

BigFix Runbook AI  
Installation Guide  
Version 6.3



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
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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 Installation Guide.

| Version Date | Description                               |
|--------------|---|
| June, 2023   | BigFix Runbook AI v6.3 Installation Guide |

# 1 Preface

This section provides information about the **BigFix Runbook AI Installation Guide** and includes the following topics.

- [Intended Audience](#)
- [About This Guide](#)
- [Related Documents](#)
- [Conventions](#)

## 1.1 Intended Audience

This information is intended for administrators responsible for installing **BigFix Runbook AI** and infrastructure administrators responsible for provisioning infrastructure required for installation of BigFix Runbook AI.

## 1.2 About this Guide

This guide provides instructions to install BigFix Runbook AI. It includes the pre-installation and the installation procedures for BigFix Runbook AI.

This guide also provides summary material about additional servers and optional post- installations and references to the other documents for detailed information.

## 1.3 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

## 1.4 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  |
| Courier New (Font)          | Indicates commands within a paragraph, URLs, code in examples, and paths including onscreen text and text input from users |
| Numbered lists              | Indicates steps in a procedure to be followed in a sequence  |
| Bulleted lists              | Indicates a list of items that is not necessarily meant to be followed in a sequence                                       |

## 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 IT Operations issues resolution lifecycle including incidents, service request tasks, change request tasks and events. It leverages its NLP capabilities for analyzing and understanding the context of a specific issue, recommends the most relevant solution and even triggers the execution, thereby enabling Zero Touch Automated Remediation. It also provides AI-driven Knowledge Recommendation by suggesting 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.

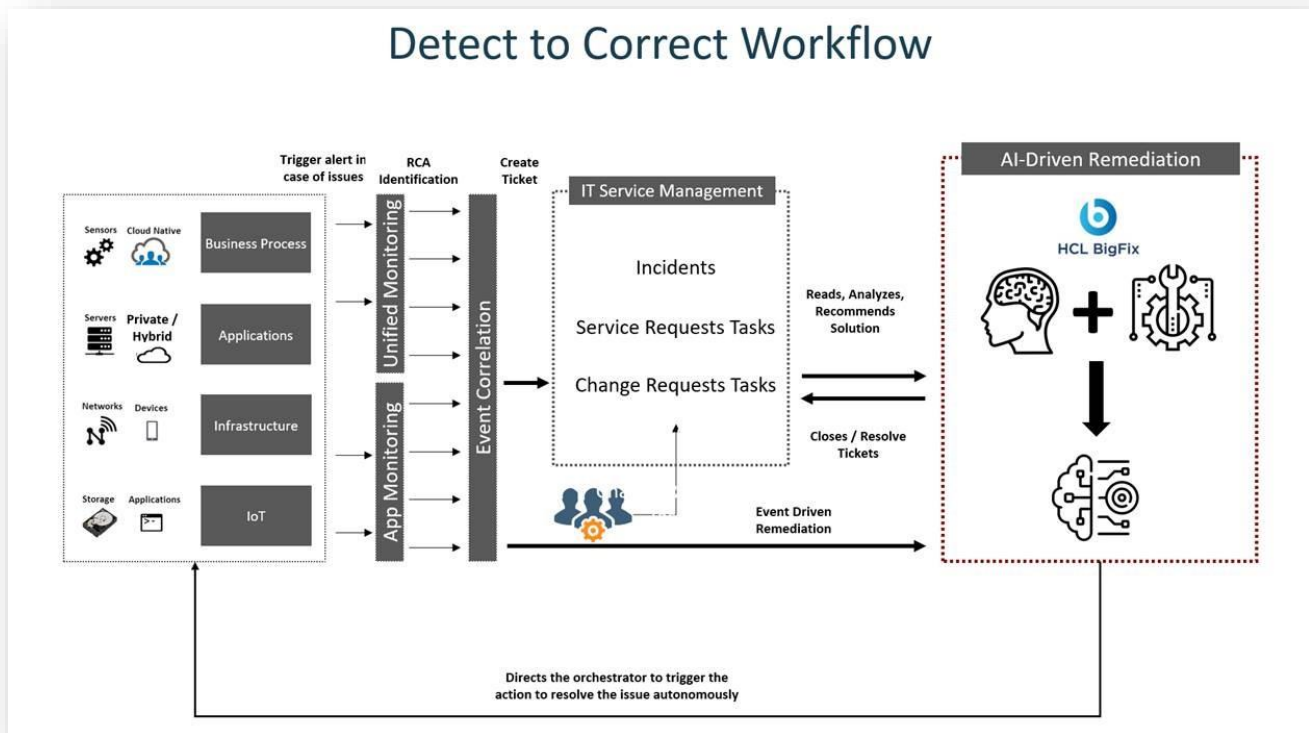


Figure 1 - BigFix Runbook AI Workflow

Intelligent automation powered by BigFix Runbook AI can make a tremendous impact in an enterprise adjusting to the New Normal:

- **Reduces Costs**
  - Achieves up to 30% reduction in service desk related costs
  - Quick and High ROI
- **Mitigates Risks**
  - Avoids operational risks and ensures compliance by avoiding critical outages
  - Reduces escalations and improves SLA compliance by up to 20%
  - Achieves up to 85% reduction in MTTR
- **Drives Efficiency**
  - Automates redundant tasks and lets employees focus on more creative activities
  - Reduces manual effort by 30% to 60%
  - Improves 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\*
  - Leverages 300+ reusable and configurable runbooks out of the box

\*Conditions Apply

## 3 BigFix Runbook AI Installation

This section describes the detailed BigFix Runbook AI installation procedure and the various stages involved in this process.

The BigFix Runbook AI installation process comprises the following steps:

### 1. Plan and Prepare Your Environment

Prior to installing BigFix Runbook AI, the environment, hardware, and networking components must be prepared and configured. The relevant software dependencies must be installed. For more information about preparing components for installation, see Environment Planning.

### 2. Complete Pre-installation Tasks

Lists tasks the user needs to complete before installing BigFix Runbook AI.

### 3. Installation

After the environment has been prepared and the relevant databases and servers have been provisioned, user can install the BigFix Runbook AI product.

### 4. Complete Post Install Checks

After installing the BigFix Runbook AI product, complete the post installation tasks. These tasks include specific steps required for BigFix Runbook AI Configuration. For more information about the post-installation tasks, see Configure BigFix Runbook AI.

A complete installation of BigFix Runbook AI includes databases, a web interface, and a set of services including iRecommend, iParse, iUnique, iScrape, iKnowledge and others.

This section includes the following topics:

- [Environment Planning](#)
- [Environment Preparation](#)
- [Prerequisites to Run the Installer](#)
- [BigFix Runbook AI Installation](#)
- [BigFix Runbook AI Upgradation](#)
- [Post-Installation Activities](#)

## 3.1 Environment Preparation

This section details how to prepare the environment to perform the physical installation and configuration of BigFix Runbook AI. Before proceeding, users should familiarize themselves with the different components of BigFix Runbook AI.

## 3.2 Environment Planning

Before preparing the deployment environment, see the environment categorization table and plan accordingly. Environments are classified in three categories based on the parameters listed below:

Table 2 - Environment Categorization

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

Data Retention is only applicable for ticket data.

Search Queries and Document Process is only 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.

## 3.2.1 BigFix Runbook AI Components

BigFix Runbook AI follows a multi-tier architecture and includes the following components:

- **Web Components-** This includes the user interface that enables the configuration, management, and quick resolution of tickets.
- **Service Components-** It is divided into two categories:
  - **Application Components-** This includes essential services that work together to achieve the core functionality of BigFix Runbook AI.
  - **Advanced AI Components-** This includes features like Solution Creation; Natural Language Processing (NLP) based assisted services, and so on.

The following table lists the components available on different servers.



| Server Type           | Components         | Description  |
|-----------------------|--------------------|--|
| Web Component         | Web UI             | Web User Interface for Admin, Configuration, Operations Console, Dashboards and Knowledge Analysis and Search functionalities  |
|                       | Web API            | It is an API in the BigFix Runbook AI web module that can be accessed using the HTTP protocol.   |
|                       | KRS                | The Key Rotation Service component which serves the purpose of providing additional security through rotation of keys on a periodic basis.   |
| Application Component | iRecommend         | It leverages Natural Language Processing and is responsible for recommending the best-suited runbook for resolving the issue based on the ticket description   |
|                       | iParse             | It serves the purpose of analyzing the ticket description and summary for extracting relevant parameters to be passed to configurable runbooks   |
|                       | iUnique            | It helps in clustering the ticket data (incident, service requests, change requests) into different categories for identification of automation opportunities  |
|                       | Data Collector     | It is responsible for collecting ticket information from the ITSM tool   |
|                       | Generic Executor   | It is used for data processing at the DB layer for enabling backend processes.   |
|                       | RBA Executor       | It helps in triggering the identified runbook for automatic resolution using an underlying RBA tool  |
|                       | Release            | It is used to release the ticket in case an appropriate runbook is not recommended OR runbook execution for a ticket fails. In the latter case, the ticket is released and assigned to a human agent to investigate it.  |
|                       | Generic Listener   | Ticket passes through multiple stages during the resolution lifecycle using BigFix Runbook AI. Generic Listener module is responsible for ensuring the ticket is moved to the next stage based on the outcome. Its job is to identify the status of the present stage and based on success / failure, move the ticket to the consequent stage in the lifecycle |
|                       | AD Sync            | It is responsible for fetching LDAP user from LDAP Server.   |
|                       | Email Service      | It is responsible for sending mail based notifications to user.  |
| Advanced AI Component | Advanced Knowledge | It returns a list of relevant documents for a query that have been crawled from different repositories like SNOW KB, Web URL, Satori repository, and internal files and folders.   |
|                       | iKnowledge         | It returns a list of relevant results from Google for a query, if no relevant document exists in the organization's repository.  |

|  |                  |  |
|--|------------------|--|
|  | Knowledge rating | It enables users to provide feedback as a rating for the document search corresponding to the ticket summary.  |
|  | iScrape          | It helps in automated runbook creation for ticket categories for which runbooks don't exist by exploring various internal and external data sources for relevant executable code snippets and scripts. |

Before starting the installation, identify the components that user needs to install based on the requirement. Also, the user needs to identify the deployment mode from the below list based on the Environment categorization identified earlier.

## 3.2.2 Deployment Identification Mode

BigFix Runbook AI can be installed in the following deployment modes using the installer.

### 3.2.2.1 Minimal Deployment Mode

In this mode, the following BigFix Runbook AI servers are deployed:

- **Web and Application Server:** This server hosts the Web UI and the application components.
- **Advanced AI Server, MongoDB and Solr:** This server hosts iScrape, iKnowledge, and Advanced iKnowledge components along with the Document Storage (MongoDB) and Indexer (Solr).
- **Database Server:** This server hosts the SQL Server database, which is the main transactional database of BigFix Runbook AI.

The following table describes the hardware and software requirements for this installation.

Table 3 - Minimal Deployment

| Server       | Component     | Sub-Components   | Database Requirement | Recommended Hardware Configuration | Minimum RAM Requirement for BigFix Runbook AI | Software Requirements      | Storage (Local) |
|--------------|---------------|--|----------------------|------------------------------------|---|----------------------------|-----------------|
| Web Server + | Web Component | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul> | NA                   | One Virtual Server with            | 4 GB RAM                                      | Operating System - Windows | 100 GB          |

|                                     |   |   |  |   |                |  |        |
|-------------------------------------|---|---|--|---|----------------|--|--------|
| Application Server                  | Application Component – Microsoft Dot Net | <ul style="list-style-type: none"> <li>- Data Collector</li> <li>- RBA Executor</li> <li>- Generic Executor</li> <li>- Release</li> <li>- Generic Listener</li> <li>- AD Sync</li> <li>- Email Service</li> </ul> |  | 2vCPU, 8 GB RAM                         |                | Server 2016, 2019, 64-bit  |        |
|                                     | Application Component - Python            | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> <li>- iRecommended</li> </ul>   |  |   |                |  |        |
| Advanced AI Server + MongoDB + Solr | Advanced AI Component - Python            | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul>   | NA   | One Virtual Server with 2vCPU, 8 GB RAM | 8 GB RAM       | Operating System - Windows Server 2016,2019, 64-bit MongoDB + Solr | 100 GB |
|                                     | Document Storage                          | MongoDB   | NA   |   |                |  |        |
|                                     | Indexer                                   | Solr  | NA   |   |                |  |        |
| Database Server                     | Database                                  | Transactional Database  | Microsoft SQL Server 2016 - Standard Edition | One Virtual Server with 4vCPU, 8 GB RAM | Not Applicable | Operating System - Windows Server 2016, 2019, 64-bit               | 100 GB |

The installer needs to be run on individual servers that include Web Component, Base Component, and Advance AI Component server. If Advanced AI components like iKnowledge, Advanced Knowledge and iScrape are not required, only Web Server, Application Server and Database server will be required.

Alternate Database options:

1. AWS Relational Database Service (RDS)
2. GCP SQL Server 2017 PaaS service

For Document storage, MongoDB as a service can be used from AWS and GCP marketplace

### 3.2.2.2 Small Environment without High Availability (HA)

In this mode, the following BigFix Runbook AI servers are deployed:

- **Web and Application Server:** This server hosts the Web UI and the Application components.
- **Advanced AI Server:** This server hosts iScrape, iKnowledge, and Advanced iKnowledge components.
- **Database Server:** This server hosts the SQL Server database, which is the main transactional database of BigFix Runbook AI.
- **MongoDB and Solr:** This server hosts the Document Storage (MongoDB) and Indexer (Solr).

The following table describes the hardware and software requirements for this installation.

Table 4 - Small Environment without High Availability (HA)

| Server                          | Component                                 | Sub-Components   | Database Requirement | Recommended Hardware Configuration      | Minimum RAM Requirement for BigFix Runbook AI | Software Requirements                                | Storage (Local) |
|---------------------------------|---|--|----------------------|---|---|--|-----------------|
| Web Server + Application Server | Web Component                             | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul>                           | NA                   | One Virtual Server with 2vCPU, 8 GB RAM | 4 GB RAM                                      | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB          |
|                                 | Application Component – Microsoft Dot Net | <ul style="list-style-type: none"> <li>- Data Collector</li> <li>- RBA Executor</li> <li>- Generic Executor</li> </ul> |                      |   |   |  |                 |

|                    |                                |   |  |   |          |  |        |
|--------------------|--------------------------------|---|--|---|----------|--|--------|
|                    |                                | <ul style="list-style-type: none"> <li>- Release</li> <li>- Generic Listener</li> <li>- AD Sync</li> <li>- Email Service</li> </ul>         |  |   |          |  |        |
|                    | Application Component - Python | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> <li>- iRecommended</li> </ul>                                       |  |   |          |  |        |
| Advanced AI Server | Advanced AI Component - Python | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul> | NA   | One Virtual Server with 2vCPU, 4 GB RAM | 4 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 50 GB  |
| Database Server    | Database                       | Transactional Database  | Microsoft SQL Server 2016, 2019 Standard Edition | One Virtual Server with 4vCPU, 8 GB RAM | NA       | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB |
| MongoDB and Solr   | Document Storage               | MongoDB   | NA   | One Virtual Server with 4vCPU, 8 GB RAM | 2 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB |
|                    | Indexer                        | Solr  | NA   |   |          |  |        |

The installer needs to be run on individual servers that include Web Component, Base Component, and Advance AI Component server. In case Advanced AI components like iKnowledge, Advanced Knowledge and iScrape are not required, only Web Server, Application Server and Database server will be required.

- Alternate Database options

1. AWS Relational Database Service (RDS)
2. GCP SQL Server 2017 PaaS service

- For Document storage, MongoDB as a service can be used from AWS and GCP marketplace

### 3.2.2.3 Medium Environment without High Availability (HA)

In this mode, the following BigFix Runbook AI servers are deployed:

- **Web Server:** This server hosts the Web User Interface.
- **Application Server:** This server hosts the Application components.
- **Advanced AI Server:** This server hosts iScrape, iKnowledge, and Advanced iKnowledge components.
- **Database Server:** This server hosts the SQL Server database, which is the main transactional database of BigFix Runbook AI.
- **MongoDB and Solr:** This server hosts the Document Storage (MongoDB) and Indexer (Solr).

The following table describes the hardware and software requirements for this installation.

Table 5 - Medium Environment without HA

| Server             | Component                                 | Sub-Components  | Database Requirement | Recommended Hardware Configuration      | Minimum RAM Requirement for BigFix Runbook AI | Software Requirements                                | Storage (Local) |
|--------------------|---|---|----------------------|---|---|--|-----------------|
| Web Server         | Web Component                             | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul>  | NA                   | One Virtual Server with 2vCPU, 8 GB RAM | 4 GB RAM                                      | Operating System - Windows Server 2016, 2019, 64-bit | 50 GB           |
| Application Server | Application Component – Microsoft Dot Net | <ul style="list-style-type: none"> <li>- Data Collector</li> <li>- RBA Executor</li> <li>- Generic Executor</li> <li>- Release</li> <li>- Generic Listener</li> </ul> | NA                   | One Virtual Server with 4vCPU, 8 GB RAM | 4 GB RAM                                      | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB          |

|                    |                                |   |  |   |          |  |        |
|--------------------|--------------------------------|---|--|---|----------|--|--------|
|                    |                                | <ul style="list-style-type: none"> <li>- AD Sync</li> <li>- Email Service</li> </ul>  |  |   |          |  |        |
|                    | Application Component - Python | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> <li>- iRecommended</li> </ul>                                       |  |   |          |  |        |
| Advanced AI Server | Advanced AI Component - Python | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul> | NA   | One Virtual Server with 4vCPU, 8 GB RAM | 4 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB |
| Database Server    | Database                       | Transactional Database  | Microsoft SQL Server 2016, 2019 - Standard Edition | One Virtual Server with 4vCPU, 8 GB RAM | NA       | Operating System - Windows Server 2016, 2019, 64-bit | 300 GB |
| MongoDB and Solr   | Document Storage               | MongoDB   | NA   | One Virtual Server with 4vCPU, 8 GB RAM | 4 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB |
|                    | Indexer                        | Solr  | NA   | RAM                                     |          |  |        |

The installer needs to be run on individual servers that include Web Component, Base Component, and Advance AI Component server. If Advanced AI components like iKnowledge, Advanced Knowledge and iScrape are not required, only Web Server, Application Server and Database server will be required.

- Alternate Database options

1. AWS Relational Database Service (RDS)
2. GCP SQL Server 2017 PaaS service

- For Document storage, MongoDB as a service can be used from AWS and GCP marketplace

### 3.2.2.4 Large Environment without High Availability (HA)

In this mode, the following BigFix Runbook AI servers are deployed:

- **Web Server:** This server hosts the Web User Interface.
- **Application Server:** This server hosts the Application components.
- **Advanced AI Server:** This server hosts iScrape, iKnowledge, and Advanced iKnowledge components.
- **Database Server:** This server hosts the SQL Server database, which is the main transactional database of BigFix Runbook AI.
- **MongoDB and Solr:** This server hosts the Document Storage (MongoDB) and Indexer (Solr).

The following table describes the hardware and software requirements for this installation.

Table 6 - Large Environment without HA

| Server             | Component                                 | Sub-Components   | Database Requirement | Recommended Hardware Configuration       | Minimum RAM Requirement for BigFix Runbook AI | Software Requirements                                | Storage (Local) |
|--------------------|---|--|----------------------|--|---|--|-----------------|
| Web Server         | Web Component                             | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul>   | NA                   | One Virtual Server with 4vCPU, 8 GB RAM  | 4 GB RAM                                      | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB          |
| Application Server | Application Component - Microsoft Dot Net | <ul style="list-style-type: none"> <li>- Data Collector</li> <li>- RBA Executor</li> <li>- Generic Executor</li> <li>- Release</li> <li>- Generic Listener</li> <li>- AD Sync</li> </ul> | NA                   | One Virtual Server with 4vCPU, 16 GB RAM | 8 GB RAM                                      | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB          |



|                    |                                |   |  |  |          |  |        |
|--------------------|--------------------------------|---|--|--|----------|--|--------|
|                    |                                | <ul style="list-style-type: none"> <li>- Email Service</li> </ul>   |  |  |          |  |        |
|                    | Application Component - Python | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> <li>- iRecommended</li> </ul>                                       |  |  |          |  |        |
| Advanced AI Server | Advanced AI Component - Python | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul> | NA   | One Virtual Server with 4vCPU, 16 GB RAM | 8 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB |
| Database Server    | Database                       | Transactional Database  | Microsoft SQL Server 2016, 2019 - Standard Edition | One Virtual Server with 8vCPU, 16 GB RAM | NA       | Operating System - Windows Server 2016, 2019, 64-bit | 500 GB |
| MongoDB and Solr   | Document Storage               | MongoDB   | NA   | One Virtual Server with 4vCPU, 16 GB RAM | 8 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 150 GB |
|                    | Indexer                        | Solr  | NA   | RAM                                      |          |  |        |

The installer needs to be run on individual servers that include Web Component, Base Component, and Advance AI Component server. If Advanced AI components like iKnowledge, Advanced Knowledge and iScrape are not required, only Web Server, Application Server and Database server will be required.

Alternate Database options:

1. AWS Relational Database Service (RDS)
2. GCP SQL Server 2017 PaaS service

For Document storage, MongoDB as a service can be used from AWS and GCP marketplace

### 3.2.2.5 Small Environment with High Availability (HA)

In this mode, the following BigFix Runbook AI servers are deployed:

- **Web and Application Server:** This server hosts the Web UI and the Application components
- **Advanced AI Server:** This server hosts iScrape, iKnowledge, and Advanced iKnowledge components
- **Database Server:** This server hosts the SQL Server database, which is the main transactional database of BigFix Runbook AI
- **MongoDB:** This server hosts the Document Storage Database (MongoDB)
- **Solr:** This server hosts the Indexer (Solr)

The following table describes the hardware and software requirements for this installation.

Table 7 - Small Environment with HA

| Server                          | Component                                 | Sub-Components  | Database Requirement | Recommended Hardware Configuration       | Minimum RAM Requirement for BigFix Runbook AI | Software Requirements                                | Storage   |
|---------------------------------|---|---|----------------------|--|---|--|---|
| Web Server + Application Server | Web Component                             | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul>  | NA                   | Two Virtual Servers with 2vCPU, 8 GB RAM | 4 GB RAM                                      | Operating System - Windows Server 2016, 2019, 64-bit | 50 GB (Additional D: Drive) and 50GB shared storage (SAN / File Folder) |
|                                 | Application Component – Microsoft Dot Net | <ul style="list-style-type: none"> <li>- Data Collector</li> <li>- RBA Executor</li> <li>- Generic Executor</li> <li>- Release</li> <li>- Generic Listener</li> <li>- AD Sync</li> <li>- Email Service</li> </ul> |                      |  |   |  |   |
|                                 | Application Component - Python            | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> </ul>   |                      |  |   |  |   |

|                    |                                |   |  |  |                |  |   |
|--------------------|--------------------------------|---|--|--|----------------|--|---|
|                    |                                | <ul style="list-style-type: none"> <li>- iRecommen<br/>d</li> </ul>   |  |  |                |  |   |
| Advanced AI Server | Advanced AI Component - Python | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul> | NA   | Two Virtual Servers with 2vCPU, 8 GB RAM | 4 GB RAM       | Operating System - Windows Server 2016, 2019, 64-bit | 50 GB (Additional D: Drive) and 50GB shared storage (SAN / File Folder) |
| Database Server*   | Database                       | Transactional Database  | Microsoft SQL Server 2016, 2019 - Standard Edition | Two Virtual Servers with 4vCPU, 8 GB RAM | Not Applicable | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB Shared storage (SAN / File Folder)                               |
| MongoDB **         | Document Storage               | MongoDB   | NA   | One Virtual Server with 2vCPU, 4 GB RAM  | 2 GB RAM       | Operating System - Windows Server 2016, 2019, 64-bit | 50 GB (Additional D: Drive)   |
| Solr***            | Indexer                        | Solr  | NA   | One Virtual Server with 2vCPU, 8 GB RAM  | 4 GB RAM       | Operating System - Windows Server 2016, 2019, 64-bit | 50 GB (Additional D: Drive)   |

The installer needs to be run on individual servers that include Web Component, Base Component, and Advance AI Component server. If Advanced AI components like iKnowledge, Advanced Knowledge and iScrape are not required, only Web Server, Application Server and Database server will be required.

#### - Alternate Database options

##### 1. AWS Relational Database Service (RDS)

2. GCP SQL Server 2017 PaaS service

- For Document Storage, if \*MongoDB has to be made available in HA, then 3 servers will have to be provided as per the best practices. Alternately, MongoDB as a service can be used from AWS and GCP marketplace
- For Indexer, if Solr has to be made available in HA, then 5 servers will have to be provided as per the best practices

### 3.2.2.6 Medium Environment with High Availability (HA)

In this mode, the following BigFix Runbook AI servers are deployed:

- **Web Server:** This server hosts the Web User Interface
- **Application Server:** This server hosts the Application components
- **Advanced AI Server:** This server hosts iScrape, iKnowledge, and Advanced iKnowledge components
- **Database Server:** This server hosts the SQL Server database, which is the main transactional database of BigFix Runbook AI
- **MongoDB:** This server hosts the Document Storage Database (MongoDB).
- **Solr:** This server hosts the Indexer (Solr)

The following table describes the hardware and software requirements for this installation.

Table 8 - Medium Environment with HA

| Server | Component | Sub-Components | Database Requirement | Recommended Hardware Configuration | Minimum RAM Requirement for BigFix Runbook AI | Software Requirements | Storage |
|--------|-----------|----------------|----------------------|------------------------------------|---|-----------------------|---------|
|--------|-----------|----------------|----------------------|------------------------------------|---|-----------------------|---------|

|                    |   |   |    |   |          |  |  |
|--------------------|---|---|----|---|----------|--|--|
| Web Server         | Web Component                             | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul>  | NA | Two Virtual Servers with 2vCPU, 8 GB RAM  | 4 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 50 GB (Additional D: Drive) and 50GB shared storage (SAN / File Folder)  |
| Application Server | Application Component – Microsoft Dot Net | <ul style="list-style-type: none"> <li>- Data Collector</li> <li>- RBA Executor</li> <li>- Generic Executor</li> <li>- Release</li> <li>- Generic Listener</li> <li>- AD Sync</li> <li>- Email Service</li> </ul> | NA | Two Virtual Servers with 4 vCPU, 8 GB RAM | 8 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB (Additional D: Drive) and 50GB shared storage (SAN / File Folder) |
|                    | Application Component - Python            | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> <li>- iRecommended</li> </ul>   |    |   |          |  |  |
| Advanced AI Server | Advanced AI Component - Python            | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul>   | NA | Two Virtual Servers with 4 vCPU, 8 GB RAM | 8 GB RAM | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB (Additional D: Drive) and 50GB                                    |

|                  |                  |                        |  |   |                |   |   |
|------------------|------------------|------------------------|--|---|----------------|---|---|
|                  |                  |                        |  |   |                |   | shared storage (SAN / File Folder)        |
| Database Server* | Database         | Transactional Database | Microsoft SQL Server 2016, 2019 - Standard Edition | Two Virtual Servers with 4vCPU, 16 GB RAM | Not Applicable | Operating System - Windows Server 2016, 2019 64-bit | 300 GB shared storage (SAN / File Folder) |
| MongoDB**        | Document Storage | MongoDB                | NA   | One Virtual Server with 4vCPU, 8 GB RAM   | 4 GB RAM       | Operating System - Windows Server 2016, 64-bit      | 100 GB (Additional D: Drive)              |
| Solr***          | Indexer          | Solr                   | NA   | One Virtual Server with 4vCPU, 8 GB RAM   | 8 GB RAM       | Operating System - Windows Server 2016, 2019 64-bit | 100 GB (Additional D: Drive)              |

The installer needs to be run on individual servers that include Web Component, Base Component, and Advance AI Component server. If Advanced AI components like iKnowledge, Advanced Knowledge and iScrape are not required, only Web Server, Application Server and Database server will be required.

#### - Alternate Database options

1. AWS Relational Database Service (RDS)
2. GCP SQL Server 2017 PaaS service

- For Document Storage, if \*MongoDB has to be made available in HA, then 3 servers will have to be provided as per the best practices. Alternately, MongoDB as a service can be used from AWS and GCP marketplace

- For Indexer, if Solr has to be made available in HA, then 5 servers will have to be provided as per the best practices

### 3.2.2.7 Large Environment with High Availability (HA)

In this mode, the following BigFix Runbook AI servers are deployed:

- **Web Server:** This server hosts the Web User Interface
- **Application Server:** This server hosts the Application components
- **Advanced AI Server:** This server hosts iScrape, iKnowledge, and Advanced iKnowledge components
- **Database Server:** This server hosts the SQL Server database, which is the main transactional database of BigFix Runbook AI
- **MongoDB:** This server hosts the Document Storage Database (MongoDB).
- **Solr:** This server hosts the Indexer (Solr)

The following table describes the hardware and software requirements for this installation.

Table 9 - Large Environment with HA

| Server             | Component             | Sub-Components   | Database Requirement | Recommended Hardware Configuration       | Minimum RAM Requirement for BigFix Runbook AI | Software Requirements                                | Storage   |
|--------------------|-----------------------|--|----------------------|--|---|--|---|
| Web Server         | Web Component         | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul> | NA                   | Two Virtual Servers with 4vCPU, 8 GB RAM | 4 GB RAM                                      | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB (Additional D: Drive) and 50 GB shared storage (SAN / File Folder) |
| Application Server | Application Component | <ul style="list-style-type: none"> <li>- Data Collector</li> </ul>                           | NA                   | Two Virtual Servers with                 | 8 GB RAM                                      | Operating System -                                   | 100 GB (Additi  |

|                    |   |   |  |   |                |  |   |
|--------------------|---|---|--|---|----------------|--|---|
|                    | <ul style="list-style-type: none"> <li>- Microsoft Dot Net</li> </ul> | <ul style="list-style-type: none"> <li>- RBA Executor</li> <li>- Generic Executor</li> <li>- Release</li> <li>- Generic Listener</li> <li>- AD Sync</li> <li>- Email Service</li> </ul> |  | 4vCPU, 16 GB RAM                          |                | Windows Server 2016, 2019, 64-bit                    | onal D: Drive) and 50 GB shared storage (SAN / File Folder)               |
|                    | Application Component - Python  | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> <li>- iRecomm end</li> </ul>  |  |   |                |  |   |
| Advanced AI Server | Advanced AI Component - Python  | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul>   | NA   | Two Virtual Servers with 4vCPU, 16 GB RAM | 8 GB RAM       | Operating System - Windows Server 2016, 2019, 64-bit | 100 GB (Additional D: Drive) and 50 GB shared storage (SAN / File Folder) |
| Database Server*   | Database  | Transactional Database  | Microsoft SQL Server 2016, 2019 - Standard Edition | Two Virtual Servers with 8vCPU, 16 GB RAM | Not Applicable | Operating System - Windows Server 2016, 2019 64-bit  | 500 GB shared storage (SAN / File Folder)                                 |



|           |                  |         |    |  |          |   |                              |
|-----------|------------------|---------|----|--|----------|---|------------------------------|
| MongoDB** | Document Storage | MongoDB | NA | One Virtual Server with 4vCPU, 8 GB RAM  | 4 GB RAM | Operating System - Windows Server 2016, 64-bit      | 150 GB (Additional D: Drive) |
| Solr***   | Indexer          | Solr    | NA | One Virtual Server with 4vCPU, 16 GB RAM | 8 GB RAM | Operating System - Windows Server 2016, 2019 64-bit | 150 GB (Additional D: Drive) |

The installer needs to be run on individual servers that include Web Component, Base Component, and Advance AI Component server. If Advanced AI components like iKnowledge, Advanced Knowledge and iScrape are not required, only Web Server, Application Server and Database server will be required.

#### - Alternate Database options

1. AWS Relational Database Service (RDS)
2. GCP SQL Server 2017 PaaS service

- For Document Storage, if \*MongoDB has to be made available in HA, then 3 servers will have to be provided as per the best practices. Alternately, MongoDB as a service can be used from AWS and GCP marketplace

- For Indexer, if Solr has to be made available in HA, then 5 servers will have to be provided as per the best practices.

### 3.2.3 Component Installation Prerequisites

Prior to running the installer, complete all procedures as described in [Environment Planning](#) and ensure that all the software prerequisites for the BigFix Runbook AI component installation are met.

The following table describes the software requirements to install the components.

Table 10 - Component Installation Prerequisites

| Server     | Component     | Sub-Components   | Software Requirements  |
|------------|---------------|--|--|
| Web Server | Web Component | <ul style="list-style-type: none"> <li>- Web UI</li> <li>- Web API</li> <li>- KRS</li> </ul> | IIS 10.0 or above<br>Dot Net Framework 4.8.x<br>Microsoft ACE OLEDB 12.0 |

|   |   |   |  |
|---|---|---|--|
| Application Server                      | Application Component – Microsoft Dot Net | <ul style="list-style-type: none"> <li>- Data Collector</li> <li>- RBA Executor</li> <li>- Generic Executor</li> <li>- Release</li> <li>- Generic Listener</li> <li>- AD Sync</li> <li>- Email Service</li> </ul> | Dot Net Framework 4.8.x<br>Python 3.8.10 64-bit<br>NLTK 3.8.1<br>Apache Server 2.4<br><ul style="list-style-type: none"> <li>- VC++ 2015 64-bit Redistributable package</li> </ul>   |
|   | Application Component - Python            | <ul style="list-style-type: none"> <li>- iParse</li> <li>- iUnique</li> <li>- iRecommend</li> </ul>   |  |
| Advanced AI Server                      | Advanced AI Component - Python            | <ul style="list-style-type: none"> <li>- iScrape</li> <li>- iKnowledge</li> <li>- Advanced Knowledge</li> <li>- Knowledge Rating</li> </ul>   | Python 3.8.10 64-bit<br>NLTK 3.8.1<br>Apache Server 2.4<br>VC++ 2015 64-bit Redistributable package<br>Oracle Distribution of Java JDK 1.8.x<br>(Required only for Solr installation)<br>Anti-Word<br>Spacy 3.1.2<br><ul style="list-style-type: none"> <li>- Google Chrome Browser</li> </ul> |
| Database Server                         | Database                                  | Transactional Database  | MS SQL 2016 (2019) Enterprise / Standard edition 64 bit  |
| MongoDB                                 | Document Storage                          | MongoDB   | MongoDB 4.0  |
| Solr                                    | Indexer                                   | Solr  | SOLR 8.5.0   |
| Certificates (applicable for all tiers) |   |   | SSL Certificates   |

### 3.3 Prerequisites to Run the Installer

This section provides an overview of the prerequisites to run the installer.

Once the infrastructure is prepared, determine the server where the installer will be run. Prior to running the installer, ensure all prerequisites are ready on the server.

Table 11 - Prerequisites to Run the Installer

| Applications    | Version  |
|-----------------|--|
| Windows Version | Microsoft® Windows® Server 2012 Standard Edition or Windows Server 2016 Standard Edition |
| .Net Framework  | .Net Framework 4.8   |

The requirements mentioned in the following tables indicate the minimum configuration required at the time of installation:

- Table 3 - Minimal Deployment
- Table 5 - Medium Environment without HA
- Table 6 - Large Environment without HA
- Table 7 - Small Environment with HA
- Table 8 - Medium Environment with HA
- Table 9 - Large Environment with HA

Over a period, based on the use of enterprise managed resources, user might have to upgrade to a higher configuration.

### 3.3.1 Installer

The installer includes an installer executable. This executable enables complete installation of BigFix Runbook AI and checks the prerequisites for all the servers and components.

## 3.4 BigFix Runbook AI Installation

This section explains how to install BigFix Runbook AI components using the installer on any server or standalone machine. The installer can be further used for deployment of web server, application server, advanced AI server and , database server, and the underlying components.

BigFix Runbook AI implementation contains the following menus:

- [Run the Installer](#)
- [Install BigFix Runbook AI](#)

Before running the installer, ensure that the ‘write’ permission is enabled for the user on the Apache24 folder.

## 3.4.1 Run the Installer

Review the prerequisites carefully before proceeding with the installation.

After confirmation that the system meets the prerequisites to run the BigFix Runbook AI installer, perform the following steps:

1. Copy the zipped installer file to the server where you want to run the BigFix Runbook AI installer.
2. Unzip and extract all the contents to the default folder.
3. Browse the **Installer.exe** in the folder and click **Run as administrator** to start installation.

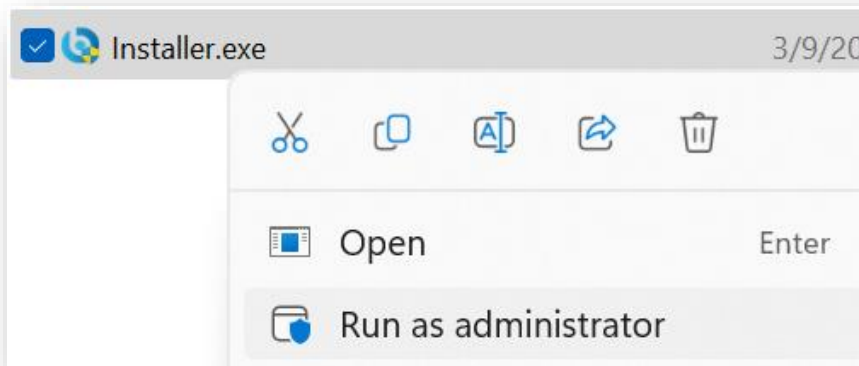


Figure 2 – Run the Installer

## 3.4.2 Install BigFix Runbook AI

This section lists the steps to install the BigFix Runbook AI components on all hosts. Ensure that user meets all requirements in the section [Environment Preparation](#) and [Prerequisites to Run the Installer](#) before starting the installation procedure.

To install BigFix Runbook AI, perform the following steps:

1. On running the Installer, the following page appears.

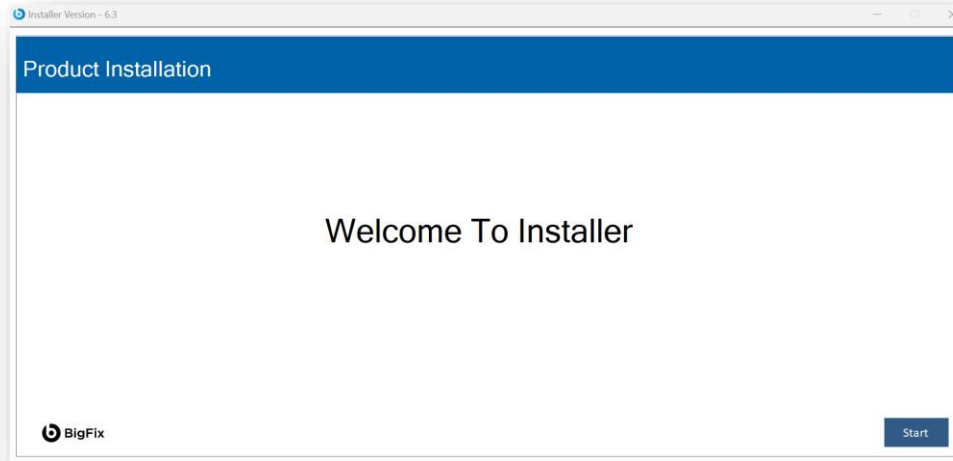


Figure 3 - BigFix Runbook AI Implementation

2. Click **Start**. It will extract required binaries and the following page will appear.

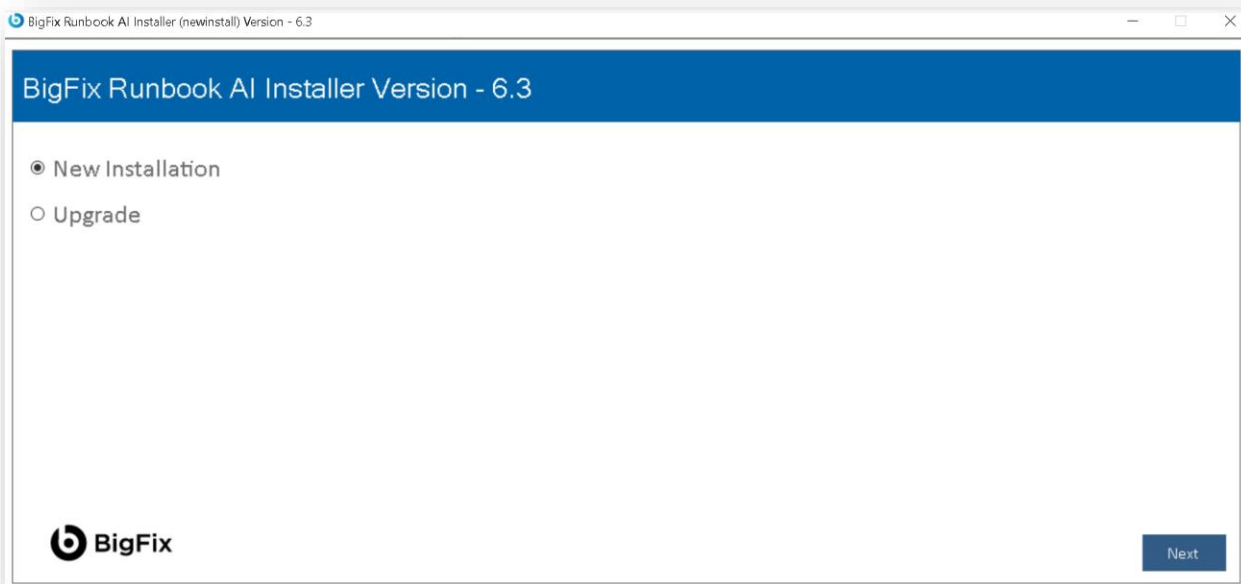


Figure 2 - BigFix Runbook AI Implementation

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.

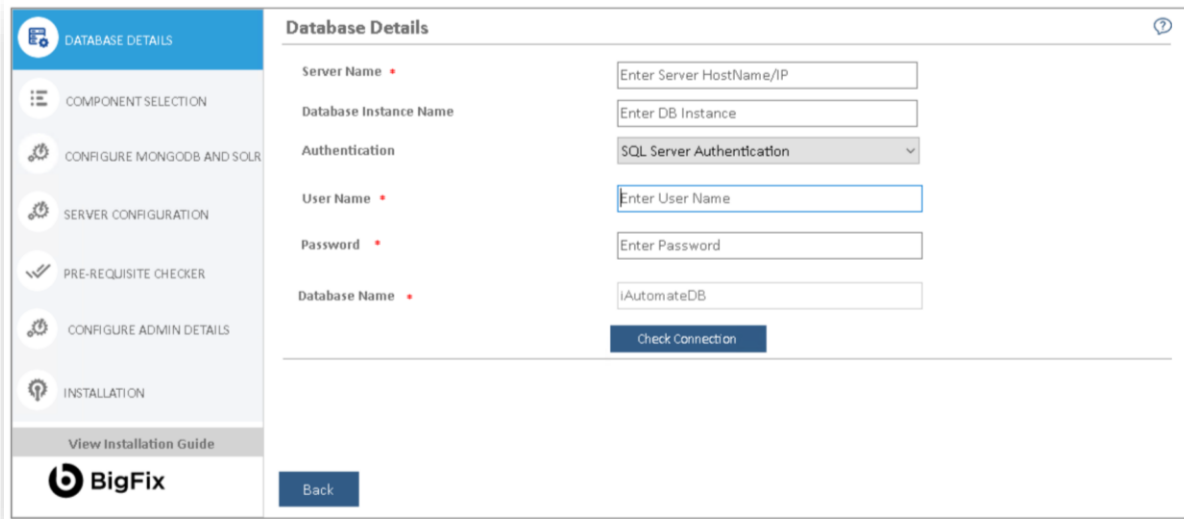


Figure 3 - Database Details

The next step is to create the database.

On Left Menu click on “**View Installation Guide**” to view installation guide.

### 3.4.3 Database Setup

User can create a customized database using the following steps.

1. On the **Database Details** view, type the **Server Name**, and then the **Database Instance Name**.

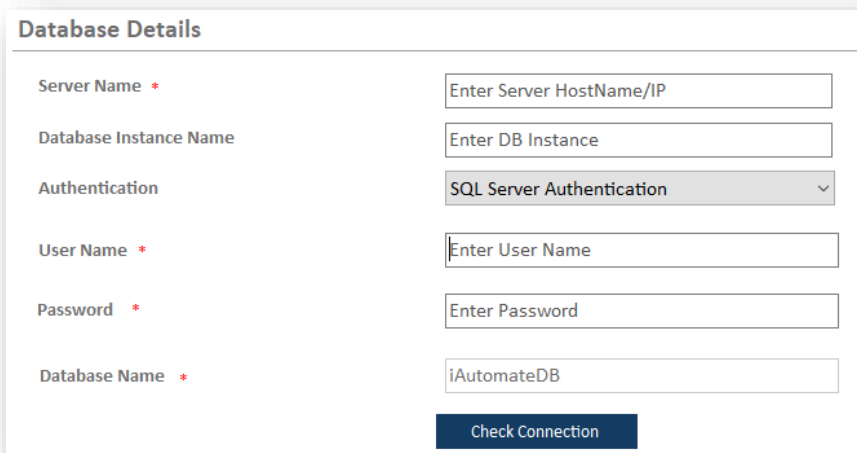
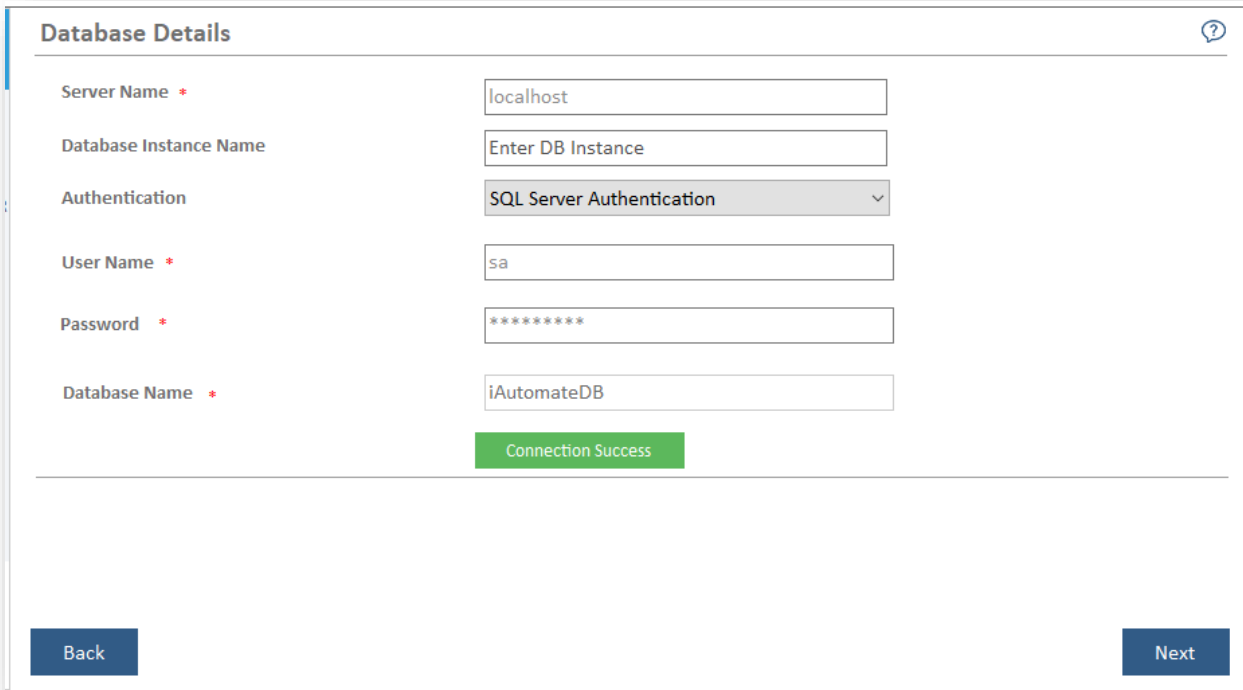


Figure 4 - Select Authentication

2. Select the **Authentication** type. The type of login authentication used to configure the database determines the resulting username.
3. There are two types of authentications used for database configuration:

- Windows Authentication
  - SQL Server Authentication
4. In the **UserName** and **Password** fields, type username and password to access the server.
  5. In the **Database Name** field, **iAutomateDB** is auto filled by default.
  6. To check the connectivity to a server using the credentials provided, click **Check Connection**. This displays a message for **Connection Success** or **Connection Failure**.
  7. Successful connection to the database enables the **Next** button.



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

| Field                  | Value                     |
|------------------------|---------------------------|
| 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 5 - Test Connection

8. Click **Next**. The **Component Setup** page appears.

All fields marked with an asterisk (\*) are mandatory.

### 3.4.4 Component Setup

After creating the BigFix Runbook AI database, perform the following steps to set up the Web UI components.

1. The **Component Selection** view lists the components and their corresponding parameters based on the selected component.
2. The following types of components are deployed in BigFix Runbook AI:

- **Web Component** - It includes the user interface that enables the configuration, management, and resolution of tickets.
- **Service Component** - This is further divided into two categories:
  - **Application Component** - This includes essential services that work together to achieve the core functionality of BigFix Runbook AI.
  - **Advanced AI Component** - This includes features like Solution Creation; Natural Language Processing (NLP) based assisted services, and so on.

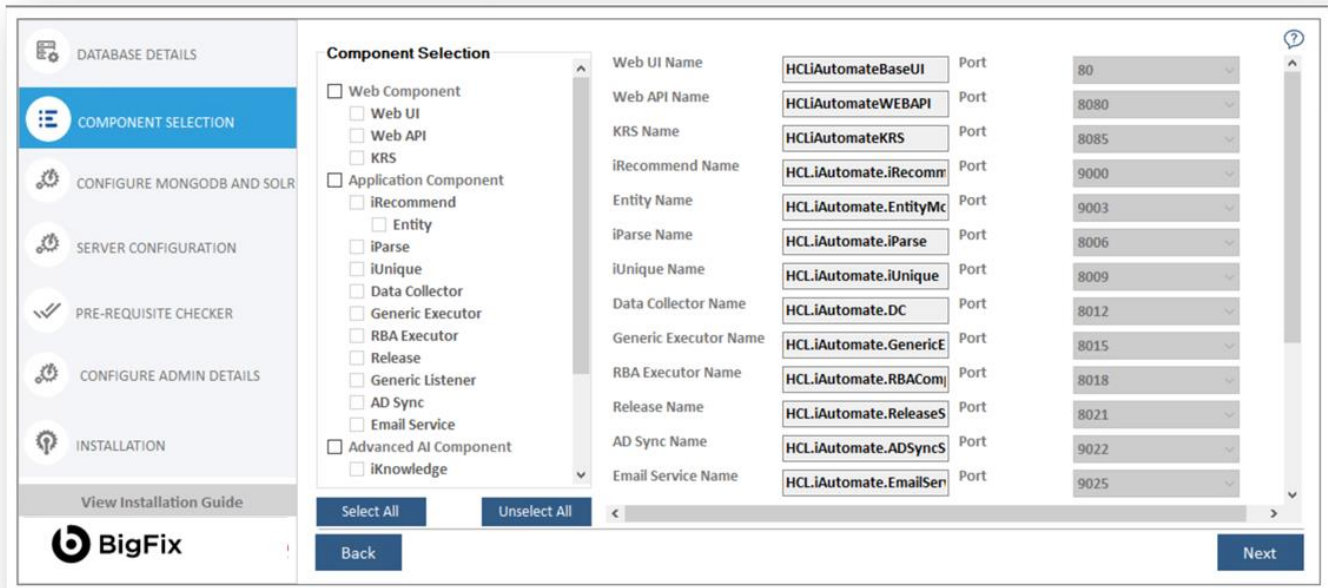


Figure 6 - Component Setup

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

The following table lists the components available on different servers.

Table 12 - BigFix Runbook AI Components

| Server Type   | Components | Description   |
|---------------|------------|---|
| Web Component | Web UI     | Web User Interface for Admin, Configuration, Operations Console, Dashboards and Knowledge Analysis and Search functionalities |
|               | Web API    | It is an API in the BigFix Runbook AI web module that can be accessed using the HTTP protocol.                                |



|                       |                    |  |
|-----------------------|--------------------|--|
|                       | KRS                | The Key Rotation Service component which serves the purpose of providing additional security through rotation of keys on a periodic basis.   |
| Application Component | iRecommend         | It leverages Natural Language Processing and is responsible for recommending the best suited runbook for resolving the issue based on the ticket description   |
|                       | iParse             | It serves the purpose of analyzing the ticket description and summary for extracting relevant parameters to be passed to configurable runbooks   |
|                       | iUnique            | It helps in clustering the ticket data (incident, service requests, change requests) into different categories for identification of automation opportunities  |
|                       | Data Collector     | It is responsible for collecting ticket information from the ITSM tool   |
|                       | Generic Executor   | It is used for data processing at the DB layer for enabling backend processes.   |
|                       | RBA Executor       | It helps in triggering the identified runbook for automatic resolution using an underlying RBA tool  |
|                       | Release            | It is used to release the ticket in case an appropriate runbook is not recommended OR runbook execution for a ticket fails. In the latter case, the ticket is released and assigned to a human agent.  |
|                       | Generic Listener   | Ticket passes through multiple stages during the resolution lifecycle using BigFix Runbook AI. Generic Listener module is responsible for ensuring the ticket is moved to the next stage based on the current outcome. Its job is to identify the status of the present stage and based on success / failure, move the ticket to the consequent stage in the lifecycle |
|                       | AD Sync            | It is responsible for fetching LDAP user from LDAP Server.   |
|                       | Email Service      | It is responsible for sending mail notifications to user   |
| Advanced AI Component | Advanced Knowledge | It returns a list of relevant documents for a query that have been crawled from different repositories like SNOW KB, Web URL, Satori repository, and internal files and folders.   |
|                       | iKnowledge         | It returns a list of relevant results from Google for a query, if no relevant documents exist in the organization's repository.  |

|  |                  |  |
|--|------------------|--|
|  | Knowledge rating | It enables users to provide feedback as a rating for the document search corresponding to the ticket summary.  |
|  | iScrape          | It helps in automated runbook creation for ticket categories for which runbooks don't exist by exploring various internal and external data sources for relevant executable code snippets and scripts. |

3. Select the components as planned for the server configuration.
4. Select the **Web Component**, **Application Component**, or **Advanced AI Component** check boxes to install all the components listed under the servers simultaneously or select a single component to install it individually.
5. After component selection, their corresponding details are auto filled and enables user to select the **Port** for each component.
6. On selecting **Advance AI Components**, user must provide the MongoDB and Solr database details else the setup will display the **Server Configuration** page.
7. To continue with the installation, click Next.  
This enables the **Configure MongoDB** and **Solr** tab on the left navigation pane. Type the following details to set up the MongoDB and Solr databases:
8. On the Configure MongoDB page:
  - a. Type the **MongoDB Server Name** (including the port details).
  - b. In the **User ID** and **Password** fields, type username and password to access the server.
  - c. Select the Version Type.
  - d. Select the **HA** mode.
  - e. Based on the selected "**Version Type**" and **HA** mode (selected / unselected), please follow the below steps:

Table 13 - MongoDB Configuration Parameters

| Version Type | HA Mode  | Number of Servers Required* | CA File Required | PEM File Required |
|--------------|----------|-----------------------------|------------------|-------------------|
| Community    | Enabled  | At least 3                  | Not Required     |                   |
| Community    | Disabled | 1                           | Not Required     |                   |
| Enterprise   | Enabled  | At least 3                  | Depends**        | Required          |
| Enterprise   | Disabled | 1                           | Depends**        | Required          |

\* - As per the best practices, number of servers required should be odd in numbers. Provide the list of all MongoDB instances as comma separated pairs of hostname and port.

**\*\* - CA File is only required if and only if MongoDB installation mandates use of CA file**

9. On the **Configure Solr** page:
  - a. Type the **Solr Server**.
  - b. In the **User ID** and **Password** fields, type user ID and password to access the server.
  - c. The default port is auto filled in the **PORT** field next to each component.
  - d. Click **Next**.

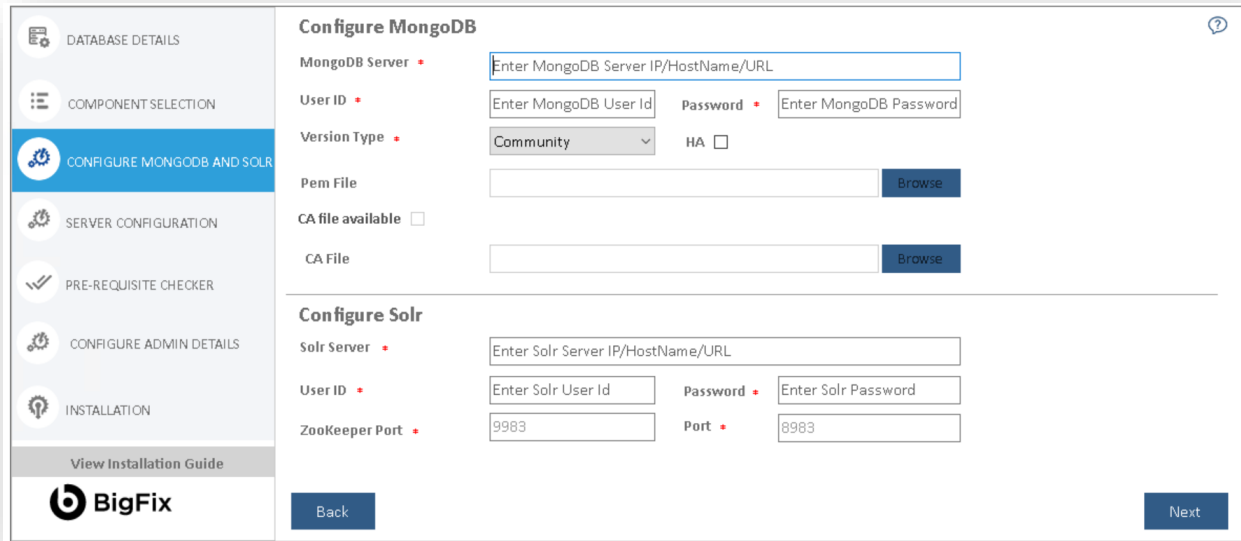


Figure 7 - Configure Mongo DB and Solr

- e. User will be prompted to check the connection status. Click **Yes** to proceed with checking the connection status or **No** to continue with the Installation.

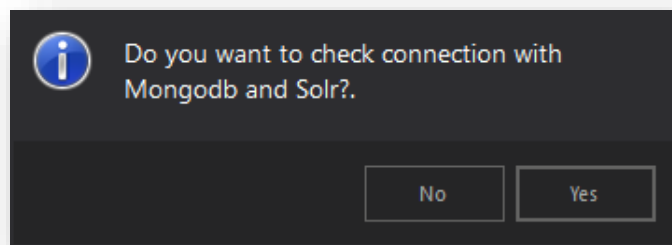


Figure 8 - Check Mongo DB and Solr Connection Status

The Server Configuration page appears.

**All fields marked with an asterisk (\*) are mandatory.**

## 3.4.5 Server Configuration

This section describes how to set up and configure a server for BigFix Runbook AI installation.

To configure servers, provide the following details:

1. The **IP Address/Host Name**, where user wants to install the components.

The installer automatically detects the host name where the installer is running and auto-fills the information in the text box.

2. Select the **Account Type** from the available options:

- Local Administrator
- Domain Account

3. Type the Domain Name.

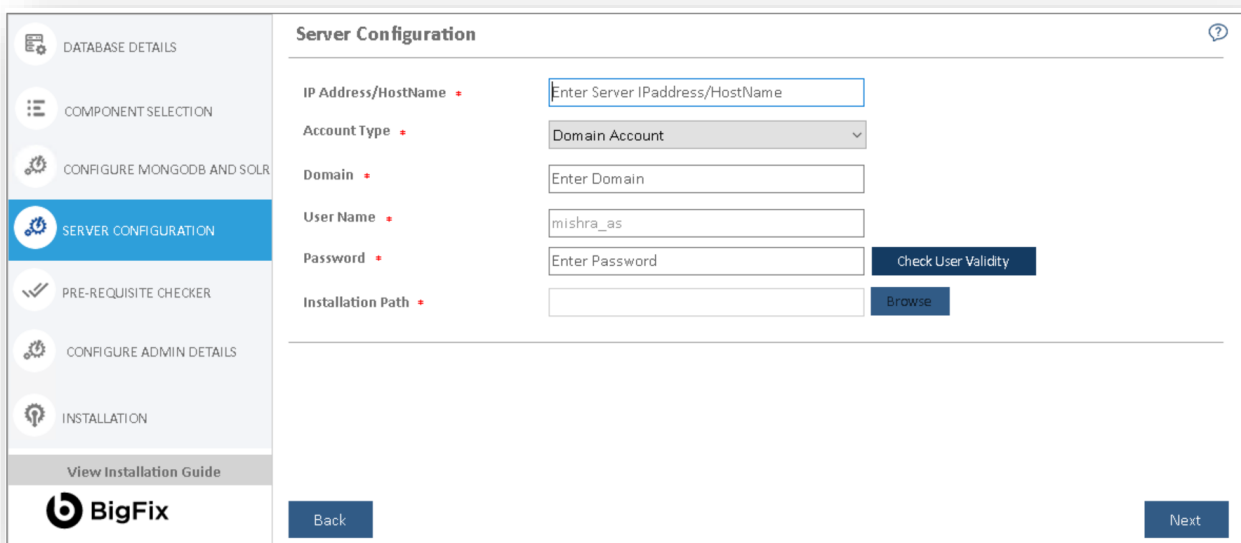


Figure 9- Server Configuration

4. In the **User Name** and **Password** fields, type the login credentials to access the application server.
5. Click **Check User Validity** to validate the user to connect to the server.
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.

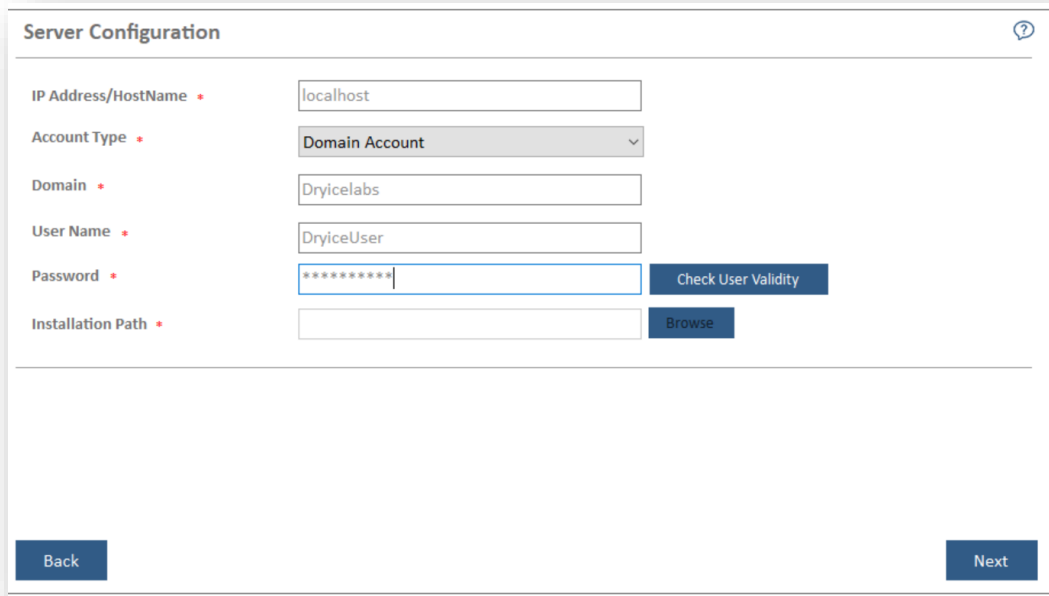


Figure 10 - Successful Validation

8. Click **Next**.

The **Pre-Requisite Checker** page appears.

All fields marked with an asterisk (\*) are mandatory.

### 3.4.6 Run Pre-Requisite Checker

This section describes the procedure to check if all BigFix Runbook AI installation prerequisites have been met before the installation. The Prerequisite Checker identifies all the missing pre-requisite software and utilities. User will have to ensure that the identified prerequisites are installed manually before proceeding further.

To run the **Prerequisite Checker**, perform the following steps:

1. Click **Run**.

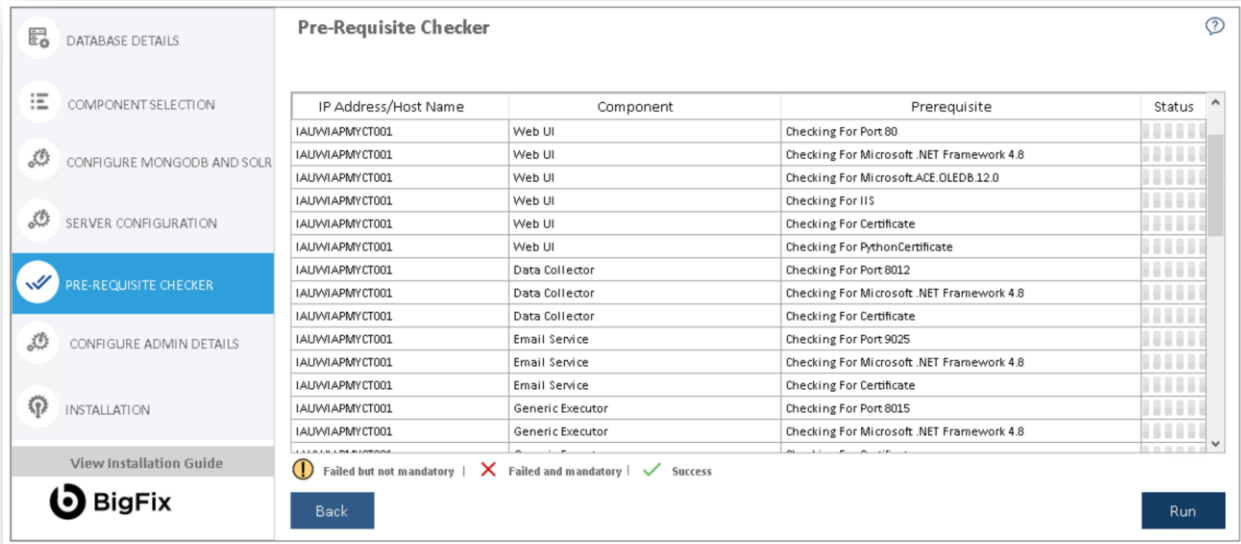


Figure 11 - Prerequisite Checker

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

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

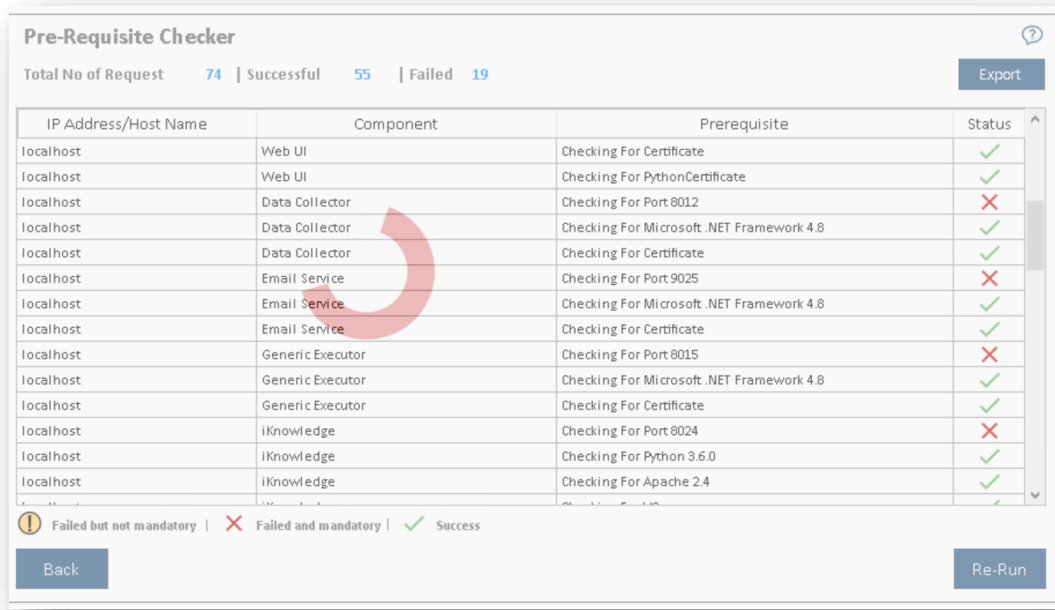


Figure 12 - Pre-Requirement Checking in Progress

If you encounter a failure status for any of the Ports, either go back Section 3.4.4- Component Setup, to choose a different port, or make sure all the mentioned ports are available to use

3. In the **Status** column, each prerequisite is marked a success or a 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 13 - Pre-Requisite Checker Status

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

4. Upon successful validation of all the pre-requisites, **Next** button is enabled
5. Click **Export** to export the **Pre-Requisite Checker** report, if required.

**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.OLEDB.12.0     | ✓      |
| localhost            | Web UI           | Checking For IIS                          | ✓      |
| localhost            | Web UI           | Checking For Certificate                  | ✓      |
| localhost            | Web UI           | Checking For PythonCertificate            | ✓      |
| localhost            | Data Collector   | Checking For Port 8014                    | ✓      |
| localhost            | Data Collector   | Checking For Microsoft .NET Framework 4.8 | ✓      |
| localhost            | Data Collector   | Checking For Certificate                  | ✓      |
| localhost            | Email Service    | Checking For Port 9026                    | ✓      |
| localhost            | Email Service    | Checking For Microsoft .NET Framework 4.8 | ✓      |
| localhost            | Email Service    | Checking For Certificate                  | ✓      |
| localhost            | Generic Executor | Checking For Port 8016                    | ✓      |
| localhost            | Generic Executor | Checking For Microsoft .NET Framework 4.8 | ✓      |
| localhost            | Generic Executor | Checking For Certificate                  | ✓      |
| localhost            | iParse           | Checking For Port 8007                    | ✓      |

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

**Back** **Next**

Figure 14 - Prerequisite Checker Report

Use **Back** to go to the previous page.

6. Click Next. The **Configure Admin Details** page appears.

### 3.4.7 Configure Admin Details

Administrative roles provide controlled decentralization of administrative responsibilities and the functionality to add or manage more administrators or users, manage settings, and perform governance actions.

This section describes the steps involved to configure the Super Administrator which is required after the initial setup of BigFix Runbook AI.

To configure **Super Administrator** details, perform the following steps:

1. On the **Configure Admin Details** page, type the new administrator’s **Name**, **Email** and **Password**.

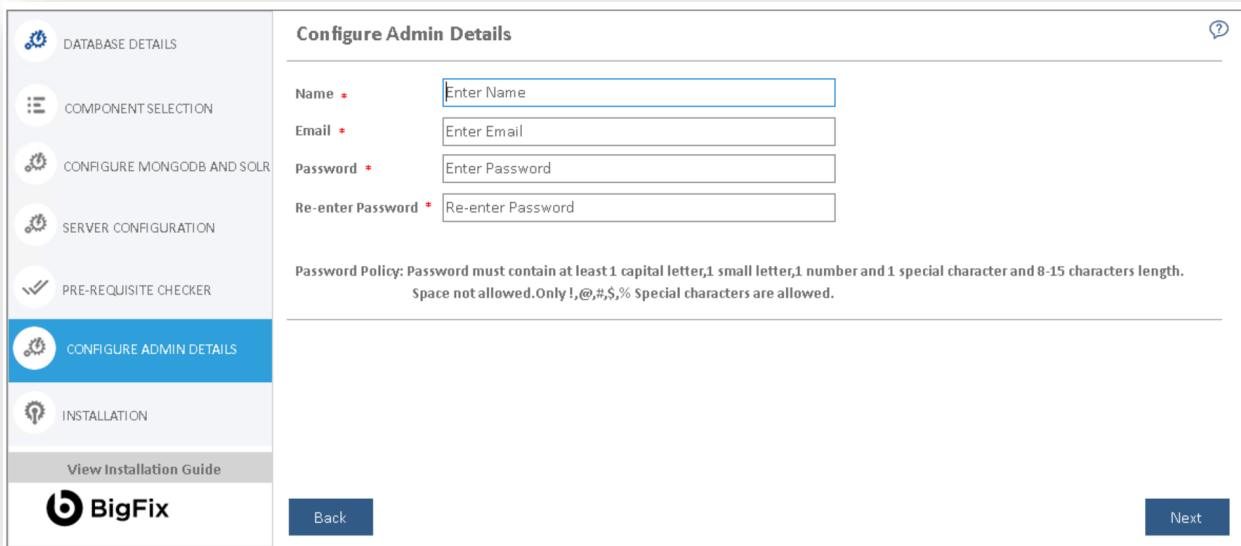


Figure 15 - Configure Admin Details

If the database provided in the [Database Setup](#) already exists at the time of installation, then the **Configure Admin Details** page will remain unavailable.

Post installation, the administration console can be accessed by this **Super Administrator** account to configure BigFix Runbook AI.

2. Click **Next** to review the information provided on previous pages.

Click **Reset** to reset the admin credentials. Click **Back** to navigate to the previous pages for making any changes. All fields marked with an asterisk (\*) are mandatory.



### 3.4.8 Install

This section describes the installation of BigFix Runbook AI after all components and admin configuration is completed.

1. Before proceeding with the Installation, review the information on the **Installation** page and, if required, click **Back** to make any changes.
2. Click **Run** to start the installation.

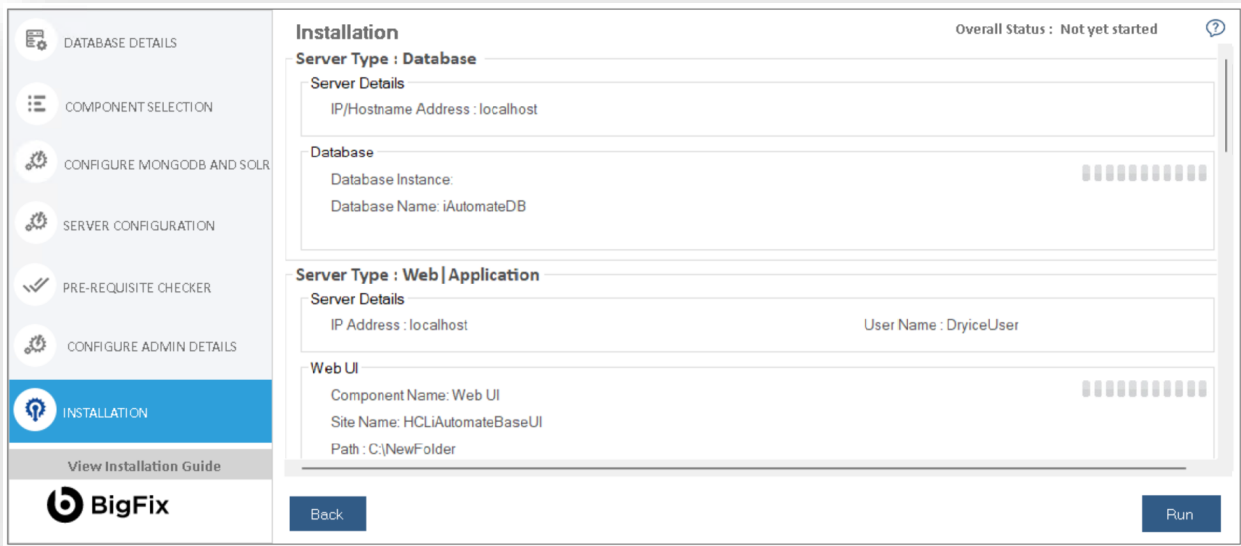


Figure 16 – Installation

The progress bar displays the installation progress.

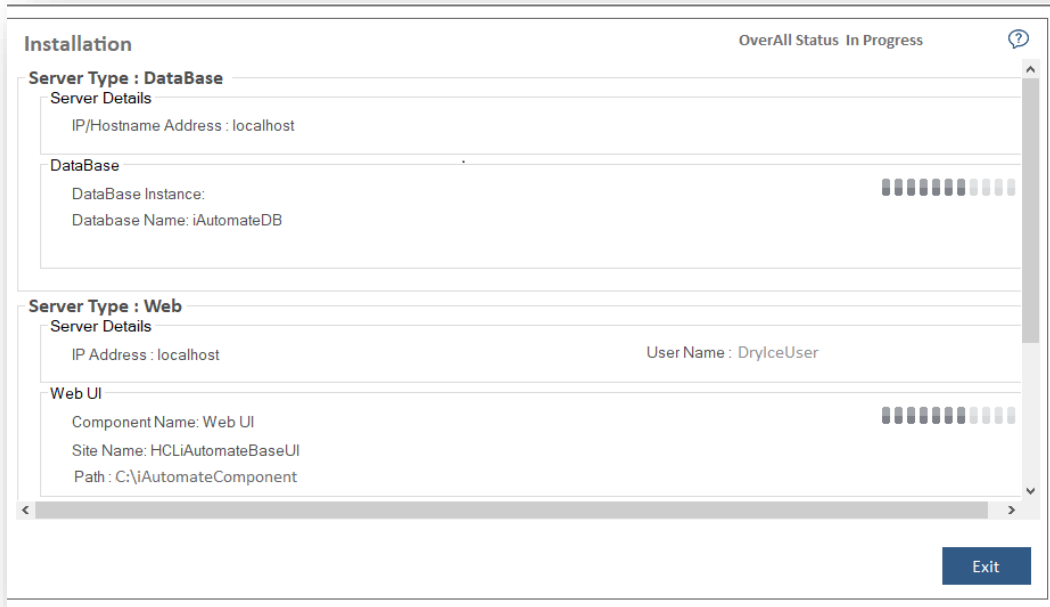


Figure 17 - Installation Progress

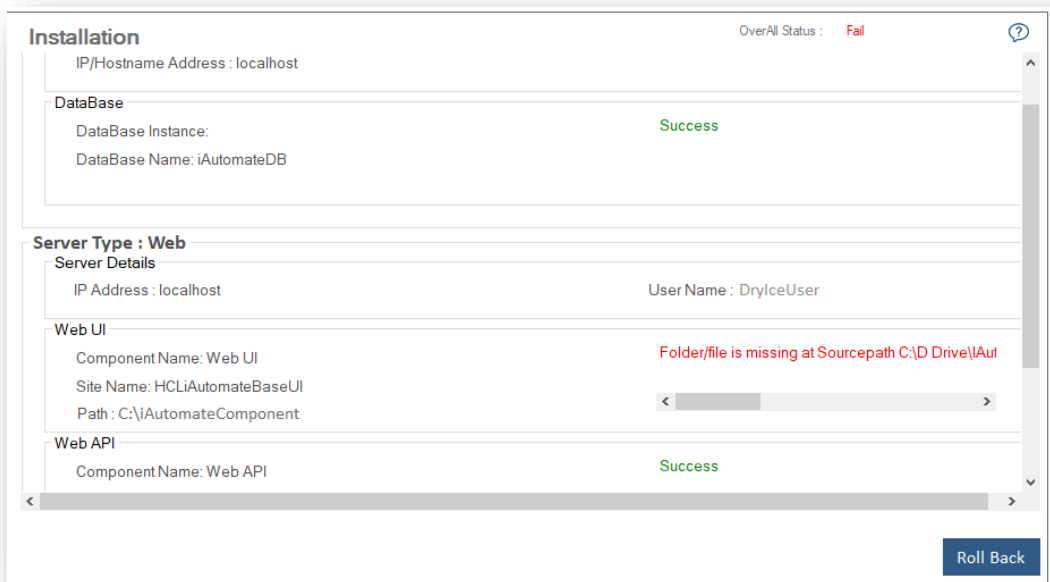


Figure 18 - Installation Progress (In case of failure)

In case of 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 server installation path provided earlier. Contact the product team administrator for further assistance.

3. After successful installation, the **Launch Application** button appears. Click **Exit** to exit the installer.

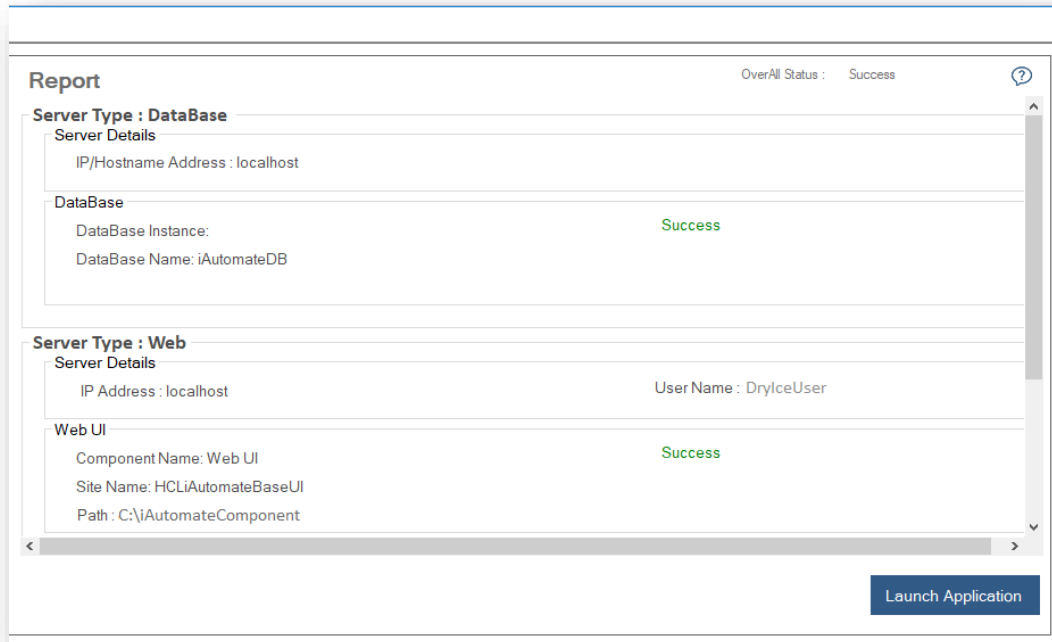


Figure 19 - Installation Successful

Navigate to the `{PythonHome}/Lib/site-packages/pkg_resources/_vendor` folder and Delete the below marked folders.

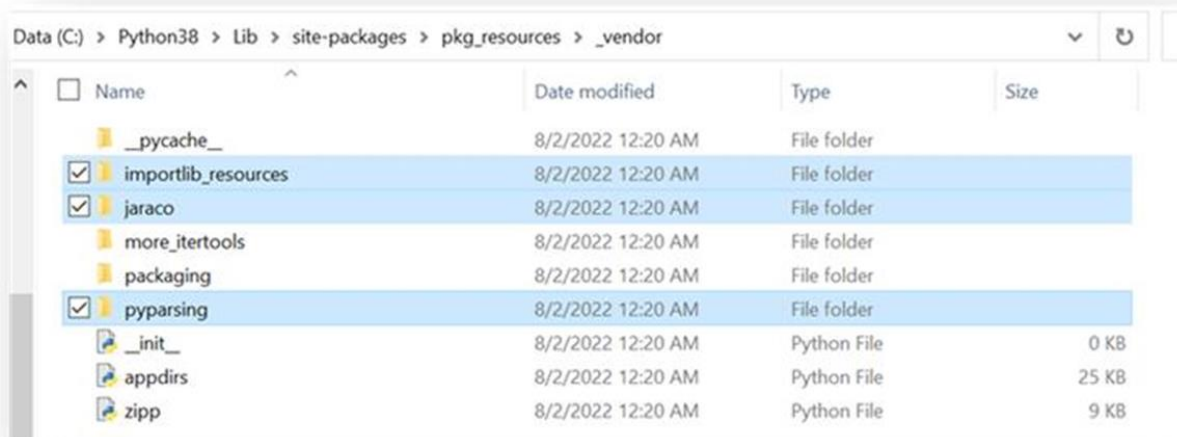


Figure 20 - Delete Folders before launch

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

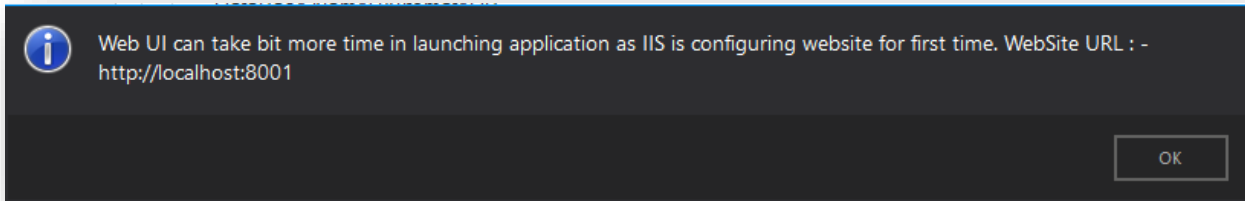


Figure 21 - Message on Launching BigFix Runbook AI

6. Click **OK** to navigate to the **BigFix Runbook AI Login Page**.

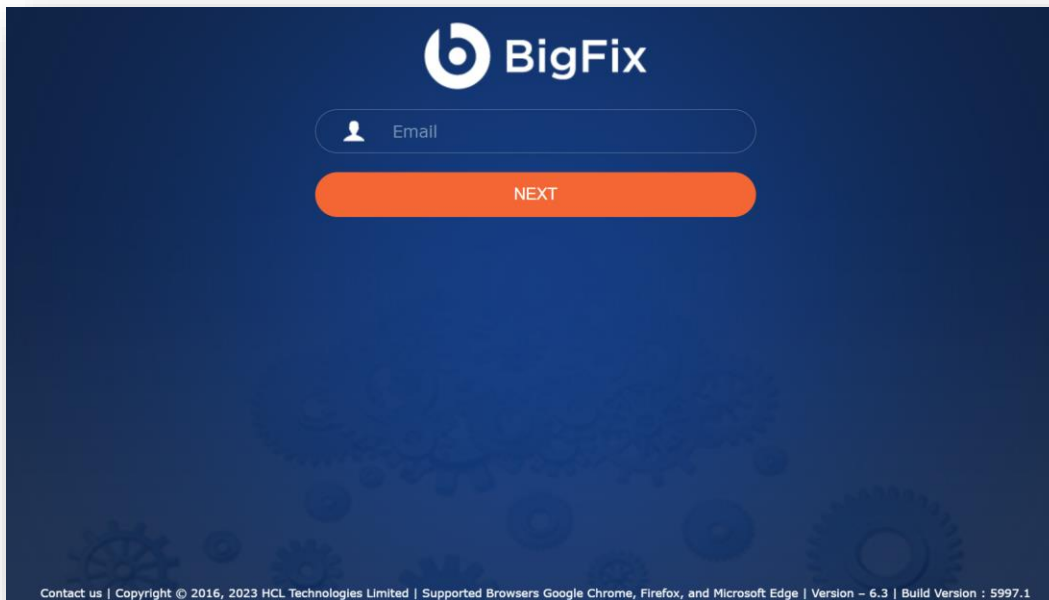


Figure 22 - BigFix Runbook AI Login Page

## 3.5 Post Installation Activities

This section describes how to perform certain post installation activities which are strictly dependent on the organization's requirements.

It includes the following:

- [Enable Secure Communication \(Changing HTTP to HTTPS\)](#)
- [Configuration Changes – Certificate Name Change \(Type – PFX\)](#)
- [Configuration Changes – Certificate Name Change \(for PEM/CRT/KEY Certificates\)](#)
- [Load Balancer Configuration](#)
- [Configuration Changes - Access BigFix Runbook AI without Certificate \(Type – PFX\)](#)
- [Configuration Changes - Access BigFix Runbook AI with Certificate \(Type – PFX\)](#)

- [Configuration Changes - Access BigFix Runbook AI without Certificate \(Type – PEM\)](#)
- [Configuration Changes – SaaS based Ticket Analysis](#)
- [Configuration Changes – Run BASEUI and WEBAPI on same port](#)

All the post installation activities listed above are optional.

## 3.5.1 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.

### 3.5.1.1 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.

#### 3.5.1.1.1 Key Rotation Service (KRS)

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

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

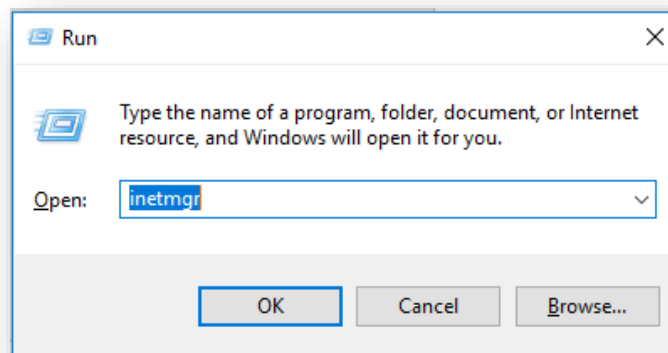


Figure 23 - Hosting KRS from HTTP to HTTPS

- Expand Sites and click **HCLiAutomateKRS**.

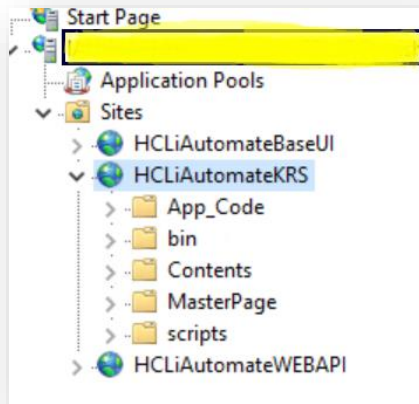


Figure 24 - Hosting KRS from HTTP to HTTPS (cont.)

- Click on **Bindings** in the **Edit Site** section.

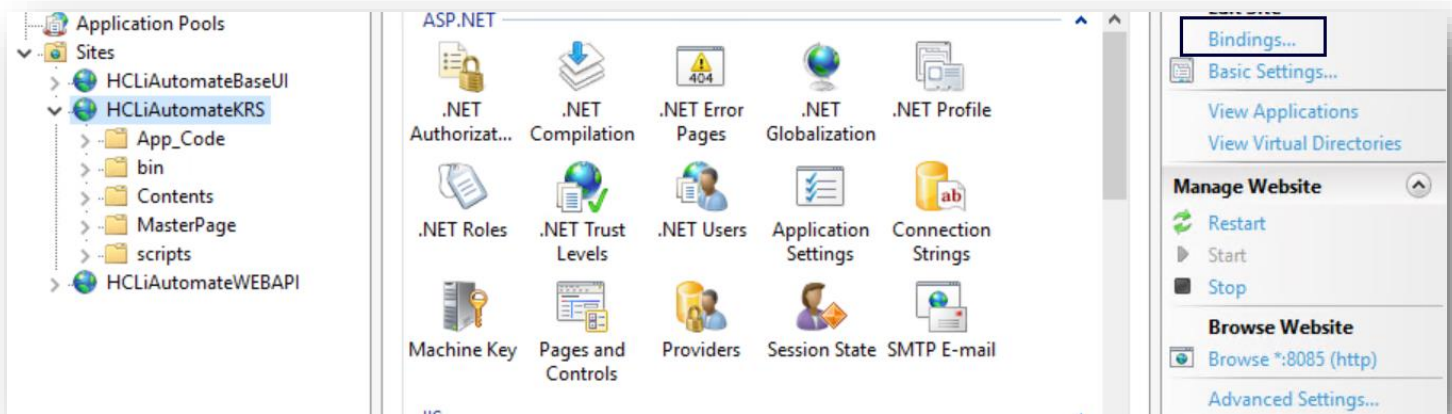


Figure 25 - Hosting KRS from HTTP to HTTPS (cont.)

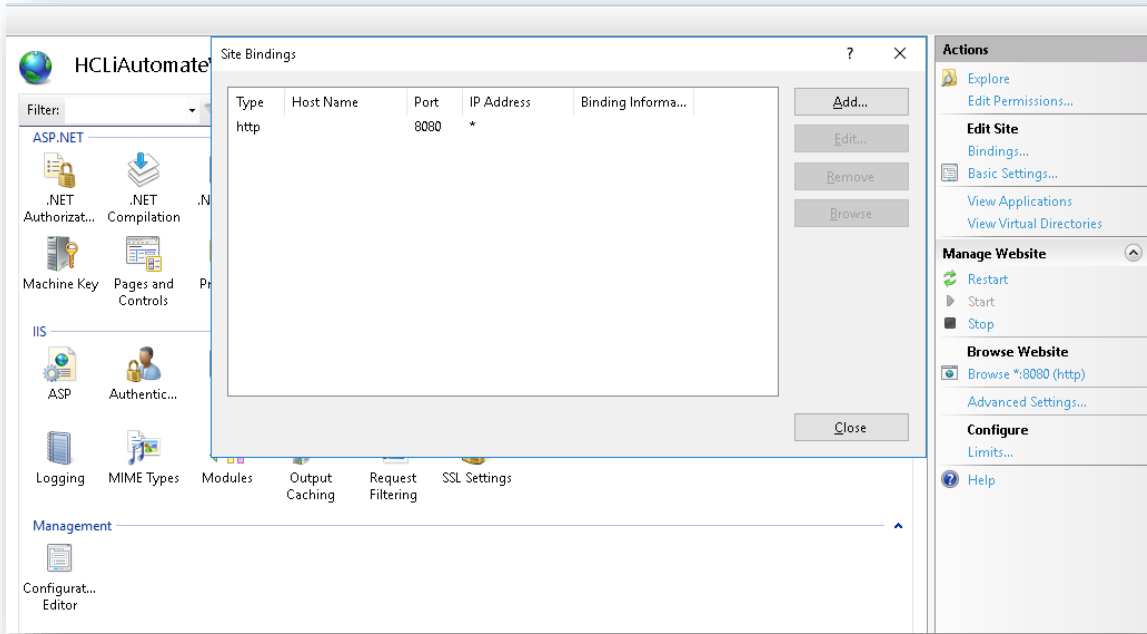


Figure 26 - Hosting KRS from HTTP to HTTPS (cont.)

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

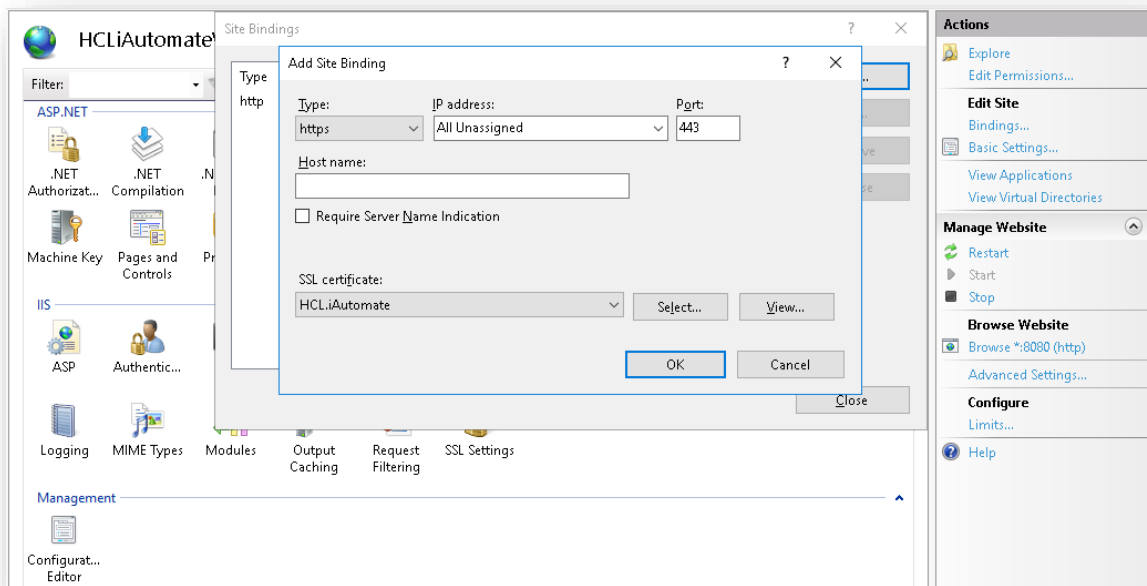


Figure 27 - Hosting KRS from HTTP to HTTPS (cont.)

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



Figure 28 - 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" />
</security>
```

Figure 29 - Hosting KRS 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.

### 3.5.1.1.2 Base User interface

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

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



Figure 30 - Hosting Base user interface from HTTP to HTTPS

3. Expand Sites and click **HCLiAutomateBaseUI**.



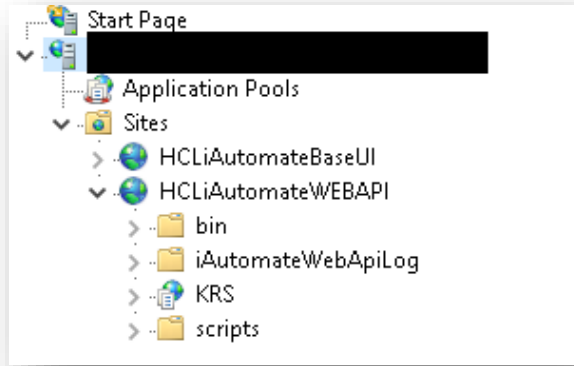


Figure 31 - Hosting Base user interface from HTTP to HTTPS (cont.)

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

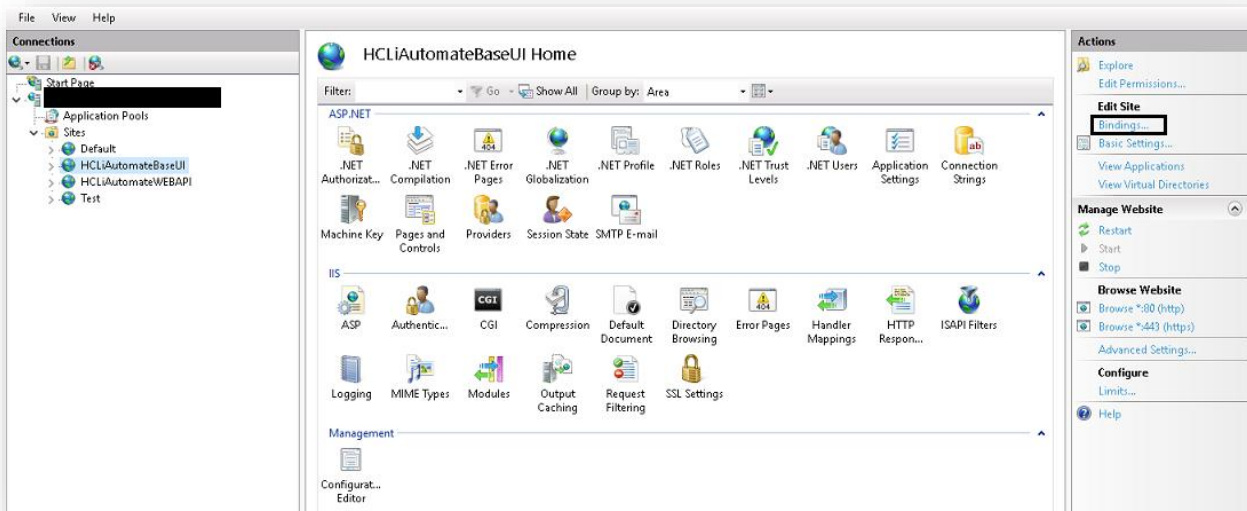


Figure 32 - Hosting Base user interface from HTTP to HTTPS (cont.)

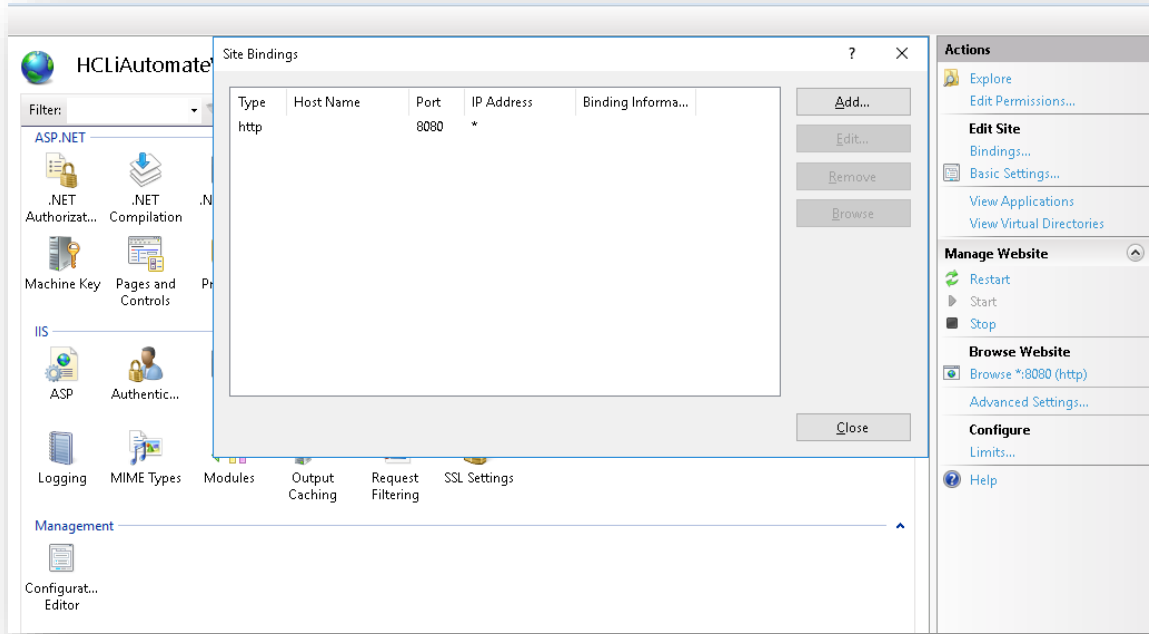


Figure 33 - Hosting Base user interface from HTTP to HTTPS (cont.)

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

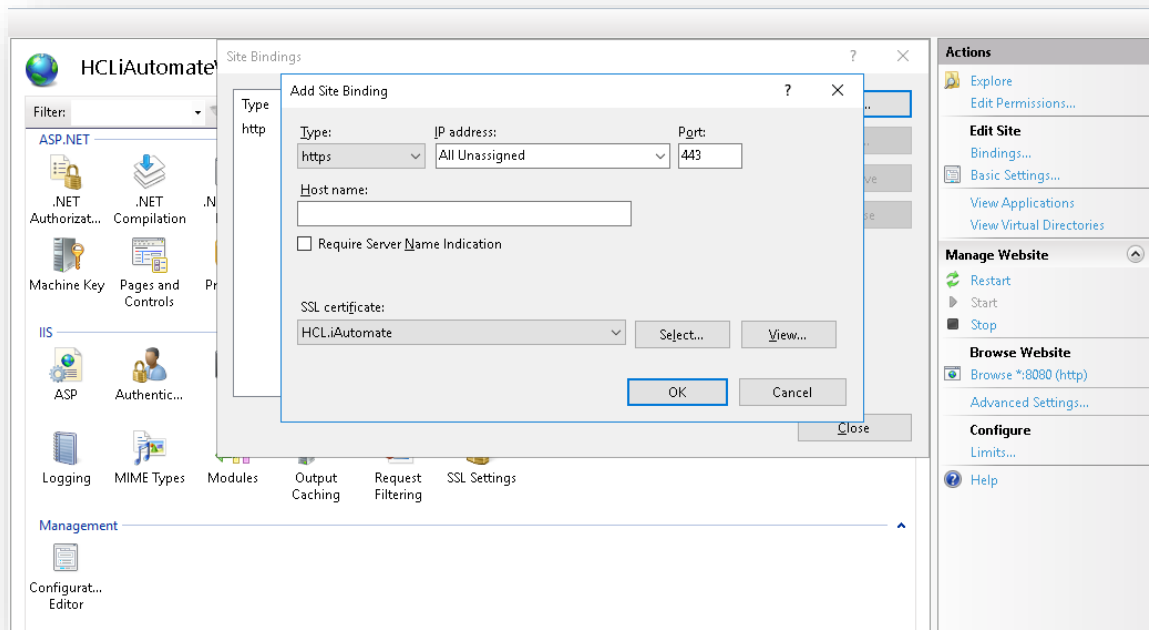


Figure 34 - Hosting Base user interface from HTTP to HTTPS (cont.)

8. Right-click HCLiAutomateBaseUI.
9. Click **Explore**.

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




Figure 35 - Hosting Base user interface from HTTP to HTTPS (cont.)

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

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

Figure 36 - Hosting Base user interface from HTTP to HTTPS (cont.)

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

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

Figure 37 - Hosting Base user interface 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.

### 3.5.1.1.3 Web API

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

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

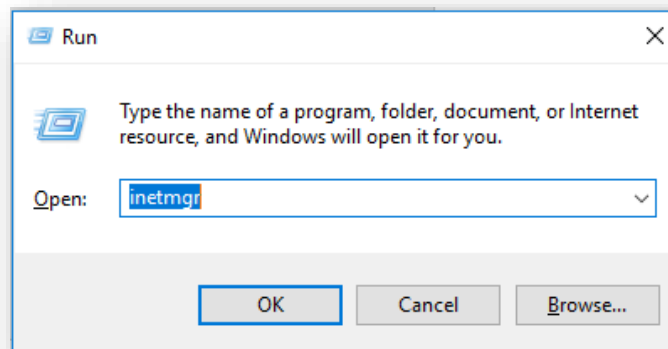


Figure 38 - Hosting Web API from HTTP to HTTPS

3. Expand **Sites** and right-click **HCLiAutomateWEBAPI**.

- Click **Explore**.

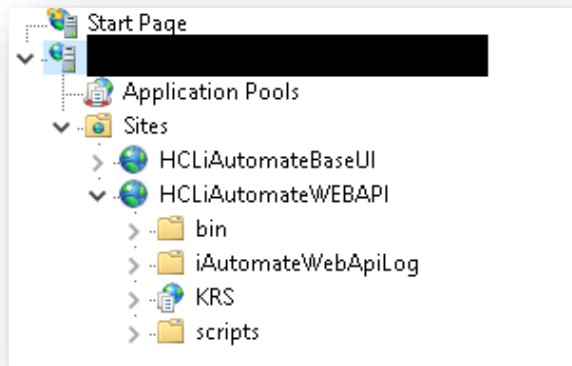


Figure 39 - Hosting Web API from HTTP to HTTPS (Cont.)

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

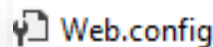


Figure 40 - Hosting Web API from HTTP to HTTPS (Cont.)

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

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

Figure 41 - Hosting Web API from HTTP to HTTPS (Cont.)

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

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

Figure 42 - 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.

### 3.5.1.1.4 Listener

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

- Press **Win+R** and type **services.msc**.

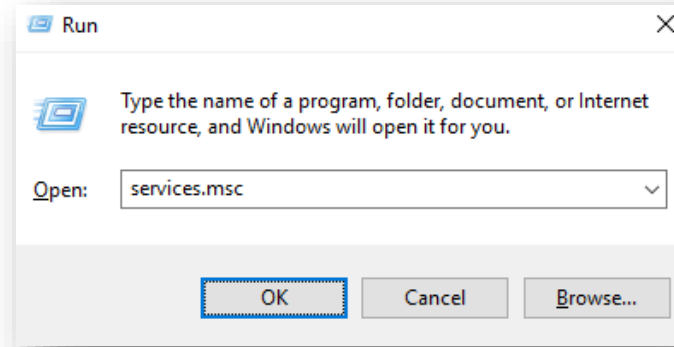


Figure 43 - Hosting Listener from HTTP to HTTPS

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

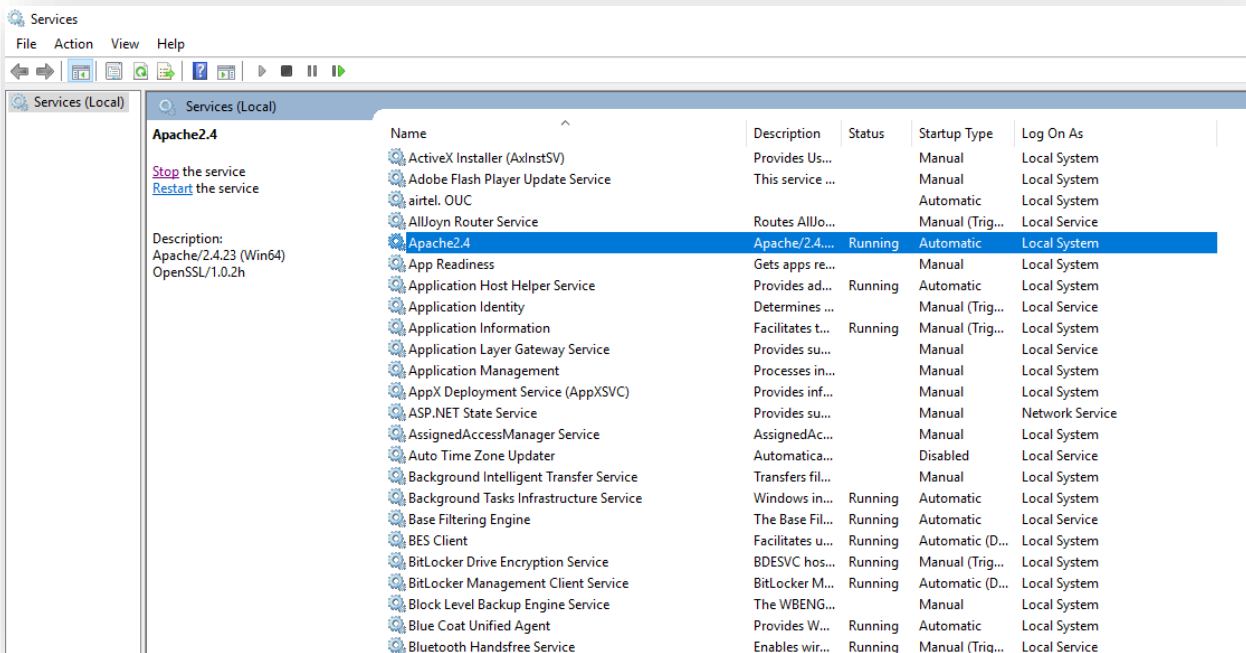


Figure 44 - Hosting Listener from HTTP to HTTPS

3. Search for HCL.iAutomate.Listener service and right-click on it.
4. Click Properties.

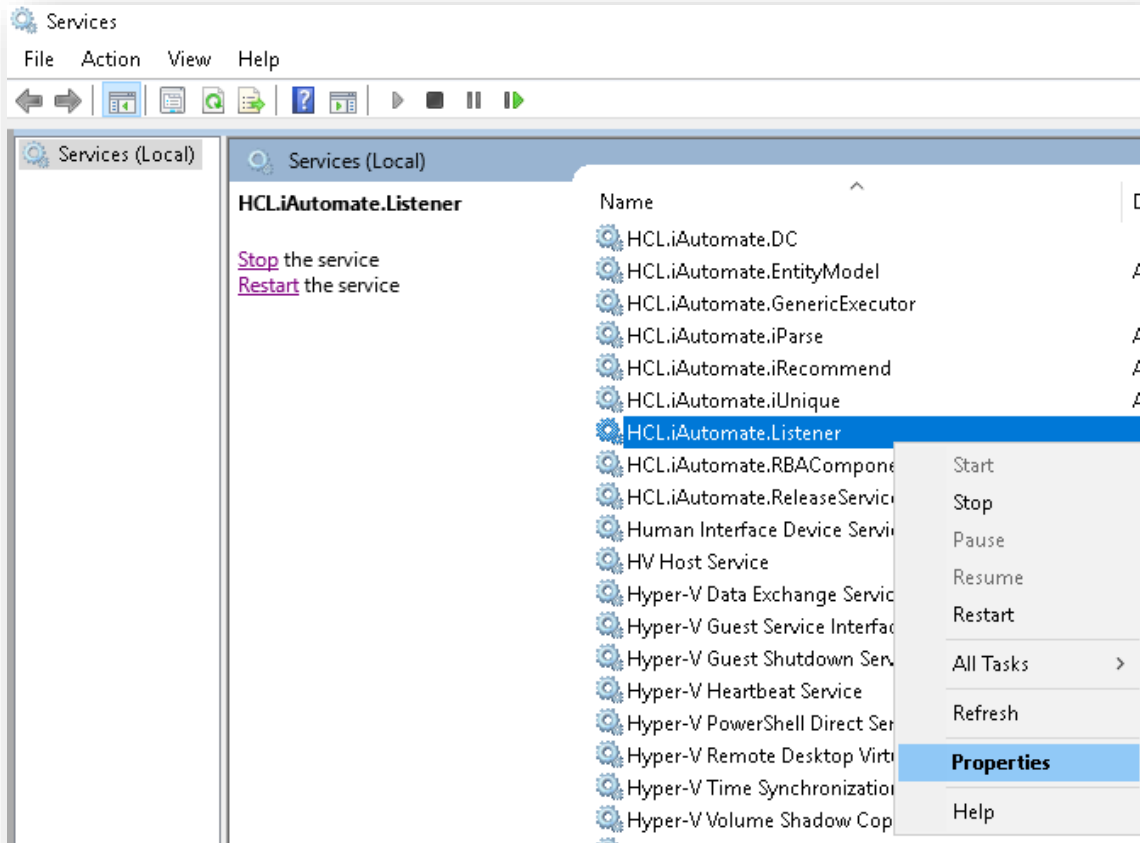


Figure 45 - Hosting Listener from HTTP to HTTPS (cont.)

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

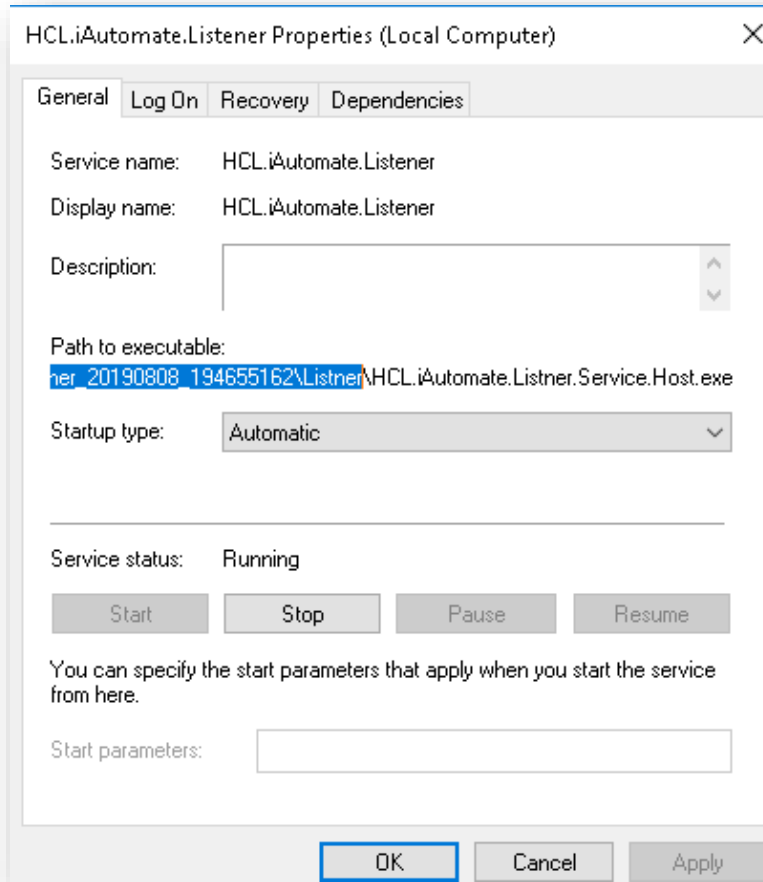


Figure 46 - Hosting Listener from HTTP to HTTPS (cont.)

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



Figure 47 - 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 48 - Hosting Listener from HTTP to HTTPS (cont.)

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

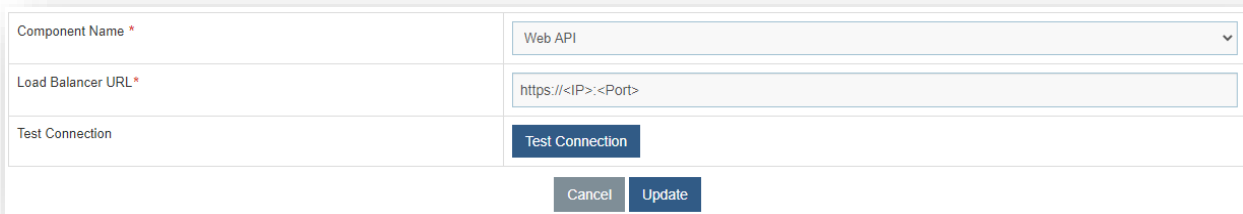
```
<add key="IsSelfSigned_KRS" value="N" />
```

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

### 3.5.1.1.5 Configuration Changes via GUI

To change the configuration of Screen 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 **Environment** and click **BigFix Runbook AI 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   | <input type="button" value="Test Connection"/> |
| <input type="button" value="Cancel"/> <input type="button" value="Update"/> |  |

Figure 49 - Changing LB IP via GUI from HTTP to HTTPS

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

### 3.5.1.2 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**.



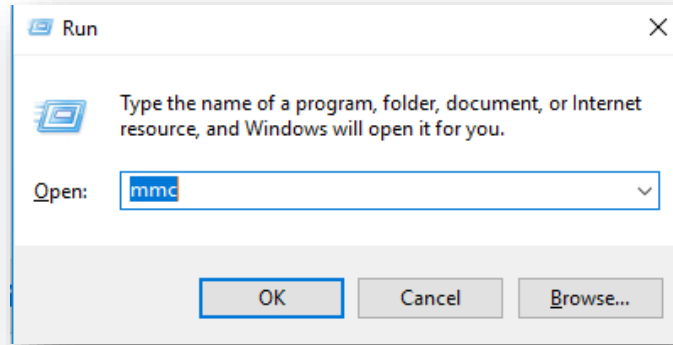


Figure 50 - Identify Thumbprint of the Certificate

2. Click OK to open the Microsoft Management Console.

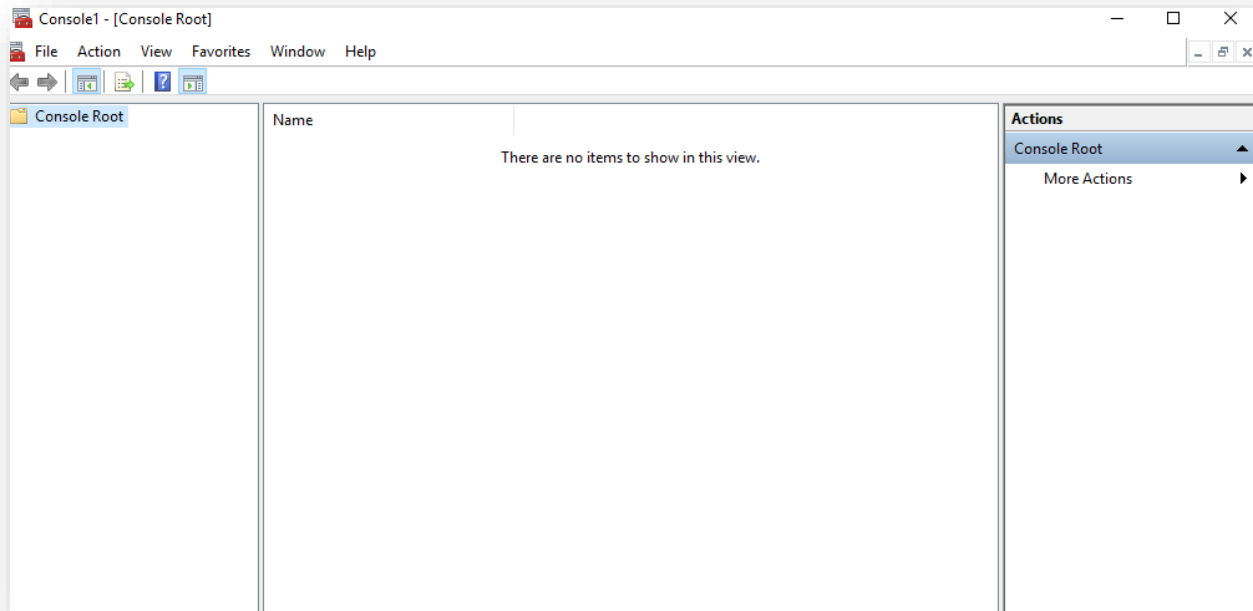


Figure 51 - Identify Thumbprint of the Certificate (cont.)

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

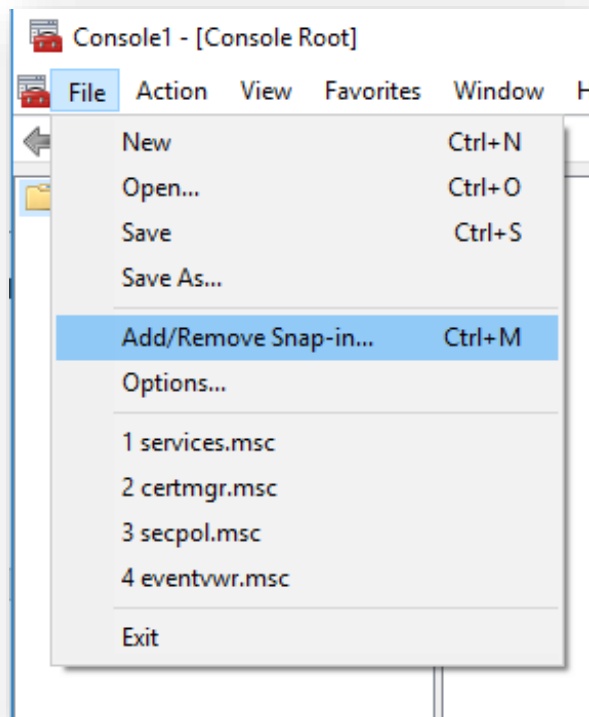


Figure 52 - Identify Thumbprint of the Certificate (cont.)

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

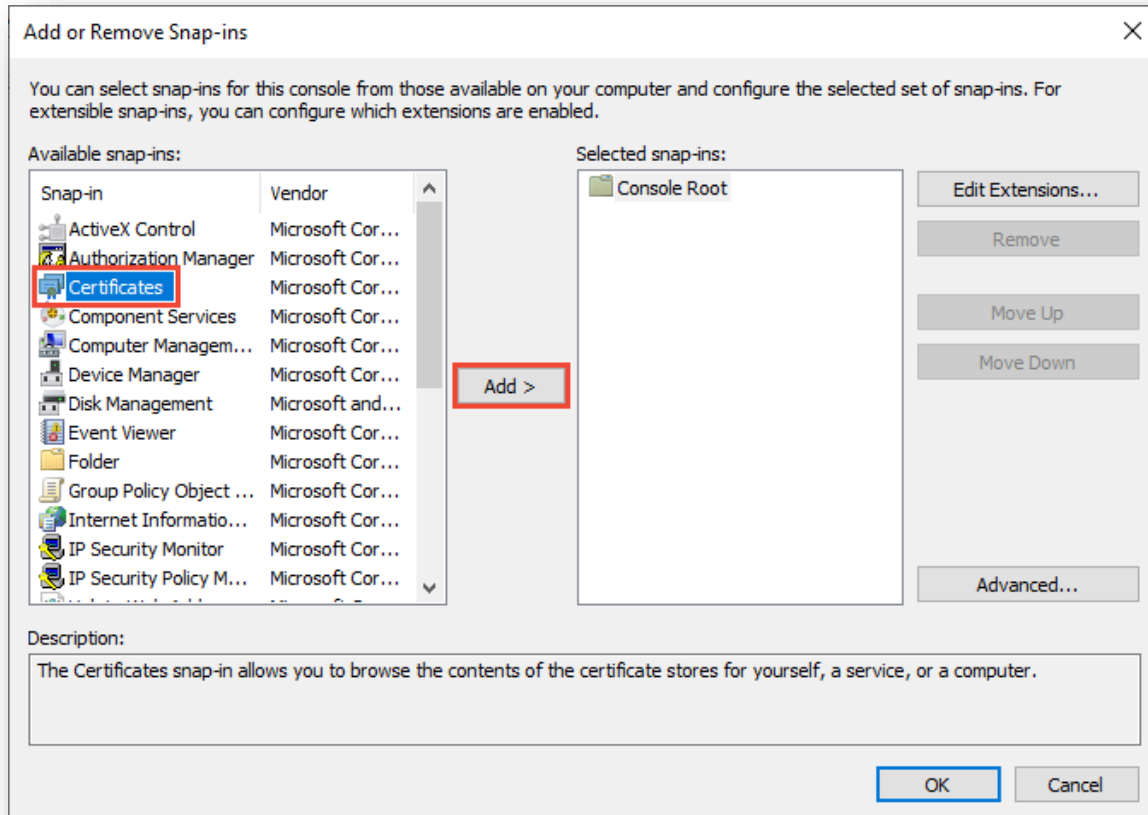


Figure 53 - Identify Thumbprint of the Certificate (cont.)

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

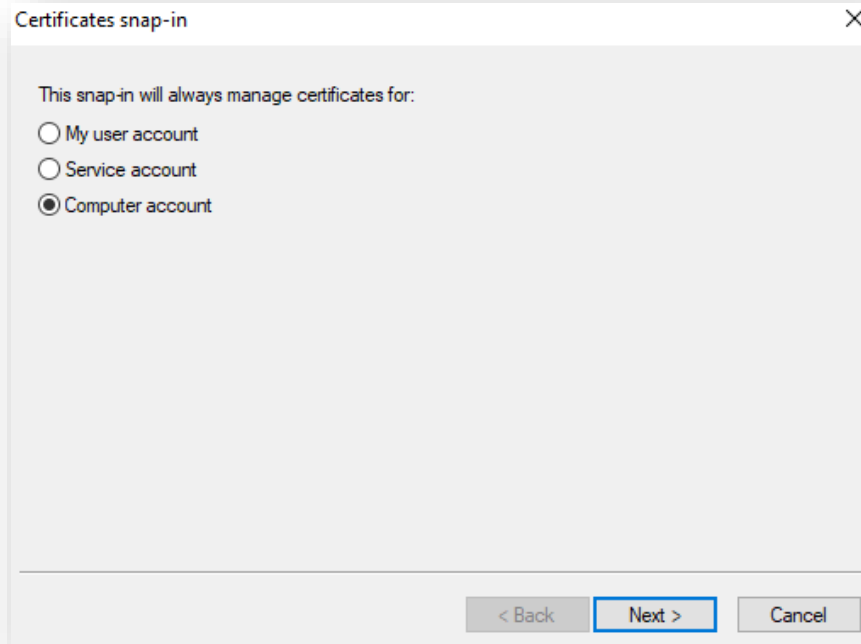


Figure 54 - Identify Thumbprint of the Certificate (cont.)

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.

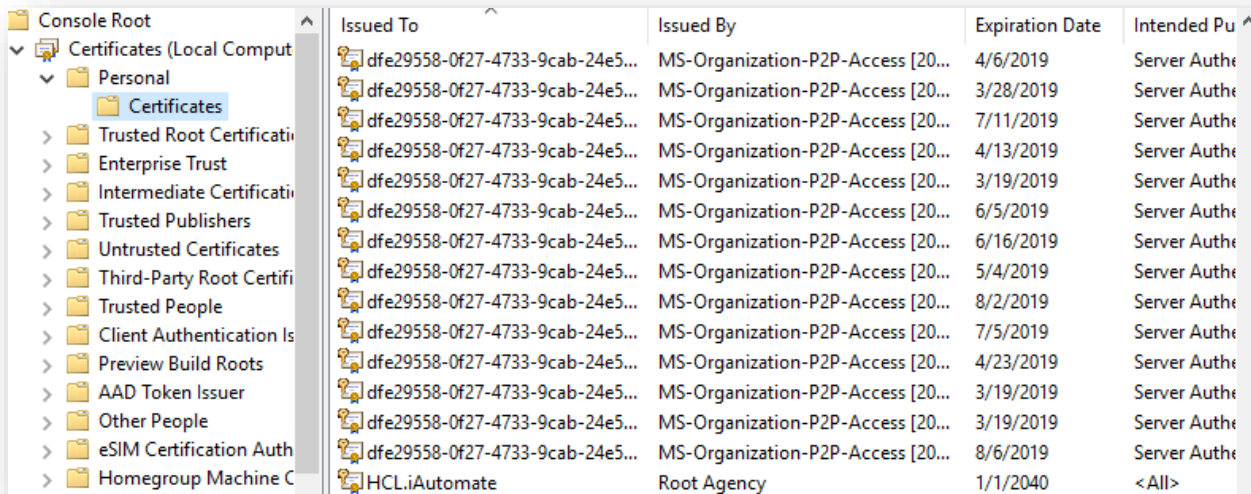


Figure 55 - Identify Thumbprint of the Certificate (cont.)

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.

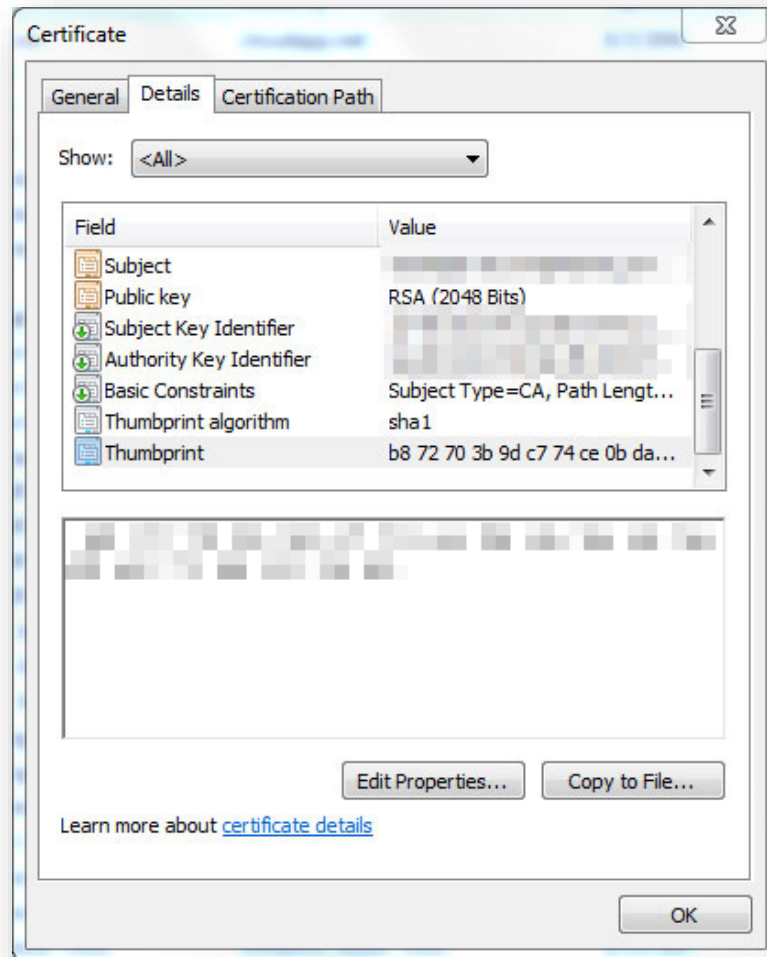


Figure 56 - Identify Thumbprint of the Certificate (cont.)

Following changes are required in the underlying components:

### 3.5.1.2.1 Listener

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

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

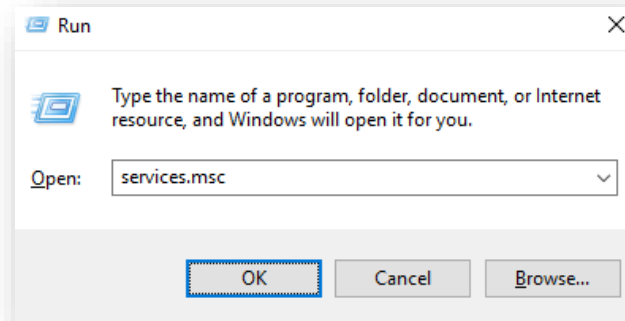


Figure 57 - Hosting Listener from HTTP to HTTPS

2. Click OK to open Windows Services.

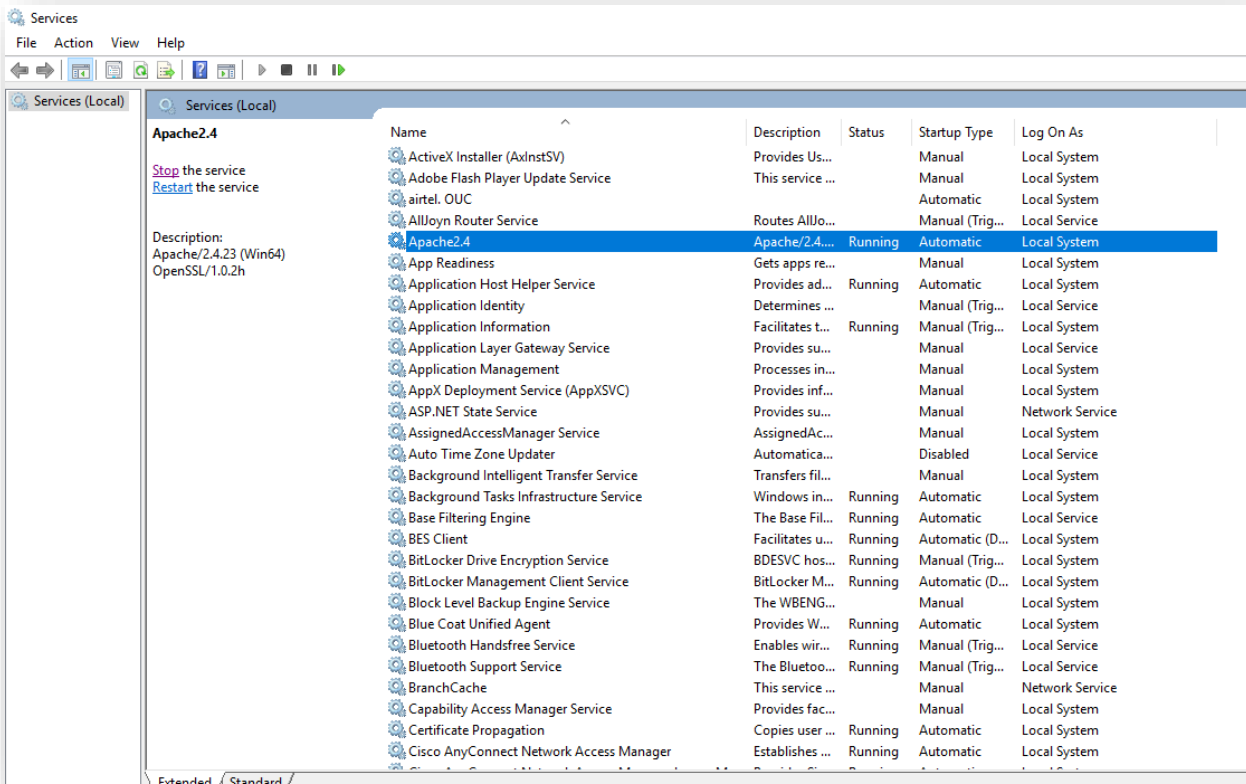


Figure 58 - Hosting Listener from HTTP to HTTPS (cont.)

3. Search for **HCL.iAutomate.Listener** service and right-click on it.
4. Click Properties.

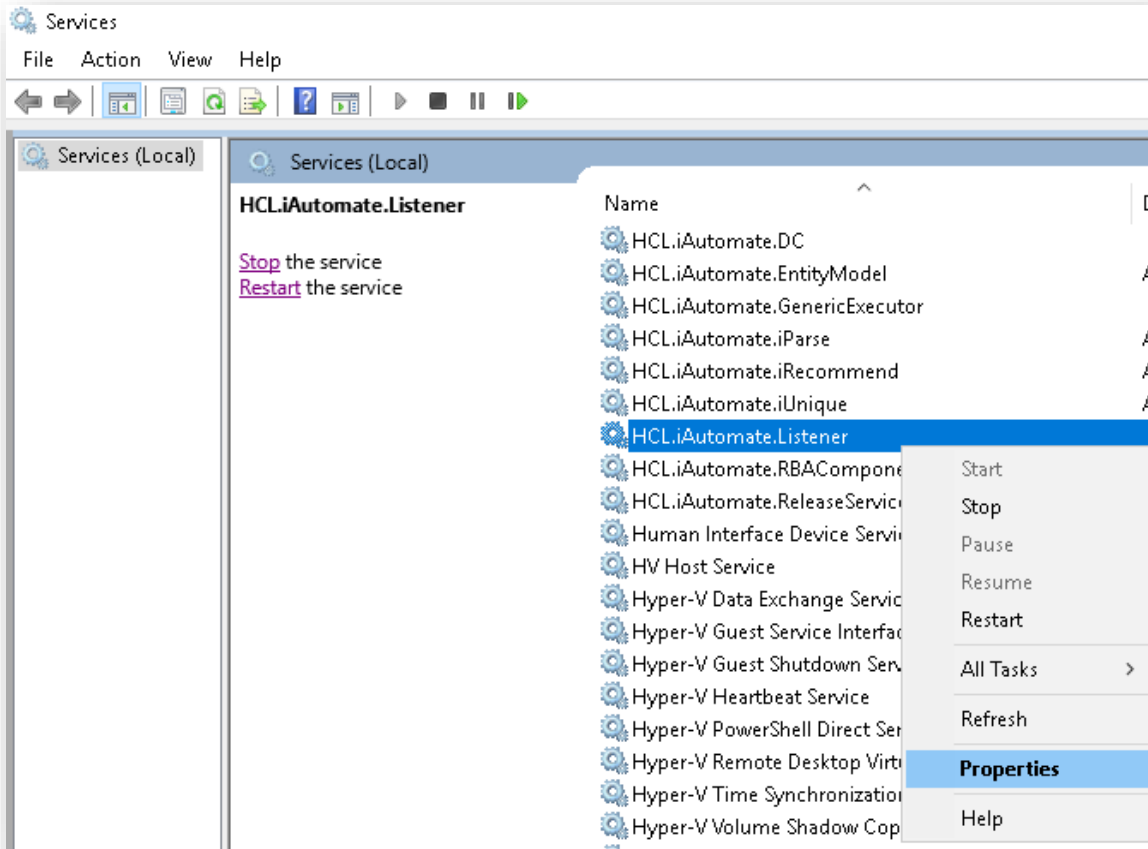


Figure 59 - Hosting Listener from HTTP to HTTPS (cont.)

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

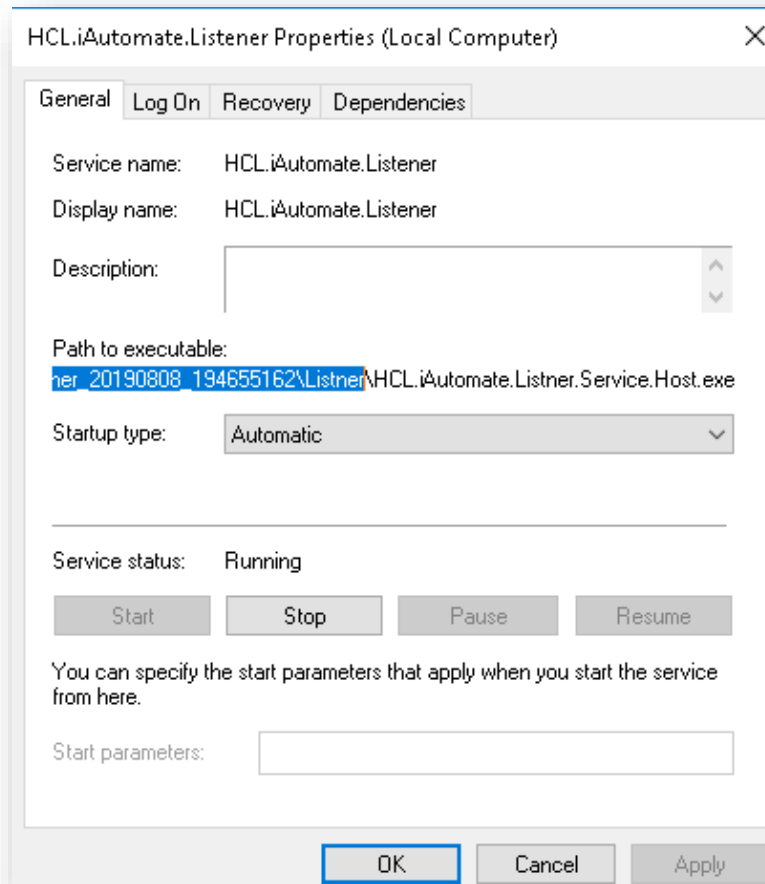


Figure 60 - Hosting Listener from HTTP to HTTPS (cont.)

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



Figure 61 - 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 62 - Hosting Listener from HTTP to HTTPS (cont.)

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



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

Figure 63 - Hosting Listener from HTTP to HTTPS (cont.)

10. Save the file for changes to be reflected.
11. 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.

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

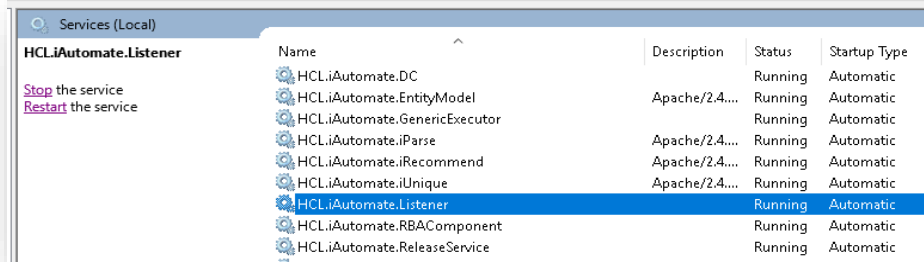


Figure 64 - Hosting Listener from HTTP to HTTPS (cont.)

### 3.5.1.2.2 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**.

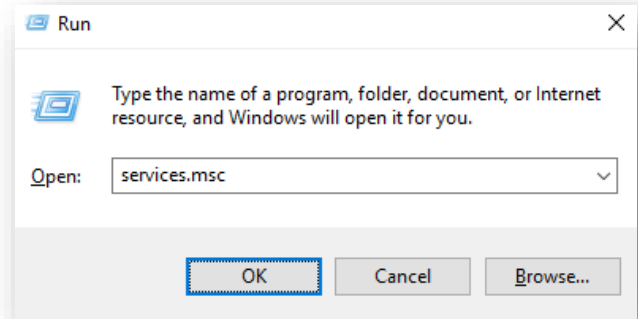


Figure 65 - Hosting Data Collector from HTTP to HTTPS

2. Click OK to open Windows Services.

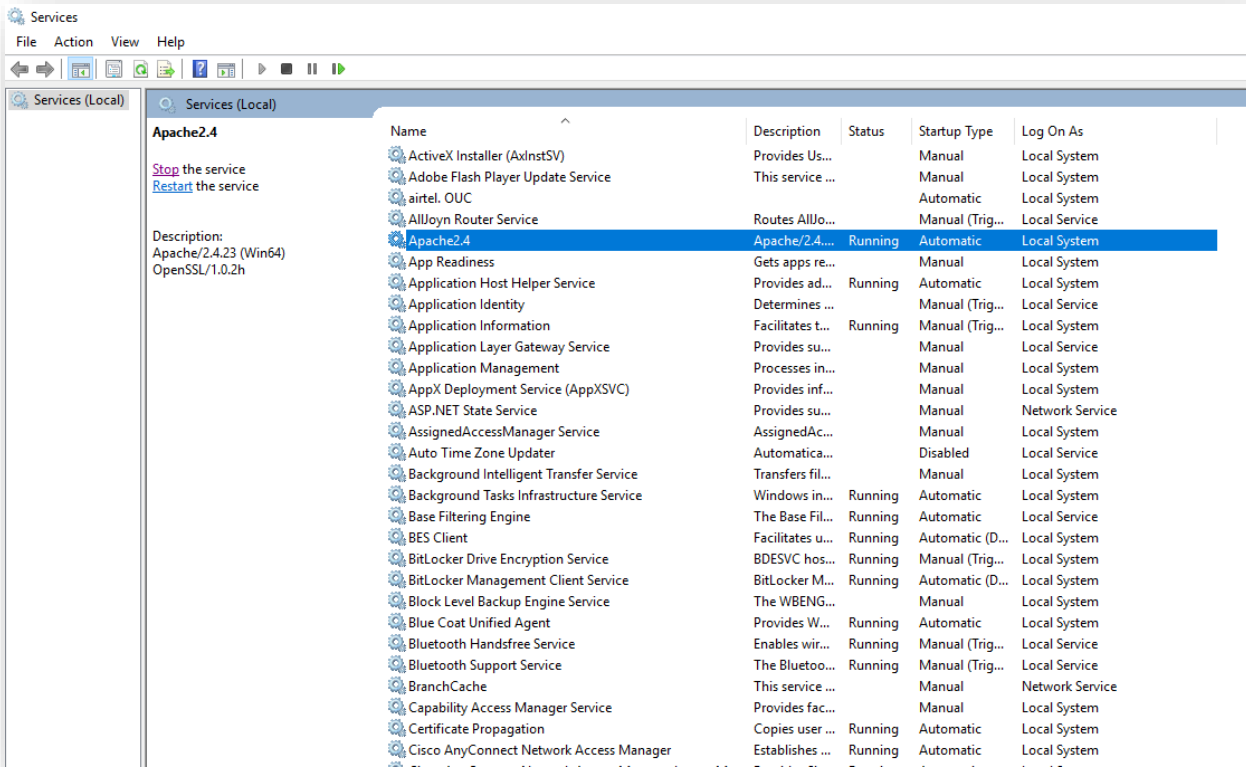


Figure 66 - Hosting Data Collector from HTTP to HTTPS (cont.)

3. Search for **HCL.iAutomate.DC** service and right-click on it.
4. Click Properties.

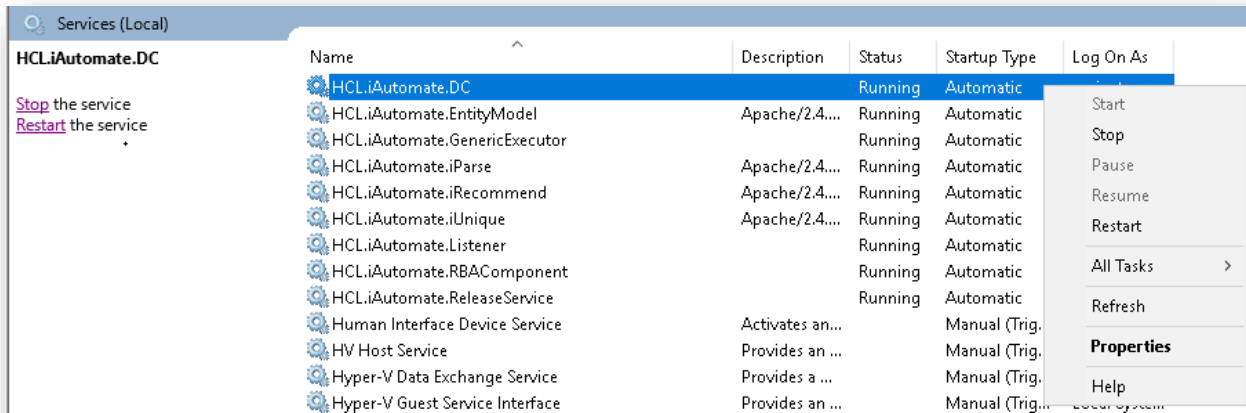


Figure 67 - Hosting Data Collector from HTTP to HTTPS (cont.)

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

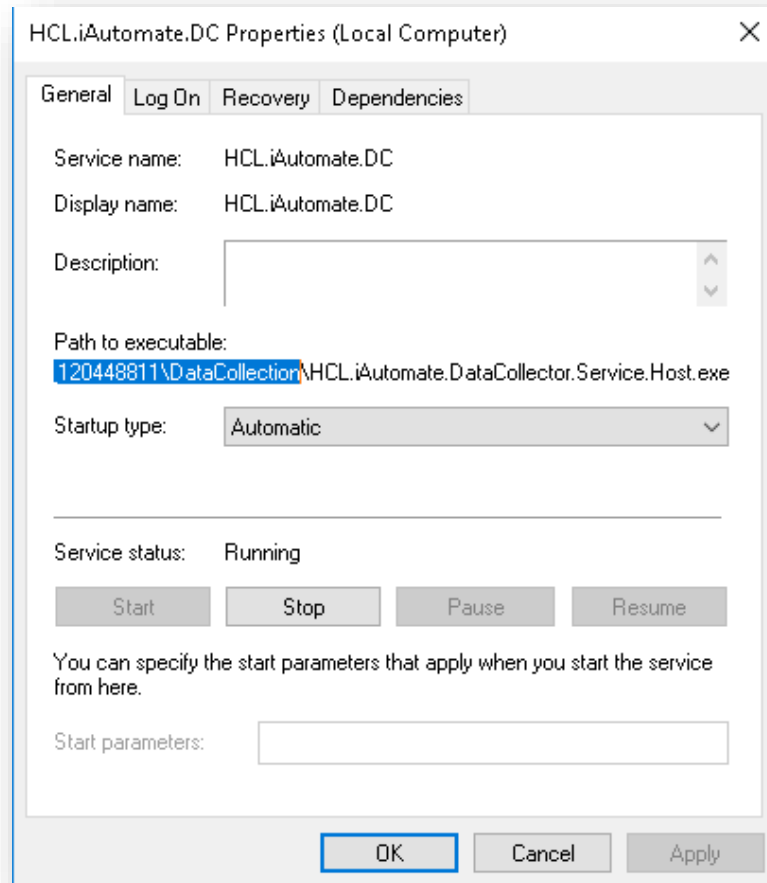


Figure 68 - Hosting Data Collector from HTTP to HTTPS (cont.)

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



Figure 69 - 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 70 - Hosting Data Collector from HTTP to HTTPS (cont.)

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

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

Figure 71 - Hosting Data Collector from HTTP to HTTPS (cont.)

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

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

Figure 72 - 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.

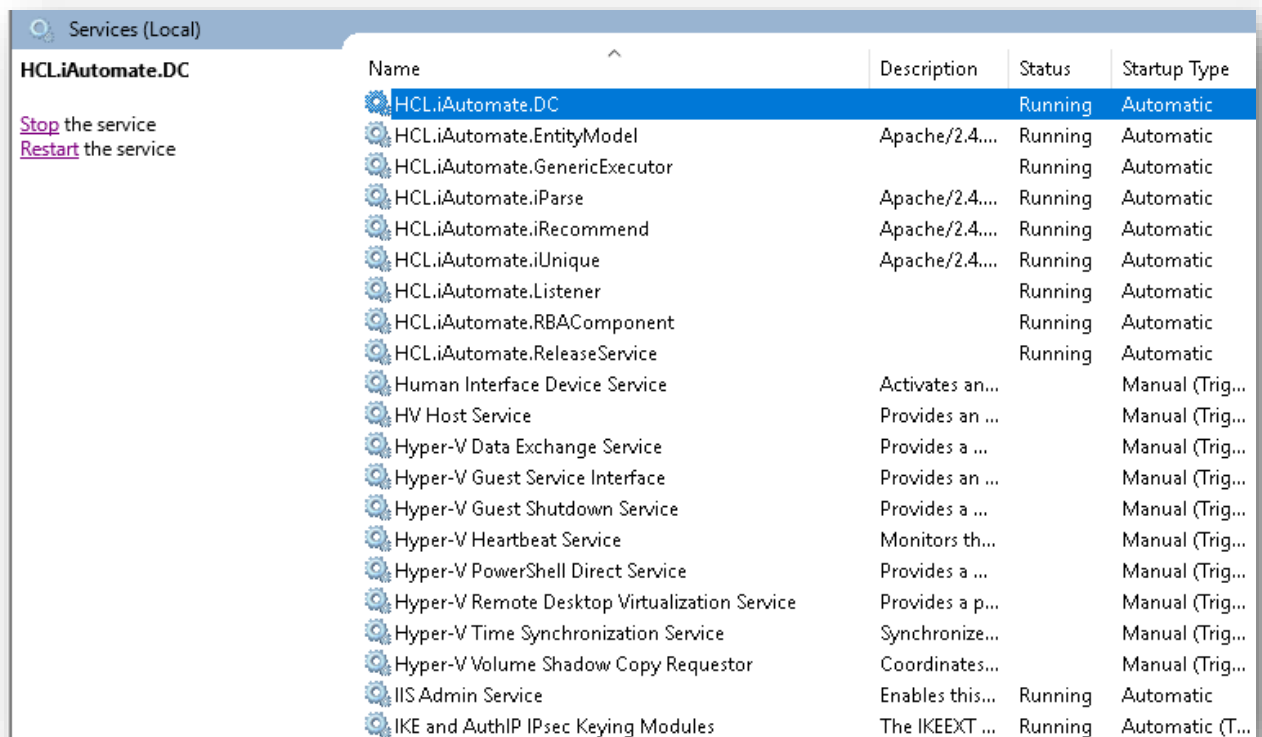


Figure 73 - Hosting Data Collector from HTTP to HTTPS (cont.)

### 3.5.1.2.3 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**.

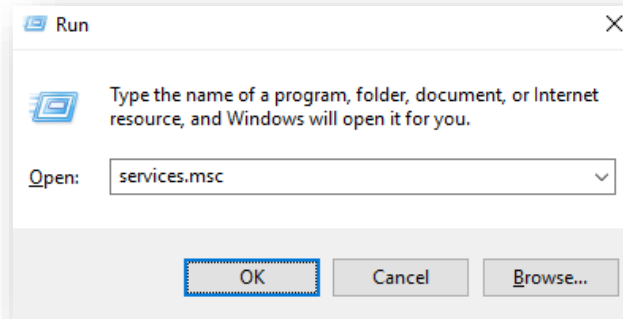


Figure 74 - Hosting Generic Service from HTTP to HTTPS

2. Click OK to open Windows Services.

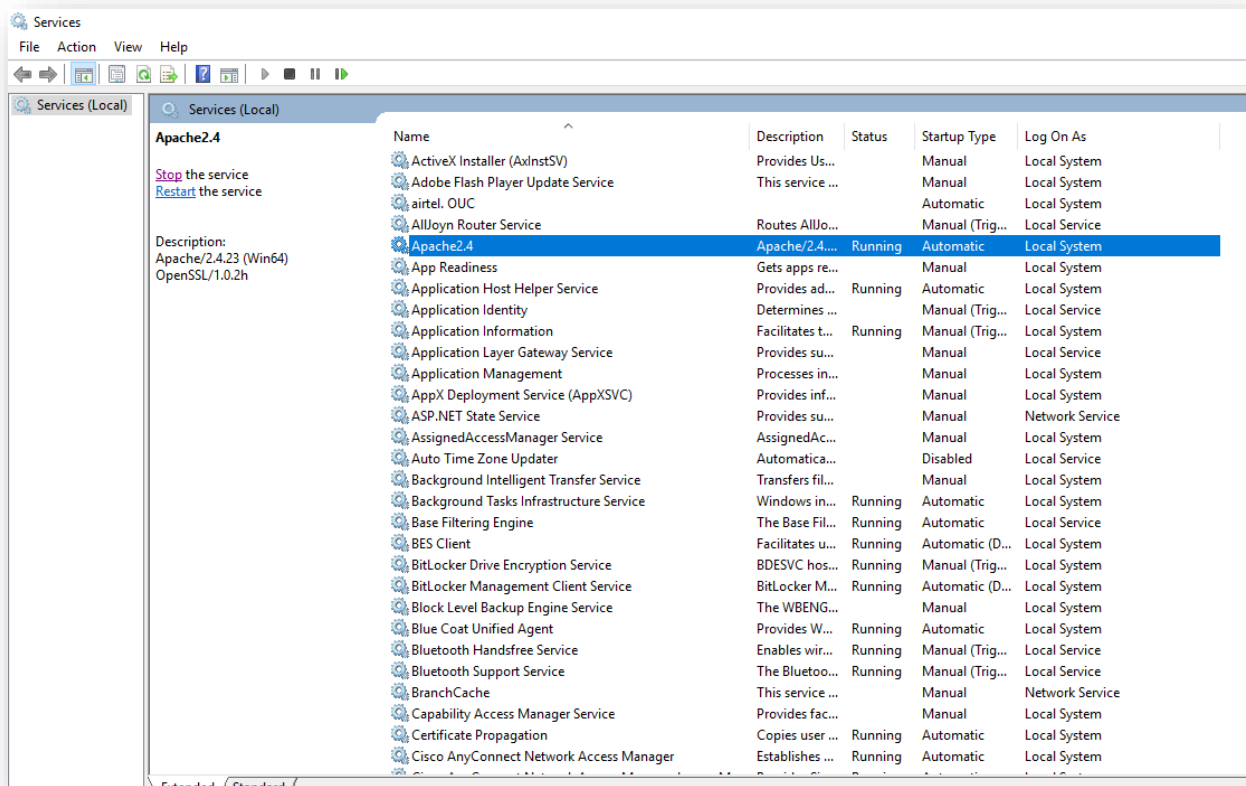


Figure 75 - Hosting Generic Service from HTTP to HTTPS (Cont.)

3. Search for HCL.iAutomate.GenericExecutor service and right-click on it.
4. Click Properties.

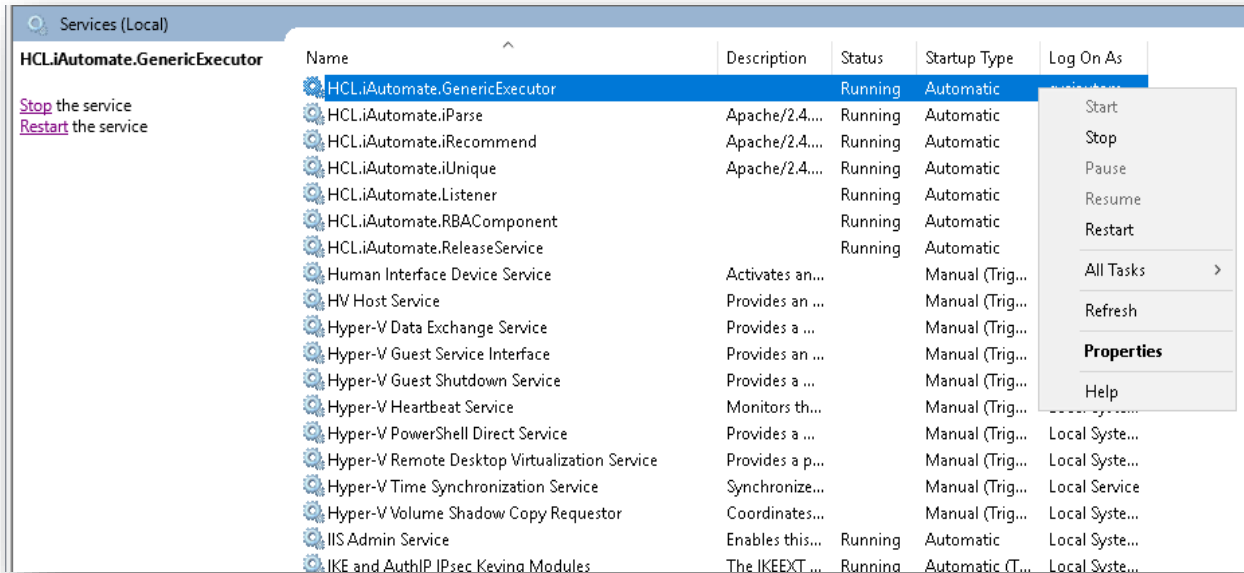


Figure 76 - Hosting Generic Service from HTTP to HTTPS (Cont.)

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

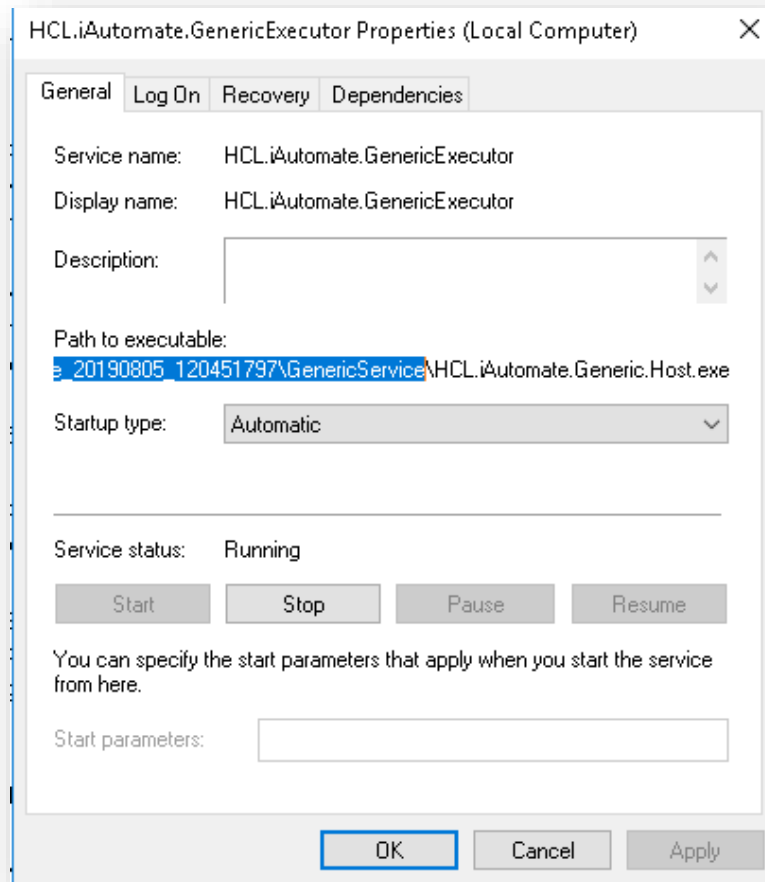


Figure 77 - Hosting Generic Service from HTTP to HTTPS (Cont.)

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 78 - 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 79-Hosting Generic Service from HTTP to HTTPS (Cont.)

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

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

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

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

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

Figure 81 - 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.

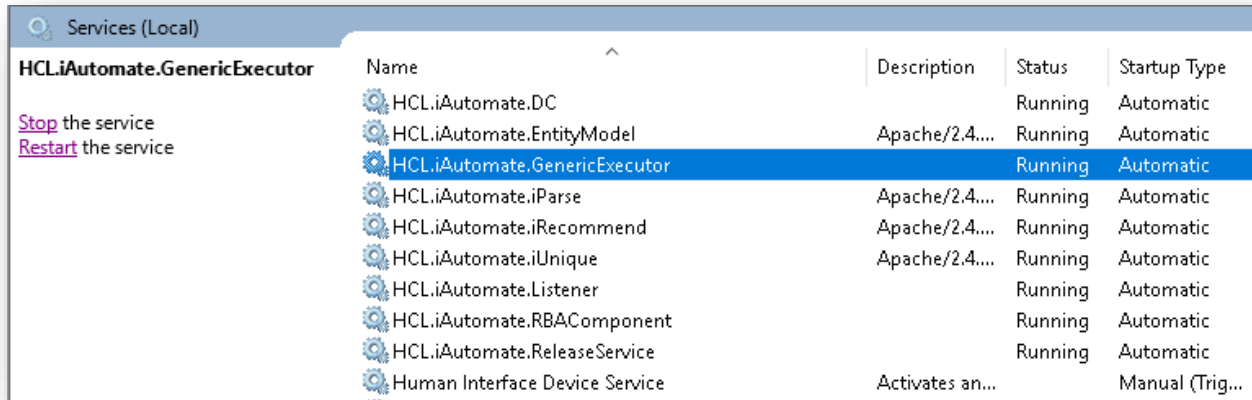


Figure 82 - Hosting Generic Service from HTTP to HTTPS (Cont.)

### 3.5.1.2.4 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**.

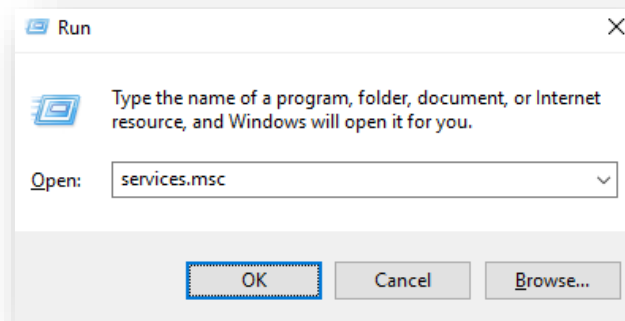


Figure 83 - Hosting RBA Component from HTTP to HTTPS

2. Click OK to open Windows Services.



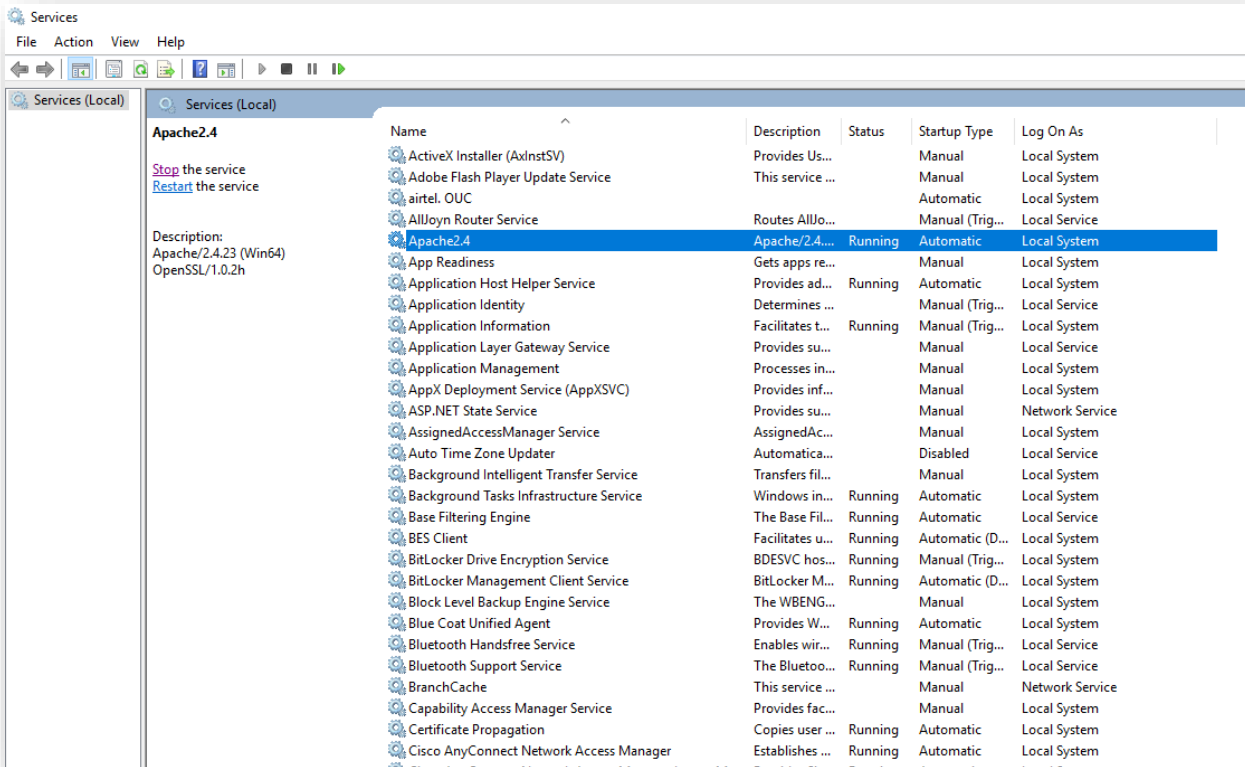


Figure 84 - Hosting RBA Component from HTTP to HTTPS

3. Search for HCL.iAutomate.RBAComponent service and right-click on it.
4. Click Properties.

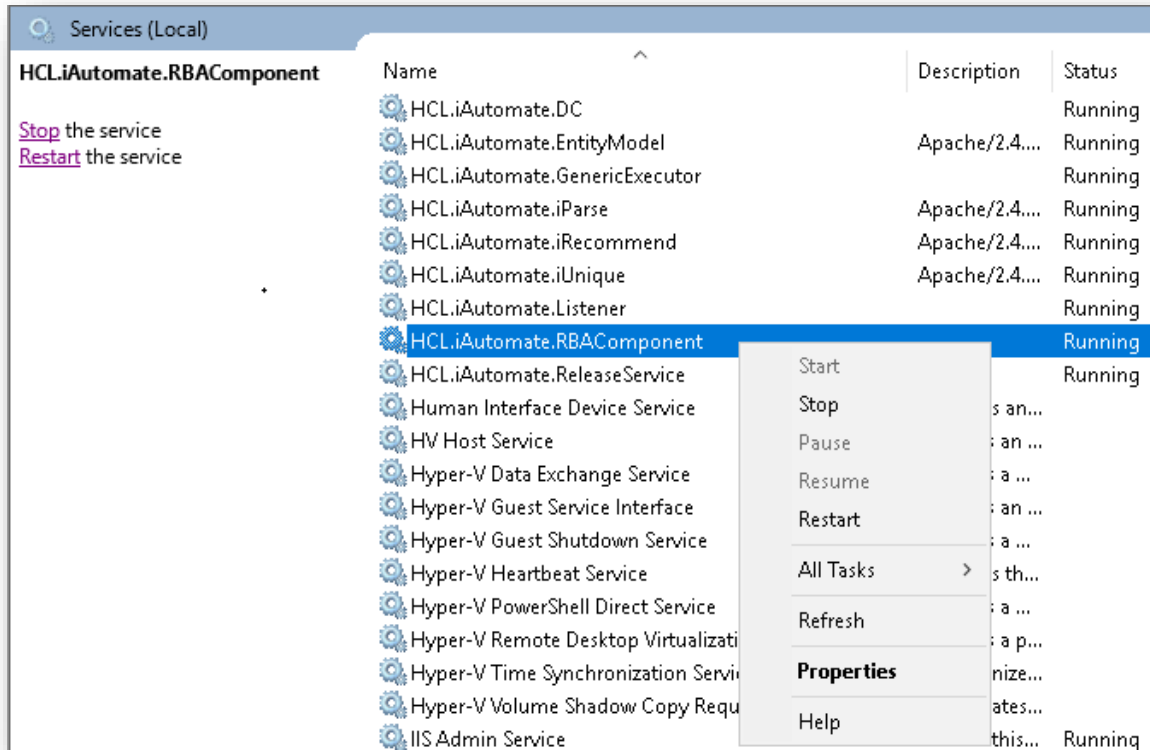


Figure 85 - Hosting RBA Component from HTTP to HTTPS (Cont.)

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

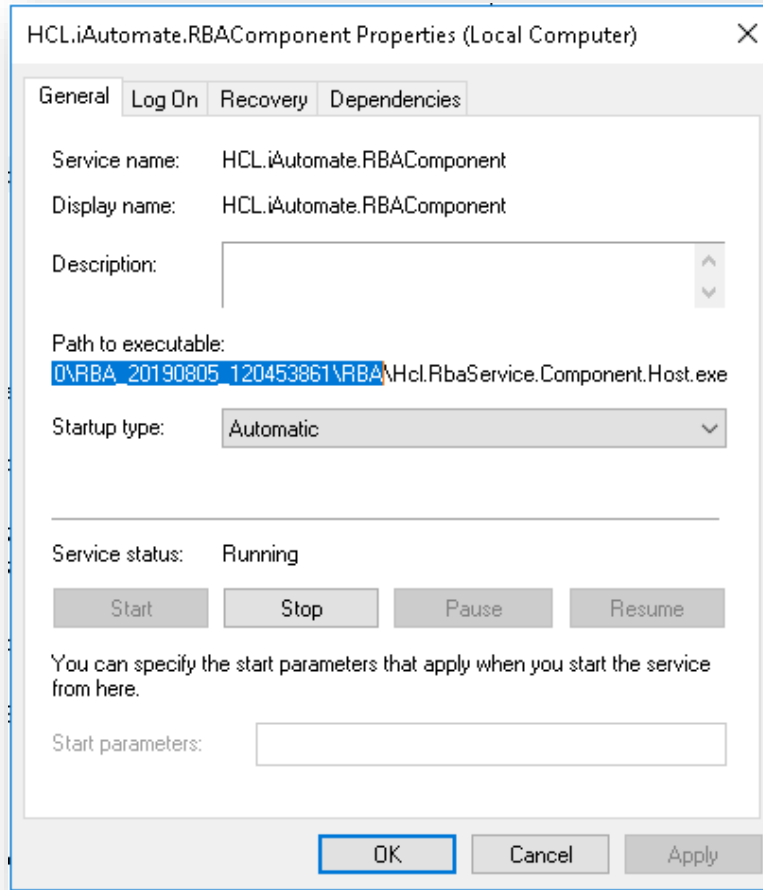


Figure 86 - Hosting RBA Component from HTTP to HTTPS (Cont.)

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 87 - 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 88 - Hosting RBA Component from HTTP to HTTPS (Cont.)

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

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

Figure 89 - Hosting RBA Component from HTTP to HTTPS (Cont.)

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

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

Figure 90 - 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.

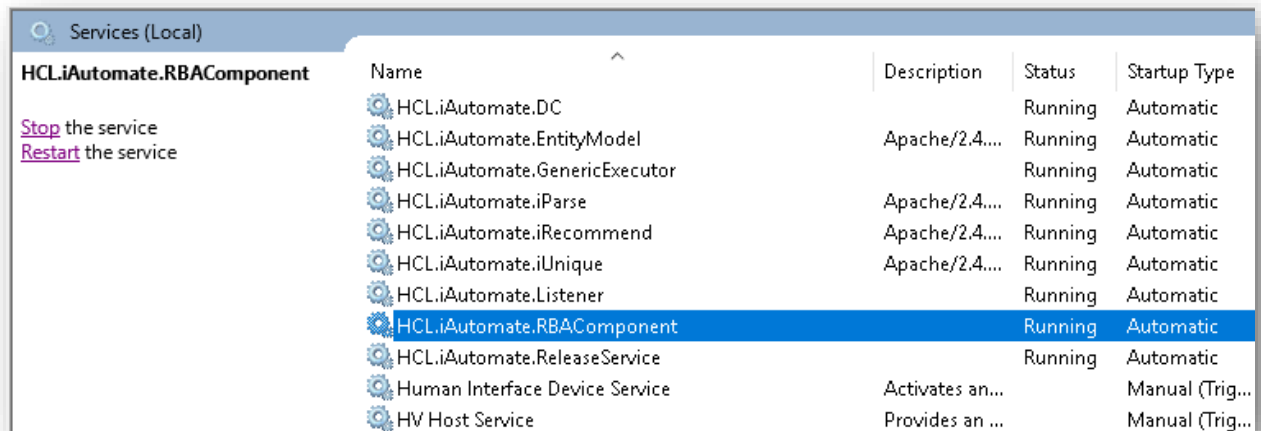


Figure 91 - Hosting RBA Component from HTTP to HTTPS (Cont.)

### 3.5.1.2.5 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**.

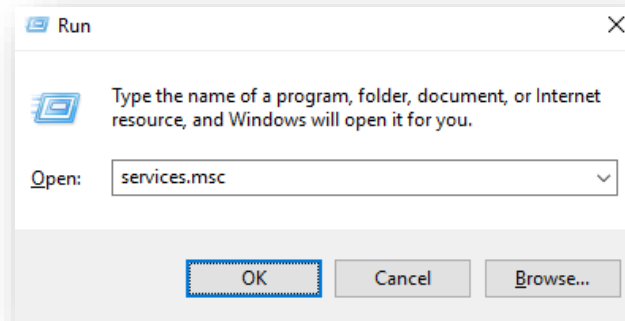


Figure 92 - Hosting Release Service from HTTP to HTTPS

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

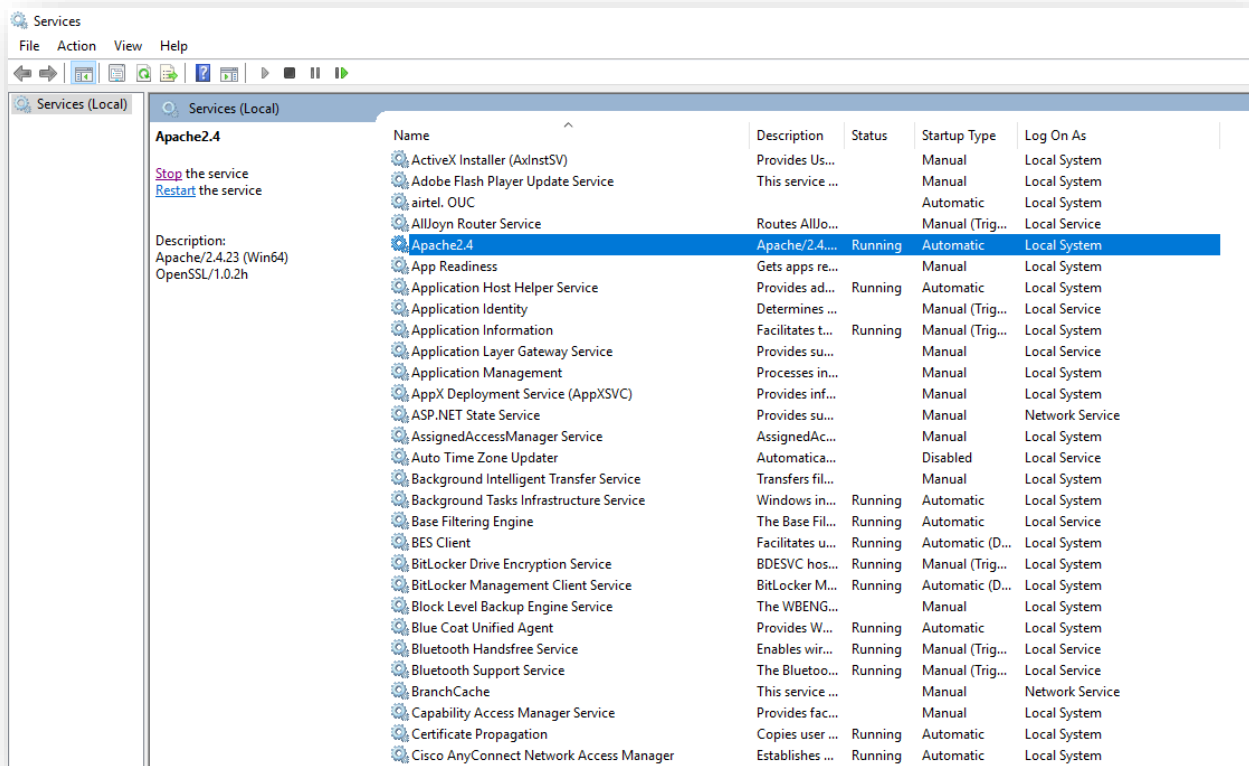


Figure 93 - Hosting Release Service from HTTP to HTTPS (Cont.)

3. Search for **HCL.iAutomate.ReleaseService** service and right-click on it.
4. Click on **Properties**.

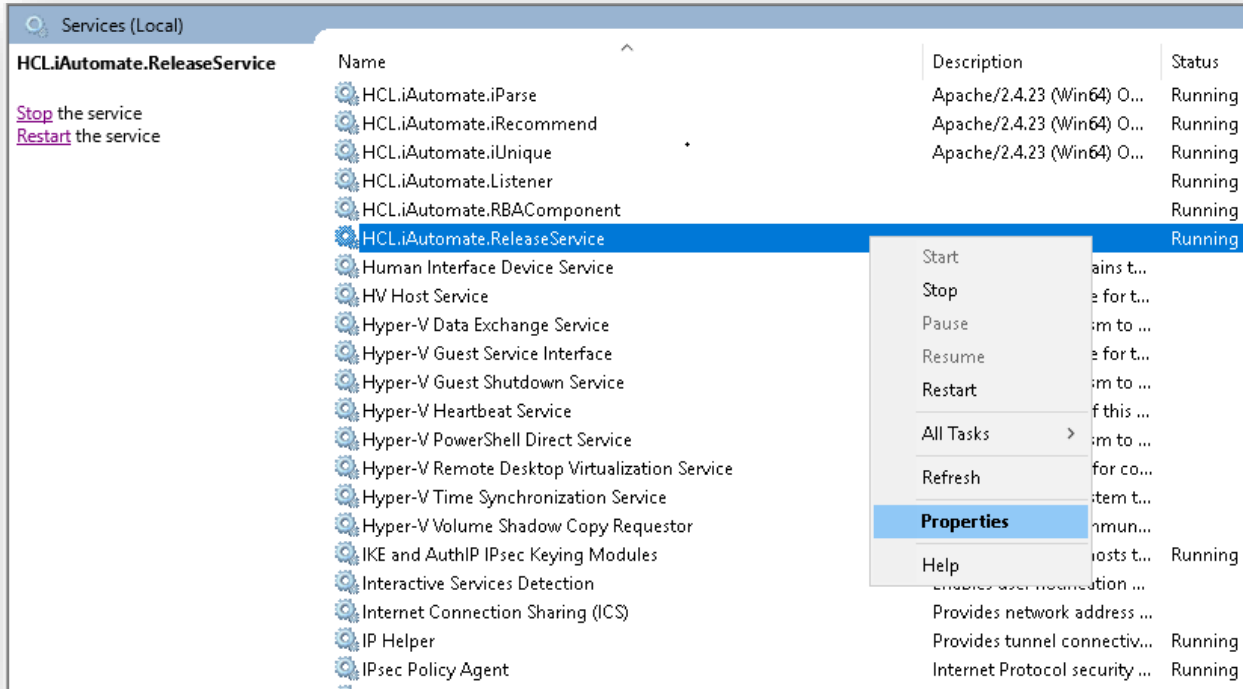


Figure 94 - Hosting Release Service from HTTP to HTTPS (Cont.)

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

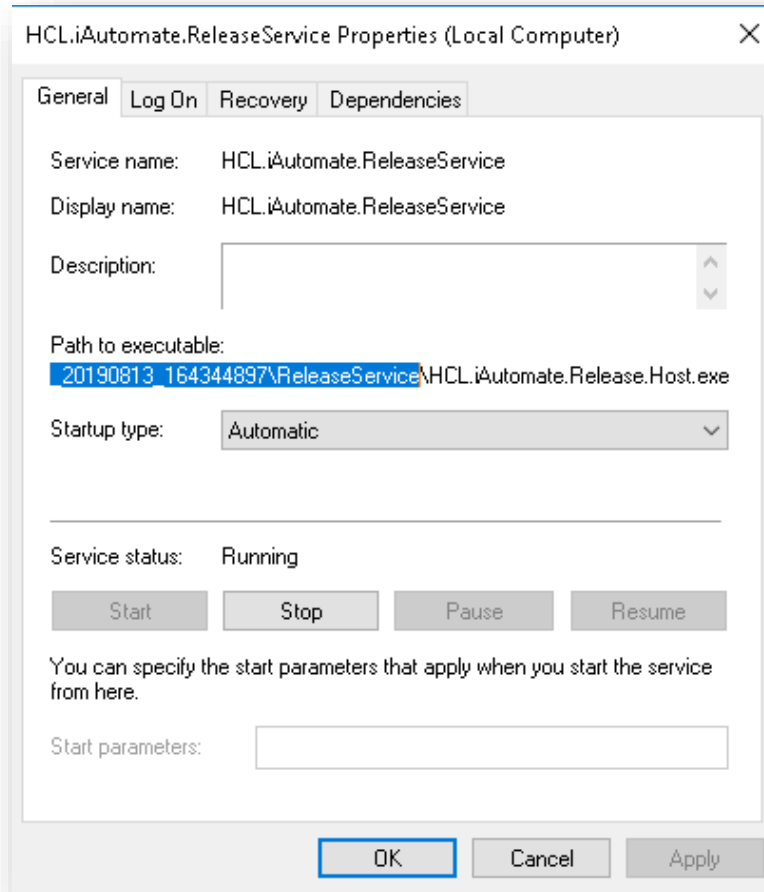


Figure 95 - Hosting Release Service from HTTP to HTTPS (Cont.)

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



Figure 96 - Hosting Release Service from HTTP to HTTPS (Cont.)

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

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

Figure 97 - Hosting Release Service from HTTP to HTTPS (Cont.)

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

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

Figure 98 - Hosting Release Service from HTTP to HTTPS (Cont.)

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

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

Figure 99 - 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.

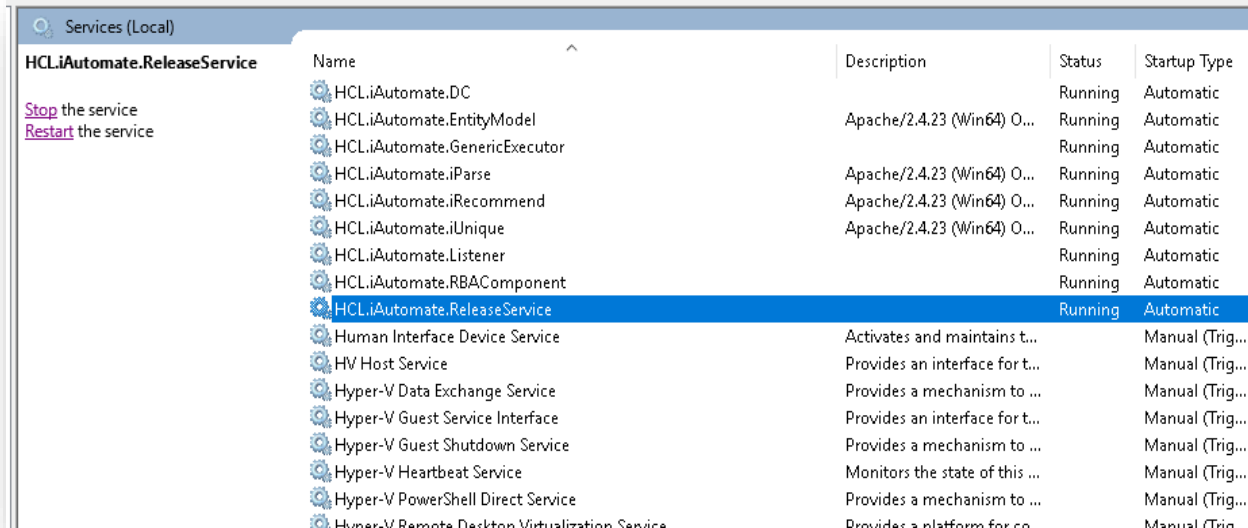


Figure 100 - Hosting Release Service from HTTP to HTTPS (Cont.)

### 3.5.1.2.6AD 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**.



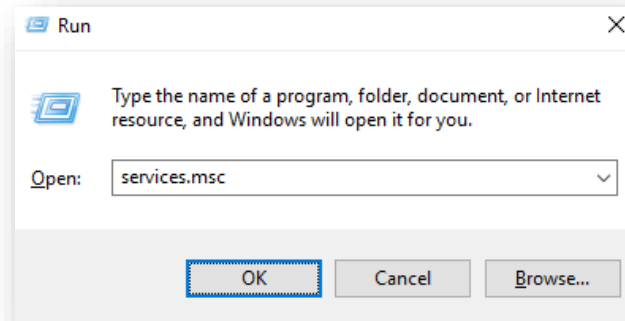


Figure 101 - Hosting AD Sync from HTTP to HTTPS

2. Click OK to open Windows Services.

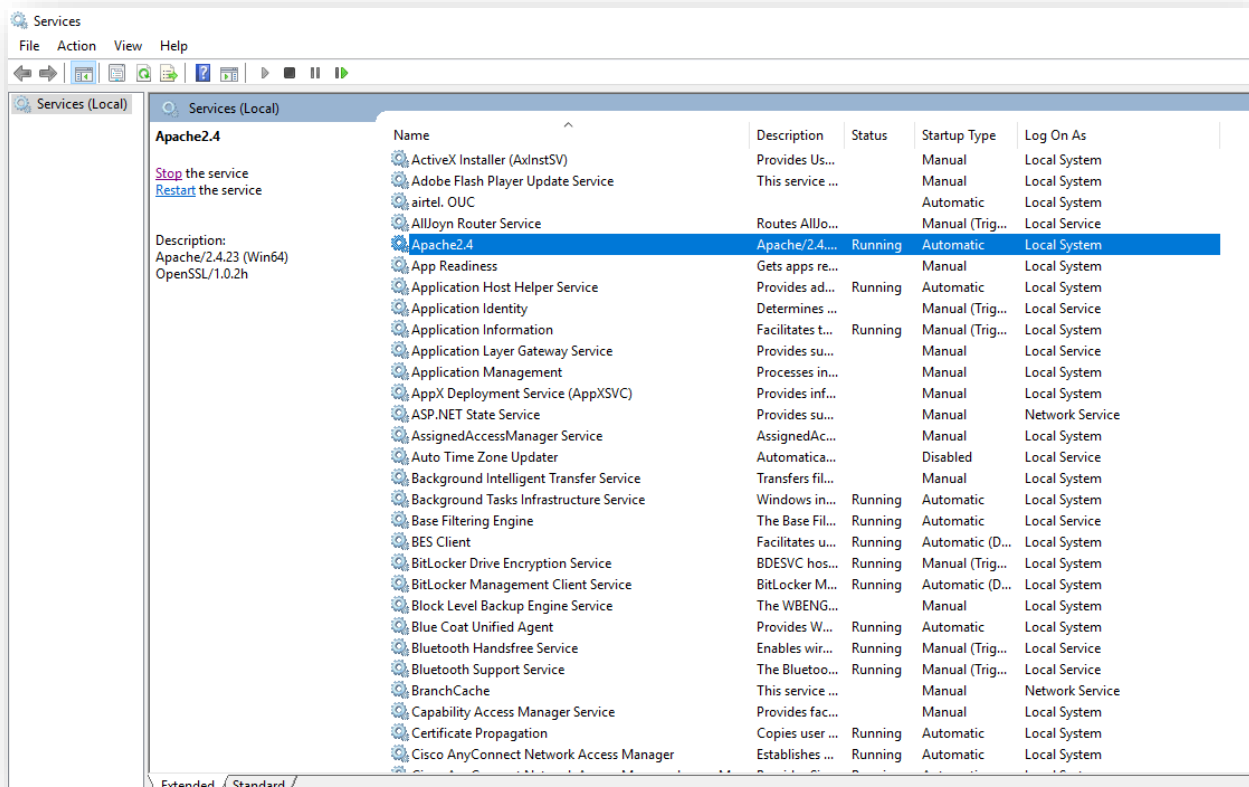


Figure 102 - Hosting AD Sync from HTTP to HTTPS (cont.)

3. Search for HCL.iAutomate.ADSyncService and right-click on it.
4. Click Properties.

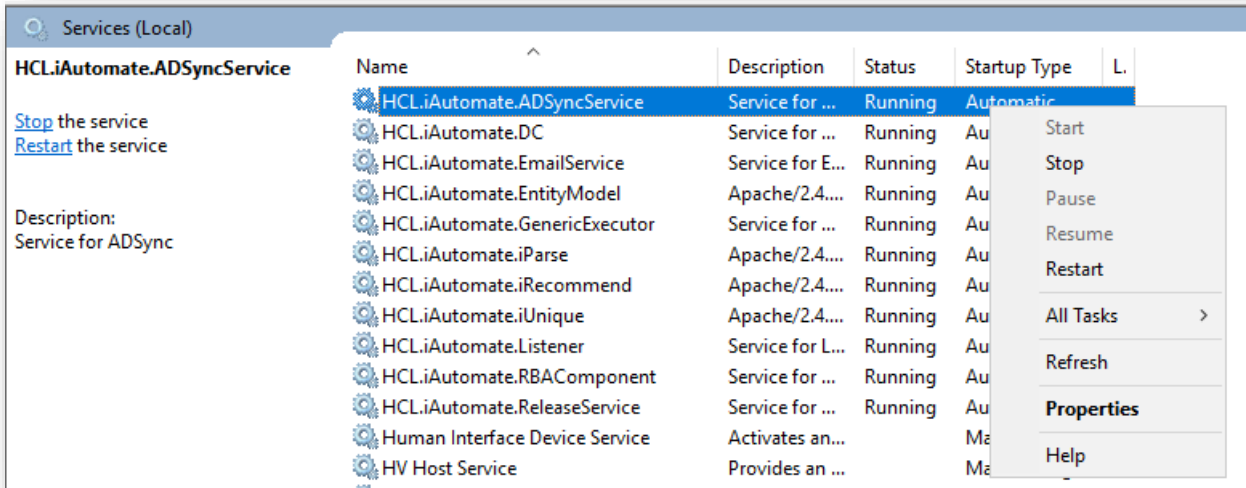


Figure 103 - Hosting AD Sync from HTTP to HTTPS (cont.)

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

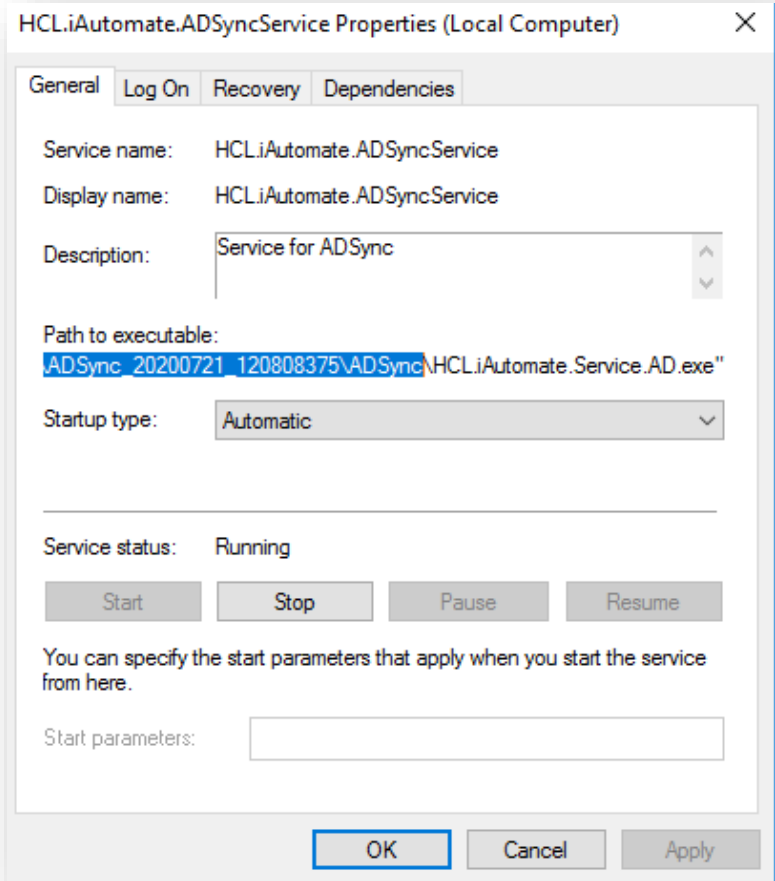


Figure 104 - Hosting AD Sync from HTTP to HTTPS (cont.)

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

- Search for **HCL.iAutomate.Service.AD.exe** config file and open it in a Notepad.



Figure 105 - Hosting AD Sync from HTTP to HTTPS (cont.)

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

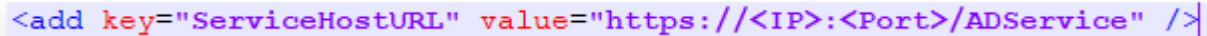


Figure 106 - Hosting AD Sync from HTTP to HTTPS (cont.)

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



Figure 107 - Hosting AD Sync from HTTP to HTTPS (cont.)

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



Figure 108 - Hosting AD Sync from HTTP to HTTPS (cont.)

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

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

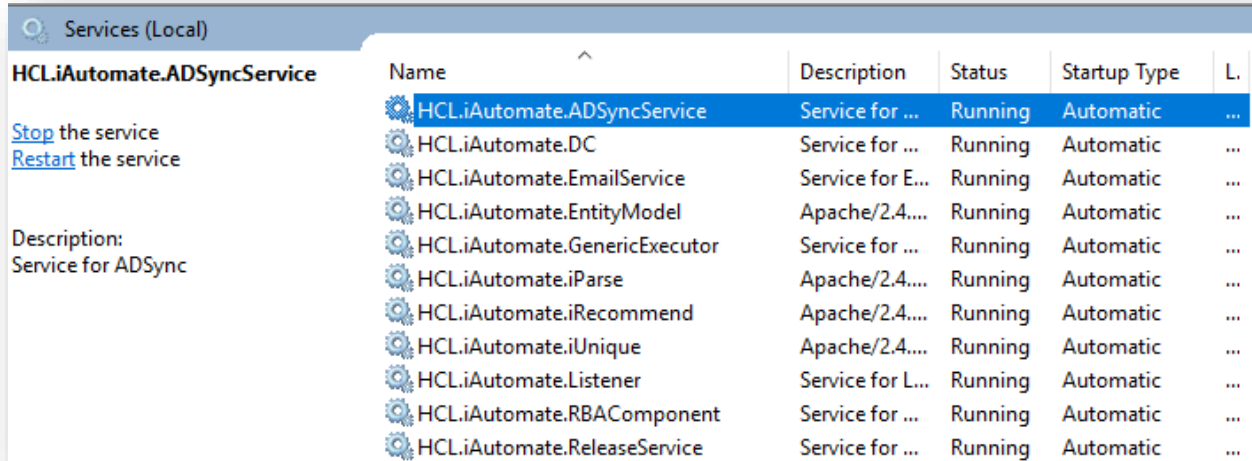


Figure 109 - Hosting AD Sync from HTTP to HTTPS (cont.)

### 3.5.1.2.7 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**.

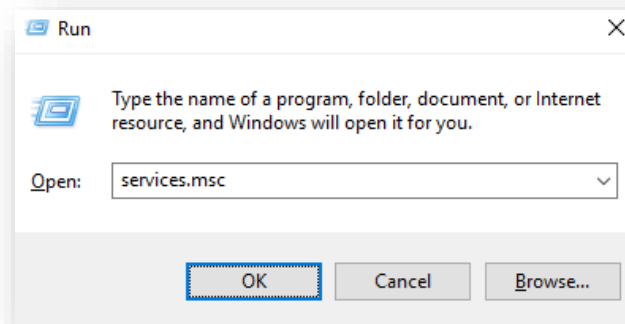


Figure 110 - Hosting Email Service from HTTP to HTTPS

2. Click OK to open Windows Services.

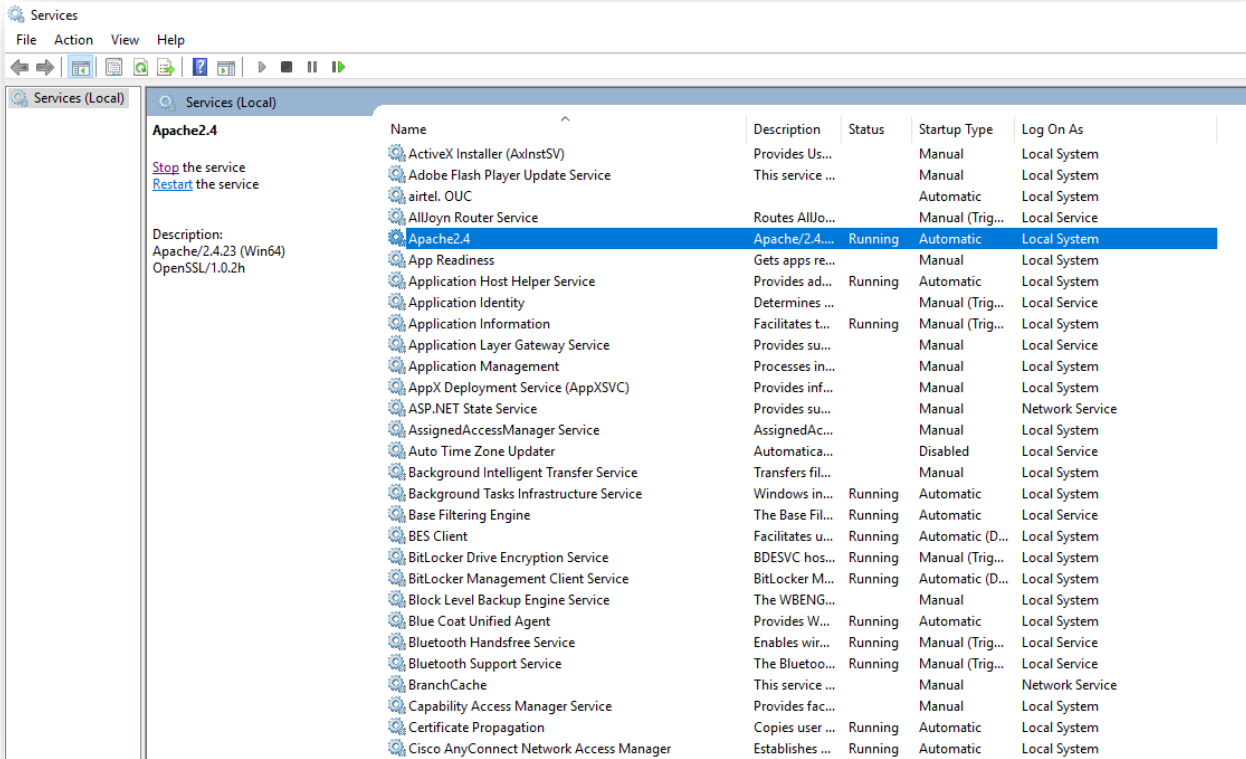


Figure 111 - Hosting Email Service from HTTP to HTTPS (cont.)

3. Search for **HCL.iAutomate.EmailService** and right-click on it.
4. Click Properties.

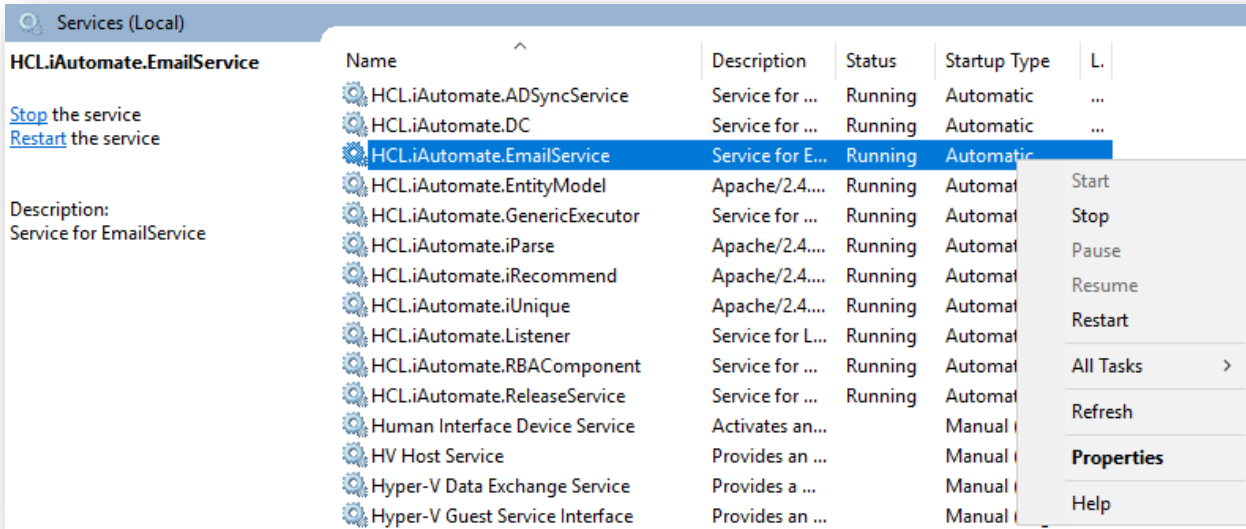


Figure 112 - Hosting Email Service from HTTP to HTTPS (cont.)

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

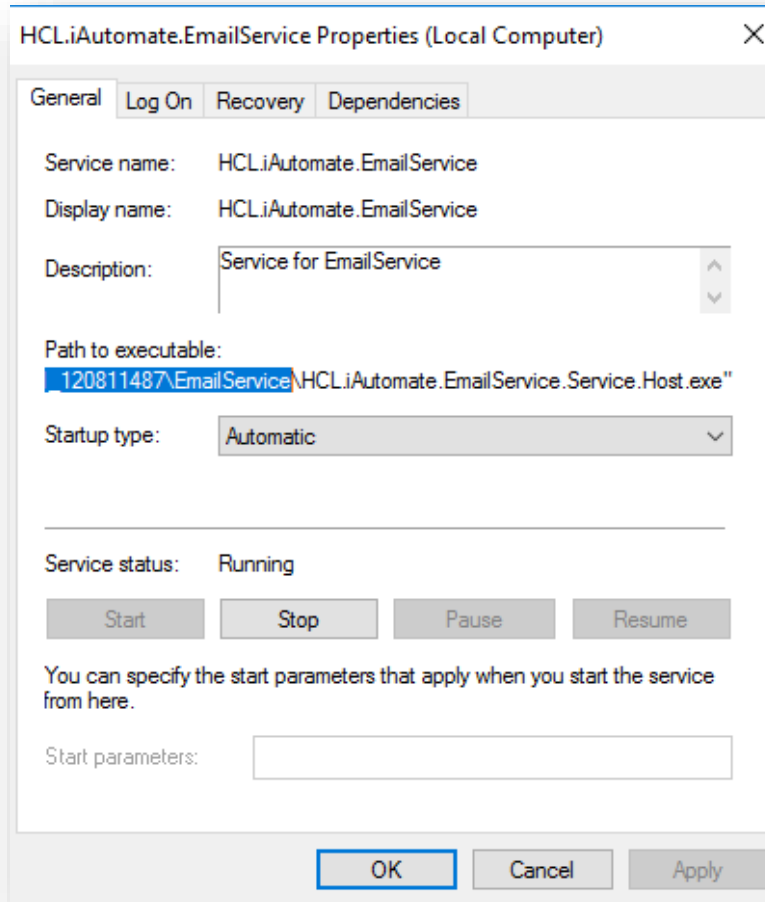


Figure 113 - Hosting Email Service from HTTP to HTTPS (cont.)

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



Figure 114 - Hosting Email Service from HTTP to HTTPS (cont.)

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

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

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

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

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

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

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

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

Figure 117 - 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 and click Restart to restart the service.

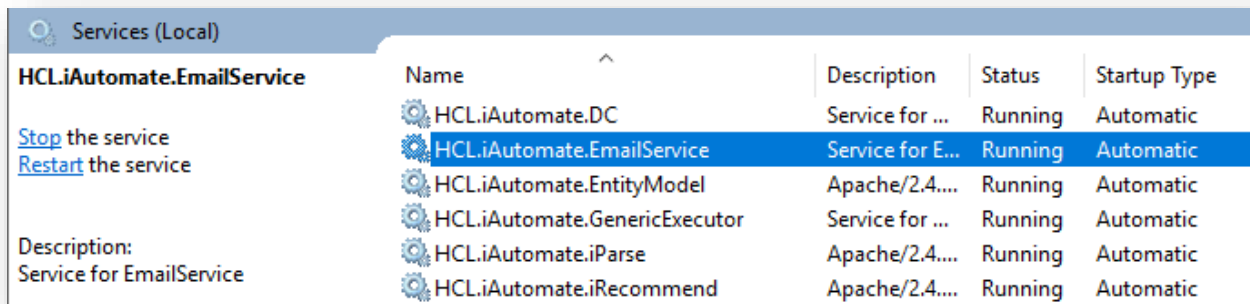


Figure 118 – Hosting Email Service from HTTP to HTTPS (cont.)

### 3.5.1.2.8 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 **Environment** and click **BigFix Runbook AI 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   | <input type="button" value="Test Connection"/> |
| <input type="button" value="Cancel"/> <input type="button" value="Update"/> |  |

Figure 119 - 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   | <input type="button" value="Test Connection"/> |
| <input type="button" value="Cancel"/> <input type="button" value="Update"/> |  |

Figure 120 - 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 121 - 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 122 - 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 123 - 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 124 - 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.

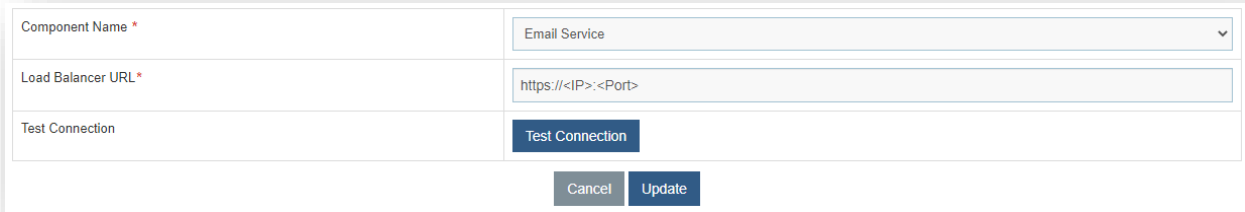


Figure 125 - Configuration Changes via GUI from HTTP to HTTPS (Cont.)

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

## 3.5.2 Configuration Changes – Certificate Name Change (Type – PFX)

This section describes how to make the configurational changes if the SSL certificate name (Type - PFX) is other than 'HCLiAutomate'.

Please install the certificate through the **Microsoft Management Console** in both **Personal** as well as **Trusted People** folder. Refer to the pre-requisites document for the detailed procedure for certificate installation at required locations.

### 3.5.2.1 Change name of Certificate used to connect KRS

#### 3.5.2.1.1 Website

This section describes configuration changes required for the Website in case SSL certificate is other than **HCL.iAutomate**.

Following changes are required in the underlying components.

##### 3.5.2.1.1.1 Key Rotation Service (KRS)

To make changes for the KRS, please follow the below steps:

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

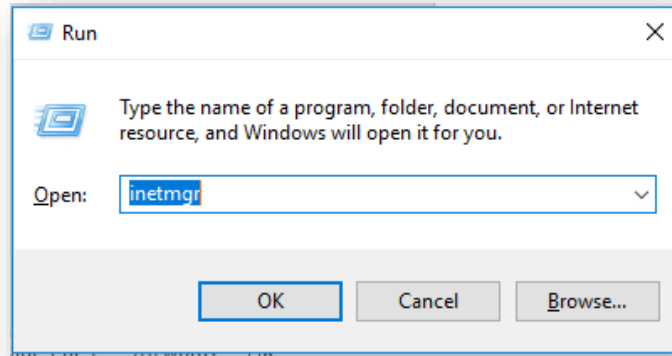


Figure 126 - Certificate Name Change – KRS

3. Expand Sites and click HCLiAutomateKRS.

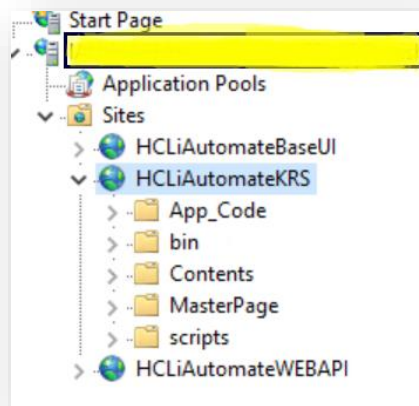


Figure 127 - Certificate Name Change – KRS (Cont.)

4. Right click HCLiAutomateKRS.
5. Click **Explore**.
6. Find **Web.config** file and open it in a Notepad.



Figure 128 - Certificate Name Change – KRS (Cont.)

7. Within the **Web.config** file, find the tag `<serviceCertificate>` and change the value of attribute 'findValue' with the updated **Certificate Name**.

```
<serviceCertificate findValue="HclTech.iautomate.Web"
```

Figure 129 - Certificate Name Change – KRS (Cont.)

8. 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" value="Y"/>
```

Figure 130 - Certificate Name Change – KRS (Cont.)

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

### 3.5.2.1.1.2 Base User interface

To make changes for the BaseUI, please follow the below steps:

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

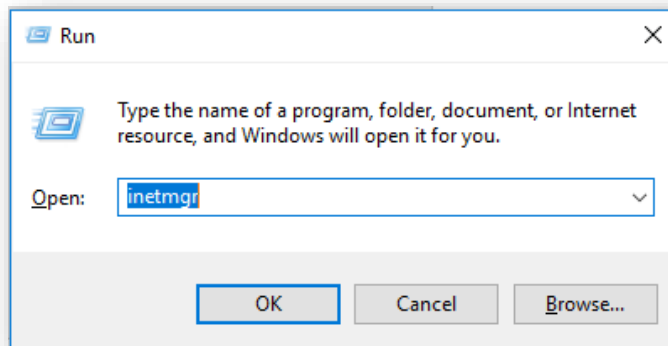


Figure 131 - Certificate Name Change – BaseUI

3. Expand Sites and click HCLiAutomateBaseUI.

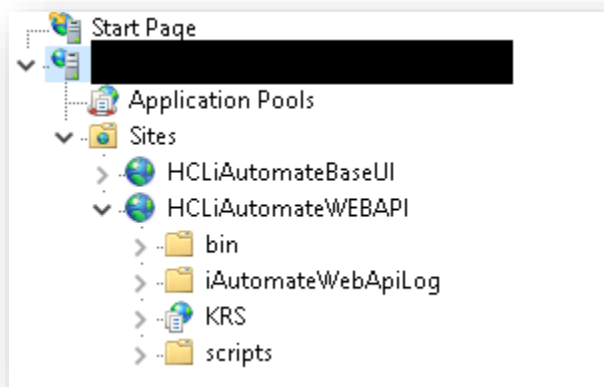


Figure 132 - Certificate Name Change – BaseUI (Cont.)

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

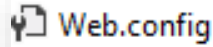


Figure 133 - Certificate Name Change – BaseUI (Cont.)

6. Within the **Web.config** file, find the key '**Certificate\_Name\_KRS**' and change its value with the new **Certificate Name**.

```
<add key="CertificateName_KRS" value="HclTech.iautomate.Web" />
```

Figure 134 - Certificate Name Change – BaseUI (Cont.)

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

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

Figure 135 - Certificate Name Change – BaseUI (Cont.)

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

### 3.5.2.1.1.3 Web API

To make changes for the Web API, please follow the below steps:

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

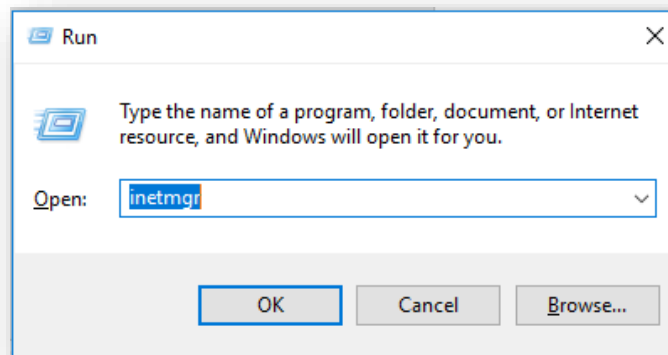


Figure 136 - Certificate Name Change – Web API

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

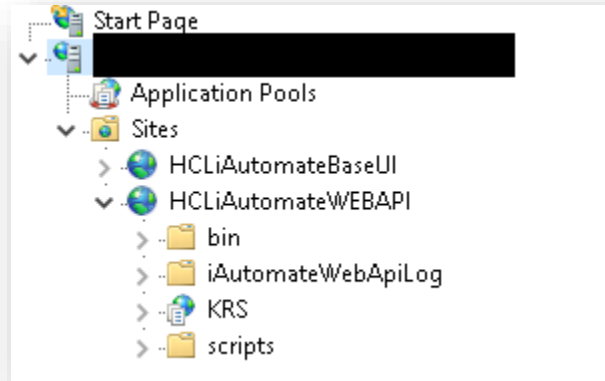


Figure 137 - Certificate Name Change – Web API (cont.)

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

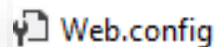


Figure 138 - Certificate Name Change – Web API (cont.)

- Within the **Web.config** file, find the key '**Certificate\_Name\_KRS**' and change its value with the new **Certificate Name**.

```
<add key="CertificateName_KRS" value="HclTech.iAutomate.Web" />
```

Figure 139 - Certificate Name Change – Web API (cont.)

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

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

Figure 140 - Certificate Name Change – Web API (cont.)

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

### 3.5.2.1.2 Components

This section describes the configuration changes required for the Components in case the SSL Certificate name is other than **HCL.iAutomate**.

Following changes are required in the underlying components:

### 3.5.2.1.2.1 Listener

To make changes for the Listener, please follow the below steps:

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

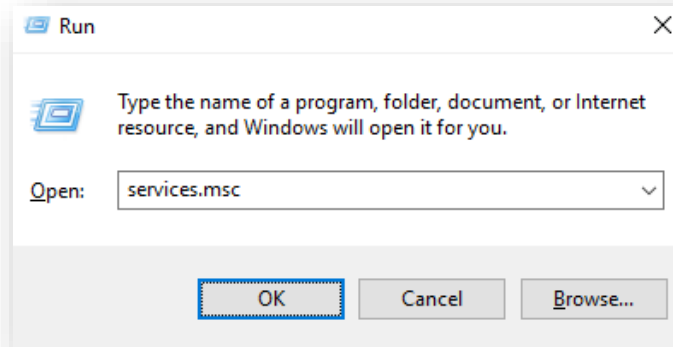


Figure 141 - Certificate Name Change – Listener

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

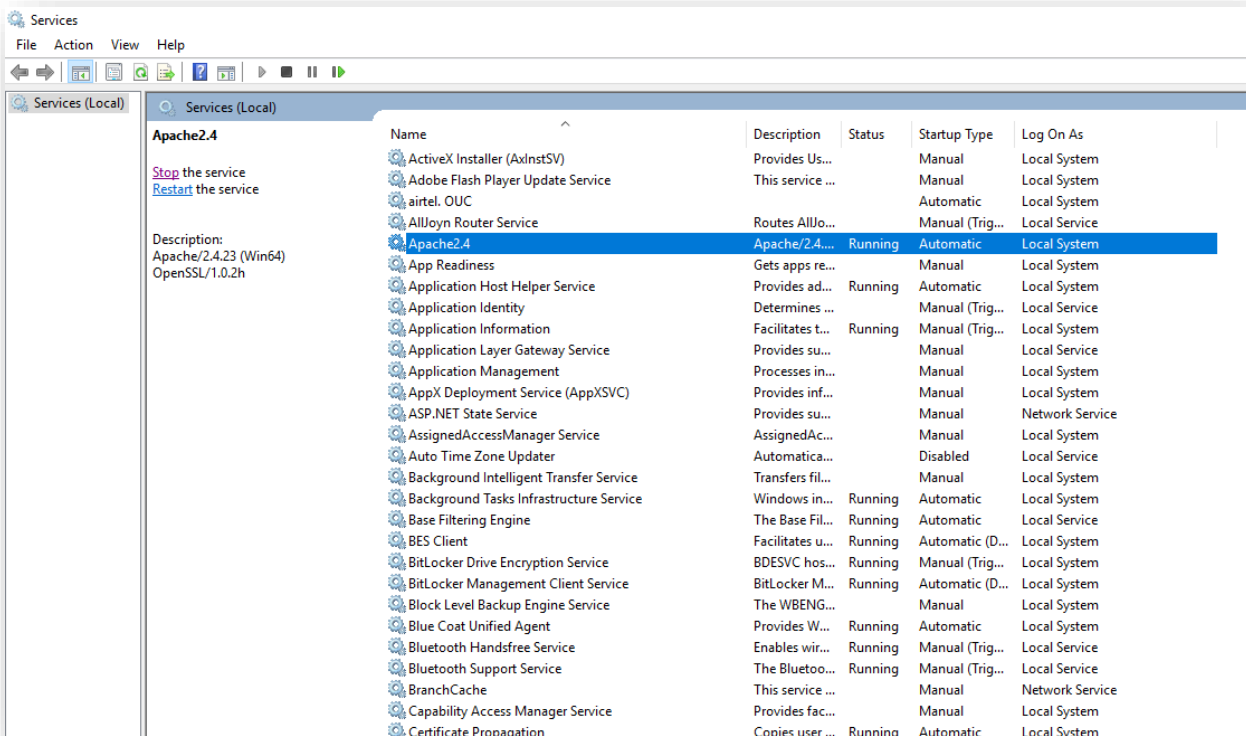


Figure 142 - Certificate Name Change – Listener (cont.)

3. Search for **HCL.iAutomate.Listener** service and right-click on it.
4. Click **Properties**.

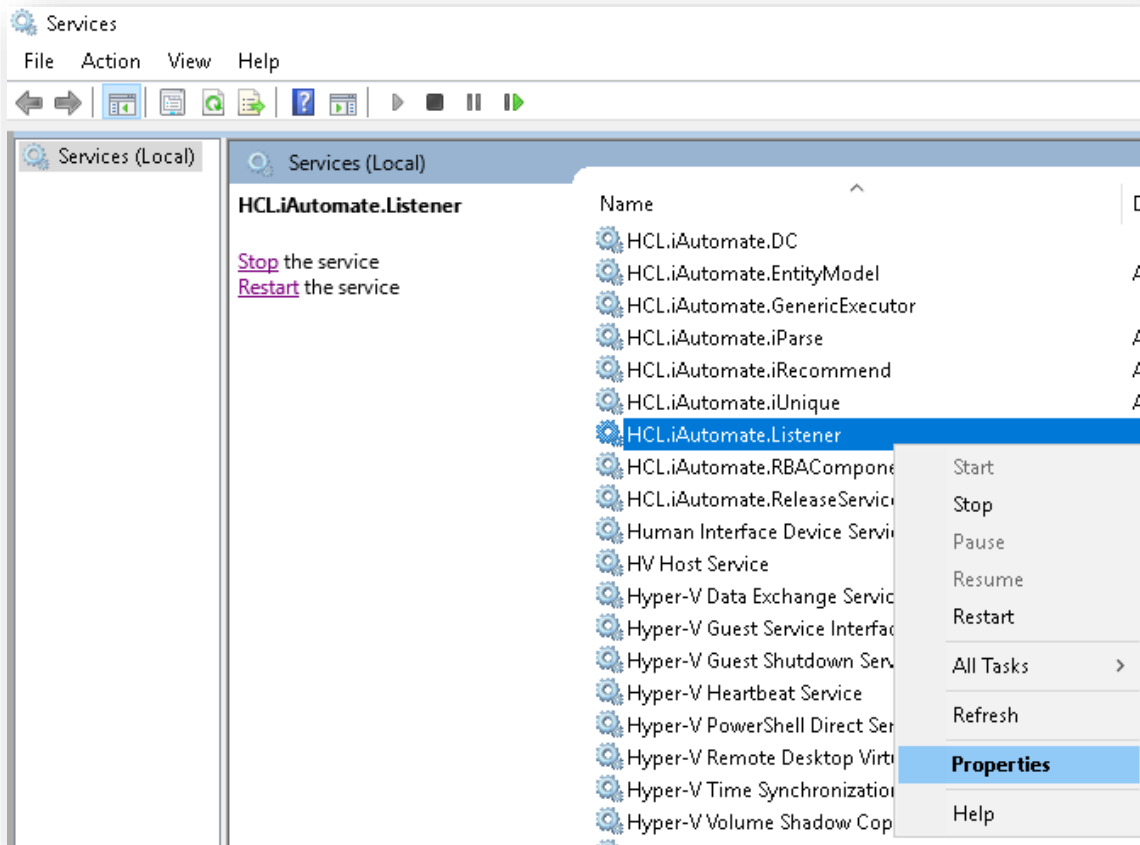


Figure 143 - Certificate Name Change – Listener (cont.)

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



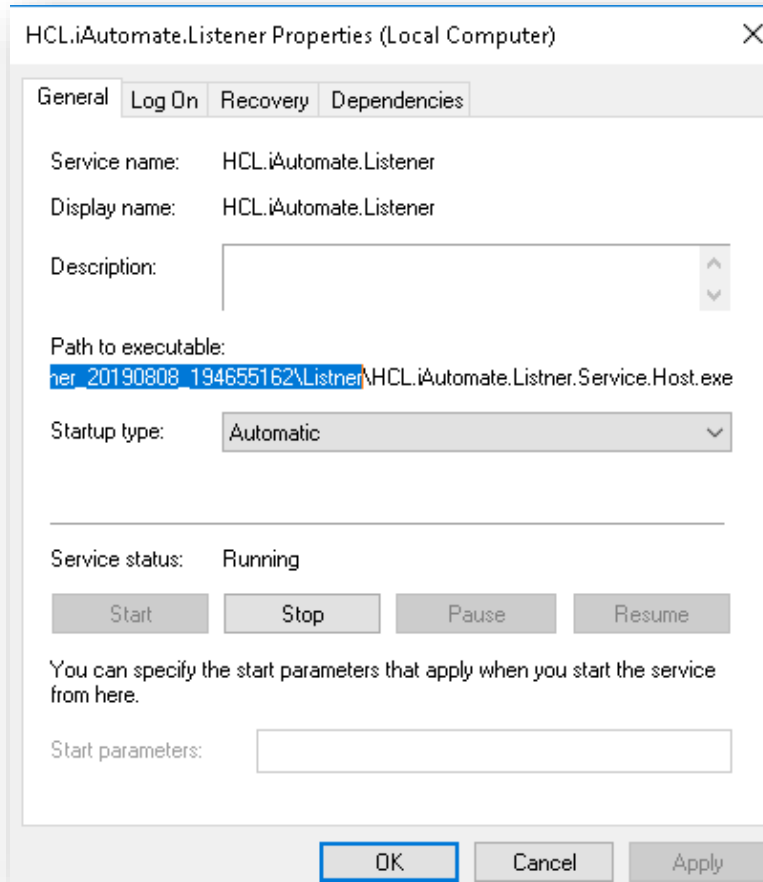


Figure 144 - Certificate Name Change – Listener (cont.)

6. Open **File Explorer** then 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 145 - Certificate Name Change – Listener (cont.)

8. Within the **HCL.iAutomate.Listener.Service.Host** config file, find the key '**CertificateName\_KRS**' and change its value with the new **Certificate Name**.

```
<add key="CertificateName_KRS" value="HclTech.iAutomate.Web" />
```

Figure 146 - Certificate Name Change – Listener (cont.)

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

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

Figure 147- Certificate Name Change – Listener (cont.)

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

### 3.5.2.1.2.2 Data Collector

To make changes for the Data Collector, please follow the below steps:

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

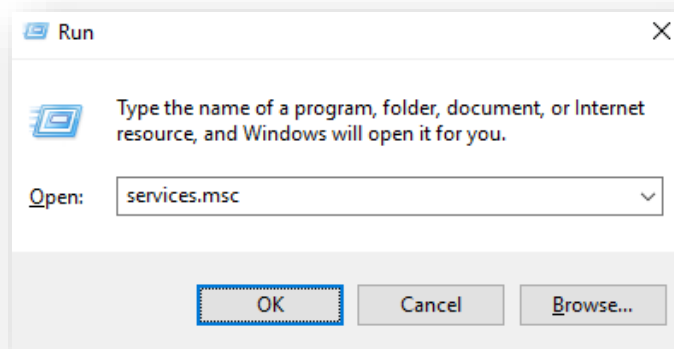


Figure 148 - Certificate Name Change – Data Collector

2. Click OK to open Windows Services.

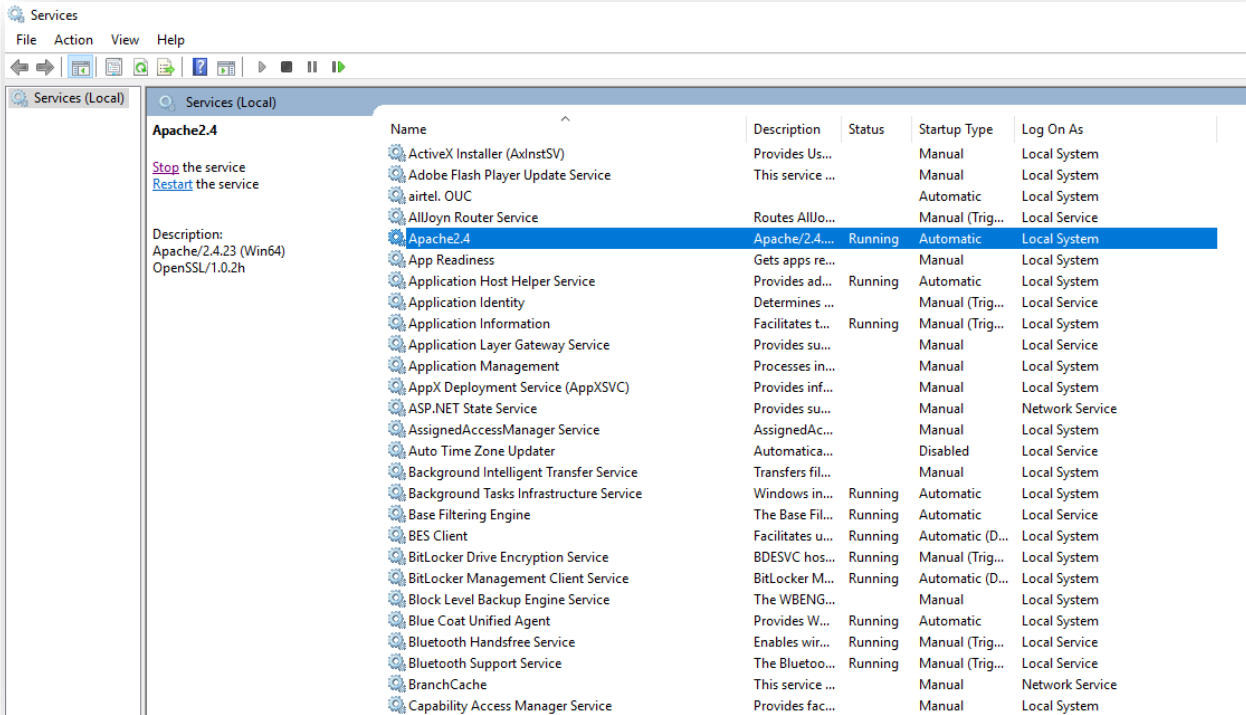


Figure 149 - Certificate Name Change – Data Collector (Cont.)

3. Search for **HCL.iAutomate.DC** service and right-click on it.
4. Click on **Properties**.

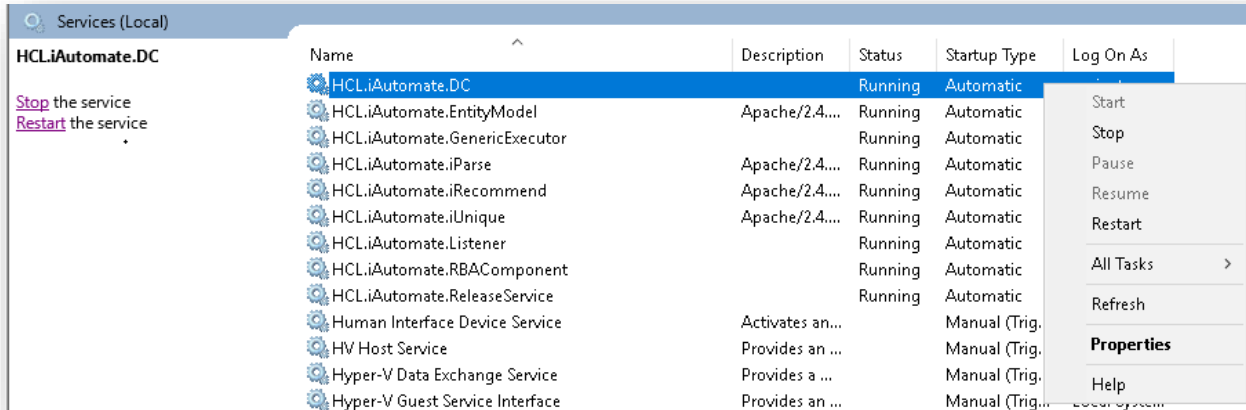


Figure 150 - Certificate Name Change – Data Collector (Cont.)

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

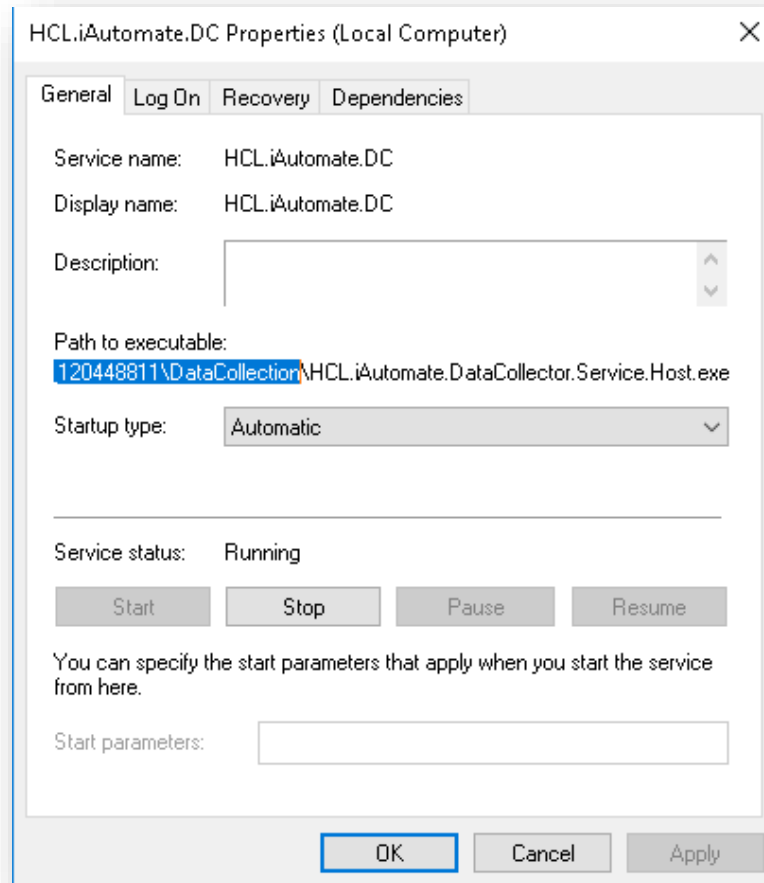


Figure 151 - Certificate Name Change – Data Collector (Cont.)

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



Figure 152 - Certificate Name Change – Data Collector (Cont.)

8. Within the **HCL.iAutomate.DataCollector.Service.Host.exe** config file, find the key '**CertificateName\_KRS**' and change its value with the new Certificate Name.

```
<add key="CertificateName_KRS" value="HclTech.iAutomate.Web" />
```

Figure 153 - Certificate Name Change – Data Collector (Cont.)

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

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

Figure 154 - Certificate Name Change – Data Collector (Cont.)

10. Save the file for changes to be reflected.
11. Select **HCL.iAutomate.DC** service and click **Restart** to restart the service.

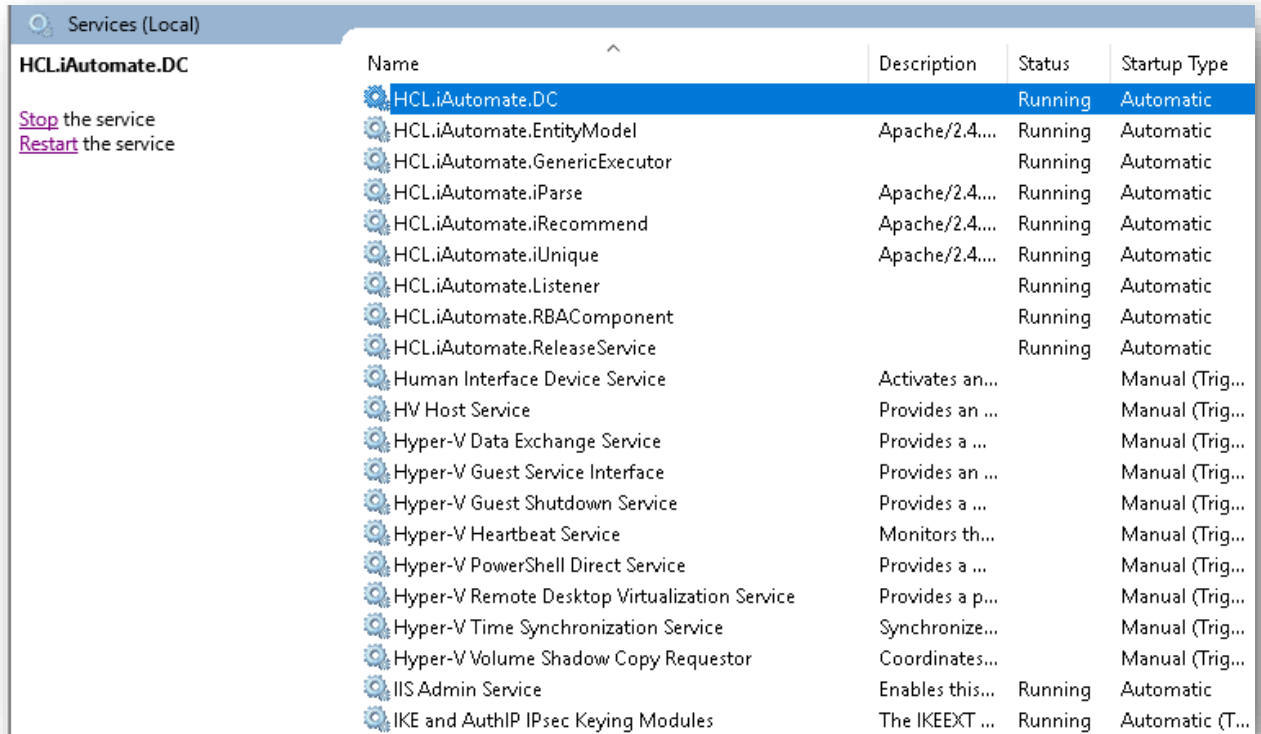


Figure 155 - Certificate Name Change – Data Collector (Cont.)

### 3.5.2.1.2.3 Generic Service

To make changes for the Generic Service, please follow the below steps:

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

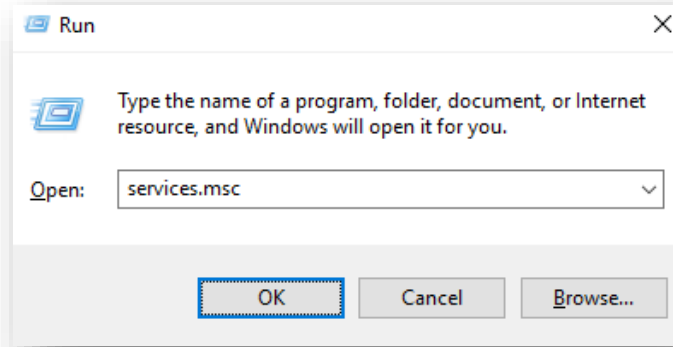


Figure 156 - Certificate Name Change – Generic Service

2. Click OK to open Windows Services.

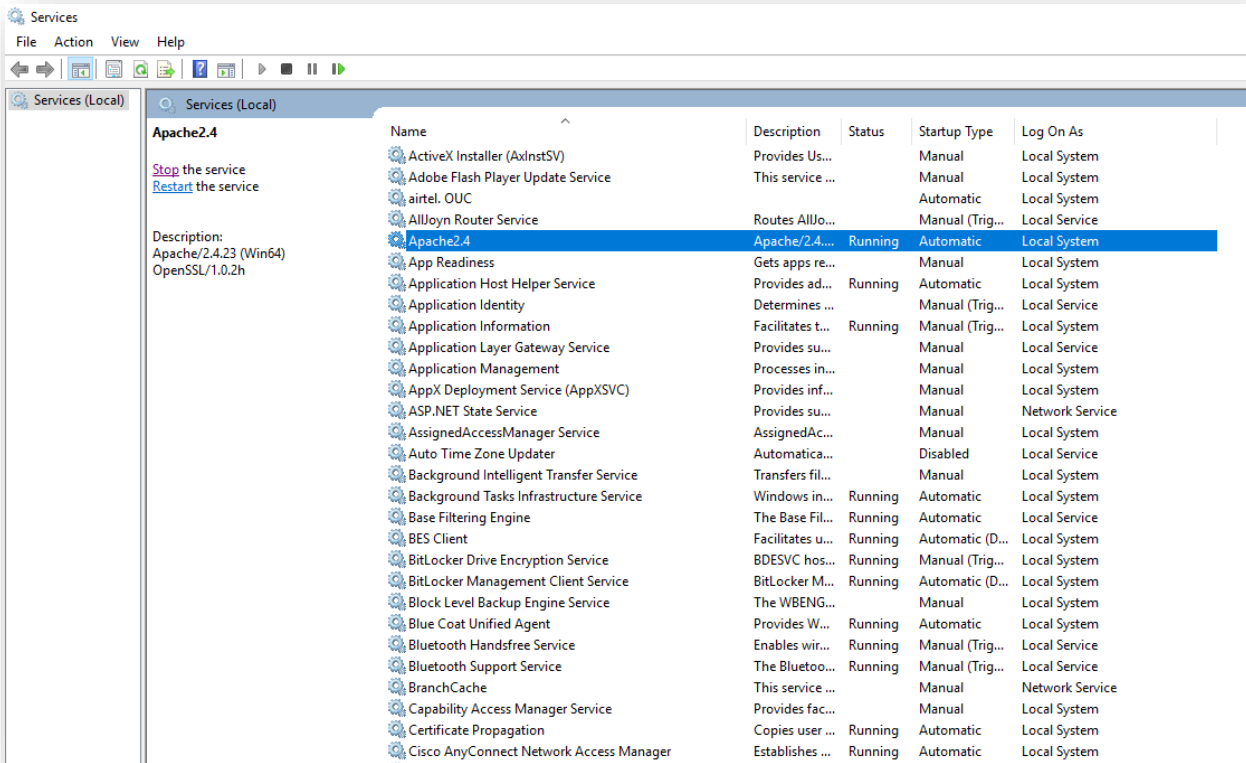


Figure 157 - Certificate Name Change – Generic Service (cont.)

3. Search for **HCL.iAutomate.GenericExecutor** service and right-click on it.
4. Click on **Properties**.

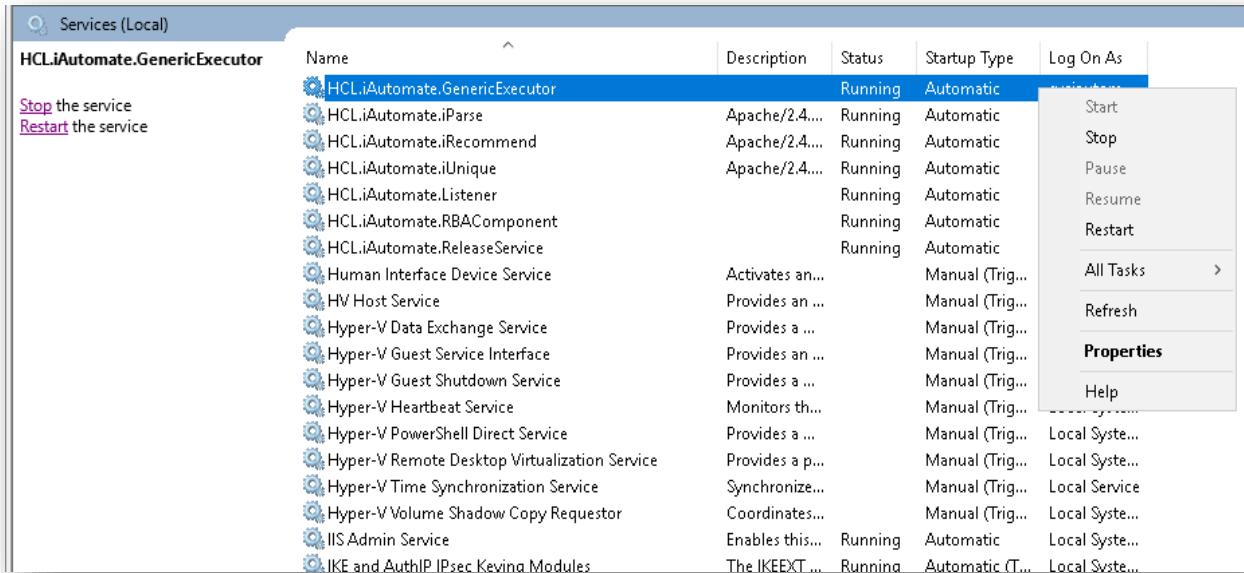


Figure 158 - Certificate Name Change – Generic Service (cont.)

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

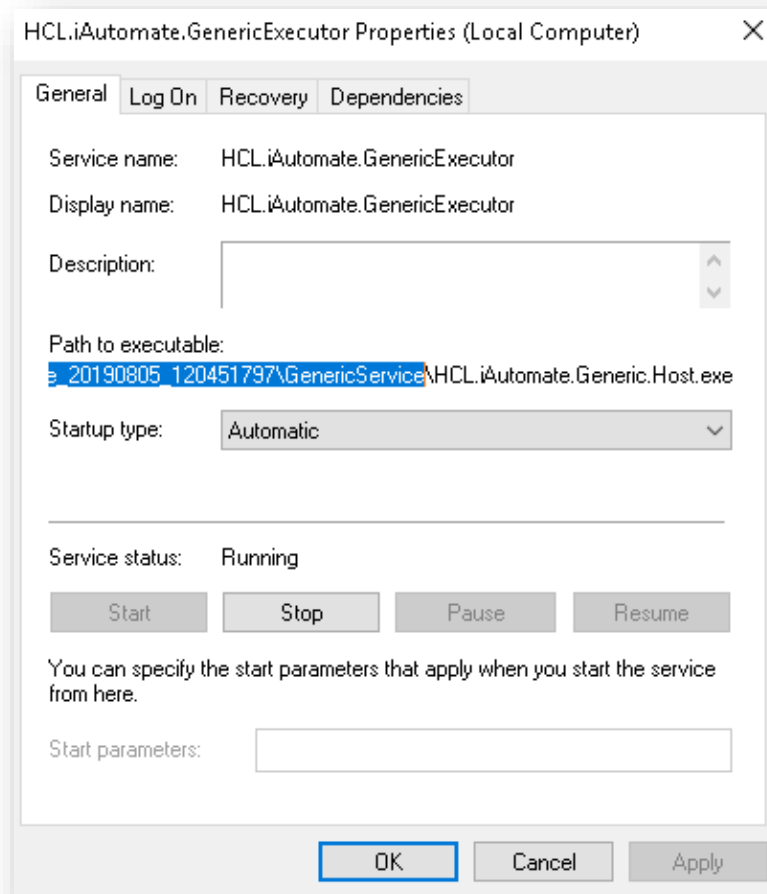


Figure 159 - Certificate Name Change – Generic Service (cont.)

6. Open **File Explorer** and 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 160- Certificate Name Change – Generic Service (cont.)

8. Within the **HCL.iAutomate.Generic.Host.exe** config file, find the key '**CertificateName\_KRS**' and change its value with the new **Certificate Name**.

```
<add key="CertificateName_KRS" value="HclTech.iautomate.Web" />
```

Figure 161 - Certificate Name Change – Generic Service (cont.)

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



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

Figure 162 - Certificate Name Change – Generic Service (cont.)

10. Save the file for changes to be reflected.
11. Select **HCL.iAutomate.GenericExecutor** service and click **Restart** to restart the service.

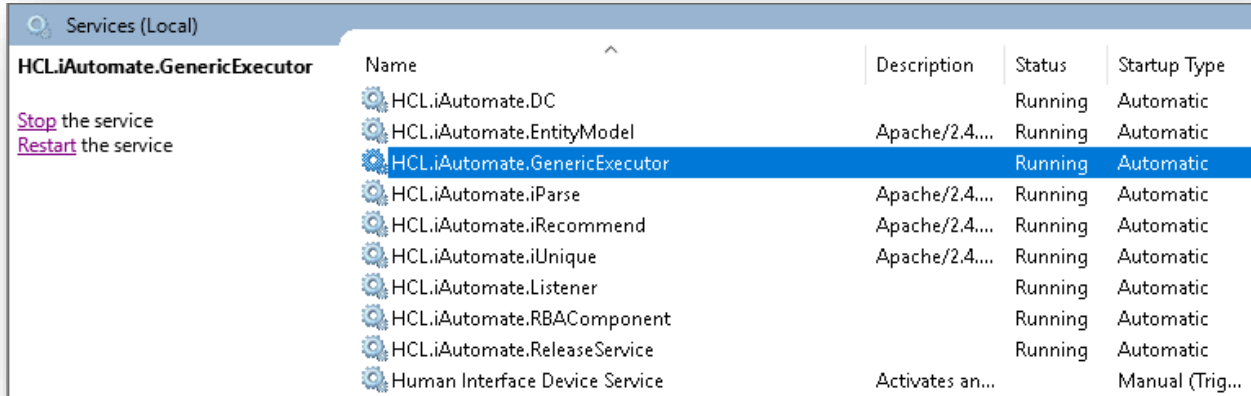


Figure 163- Certificate Name Change – Generic Service (cont.)

### 3.5.2.1.2.4RBA Component

To make changes for the RBA component, please follow the below steps:

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

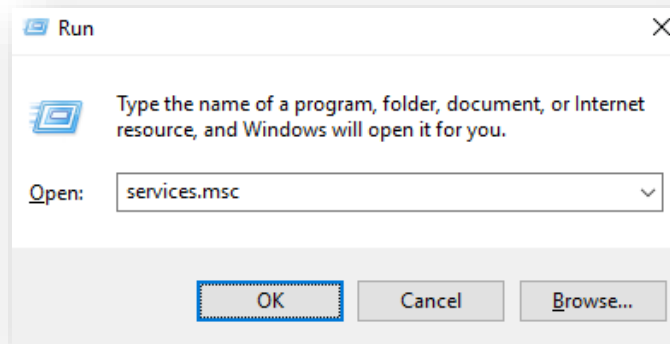


Figure 164 - Certificate Name Change – RBA Component

2. Click OK to open Windows Services.

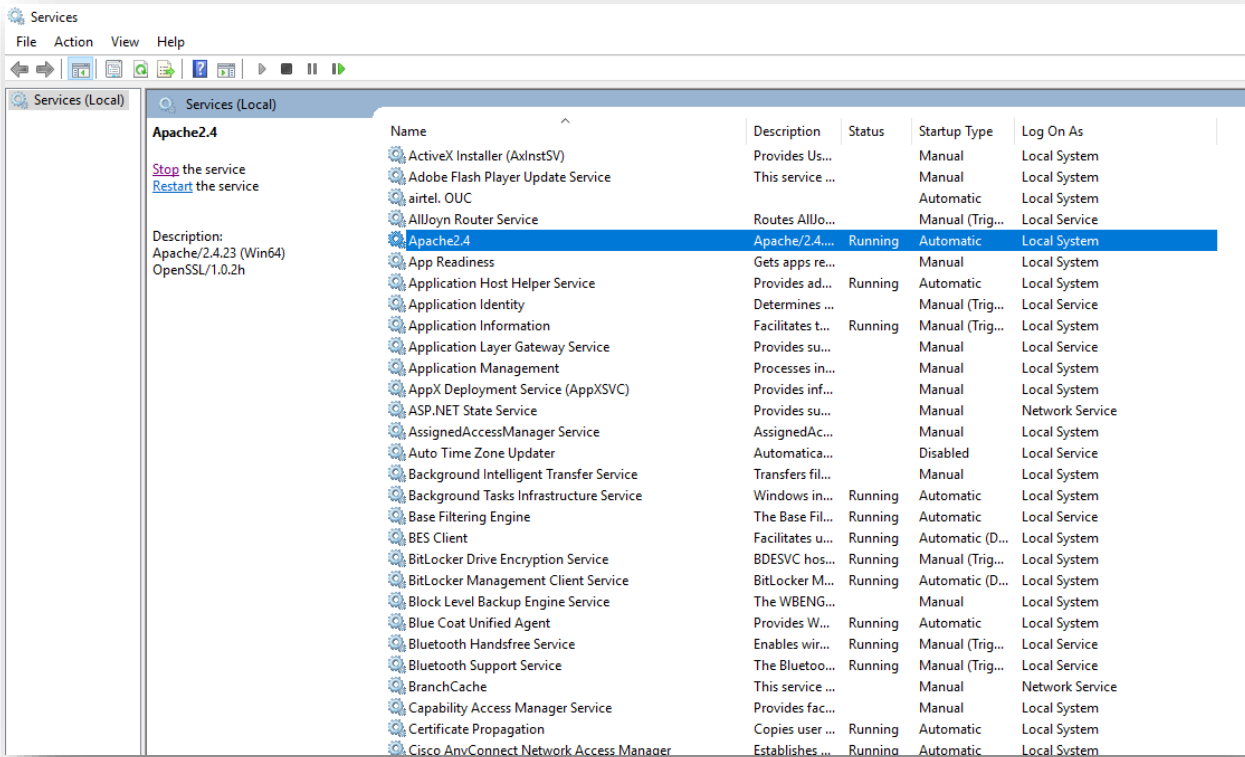


Figure 165 - Certificate Name Change – RBA Component (cont.)

3. Search for HCL.iAutomate.RBAComponent service and right-click on it.
4. Click Properties.

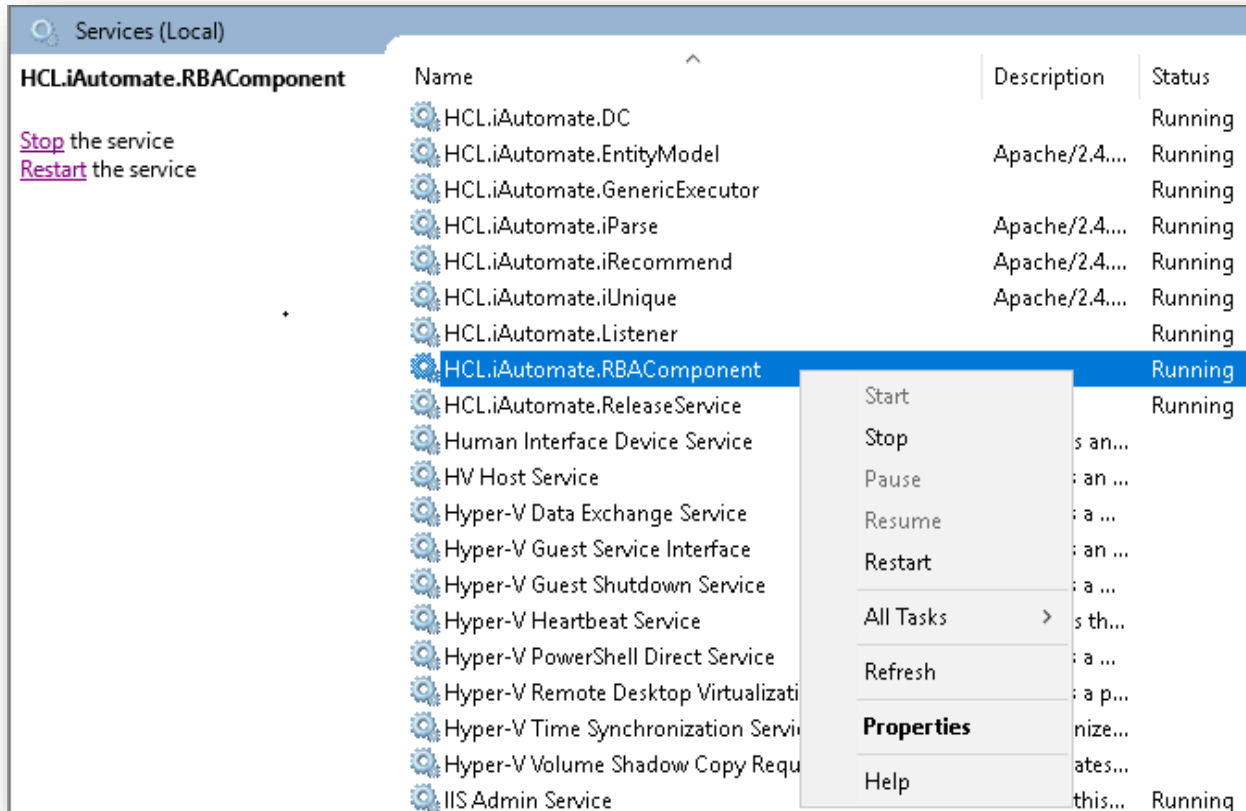


Figure 166 - Certificate Name Change – RBA Component (cont.)

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

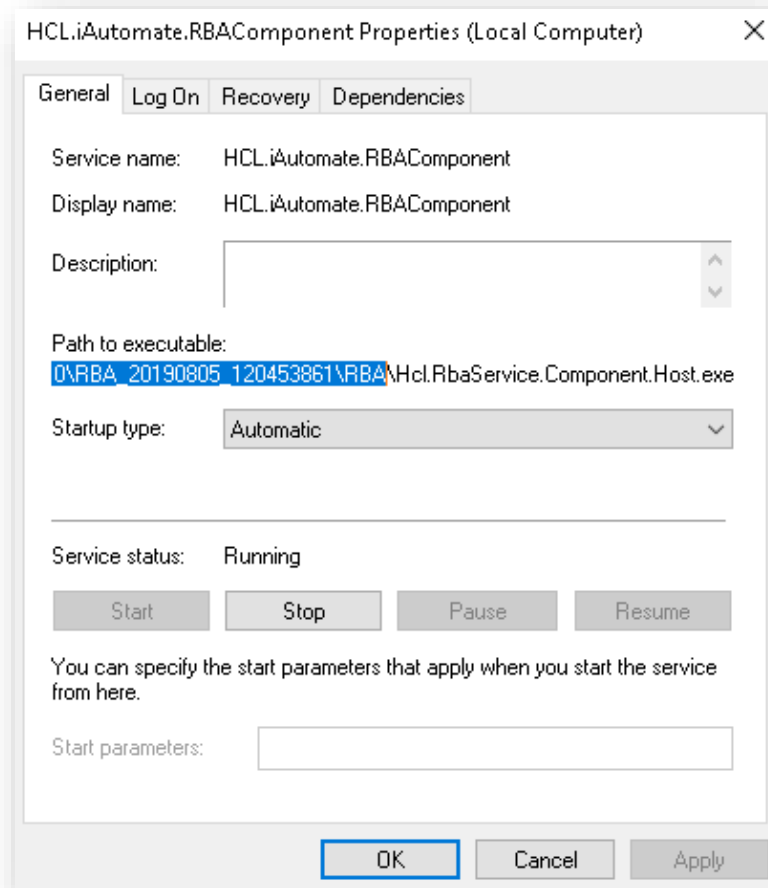


Figure 167 - Certificate Name Change – RBA Component (cont.)

6. Open **File Explorer**, 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 168 - Certificate Name Change – RBA Component (cont.)

8. Within the **HCL.RbaService.Component.Host.exe** config file, find the key '**CertificateName\_KRS**' and change its value with the new **Certificate Name**.

```
<add key="CertificateName_KRS" value="HclTech.iAutomate.Web" />
```

Figure 169 - Certificate Name Change – RBA Component (cont.)

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

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

Figure 170 - Certificate Name Change – RBA Component (cont.)

10. Save the file for changes to be reflected.
11. Select **HCL.iAutomate.RBAComponent** service and click **Restart** to restart the service.

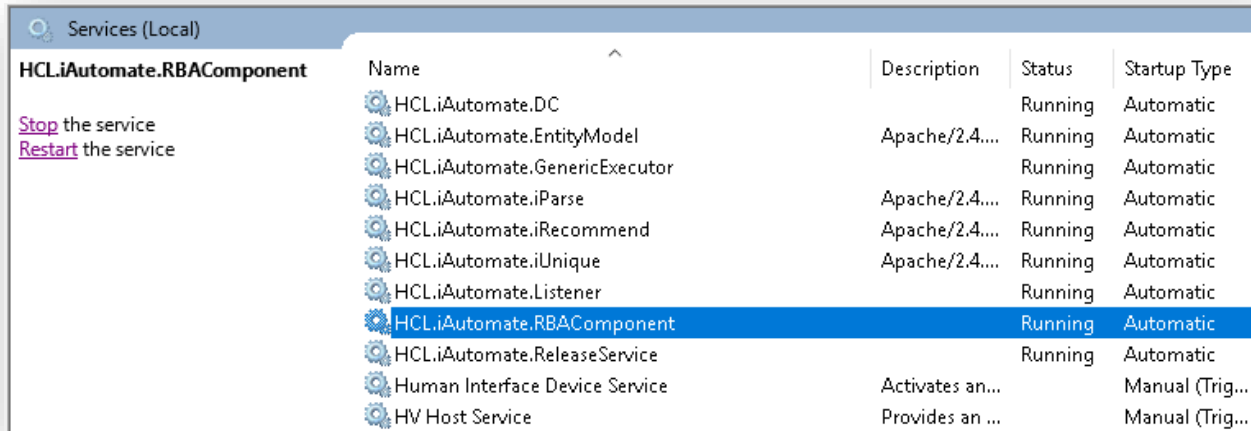


Figure 171 - Certificate Name Change – RBA Component (cont.)

### 3.5.2.1.2.5 Release Service

To make changes for the Release Service, please follow the below steps:

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

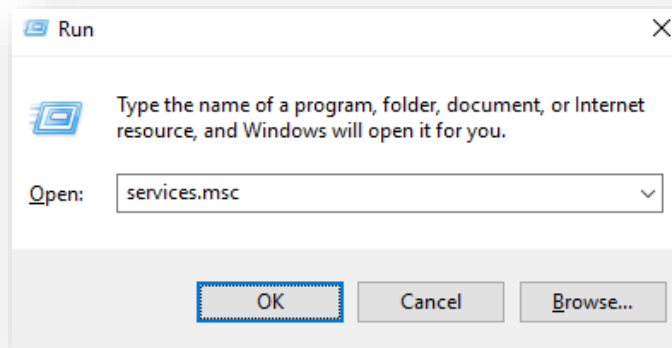


Figure 172 - Certificate Name Change – Release Service

2. Click OK to open Windows Services.

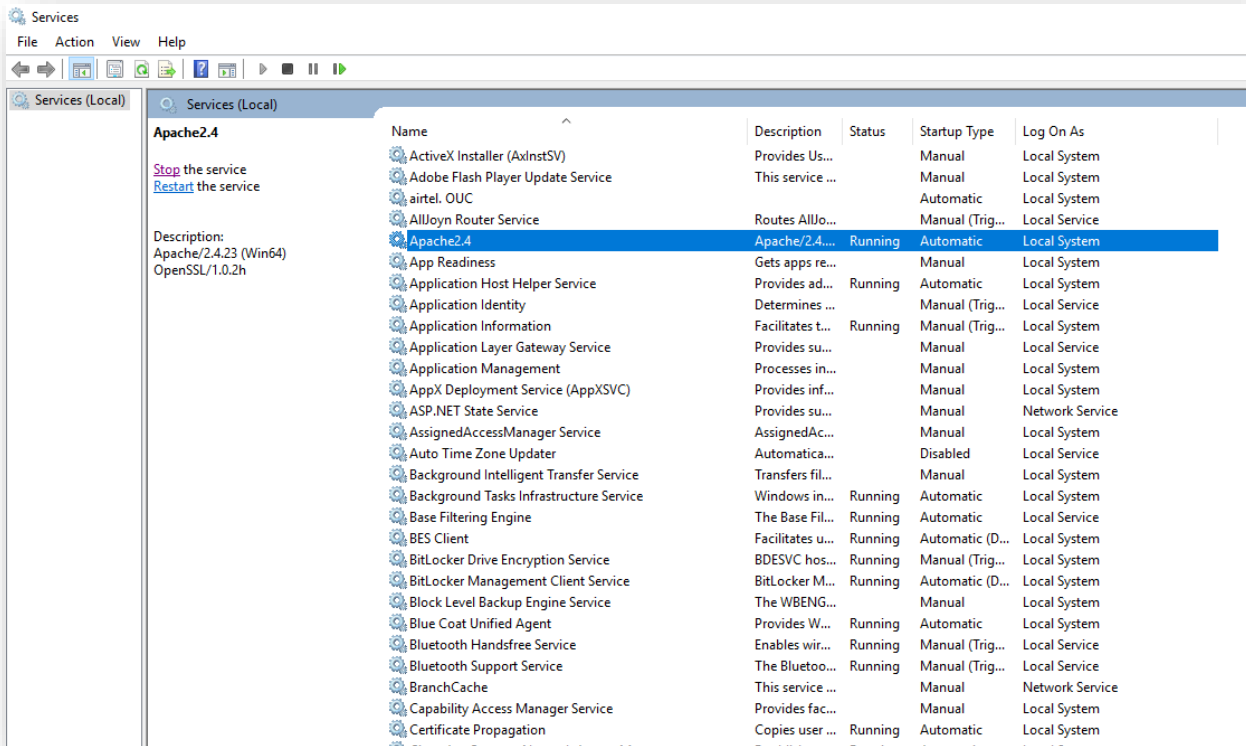


Figure 173 - Certificate Name Change – Release Service (cont.)

3. Search for HCL.iAutomate.ReleaseService and right-click on it.
4. Click Properties.

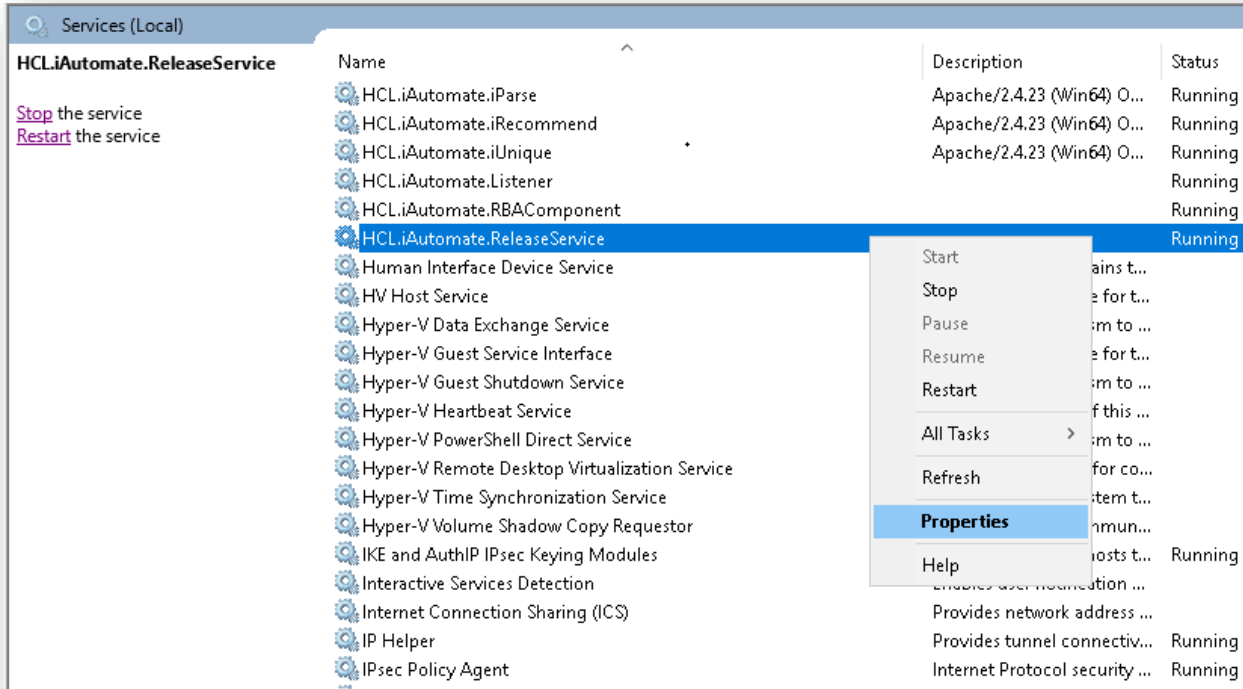


Figure 174 - Certificate Name Change – Release Service (cont.)

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

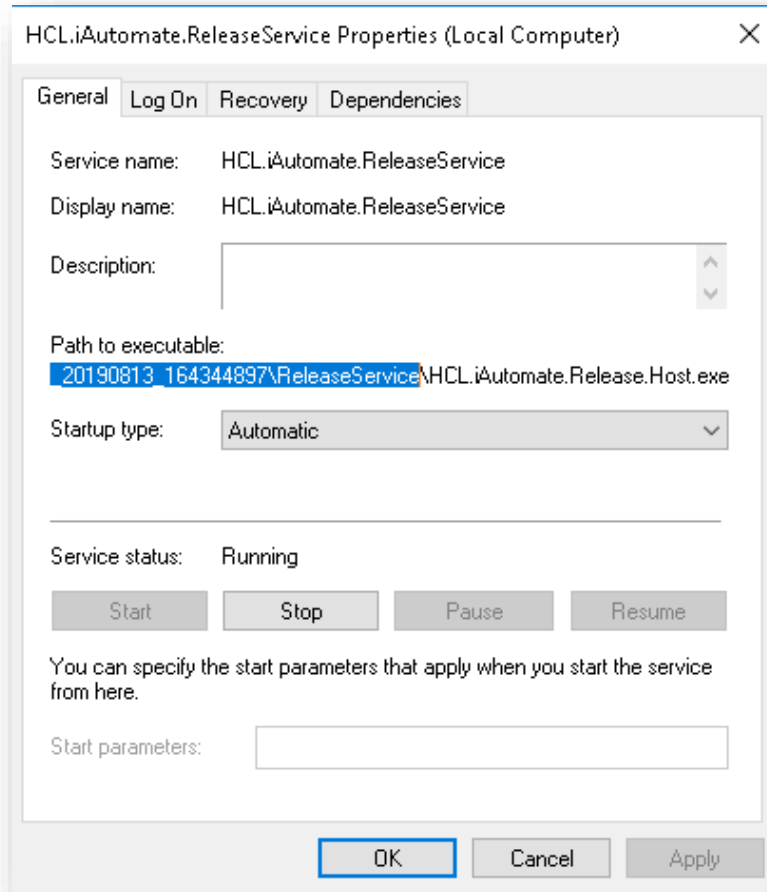


Figure 175 - Certificate Name Change – Release Service (cont.)

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



Figure 176 - Certificate Name Change – Release Service (cont.)

8. Within the **HCL.iAutomate.Release.Host.exe** config file, find the key '**CertificateName\_KRS**' and change its value with the new **Certificate Name**.

```
<add key="CertificateName_KRS" value="HclTech.iautomate.Web" />
```

Figure 177 - Certificate Name Change – Release Service (cont.)

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



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

Figure 178 - Certificate Name Change – Release Service (cont.)

10. Save the file for changes to be reflected.
11. Select **HCL.iAutomate.ReleaseService** service and click **Restart** to restart the service.

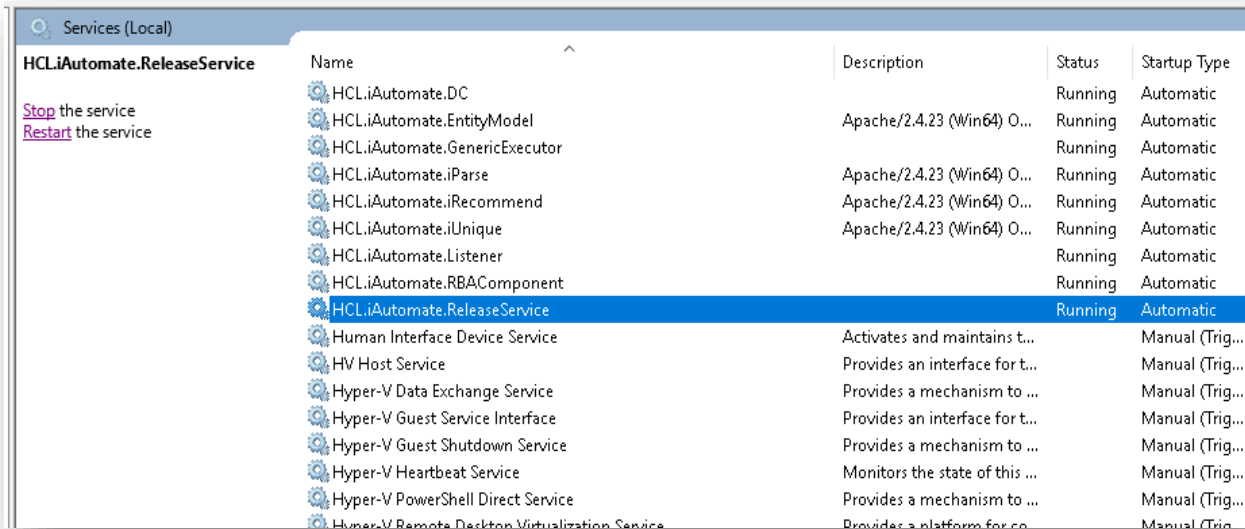


Figure 179 - Certificate Name Change – Release Service (cont.)

### 3.5.2.1.2.6AD 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**.

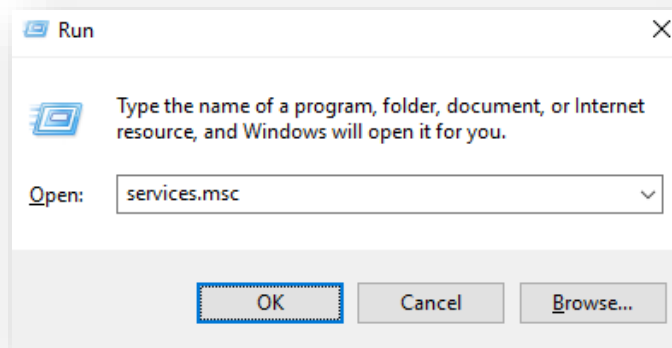


Figure 180 - Certificate Name Change – AD Sync Service

2. Click OK to open Windows Services.

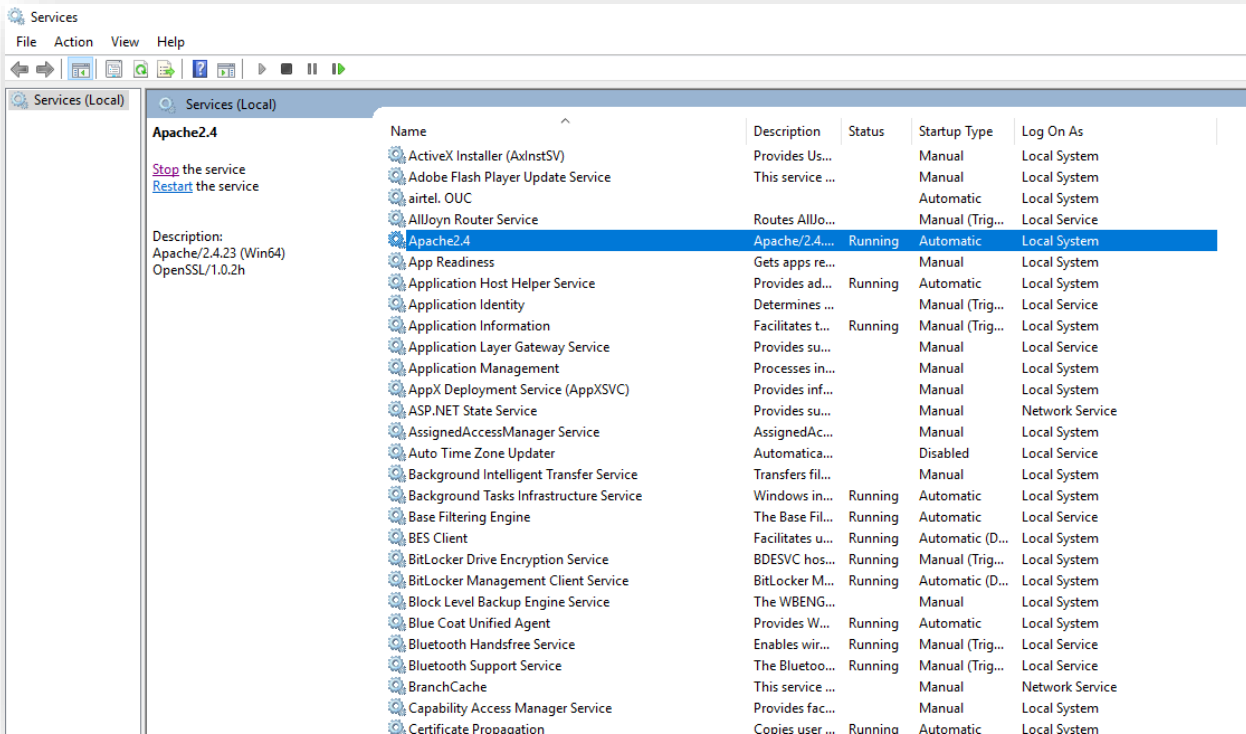


Figure 181 - Certificate Name Change – AD Sync Service (cont.)

3. Search for HCL.iAutomate.ADSyncService and right-click on it.
4. Click **Properties**.

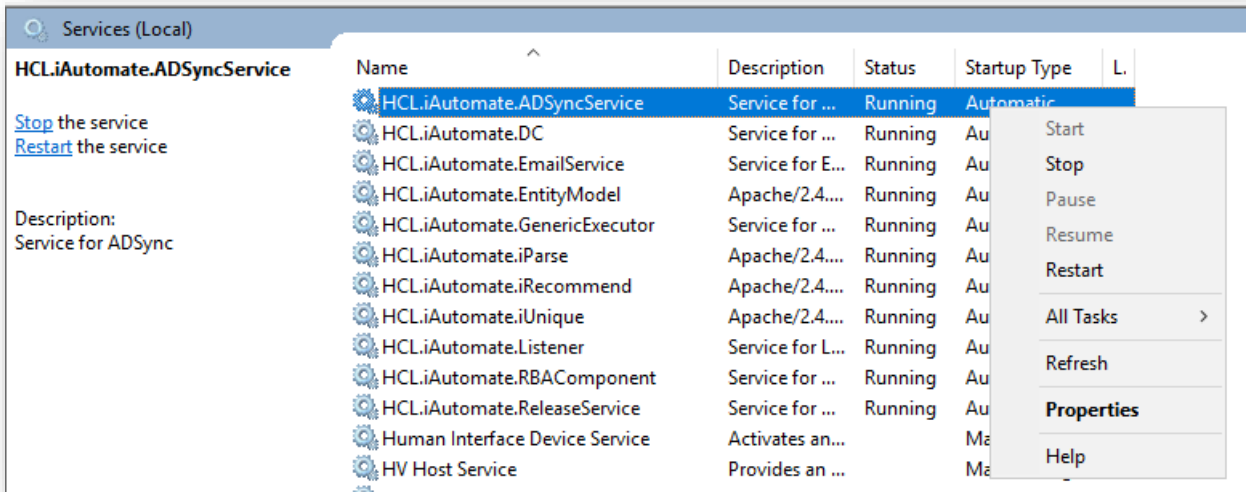


Figure 182 - Certificate Name Change – AD Sync Service (cont.)

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

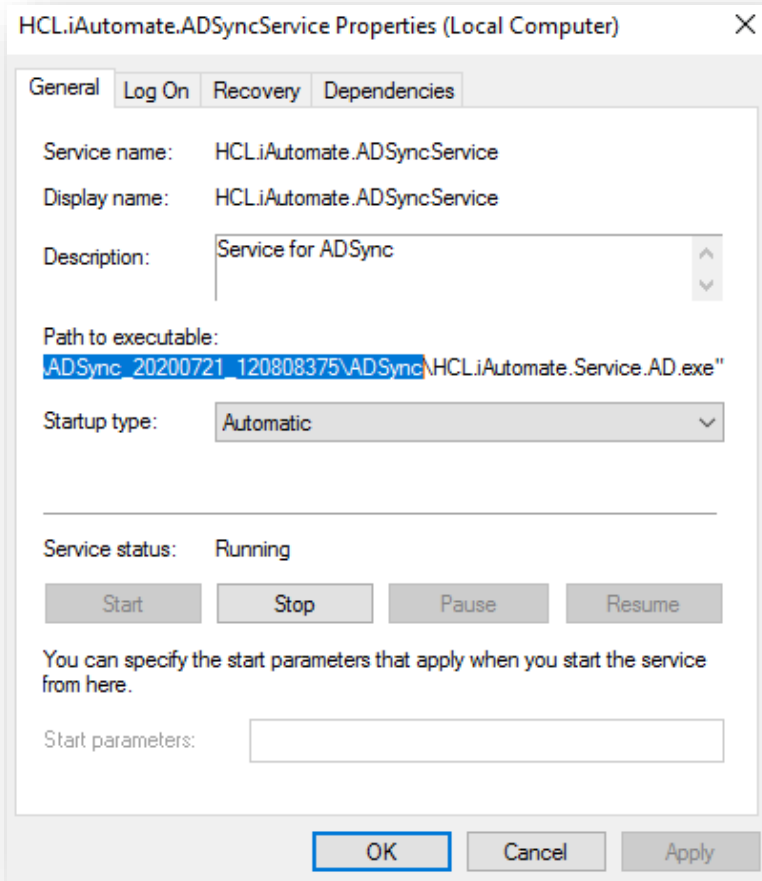


Figure 183 - Certificate Name Change – AD Sync Service (cont.)

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.

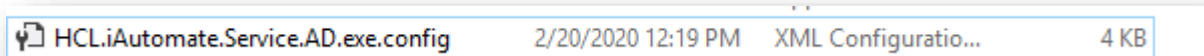


Figure 184 - Certificate Name Change – AD Sync Service (cont.)

8. Within the **HCL.iAutomate.Service.AD.exe** config file, find the key '**CertificateName\_KRS**' and change its value with the new **Certificate Name**.

```
<add key="CertificateName_KRS" value="HclTech.iautomate.Web" />
```

Figure 185 - Certificate Name Change – AD Sync Service (cont.)

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

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

Figure 186 - Certificate Name Change – AD Sync Service (cont.)

10. Save the file for changes to be reflected.

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

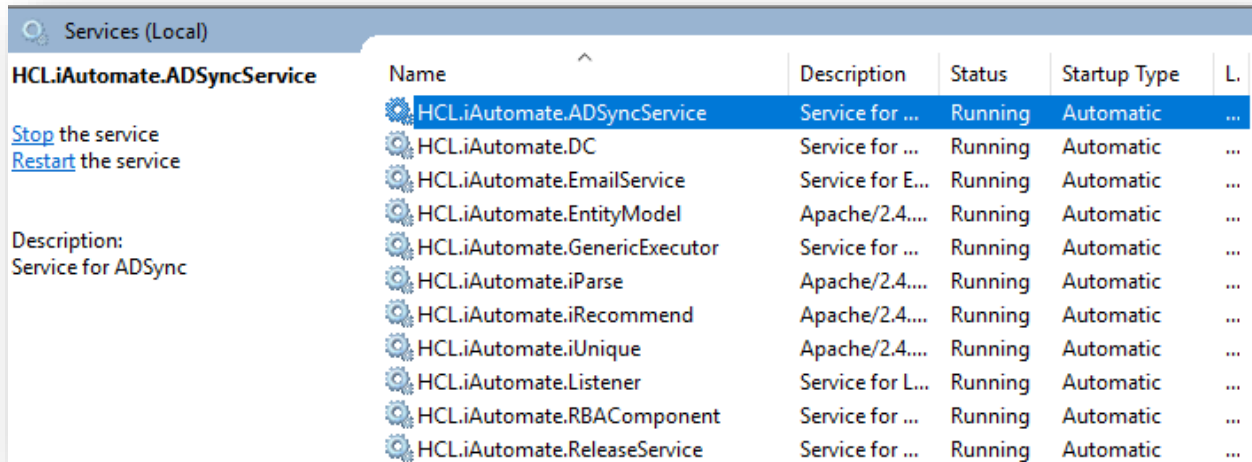


Figure 187 - Certificate Name Change – AD Sync Service (cont.)

### 3.5.2.1.2.7 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**.

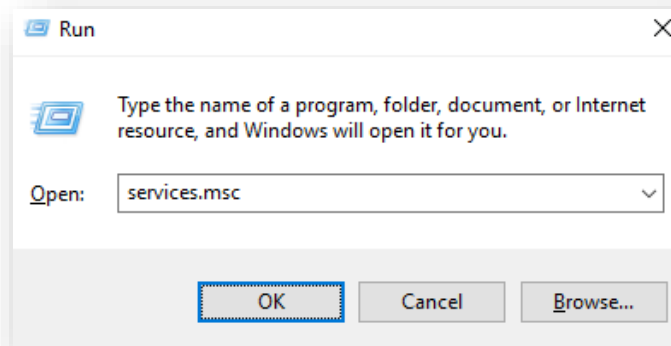


Figure 188 - Certificate Name Change – Email Service

2. Click OK to open Windows Services.

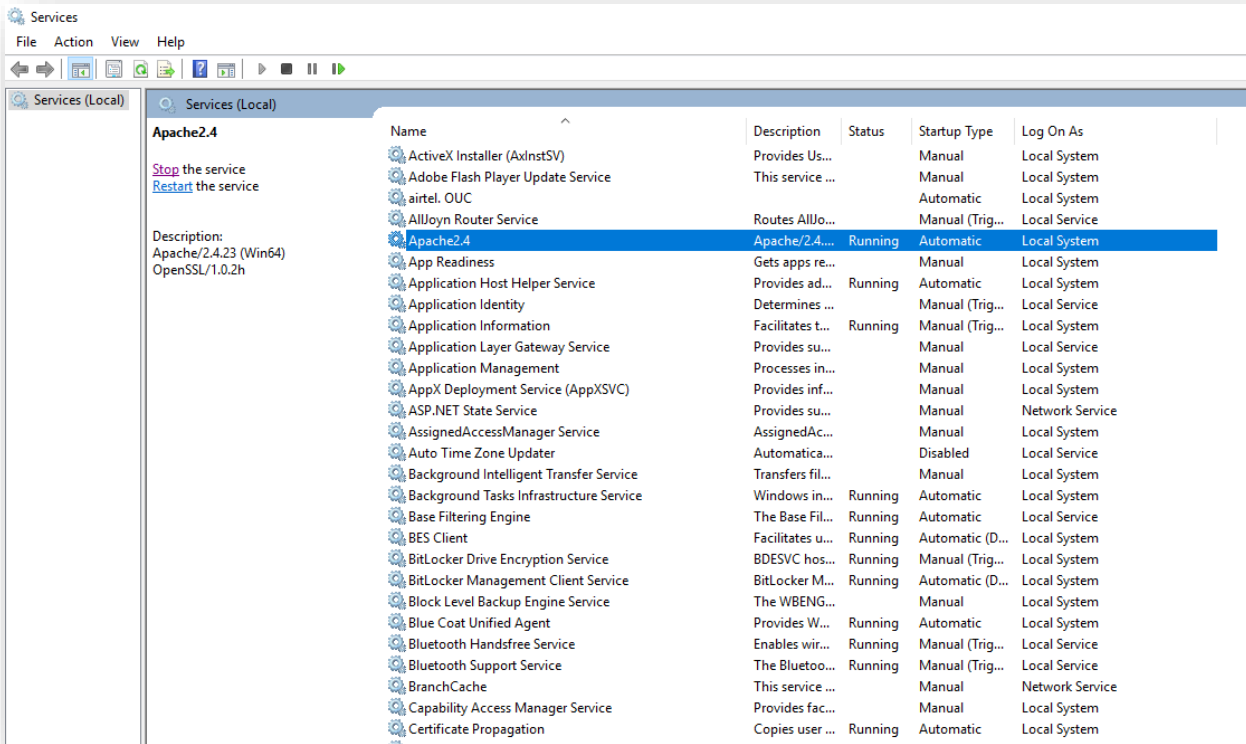


Figure 189 - Certificate Name Change – Email Service (cont.)

3. Search for **HCL.iAutomate.EmailService** and right-click on it.
4. Click Properties.

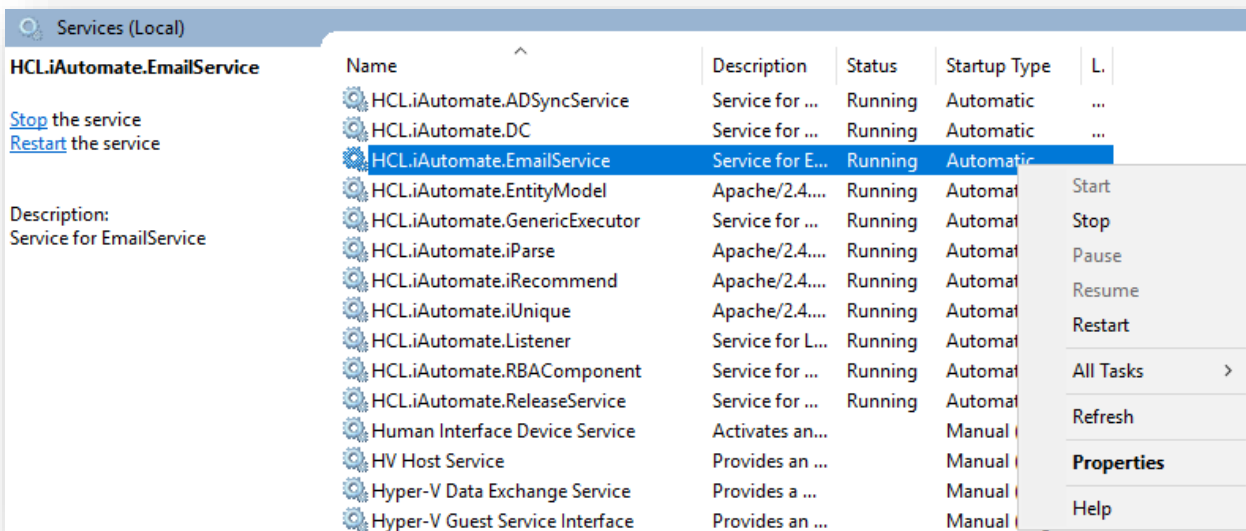


Figure 190 - Certificate Name Change – Email Service (cont.)

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

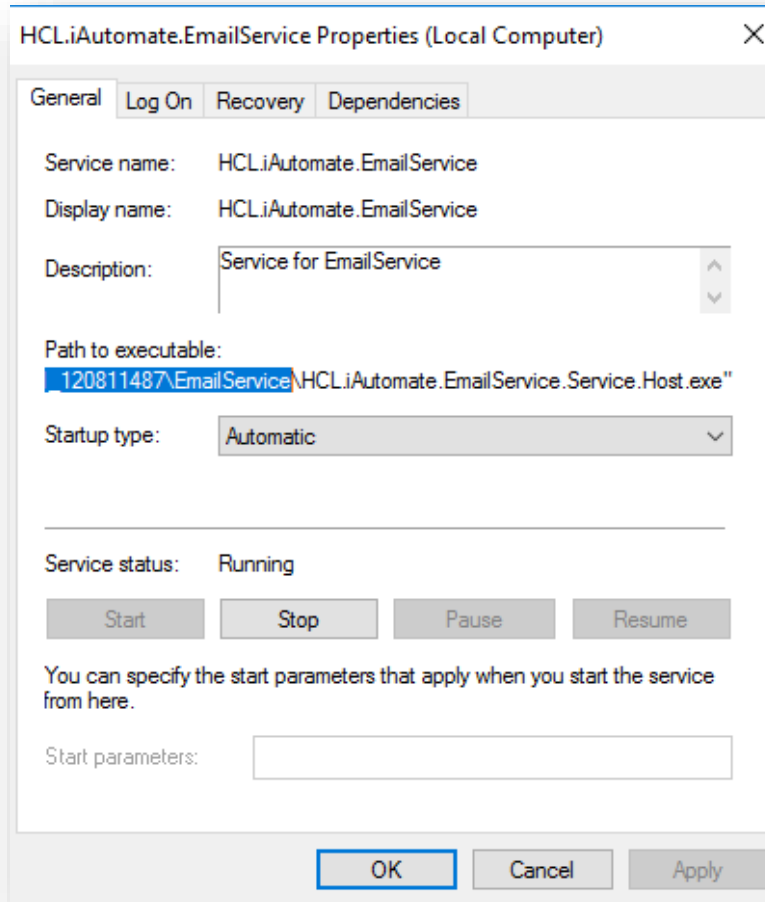


Figure 191 - Certificate Name Change – Email Service (cont.)

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



Figure 192 - Certificate Name Change – Email Service (cont.)

8. Within the **HCL.iAutomate.EmailService.Service.Host.exe** config file, find the key '**CertificateName\_KRS**' and change its value with the new Certificate Name.

```
<add key="CertificateName_KRS" value="HclTech.iAutomate.Web" />
```

Figure 193 - Certificate Name Change – AD Sync Service (cont.)

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

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

Figure 194 - Certificate Name Change – Email Service (cont.)

10. Save the file for changes to be reflected.
11. Select **HCL.iAutomate.EmailService** service and click Restart to restart the service.

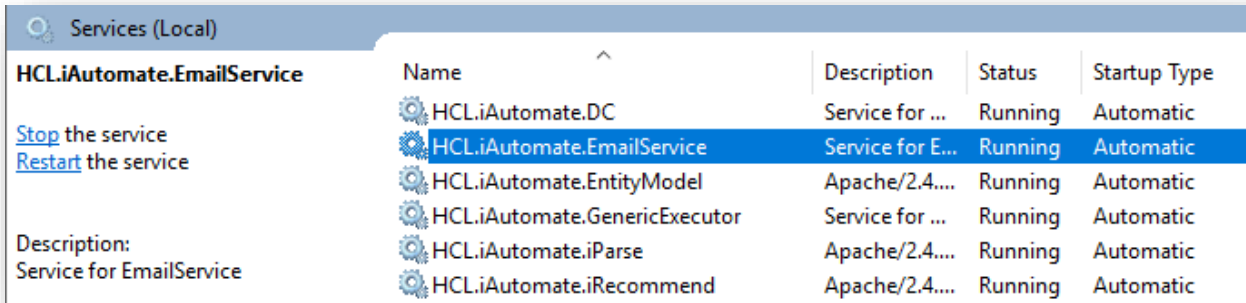


Figure 195 – Certificate Name Change – Email Service (cont.)

### 3.5.2.1.2.8iRecommend

To make changes for iRecommend service, please follow the below steps:

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

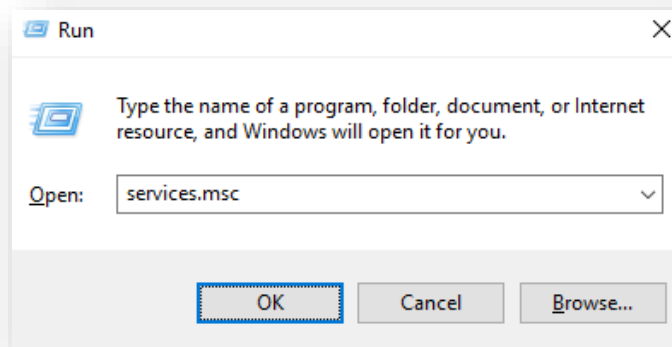


Figure 196 - Certificate Name Change – iRecommend

2. Click OK to open Windows Services.

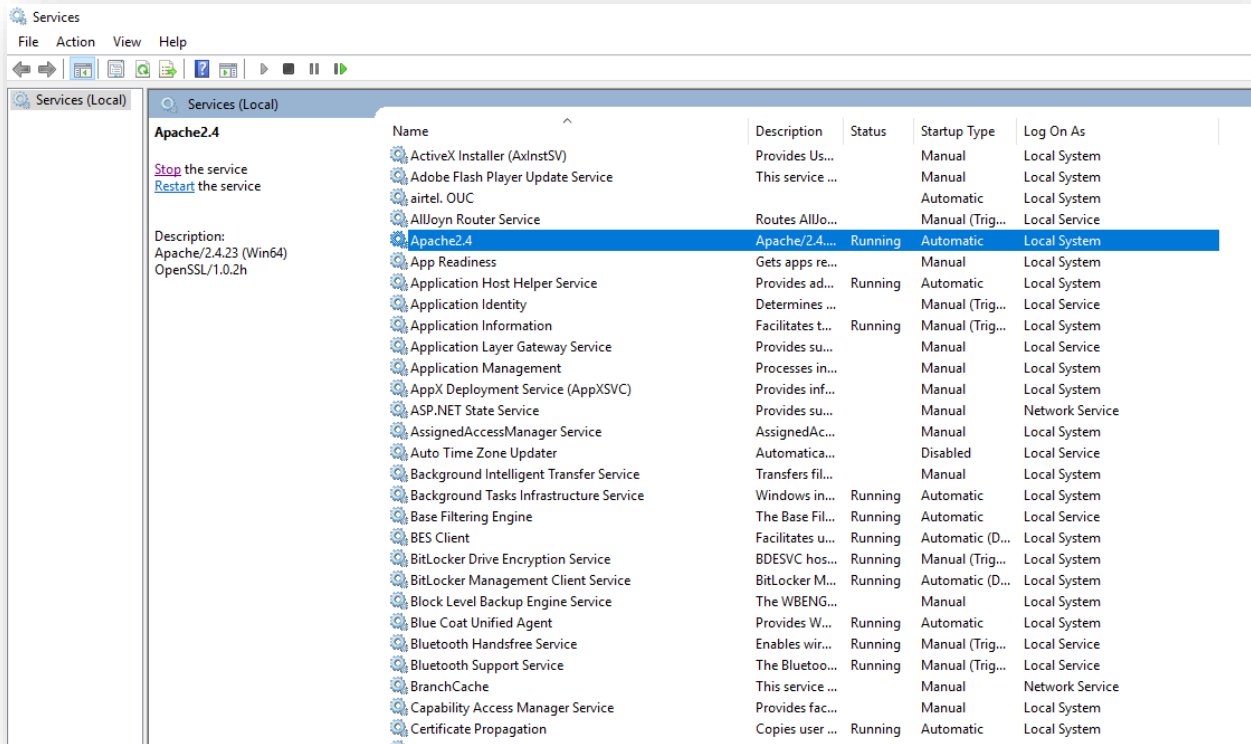


Figure 197 - Certificate Name Change – iRecommend (Cont.)

3. Search for **HCL.iAutomate.Listener** service and right-click on it.
4. Click on **Properties**.



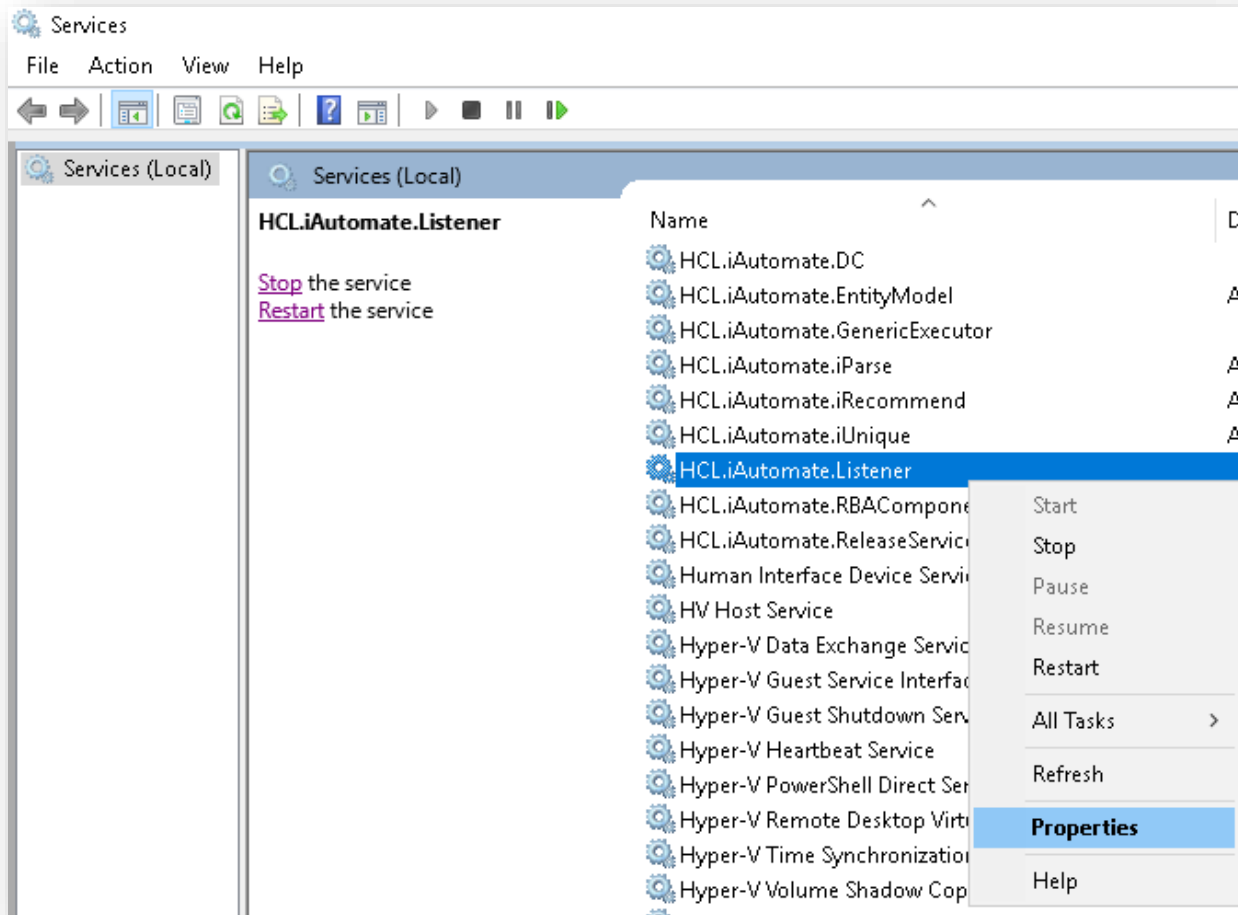


Figure 198 - Certificate Name Change – iRecommend (Cont.)

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

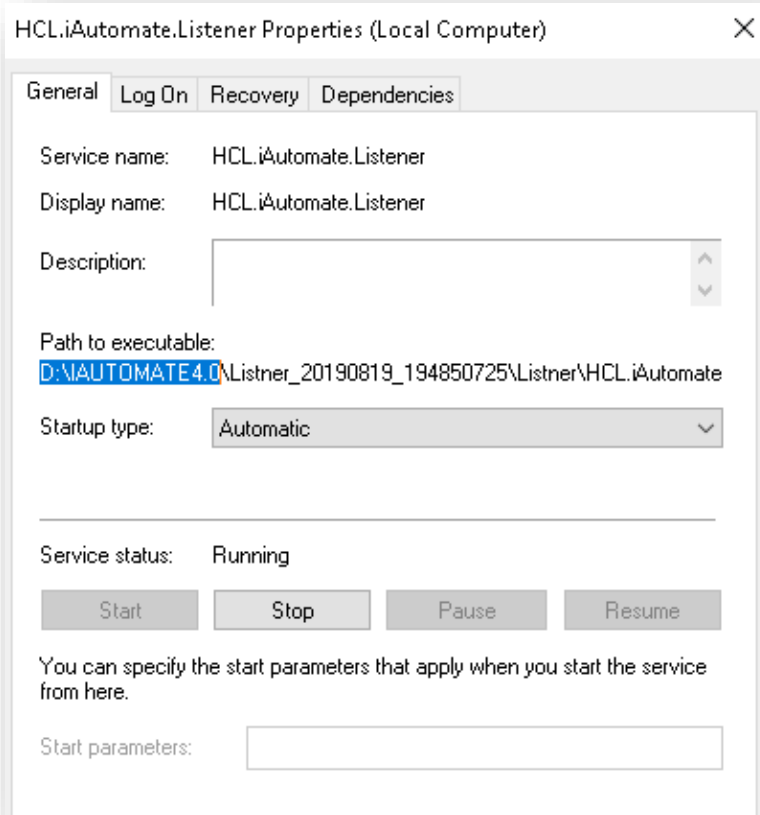


Figure 199 - Certificate Name Change – iRecommend (Cont.)

6. Open **File Explorer** and paste the **copied path** and press **Enter** to open the desired folder.
7. Go to **iRecommend** folder. Locate **irecommend.config** file.
8. Open **irecommend.config** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 200 - Certificate Name Change – iRecommend (Cont.)

9. Change **Certificate\_Name** and the value from **HclTech.iautomate.Web** to the new Certificate name.
10. Save the file to implement the changes.
11. Go to **iRecommend** → **config** folder.
12. Locate **entity.config** file.
13. Open **entity.config** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 201 - Certificate Name Change – iRecommend (Cont.)

14. Change **Certificate\_Name** and the value from **HclTech.iautomate.Web** to the new Certificate name.
15. Save the file for changes to get reflected.

### 3.5.2.1.2.9iParse

To make changes for iParse service, please follow the below steps:

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

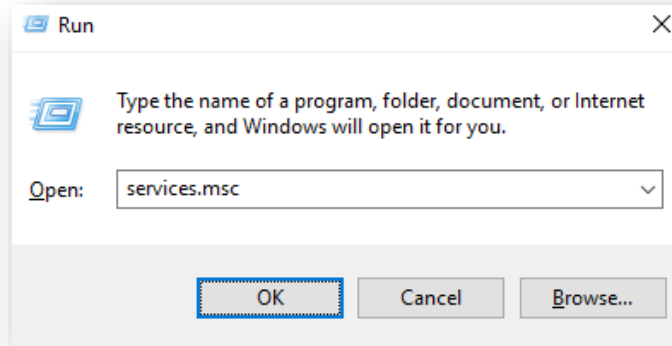


Figure 202 - Certificate Name Change – iParse

2. Click OK to open Windows Services.

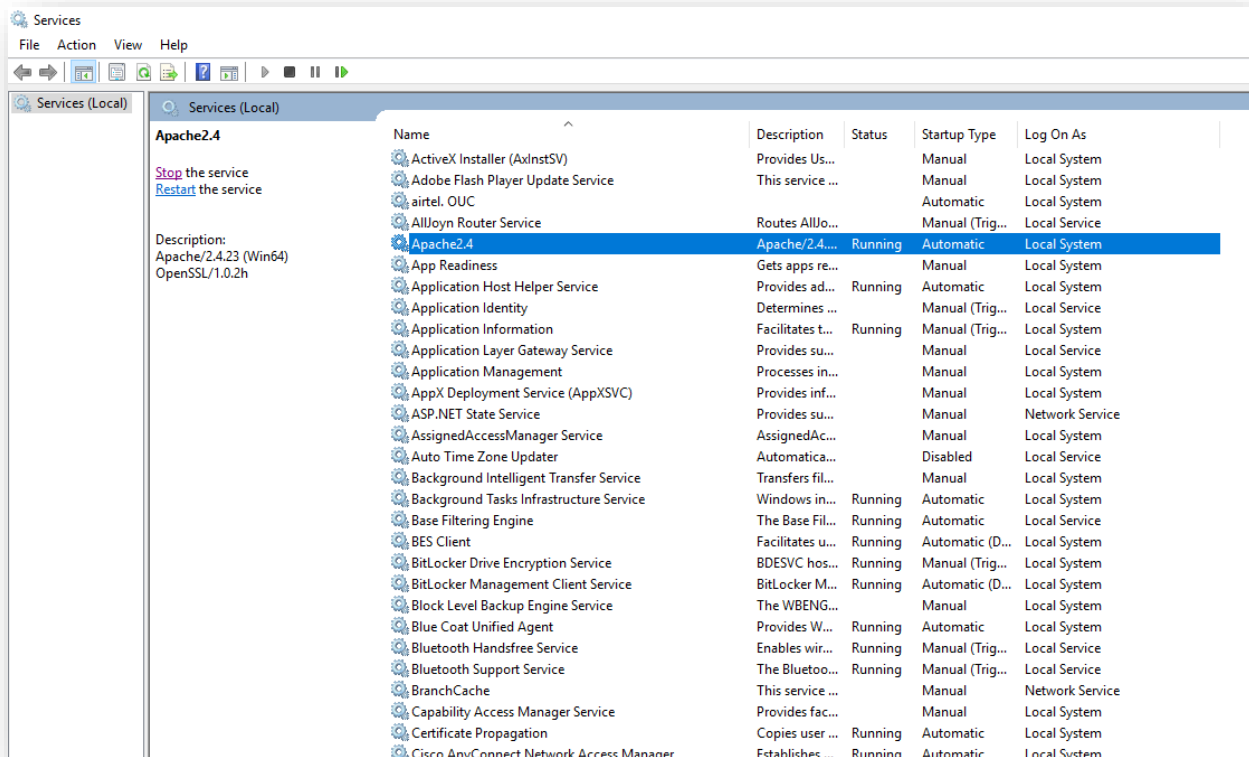


Figure 203 - Certificate Name Change – iParse (Cont.)

3. Search for **HCL.iAutomate.Listener** service and right-click on it.
4. Click on **Properties**.

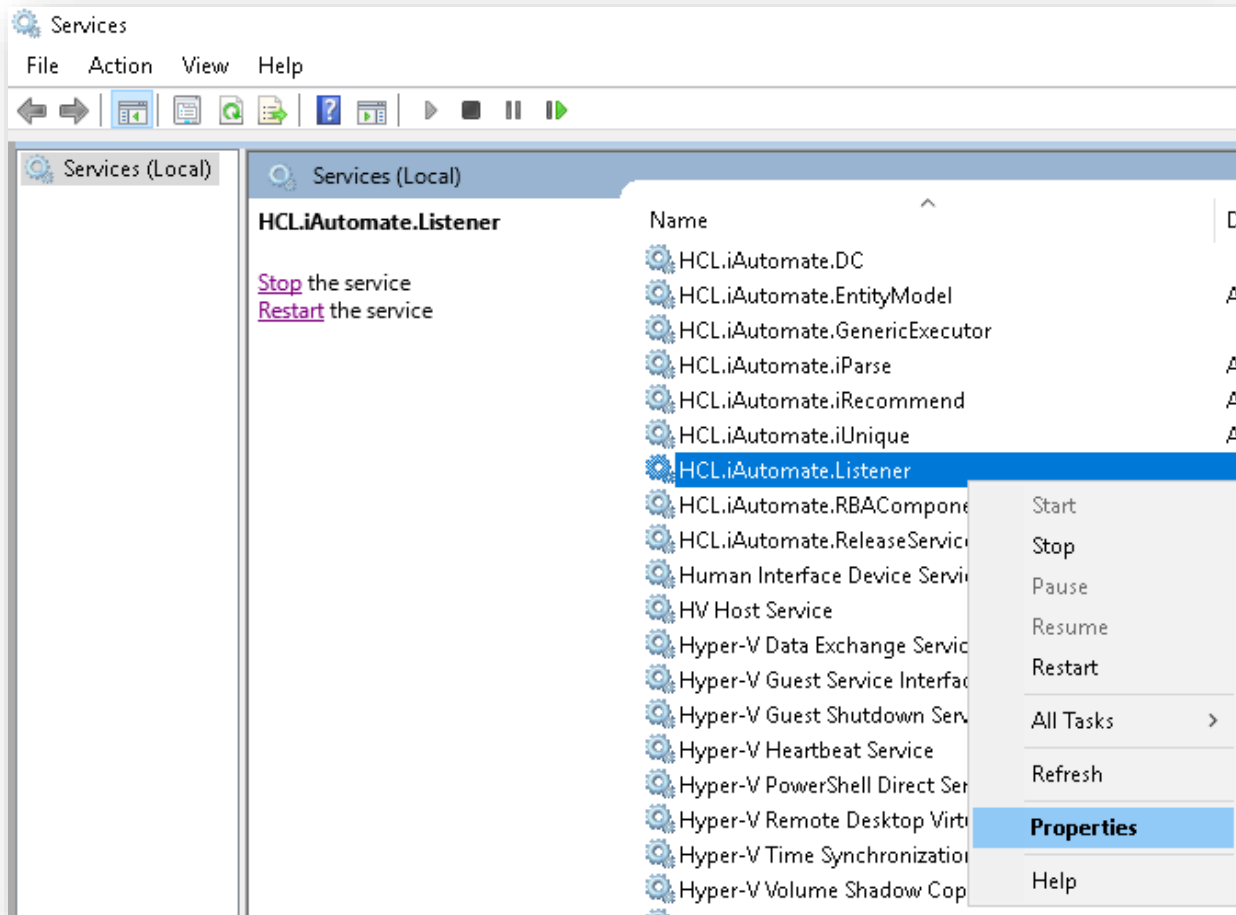


Figure 204 - Certificate Name Change – iParse (Cont.)

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

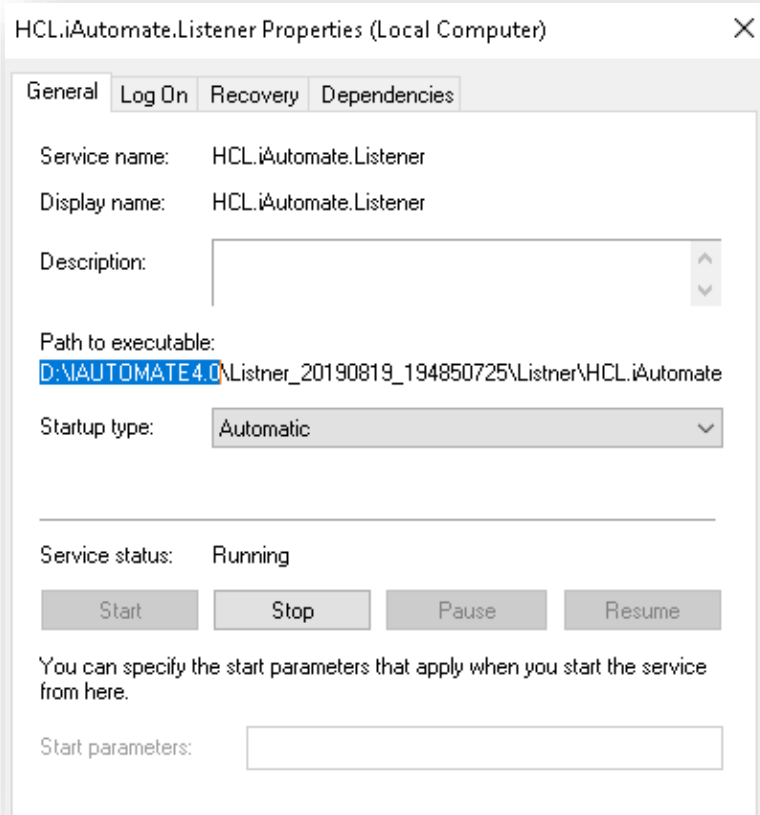


Figure 205 - Certificate Name Change – iParse (Cont.)

6. Open **File Explorer** and paste the **copied path** and press **Enter** to open the desired folder.
7. Go to **\iParse\iParse\iparse\config** folder.
8. Locate **parse\_config.config** file.
9. Open **parse\_config.config** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 206 - Certificate Name Change – iParse (Cont.)

10. Change **Certificate\_Name** and the value from **HclTech.iautomate.Web** to the new Certificate name.
11. Save the file to implement the changes.

### 3.5.2.1.2.10iScrape

To make changes for iScrape service, please follow the below steps:

1. Go to the folder where user has installed knowledge components.
2. Go to **\iScript\iScript\iScript\config** folder.
3. Locate **iScrape.cfg** file.
4. Open **iScrape.cfg** in a Notepad and search for below line.

**Certificate\_Name = HclTech.iautomate.Web**

Figure 207 - Certificate Name Change – iScrape

5. Change **Certificate\_Name** and **value** from **HclTech.iautomate.Web** to the new Certificate name.
6. Save the file to implement the changes.

### 3.5.2.1.2.11iUnique

To make changes for iUnique service, please follow the below steps:

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

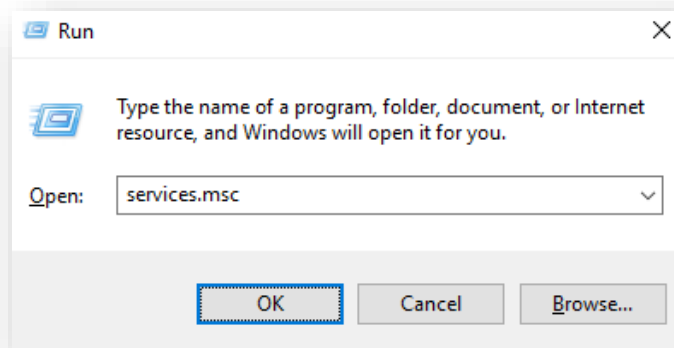


Figure 208 - Certificate Name Change – iUnique

2. Click OK to open Windows Services.

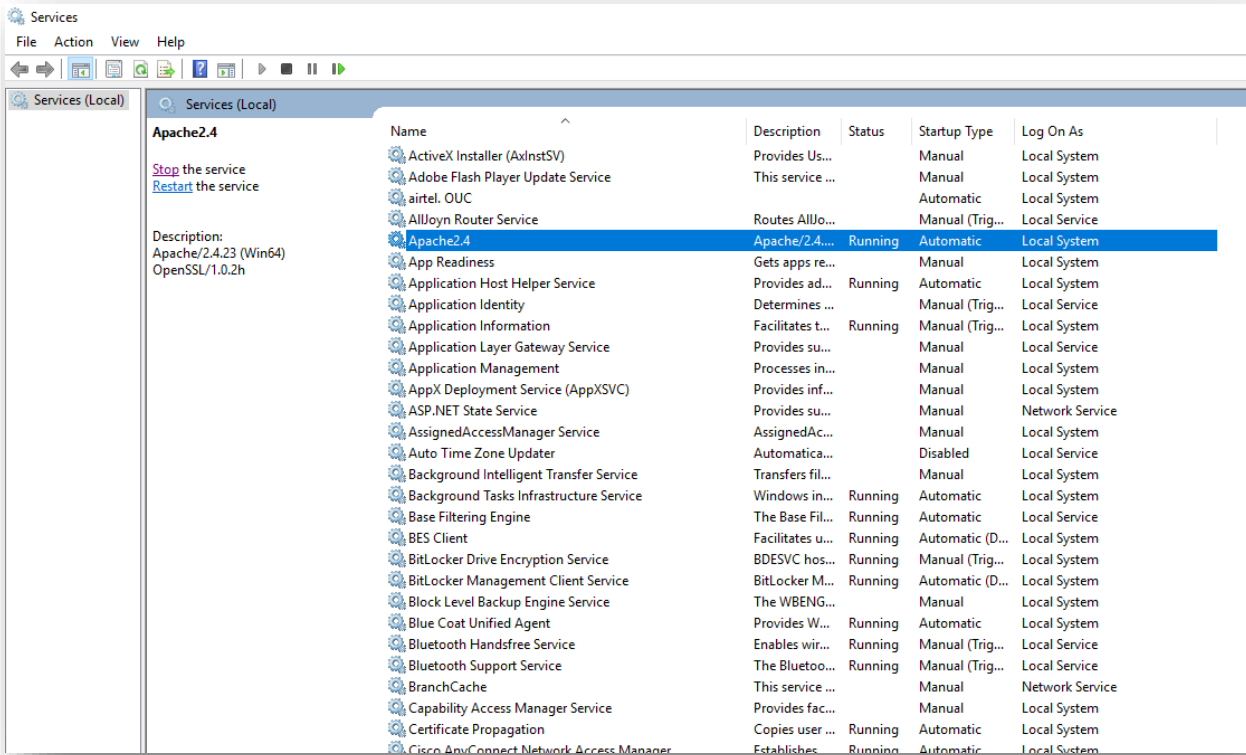


Figure 209 - Certificate Name Change – iUnique

3. Search for **HCL.iAutomate.Listener** service and right-click on it.
4. Click on **Properties**.

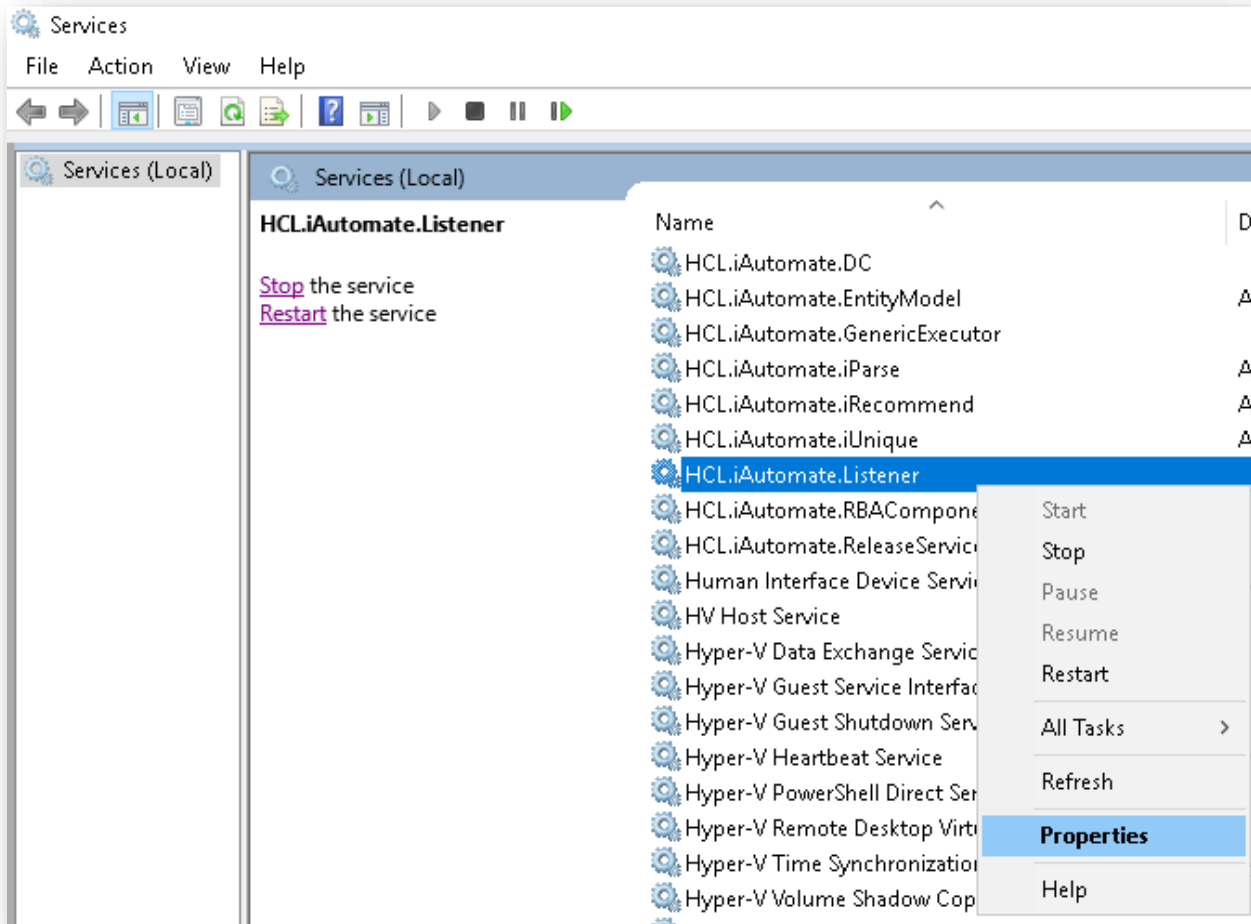


Figure 210 - Certificate Name Change – iUnique

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



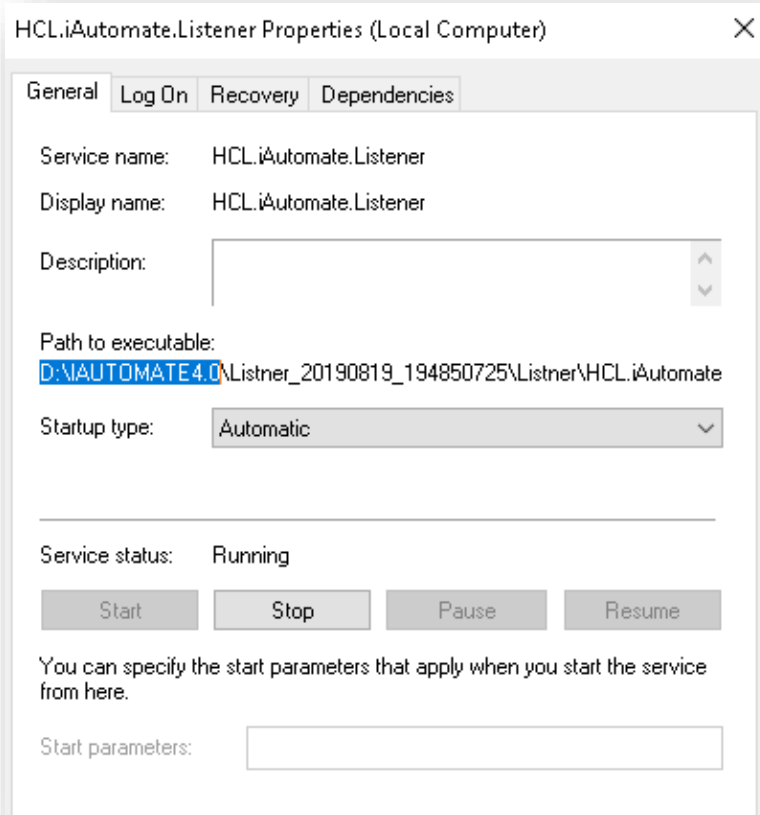


Figure 211 - Certificate Name Change – iUnique

6. Open **File Explorer**, then paste the copied path and press Enter to open the desired folder.
7. Go to \iUnique\iUnique\iUnique\_final\config folder.
8. Locate iUnique.cfg file.
9. Open **iUnique.cfg** in Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 212 - Certificate Name Change – iUnique

10. Change **Certificate\_Name** and the value from **HclTech.iAutomate.Web** to the new Certificate Name.
11. **Save** the file to implement the changes.

### 3.5.2.1.2.12 Knowledge

To make changes for Knowledge service, please follow the below steps:

1. Go to the folder where user has installed knowledge components.
2. Go to \KnowledgeRating\KnowledgeRating\iKnowledge\_Rating folder.
3. Locate **rating.cfg** file.

4. Open **rating.cfg** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 213 - Certificate Name Change – Knowledge

5. Change **Certificate\_Name** and the value from **HclTech.iautomate.web** to the new Certificate name.
6. **Save** the file for changes to get reflected.
7. Go to the folder where user has installed knowledge components.
8. Go to \AdvanceKnowledge\Crawler\crawler\_v5\config folder. Locate icrawler.cfg file.
9. Open **indexer.cfg** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 214 - Certificate Name Change – Knowledge (Cont.)

10. Change Certificate\_Name and their value from **HclTech.iautomate.web** to the new Certificate name.
11. **Save** the file for changes to get reflected.
12. Go to the folder where user has installed knowledge components.
13. Go to \AdvanceKnowledge\iKnowledge\_Indexer folder. Locate indexer.cfg file.
14. Open **indexer.cfg** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 215 - Certificate Name Change – Knowledge (Cont.)

15. Change Certificate\_Name and their value from **HclTech.iautomate.Web** to the new Certificate name.
16. **Save** the file for changes to get reflected.
17. Go to the folder where user has installed knowledge components.
18. Go to AdvanceKnowledge\iKnowledge\_Screen folder.
19. Locate iKnowledge\_Screen.cfg file.
20. Open **iKnowledge\_Screen.cfg** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 216 - Certificate Name Change – Knowledge (Cont.)

21. Change Certificate\_Name and the value from **HclTech.iautomate.Web** to the new Certificate name.
22. **Save** the file for changes to get reflected.
23. Go to the folder where user has installed knowledge components.
24. Go to \AdvanceKnowledge\iKnowledge\_Search folder.

25. Locate `iKnowledge_Search` file.
26. Open **iKnowledge\_Search** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 217 - Certificate Name Change – Knowledge (Cont.)

27. Change **Certificate\_Name** and the value from **HclTech.iautomate.Web** to the new Certificate name.
28. Save the file for changes to get reflected.
29. Go to the folder where user has installed knowledge components.
30. Go to `iKnowledge\iKnowledge\knowledge_v4` folder.
31. Locate `iKnowledge.cfg` file.
32. Open **iKnowledge.cfg** in a Notepad and search for below line.

```
Certificate_Name = HclTech.iautomate.Web
```

Figure 218 - Certificate Name Change – Knowledge (Cont.)

33. Change **Certificate\_Name** and the value from **HclTech.iautomate.Web** to the new Certificate name.
34. **Save** the file to implement the changes.

### 3.5.2.2 CHANGE NAME OF CERTIFICATE USED TO CONNECT SERVICES

This section describes configuration changes required for the components in case ssl certificate is other than **HclTech.iautomate.App**.

Follow all steps mentioned in section “change name of certificate used to connect KRS” with below changes:

Search for key “CertificateName\_Service” instead ‘CertificateName\_KRS’.

Search for key ‘IsSelfSigned\_Service’ instead ‘IsSelfSigned\_KRS’.

For below components:

Base User Interface, Listener, Data Collector, Generic Service, RBA Component, Release Service, Email Service, Ad Sync

For BASEUI and Listener follow below steps:

Search for “<dns value="HclTech.iautomate.App" />” in `web.config` and change with New Certificate.

### 3.5.3 Configuration Changes – Certificate Name Change for PEM/CRT/KEY Certificates

If the Certificate that is used for connecting the REST API hosted by Apache gets changed (PEM/CRT/KEY), user needs to change some parameters (params) in the **httpd.conf** file in apache directory: **/Apache24/conf/httpd.conf**.

The parameters define the path of the certificates that are used along with certificate names.

For instance, suppose the certificate changes from **server.crt** to **server1.crt** then, by default, they are set to default location as **“C:/Program Files/certificate/server.crt”**, which needs to be changed to new file name of certificates as **“C:/Program Files/certificate/server1.crt”**.

```

SSLCertificateFile "C:/Program Files/certificate/server.crt"
SSLCertificateKeyFile "C:/Program Files/certificate/server.key"
SSLCACertificateFile "C:/Program Files/certificate/ca.pem"
SSLVerifyClient require
SSLVerifyDepth 10
    
```

Figure 219 - Certificate Name Change (PEM / CRT / Key Certificate)

### 3.5.4 Load Balancer Configuration

This section describes the steps for making the required configurational changes if, BigFix Runbook AI is installed in *High Availability* mode.

To make the configuration changes, please follow the below steps:

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

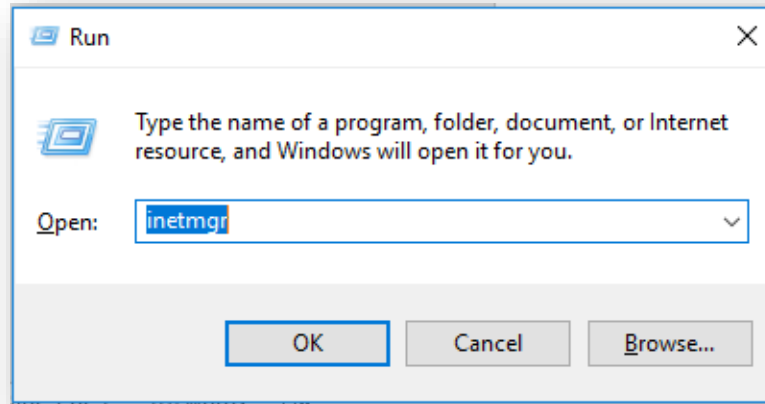


Figure 220 - Load Balancer Configuration

3. Expand Sites under Connections and click HCLiAutomateBaseUI.

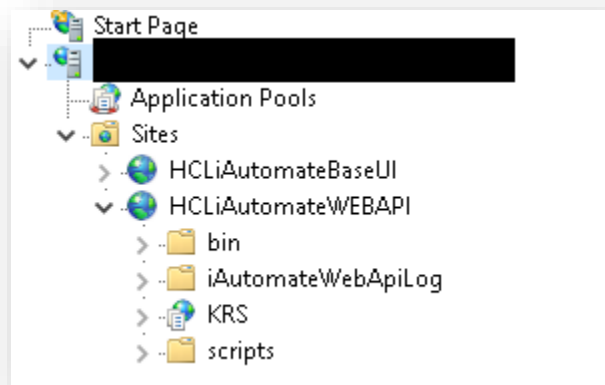


Figure 221 - Load Balancer Configuration (cont.)

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

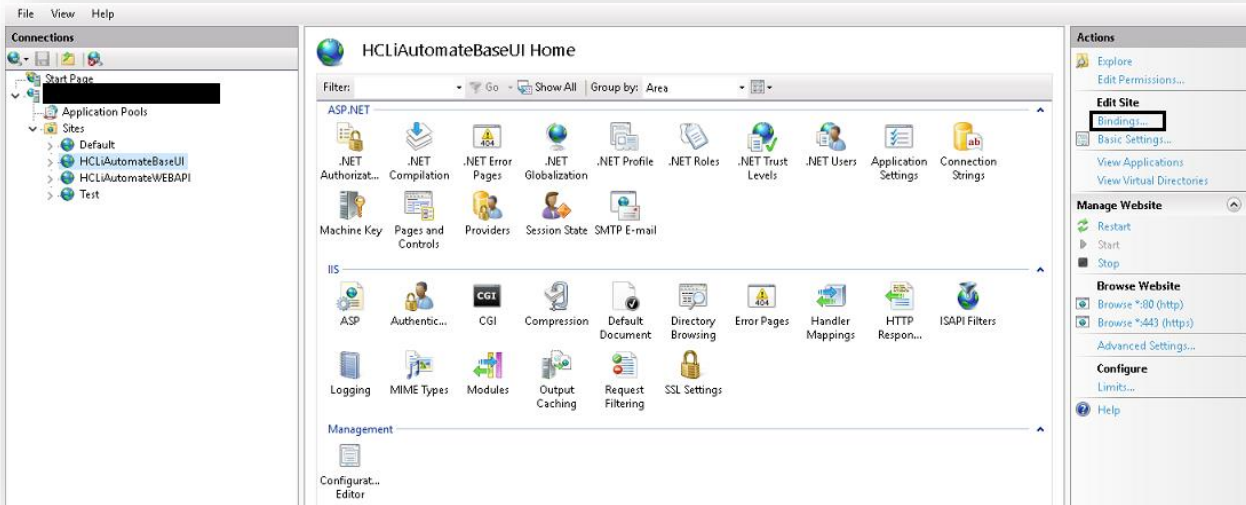


Figure 222 - Load Balancer Configuration (cont.)

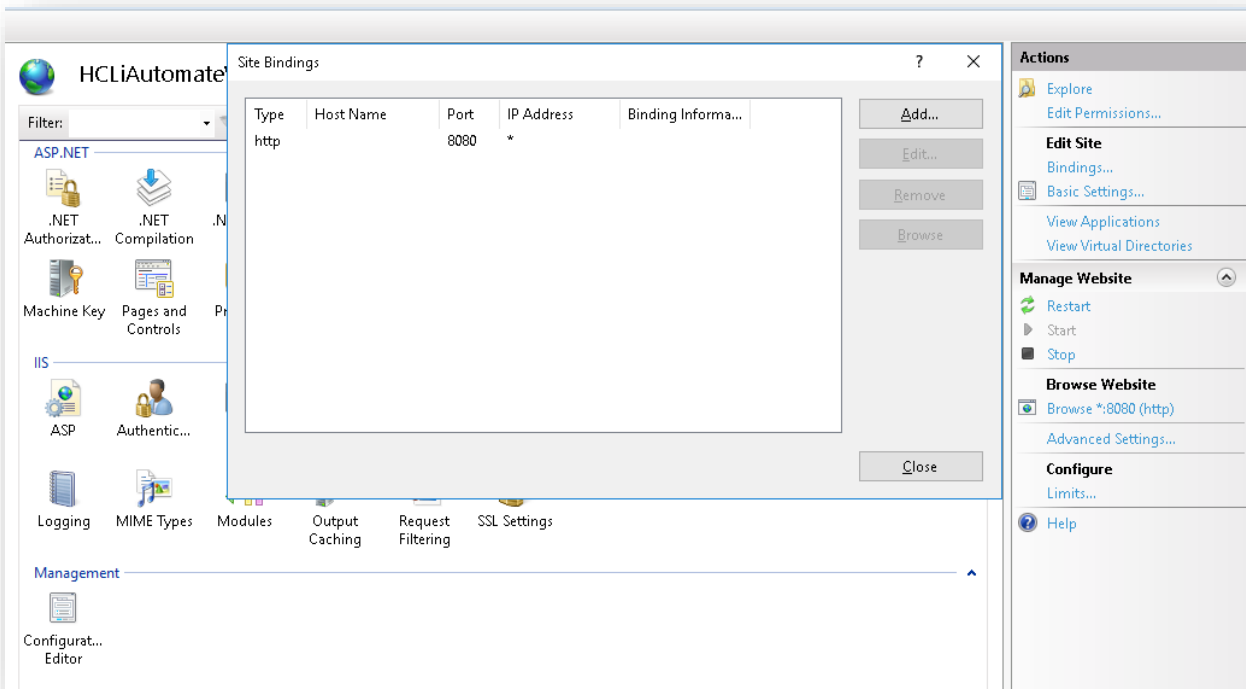


Figure 223 - Load Balancer Configuration (cont.)

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 on **HCLiAutomateBaseUI** and click **Explore**.
7. Find **Web.config** file and open it in a Notepad.



Figure 224 - 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 225 - Load Balancer Configuration (cont.)

9. Save the file to implement the changes.
10. Select the service and click **Restart** to restart the services.
11. Expand Sites in Connections section and click HCLiAutomateWEBAPI.

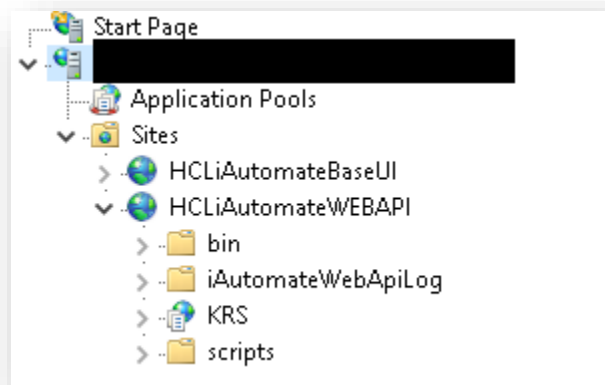


Figure 226 - Load Balancer Configuration (cont.)

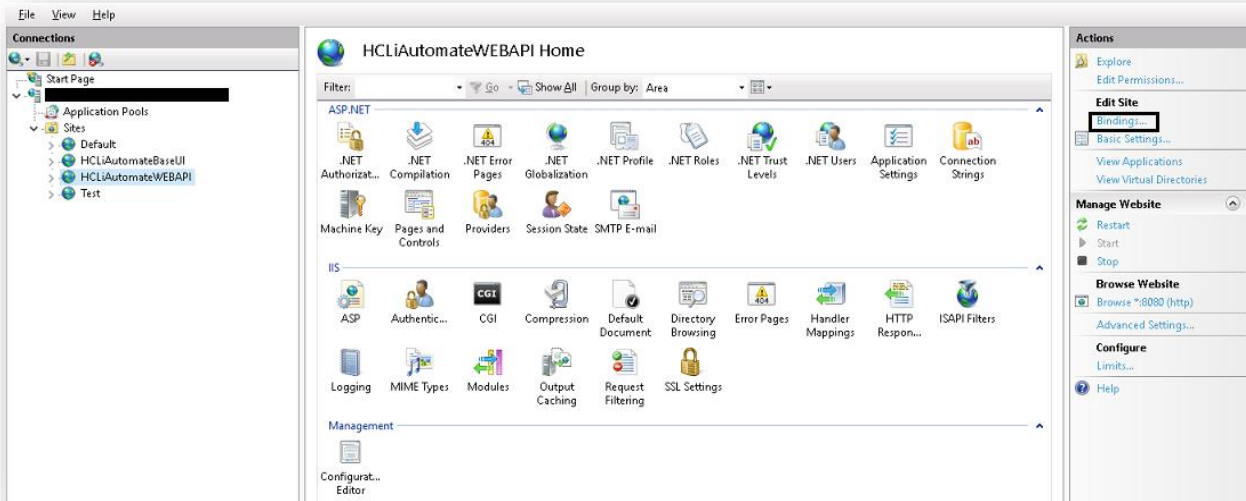


Figure 227 - Load Balancer Configuration (cont.)

12. Right-click on **HCLiAutomateWEBAPI** and click **Explore**.
13. Find **Web.config** file and open it in a Notepad.

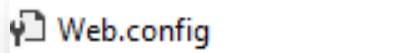


Figure 228 - Load Balancer Configuration (cont.)

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 229 - Load Balancer Configuration (cont.)

15. Save the file to implement the changes.
16. Select the service and click **Restart** to restart the services.
17. Press **Win+R** and type **services.msc**.



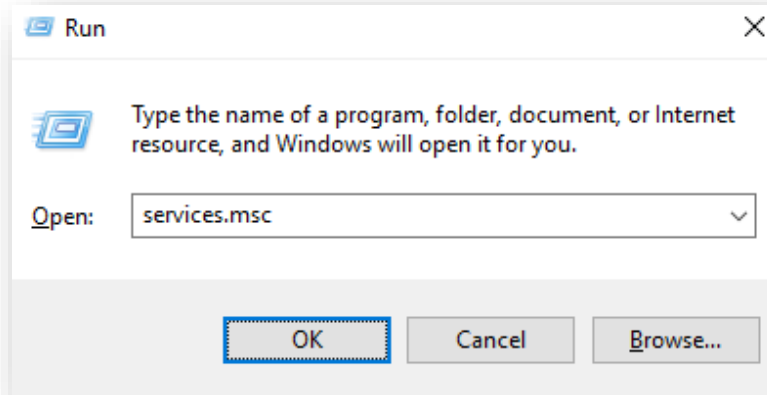


Figure 230 - Load Balancer Configuration (cont.)

18. Click OK to open Windows Services.

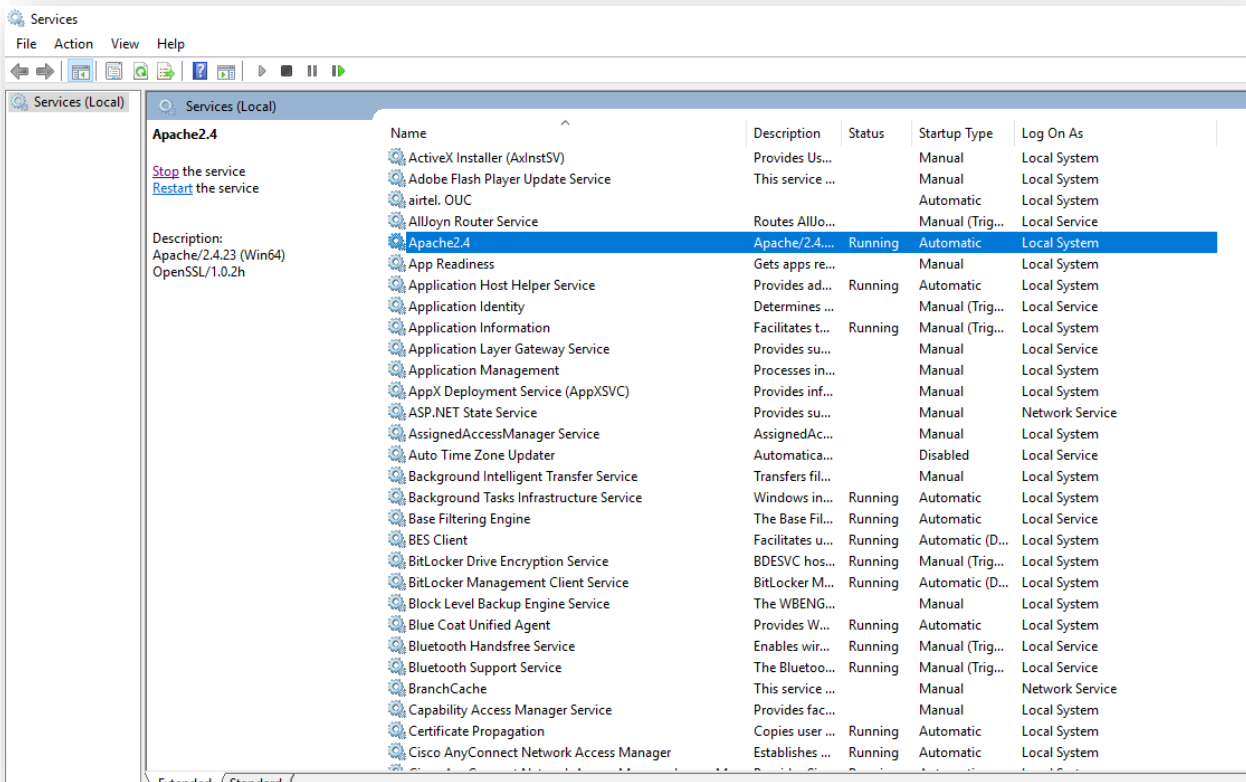


Figure 231 - Load Balancer Configuration (cont.)

- 19. Search for **HCL.iAutomate.Listener** service and right-click on it.
- 20. Click Properties.

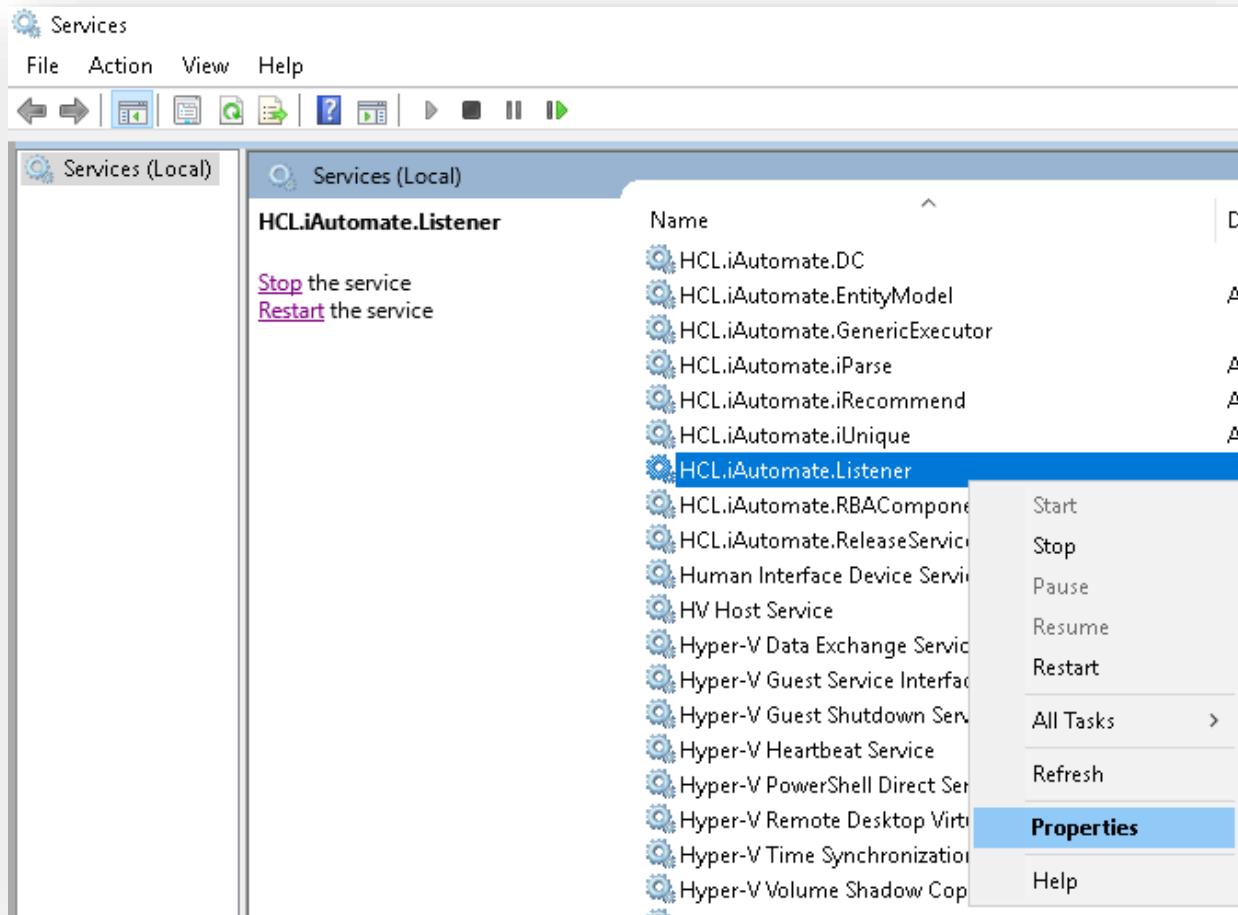


Figure 232 - Load Balancer Configuration (cont.)

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

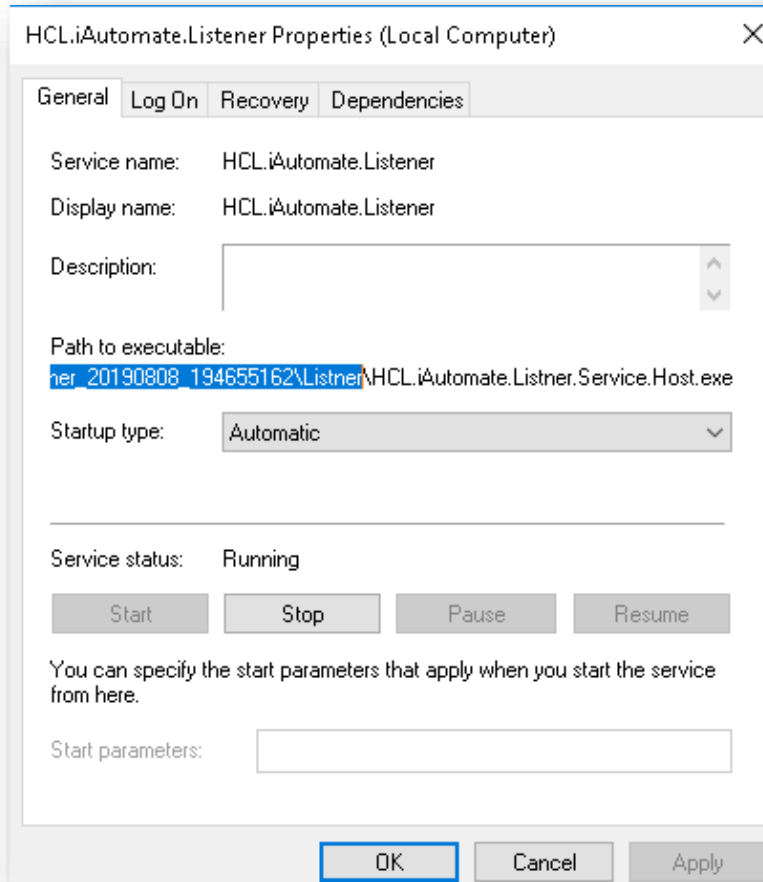


Figure 233 - Load Balancer Configuration (cont.)

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



Figure 234 - Load Balancer Configuration (cont.)

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

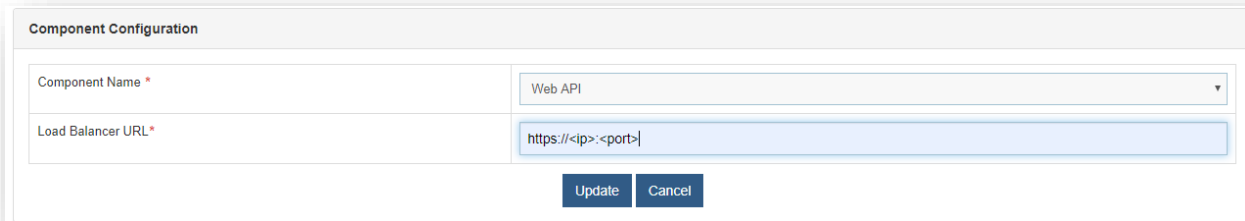
```
<add key="URL" value="http://localhost:8080" />
```

Figure 235 - Load Balancer Configuration (cont.)

25. Save the file to implement the changes.
26. Select the service and click **Restart** to restart the services.

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

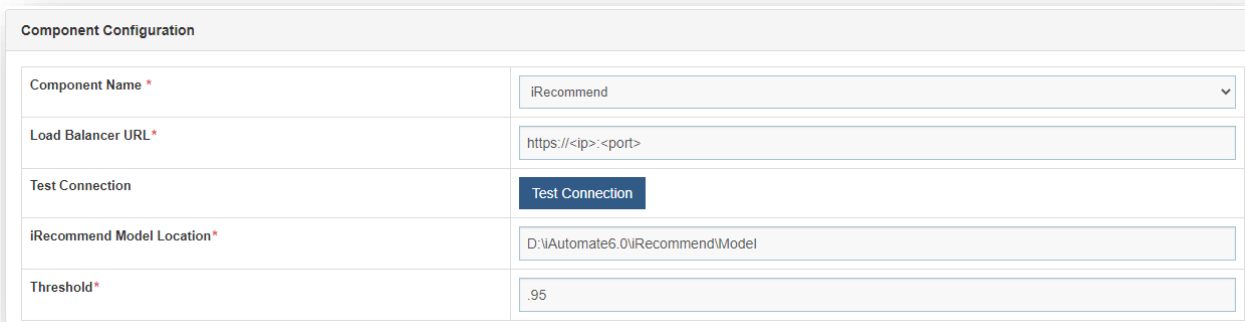
27. Login to BigFix Runbook AI using the **Super Admin** credentials.
28. Roll-over Environment and click BigFix Runbook AI Configuration.
29. Select **Component Name** as **'Web API'**. Change the **Load Balancer URL** to the Load Balancer IP.



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

Figure 236 - Load Balancer Configuration (cont.)

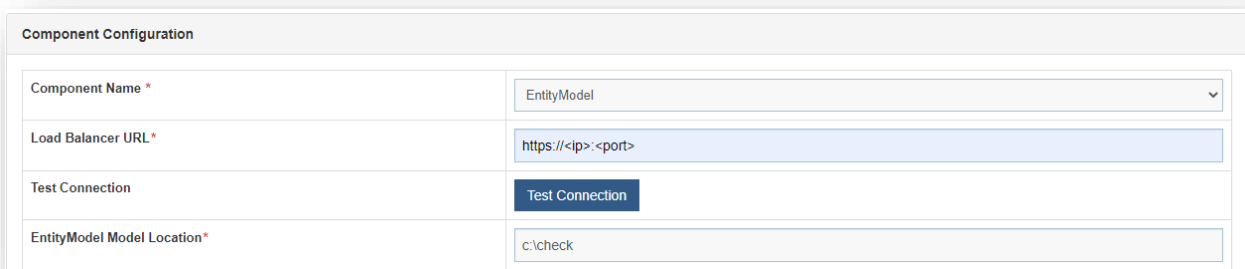
30. Click **Update** to save the changes.
31. Above step must be repeated for all the components. Additionally, for the **Component Name** **'iRecommend'**, provide the path of the shared drive location in the **'iRecommend Model Location'** field.



The screenshot shows a 'Component Configuration' dialog box for the 'iRecommend' component. It includes fields for 'Component Name \*' (dropdown set to 'iRecommend'), 'Load Balancer URL \*' (text input with 'https://<ip>:<port>'), 'Test Connection' (button), 'iRecommend Model Location \*' (text input with 'D:\Automate6.0\iRecommend\Model'), and 'Threshold \*' (text input with '.95').

Figure 237 - Load Balancer Configuration (cont.)

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

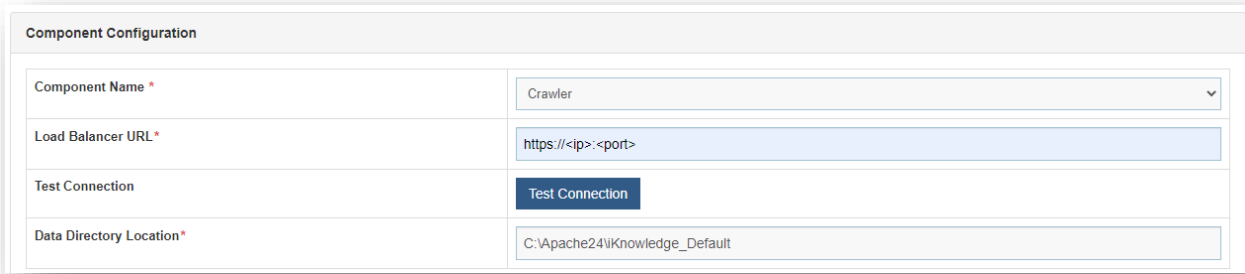


The screenshot shows a 'Component Configuration' dialog box for the 'EntityModel' component. It includes fields for 'Component Name \*' (dropdown set to 'EntityModel'), 'Load Balancer URL \*' (text input with 'https://<ip>:<port>'), 'Test Connection' (button), and 'EntityModel Model Location \*' (text input with 'c:\check').

Figure 238 - Load Balancer Configuration (cont.)

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

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



| Component Configuration   |  |
|---------------------------|--|
| Component Name *          | Crawler  |
| Load Balancer URL *       | https://<ip>:<port>                            |
| Test Connection           | <input type="button" value="Test Connection"/> |
| Data Directory Location * | C:\Apache24\Knowledge_Default                  |

Figure 239 - Load Balancer Configuration (cont.)

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

## 3.5.5 Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX)

This section describes the steps for making the required configurational changes to enable access to BigFix Runbook AI when PFX certificate is not available.

To make the configuration changes, please follow the below steps:

### 3.5.5.1 Without Certificate used to connect KRS

#### 3.5.5.1.1 WCF Services:

1. When no certificate is present in **Personal** and **Trusted** folder, following error will occur while loading the KRS wsdl ( <IP address:port>/KRS/KeyManagement.svc )

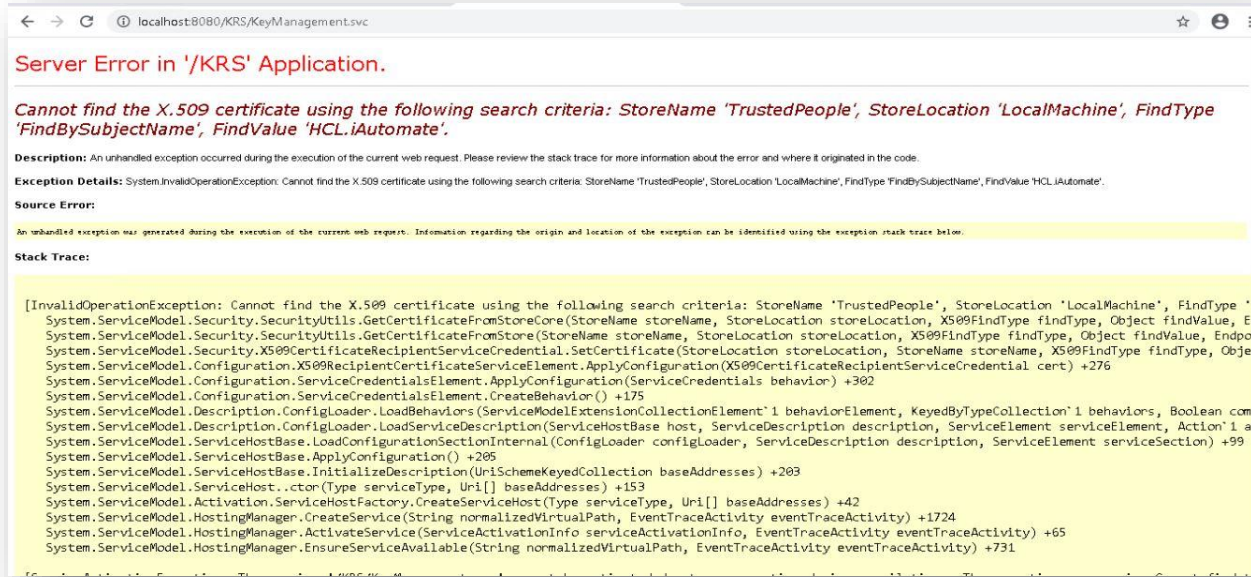


Figure 240 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX)

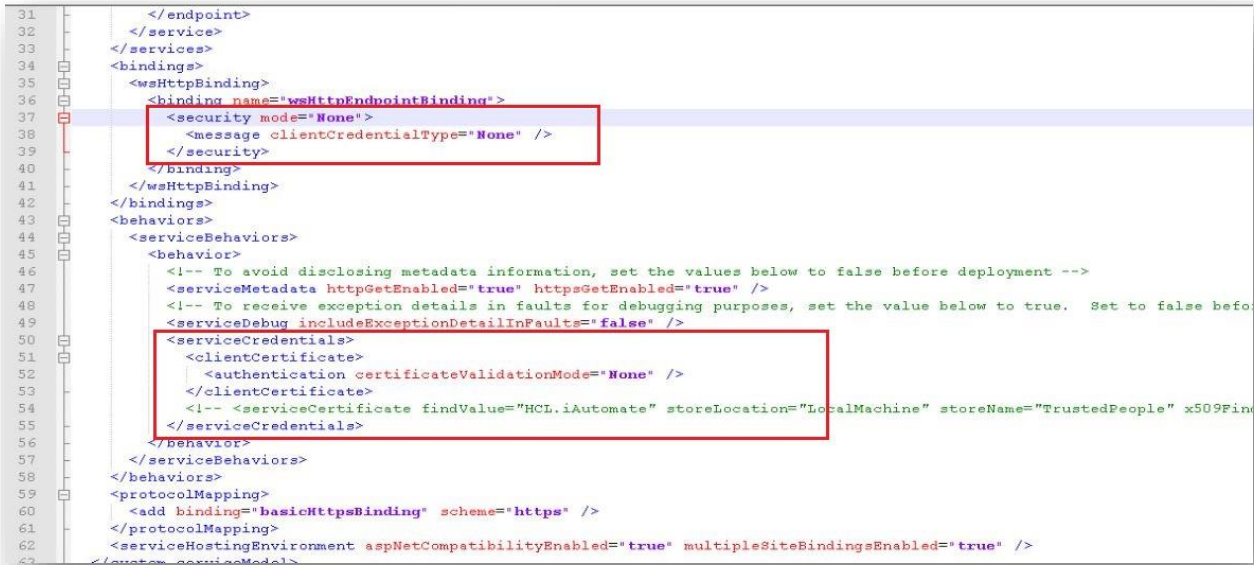
2. Go to <BigFix Runbook AI Installer path>.

| Name                             | Date modified     | Type        | Size |
|----------------------------------|-------------------|-------------|------|
| ADSync_20230410_213331           | 4/10/2023 9:33 PM | File folder |      |
| AdvanceKnowledge_20230410_213323 | 4/10/2023 9:36 PM | File folder |      |
| BaseUI_20230410_213308           | 6/1/2023 10:26 AM | File folder |      |
| DataCollection_20230410_213316   | 4/10/2023 9:33 PM | File folder |      |
| EmailService_20230410_213333     | 4/10/2023 9:33 PM | File folder |      |
| GenericService_20230410_213319   | 4/10/2023 9:33 PM | File folder |      |
| iKnowledge_20230410_213310       | 4/10/2023 9:33 PM | File folder |      |
| iParse_20230410_213304           | 4/10/2023 9:33 PM | File folder |      |
| iRecommend_20230410_213304       | 4/11/2023 3:53 PM | File folder |      |
| iScript_20230410_213304          | 4/10/2023 9:33 PM | File folder |      |
| iUnique_20230410_213304          | 4/10/2023 9:33 PM | File folder |      |
| KnowledgeRating_20230410_213304  | 4/10/2023 9:33 PM | File folder |      |
| KRS_20230410_213304              | 4/10/2023 9:33 PM | File folder |      |
| Listner_20230410_213329          | 4/10/2023 9:33 PM | File folder |      |
| Log_Baseui                       | 4/28/2023 3:53 PM | File folder |      |
| RBA_20230410_213325              | 4/10/2023 9:33 PM | File folder |      |
| ReleaseService_20230410_213328   | 4/10/2023 9:33 PM | File folder |      |
| WebAPI_20230410_213306           | 4/13/2023 2:59 PM | File folder |      |

Figure 241 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

3. Go to Path <BigFix Runbook AI Installer path>\KRS.

4. Open **Web.config** file.
5. Add mode="None" in <security> tag
6. Change **clientCredentialType="None"** in <serviceCredentials> tag.
7. Comment the <serviceCertificate> tag in <serviceCredentials>.



```

31     </endpoint>
32 </service>
33 </services>
34 <bindings>
35   <wsHttpBinding>
36     <binding_name="wsHttpEndpointBinding">
37       <security mode="None">
38         <message:clientCredentialType="None" />
39       </security>
40     </binding>
41   </wsHttpBinding>
42 </bindings>
43 <behaviors>
44   <serviceBehaviors>
45     <behavior>
46       <!-- To avoid disclosing metadata information, set the values below to false before deployment -->
47       <serviceMetadata httpGetEnabled="true" httpsGetEnabled="true" />
48       <!-- To receive exception details in faults for debugging purposes, set the value below to true. Set to false before deployment -->
49       <serviceDebug includeExceptionDetailInFaults="false" />
50     </behavior>
51     <serviceCredentials>
52       <clientCertificate>
53         <authentication:certificateValidationMode="None" />
54       </clientCertificate>
55       <!-- <serviceCertificate findValue="HCL.iAutomate" storeLocation="LocalMachine" storeName="TrustedPeople" x509FindBy="Name" /> -->
56     </serviceCredentials>
57   </serviceBehaviors>
58 </behaviors>
59 <protocolMapping>
60   <add binding="basicHttpsBinding" scheme="https" />
61 </protocolMapping>
62 <serviceHostingEnvironment aspNetCompatibilityEnabled="true" multipleSiteBindingsEnabled="true" />
63 </custom:serviceModel>
    
```

Figure 242 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

8. Go to Path < BigFix Runbook AI Installer path>\ WebAPI
9. Open **Web.config** file.
10. Set key “enableCertificate\_KRS” value to “N”.

```
<add key="enableCertificate_KRS" value="N" />
```

Figure 243 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

11. Go to Path < BigFix Runbook AI Installer path>\Listener...\Listener
12. Open HCL.iAutomate.Listener.Service.Host.exe config file.
13. Set “enableCertificate\_KRS” key to “N”

```
<add key="enableCertificate_KRS" value="N" />
```

Figure 244 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

14. Go to Path < BigFix Runbook AI Installer path>\BaseUI...\BaseUI
15. Open **Web.config** file.
16. Set “enableCertificate\_KRS” key to “N”.

```
<add key="enableCertificate_KRS" value="N" />
```

Figure 245 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

17. Go to Path < BigFix Runbook AI Installer path>\DataCollection...\DataCollection folder location
18. Open HCL.iAutomate.DataCollector.Service.Host.exe config file.
19. Set “enableCertificate\_KRS” key to “N”.

```
<add key="enableCertificate_KRS" value="N" />
```

Figure 246 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

20. Follow the last 3 mentioned steps to make the configurational changes required for **AD Sync, Email Service, Generic Service, RBA service and Release Service**

### 3.5.5.1.2 AI Services:

1. Go to Path < BigFix Runbook AI Installer path>\iRecommend...\
2. Open IRECOMMEND.CFG file.
3. Replace value of “enableCertificate” with “N”.

```

24 RANKING_MODEL_VERSION=1
25 RANKING_VOTES_TYPE=Average
26
27 [PROPERTIES]
28 SCORE_BOOSTING_THRESHOLD=0.5
29 RETRY_COUNT=5
30 SALT = 560A18CD-6346-4CF0-A2E8-671F9B6B9EA9
31 IsSelfSigned=y
32 enableCertificate=N
33 Certificate_Name=HCL.iAutomate
34 DetailLogging=True
35 PROPERTY_LOCATION=DB
36 RECOMMENDATION_MODEL_VERSION=1
37 ENTITY_MODEL_VERSION=1
38 ENTITY_MODEL_LOCATION=D:/Entity/Location
39
    
```

Figure 247 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX)

4. Open **entity.cfg** file in **entity** folder in same location and replace value of “enableCertificate” with “N”



```

5 DB_NAME = iAutomateDB
6 CONNECTION_TYPE = Windows
7
8 [MISC]
9 KEY=150
10 loggerState=1
11 SUCCESS_STATUS=0
12 FAIL_STATUS=1
13 KEY_SALT=560A18CD-6346-4CF0-A2E8-671F9B6B9EA9
14 Certificate_Name=HCL.iAutomate
15 IsSelfSigned=Y
16 enableCertificate=N
17 IsJobupdateError=Y
18
    
```

Figure 248 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX)

5. Go to Path < BigFix Runbook AI Installer path>\iParse...\iParse\iparse\config
6. Open Parse\_data.cfg file.
7. Replace value of “**enableCertificate**” with “**N**”

```

5 DB_NAME = iAutomateDB
6 CONNECTION_TYPE = Windows
7
8 [MISC]
9 KEY=150
10 loggerState=1
11 SUCCESS_STATUS=0
12 FAIL_STATUS=1
13 KEY_SALT=560A18CD-6346-4CF0-A2E8-671F9B6B9EA9
14 Certificate_Name=HCL.iAutomate
15 IsSelfSigned=Y
16 enableCertificate=N
17 IsJobupdateError=Y
18
    
```

Figure 249 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

8. Go to Path < BigFix Runbook AI Installer path>\iUnique...\iUnique\iUnique\_final\config
9. Open **iUnique.cfg** file.
10. Replace “**enableCertificate**” with “**N**”

```

21
22 [DATA_FROM_DB]
23 VALUE=True
24
25 [SIMILARITY]
26 S_VALUE=0.70
27
28 [MISC]
29 KEY=150
30 loggerState=1
31 KEY_SALT=560A18CD-6346-4CF0-A2E8-671F9B6B9EA9
32 Certificate_Name=HCL.iAutomate
33 IsSelfSigned=Y
34 enableCertificate=N
35
    
```

Figure 250 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

11. Go to < BigFix Runbook AI Installer path>\iScript...\iScript\iScript\config
12. Open **iScrape.cfg** file.
13. Replace “**enableCertificate**” with “**N**”

```

1 [DATABASE]
2 DB_HOST = 52.62.30.61
3 DB_USER = sa
4 DB_PASSWORD = Welcome@123
5 DB_NAME = iAutomateDB
6 DOWNLOAD_PATH = C:/Apache24/htdocs/Scripts/Scripts
7
8 [logging]
9 filename = action.log
10
11 [urls]
12 docsExtensions = .pdf,.doc,.txt,.xlsx,.xlsm,.docx,.sql
13 scriptExtensions = .ps1,.rar,.psml
14
15 [MISC]
16 loggerState=0
17 KEY_SALT=560A18CD-6346-4CF0-A2E8-671F9B6B9EA9
18 Certificate_Name=HCL.iAutomate
19 IsSelfSigned=Y
20 enableCertificate=N
21
    
```

Figure 251 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

14. Go to < BigFix Runbook AI Installer path>\AdvanceKnowledge\Crawler\crawler\_v5\config
15. Open **iCrawler.cfg** file.
16. Replace “**enableCertificate**” with “**N**”
17. Go to < BigFix Runbook AI Installer path>\ AdvanceKnowledge\ iKnowledge\_Indexer
18. Open **INDEXER.cfg** file.

19. Replace “enableCertificate” with “N”
20. Go to < BigFix Runbook AI Installer path>\ AdvanceKnowledge\ iKnowledge\_Screen
21. Open IKNOWLEDGE\_SCREEN.cfg file.
22. Replace “enableCertificate” with “N”
23. Go to < BigFix Runbook AI Installer path>\ AdvanceKnowledge\ iKnowledge\_Search
24. Open IKNOWLEDGE\_SEARCH.cfg file.
25. Replace “enableCertificate” with “N”
26. Go to < BigFix Runbook AI Installer path>\ KnowledgeRating ...\ iKnowledge\_Rating
27. Open rating.cfg file.
28. Replace “enableCertificate” with “N”
29. Go to < BigFix Runbook AI Installer path>\ iKnowledge \ iKnowledge \ knowledge\_v4
30. Open iknowledge.cfg file.
31. Replace “enableCertificate” with “N”

### 3.5.5.2 Without Certificate used to connect Services

#### 3.5.5.2.1 WCF Services:

1. Go to < BigFix Runbook AI Installer path>.

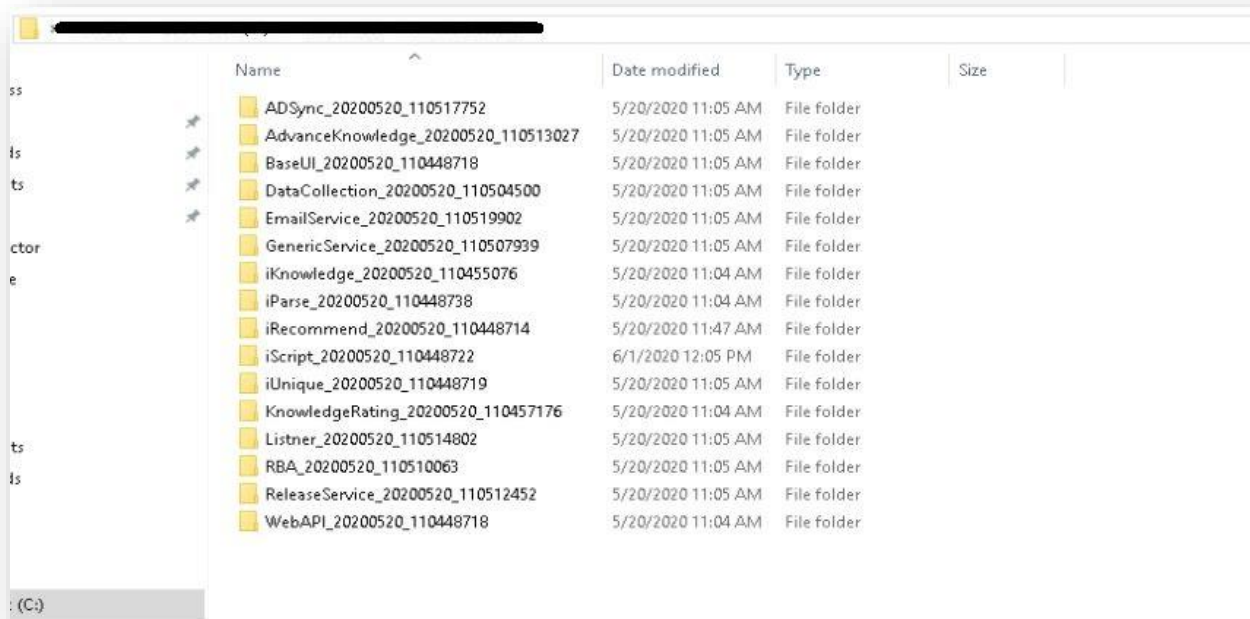


Figure 252 – Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

2. Go to Path < BigFix Runbook AI Installer path>\BaseUI...\BaseUI
3. Open **Web.config** file.
4. Replace value of “enableCertificate\_Service” key to “N”.

```
<add key="enableCertificate_Service" value="N" />
```

```
<security mode="None">
  <message clientCredentialType="None" establishSecurityContext="false" negotiateServiceCredential="false" />
</security>
```

Figure 253 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

5. Change mode="None" and clientCertificateType="None".
6. Go to Path < BigFix Runbook AI Installer path>\Listener...\Listener
7. Open HCL.iAutomate.Listener.Service.Host.exe config file.
8. Replace value of "enableCertificate\_Service" key to "N".

```
<add key="enableCertificate_Service" value="N" />
```

```
<security mode="None">
  <message clientCredentialType="None" establishSecurityContext="false" negotiateServiceCredential="false" />
</security>
```

Figure 254 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

9. Change mode="None" and clientCertificateType="None".
10. Go to Path < BigFix Runbook AI Installer path>\DataCollection...\DataCollection folder location
11. Open HCL.iAutomate.DataCollector.Service.Host.exe config file.
12. Replace value of "enableCertificate\_Service" key to "N".

```
<add key="enableCertificate_Service" value="N" />
```

Figure 255 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

13. Follow the last 3 mentioned steps to make the configurational changes required for **AD Sync, Email Service, Generic Service, RBA service** and **Release Service**

## 3.5.6 Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX)

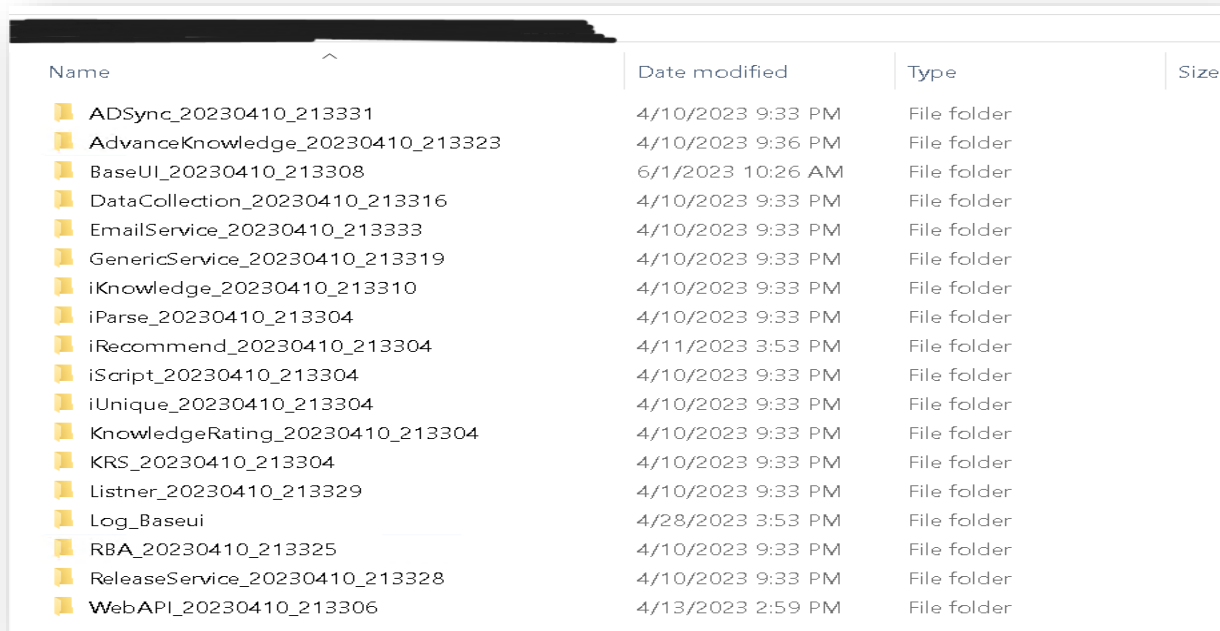
This section describes the steps for making the required configurational changes to enable access to BigFix Runbook AI when PFX certificate is available. By default, BigFix Runbook AI will install with Certificate.

To make the configuration changes, please follow the below steps:

### 3.5.6.1 With Certificate used to connect KRS

#### 3.5.6.1.1 WCF Services:

1. Go to < BigFix Runbook AI Installed path>.



| Name                             | Date modified     | Type        | Size |
|----------------------------------|-------------------|-------------|------|
| ADSync_20230410_213331           | 4/10/2023 9:33 PM | File folder |      |
| AdvanceKnowledge_20230410_213323 | 4/10/2023 9:36 PM | File folder |      |
| BaseUI_20230410_213308           | 6/1/2023 10:26 AM | File folder |      |
| DataCollection_20230410_213316   | 4/10/2023 9:33 PM | File folder |      |
| EmailService_20230410_213333     | 4/10/2023 9:33 PM | File folder |      |
| GenericService_20230410_213319   | 4/10/2023 9:33 PM | File folder |      |
| iKnowledge_20230410_213310       | 4/10/2023 9:33 PM | File folder |      |
| iParse_20230410_213304           | 4/10/2023 9:33 PM | File folder |      |
| iRecommend_20230410_213304       | 4/11/2023 3:53 PM | File folder |      |
| iScript_20230410_213304          | 4/10/2023 9:33 PM | File folder |      |
| iUnique_20230410_213304          | 4/10/2023 9:33 PM | File folder |      |
| KnowledgeRating_20230410_213304  | 4/10/2023 9:33 PM | File folder |      |
| KRS_20230410_213304              | 4/10/2023 9:33 PM | File folder |      |
| Listner_20230410_213329          | 4/10/2023 9:33 PM | File folder |      |
| Log_Baseui                       | 4/28/2023 3:53 PM | File folder |      |
| RBA_20230410_213325              | 4/10/2023 9:33 PM | File folder |      |
| ReleaseService_20230410_213328   | 4/10/2023 9:33 PM | File folder |      |
| WebAPI_20230410_213306           | 4/13/2023 2:59 PM | File folder |      |

Figure 256 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

2. Go to Path < BigFix Runbook AI Installer path>\KRS.
3. Open **Web.config** file.
4. Add mode=" Message" in <security> tag.
5. Change clientCredentialType="Certificate" in <message> tag.

```
<binding name="wsHttpEndpointBinding">
  <security>
    <message clientCredentialType="Certificate" establishSecurityContext="false" negotiateServiceCredential="false"/>
  </security>
</binding>
```

Figure 257 Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

- Change certificateValidationMode="PeerTrust" in <serviceCredentials> tag.

```
<serviceCredentials>
  <clientCertificate>
    <authentication certificateValidationMode="PeerTrust"/>
  </clientCertificate>
  <serviceCertificate findValue="HCL.iAutomate" storeLocation="LocalMachine" storeName="TrustedPeople" x509FindType="FindBySubjectName"/>
</serviceCredentials>
```

Figure 258 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

- Uncomment the <serviceCertificate> tag, if commented.
- Go to Path < BigFix Runbook AI Installer path>\ WebAPI
- Open **Web.config** file.
- Set key “enableCertificate\_KRS” value to “Y”.

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

Figure 259 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

- Go to Path < BigFix Runbook AI Installer path>\Listener...\Listener
- Open HCL.iAutomate.Listener.Service.Host.exe config file.
- Set “enableCertificate\_KRS” key to “Y”.

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

Figure 260 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

- Go to Path < BigFix Runbook AI Installer path>\BaseUI...\BaseUI
- Open **Web.config** file.
- Set “enableCertificate\_KRS” key to “Y”.

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

Figure 261 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

17. Go to Path < BigFix Runbook AI Installer path>\DataCollection...\DataCollection folder location
18. Open HCL.iAutomate.DataCollector.Service.Host.exe config file.
19. Replace value of “**enableCertificate\_KRS**” key to “**Y**”.

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

Figure 262 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PFX) (cont.)

20. Follow the last 3 mentioned steps to make the configurational changes required for **AD Sync, Email Service, Generic Service, RBA service and Release Service**

### 3.5.6.1.2 AI Services

1. Go to Path < BigFix Runbook AI Installer path>\iRecommend...\
2. Open IRECOMMEND.CFG file.
3. Replace value of “**enableCertificate**” with “**Y**”.
  
4. Open **entity.cfg** file in **entity** folder in same location and replace value of “**enableCertificate**” with “**Y**”
5. Go to Path < BigFix Runbook AI Installer path>\iParse...\iParse\iparse\config
6. Open Parse\_data.cfg file.
7. Replace value of “**enableCertificate**” with “**Y**”
  
8. Go to Path < BigFix Runbook AI Installer path>\iUnique...\iUnique\iUnique\_final\config
9. Open **iUnique.cfg** file.
10. Replace “**enableCertificate**” with “**Y**”
11. Go to <BigFix Runbook AI Installer path>\iScript...\iScript\iScript\config
12. Open **iScrape.cfg** file.
13. Replace “**enableCertificate**” with “**Y**”
14. Go to <BigFix Runbook AI Installer path>\AdvanceKnowledge\Crawler\crawler\_v5\config
15. Open **iCrawler.cfg** file.
16. Replace “**enableCertificate**” with “**Y**”
17. Go to < BigFix Runbook AI Installer path>\ AdvanceKnowledge\ iKnowledge\_Indexer
18. Open **INDEXER.cfg** file.
19. Replace “**enableCertificate**” with “**Y**”
20. Go to < BigFix Runbook AI Installer path>\ AdvanceKnowledge\ iKnowledge\_Screen
21. Open IKNOWLEDGE\_SCREEN.cfg file.
22. Replace “**enableCertificate**” with “**Y**”
23. Go to <BigFix Runbook AI Installer path>\ AdvanceKnowledge\ iKnowledge\_Search

24. Open IKNOWLEDGE\_SEARCH.cfg file.
25. Replace “enableCertificate” with “Y”
26. Go to <BigFix Runbook AI Installer path>\ KnowledgeRating ...\ iKnowledge\_Rating
27. Open rating.cfg file.
28. Replace “enableCertificate” with “Y”
29. Go to <BigFix Runbook AI Installer path>\ iKnowledge \ iKnowledge \ knowledge\_v4
30. Open iknowledge.cfg file.
31. Replace “enableCertificate” with “Y”

### 3.5.6.2 With Certificate used to connect Services

#### 3.5.6.2.1 WCF Services:

1. Go to <BigFix Runbook AI Installed path>.

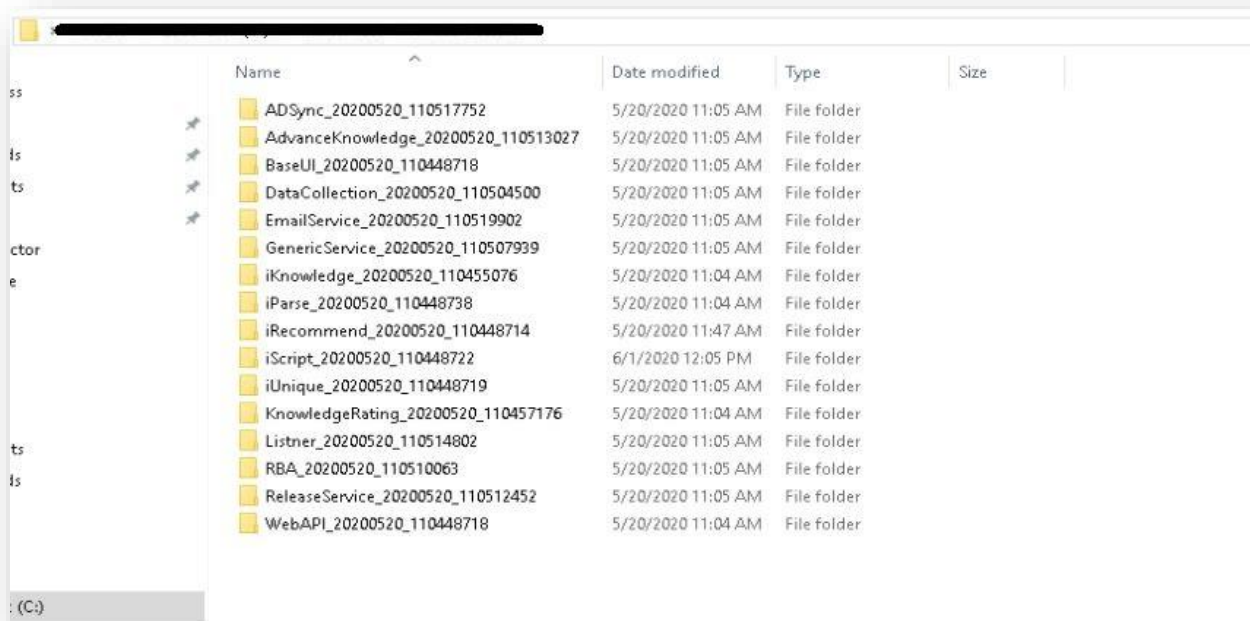


Figure 263 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

2. Go to Path <BigFix Runbook AI Installer path>\BaseUI...\BaseUI
3. Open **Web.config** file.
4. Replace value of “enableCertificate\_Service” key to “Y”.



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

Figure 264- Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

5. Go to Path <BigFix Runbook AI Installer path>\Listener...\Listener
6. Open HCL.iAutomate.Listener.Service.Host.exe config file.
7. Replace value of “enableCertificate\_Service” key to “Y”.

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

Figure 265 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

8. Go to Path <BigFix Runbook AI Installer path>\DataCollection...\DataCollection folder location
9. Open HCL.iAutomate.DataCollector.Service.Host.exe config file.
10. Replace value of “enableCertificate\_Service” key to “Y”.

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

Figure 266 - Configuration Changes – Access BigFix Runbook AI with Certificate (Type – PFX) (cont.)

11. Follow the last 3 mentioned steps to make the configurational changes required for **AD Sync, Email Service, Generic Service, RBA service and Release Service**

## 3.5.7 Configuration Changes - Access BigFix Runbook AI without Certificate (Type – PEM)

This section describes the steps for making the required configurational changes to enable access to BigFix Runbook AI when PEM certificate is not available.

To make the configuration changes, please follow the below steps:

### 3.5.7.1 AI Services:

1. Go to Path <BigFix Runbook AI Installer path>\Listener...\Listener
2. Open HCL.iAutomate.Listener.Service.Host.exe config file.
3. Replace value of “**enablePEMCertificate**” key with “**N**”.

```

69 <add key="PythonCertiPath" value="C:\Program Files\Certificate\server.pem" />
70 <!--Check PFX Certificate required or not-->
71 <add key="enableCertificate" value="N" />
72 <!--Check Pem (Python)Certificate required or not-->
73 <add key="enablePEMCertificate" value="N" />
74 <add key="IsSelfSigned" value="N" />
75 <!--Error log folder Path-->
76 <add key="Errorlog" value="C:\Logs" />
    
```

Figure 267 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

4. Go to Path <BigFix Runbook AI Installer path>\BaseUI...\BaseUI
5. Open **Web.config** file.
6. Replace value of “enablePEMCertificate” key to “N”.
7. Got to Path C:/Apache24/conf and open **iRecommend.cfg** file. Comment the following lines:
  - a. SSLEngine on
  - b. SSLCertificateFile "C:/Program Files/certificate/server.crt"
  - c. SSLCertificateKeyFile "C:/Program Files/certificate/server.key"
  - d. SSLCACertificateFile "C:/Program Files/certificate/ca.pem"
  - e. SSLVerifyClient require
  - f. SSLVerifyDepth 10
  - g. LoadModule ssl\_module modules/mod\_ssl.so.

```

162 #LoadModule slotmem_shm_module modules/mod_slotmem_shm.so
163 #LoadModule socache_dbm_module modules/mod_socache_dbm.so
164 #LoadModule socache_memcache_module modules/mod_socache_memcache.so
165 LoadModule socache_shmcb_module modules/mod_socache_shmcb.so
166 #LoadModule spelling_module modules/mod_spelling.so
167 #LoadModule ssl_module modules/mod_ssl.so
168 #LoadModule status_module modules/mod_status.so
169 #LoadModule substitute_module modules/mod_substitute.so
170 #LoadModule unique_id_module modules/mod_unique_id.so
171 #LoadModule userdir_module modules/mod_userdir.so
172 #LoadModule usertrack_module modules/mod_usertrack.so
    
```

Figure 268 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

```

530
531 #SSLEngine on
532
533 #SSLCertificateFile "C:/Program Files/certificate/server.crt"
534 #SSLCertificateKeyFile "C:/Program Files/certificate/server.key"
535 #SSLCACertificateFile "C:/Program Files/certificate/ca.pem"
536
537
538
539
540 <VirtualHost *>
541
542     WSGIScriptAlias /iAutomate C:/iAutomate/iAutomate5.1/iKnowledge_2020
543
544     #SSLVerifyClient require
545
546     #SSLVerifyDepth 10
547
  
```

Figure 269 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

8. To make the changes to the **Endpoint URL**, go to the BigFix Runbook AI website.
9. Click Advance Configuration → Product Configuration.

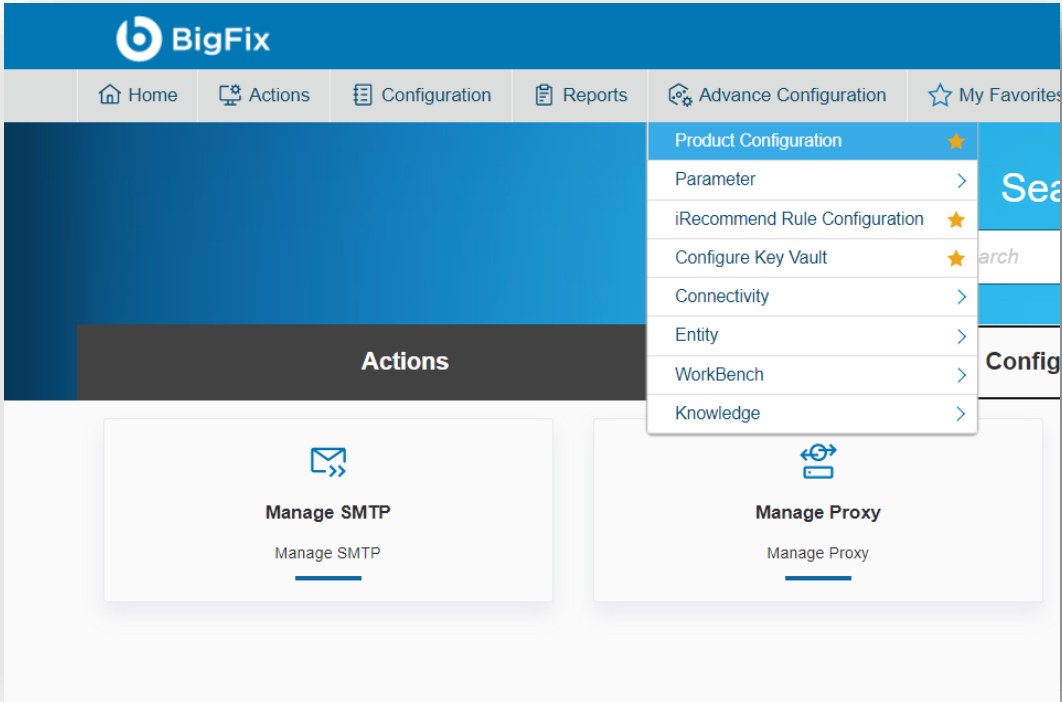
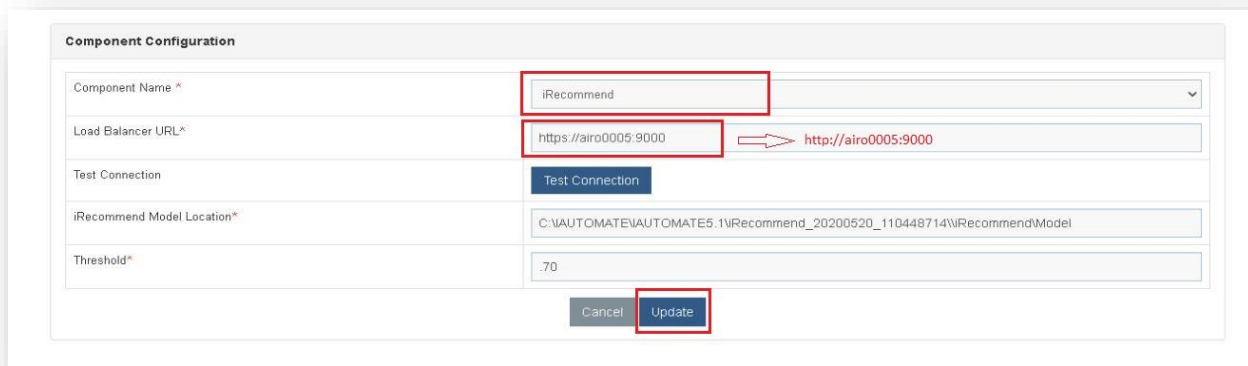


Figure 270 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

10. Select **Component Name** as 'iRecommend'.
11. Change the **Load Balancer URL** from 'https' to 'http'.

## 12. Click **Update**.



**Component Configuration**

|                            |   |
|----------------------------|---|
| Component Name *           | iRecommend  |
| Load Balancer URL*         | https://airo0005:9000 → http://airo0005:9000                          |
| Test Connection            | Test Connection   |
| iRecommend Model Location* | C:\AUTOMATE\AUTOMATE5.1\iRecommend_20200520_110448714\iRecommendModel |
| Threshold*                 | .70   |

Cancel Update

Figure 271 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

## 13. Repeat Steps 7 & 8 for each of the AI components mentioned below –

- Entity
- iKnowledge
- iKnowledgeCrawler
- iKnowledgeIndexer
- iKnowledgeScreen
- iKnowledgeSearch
- iParse
- iRecommend
- iScript
- iUnique
- ratingMongo

### 3.5.7.2 IIS Configuration:

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

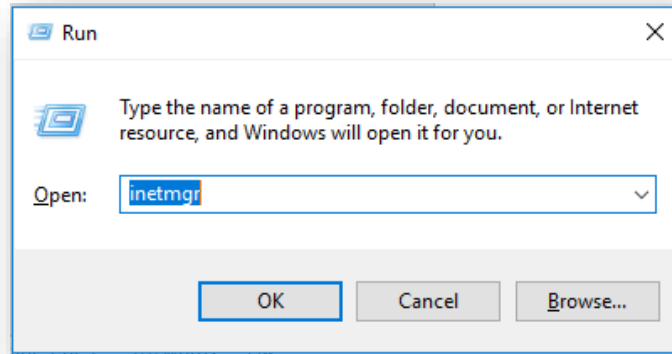


Figure 272 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

3. Expand **Sites**.

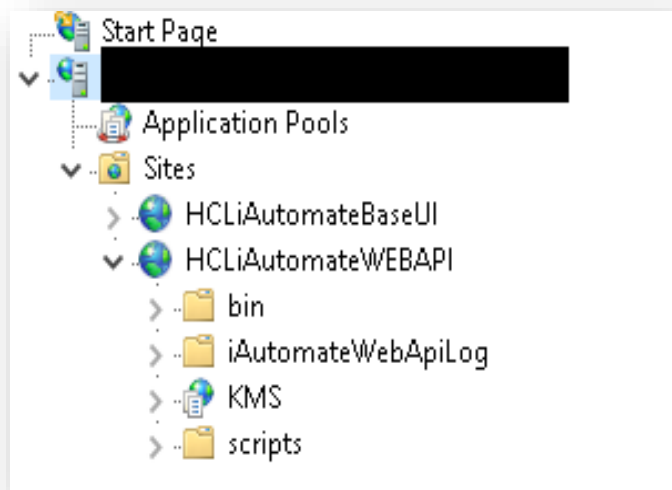


Figure 273 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

4. Go to **Application Pools**. Click on your specific application pool. Click **Recycle** or **Stop** and then click **Start**

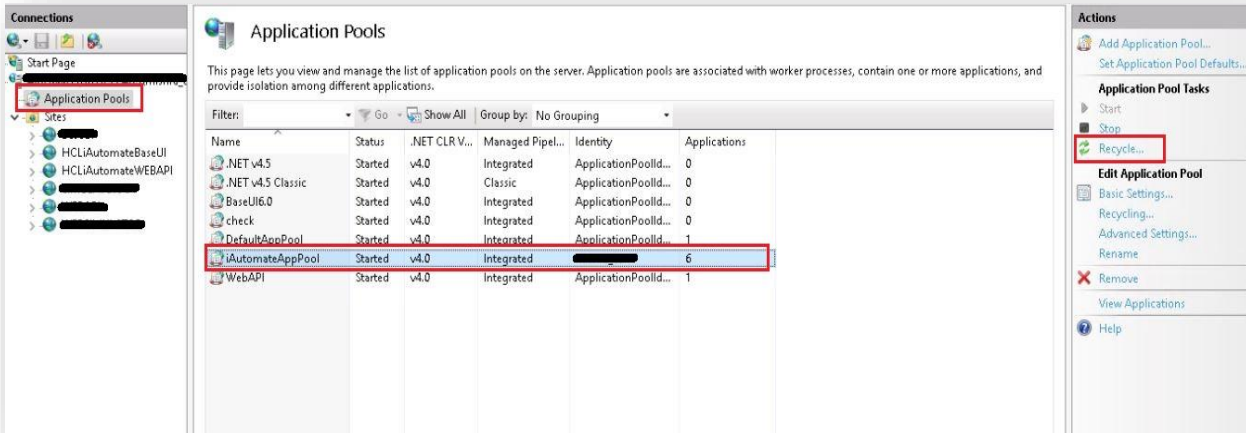


Figure 274 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

5. Go to **Sites**. Click the site having name **BaseUI**. Click on **Restart**.

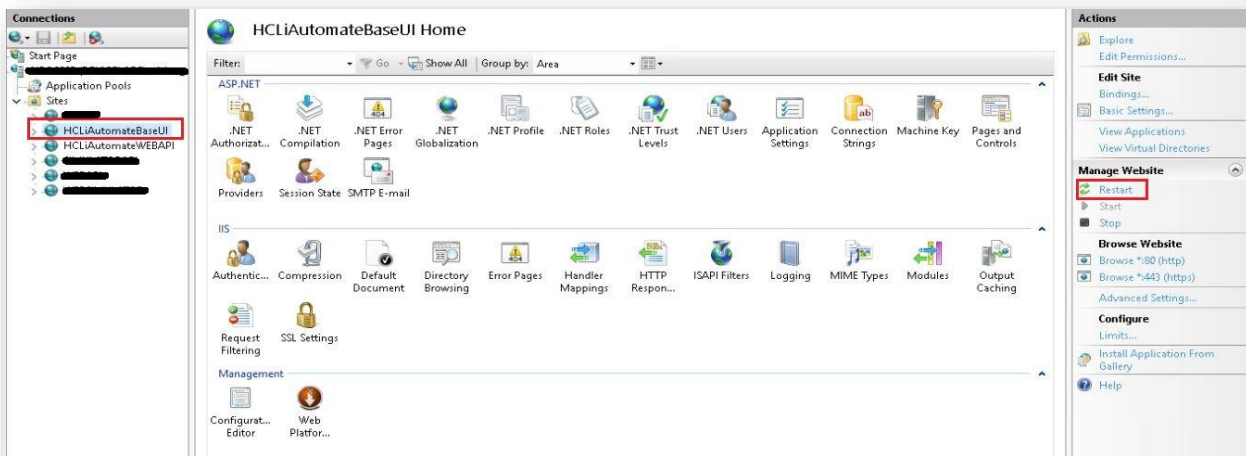


Figure 275 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

6. Go to **Sites**. Click the site having name **WEBAPI**. Click on **Restart**.

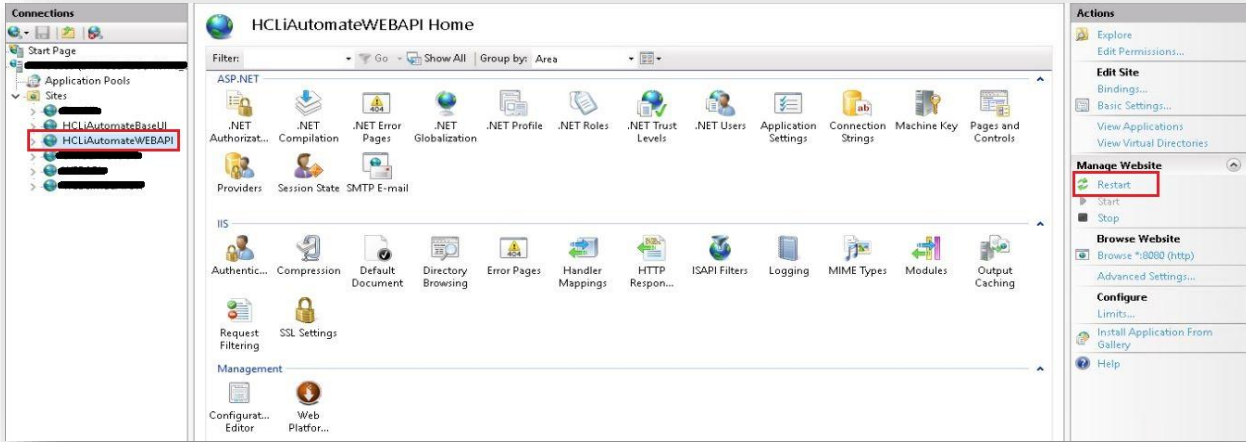


Figure 276 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

### 3.5.7.3 Restart Services

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

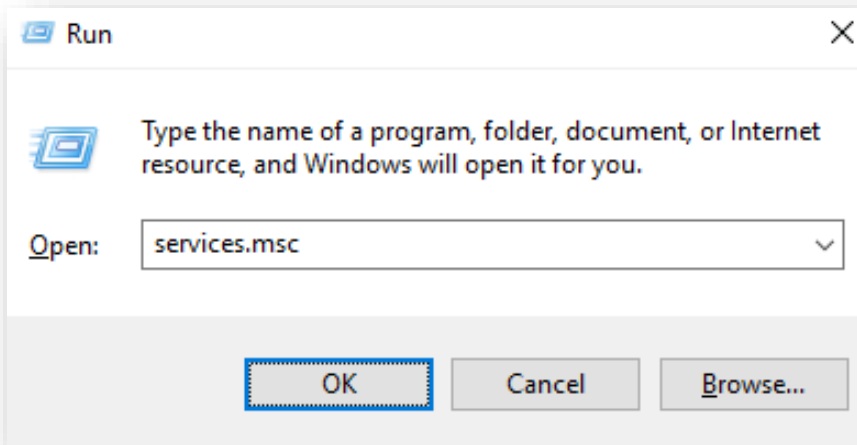


Figure 277 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

2. Click OK to open Windows Services.

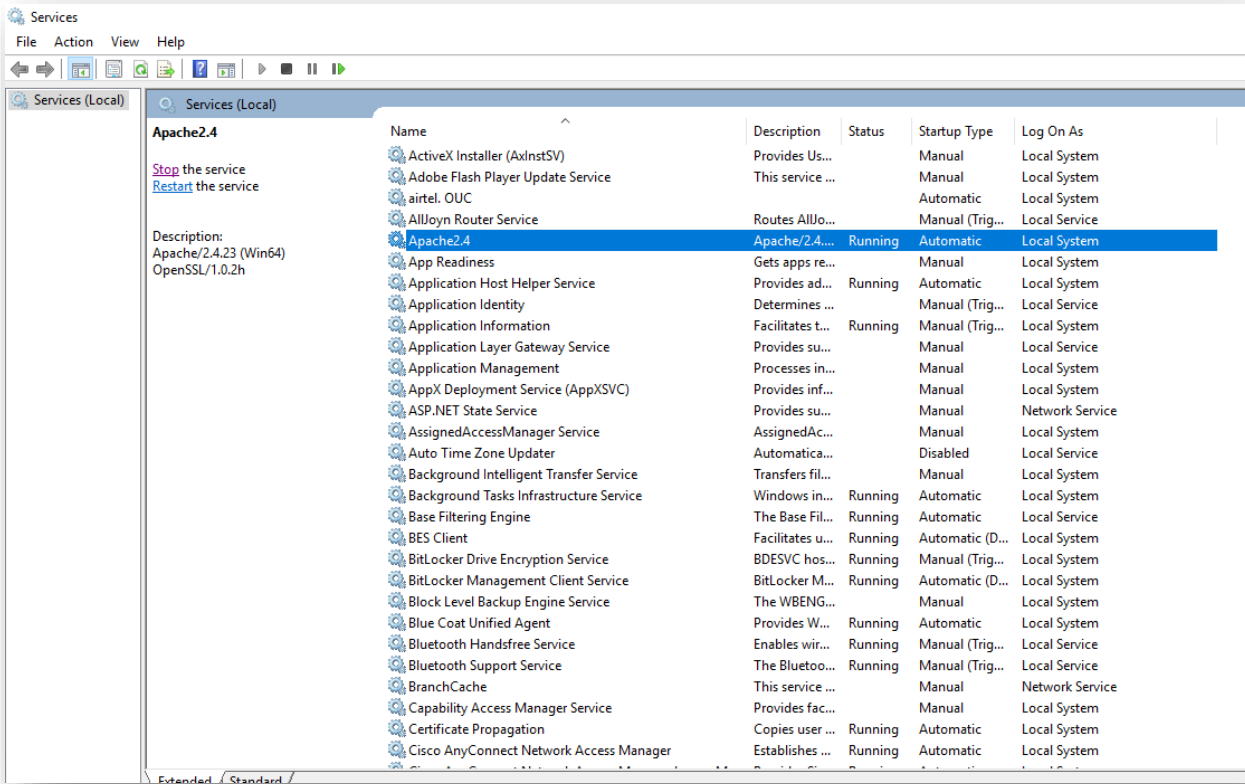


Figure 278 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

3. Search for Services.
4. Restart **Apache24** service.
5. Restart all **HCL.iAutomate** services.



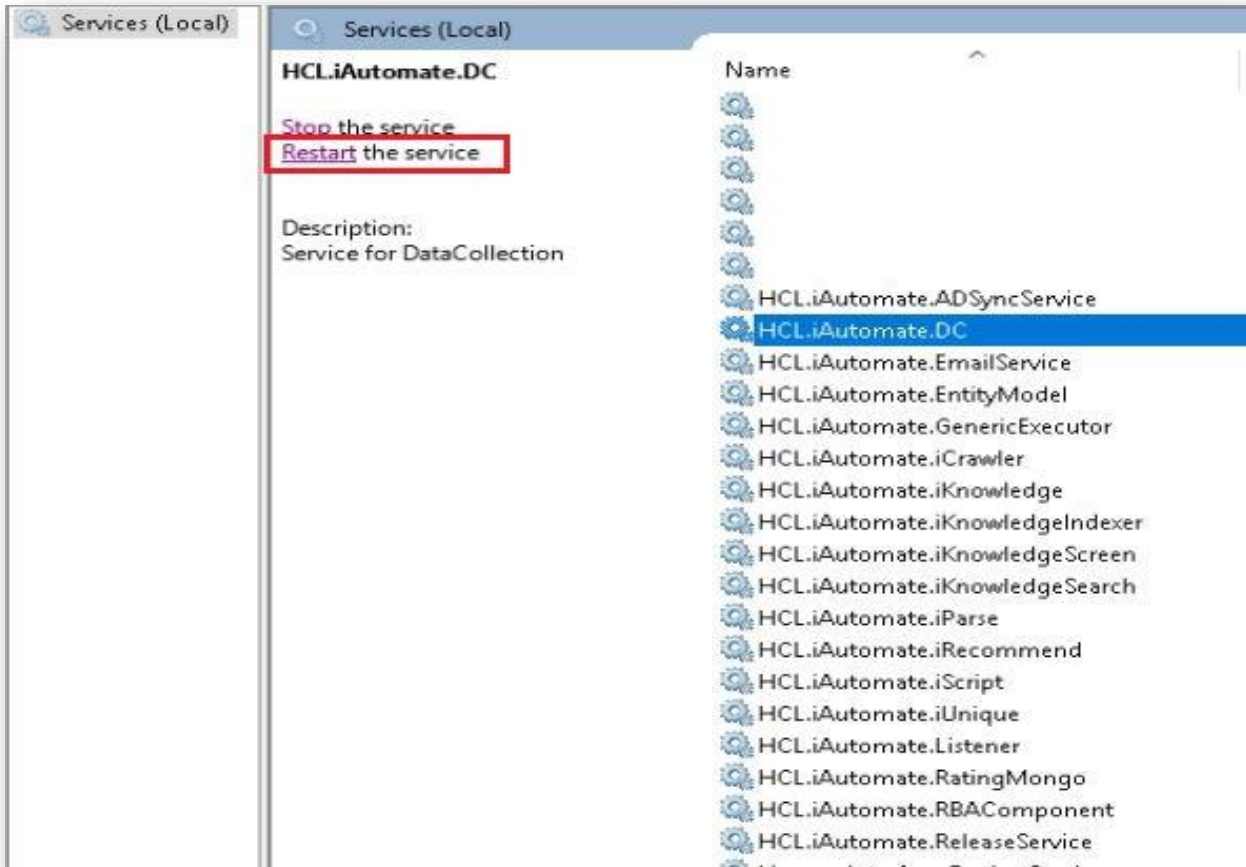


Figure 279 - Configuration Changes – Access BigFix Runbook AI without Certificate (Type – PEM)

### 3.5.8 Configuration Changes - Run BASEUI and WEBAPI on Same Port

This section describes the steps for making the required configurational changes to enable BASEUI and WEBAPI on Same Port.

1. Press Win+R and type intemgr.

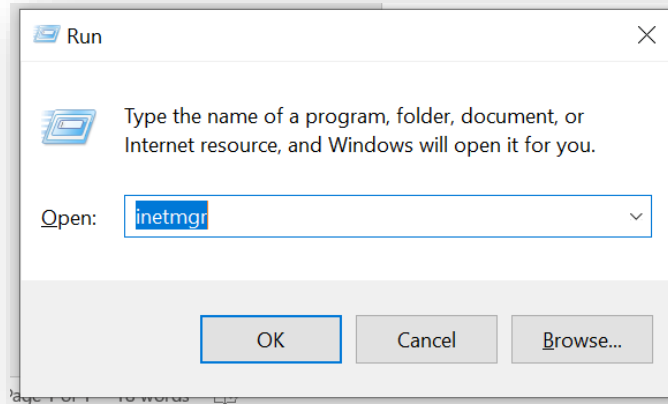


Figure 280 - Configuration Changes - Run BASEUI and WEBAPI on Same Port

2. IIS will be opened. Expand the server's name and then the sites.

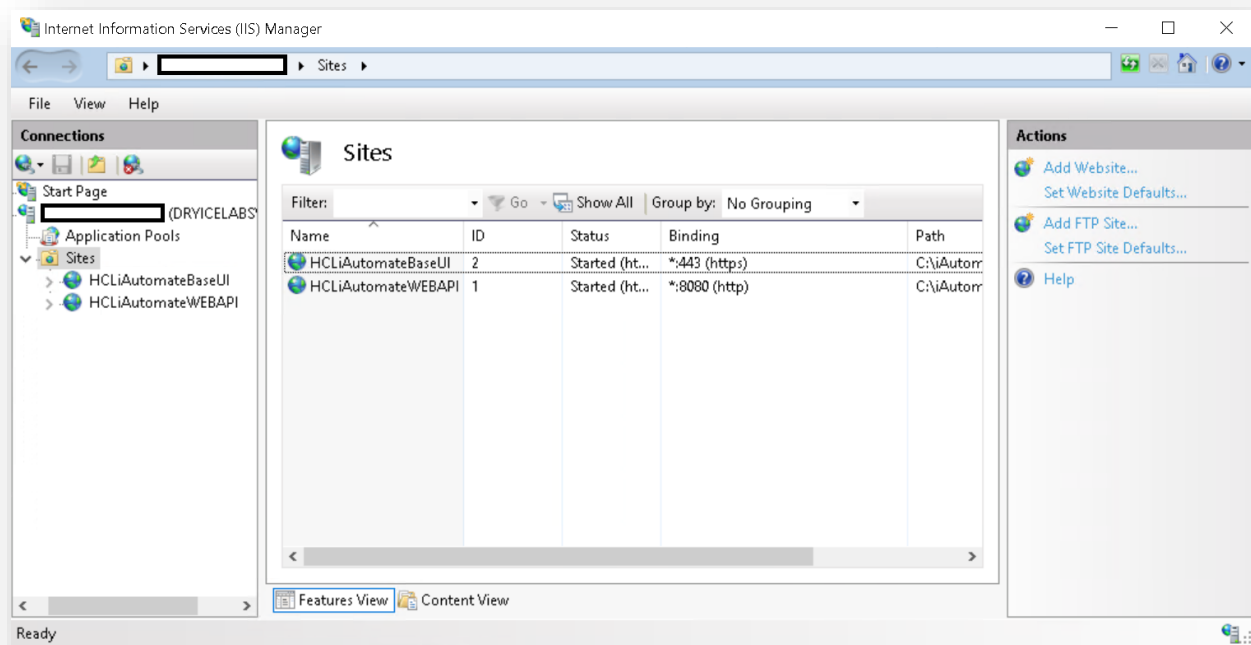


Figure 281 - Configuration Changes - Run BASEUI and WEBAPI on Same Port

3. Right click on **HCLiAutomateBaseUI** and click on add application.

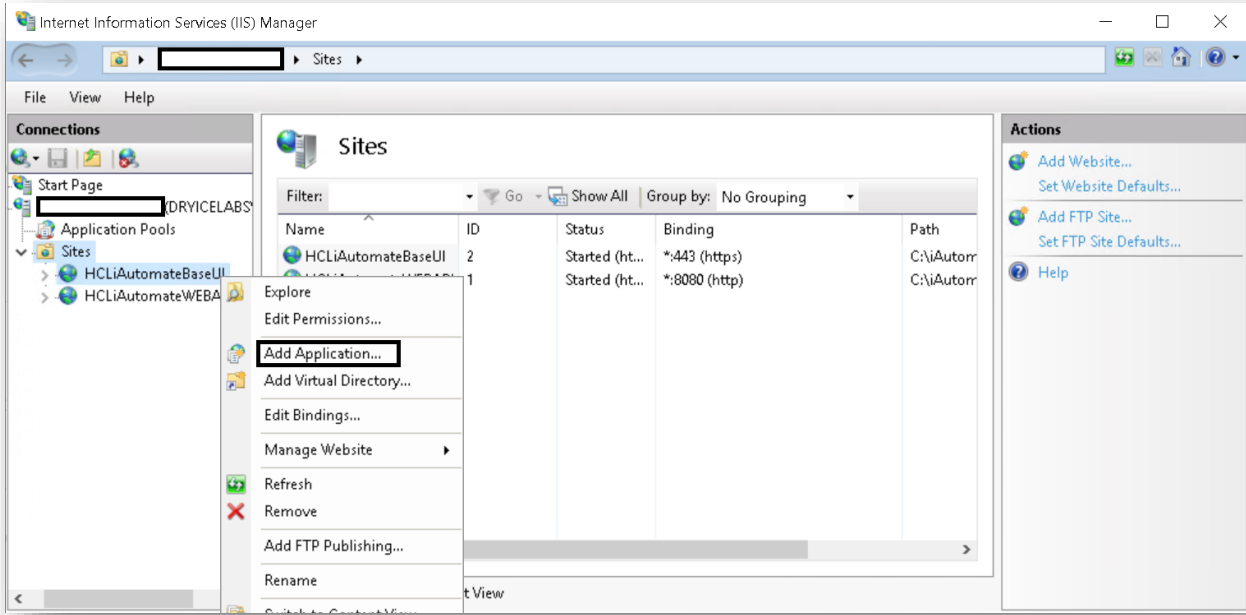


Figure 282 - Configuration Changes - Run BASEUI and WEBAPI on Same Port

- On the popup opened, enter Alias as **'WebAPI'**, Application pool as 'iAutomateAppPool' and enter the path till **WebAPI** folder in Physical Path. Click Ok.

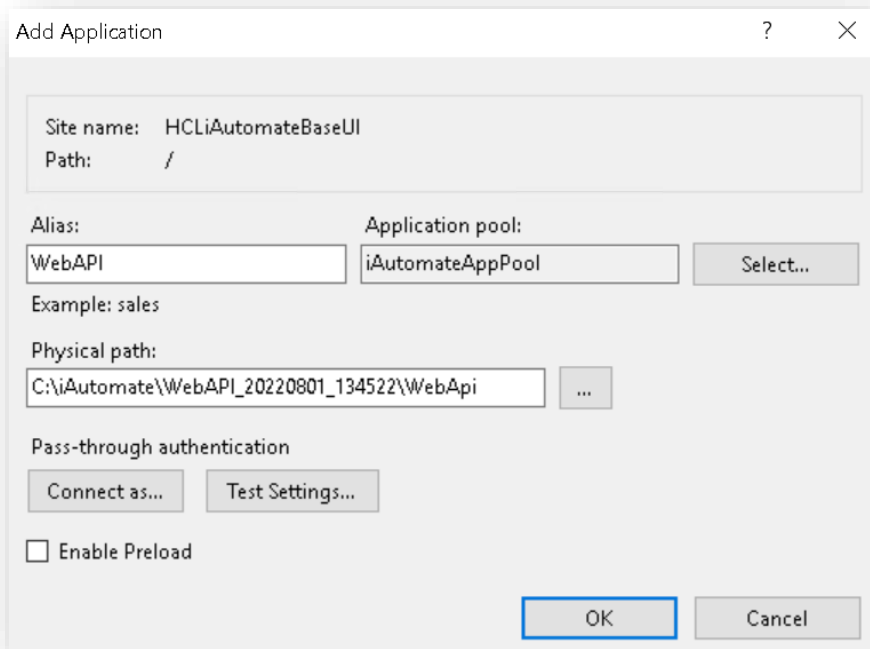


Figure 283 - Configuration Changes - Run BASEUI and WEBAPI on Same Port

- The WebAPI application will now appear under HCLiAutomateBaseUI.

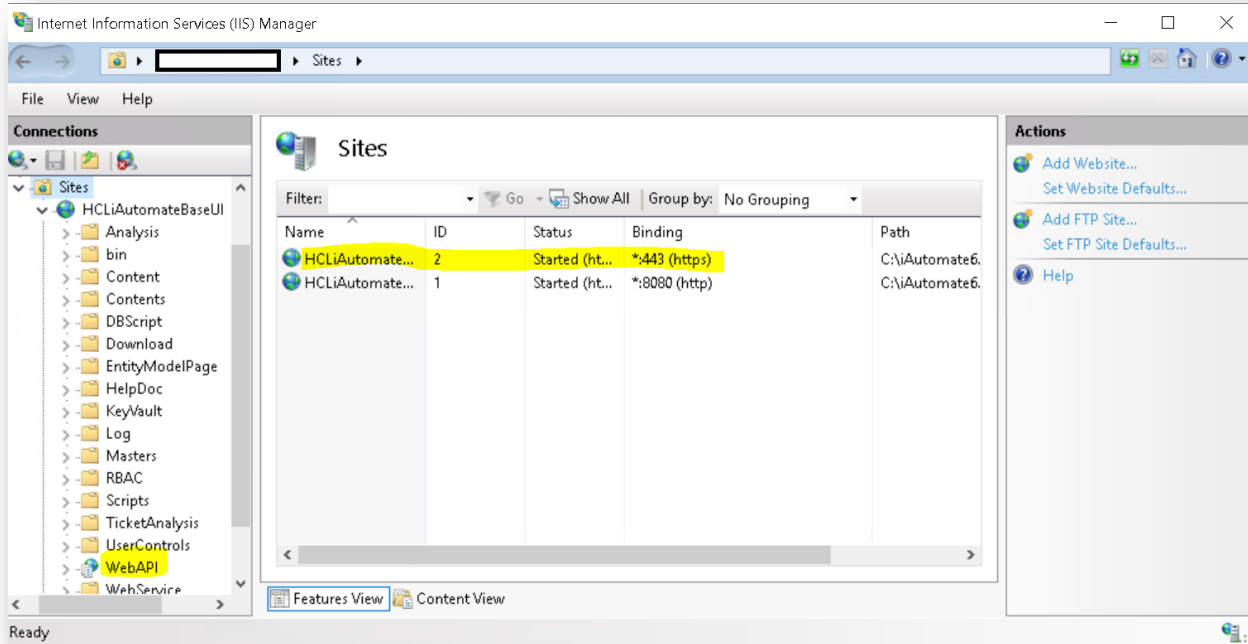


Figure 284 - Configuration Changes - Run BASEUI and WEBAPI on Same Port

- To test whether API and BaseUI is working on same port, if BaseUI is accessible as <https://localhost:443> then type below URL and see if WebAPI is also accessible with below URL:  
WebAPI URL: <BaseUI URL>/<Alias Name of Folder>/iAutomateAPI/Request/Getheartbeat  
Eg: <https://localhost:443/WebAPI/iAutomateAPI/Request/Getheartbeat>
- Go to web.config file of BaseUI. For that, go to IIS, expand server name and sites, and right click on HCLiAutomateBaseUI and click on explore. Search the web.config file in the opened folder and open the file.
- In the web.config file, search for 'sessionState mode= "SQLServer"'. Comment this line and uncomment the line with sessionState mode= "InProc" like given below:

```
<!--<sessionState mode="SQLServer" allowCustomSqlDatabase="true" partitionResolverType="iAutomateWeb.App_Code.ConnectionStringResolver" regenerateExpiredSessionId="true" compressionEnabled="true" useHostingIdentity="true" timeout="20" />-->
<sessionState mode="InProc" cookieless="false" timeout="3600" />
```

Figure 285 - Configuration Changes - Run BASEUI and WEBAPI on Same Port

- Save the web.config and restart the HCLiAutomateBaseUI in IIS. Now enter the WEBAPI URL (mentioned in Step 6) in browser. Now it should successfully give the below output:

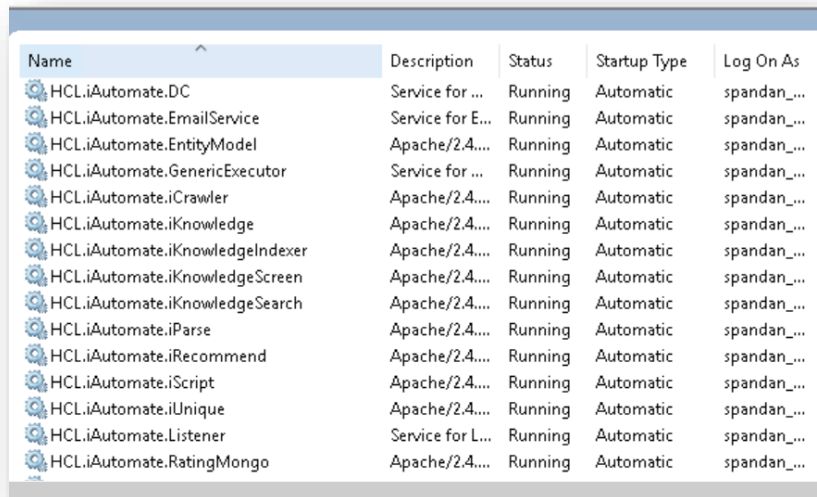
This XML file does not appear to have any style information associated with it. The document tree is shown below.

```
<string xmlns="http://schemas.microsoft.com/2003/10/Serialization/">ok</string>
```

Figure 286 - Configuration Changes - Run BASEUI and WEBAPI on Same Port

## 3.5.9 Configuration Changes in Apache –FOR PYTHON COMPONENTS

1. Go to **Run (Windows + R)** and type **services.msc** and search and stop the python services.



| Name                            | Description      | Status  | Startup Type | Log On As   |
|---------------------------------|------------------|---------|--------------|-------------|
| HCL.iAutomate.DC                | Service for ...  | Running | Automatic    | spandan_... |
| HCL.iAutomate.EmailService      | Service for E... | Running | Automatic    | spandan_... |
| HCL.iAutomate.EntityModel       | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.GenericExecutor   | Service for ...  | Running | Automatic    | spandan_... |
| HCL.iAutomate.iCrawler          | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledge        | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledgeIndexer | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledgeScreen  | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledgeSearch  | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iParse            | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iRecommend        | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iScript           | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iUnique           | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.Listener          | Service for L... | Running | Automatic    | spandan_... |
| HCL.iAutomate.RatingMongo       | Apache/2.4....   | Running | Automatic    | spandan_... |

Figure 445- Apache Upgradation

- Apache2.4
- HCL.iAutomate.Entitymodel
- HCL.iAutomate.iCrawler
- HCL.iAutomate.iknowledge
- HCL.iAutomate.iKnowledgeIndexer
- HCL.iAutomate.iKnowledgeScreen
- HCL.iAutomate.iKnowledgeSearch
- HCL.iAutomate.iRecommend
- HCL.iAutomate.iParse

- HCL.iAutomate.iScript
  - HCL.iAutomate.iUnique
  - HCL.iAutomate.RatingMongo
2. Open below path in explorer: **C:\Apache24\conf**
  3. Navigate to the above path mentioned, need to update in .conf file of all python components as mentioned in the below screenshot

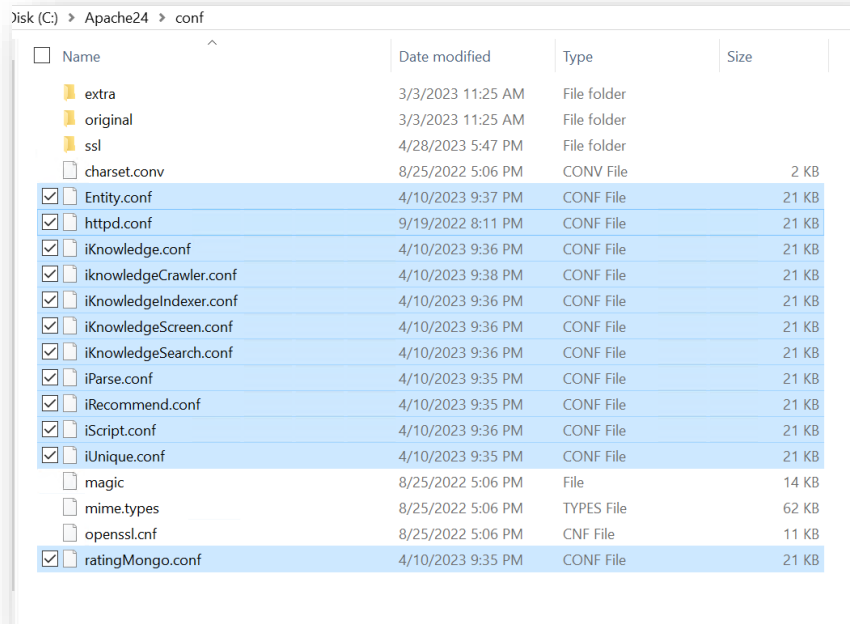


Figure 446 - Apache Upgradation (cont.)

4. Open the conf files one by one in notepad++/notepad, locate the word **“Define SRVROOT “/Apache24”**.
5. If it is present you can skip this step and proceed with Step 6, if not add the following 3 lines by searching for the word **“ServerRoot “c:/Apache24”**
  - Replace **“ServerRoot “c:/Apache24”** line in the file with below 3 lines
  - Define SRVROOT “/Apache24”
  - ServerRoot “\${SRVROOT}”
  - PidFile “\${SRVROOT}/httpd.pid”

By Default **TLS version, 1.3** has been enabled in this apache configuration. If you want to enable any other TLS version for a particular windows build you need to follow below mentioned steps else continue with **step 9**

6. Then find the line **“SSLEngine on”** in the same document

7. Based on the TLS requirement, check the TLS version that needs to be enabled and copy the lines mentioned below for respective TLS version and paste it after “**SSLEngine on**” line in conf file by removing/uncomment “**#**” from the beginning and save the file.
8. If the required TLS line is already uncommented, skip and proceed with Step No 9, if it’s not present perform below steps.

Table 15 - TLS versions -Apache

- #To enable SSL protocol TLS1.1 uncomment the below line
- #SSLProtocol -all +TLSv1.1
- #To enable SSL protocol TLS1.2 uncomment the below line
- #SSLProtocol -all +TLSv1.2
- #To enable SSL protocol TLS1.3 uncomment the below line
- #SSLProtocol -all +TLSv1.3
- #To enable and integrate SSL protocol TLS1.2 and TLS1.3 uncomment the below line
- #SSLProtocol -all +TLSv1.2 +TLSv1.3
- #To enable SSL protocol till TLS1.2 uncomment the below line
- #SSLProtocol +SSLv2 +SSLv3 +TLSv1 +TLSv1.1 +TLSv1.2

- For example:

**If need to go with TLS version 1.2:** Removed “**#**” in the below screenshot and save the file.

```
SSLEngine on
# To enable SSL protocol TLS1.1 uncomment the below line
#SSLProtocol -all +TLSv1.1
# To enable SSL protocol TLS1.2 uncomment the below line
SSLProtocol -all +TLSv1.2
# To enable SSL protocol TLS1.3 uncomment the below line
#SSLProtocol -all +TLSv1.3
# To enable and integrate SSL protocol TLS1.2 and TLS1.3 uncomment the below line
#SSLProtocol -all +TLSv1.2 +TLSv1.3
# To enable SSL protocol till TLS1.2 uncomment the below line
#SSLProtocol +SSLv2 +SSLv3 +TLSv1 +TLSv1.1 +TLSv1.2
```

Figure 447 - Apache Upgradation (cont.)

Changes need to be done for all Python Components that are selected in figure 446

9. Verify the changes done in all python components.
10. Go to **Run (Windows + R)** and type **services.msc** and start the python services, which are in stop state.

| Name                            | Description      | Status  | Startup Type | Log On As   |
|---------------------------------|------------------|---------|--------------|-------------|
| HCL.iAutomate.DC                | Service for ...  | Running | Automatic    | spandan_... |
| HCL.iAutomate.EmailService      | Service for E... | Running | Automatic    | spandan_... |
| HCL.iAutomate.EntityModel       | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.GenericExecutor   | Service for ...  | Running | Automatic    | spandan_... |
| HCL.iAutomate.iCrawler          | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledge        | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledgeIndexer | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledgeScreen  | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iKnowledgeSearch  | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iParse            | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iRecommend        | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iScript           | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.iUnique           | Apache/2.4....   | Running | Automatic    | spandan_... |
| HCL.iAutomate.Listener          | Service for L... | Running | Automatic    | spandan_... |
| HCL.iAutomate.RatingMongo       | Apache/2.4....   | Running | Automatic    | spandan_... |

Figure 448 - Screenshot of the Apache Python services



## 4 Appendix

### 4.1 List of Abbreviations

Table 14 - 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                   |