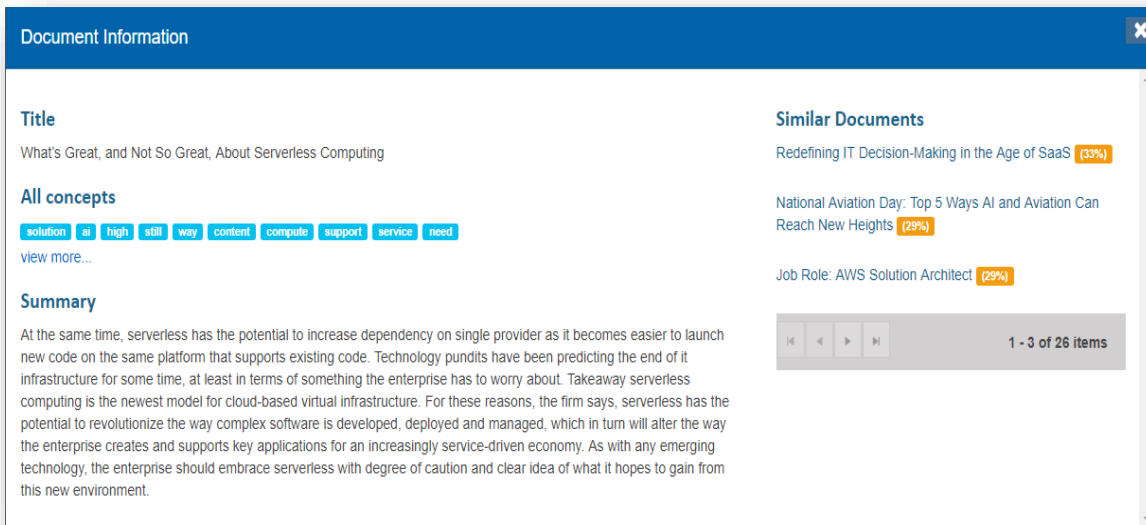



Figure 310 – Document Information

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.

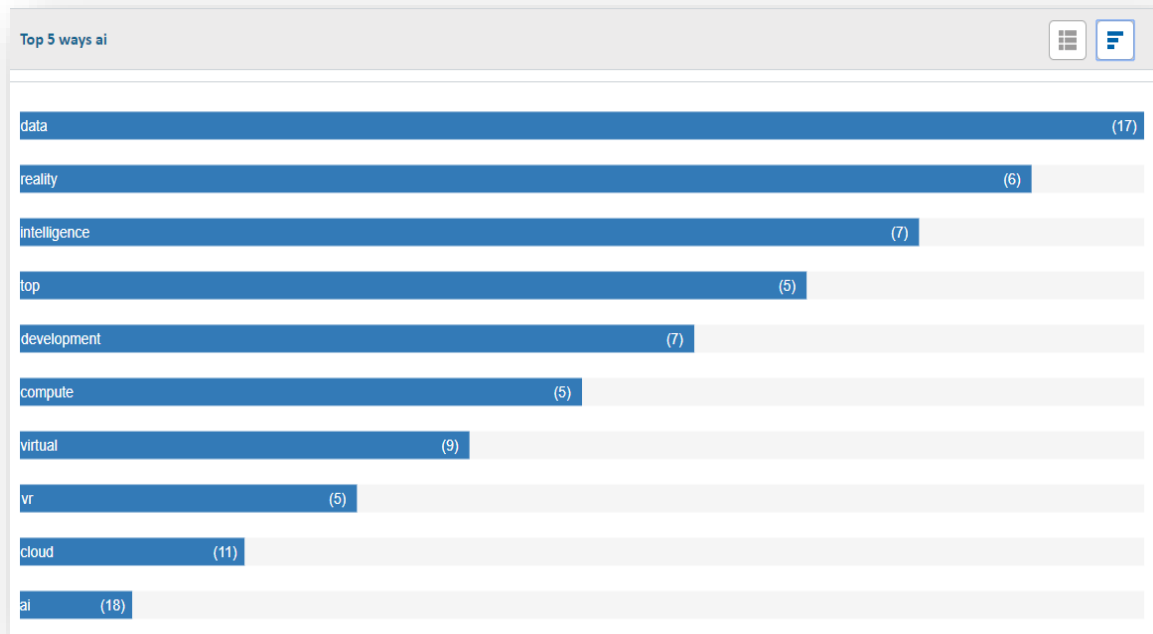


Figure 311 - Document Selection

The numerical value against each term represents the frequency of occurrence of a particular term or topic in a cluster.

Selecting a term lists all the available documents containing the selected term.

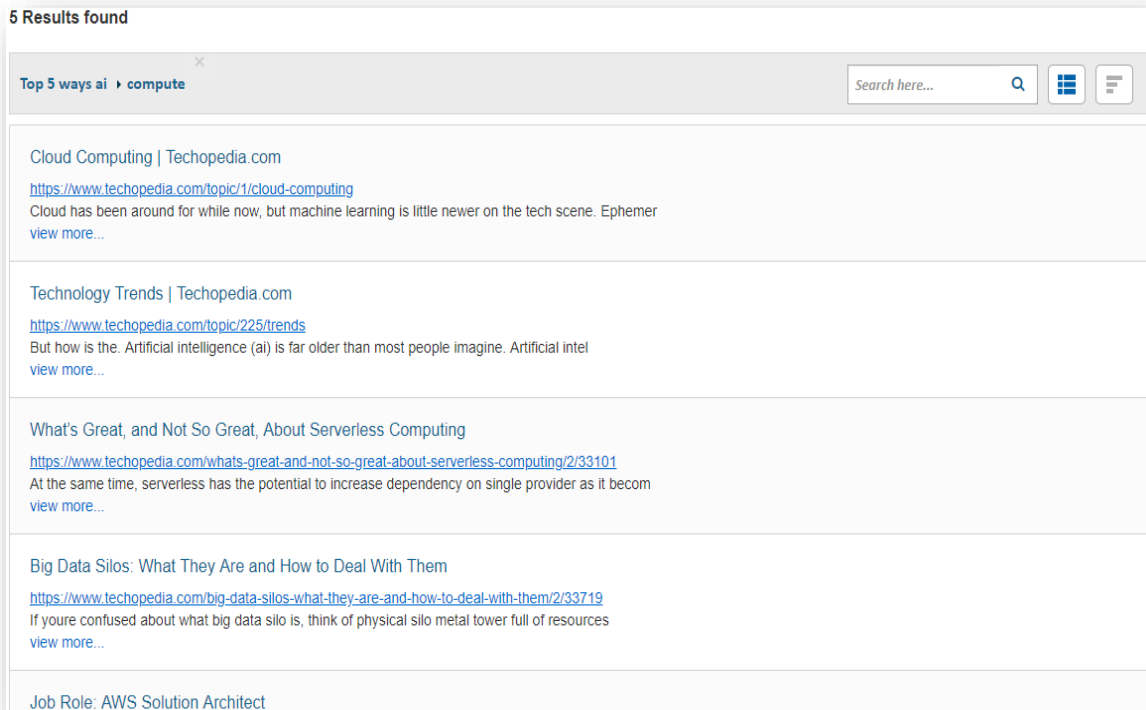


Figure 312 – View the list of Knowledge

## 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

- BigFix Runbook AI Configuration Guide
- BigFix Runbook AI Troubleshooting Guide
- BigFix Runbook AI 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

An organization has already installed and configured BigFix Runbook AI 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 for resolving 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 - `[0-9]{1,2}\.[0-9]{1,2}\.[0-9]{1,2}\.[0-9]{1,2}`
- User should have the requisite role, privileges and access credentials.

#### 9.2.3 Solution

To resolve 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 BigFix Runbook AI 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**.

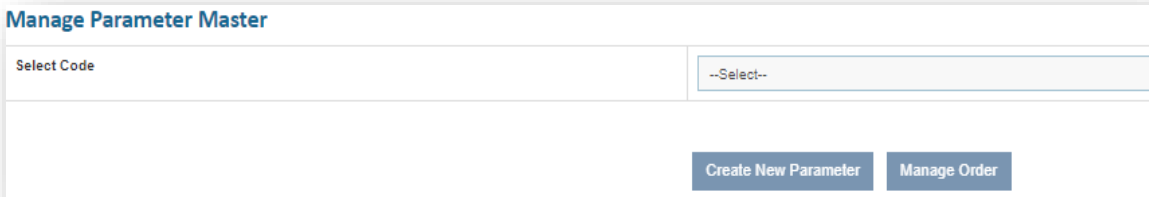


Figure 313 - Manage Parameter Master

- b. Select **Select Code** from the drop-down list.
- c. Click **Create New Parameter**.

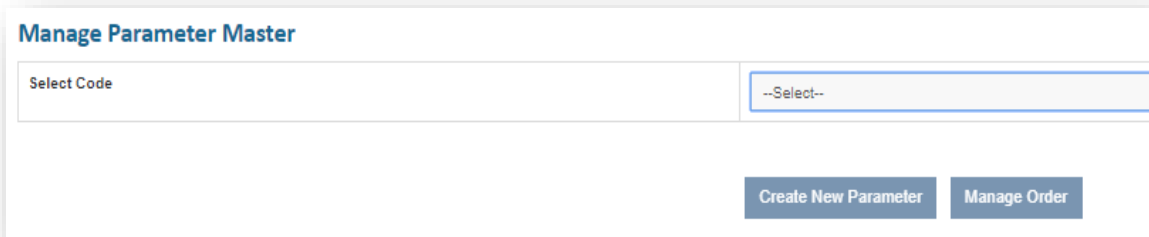


Figure 314 - Create New Parameter

The **Manage Parameter** page appears.

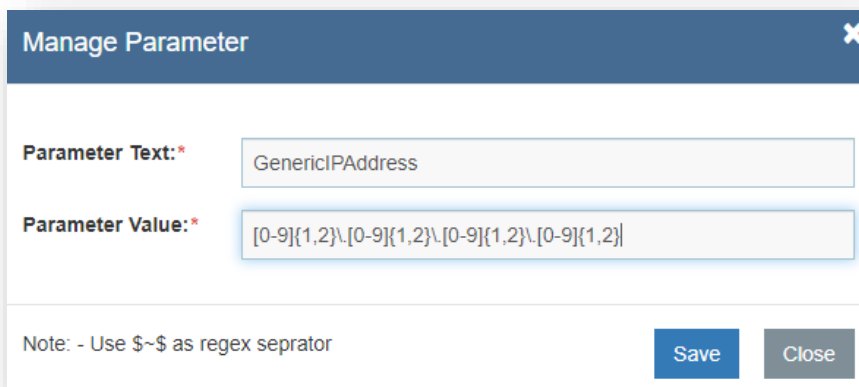


Figure 315 - Create New Parameter (cont.)

- d. 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. **[0-9]{1,2}\.[0-9]{1,2}\.[0-9]{1,2}\.[0-9]{1,2}**.
- e. 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	

Figure 316 - Configure Parameter Type

- b. Click **Add New**. The **Configure Parameter Type** page appears.

**Configure Parameter Type**

Parameter Type\*

Parse by\*

Regular Expression

Proximity Words

Parse Order\*

Default Field Name\*

Figure 317 - 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 318 - Configure Parameter Type (cont.)

- Select value for **Regular Expression** field as “**GenericIPAddress**” which was added in section **Manage Parameter Master**.

Figure 319 - Configure Parameter Type (cont.)

- Value for **Proximity Words** field is optional as parse by type is “**Only RegEx**”

Figure 320 – Proximity Words

- Select the **Parse Order** to prioritize the parsing methods i.e. In our case, Regex should come before than proximity.

Figure 321 – 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 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**.

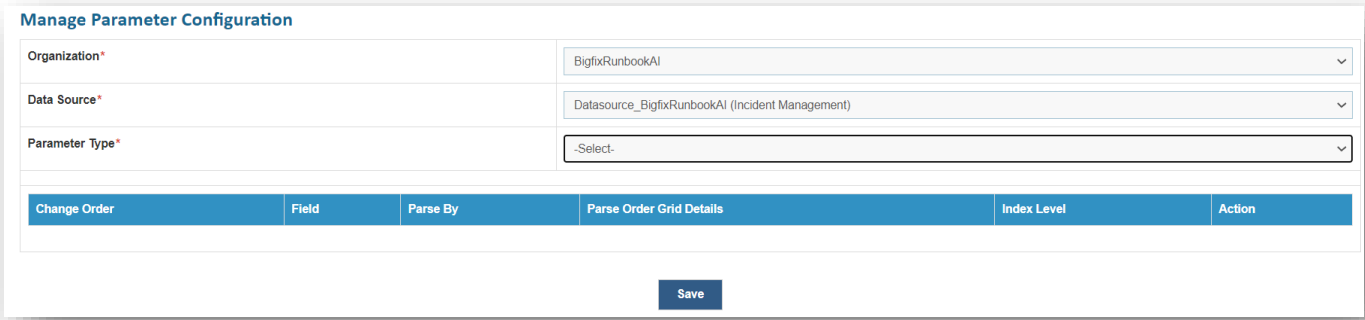


Figure 322 - Manage Parameter Configuration

- 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.

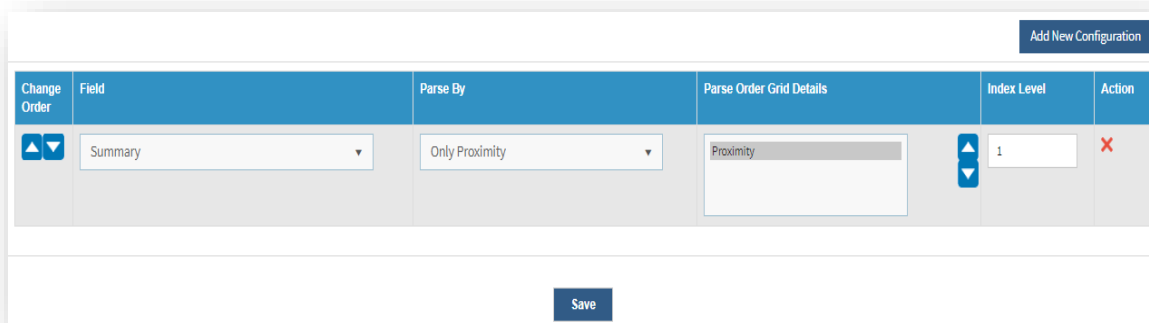


Figure 323 - Existing configuration

- e. 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
▲▼	Description ▼	Only Regex ▼	regex	▲▼ 1	✖
▲▼	▼	▼		▲▼ 1	✖

Figure 324 - Add New Configuration (cont.)

- f. Select a value for column **Field**. It defines what ticket information need to be processed. It may be a description or a short description.
- g. Select a value for **Parse By** column value as **Only Regex**.
- h. Select a value for Parse Order Grid Details columns as Regex.
- i. Select **Index Level** value as **1**.
- j. Click **Save** to update the configured parameter.

User can rearrange the order of parameter configuration using Change Order in the left column of the parameter grid.

- k. A confirmation dialog box appears. Click **OK**.

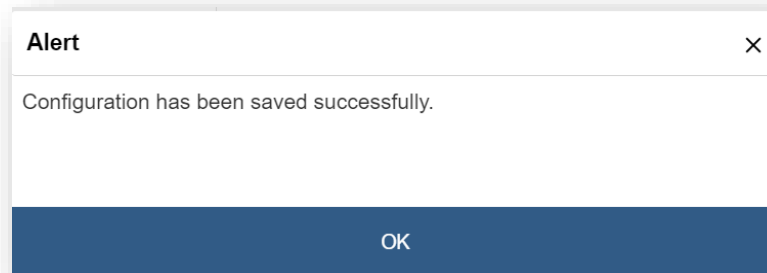


Figure 325 – Confirmation Message

5. To update the runbook corresponding to the newly configured parameter i.e. **IP Address**, perform the following steps:
  - a. Go to **Actions** → **Runbooks** and click **Manage Runbooks**.

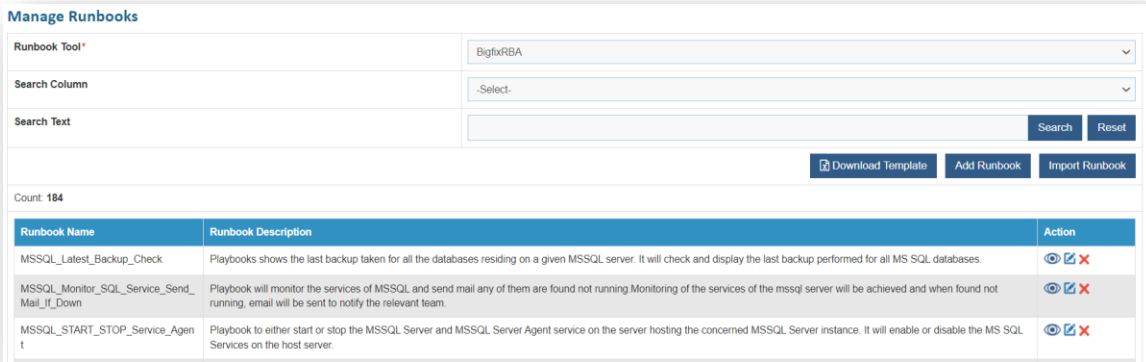


Figure 326 - Manage Runbooks

- b. Select value for **Runbook Tool**.
- c. Click  next to the runbook which need to be updated.

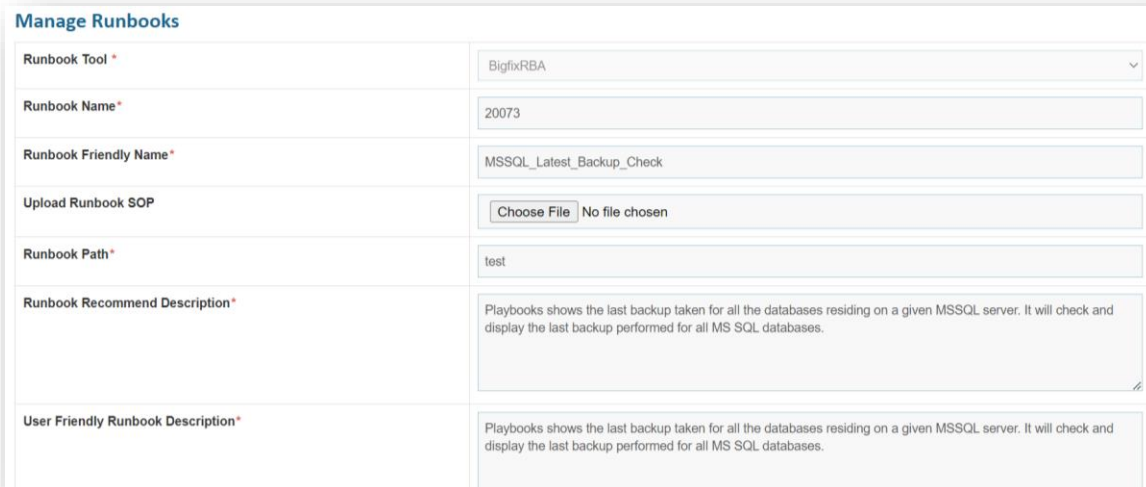


Figure 327 - Manage Runbooks (cont.)

- d. Add required parameter i.e. **IP Address** as shown in below figure.

**Parameters**

Parameter Name	Parameter Label	Is Mandatory	Parameter Description	Default Parameter Value	Field Type	Parameter Type	IsCIBased Parameter	IsReadOnly Parameter	Action
ComputerName	ComputerName	True	ComputerName	SRVAT0046	Text	TargetName	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<a href="#">✎</a> <a href="#">🗑</a>
DB_Name	DB_Name	True	DB_Name	master	Text	LocalUserName	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">✎</a> <a href="#">🗑</a>
DB_Pwd	DB_Pwd	True	DB_Pwd	Admin098!	Text	LocalUserName	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">✎</a> <a href="#">🗑</a>
DB_User	DB_User	True	DB_User	bigfix	Text	LocalUserName	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">✎</a> <a href="#">🗑</a>
TenantId	TenantId	True	TenantId	ActionSite	Text	TenantId	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">✎</a> <a href="#">🗑</a>
<input type="text"/>	<input type="text"/>	True <input type="checkbox"/>	<input type="text"/>	<input type="text"/>	Text <input type="text"/>	-Select- <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<a href="#">+</a>

Note: TenantId and ComputerName are mandatory in case of BigFix tool type.

Figure 328 – Add Parameter

e. Click **Update** to save the changes. A confirmation dialog box appears.

**Update Runbooks** ✕

---

Runbook updated successfully.

Next Recommended Page

Figure 329 – 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

- BigFix Runbook AI Configuration Guide
- BigFix Runbook AI 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

An organization has been using BigFix Runbook AI 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 configuring the widgets available in the 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 BigFix Runbook AI Web URL and login with organization Admin credentials.
2. Go to Reports and click Dashboard.

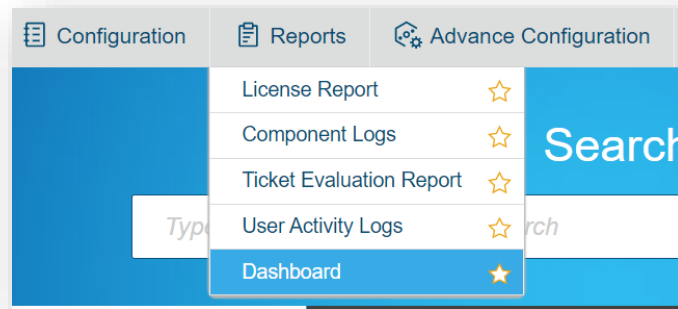


Figure 330 – Dashboard Menu

The **Dashboard** appears.

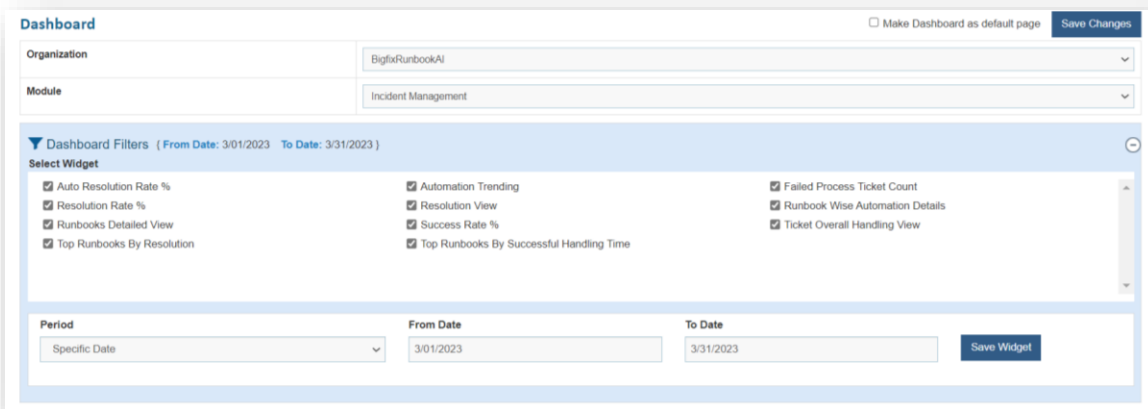


Figure 331 – Dashboard View

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.

3. 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 current month.



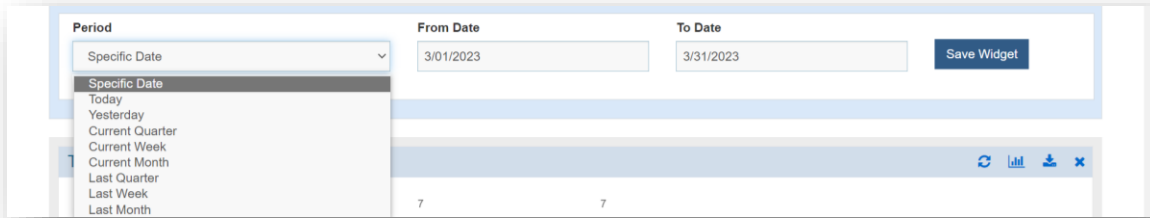


Figure 332 - Dashboard

4. Select **Widget** from provided the List. Click **Save Widget**. These selections will recompile the data that appears in any report that is associated with the date filter. All data beyond the selected range is excluded.

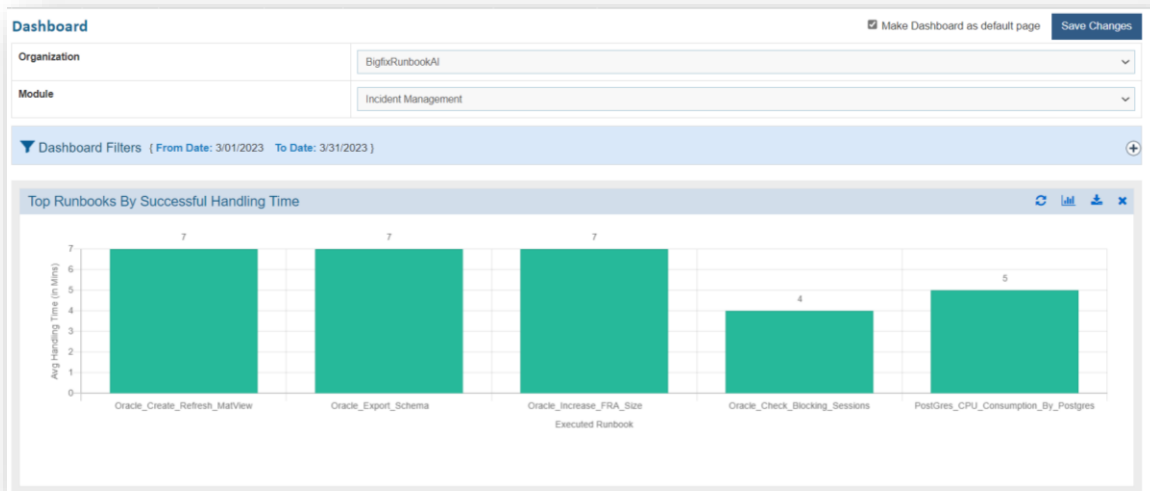


Figure 333 -Dashboard Widget

5. You can use predefined widgets under **Dashboard Filters** tab to add new widgets and modify or remove existing widgets from the organization.

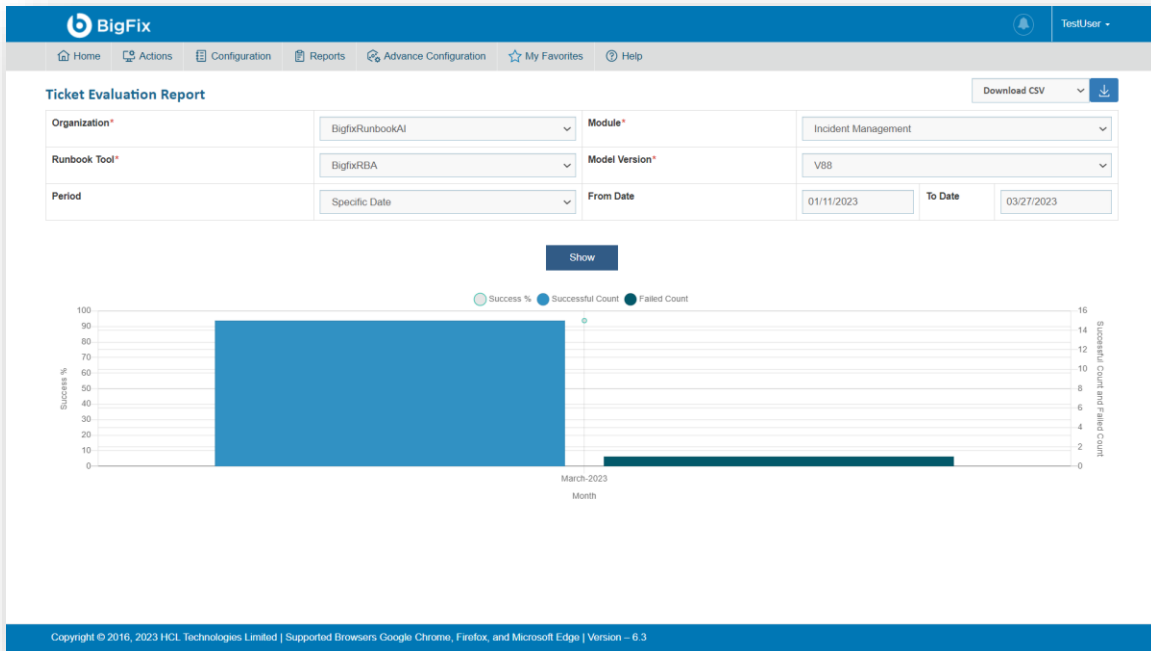


Figure 334 - Dashboard

6. You can view drill-down details of any report appearing on the widget. To the drill-down report, perform the following steps –
  - a. Click any visualization to view the drill-down report.

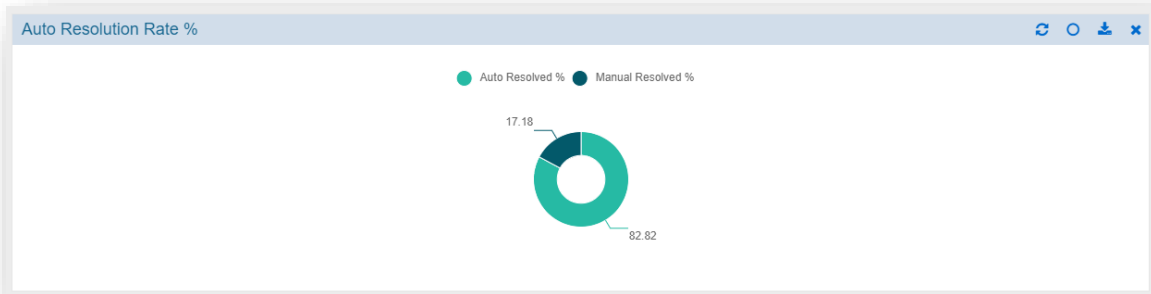


Figure 335 – Drill Down Reports

- b. The detailed drill down report is displayed.




TicketNumber	Summary	Is Recommended Runbook Executed	Max Threshold Runbook	Executed Runbook	Execut
INC0167134	BigfixAI    Playbook will perform the enablement of streaming replication between two servers of PostgreSQL database. The playbook will run in RHEL operating sy	Y	PostGres_Perform_Vaccum	PostGres_Perform_Vaccum	Runboc Recom
INC0167122	BigfixAI    Playbook will move datafile to different location.Playbook to relocate the datafile to a new location in oracle.  From_file_loc:u02/CDB/data02.dbf	Y	Oracle_Datafile_Move_Diff_Location	Oracle_Datafile_Move_Diff_Location	Runboc Oracle Recom
INC0167120	BigfixAI    Playbook will perform the enablement of streaming replication between two servers of PostgreSQL database. The playbook will run in RHEL operating sy	Y	PostGres_Perform_Vaccum	PostGres_Perform_Vaccum	Runboc Recom
INC0167118	BigfixAI    Playbook will perform the enablement of streaming replicat	Y	PostGres_Perform_Vaccum	PostGres_Perform_Vaccum	Runboc Recom

Figure 336 - Drill Down Reports (cont.)

7. To resize any widget, perform the following steps –
  - a. Point at any corner of the selected tab with the mouse pointer. When the pointer changes into a double-headed arrow, hold down the primary mouse button and drag the corner in or out to resize the window. Release the mouse button to stop resizing the window.
  - b. Click **Save Changes** to save the changes
  
8. To move the widget or change the location of the widget based on your preference, perform the following steps –
  - a. Click a blank portion on the navigation bar of the selected tab.
  - b. Hold down the primary mouse button and then drag the mouse pointer to the place on the screen where you want the tab. After you move the mouse pointer to the position on your screen where you want the taskbar, release the mouse button.
  - c. Click **Save Changes** to save the changes.
  
9. The navigation bar on each widget contains the following menu options:

Table 9 – Widget Menu

Tabs	Name and Function
	Change the view of widget to bar/grid/pie/doughnut.

Tabs	Name and Function
	Refresh the data in a widget.
	Remove a widget from the selected organization's dashboard.
	Export the data in a widget to PDF or CSV format.

## 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

- [BigFix Runbook AI Configuration Guide](#)
- [BigFix Runbook AI Troubleshooting Guide](#)

# 11 Appendix

## 11.1 List of Abbreviations

Table 10 - 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