

International Atomic Energy Agency

RAIS+ Installation Manual

Regulatory Authority Information System

Division of Radiation, Transport and Waste Safety 12-01-2023

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Version history

| Version | Date | Author/s | Description |
|---------|--------------------|------------------------------------|----------------------|
| 1.0 | 06th June 2022 | Dragan Avramovski Neji Chihaoui | Intermediate version |
| 1.1 | 01st December 2023 | Dragan Avramovski Neji Chihaoui | Official version |

Introduction

RAIS+ is a web-based application built using the React components for the Front end, .NET Core for the backend and MS SQL Server for the database [Figure 1].



High-level description of the system architecture

RAIS+ follows the classical architecture of a web-based system where the application program is stored on an application server and exposes an API to the web server which then delivers client-side functionalities over the network through a browser interface. The API communicates with Database for record storing and retrieval.



RAIS+ Installation software requirements

Hardware Requirements:

Minimum requirements for standalone server:

RAIS+ standalone will work on any modern computer with Microsoft Windows operating system. Minimum requirements are the following:

- Hard Disk (20 GB available)
- Memory: 4 GB (8 GB High recommended)
- Processor: x64 Processor, Speed: at least 1.4 GHz

Minimum requirements for computer server:

| Resource description | Minimal requirements |
|----------------------|---|
| Server format and | Tower clustered non virtualized, or |
| datacenter hosting | Rack or blade virtualized, or |
| mode: | • HCI |
| CPU: | 2 sockets, 1/2 CPU, Each CPU: with 10 cores, 20 threads, Basic Frequency = 2 GHz minimum, L3 cache =13 MB |
| Memory: | DDR4 –2666 MHz, 32 GB installed capacity, Maximum capacity 769 GB |
| Storage: | Type SAS, supporting Hot-plug with spare disks available, 1.2 To useful capacity, configured with RAID 5-2GB Buffer |
| Power and FAN | Redundant voltage 220/230 V, 240 V or 110/120 V depending on location. Redundant FAN |
| Network | RJ45 - 100/1000 MBits/s, and an additional management port |

Table 1

Table 1 describes the minimal requirement of a standalone server for medium range use. In a production environment, monitoring the system is recommended to identify whether additional system resources are needed.

Moreover, in a wide range use, deploying RAIS+ software on a n-Tier architecture with load balancing or clustering of both application and storage servers could offer better and optimized availability, performance and scalability of the system.

Software requirements:

- 1. Operating System
 - a. Windows 2019 Server or later, with the latest service pack and patches installed.
 - b. The latest version of the Internet Information Services.
- 2. Database Management System: Microsoft SQL server 2019 or later
- 3. Other modules: Hosting bundle 7.0.9 and Target Framework asp.net core 6.0.
- 4. Download RAIS+ software from these locations:

https://www.iaea.org/resources/software/rais-plus

Or

http://ns-files.iaea.org/files/RAIS_Software.zip

The installer package includes by default the following modules:

- SQL Server online installer
- RAIS+ software installer
- Hosting bundle 7.0.9
- .NET Core 6.0

Note: for Training or limited standalone use, it is possible to install RAIS+ on Microsoft Windows 10 - version Professional or Enterprise 10.0.19044.170 with SQL Express 2019.

RAIS+ Installation Modes:

RAIS+ as a web application that can be installed and run in two modes:

- 1. Basic Mode: with this mode of deployment the application uses Kestrel as web server. This mode of installation could be used for the following reasons:
 - a. No need for configuration and monitoring advanced features of the system, such as management console, logging, port sharing, request filtering...
 - b. Insufficient experience of how to prepare and configure the advanced installation mode.
- 2. Advanced Mode: in this mode the application uses IIS as web server. It is recommended for production deployment where the RAIS+ system will be connected to the Network to provide access to users. With this mode, IIS Web Server advanced features are available, such as management console, logging, port sharing, request filtering, etc. This can help the administrator configuring the environment, monitoring flows, fixing observed issues.

RAIS+ Installation Steps:

- 1. Install and configure the Operating system,
- 2. Enable inbuilt Administrator Account,
- 3. Turn Off User Account Control,
- 4. Restart the computer and logon as Administrator,
 - a. For all the next steps, use the administrator account.
- 5. Add Internet Information Services (IIS) Features: see Annex A Internet Information Services Configuration,
- 6. Install and configure SQL Server: see Annex B SQL Server 2019 Setup
- 7. Run the RAIS+ installer,
- 8. After the installation, restore the default configuration of the UAC applied on administrator account.

Figure 3 describes installation process steps of RAIS+ and its running environment.



Figure 3

RAIS+ Advance installation

1. Right click the RAIS+ installer, then click run as administrator.

| This I | PC > | Downloads > RAIS_Software | e > RAIS+ Software | |
|--------|------|----------------------------|---------------------------------------|--|
| | | | Name ^ | |
| | | | Prerequisites | |
| | | | 🖂 🚰 IAEA RAIS+ Configuration Tool.exe | |
| | | Open | | |
| | | Browse with .NET Reflector | | |
| | • | Run as administrator | | |
| 1 | | | | |

Figure 4

2. From the RAIS Configuration Tool choose whether an Advance Setup mode or in Basic Setup mode will be selected.

Select the Advance Setup,



3. Read from the following menu and click Next.

RAIS Configuration Tool

| About Tool | Welcome to the configuration tool for RAIS | | | | | |
|--|--|--|--|--|--|--|
| Setup Application | | | | | | |
| Setup SSL | If you are installing RAIS, Please setup your web server, database server and other settings from navigation tabs on the left. You can use this tool to update | | | | | |
| Database Setup | these settings at any point of time. | | | | | |
| Configure SQL User | If you wish to Migrate from RAIS3.x to RAIS+ you can migrate your data from migration tab. You can contact RAIS+ support team at RAIS.Contact-Point@iaea.org | | | | | |
| Document Storage | | | | | | |
| Data Migration | | | | | | |
| IAEA International Atomic Energy Agency | Home Next | | | | | |
| | | | | | | |

– 🗆 X



- 4. From the following menu as in the Figure 7, configure the following parameters:
 - Destination Folder: create and select a destination folder that will be used to store application files,
 - Website Name: submit the virtual web folder name that will be added to IIS,
 - Port: submit a port number. This port number should not be used by other applications on the same server, from the range: 1024- 49151.

If you are using port sharing, ask the Network/System Administrator to configure this parameter within IIS and DNS server.

| Real S Configuration Tool | | | | — | | \times |
|---------------------------|-------------------|---------|-----------|-----------|--------|----------|
| About Tool | Setup RAIS Appl | ication | | | | |
| Setup Application | Detination Folder | | | | Browse | |
| Setup SSL | Website Name | | Host Name | localhost | |] |
| Database Setup | IP Address | | Port | 0 | | |
| Configure SQL User | | | | | | |
| Document Storage | | | | | | |
| Data Migration | | | | | | |
| IAEA | | | | Previous | Next | |

Figure 7

Figure 8 describes an example of web parameters configuration.

| Really Configuration Tool | | | | _ | | \times |
|---------------------------|-------------------|---------------------|-----------|-----------|--------|----------|
| About Tool | Setup RAIS Appl | ication | | | | |
| Setup Application | Detination Folder | C:\RAISPTC\RAISProd | | | Browse | |
| Setup SSL | Website Name | RAISProd | Host Name | localhost | | |
| Database Setup | IP Address | | Port | 4343 | | |
| Configure SQL User | | | | | | |
| Document Storage | | | | | | |
| Data Migration | | | | | | |
| IAEA | | | | Previous | Next | |

Figure 8

- Click Next

5. Configuration of used modules:

| Re RAIS Configuration Tool | | _ | \times |
|----------------------------|---|-----|----------|
| About Tool | | | |
| Setup Application | Detination Folder C:\RAISPTC\RAISProd | | |
| Setup SSL | Website Name RAISProd Host Name localh | ost | |
| Database Setup | IP Address Progress : | | |
| Configure SQL User | Installing Dotnet Web Hosting Module. Please wait | | |
| Document Storage | | | |
| Data Migration | | | |
| IAEA | | | |

Figure 9

6. From the following menu, select one option and click Next:

| RAIS Configuration Tool | _ | |
|--|----------------------|------|
| About Tool | Setup Certificate | |
| Setup Application | IP Address Port 4343 | |
| Setup SSL | ○ Upload Certificate | |
| Database Setup | | |
| Configure SQL User | | |
| Document Storage | | |
| Data Migration | | |
| IAEA International Atomic Energy Agency | Previous | Next |
| | | |

Figure 10

Note: If a trusted CA certificate is available, select Upload Certificate. If not, select Use Self-signed Certificate provided by RAIS+,

Configuration of SSL certificate:

| R* RAIS Configuration Tool | | - | × |
|----------------------------|---|---|---|
| About Tool | | | |
| Setup Application | IP Address | | |
| Setup SSL | Upload Certificate Selfsigned Certificate | | |
| Database Setup | Progress : | | |
| Configure SQL User | installing certificate to its. | | |
| Document Storage | | | |
| Data Migration | | | |
| IAEA | | | |

Figure 11

- 7. From the menu Configure Database:
 - Select the instance name from the database server,
 - Select the authentication mode (Windows or SQL), then click "Test connection" to ensure that the SQL service is running, and the connection is successfully established,
 - Submit the Database Name,
 - Click Next,

| R+ RAIS Configuration Tool | | | - × |
|----------------------------|--|-----------------------------------|-------------------|
| About Tool | Configure Database | | |
| Setup Application | Database Server DESKTO | P-I2CJMNF\SQLEXPRESS | ~ Refresh |
| Setup SSL | \odot SQL Authentication $	ilde{	extbf{	exbf{	extbf{	extbf{	extbf{	extbf{	extbf{	extbf{$ |) Windows Authentication \Box W | ithout MasterData |
| Database Setup | Database Name RAISProc | 1 | |
| Configure SQL User | | SQL Connection Status $	imes$ | Test Connection |
| Document Storage | | SQL connection successful. | |
| Data Migration | | ОК | |
| IAEA | | | Previous Next |

Figure 12

Note: If the SQL 2019 Standard/Express/... is not installed, the installer will setup SQL Server before to proceed to next step.

8. Restoring Database in the selected SQL instance from the previous step,

| Reference RAIS Configuration Tool | - | | × |
|--|--|------|---|
| About Tool | | | |
| Setup Application | Database Server DESKTOP-I2CJMNF\SQL/XPRESS ~ | | |
| Setup SSL | O SQL Authentication | | |
| Database Setup | Databa | | |
| Configure SQL User | Database KAISProd created successfully. | | |
| Document Storage | | | |
| Data Migration | | | |
| IAEA International Atomic Energy Agency | Previous | Next | |

Figure 13

- 9. Submit RAIS+ credentials:
 - a. SQL account: username and password
 - b. The default Admin password (for the Raisadmin account)

| R* RAIS Configuration Tool | - 🗆 X |
|----------------------------|---|
| About Tool | Configure Database |
| Setup Application | Create SQL Server user with limited privileges to run the application |
| Setup SSL | Username raisprod Password |
| Database Setup | Set default application admin password |
| Configure SQL User | Admin Password |
| Document Storage | |
| Data Migration | |
| IAEA | Previous Next |

Figure 14

10. Create and submit a destination folder name for file attachments,

R+ RAIS Configuration Tool

| Ref RAIS Configuration Tool | | | | - | | \times |
|-----------------------------|-----------------|--------------|-----------------------|----------|--------|----------|
| About Tool | Document Stor | age location | ı (file system or dat | tabase) | | |
| Setup Application | Location | ○ Database | ● File System | | | |
| Setup SSL | Selected Folder | | | | Browse | |
| Database Setup | | | | | | |
| Configure SQL User | | | | | | |
| Document Storage | | | | | | |
| Data Migration | | | | | | |
| IAEA | | | | Previous | Next | |

Figure 15

Note: The uploaded files can be saved within the Database if the option "Database" is selected, Select Database, then Click Next,



11. Generation of RAIS+ application shortcut,

| Ref RAIS Configuration Tool | | - | - | | × |
|--|-------------------------------------|----------|---|------|---|
| About Tool | | | | | |
| Setup Application | Location © Database © File System | | | | |
| Setup SSL | .) | | | | |
| Database Setup | Progress : | | | | |
| Configure SQL User | Creating desktop shortcut. | | | | |
| Document Storage | | | | | |
| Data Migration | | | | | |
| IAEA International Atomic Energy Agency | | Previous | | Next | |

Figure 17

12. Finally, RAIS+ is installed successfully, click Finish from the following menu,

| RAIS Configuration Tool | - 🗆 X | (|
|--|---|---|
| About Tool | Migrate data from RAIS 3.x (Optional in case no previous data exists) | |
| Setup Application | RAIS 3.x Database Details | |
| Setup SSL | Database Server DESKTOP-I2CJMNF\SQLEXPRESS | v |
| Database Setup | ○ SQL Authentication | |
| Configure SQL User | Database Name master | ~ |
| Document Storage | | |
| Data Migration | | |
| IAEA International Atomic Energy Agency | Previous Next Finish | |
| | | |

Figure 18

13. Use login credentials to get access to RAIS+ application:

Login: Raisadmin

Password: as created in step 9





The application is available for the administrator,

| ← C | | | | | 비 샵 @ % 🐒 … |
|---|----------------------|-----------|--------------|------------------------------|-----------------------------|
| Regulatory Authority Information System | | | | | File Library 🛔 RAISAdmin 🗸 |
| Dashboard Regulatory Processes 🗸 | Inventory 🗸 | Reports 🗸 | Statistics 🗸 | Regulatory System Settings 🗸 | Administration \checkmark |
| Dashboard | | | | | |
| All Notification(0) | All Notification (0) | | | | |
| Amendment notifications (0) | Status | | Duration | _ | |
| Access requests (0) | All | | ↓ All | • | |
| Inspection alerts (0) | | | | | |
| Notifications and updates (0) | | | | | |
| Regulatory notifications (0) | | | | | |
| Renewal requests (0) | | | | | |
| Data approval/validation decision notifications (0) | | | | | |
| Data approval/validation requests (0) | | | | | |
| Withdrawal notifications (0) | | | | | |
| Workflow assignments (0) | | | | | |
| | | | | | |

Figure 20

Note: Run the Basic Setup mode, if you want less user interaction with the installer.

RAIS+ Basic installation

1. Right click the RAIS+ installer, then click run as administrator.



Figure 21

2. From the RAIS Configuration Tool Basic Setup mode,



Figure 22

3. Read from the following menu and click Next.

| Real S Configuration Tool | | _ | | \times |
|------------------------------------|--|------------------------------------|----------------------------|-----------|
| About Tool | Welcome to the configuration tool for RAIS | | | |
| Setup Application | | | | |
| Database Setup | If you are installing RAIS, Please setup your web ser other settings from navigation tabs on the left. You | ver, database s can use this to | erver and ol to upo | d late |
| Configure SQL User | these settings at any point of time. | | | |
| Data Migration | If you wish to Migrate from RAIS3.x to RAIS+ you ca migration tab. You can contact RAIS+ support team at RAIS.Conta | an migrate you act-Point@iaea | r data fro a.org | om |
| | | Home | Nex | d . |
| International Atomic Energy Agency | | Home | 1407 | |



4. From the following menu:

- a. Click Browse,
- b. Create a folder, to store application files,
- c. Click Next:

| Ref RAIS Configuration Tool | | | — | | × |
|-----------------------------|-------------------|----------------------|----------|--------|---|
| About Tool | Setup RAIS App | lication | | | |
| Setup Application | Detination Folder | C:\RAISPTC\RAISBasic | | Browse | |
| Database Setup | | | | | |
| Configure SQL User | | | | | |
| Data Migration | | | | | |
| | | | | | |
| | | | | | |
| IAEA | | | Previous | Next | |

Figure 24

Figure 25 describes the application configuration step.

| R+ RAIS Configuration Tool | | _ | | × |
|----------------------------|--|----------|-----|---|
| About Tool | Setup RAIS Application | | | |
| Setup Application | Detination Folder C:\RAISPTC\RAISBasic | | | |
| Database Setup | | | | |
| Configure SQL User | Progress : | | | |
| Data Migration | Generating the sen signed certificate. | | | |
| | | | | |
| | | | | |
| | | Previous | Nex | t |
| | | | | |



Note: if SQL Server is not already installed in the machine, RAIS+ installer will setup that software before to proceed to RAIS+ installation:

- 5. From the Menu Configure Database:
 - a. Select the instance name from the database server,
 - b. Select the authentication mode (Windows or SQL), then click "Test connection" to ensure that the SQL service is running, and the connection is successfully established,
 - c. Submit the Database Name,
 - d. Click Next,

| Re RAIS Configuration Tool | | | - | - 🗆 X |
|----------------------------|----------------------|--------------------------------|------------------|----------------|
| About Tool | Configure Database | | | |
| Setup Application | Database Server DESK | TOP-I2CJMNF\SQLEXPRESS | v | Refresh |
| Database Setup | O SQL Authentication | Windows Authentication | Without MasterDa | ita |
| Configure SQL User | Database Name RAISB | asic | | |
| Data Migration | | SQL Connection Status \times | Т | est Connection |
| | | SQL connection successful. | | |
| | | ОК | | |
| | | | Previous | Next |

Figure 26

Restoring Database in the selected SQL instance from the previous step,

| R* RAIS Configuration Tool | - | |
|----------------------------|---|--|
| About Tool | | |
| Setup Application | Database Server DESKTOP-I2CJMNF\SQUXPRESS ~ | |
| Database Setup | ○ SQL Authentication | |
| Configure SQL User | Databa Progress : | |
| Data Migration | Restoring database (RAISBasic). | |
| | | |
| | | |
| | | |
| IAEA | | |
| | | |

Figure 27

- 6. Submit RAIS+ credentials:
 - a. SQL account: username and password
 - b. The default Admin password (for the Raisadmin account)

| Real RAIS Configuration Tool | - 🗆 X |
|--|---|
| About Tool | Configure Database |
| Setup Application | Create SQL Server user with limited privileges to run the application |
| Database Setup | Username raisbasic Password •••••• |
| Configure SQL User | Set default application admin password |
| Data Migration | Admin Password |
| | |
| | |
| IAEA International Atomic Energy Agency | Previous Next |

Figure 28

7. Application configuration and generation of RAIS+ shortcut,



Figure 29

8. RAIS+ is installed in Basic Mode, click Finish:

| R+ RAIS Configuration Tool | - 🗆 X | |
|----------------------------|---|--|
| About Tool | Migrate data from RAIS 3.x (Optional in case no previous data exists) | |
| Setup Application | RAIS 3.x Database Details | |
| Database Setup | Database Server DESKTOP-I2CJMNF\SQLEXPRESS ~ | |
| Configure SQL User | ○ SQL Authentication | |
| Data Migration | Database Name master v | |
| | | |
| | | |
| IAEA | Previous Next Finish | |
| | Figure 30 | |

9. Use login credentials to get access to RAIS+ application:

Login: Raisadmin

Password: as created in step 9

| ← C | 0 Q A 12 3 1 | 0 12 @ % 🔮 |
|-----------------------------------|--|--|
| <section-header></section-header> | Listernal Username Raisadmin Password Erorgot Password ? | EA ational Atomic Energy Agency External |

Figure 31

The application is available for the administrator,

| ← C ∴ https://localhost:5001 | | | | ⊕ A ^N ☆ G □ | 0 1 1 🙃 😵 🔮 |
|--|---------------------------------------|-----------|-----------------|------------------------------|-----------------------------|
| RAIS IAEA Regulatory Authority Information System | | | | | File Library 🛔 RAISAdmin 🗸 |
| Dashboard Regulatory Processes V | Inventory 🗸 | Reports 🗸 | Statistics 🗸 | Regulatory System Settings 🗸 | Administration \checkmark |
| Dashboard All Notification(0) Amendment notifications (0) Access requests (0) Inspection alerts (0) Notifications and updates (0) Notifications and updates (0) Regulatory notifications (0) Renewal requests (0) Data approval/validation decision notifications (0) | All Notification (0) Status All | | Ountion All | | |
| Data approval/validation requests (0) | | | | | |
| Workflow assignments (0) | | | | | |

Figure 32

Annex A - Internet Information Services Configuration

Use the inbuilt administrator account to add roles and features in the server before to install RAIS+ Method 1 - IIS installation from Server Manager console

1. Select Start > Server Manager.





2. In Server Manager, select Manage > Add Roles and Features.



Figure 34

3. In the Add Roles and Features wizard, click **Next** until the **Server Roles** page appears.



Figure 35

4. In the Add Roles and Features wizard, click **Next** until the **Server Roles** page appears.



Figure 36

5. In the Add Roles and Features wizard, click **Next** until the **Server Roles** page appears.

| 📥 A | dd Roles and Features Wizard | | | | - | | × |
|-----|---|--|---|--|---|------------|-----------|
| Se | elect destination | server | | | DESTINA RA | TION SERVI | ER /er |
| | Before You Begin Installation Type Server Selection Server Roles Features | Select a server or a virtual H Select a server from the Select a virtual hard disi Server Pool | nard disk on which t e server pool k | o install roles and features. | | | |
| | | Filter: | 10.4.1.1 | | | | 4 |
| | | RAISPLabServer 1 Computer(s) found This page shows servers the and that have been added newly-added servers from the | 10.0.2.15,169.2 at are running Wind by using the Add Se which data collectio | Microsoft Windows Server 2022 ows Server 2012 or a newer release ervers command in Server Manage n is still incomplete are not shown. | Standard B e of Windo r. Offline si | valuation | er, d |
| | | | < Prev | ious Next > Ins | stall | Cancel | |
| | | | | | | | |

Figure 37

6. In the Server Roles page, select the role Web Server (IIS)

| elect server ro | les | DESTINATION SERVE RAISPLabServ |
|-------------------|---|--------------------------------------|
| Before You Begin | Select one or more roles to install on the selected server. | |
| Installation Type | Roles | Description |
| Server Selection | Active Directory Cartificate Services | Web Server (IIS) provides a reliable |
| Server Roles | Active Directory Domain Services | manageable, and scalable Web |
| Features | Active Directory Federation Services | application infrastructure. |
| | Active Directory Lightweight Directory Services | |
| | Device Health Attestation | |
| | DHCP Server | |
| | Fax Server | |
| | File and Storage Services (1 of 12 installed) | |
| | Hyper-V | |
| | Network Policy and Access Services | |
| | Print and Document Services Remote Access | |
| | Remote Desktop Services | |
| | Volume Activation Services | |
| | Windows Deployment Services | |
| | Windows Server Update Services | |

Figure 38

7. In the Add Roles and Features Wizard page, click Add Features

| Before You Begin | Select one or more roles to install on the selected server. | |
|---|---|--|
| Installation Type Server Selection Server Roles | Roles Active Directory Certificate Services Active Directory Domain Services Active Directory R. Add Roles and Eastures Witner | Description Web Server (IIS) provides a reliabl manageable, and scalable Web |
| | Active Directory Device Health At DHCP Server DNS Server Fax Server Host Guardian S Hyper-V Network Policy a Print and Docum Remote Access Remote Desktop Volume Activatio Web Server (IS) Windows Deploy | quired for Web Server (IIS)? d to manage this feature, but do not te server. |
| | | s (if applicable) |

Figure 39

8. In the Roles Wizard page, click Next



Figure 40

9. In the Add Roles and Features Wizard page, select ASP.Net 4.8



Figure 41

10. Select Message Queuing (MSMQ) Activation, then click Add Features.



Figure 42

11. Click Next

| | 🚵 Add Roles and Features Wizard | | - 🗆 X |
|-----------|--|--|---|
| | Select features | | DESTINATION SERVER RAISPLabServer |
| | Before You Begin Installation Type Server Selection Server Roles Features Web Server Role (IIS) Role Services Confirmation Results | Select one or more features to install on the selected server. Features Select one or more features to install on the selected server. Select one or more features to install on the selected server. Select one or more features to installed Select one or more setures (2 of 7 installed) Select one or more setures (2 of 7 installed) Select one or more setures (2 of 7 installed) Select one or more setures (2 of 7 installed) Select one or more setures (2 of 7 installed) Select one or more setures (2 of 7 installed) Select one or more setures (2 of 7 installed) Select one or more setures (2 of 7 installed) Select one or more setures (1 of 5 installed) Select one or mo | Description Message Queuing Activation supports process activation via Message Queuing. Applications that use Message Queuing Activation can start and stop dynamically in response to work items that arrive over the network via Message Queuing. |
| | | < Previous Nex | t > Install Cancel |
| 12. Click | x Next | Figure 43 | |
| | 📥 Add Roles and Features Wizard | | - 🗆 X |
| | Web Server Role (| (IIS) | DESTINATION SERVER RAISPLabServer |
| | Before You Begin Installation Type Server Selection Server Roles | Web servers are computers that let you share information over extranets. The Web Server role includes Internet Information diagnostic and administration, a unified Web platform that in Communication Foundation. | er the Internet, or through intranets and Services (IIS) 10.0 with enhanced security, tegrates IIS 10.0, ASP.NET, and Windows |
| | Web Server Role (IIS) Role Services Confirmation Results | The default installation for the Web Server (IIS) role include enable you to serve static content, make minor customizati errors), monitor and log server activity, and configure static | is the installation of role services that ions (such as default documents and HTTP : content compression. |
| | | More information about Web Server IIS | |
| | | < Previous Nex | ct > Install Cancel |

Figure 44

13. All selected roles and Features are as in the Figure 45.



Figure 45

14. Click Next



Figure 46

15. Click Install



Figure 47

16. The Process Start IIS role and features installation.

| | View installation progress |
|--------------|--|
| | Feature installation |
| | |
| | Installation started on RAISPLabServer |
| | .NET Framework 4.8 Features |
| | ASP.NET 4.8 |
| | WCF Services |
| Confirmation | Message Queuing (MomQ) Activation |
| Results | Message Queuing Message Queuing Services |
| | Message Queuing Server |
| | Web Server (IIS) |
| | Management Tools |
| | IIS 6 Management Compatibility |
| | IIS 6 Metabase Compatibility |
| | IIS Management Console |
| | Web Server |
| | Application Initialization |
| | ASP.NET 4.8 |
| | Server Side Includes |
| | ISAPI Extensions |
| | ISAPI Filters |
| | .NET Extensibility 4.8 |
| | WebSocket Protocol |
| | Common HTTP Features |
| | Default Document |
| | HTTP Frroms |
| | HTTP Redirection |
| | Static Content |
| | Health and Diagnostics |
| | Custom Logging |
| | HTTP Logging |
| | Tracing |
| | Logging Tools |
| | You can close this wizard without interrupting running tasks. View task progress or open th page again by clicking Notifications in the command bar, and then Task Details. |
| | Export configuration settings |

Figure 48

You can verify the progress of the IIS roles and features installation.



Figure 49

17. The IIS role with required features is successfully added.

Click Close



Figure 50

Method 2 – IIS installation using Powershell

We are using a template generated for Microsoft Windows Server 2022 Standard.

- 1. Download and create a copy from the file 'Deployment Config Template IIS Windows Server 2022',
- 2. Save the file in a folder in C drive of the RAIS+ server,
- 3. Edit the XML file and update the "ServerName" RAISPLABSERVER with the RAIS+ server name
- 4. Select Start > Windows PowerShell, right click and select run as administrator
- 5. For local Server, Run the following PowerShell command with the XML Template



6. For Remote Server, Run the following PowerShell command with the XML Template

PS C:\Users\Administrator> PS C:\Users\Administrator> Install-WindowsFeature – ConfigurationFilePath 'C:\%FolderPath%\Template.XML' -ComputerName \$ServerName

Note: this template is prepared for Microsoft Windows Server 2022 Standard.

PS C:\Users\Administrator> PS C:\Users\Administrator> Install-WindowsFeature -ConfigurationFilePath 'C:\XWL\DeploymentConfigTemplate IIS windows Server 2022 standard.xml

Administrator: Windows PowerShell

Annex B - SQL Server 2019 Setup

Downloaded the .exe file from Microsoft web site, follow these steps to install and create an instance of SQL Server:

1. Click the middle tile to select the **Custom** installation type.

| Basic | Custom | Download Media |
|--|---|---|
| Select Basic installation type to nstall the SQL Server Database Engine feature with default configuration. | Select Custom installation type to step through the SQL Server installation wizard and choose what you want to install. This installation type is detailed and takes longer than running the Basic install. | Download SQL Server setup files now and install them later on a machine of your choice. |

Figure 51

2. Choose where to store the downloaded installation media files and click **Install** to continue.





Once the download is complete, the setup window automatically closes and is replaced by the SQL Server Installation Center window. Here, starts the wizard to install SQL Server 2019.

3. If the wizard does not start automatically, locate the folder where the installation files were downloaded then right click setup file and select **Run as administrator**

| Name | Date modified | Туре | Size |
|----------------------------------|---------------------|--------------------|--------|
| 1033_ENU_LP | 1/24/2020 9:58 AM | File folder | |
| 🦲 redist | 9/24/2019 8:15 PM | File folder | |
| resources | 9/24/2019 7:09 PM | File folder | |
| Tools | 9/24/2019 9:28 PM | File folder | |
| x64 | 2/7/2020 4:21 PM | File folder | |
| autorun 💮 | 9/24/2019 7:32 PM | Setup Information | 1 KB |
| 🕋 Medialnfo | 9/24/2019 7:32 PM | XML Document | 1 KB |
| 🖾 set | 010 1 100 1 7:32 PM | Application | 124 KB |
| Set Open | 7:32 PM | CONFIG File | 1 KB |
| 🗟 Sq 🗳 Run as administrator | 7:32 PM | Application extens | 216 KB |
| Transfel and an an annual to the | | | |

Figure 53

4. Select the **Installation** category on the left-hand side of the SQL Server Installation Center window and click the **New SQL Server** link to start the installation wizard.

| 🃸 SQL Server Installation Center | : | × |
|----------------------------------|--|---|
| Planning Installation | New SQL Server stand-alone installation or add features to an existing installation Launch a wizard to install SQL Server 2019 in a non-clustered environment or to add features to an existing SQL Server 2019 instance. | ^ |
| Maintenance Tools Resources | Install SQL Server Reporting Services Launch a download page that provides a link to install SQL Server Reporting Services. An internet connection is required to install SSRS. | 2 |
| Advanced Options | Install SQL Server Management Tools Launch a download page that provides a link to install SQL Server Management Studio, SQL Server command-line utilities (SQLCMD and BCP), SQL Server PowerShell provider, SQL Server Profiler and Database Tuning Advisor. An internet connection is required to install these tools. | |
| | Launch a download page that provides a link to install SQL Server Data Tools (SSDT), SSDT provides Visual Studio integration including project system support for Microsoft Azure SQL Database, the SQL Server Database Engine, Reporting Services, Analysis Services and Integration Services. An internet connection is required to install SSDT. | |
| | New SQL Server failover cluster installation Launch a wizard to install a single-node SQL Server 2019 failover cluster. This action is only availabe in the clustered environment. | |
| | Add node to a SQL Server failover cluster Launch a wizard to add a node to an existing SQL Server 2019 failover cluster. This action is only availabe in the clustered environment. | |
| Microsoft SQL Server 2019 | Upgrade from a previous version of SQL Server Launch a wizard to upgrade a previous version of SQL Server to SQL Server 2019. Click here to first view Upgrade Documentation | * |

Figure 54

5. The wizard automatically checks for available updates. If there are no updates, click **Next** to proceed.

| 🃸 SQL Server 2019 Setup | | | _ | | | \times |
|---|---|--------|--------|---|----------|----------|
| Product Updates | | | | | | |
| Always install the latest update | is to enhance your SQL Server security and performance. | | | | | |
| Global Rules Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Feature Selection Feature Rules Feature Configuration Rules Ready to Install Installation Progress Complete | There are no updates for SQL Server found online. | | | C | Check ag | pain |
| | · | < Back | Next > | | Cancel | |

Figure 55

6. The install wizard checks for any errors that might cause problems during the setup process. If it detects any failures, fix them before clicking **Next** to continue.

| 髕 SQL Server 2019 Setup | | | _ | | × |
|--|------------------------------|---|-----------|------|------|
| Install Rules | | | | | |
| Setup rules identify potential p can continue. | problems that | might occur while running Setup. Failures must be corrected bef | ore Setup | | |
| Global Rules Product Updates Install Setup Files | Operation | completed. Passed: 3. Failed 0. Warning 1. Skipped 0. | | | |
| Install Rules Installation Type Product Key | Hide det <u>View deta</u> | ails << iled report | | Re | -run |
| License Terms | Result | Rule | Status | | _ |
| Feature Selection | | Consistency validation for SQL Server registry keys | Passed | | |
| Feature Rules | | Computer domain controller | Passed | | |
| Feature Configuration Rules | 1 | Windows Firewall | Warning | | |
| Ready to Install | | SQL 2019 minimum CTP for Upgrade and Side by Side Support | Passed | | |
| Installation Progress Complete | | | | | |
| | | < Back | Next > | Canc | el |

Figure 56

7. Choose an installation type. If you are installing SQL Server for the first time, select the **Perform a new installation of SQL Server 2019** option and click **Next** to continue.

| 🃸 SQL Server 2019 Setup | | | | | _ | | × |
|--|--|--|---|--|--|--|----|
| Installation Type Perform a new installation or ac | ld features to an existing | instance of SQL Serve | r 2019. | | | | |
| Global Rules Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Feature Selection Feature Rules Feature Configuration Rules Ready to Install Installation Progress Complete | Perform a new insta Select this option if components. Add features to an e SQLEXPRESS Select this option if want to add the An within an instance of Installed instances: Installed instances: SQLEXPRESS Shared Compone Shared Compone | Illation of SQL Server 20 you want to install a r existing instance of SQ you want to add featu alysis Services features must be the same edition Instance ID MSSQL15.SQLEXPR | 019 hew instance of SQL S L Server 2019 ures to an existing inst s to the instance that is s to the instance that is Features SQLEngine, SQLEn Conn, BC, SDK Conn, BC, SDK | erver or want to insta tance of SQL Server. I contains the Databas Edition Express | For exar e Engin Vers 15.0. 15.0. 14.0. | d nple, you e. Featurn 2080.9 2000.5 1000.169 | es |
| | | | < Ba | ick Next > | | Cancel | |

Figure 57

8. Choose the version of SQL Server you want to install and enter a product key if you have one, then click **Next** to proceed. For this example, we are installing the free Developer version.

| 🃸 SQL Server 2019 Setup | | - | | \times |
|---|--|---|---|----------------------|
| Product Key Specify the edition of SQL Serve | er 2019 to install. | | | |
| Global Rules Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Feature Selection Feature Rules Feature Configuration Rules Ready to Install Installation Progress Complete | Validate this instance of SQL Server 2019 by entering the 25-character key from the M of authenticity or product packaging. You can also specify a free edition of SQL Serve Evaluation, or Express. Evaluation has the largest set of SQL Server features, as docum Books Online, and is activated with a 180-day expiration. Developer edition does not has the same set of features found in Evaluation, but is licensed for non-production of development only. To upgrade from one installed edition to another, run the Edition © Specify a free edition: Developer C Enter the product key: | licrosoft r: Develo hented in have an latabase Upgrade | certificat per, i SQL Sen expiration application Wizard. | e ver h, pn |
| | < Back Next > | • | Cancel | |

Figure 58

9. Check the I accept the license terms and Privacy Statement box and click Next to continue.



Figure 59

10. Select the features you want to install. For this example, we are using the **Database Engine Services** option only. Click **Next** to proceed.

| 髋 SQL Server 2019 Setup | | | | _ | | × |
|--|---|--|---|---|--|--|
| Feature Selection Select the Developer features to | install. | | | | | |
| Global Rules Product Updates Install Setup Files Install Rules Install Rules Installation Type Product Key License Terms Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete | Looking for Reporting Service Features: Database Engine Services SQL Server Replication Machine Learning Ser R Python Java Full-Text and Semanti Data Quality Services PolyBase Query Service Select All | n vices and Language ic Extractions for Sea te for External Data | m the web Feature description: The configuration and instance feature of a S isolated from other SC Prerequisites for select Already installed: Windows PowerSI Microsoft Visual C Disk Space Requirement Drive C: 1003 MB requ | d operation of e SQL Server insta QL Server instar ted features: hell 3.0 or highe C++ 2017 Redist nts uired, 24153 MB | each Ince is Inces, SQL er tributable } available | > > > |
| | Instance root directory: Shared feature directory: Shared feature directory (x86): | C:\Program Files\Microsoft SQL Server\ C:\Program Files\Microsoft SQL Server\ .86): C:\Program Files (x86)\Microsoft SQL Server\ | | | | |
| | | | < Back | Next > | Cancel | |

Figure 60

11. Enter a name and instance ID for the new SQL server and click **Next** to continue.

| 🃸 SQL Server 2019 Setup | | | | | _ | | × |
|---|--|--------------------------|-----------------------|------------------|------|------------|---|
| Instance Configuration | | | | | | | |
| Specify the name and instance | ID for the instance of SC | QL Server. Instance ID b | ecomes part of the in | stallation path. | | | |
| Global Rules | O Default instance | | | | | | |
| Product Updates | Named instance: | SQL_Server | | | | | |
| Install Setup Files | | | | | | | |
| Installation Type | Instance ID: | SQL_SERVER | | | | | |
| Product Key License Terms | | | | | | | |
| Feature Selection | SQL Server directory: | C:\Program Files\Micr | osoft SQL Server\MSS | QL15.SQL_SERVE | R | | |
| Feature Rules Instance Configuration | Installed instances: | | | | | | |
| Server Configuration | Instance Name | Instance ID | Features | Edition | Ve | rsion | |
| Database Engine Configuration | SQLEXPRESS | MSSQL15.SQLEXPR | SQLEngine, SQLEn | Express | 15.0 | 0.2080.9 | |
| Feature Configuration Rules | <shared compone<="" td=""><td></td><td>Conn, BC, SDK</td><td></td><td>15.0</td><td>0.2000.5</td><td></td></shared> | | Conn, BC, SDK | | 15.0 | 0.2000.5 | |
| Ready to Install | <shared compone<="" td=""><td></td><td>Conn, BC, SDK</td><td></td><td>14.0</td><td>0.1000.169</td><td></td></shared> | | Conn, BC, SDK | | 14.0 | 0.1000.169 | |
| Installation Progress | | | | | | | |
| Complete | | | | | | | |
| complete | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | < Ba | ock Nex | ct > | Cancel | |

Figure 61

Note: Once you enter the server's name using the **Named instance** option, the wizard automatically fills in the instance ID field.

12. Set up the service accounts and collation configuration, then click **Next** to continue.

| Server Configuration | | | | | |
|--|--|--|--|-----------------------------------|---|
| Specify the service accounts and | d collation configuration. | | | | |
| Global Rules | Service Accounts Collation | | | | |
| Product Updates Install Setup Files | Microsoft recommends that you | use a separate account for each | SQL Server serv | ice. | |
| nstall Rules | Service | Account Name | Password | Startup Typ | e |
| nstallation Type | SQL Server Agent | NT Service\SQLAgent\$S | | Manual | ~ |
| Product Key | SQL Server Database Engine | NT Service\MSSQL\$SQL | 1 | Automatic | ~ |
| icense Terms | SQL Server Browser | NT AUTHORITY\LOCAL | | Disabled | ~ |
| eature Selection eature Rules | Grant Perform Volume Mainte | mance Task privilege to SQL Sen | ver Database En | gine Service | |
| eature Selection eature Rules instance Configuration erver Configuration atabase Engine Configuration eature Configuration Rules eady to Install installation Progress omplete | Grant Perform Volume Mainte This privilege enables instant i to information disclosure by a <u>Click here for details</u> | enance Task privilege to SQL Sen file initialization by avoiding zero llowing deleted content to be ac | ver Database En bing of data pag cessed. | gine Service ges. This may lea | d |

Figure 62

13. In the Server Configuration tab, select the **Mixed Mode** method of authentication. Select a user for the role of SQL server administrator and set up a password for the sa account. Click **Next** to proceed.

| 髕 SQL Server 2019 Setup | | | | _ | | × |
|--|--|--|--|--|------------------------|------|
| Database Engine Config | juration | | | | | |
| Specify Database Engine authen parallelism, Memory limits, and F | tication security mode, ilestream settings. | administrators, data directo | ries, TempDB, Max de | gree of | | |
| Global Rules Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Feature Selection Feature Rules | Server Configuration Specify the authent Authentication Mod Windows authen Mixed Mode (SC Specify the password Enter password: | Data Directories TempDB tication mode and administra de trication mode L Server authentication and rd for the SQL Server system | MaxDOP Memory ators for the Database Windows authenticat administrator (sa) acc | y FILESTREAM e Engine. tion) 1 count. | | |
| Instance Configuration Server Configuration | Confirm password: | •••••• | | | | |
| Database Engine Configuration | Specify SQL Server a | administrators | | | | 3 |
| Feature Configuration Rules Ready to Install Installation Progress Complete | | | SQL unr Eng | L Server administrat estricted access to t jine. | ors have he Databas | e |
| | Add Current User | Add Remove | | | | |
| | | 2 | < Back | Next > | Cance | el . |

Figure 63

14. The final step offers a summary of the installation. Click **Back** to return to any of the previous steps and change the installation settings or click **Install** to start the setup process.



Figure 64

15. Once the setup is complete, the status of setup operations should read *Succeeded*. Click **Close** to exit the install wizard.

| 🃸 SQL Server 2019 Setup | | _ | | × |
|--|--|-----------|----------|---|
| Complete Your SQL Server 2019 installation | on completed successfully with product updates. | | | |
| Global Rules Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete | Information about the Setup operation or possible next steps: Feature Status Database Engine Services Succeeded SQL Browser Succeeded Details: Install successful. Install successful. Summary log file has been saved to the following location: C\Program Files\Microsoft SQL Server\150\Setup Bootstrap\Log\20210629 1255 | 50\Summar | y. DESKT | |
| | <u>10K30NQ 20210629 125550.txt</u> | | Close | • |

Figure 65