

# SonicDICOM PACS Starter Guide

Version 3.1

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## Introduction

SonicDICOM PACS is software that combines the capabilities of DICOM Server with Web browser based DICOM Viewer.

This document describes overview of SonicDICOM PACS and instructions of installation.

## Revision History

Revision	Date	Description
1.0	November 25, 2013	Initial version
2.0	December 14, 2016	Update for software version 2.3.2
3.0	April 20, 2018	Update for software version 3.0.0
3.1	April 15, 2022	Update for software version 3.9.5 / Add and improve articles

## 1. Overview

SonicDICOM PACS is software that combines the capabilities of DICOM Server with Web browser based DICOM Viewer.

### DICOM Server

DICOM Server can connect to modalities such as CR, CT, MRI, etc. and can store scanned data.

Also, it can connect to third party's DICOM Viewer that is compliant with the DICOM Standard.

Connection to modalities and third party's DICOM Viewer will be processed in parallel.

So you can simultaneously connect to multiple modalities and DICOM Viewer.

## DICOM Viewer

DICOM Viewer is Web browser based.

You can use it from any terminal in the same network by only accessing to the URL on Web browser such as Google Chrome, Mozilla Firefox, etc.

You do not need to install software and not need to add any plug-in to Web browser.

Also, this DICOM Viewer is designed to be simply integrated with Web applications such as HIS, RIS, and others via URL.

NOTE: SonicDICOM PACS should not be used for diagnosis purposes in the country and the region where pharmaceutical approvals (such as FDA, CE, HIPAA, etc.) are required in order to use this product for diagnosis.

## 2. Supported Modalities and Images

SonicDICOM PACS supports following types of modalities.

- Computed Radiography (CR)
- Computed Tomography (CT)
- Digital X-Ray (DX)
- Endoscope (ES)
- Mammography (MG)
- Magnetic Resonance (MR)
- Nuclear Medicine (NM)
- Positron Emission Tomography PET-CT (PT)
- Radio Fluoroscopy (RF)
- Radiographic Imaging (RG)
- Radiation Therapy (RT)
- Secondary Capture (SC)

- Ultrasound (US)
- X-Ray Angiographic (XA)
- External-camera Photography (XC)

And it can handle the following types of images.

- Monochromatic and color images
- Static images and multiframe images
- Uncompressed and compressed (RLE Lossless, JPEG Lossy, JPEG Lossless, JPEG 2000 Lossy, JPEG 2000 Lossless)

### 3. System Requirements

System Requirements of SonicDICOM PACS are as below.

#### Server

#### Hardware

#### CPU:

We recommend 2GHz and 4 cores or bigger cores.

3GHz or more is recommended when there are many images of large capacity such as Xray and Mammography.

If there is high frequency of Web Connection and DICOM Connection, bigger core is recommended.

#### Memory:

We recommend 4 GB or more.

If there is high frequency of Web Connection and DICOM Connection, we recommend adding more memory.

Also, if you use Microsoft SQL Server Standard Edition or Enterprise Edition, you need to add 2GB more.

### **OS HDD:**

We recommend to change the HDD of OS area to SSD.

A capacity is 200 GB or more.

### **HDD for Data Path:**

We recommend using NAS.

When you select it, please place importance on Random Read more than Sequential Read.

### **HDD for Backup Path:**

Please use internal or external HDD that has same capacity as Data Path.

Internal HDD is preferable from our experience.

### **LAN:**

1 GB or more is required.

Reference Page: [Advanced > 1. Hardware Configuration](#)

### **OS**

- Windows 10 (64 bit)
- Windows Server 2016, 2019

### **Database**

- Microsoft SQL Server 2016, 2017, 2019, 2022

### **Required Program**

- Microsoft .NET Framework 4.7

### **Client**

#### **Web Browser (PC)**

- The latest version of Google Chrome
- The latest version of Mozilla Firefox
- The latest version of Microsoft Edge

### Web Browser (Tablet)

- The latest version of Safari
- The latest version of Google Chrome

## 4. Limitation of Trial Edition

Trial Edition has following limitations.

- The max number of Studies: 10
- The max number of Web Connection: 5
- The max number of DICOM Connection: 5

Web Connection:

The number of users who can access web interface of SonicDICOM PACS at the same time.

DICOM Connection:

The number of devices/software that can connect with SonicDICOM PACS by using DICOM communication.

Such as Modalities (CR, CT, etc.), third party's DICOM Viewers, and so on.

There is no limitation on features that can be used.

## 5. Download

Trial Edition of SonicDICOM PACS is available to download free of charge.

1. Access the download page by the following URL.  
<https://sonicdicom.com/on-premises/download/>
2. Fill out the form with required information.

3. Read and accept our privacy policy before using the form. If you wish to receive marketing emails (introduction of product information and service, announcement of events and others), select the "Accept".
4. Select "Submit".
5. We will send an email with URL of the download page to the email address you entered.
6. Click the URL in the email to access the download page.
7. Select "Download".

## **6. Install**

### **Install required software**

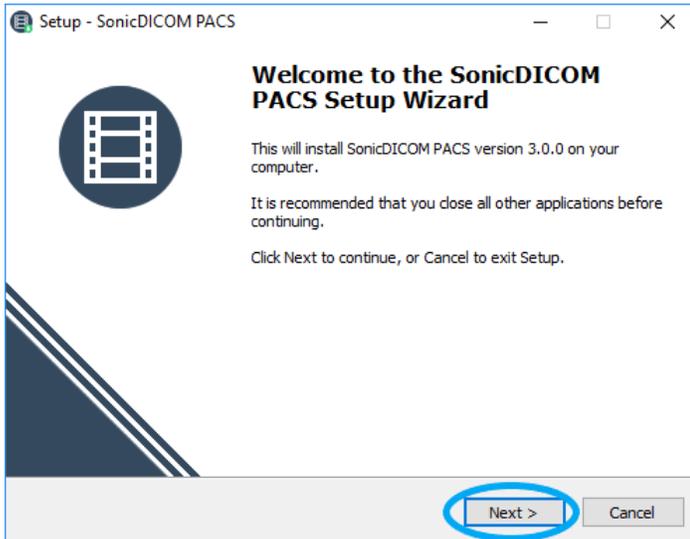
To run SonicDICOM PACS, Microsoft .NET Framework 4.7 is necessary to be installed on PC/Server that SonicDICOM PACS is installed.

It is pre-installed on the latest versions of Windows 10 and Windows Server 2016/2019.

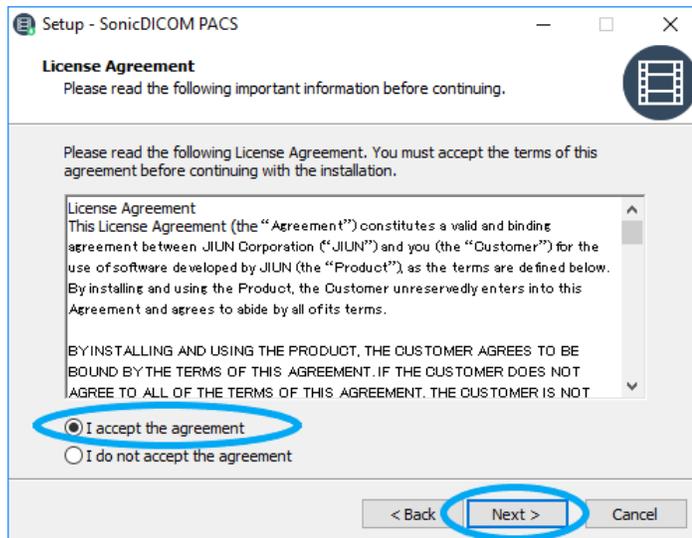
If not, install it by using Windows Update.

## Install SonicDICOM PACS

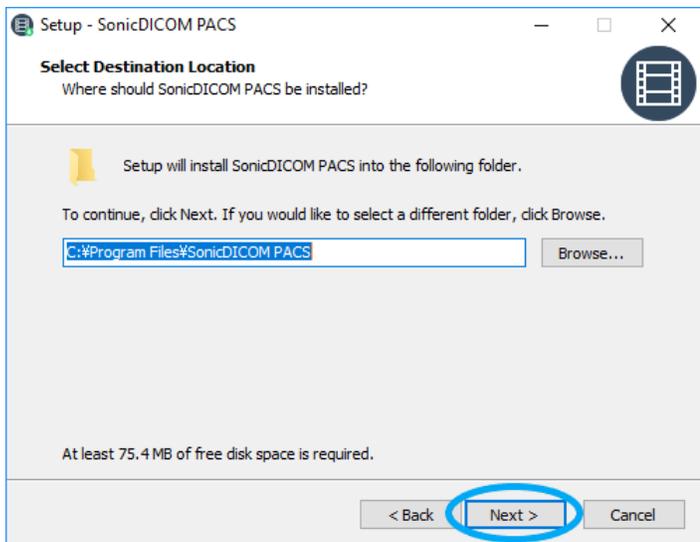
1. Start up the downloaded installer.
2. Click "Next".



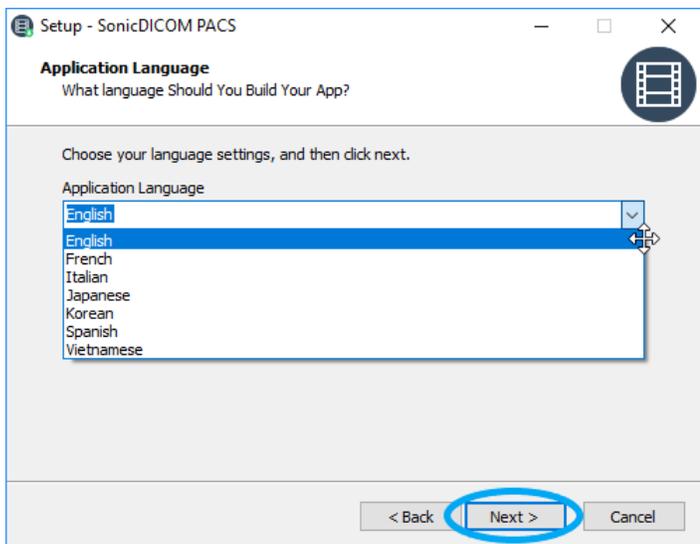
3. Read License Agreement and check "I accept the agreement" after confirming its contents.
4. Click "Next".



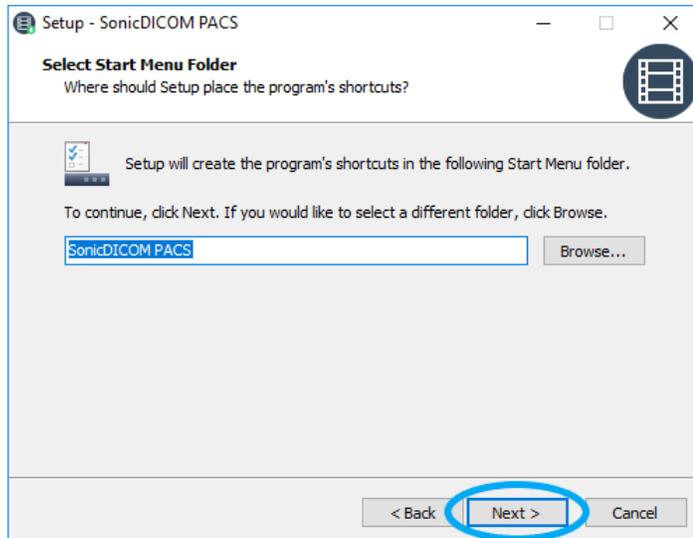
5. Select a folder to install.
6. Click "Next".



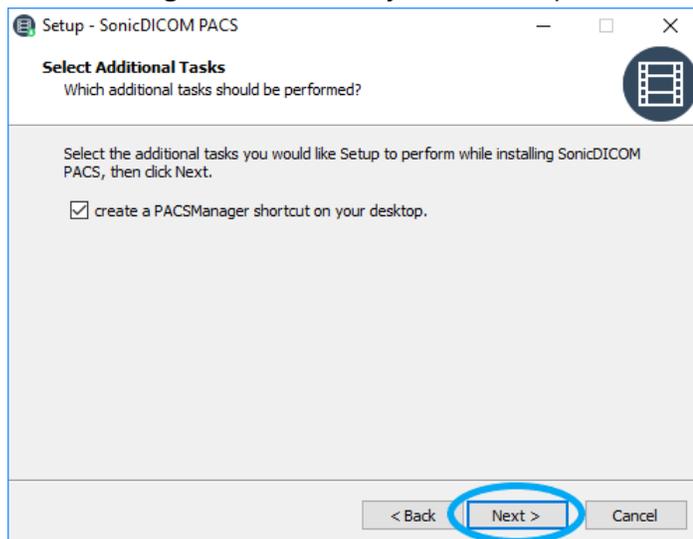
7. Select your language.
8. Click "Next".



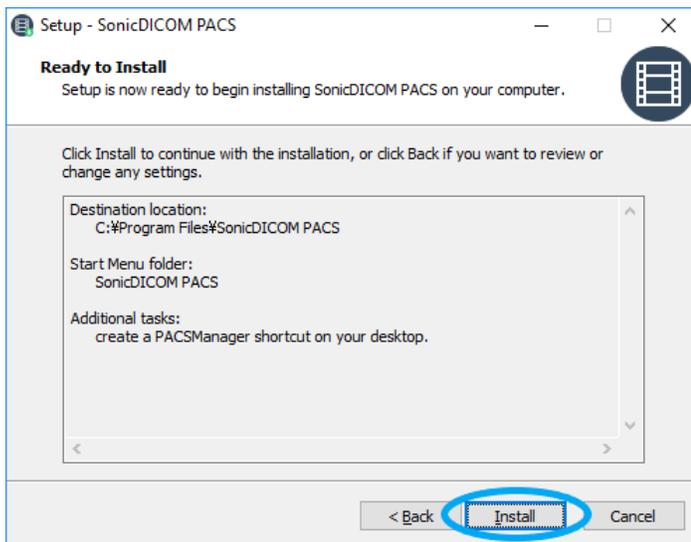
9. Select a folder to save a program's shortcut that is created in Start Menu.
10. Click "Next".



11. Click "Next".  
If you want to create a shortcut on the desktop, check "create a PACSManager shortcut on your desktop".

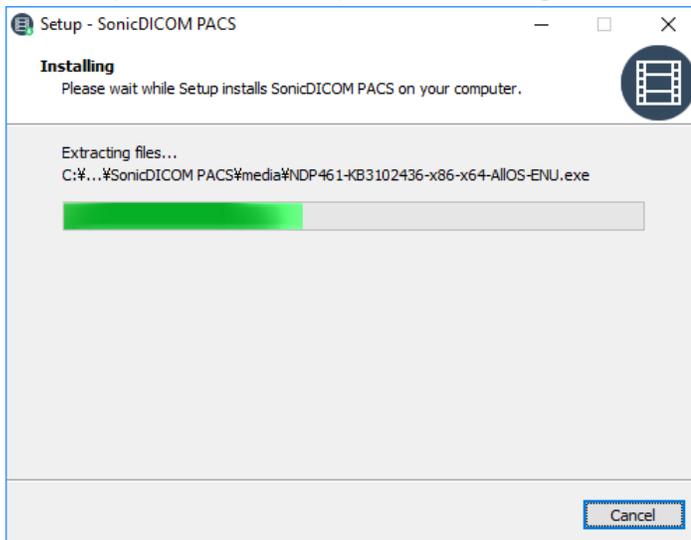


12. Click "Install".



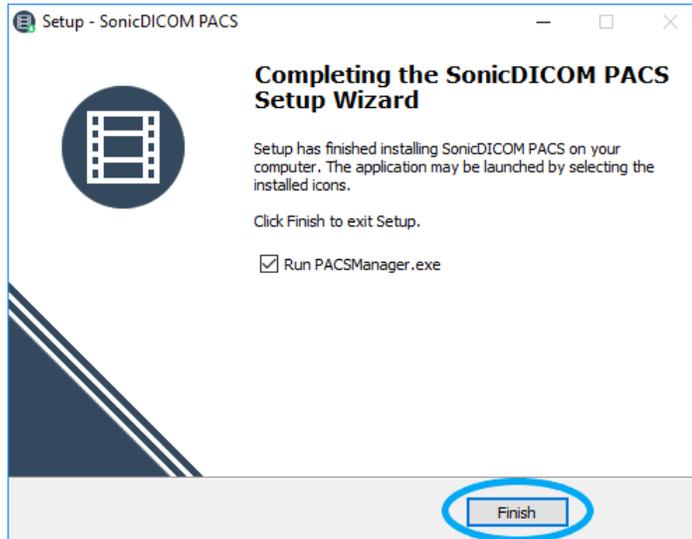
13. Installation will start.

Do not perform other operation during the installation.



14. Click "Finish".

If you would start up PACS Manager after the installation, check "Run PACSManager.exe".

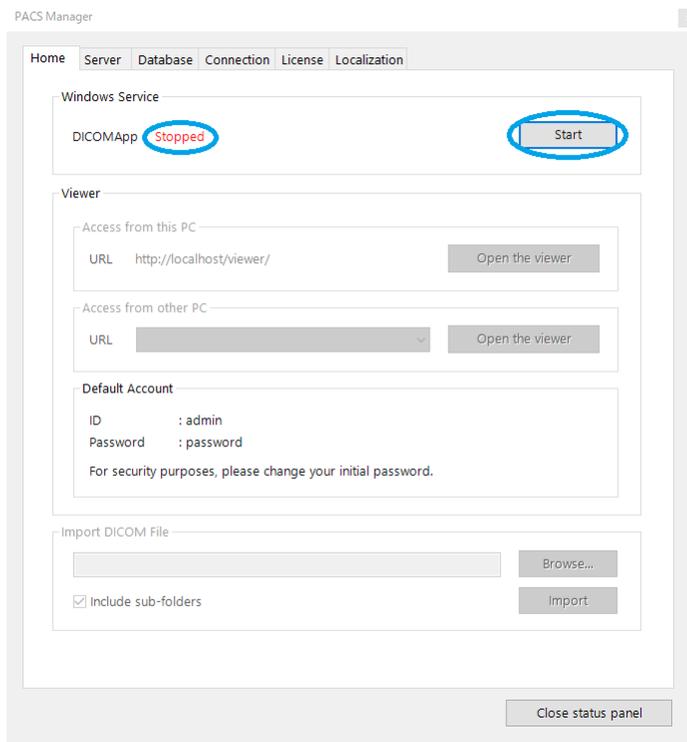


## 7. Start SonicDICOM PACS

You can start SonicDICOM PACS using PACS Manager.

### Start SonicDICOM PACS

1. Make sure that the status of DICOMApp is "Stopped".
2. Click "Start".



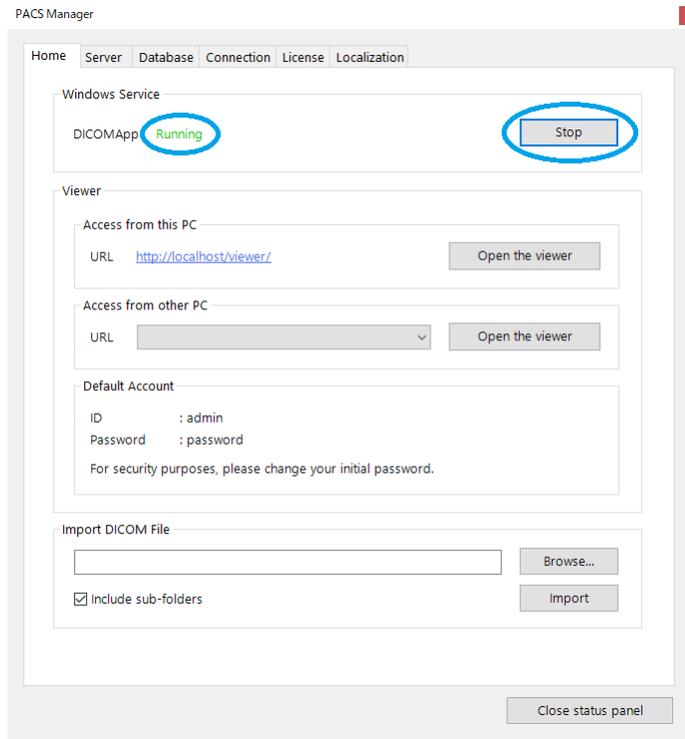
3. "Status Panel" is displayed.
4. "OK" is displayed in the status field of DICOM Server and Web Server.

```
Status
2021-06-17 11:47:55 [Service] Starting Windows Service "DICOMApp" (3.7.9.30).
2021-06-17 11:47:55 [Service] Starting Loa Manager... [ OK ]
2021-06-17 11:47:55 [Service] Loading settings...
2021-06-17 11:47:55 [Service] Clearing cache...
2021-06-17 11:47:55 [Service] Starting DICOM Server... [ OK ]
2021-06-17 11:47:55 [Service] Loading language file... [ OK ]
2021-06-17 11:47:55 [Service] Loading license information... [ OK ]
2021-06-17 11:47:55 [Service] Starting Web Server... [ OK ]
2021-06-17 11:47:55 [Service] Windows Service "DICOMApp" started successfully.
```

5. When SonicDICOM PACS is started normally, "Windows Service 'DICOMApp' started successfully" will be displayed.

```
Status
2021-06-17 11:47:55 [Service] Starting Windows Service "DICOMApp" (3.7.9.30).
2021-06-17 11:47:55 [Service] Starting Loa Manager... [ OK ]
2021-06-17 11:47:55 [Service] Loading settings...
2021-06-17 11:47:55 [Service] Clearing cache...
2021-06-17 11:47:55 [Service] Starting DICOM Server... [ OK ]
2021-06-17 11:47:55 [Service] Loading language file... [ OK ]
2021-06-17 11:47:55 [Service] Loading license information... [ OK ]
2021-06-17 11:47:55 [Service] Starting Web Server... [ OK ]
2021-06-17 11:47:55 [Service] Windows Service "DICOMApp" started successfully.
```

6. The status of DICOMApp will display "Running".



## If SonicDICOM PACS fails to start normally

If the port to be used by SonicDICOM PACS is already in use by the other software, PACS cannot be started normally. This is due to a port conflict that causes Web Server or DICOM Server of SonicDICOM PACS to fail to start.

"FAILED" is displayed in status field of Server that failed to start.

```
Status
2021-04-14 16:33:39 [Service] Clearing cache...
2021-04-14 16:33:39 [Service] Starting DICOM Server... [ OK ]
2021-04-14 16:33:40 [Service] Loading language file... [ OK ]
2021-04-14 16:33:40 [Service] Loading license information... [ OK ]
2021-04-14 16:33:42 [Service] Starting Web Server... [ OK ]
2021-04-14 16:33:42 [Service] Windows Service "DICOMApp" started successfully.
2021-04-14 16:51:00 [Service] Web Server stopped.
2021-04-14 16:51:00 [Service] DICOM Server stopped.
2021-04-14 16:51:00 [Service] Cache Manager stopped.
2021-04-14 16:51:00 [Service] Delete Manager stopped.
2021-04-14 16:51:00 [Service] Windows Service "DICOMApp" stopped successfully.
2021-04-14 18:43:54 [Service] Starting Log Manager... [ OK ]
2021-04-14 18:43:54 [Service] Starting Windows Service "DICOMApp" (3.7.7.27).
2021-04-14 18:43:54 [Service] Loading settings...
2021-04-14 18:43:54 [Service] Clearing cache...
2021-04-14 18:43:56 [Service] Starting DICOM Server... [ OK ]
2021-04-14 18:43:57 [Service] Loading language file... [ OK ]
2021-04-14 18:43:57 [Service] Loading license information... [ OK ]
2021-04-14 18:43:58 [Service] Starting Web Server... [FAILED]
2021-04-14 18:43:58 [Service] Web server failed to start.
2021-04-14 18:44:00 [Service] Windows Service "DICOMApp" stopped successfully.
2021-04-14 18:44:00 [Service] Cache Manager stopped.
2021-04-14 18:44:00 [Service] Delete Manager stopped.
```

In this case, you need to change either the port used by the other software, or the port used by SonicDICOM PACS.

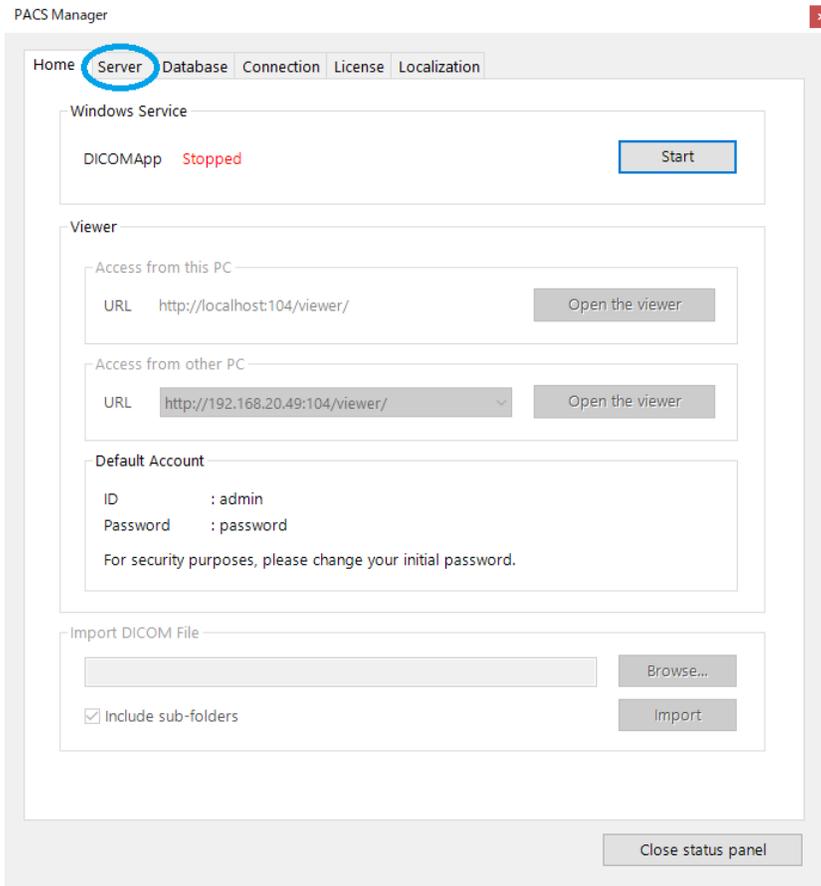
Info: The default Port Number of Web Server is "80".

The default Port Number of DICOM Server is "104".

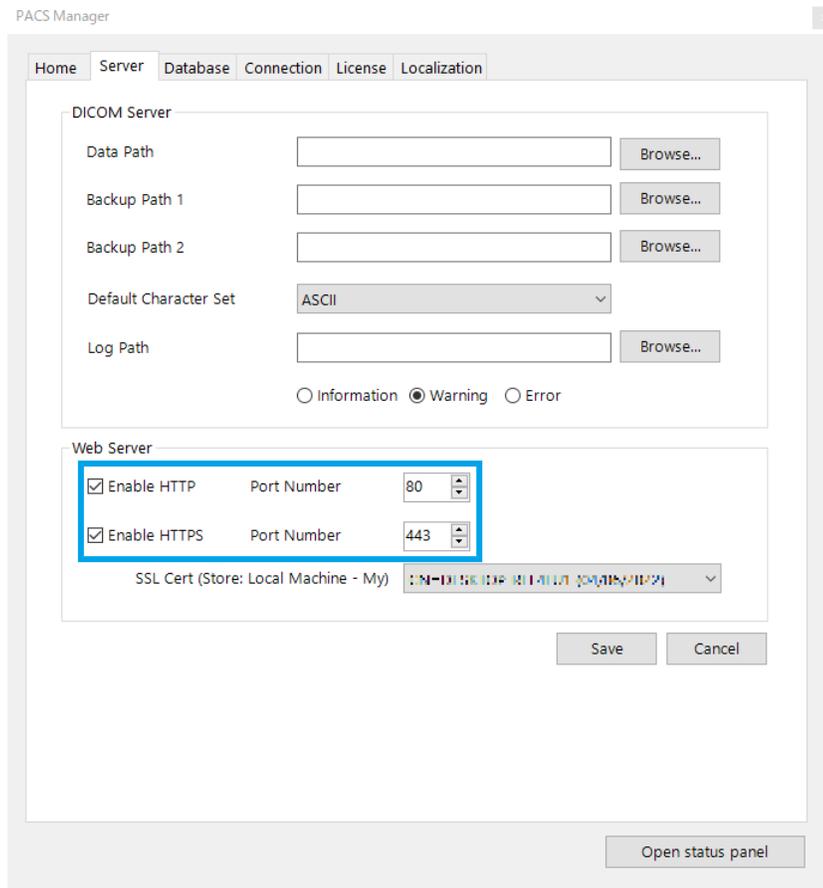
## If Web Server fails to start

Change the port that may be in conflict with another software to another port.

1. Click the "Server" tab.



2. Change "Port Number" of "Web Server".

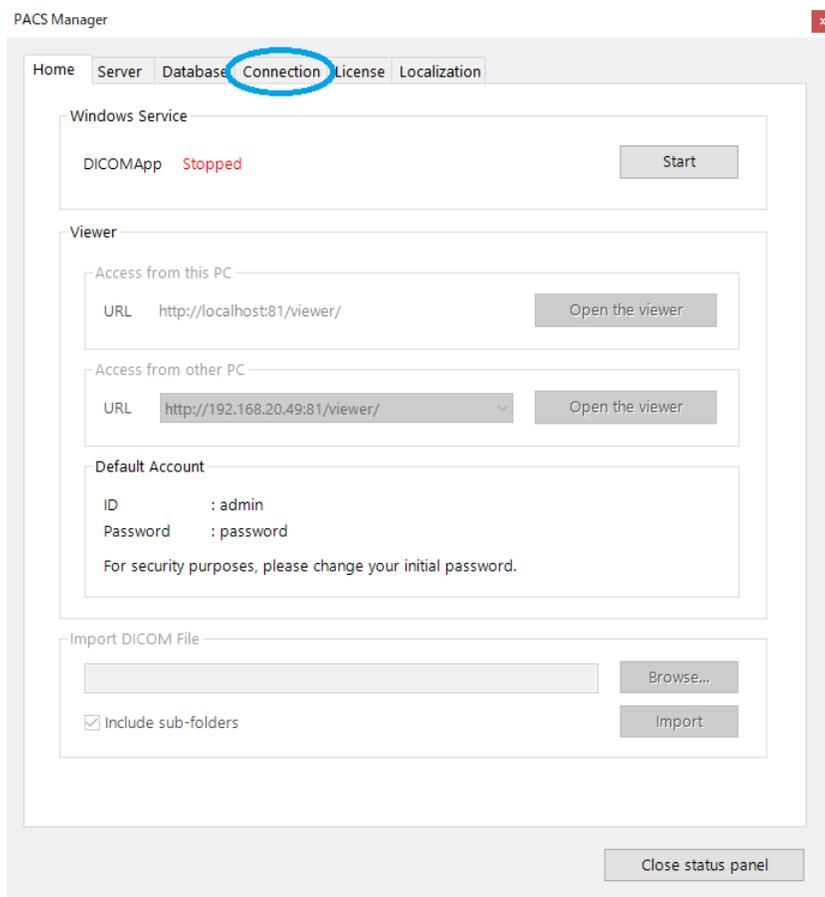


3. Click "Save".

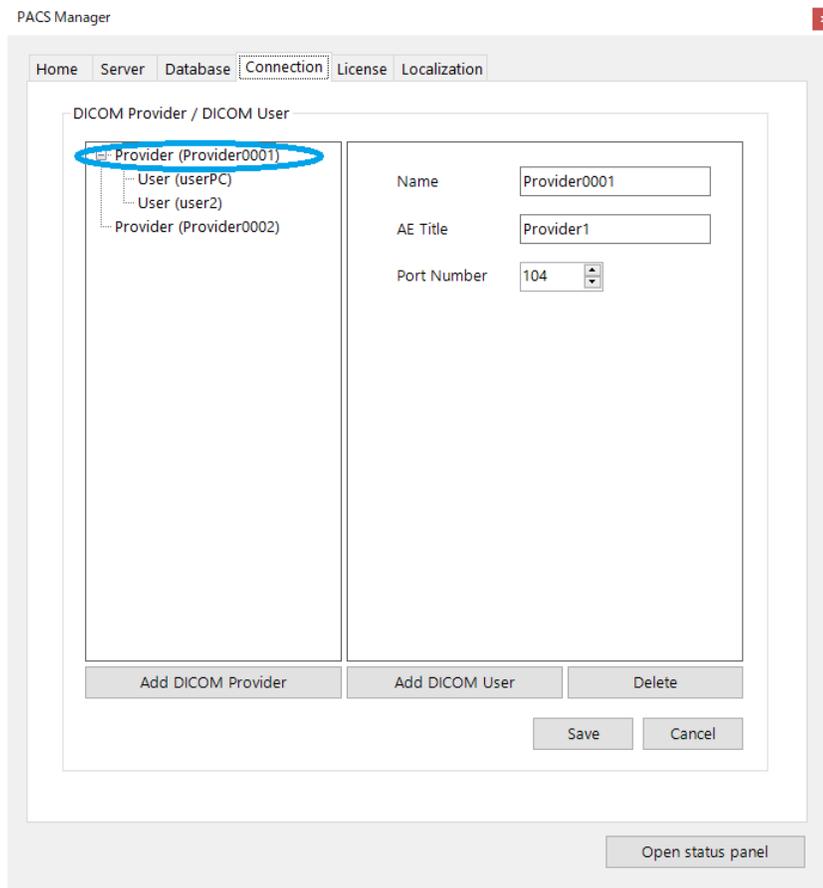
## If DICOM Server fails to start

Select DICOM Provider and change the port that may be in conflict with another software to another port.

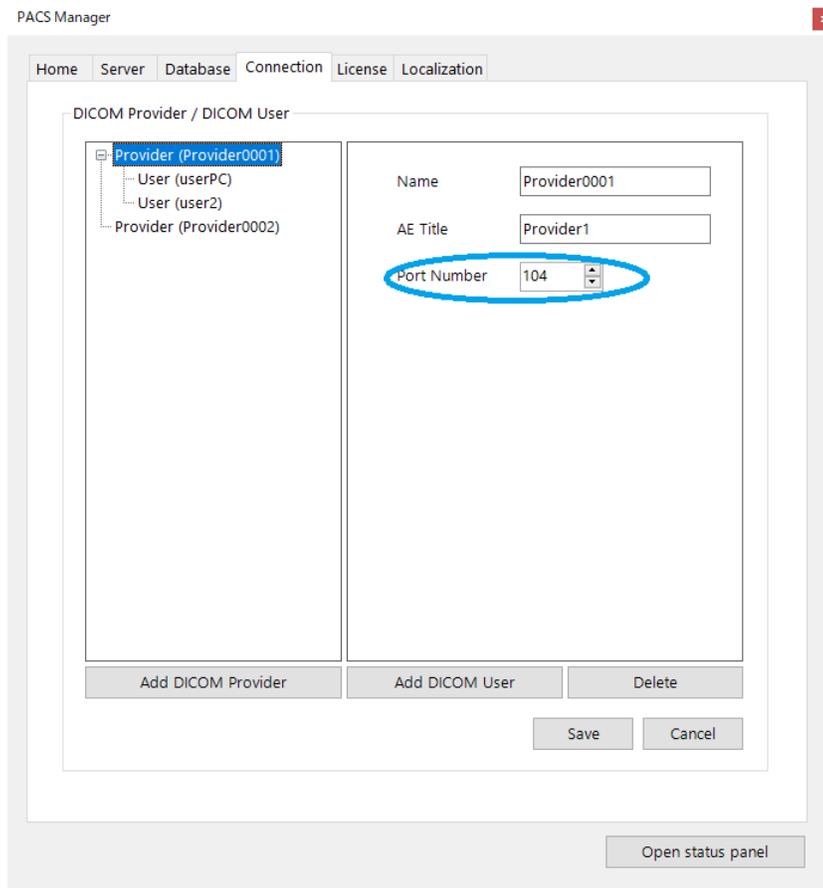
1. Click the "Connection" tab.



## 2. Click DICOM Provider.



### 3. Change "Port Number".



### 4. Click "Save".

## 8. Login

1. Open a web browser (Google Chrome, etc.).
2. Access web interface of SonicDICOM PACS.

Reference Link: [PACS Manager > 2. Access Web Interface](#)

3. Enter the ID and Password, then click "LOG IN".  
FYI, the initial values of ID and password are as follows.

**ID: admin**

**Password: password**

**NOTE: After your trial use, change the initial password for security. You can change it on [User Settings > Profile > Password](#)**

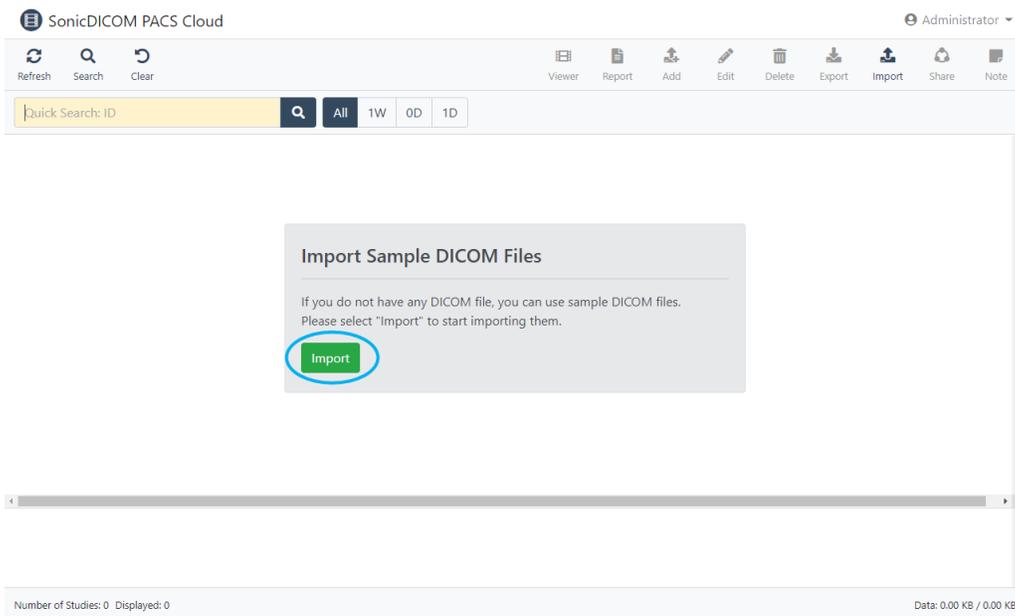
## 9. Import DICOM Files

You can import sample DICOM files or your DICOM files.

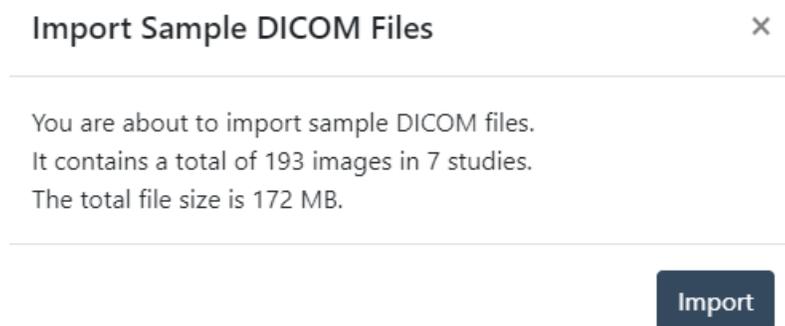
### Import Sample DICOM Files

You can import sample DICOM files if you access List page with no saved Study.

1. Click "Import".



2. Dialog "Import Sample DICOM Files" will appear.



3. Click "Import".

## Import Your DICOM Files

You can import your DICOM files on List page.

Also, you can import DICOM files on PACS Manager as well.

Please use PACS Manager if you import large data volumes or large numbers of files.

Reference Page:

- [User Manual > List > Toolbar Features > Import](#)

- [PACS Manager > 3. Import DICOM Files](#)

TIP:

[FAQs > Cannot view or import DICOM file correctly.](#)

## 10. Send Images to SonicDICOM PACS

You can send images from modalities, third party's PACS, etc. to SonicDICOM PACS using DICOM communication.

### Check required information

To send images to SonicDICOM PACS, you need to register SonicDICOM PACS information in the product that will send images, such as modalities.

The required information is only three that are "IP Address", "Port Number", and "AE Title".

The following explains each information.

#### 1) IP Address

IP Address is like home address or telephone numbers on IP network. On Windows default setting, IP Address is configured automatically when it connects to a network.

In this state, IP Address could be changed every time you start up the OS. So, you

need to change this setting and fix the IP Address in devices that will do DICOM communication.

Reference Page:

[TIPS > How to check IP Address](#)

[TIPS > How to set IP Address](#)

## 2) Port Number

This is the number to identify the program that the computer uses for communication.

The default Port Number of SonicDICOM PACS is "104".

## 3) AE Title

This is the name for identifying the application that will do DICOM communication.

The default AE Title of SonicDICOM PACS is "Provider1".

## Register SonicDICOM PACS information to modalities, etc.

Please register SonicDICOM PACS "IP Address", "Port Number", and "AE Title" to modalities, etc.

Register method differs depending on each modality, so check with the manufacturer's support staff or another person who can assist.

The followings are the default values to be registered.

Item	Value
IP Address	Check individually (it is different depending on each environment)
Port Number	104
AE Title	Provider1

If you would like to use a value other than the default one, change the settings in Connection of PACS Manager or Admin Settings > Server > Connection of the web interface.

Reference Page: [PACS Manger >Set up DICOM Connection](#)

Info:

Information of SonicDICOM PACS (side of receiving images) is called "DICOM Provider".

Also, information of modalities (side of sending images) is called "DICOM User".

The information of the side of sending images (DICOM user) will be registered automatically to SonicDICOM PACS once it receives images from modalities, etc.

**NOTE: The option of DICOM provider "Allow DICOM Connection with unregistered DICOM User" needs to be enabled.**

### **Send images from modalities**

After you complete registration of information, actually send images.

And check the following points.

- Images are sent from modalities, etc. to SonicDICOM PACS.
- SonicDICOM PACS receive images properly.
- SonicDICOM PACS can display images properly.

## 11. Get Images from SonicDICOM PACS

You can get and view images from SonicDICOM PACS using DICOM communication on third party's DICOM viewer or PACS.

### Check required information

To get images from SonicDICOM PACS, the information of both sides, SonicDICOM PACS and the product will get images, such as third party's DICOM viewer, must be mutually registered.

The required information is only three that are "IP Address", "Port Number", and "AE Title".

The following explains each information.

#### 1) IP Address

IP Address is like home addresses or telephone numbers on an IP network.

On Windows default setting, IP Address is configured automatically every time it connects to a network.

In this state, IP Address could be changed at the time of OS start up and so on. So you need to change this setting and fix the IP Address in devices that will do DICOM communication.

Reference Page:

[TIPS > How to check IP Address](#)

[TIPS > How to set IP Address](#)

#### 2) Port Number

This is the number to identify the program that the computer uses for communication.

The default Port Number of SonicDICOM PACS is "104".

### 3) AE Title

This is the name for identifying the application that will do DICOM communication. The default AE Title of SonicDICOM PACS is "Provider1".

Also, please check "IP Address", "Port Number", and "AE Title" of third party's DICOM viewer, etc.

If you are not sure, check with the manufacturer's support staff or another person who can assist.

#### **Register information of SonicDICOM PACS to third party's DICOM viewer, etc.**

Please register "IP Address", "Port Number", and "AE Title" of SonicDICOM PACS to third party's DICOM viewer, etc.

Register method differs depending on each product.

If you are not sure, check with the manufacturer's support staff or another person who can assist.

The followings are the default values to be registered.

Item	Value
IP Address	Check individually (it is different depending on each environment)
Port Number	104
AE Title	Provider1

If you would like to use a value other than the default one, change the settings in Connection of PACS Manager or Admin Settings > Server > Connection of the web interface.

Reference Page: [PACS Manger >Set up DICOM Connection](#)

Info:

Information of SonicDICOM PACS (responding side) is called "DICOM Provider".

Also, information of DICOM viewer (requesting side) is called "DICOM User".

### **Register information of third party's DICOM viewer, etc. to SonicDICOM PACS**

Please register "IP Address", "Port Number", and "AE Title" of third party's DICOM viewer, etc. to SonicDICOM PACS.

You can register them on "PACS Manager > Connection" or "Web interface > Admin Settings > Server > Connection"

Information of SonicDICOM PACS (responding side) is called "DICOM Provider".

Also, information of DICOM Viewer (requesting side) is called "DICOM User".

### **Browse images on DICOM viewer**

After you complete registration of information, actually get images.

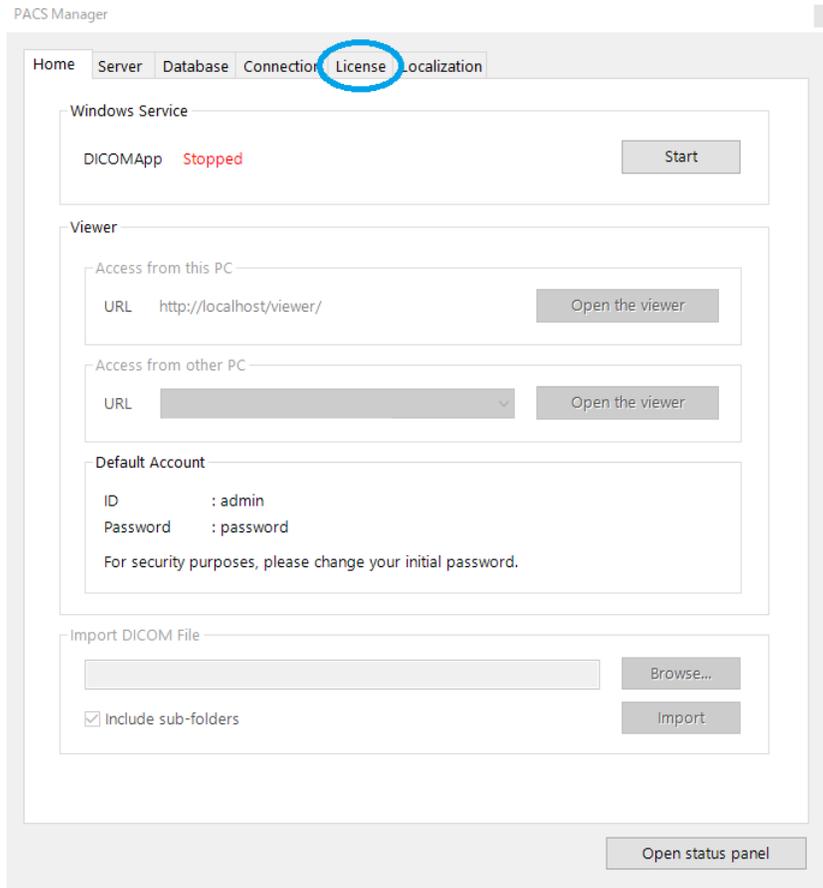
And check the following points.

- Third party's DICOM viewer, etc. can get Study list properly.
- Third party's DICOM viewer, etc. can browse and display images properly.

## 12. Check License ID

### Check your License ID on PACS Manager

1. Click the "License" tab.



## 2. Check "License ID".

PACS Manager

Home Server Database Connection License Localization

License

License ID	<input type="text" value=""/>
License Type	<input type="text" value="Trial"/>
Licensed To	<input type="text" value=""/>
License Expiration	<input type="text" value=""/>
Support Expiration	<input type="text" value=""/>
Maximum number of Studies	<input type="text" value="10"/>
Maximum number of Web Connections	<input type="text" value="5"/>
Maximum number of DICOM Connections	<input type="text" value="5"/>

Activation Key

## Check your License ID on web interface

1. Access web interface of SonicDICOM PACS.
2. Log in.
3. Check "License ID" in Admin Settings > General > License.

The screenshot shows the SonicDICOM PACS web interface. The top navigation bar includes the SonicDICOM PACS logo and the user name 'Administrator'. The left sidebar contains a menu with categories: Dashboard, Statistics, Share, Admin Settings (with sub-items: General, Server, Client, Account, Statistics, Share), User Settings (with sub-items: List, Viewer, Report, Profile), Browser Settings (with sub-item: Multi-Monitor), and About. The main content area is titled 'General' and contains a 'Trial Edition' warning box with the following text: 'This License has limitation. - Maximum number of Studies: 10 - Maximum number of Web Connections: 5 - Maximum number of DICOM Connections: 5. This License has expiration. - License Expiration: - Support Expiration:'. Below the warning box are 'Contact' and 'Activation' buttons. Underneath, there are tabs for 'License', 'Localization', 'Security', and 'Option'. The 'License' tab is active, displaying a table with the following data:

License	
License ID	[REDACTED]
License Type	Trial Edition
Maximum number of Studies	10
Maximum number of Web Connections	5
Maximum number of DICOM Connections	5

Below the table is an 'Activation' button.

Reference Page:

[PACS Manger > Access Web Interface](#)

[8. Login](#)

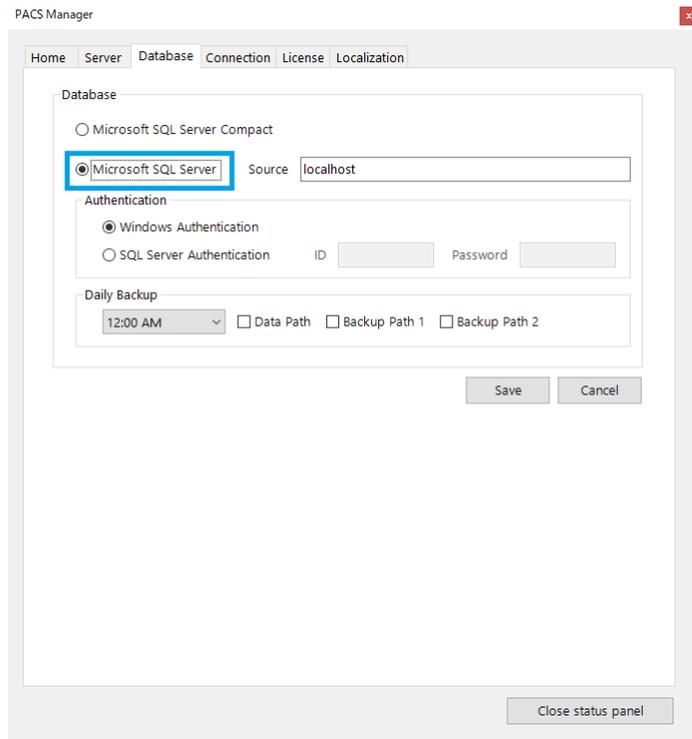
[PACS Manager > Activate](#)

## 13. Activate

You can activate on PACS Manager or web interface.

### Make sure that database has been upgraded

Before activating, make sure that the database has been upgraded to Microsoft SQL Server.



The screenshot shows the 'Database' configuration window in PACS Manager. The window has a title bar 'PACS Manager' and a close button. Below the title bar are tabs: 'Home', 'Server', 'Database', 'Connection', 'License', and 'Localization'. The 'Database' tab is active. The main content area is titled 'Database' and contains three sections: 'Database' with radio buttons for 'Microsoft SQL Server Compact' and 'Microsoft SQL Server' (selected); 'Authentication' with radio buttons for 'Windows Authentication' (selected) and 'SQL Server Authentication' (with 'ID' and 'Password' input fields); and 'Daily Backup' with a dropdown menu set to '12:00 AM' and three checkboxes for 'Data Path', 'Backup Path 1', and 'Backup Path 2'. At the bottom right are 'Save' and 'Cancel' buttons. A 'Close status panel' button is located at the very bottom of the window.

If the database has not been upgraded, please refer to the following page to upgrade to Microsoft SQL Server.

Also, change the type of database to be used to Microsoft SQL Server.

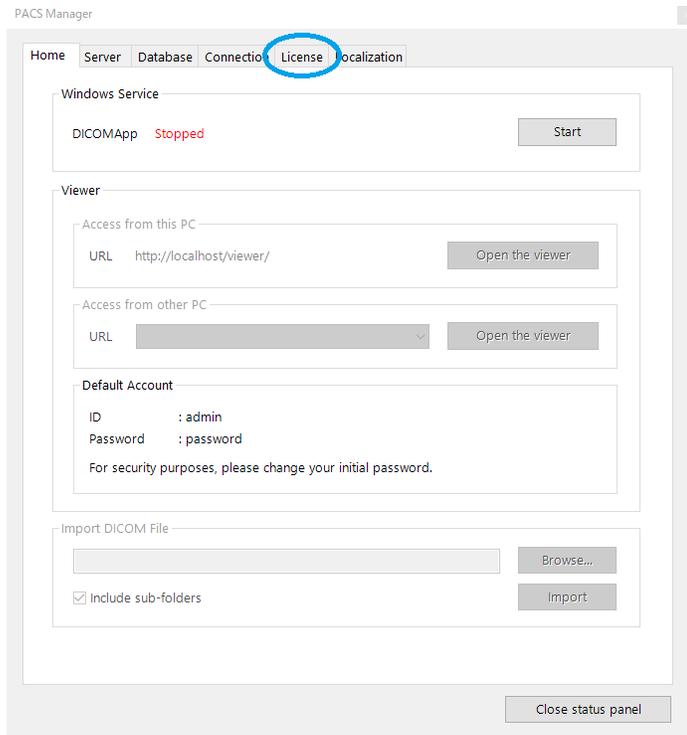
Reference Page:

- [Advanced > Upgrade Database](#)
- [PACS Manager > Switch Database](#)

**WARNING: Support will not be provided if the database has not been changed to Microsoft SQL Server.**

## Activate on PACS Manager

1. Click the "License" tab.



2. Enter Activation Key in the field of "Activation Key".

3. Click "Activate".

PACS Manager

Home Server Database Connection License Localization

License

License ID

License Type Trial

Licensed To

License Expiration

Support Expiration

Maximum number of Studies 10

Maximum number of Web Connections 5

Maximum number of DICOM Connections 5

Activation Key

Activate

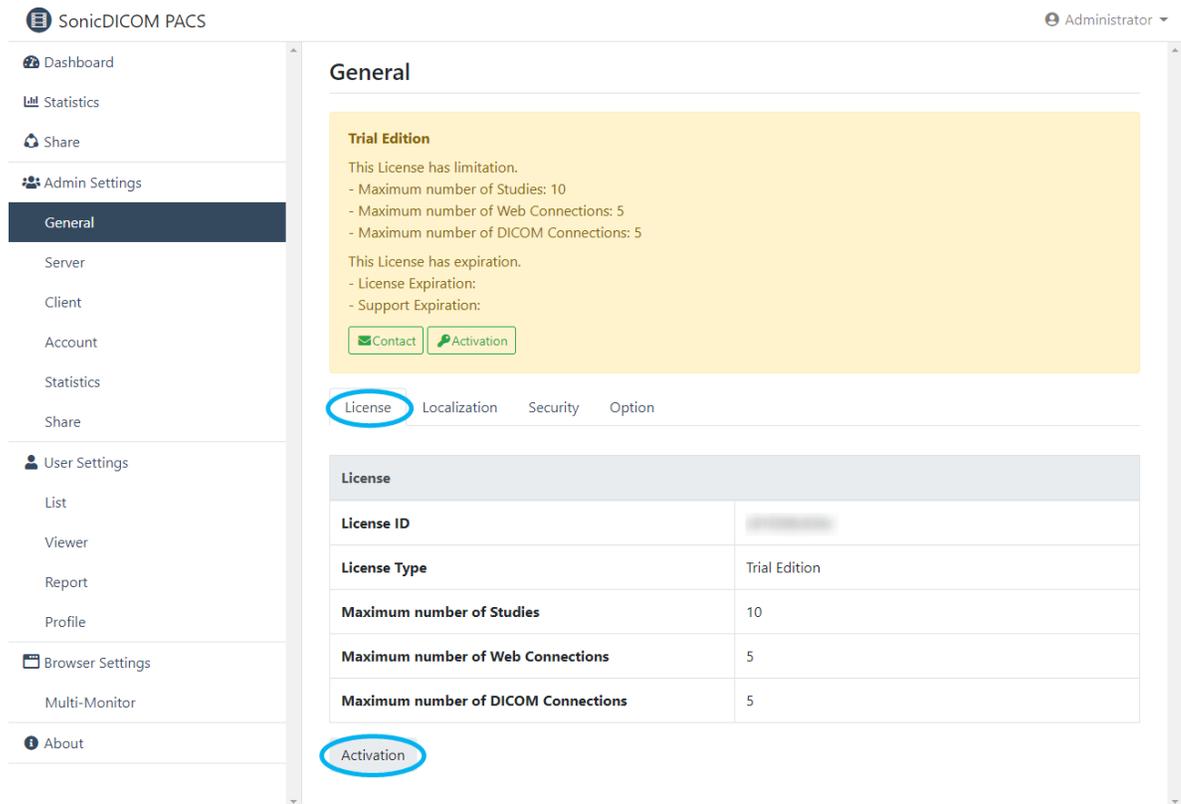
Open status panel

4. When activation is completed, the items in "License" will be updated.

Item
License Type
Licensed To
License Expiration
Support Expiration
Maximum number of Studies
Maximum number of Web Connection
Maximum number of DICOM Connection

## Activate on the web interface

2. Log in to the web interface.
3. Access Admin Settings > General > License and select "Activation".



SonicDICOM PACS Administrator

Dashboard  
Statistics  
Share  
Admin Settings  
General  
Server  
Client  
Account  
Statistics  
Share  
User Settings  
List  
Viewer  
Report  
Profile  
Browser Settings  
Multi-Monitor  
About

### General

**Trial Edition**  
This License has limitation.  
- Maximum number of Studies: 10  
- Maximum number of Web Connections: 5  
- Maximum number of DICOM Connections: 5  
This License has expiration.  
- License Expiration:  
- Support Expiration:

Contact Activation

License Localization Security Option

License	
License ID	
License Type	Trial Edition
Maximum number of Studies	10
Maximum number of Web Connections	5
Maximum number of DICOM Connections	5

Activation

3. Enter Activation Key.

4. Click "Activate".

The image shows a web-based dialog box titled "Activation" with a close button (X) in the top right corner. Inside the dialog, there are two input fields. The first is labeled "License ID" and contains a blurred value. The second is labeled "Activation Key" and is highlighted with a blue border. This field is currently empty and has a red error message "The field is required" at the bottom left. A red circle with a white exclamation mark is in the top right corner of the "Activation Key" field. At the bottom of the dialog, there are two buttons: "Cancel" and "Activate".

6. When activation is completed, the items in "License" will be updated.

Reference Page:

- [PACS Manager > Access Web Interface](#)
- [8. Login](#)

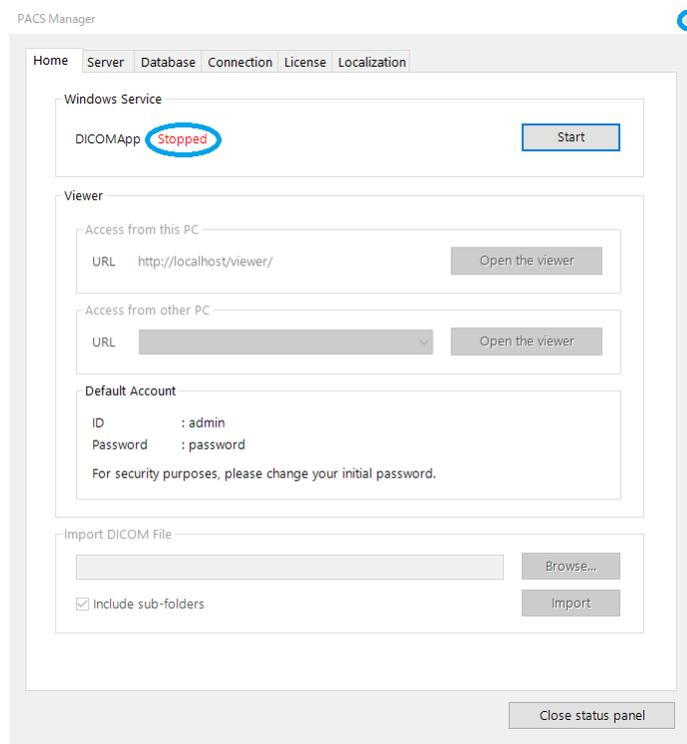
## 14. Update SonicDICOM PACS

1. Download the installer of latest version SonicDICOM PACS from the following URL: <https://sonicdicom.com/on-premises/download/>

For information on how to download it, please refer to: [5. Download](#)

2. Make sure that the status of DICOMApp is "Stopped".

If the status of DICOMApp is "Running", click "Stop" to stop PACS.



3. Click "x" to close PACS Manager.
4. Start up the installer and follow the wizard. Installation will be done and SonicDICOM PACS can be updated to the latest version.

For information on how to install, please refer to: [6. Install > Install SonicDICOM PACS](#)

**NOTE: When updating, all information such as studies, accounts, licenses will be automatically migrated.**

**However, license information will be migrated only if the major version of the product is the same.**

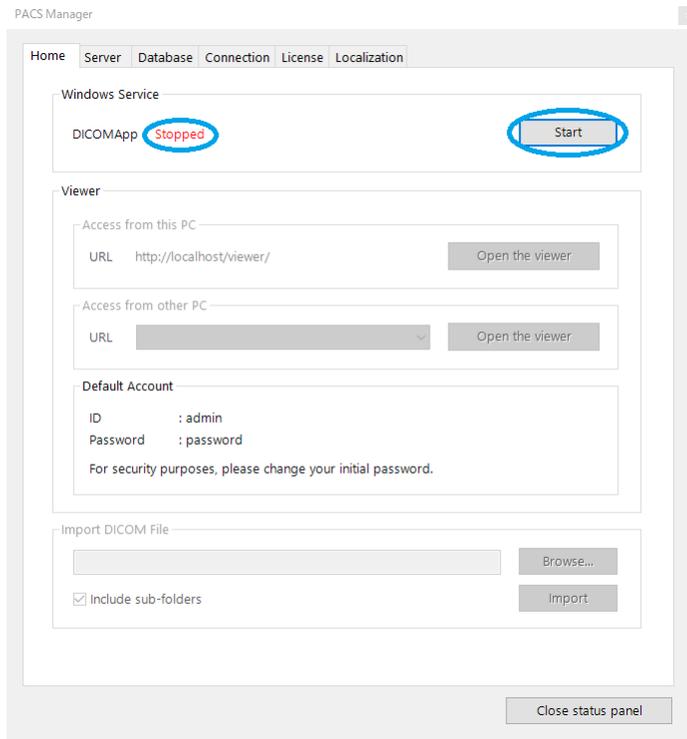
# PACS Manager

## 1. Start/Stop SonicDICOM PACS

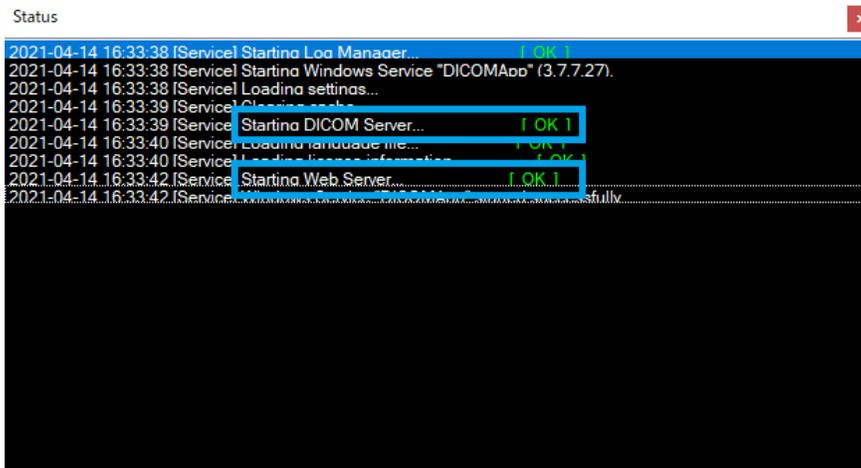
You can start or stop PACS using PACS Manager.

### Start SonicDICOM PACS

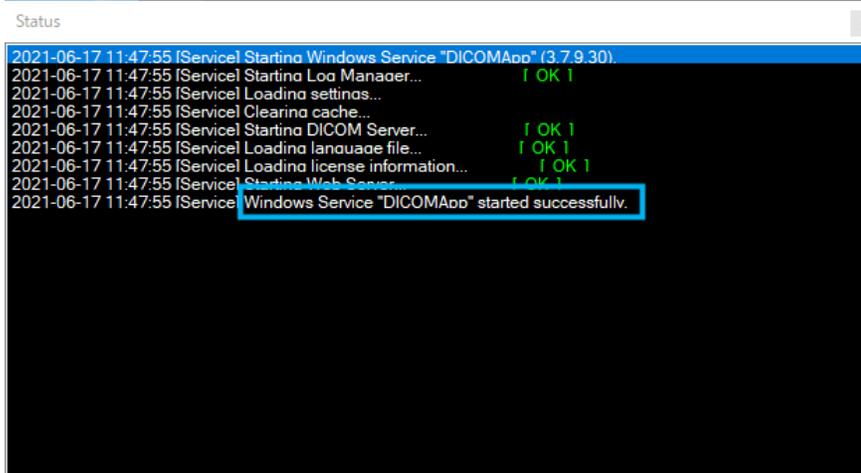
1. Make sure that the status of DICOMApp is “Stopped”.
2. Click “Start”.



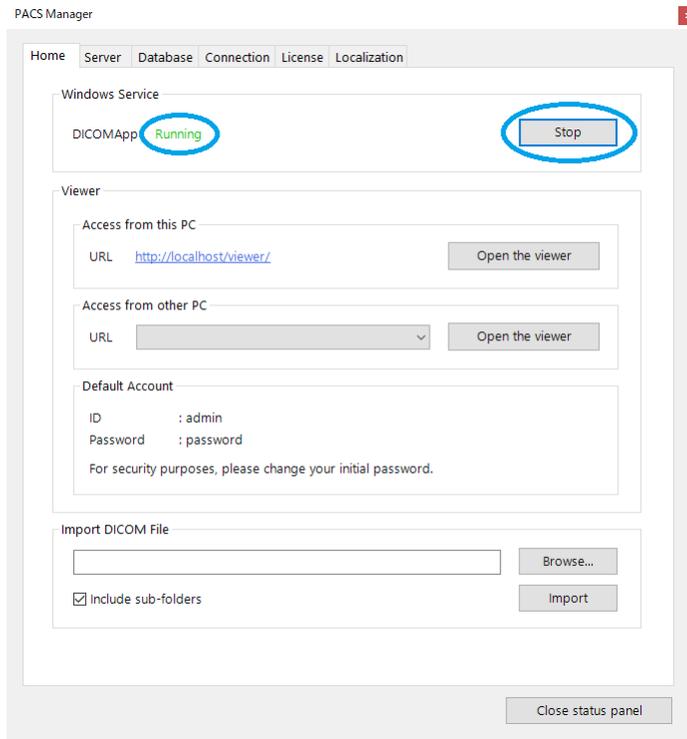
4. "Status Panel" is displayed.
5. "OK" is displayed in status field of DICOM Server and Web Server.



6. When PACS is started normally, "Windows Service "DICOMApp" started successfully" will be displayed.

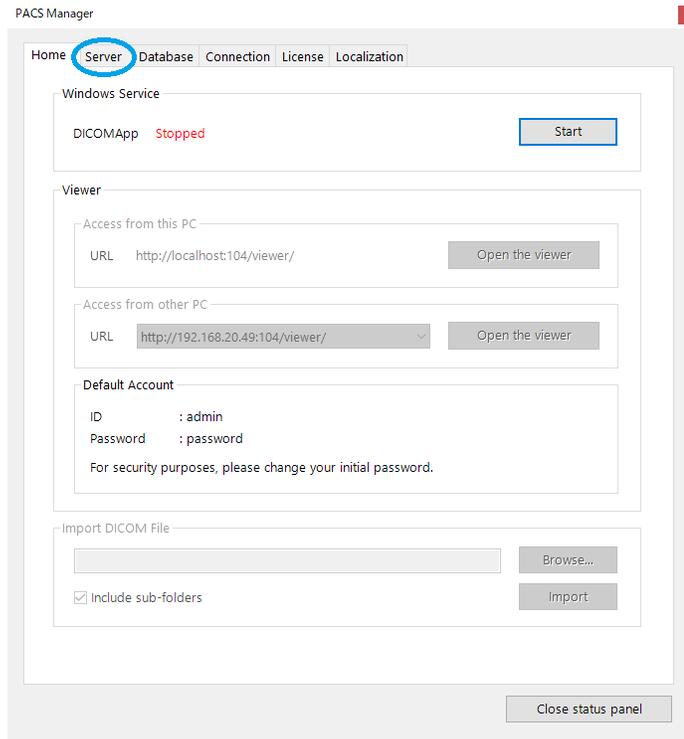


7. The status of DICOMApp will display "Running".



## How to stop SonicDICOM PACS

1. Make sure that the status of DICOMApp is "Running".
2. Click "Stop".



3. The status of DICOMApp will display "Stopped".

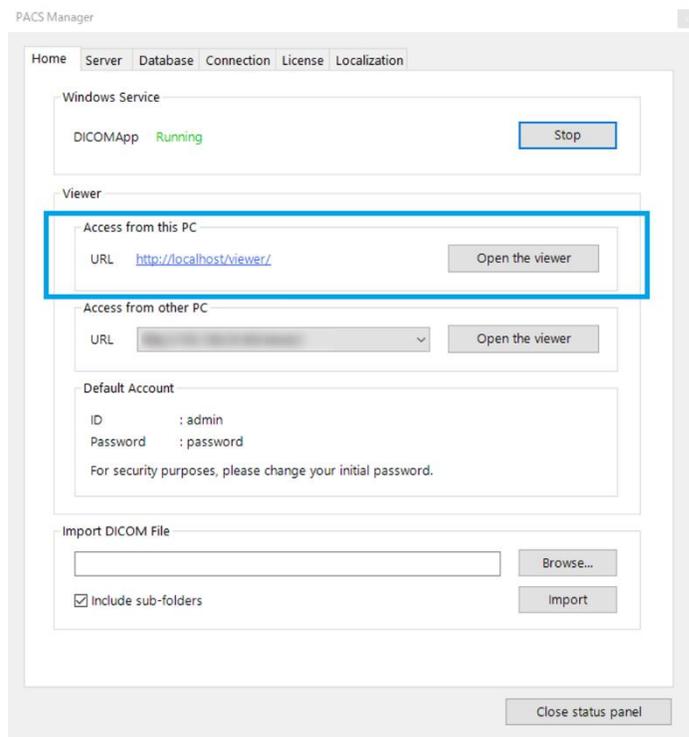
## 2. Access Web Interface

Make sure that the status of DICOMApp is "Running".

If the status of DICOMApp is "Stopped", click "Start" to start SonicDICOM PACS.

### How to access web interface from PACS Manager

To access the web interface from a PC/server that SonicDICOM PACS is installed, click "Open the viewer" under "Access from this PC".

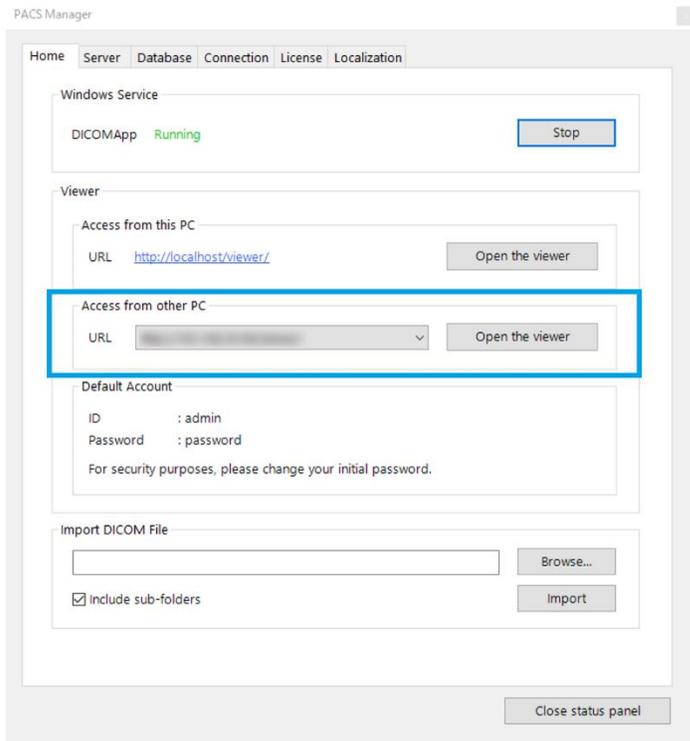


### How to access web interface from another terminal

Enter the URL displayed in the select menu "Access from other PC" into your Web browser.

The URL is automatically generated from the list of IP addresses of the PC/server on which SonicDICOM PACS is installed.

Depending on network configuration and settings, you may not be able to access the web interface even if you use this URL.

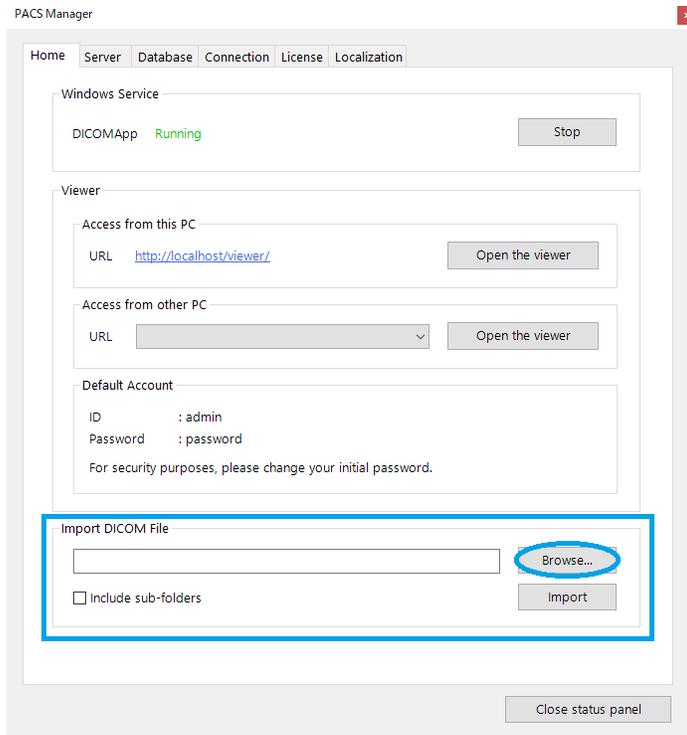


Please refer to the following link for information about the operating environment.

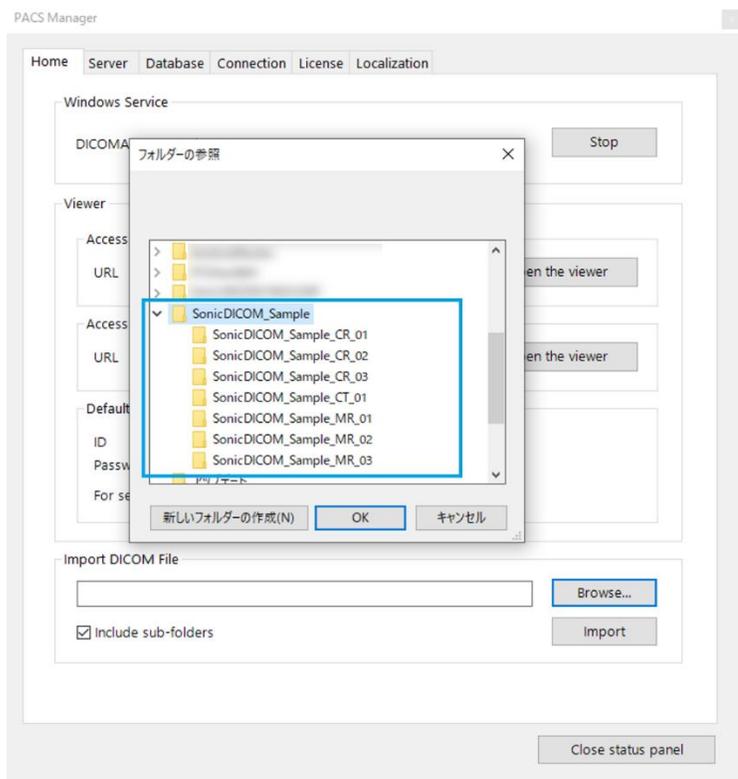
[Reference Page: System Requirements](#)

### 3. Import DICOM Files

1. Make sure that the status of DICOMApp is "Running".  
If the status of DICOMApp is "Stopped", click "Start" to start SonicDICOM PACS.
2. Click "Browse".



3. Select the folder that contains DICOM files to be imported.



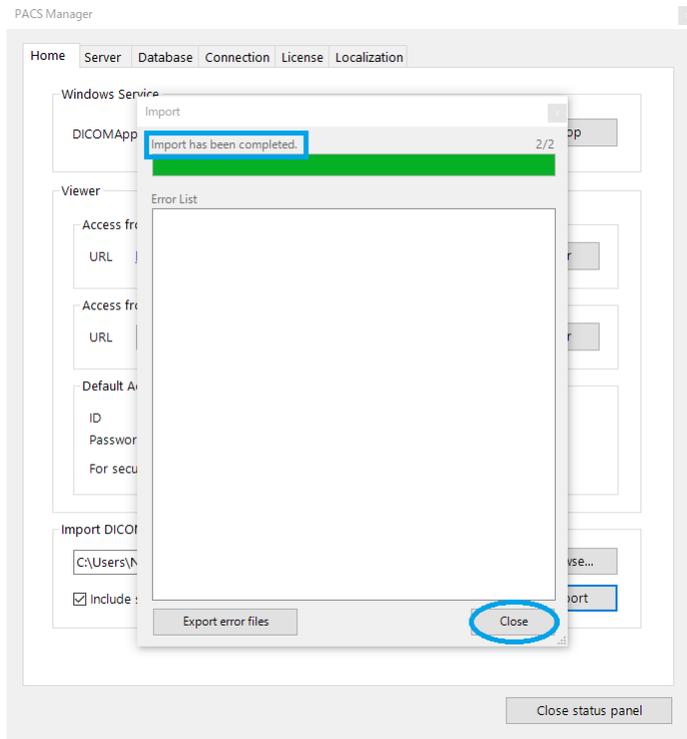
4. Check "Include sub-folders", if you want to import DICOM files in sub-folders.



5. Click "Import".



- When the import is completed, "Import has been completed" is displayed.



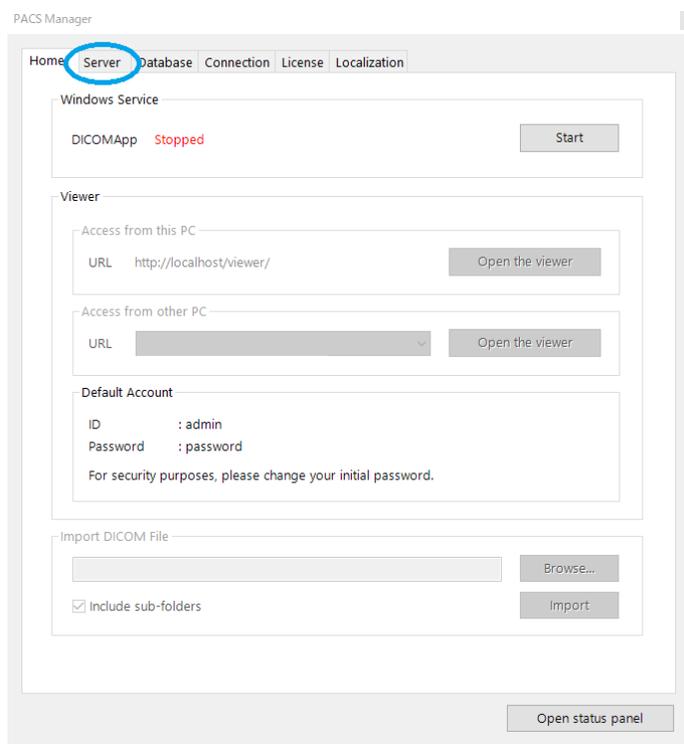
- Click "Close".

## 4. Set Data Path/Backup Path

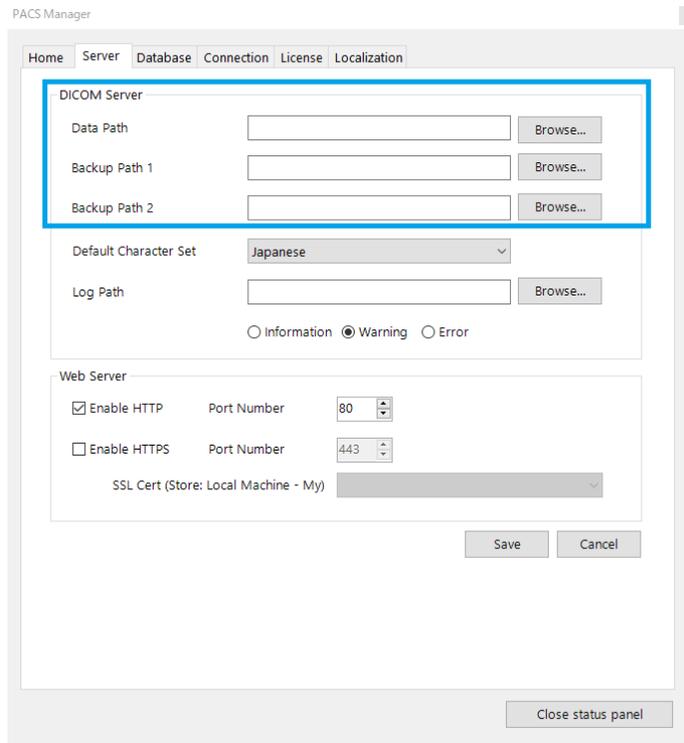
Data Path and Backup Path can be set using PACS Manager.

Data Path is where to save/refer to a DICOM file. Backup Path is where to back up a DICOM files.

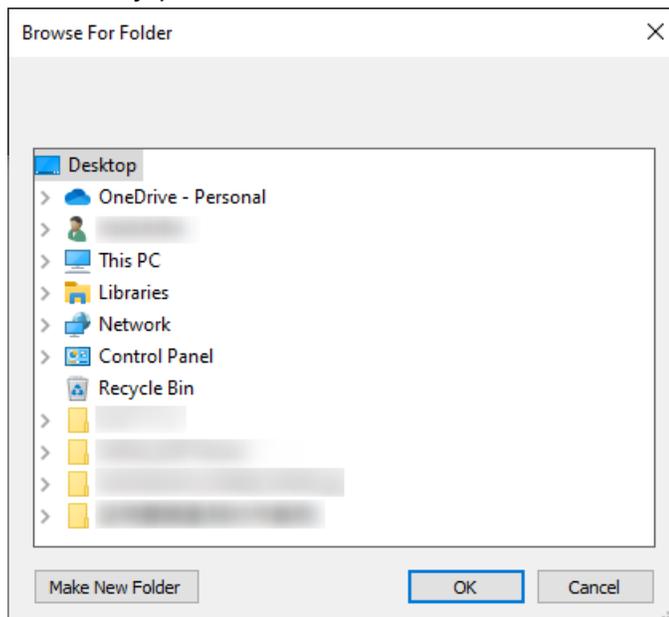
1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop PACS.
2. Click the "Server" tab.



3. Under the "DICOM Server", click "Browse..." of Data Path or Backup Path.



4. Select any path.



5. Click "Save".

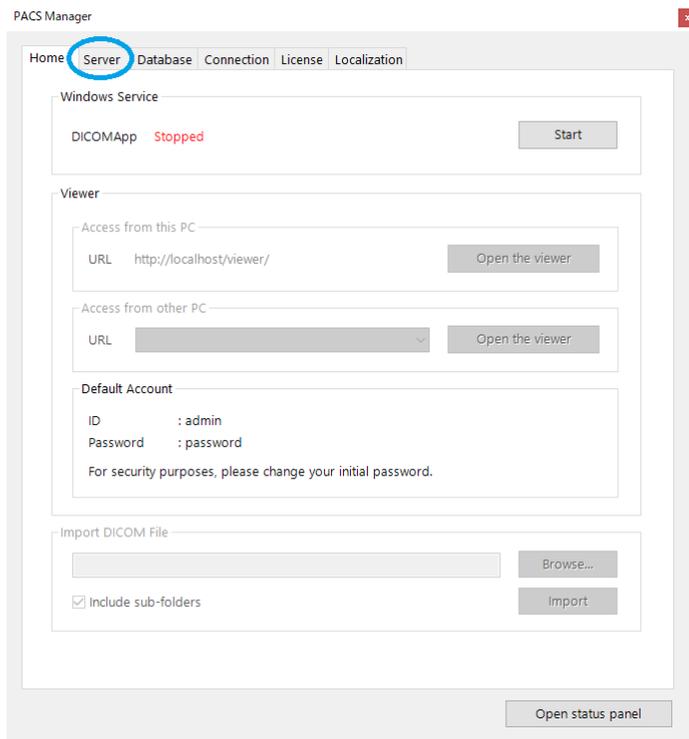
## 5. Set Default Character Set

You can set the default Character Set using PACS Manager.

The Character Set you set will be used as the default, if a DICOM file does not have a DICOM tag that defines the Character Set or if the value is invalid.

Changing the default value of Character Set may solve a problem of garbled characters in the DICOM file.

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop PACS.
2. Click the "Server" tab.



3. From the select menu "Default Character Set", select any Character Set.

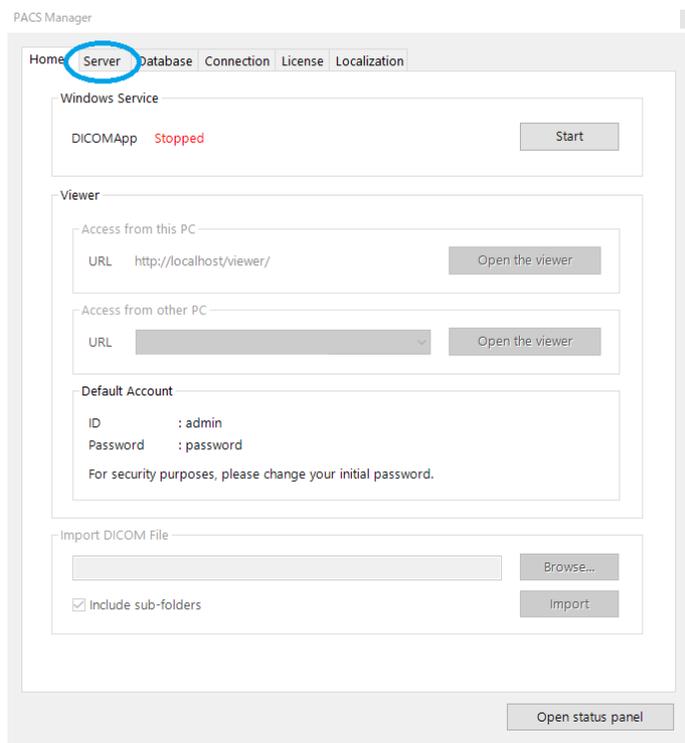
The screenshot shows the 'PACS Manager' configuration window with the 'Server' tab selected. The 'DICOM Server' section contains several fields: 'Data Path', 'Backup Path 1', 'Backup Path 2', and 'Log Path', each with a 'Browse...' button. The 'Default Character Set' dropdown menu is highlighted with a blue box and currently shows 'ASCII'. Below this section are radio buttons for 'Information', 'Warning' (selected), and 'Error'. The 'Web Server' section includes checkboxes for 'Enable HTTP' (checked) and 'Enable HTTPS' (unchecked), with corresponding 'Port Number' spinners set to 80 and 443. An 'SSL Cert' dropdown menu is also present. At the bottom of the window are 'Save' and 'Cancel' buttons, and an 'Open status panel' button at the very bottom.

4. Click "Save".

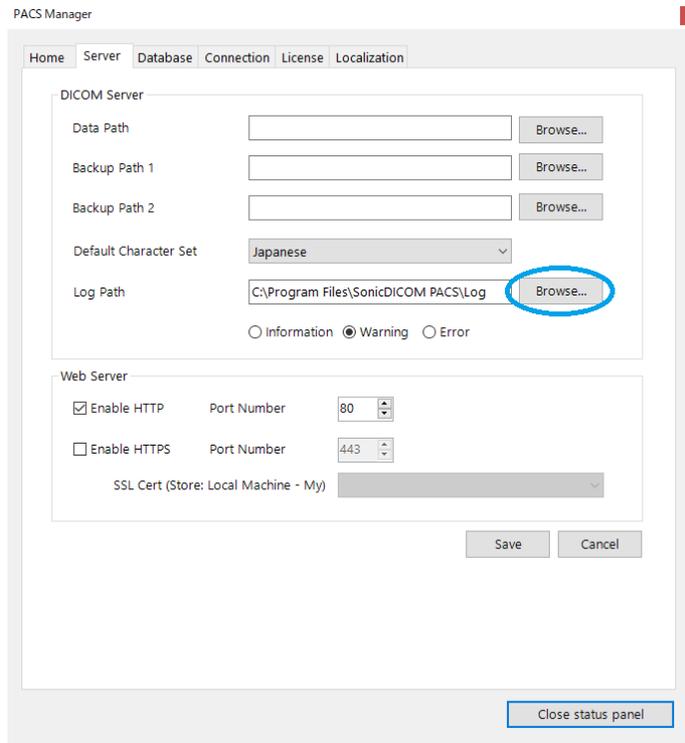
## 6. Set Log Path

You can set the location to save a log file using PACS Manager.

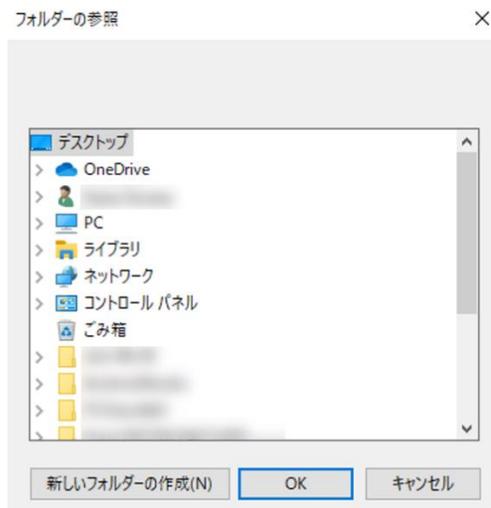
1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop PACS.
2. Click the "Server" tab.



3. Click "Browse" under "Log Path".



4. Select the location where you want to save the log file.

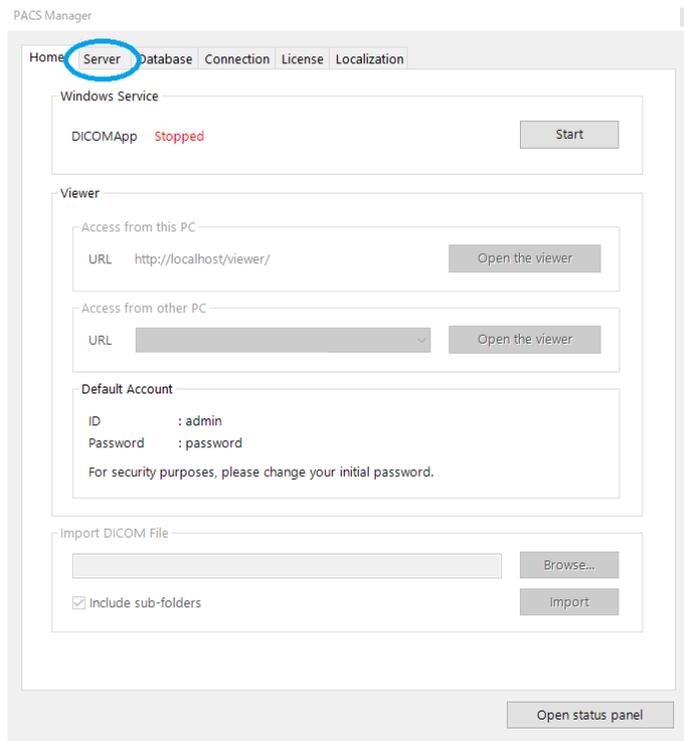


5. Click "Save".

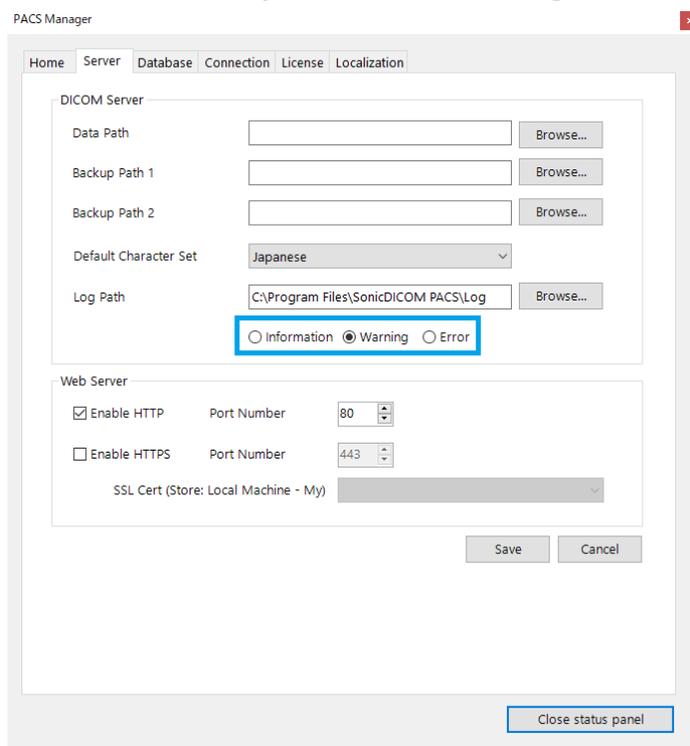
## 7. Set Log Level

You can set log levels using PACS Manager.

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop PACS.
2. Click the "Server" tab.



3. Select which level you want for the “Log Level” to be output.



The different levels of logs are defined as follows.

Level	Description
Information	Information that should be notified
Warning	Potential unexpected problems
Error	Unexpected problems

The contents of the log differ depending on the level you chose.

Level of your choice	Contents to be output
Information	Information, Warning, Error
Warning	Warning, Error
Error	Error

4. Click “Save”.

## 8. Enable HTTPS

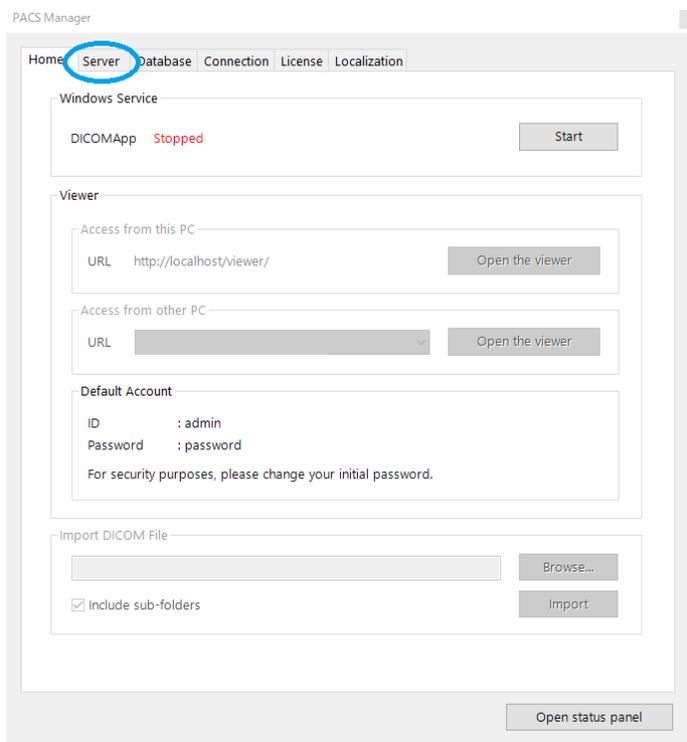
You can enable HTTP communication using PACS Manager.

To enable HTTPS communication, you need to install IIS (Internet Information Services) and issue a Server Certificate.

Please follow the procedures in the link below.

Reference Page: [Advanced > Enable HTTPS](#)

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.
2. Click the "Server" tab.



3. Check "Enable HTTPS".

4. In the select menu "SSL Cert", select the Server Certificate that has been issued.

The screenshot shows the PACS Manager configuration window with the 'Server' tab selected. The 'Web Server' section is expanded, and the 'SSL Cert (Store: Local Machine - My)' dropdown menu is highlighted with a blue border. The dropdown menu is open, showing a list of certificates. The 'Save' and 'Cancel' buttons are visible at the bottom of the window.

PACS Manager

Home Server Database Connection License Localization

DICOM Server

Data Path  Browse...

Backup Path 1  Browse...

Backup Path 2  Browse...

Default Character Set ASCII

Log Path  Browse...

Information  Warning  Error

Web Server

Enable HTTP Port Number 80

Enable HTTPS Port Number 443

SSL Cert (Store: Local Machine - My)

Save Cancel

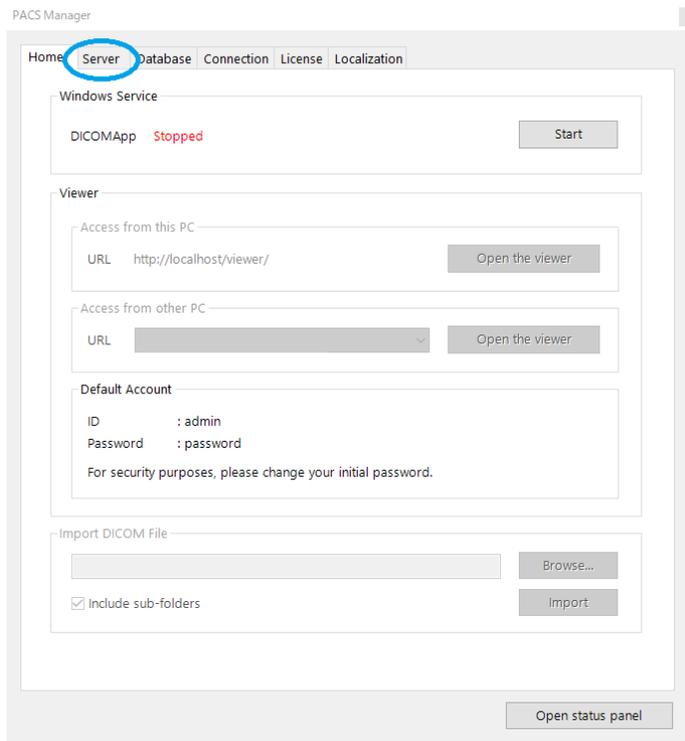
Open status panel

5. Click "Save".

## 9. Set Web Server Port

You can set the port to be used by Web Server using PACS Manager.

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.
2. Click the "Server" tab.



3. If you change the HTTP port, check "Enable HTTP". If you change the HTTPS port, check "Enable HTTPS".

#### 4. Change the "Port Number".

PACS Manager

Home Server Database Connection License Localization

DICOM Server

Data Path  Browse...

Backup Path 1  Browse...

Backup Path 2  Browse...

Default Character Set Japanese

Log Path C:\Program Files\SonicDICOM PACS\Log Browse...

Information  Warning  Error

Web Server

Enable HTTP Port Number 80

Enable HTTPS Port Number 443

SSL Cert (Store: Local Machine - My)

Save Cancel

Close status panel

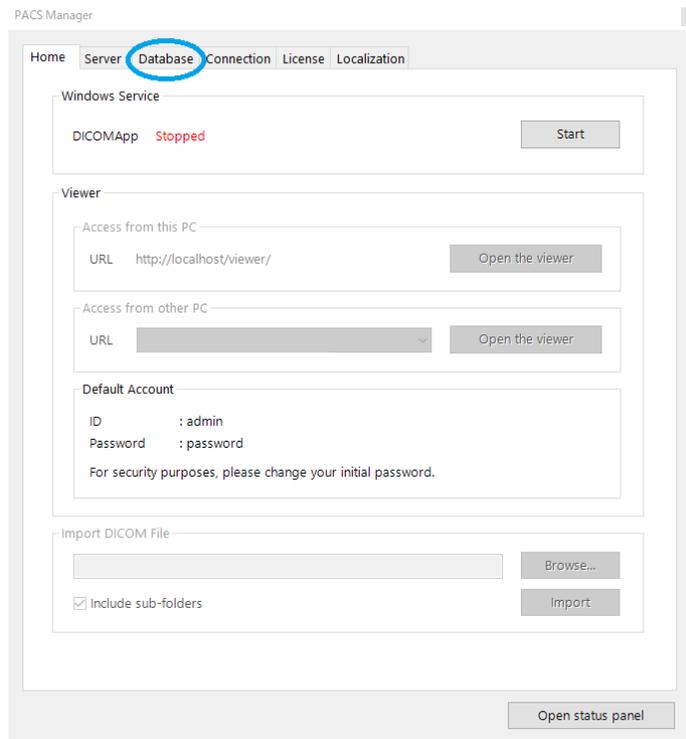
#### 5. Click "Save".

## 10. Switch Database

You can change the type of database. If "Microsoft SQL Server" has not been installed or its configuration has not been completed, follow the procedures in the link below.

Reference Page: [Upgrade Database](#)

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.
2. Click the "Database" tab.



### 3. Select "Microsoft SQL Server".

PACS Manager

Home Server Database Connection License Localization

Database

Microsoft SQL Server Compact

Microsoft SQL Server Source localhost

Authentication

Windows Authentication

SQL Server Authentication ID Password

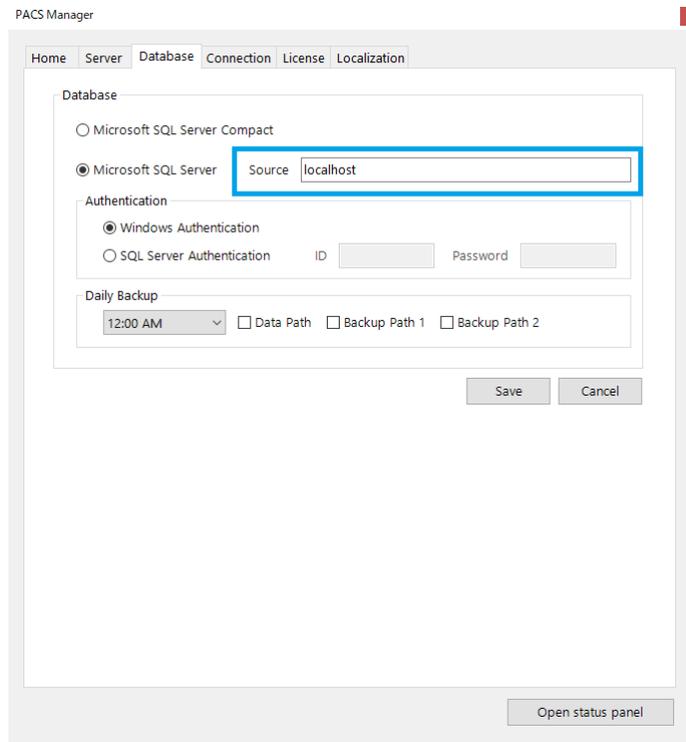
Daily Backup

12:00 AM  Data Path  Backup Path 1  Backup Path 2

Save Cancel

Close status panel

4. Enter the instance name in "Source". If you selected the "Default instance" when you installed Microsoft SQL Server, enter "localhost".



The screenshot shows the 'Database' configuration window in PACS Manager. The window has a title bar 'PACS Manager' and a close button. Below the title bar are tabs: 'Home', 'Server', 'Database', 'Connection', 'License', and 'Localization'. The 'Database' tab is active. The 'Database' section contains two radio buttons: 'Microsoft SQL Server Compact' (unselected) and 'Microsoft SQL Server' (selected). Below the 'Microsoft SQL Server' radio button is a text box labeled 'Source' containing the text 'localhost'. The 'Authentication' section contains two radio buttons: 'Windows Authentication' (selected) and 'SQL Server Authentication' (unselected). Below the 'SQL Server Authentication' radio button are two text boxes labeled 'ID' and 'Password'. The 'Daily Backup' section contains a dropdown menu set to '12:00 AM' and three checkboxes: 'Data Path', 'Backup Path 1', and 'Backup Path 2'. At the bottom right of the window are 'Save' and 'Cancel' buttons. At the bottom center of the window is an 'Open status panel' button.

- Under "Authentication", select the authentication method.  
If you select "SQL Server Authentication", enter relevant "ID" and "Password".

The screenshot shows the 'Database' configuration window in PACS Manager. The 'Localization' tab is active. Under the 'Database' section, 'Microsoft SQL Server' is selected with 'localhost' in the 'Source' field. In the 'Authentication' section, 'SQL Server Authentication' is selected, and the 'ID' and 'Password' fields are highlighted with a blue border. The 'Daily Backup' section shows a dropdown set to '12:00 AM' and three unchecked checkboxes for 'Data Path', 'Backup Path 1', and 'Backup Path 2'. 'Save' and 'Cancel' buttons are at the bottom right, and an 'Open status panel' button is at the bottom center.

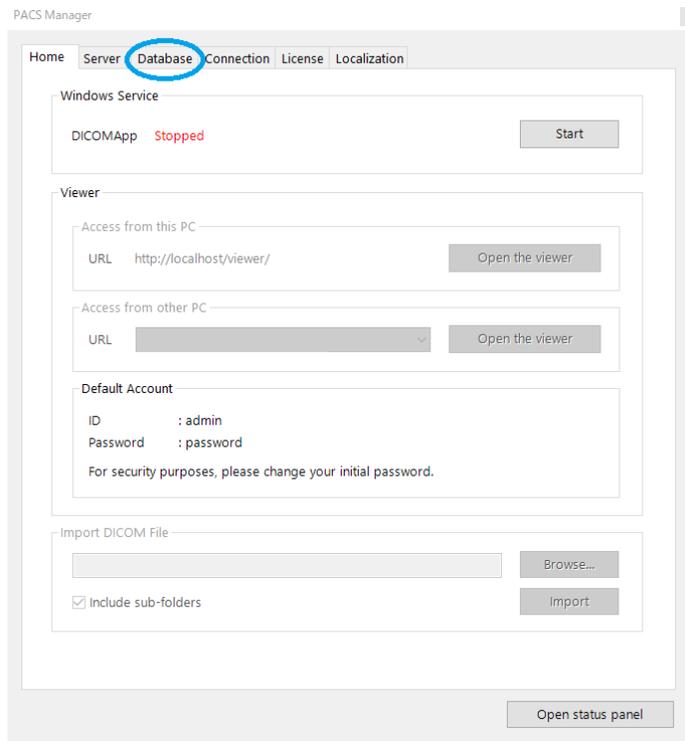
- Click "Save".

## 11. Set up Database Backup

You can set up automatic backup of database using PACS Manager.  
An automatic backup is executed at the fixed time daily.

- Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.

2. Click the "Database tab".



3. Select the time for automatic backup.

- Put a check in the backup location of the database file.

The screenshot shows the 'Database' configuration window in PACS Manager. The 'Database' section has 'Microsoft SQL Server' selected with 'localhost' as the source. Under 'Authentication', 'Windows Authentication' is selected. The 'Daily Backup' section is highlighted with a blue box and contains a dropdown menu set to '12:00 AM', and three checkboxes: 'Data Path' (checked), 'Backup Path 1' (checked), and 'Backup Path 2' (unchecked). 'Save' and 'Cancel' buttons are visible at the bottom right of the window.

- Click "Save".

**NOTE:**

- Seven generations of backup files will be stored in the selected backup location.
- If the backup location is not selected, no backup will be performed.
- System administrator should check regularly that the backup is performed successfully.

## 12. Set up DICOM Connection

You can connect SonicDICOM PACS to modalities, third party's DICOM viewers, third party's PACS and so on, using DICOM communication.

If you want to send images to SonicDICOM PACS from a modality or others, enter DICOM Provider information into them. If you want to get images from SonicDICOM PACS by using third party's DICOM viewer and so on, enter DICOM Provider information into it. Also, add the information of third party's DICOM viewer to the DICOM Provider as DICOM User.

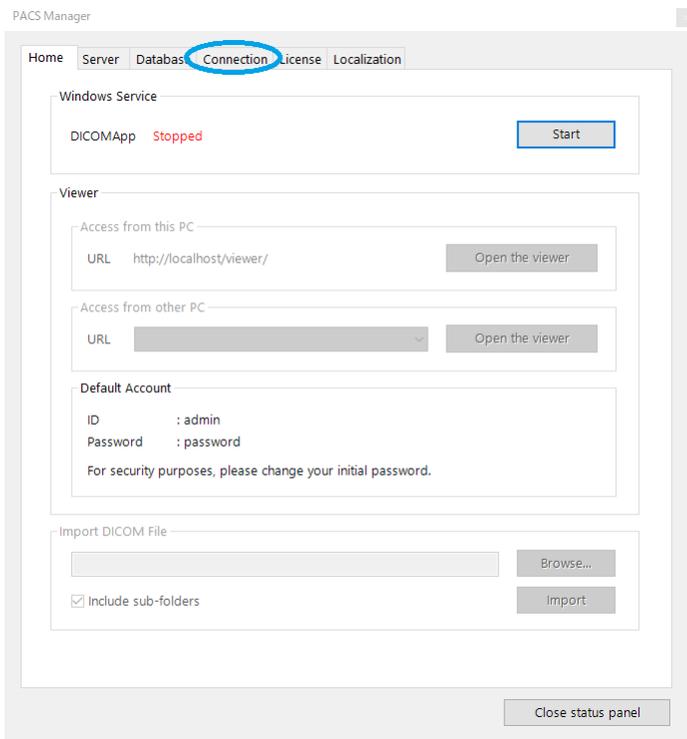
Reference Page

- [Send Images to SonicDICOM PACS](#)
- [Get Images from SonicDICOM PACS](#)

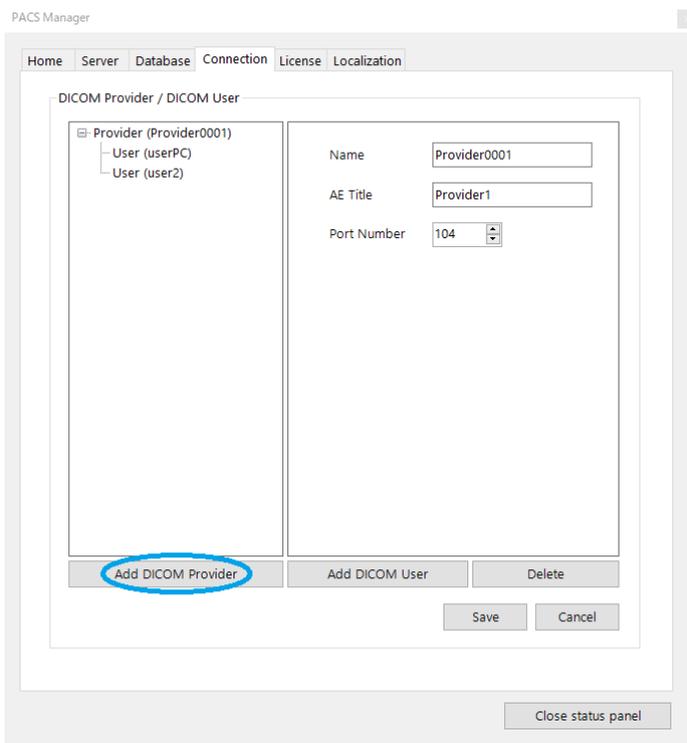
### How to add DICOM Provider

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop PACS.

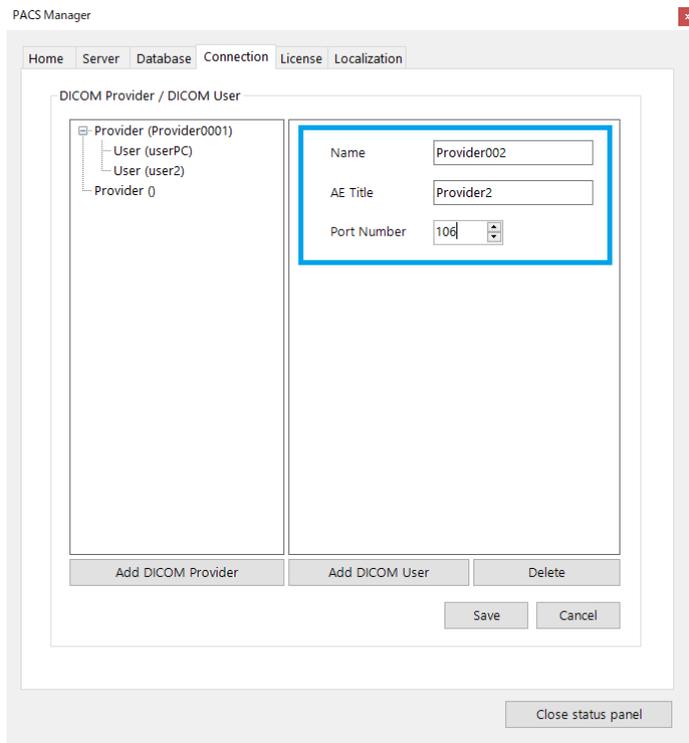
2. Click the "Connection" tab.



3. Click "Add DICOM Provider".



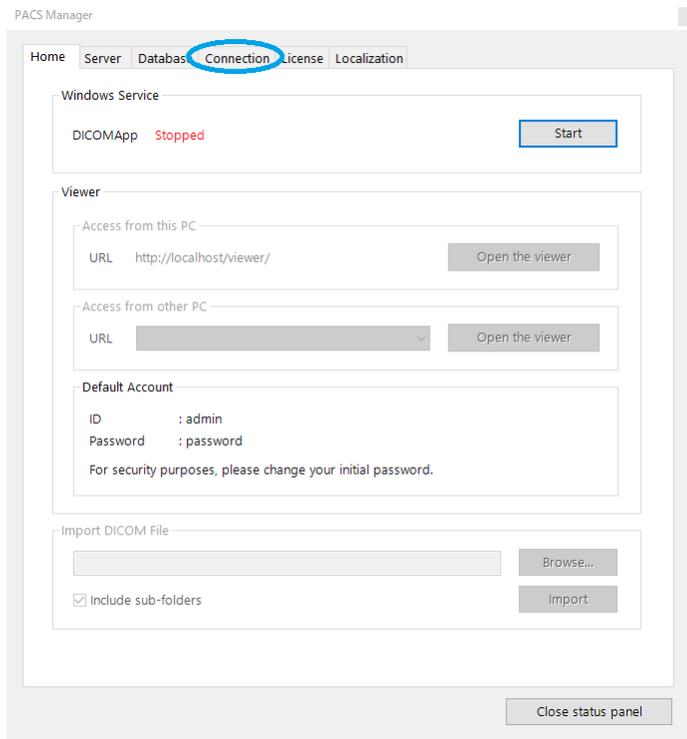
4. Enter the information of DICOM Provider.



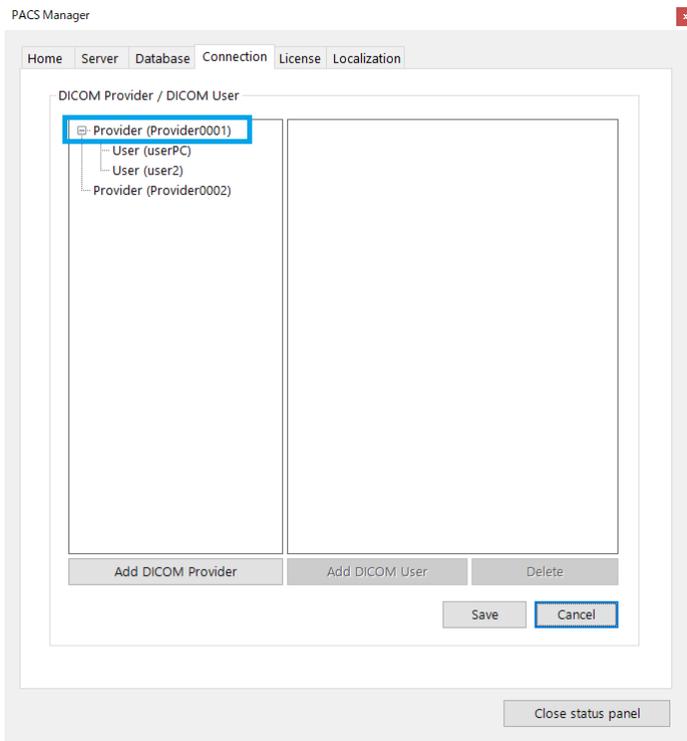
5. Click "Save".

## How to edit DICOM Provider

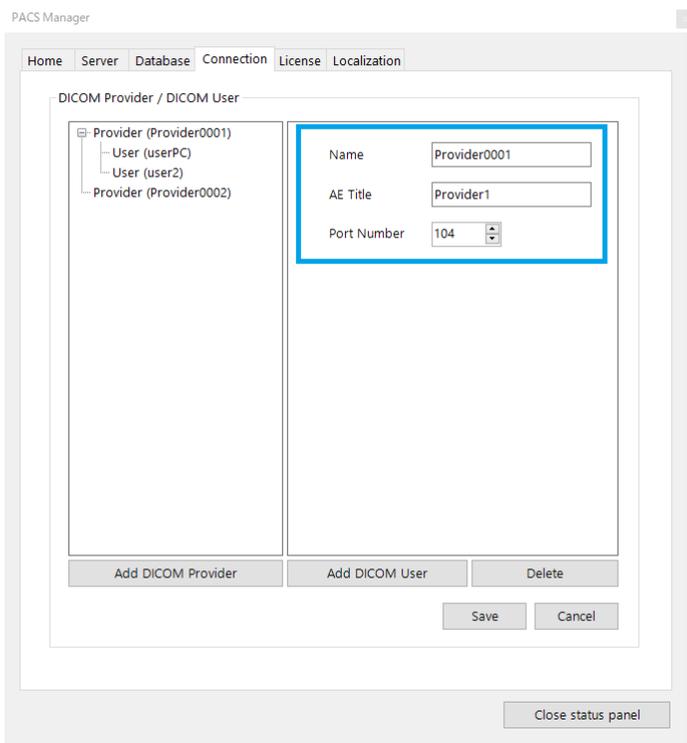
1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.
2. Click the "Connection" tab.



### 3. Click DICOM Provider.



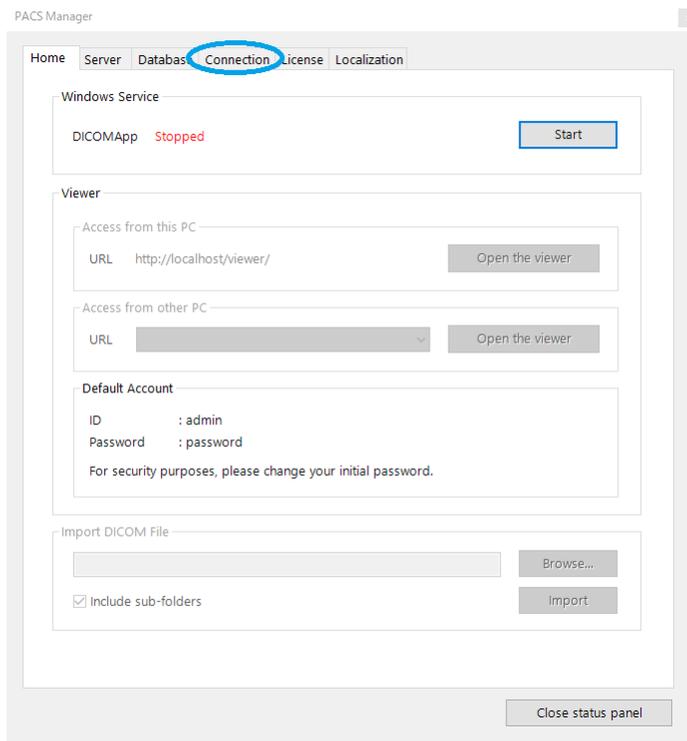
### 4. Edit DICOM Provider.



5. Click "Save".

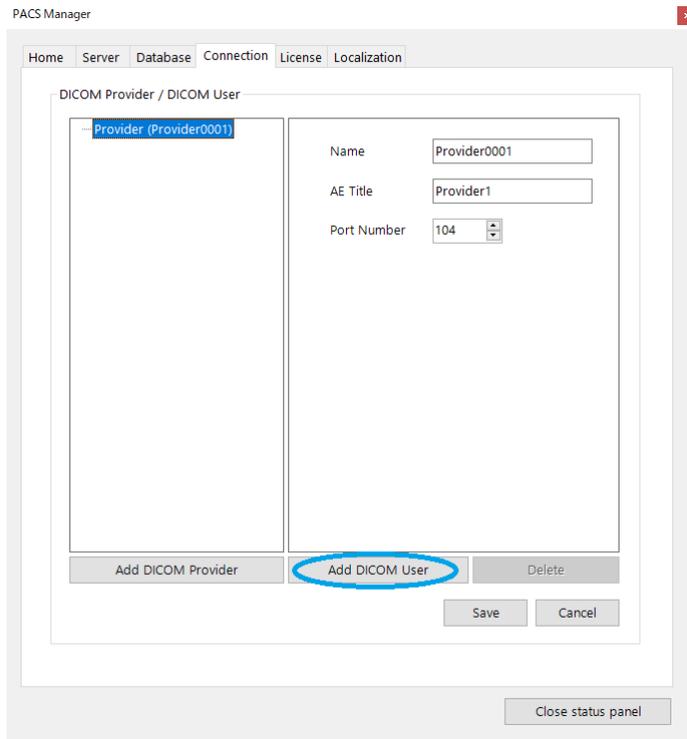
### How to add DICOM User

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.
2. Click the "Connection" tab.

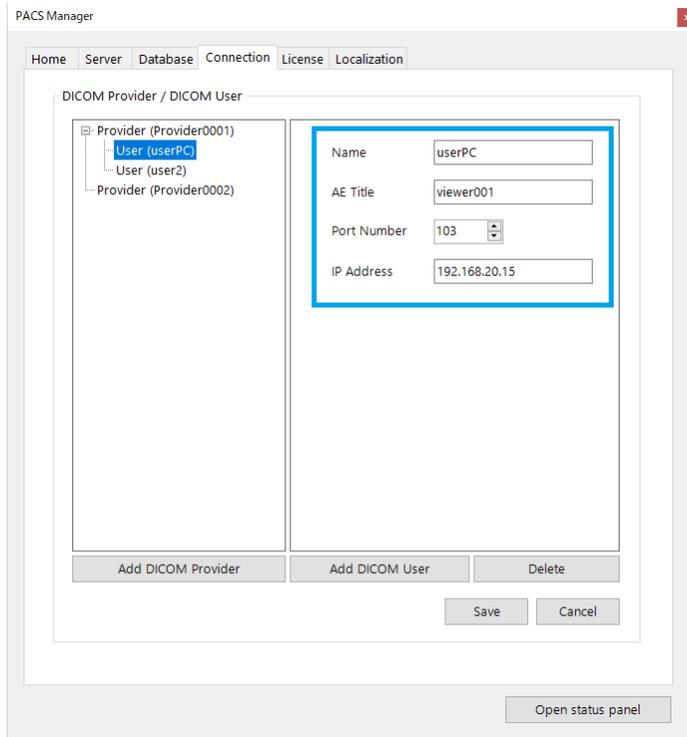


3. Click DICOM Provider to which you want to add DICOM User.

4. Click "Add DICOM User".



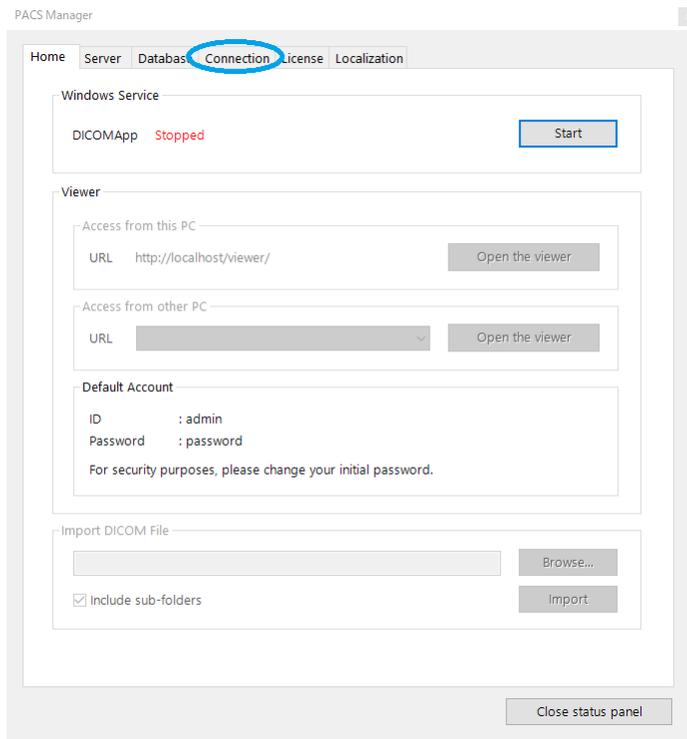
5. Enter the information of DICOM User.



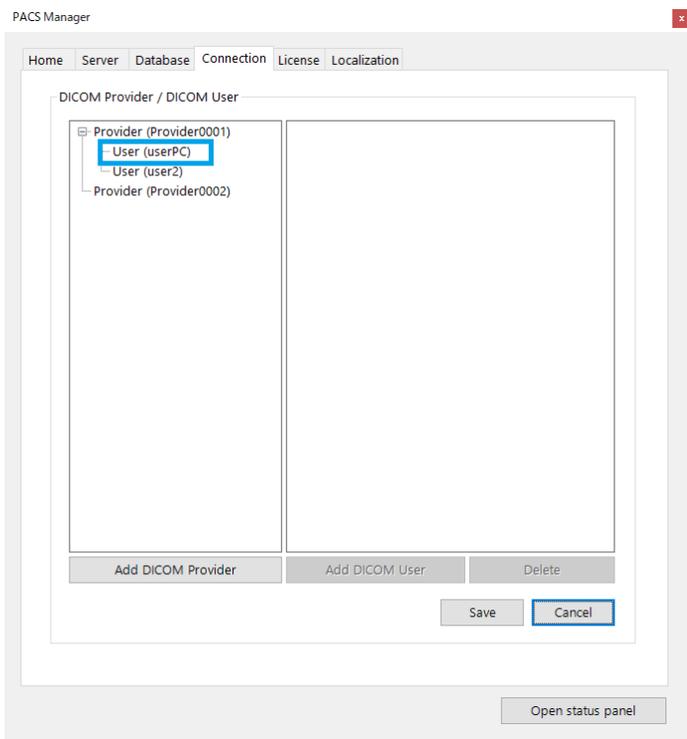
6. Click "Save".

## How to edit DICOM User

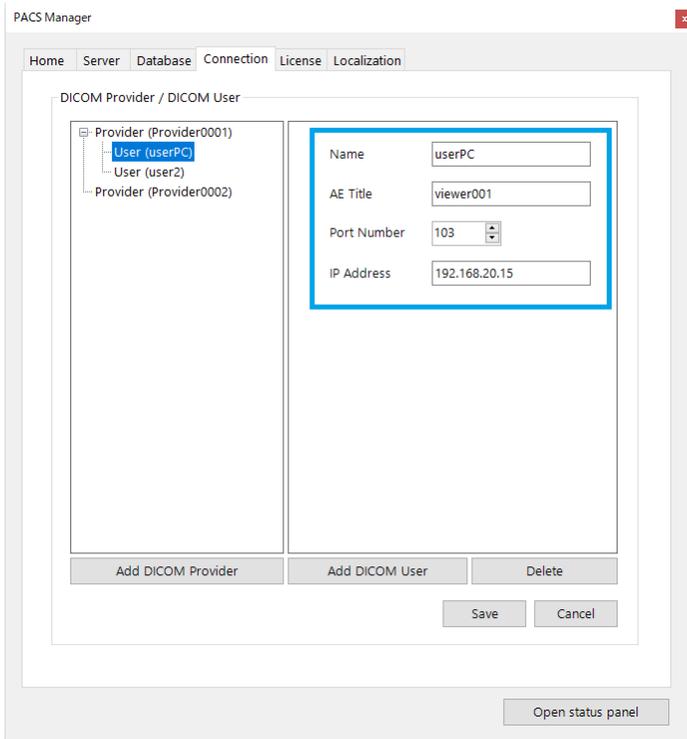
1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.
2. Click the "Connection" tab.



### 3. Click DICOM User.



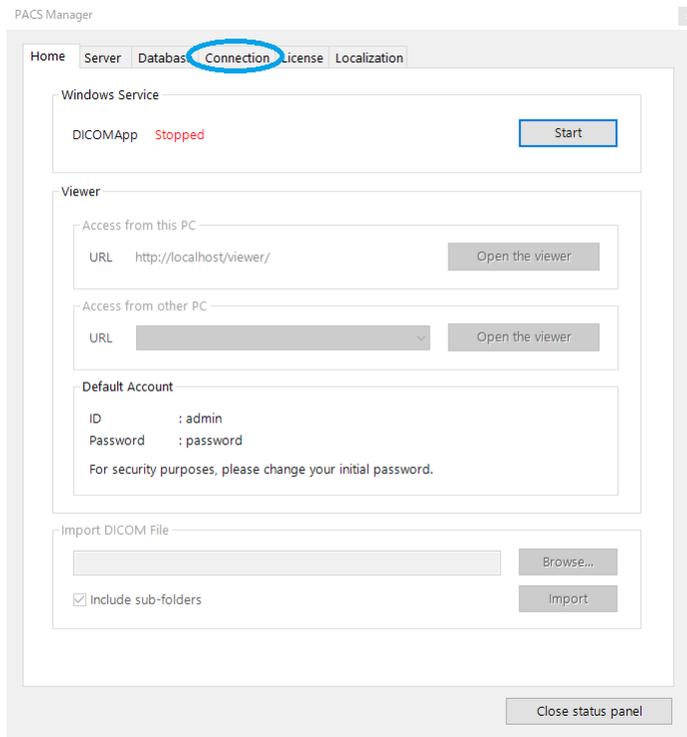
### 4. Edit DICOM User.



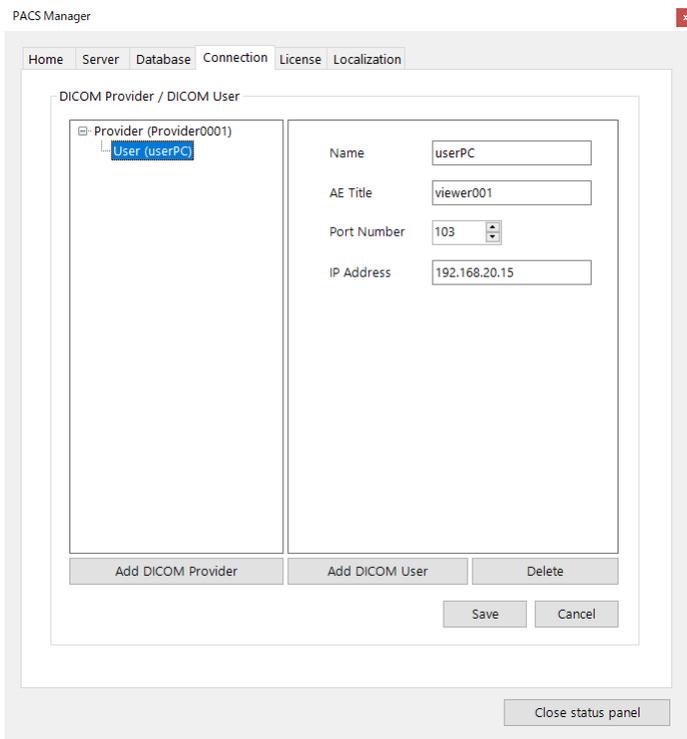
5. Click "Save".

### How to delete DICOM Provider/DICOM User

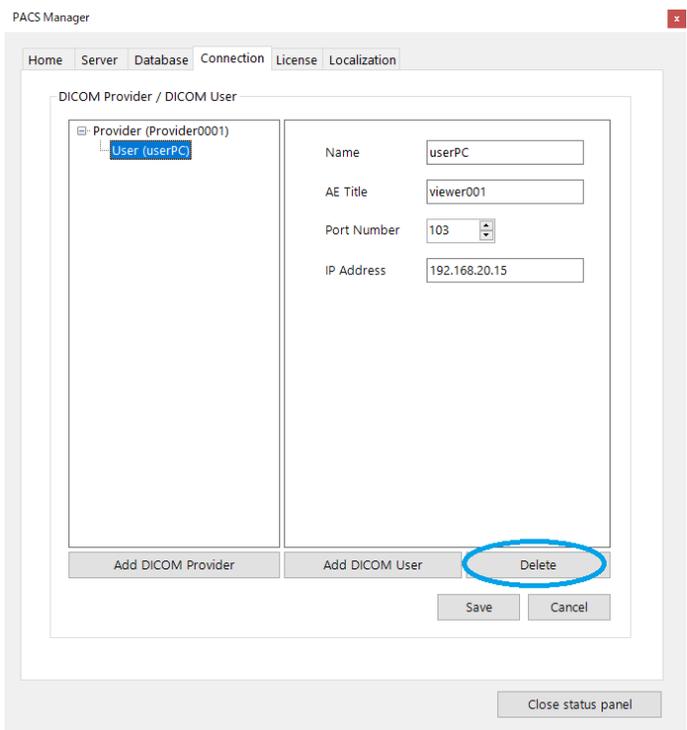
1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.
2. Click the "Connection" tab.



3. Click DICOM Provider/DICOM User to be deleted.



4. Click "Delete".



5. Click "Save".

### 13. Activate

**Make sure that database has been upgraded.**

Before activating, make sure that the database has been upgraded to Microsoft SQL Server.

If the database has not been upgraded, please refer to the following link to upgrade to Microsoft SQL Server.

Also, change the type of database to be used to Microsoft SQL Server.

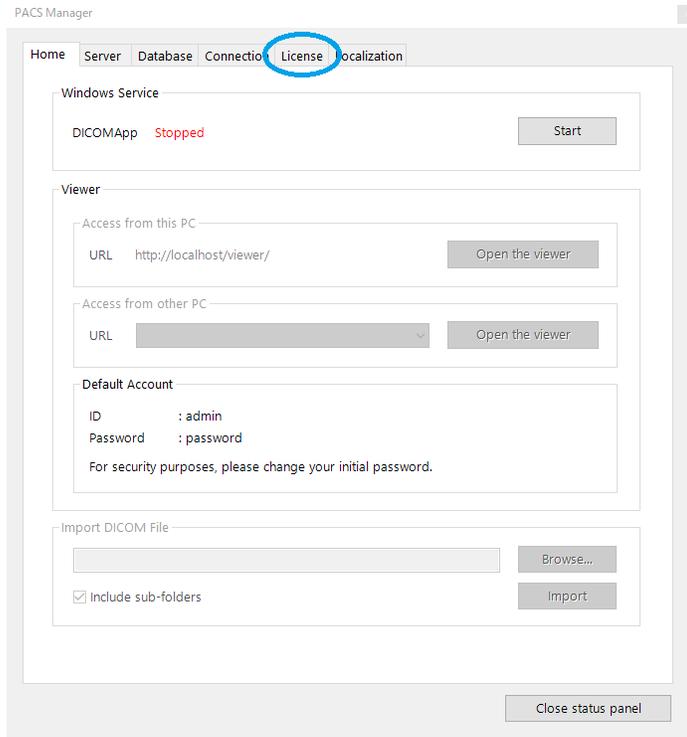
Reference Page

- [Upgrade Database](#)
- [Switch Database](#)

**WARNING: Support will not be provided if the database has not been changed to Microsoft SQL Server.**

## Activation

1. Click the "License" tab.



2. Enter Activation Key in the field of "Activation Key".

PACS Manager

Home Server Database Connection License Localization

License

License ID

License Type

Licensed To

License Expiration

Support Expiration

Maximum number of Studies

Maximum number of Web Connections

Maximum number of DICOM Connections

Activation Key

Activate

Open status panel

3. Click "Activate".
4. When activation is completed, the items in "License" will be updated.

Item
License Type
Licensed To
License Expiration
Support Expiration
Maximum number of Studies
Maximum number of Web Connection
Maximum number of DICOM Connection

## Advanced

### 1. Hardware Configuration

Most processes relating DICOM Viewer of SonicDICOM PACS is done on the PC/Server side where SonicDICOM PACS is installed.

It means you can expect overall performance will be improved by upgrading the hardware configuration of the PC/Server.

#### SSD/HDD

The followings are assumed that OS and SonicDICOM PACS is installed on C drive.

4. Please change C drive to SSD.
5. If possible, please set up RAID on C drive.
6. Please add 2 internal HDDs and set them as store location of DICOM files (Data Path and Backup Path). The configuration of SSD/HDD will be followings.

C: (OS, SonicDICOM PACS)  
Y: (Data Path)  
Z: (Backup Path)

Changing C drive to SSD improves a performance dramatically. This is because SonicDICOM PACS frequently writes and reads the OS's temp folder.

Setting up RAID in C drive prevent that the system suddenly stops. And this configuration enables you to avoid several potential problems.

By storing DICOM files in the added HDD, DICOM files will not be lost if C drive crashes.

Even if the added HDD crashes, there is another HDD. So, it can reduce risk to lose

DICOM files.

And if your Data Path (Y:) HDD crashes, you can immediately restore the system by changing Data Path to Backup Path (Z:) by using PACS Manager.

Info

- Data Path: Where to save/refer to a DICOM file
- Backup Path: Where to back up a DICOM file

## CPU

CPU's clock speed affects a speed of image processing.

The number of CPU cores affects response if there are simultaneous accesses from multiple Web browsers frequency, and if the hardware simultaneously communicates with multiple modalities.

SonicDICOM PACS supports image processing by multi-core CPUs, so the bigger CPU core makes performance of image processing significantly improved.

## Memory

Memory affects performance if there are simultaneous accesses from multiple Web browsers frequency, and if the hardware has big stress by communication with multiple modalities.

## 2. Upgrade Database

SonicDICOM PACS uses Microsoft SQL Server Compact as the default database. Since Microsoft SQL Server Compact is not necessary to be installed, it is suited for trial use of SonicDICOM PACS. However, it is not suited for the use in a production environment. And if you use this database in a production environment, we are unable to provide any support. Therefore, if you intend to use SonicDICOM PACS in a production environment, you need to upgrade it to Microsoft SQL Server. In this page, we provide information on how to upgrade to Microsoft SQL Server Express, which is a free edition, and Microsoft SQL Server Standard, which is a paid edition.

Although Microsoft SQL Server Express is available free of charge, it has a 10GB limit on the size of the database file. If the size of the database file reaches its limit, errors may occur, such as not receiving DICOM files from modalities. In this case, you need to upgrade the database to a higher edition such as Microsoft SQL Server Standard. Also, depending on the environment and usage, the approximate number of images that can be stored with Microsoft SQL Server Express is two million. If there is a possibility of exceeding this, please consider upgrading to a higher edition such as Microsoft SQL Server Standard.

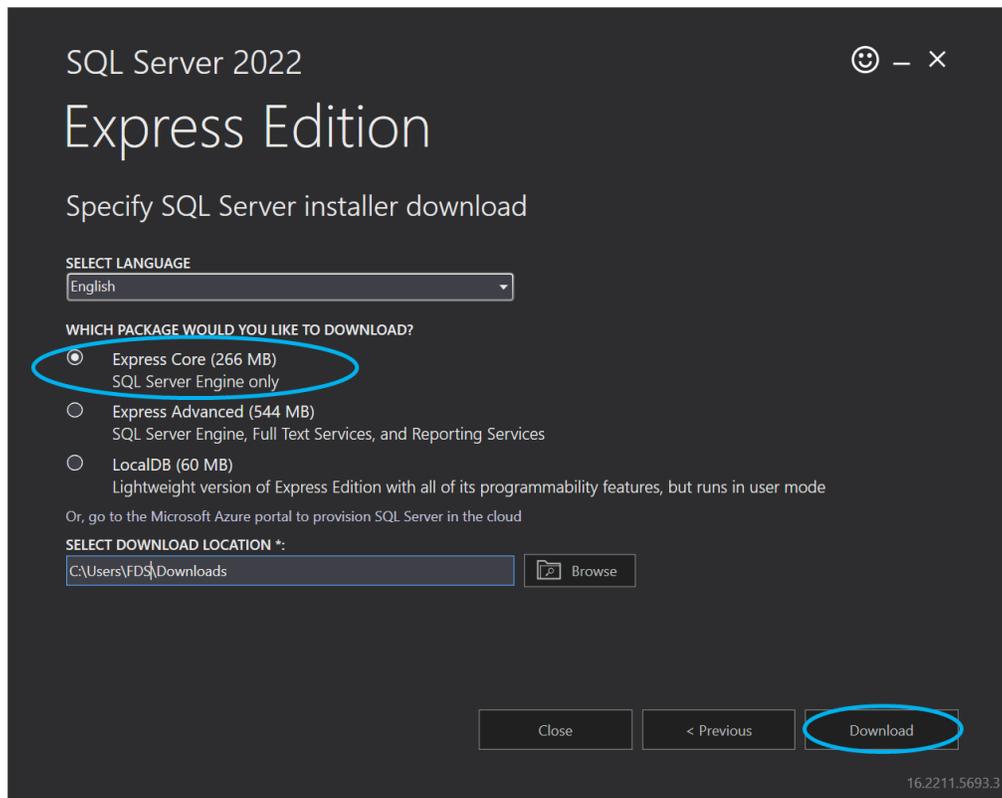
NOTE: Microsoft SQL Server Standard is a paid edition.

For more information on how to buy, prices, licensing details, etc., please contact Microsoft or a retailer of Microsoft products.

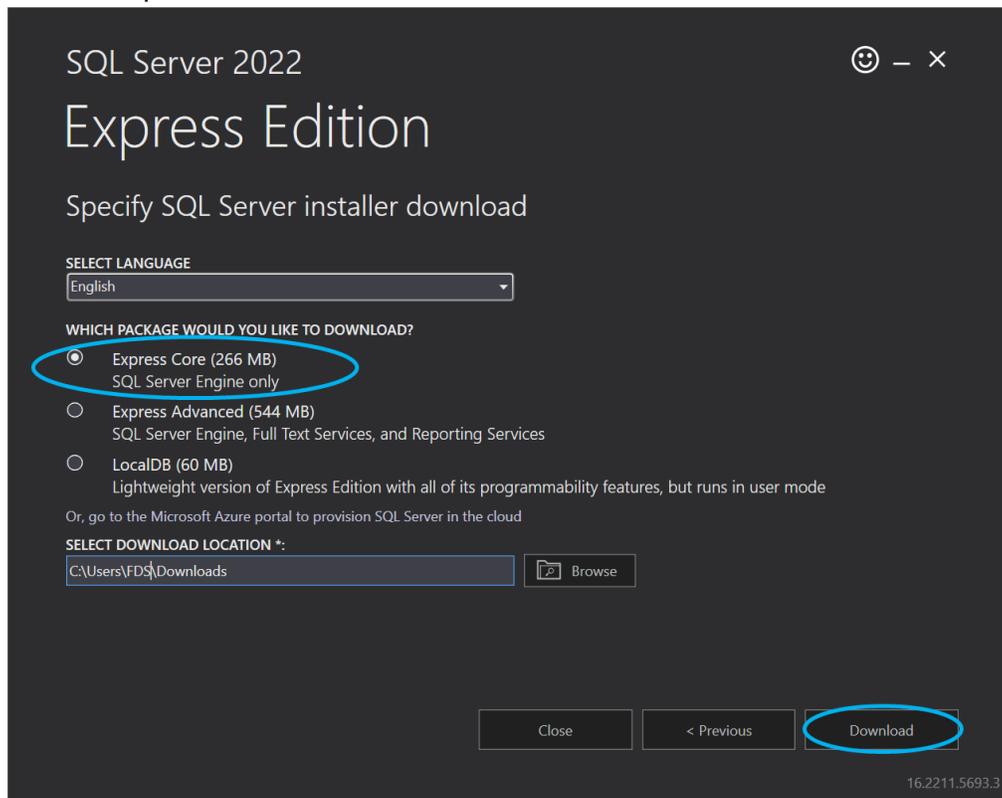
#### **Install Microsoft SQL Server Express**

1. Download Microsoft SQL Server 2022 Express from the following URL:  
<https://www.microsoft.com/en-us/download/details.aspx?id=104781>
2. Launch "SQL2022-SSEI-Expr.exe".

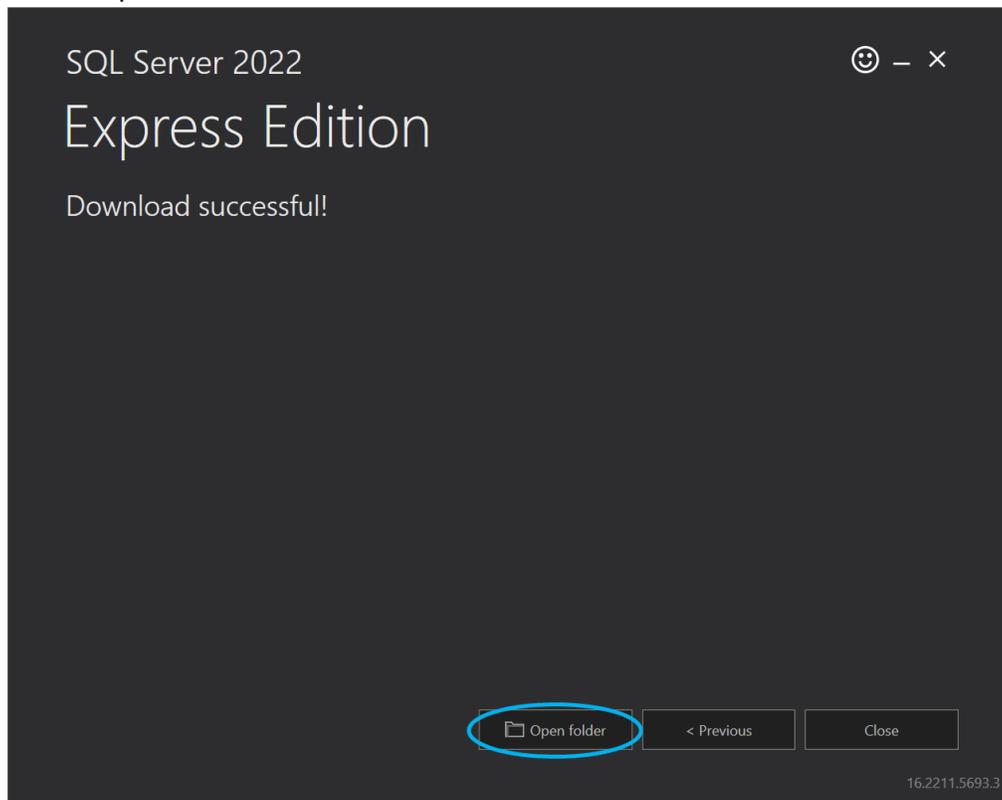
3. Click "Download Media".



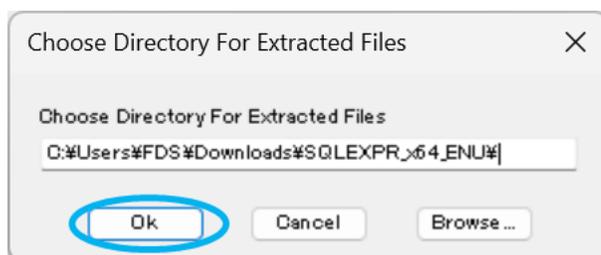
4. Select "Express Core" and click "Download".



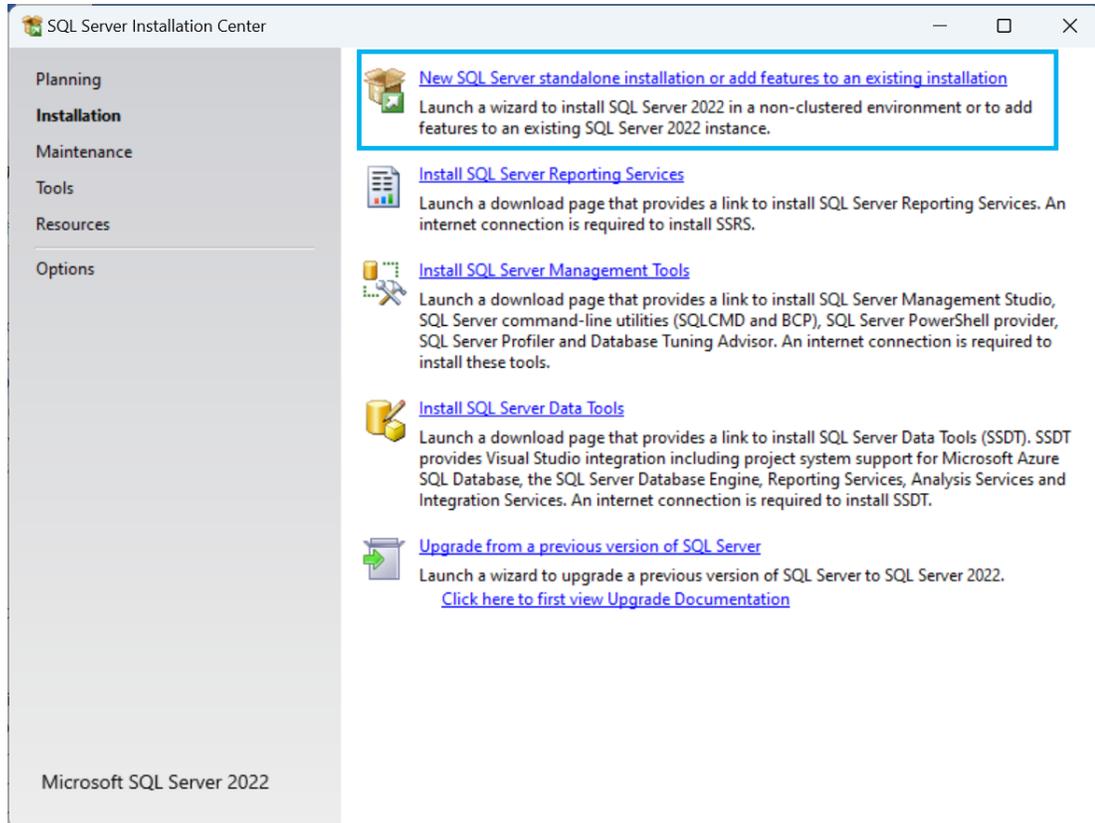
5. Click "Open folder".



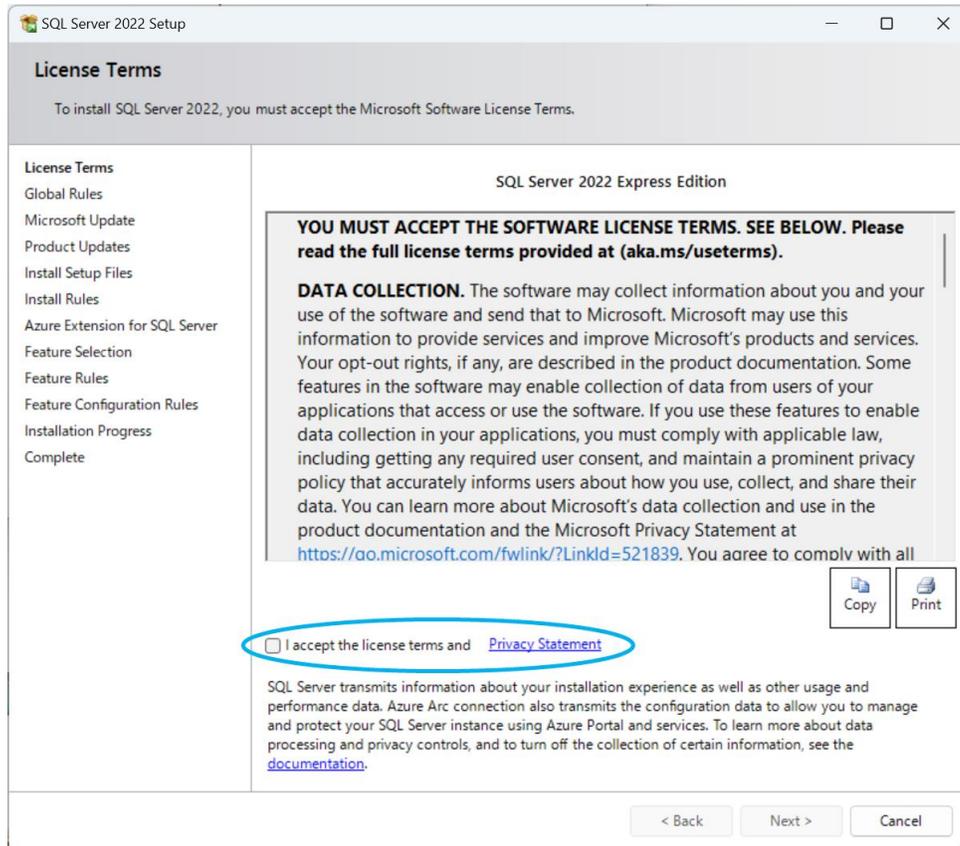
6. Start up the installer "SQLEXP\_x64\_ENU.exe" that is in the displayed folder.
7. Click "OK".



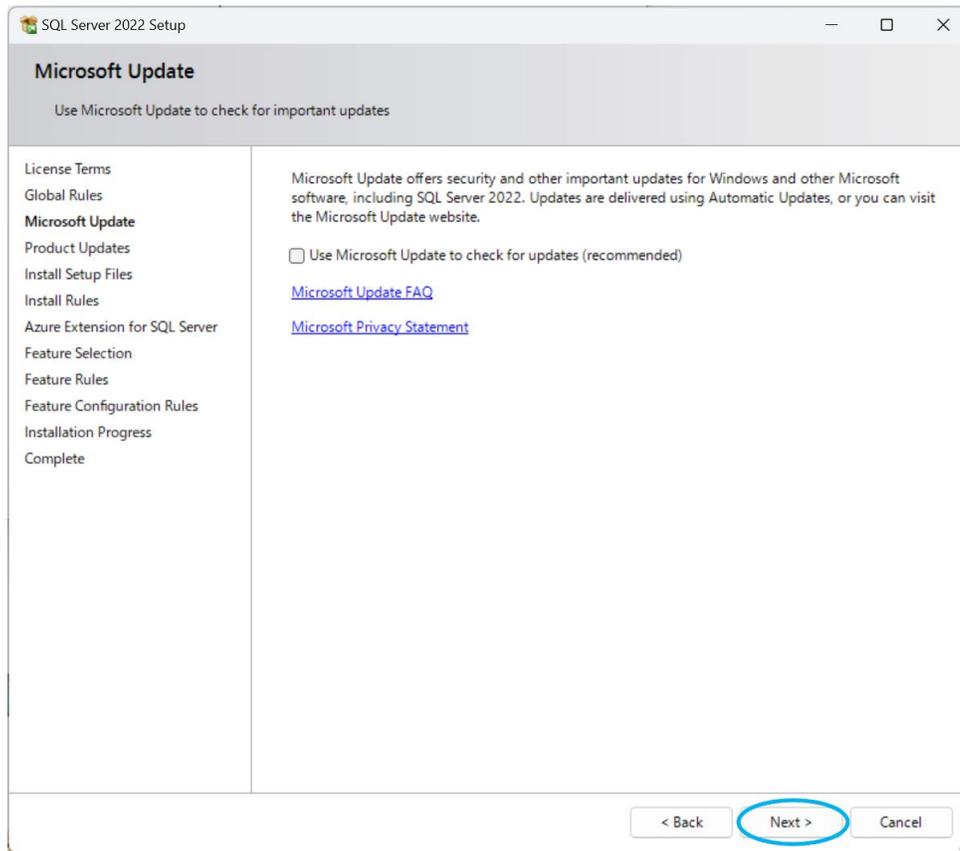
8. Click “New SQL Server stand-alone installation or add features to an existing installation”.



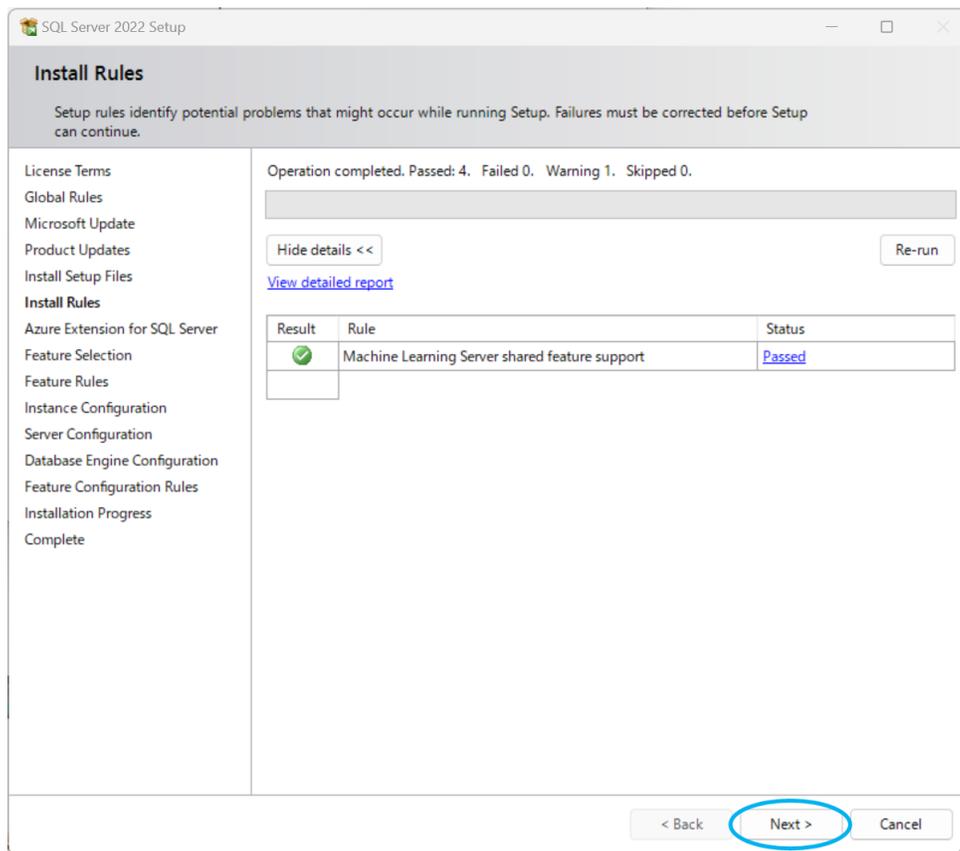
9. Read through the "License Terms" and Privacy Statement then check "I accept the license terms." after confirming the contents.



10. Click "Next".

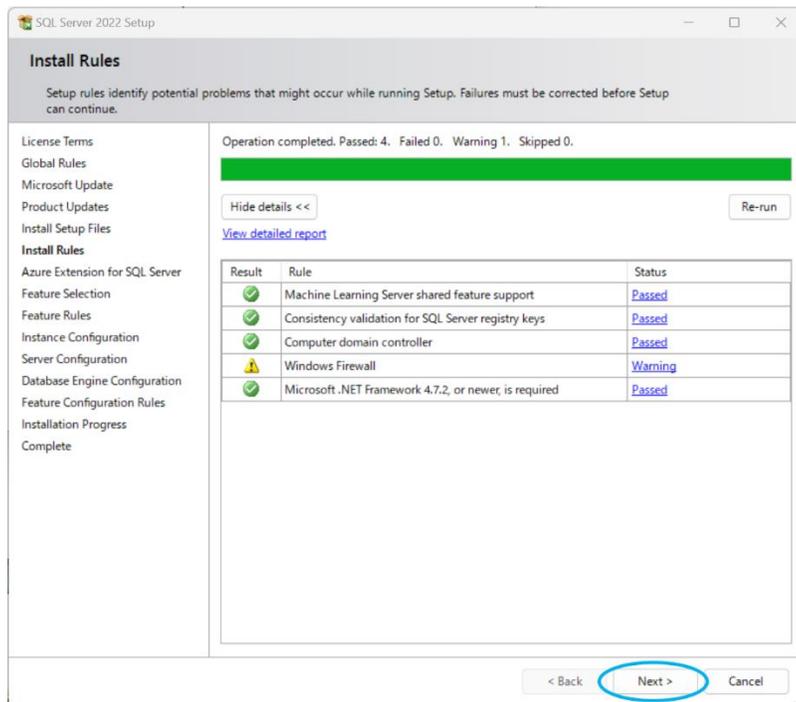


11. Click "Next".

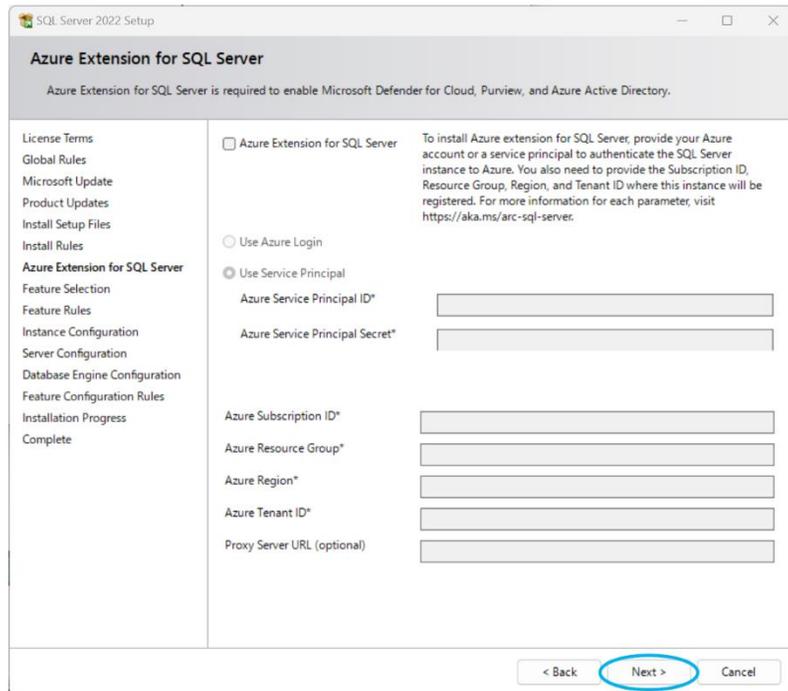


**NOTE: If the environment can use Microsoft Update, we recommend checking "Use Microsoft Update to check for updates (recommended)".**

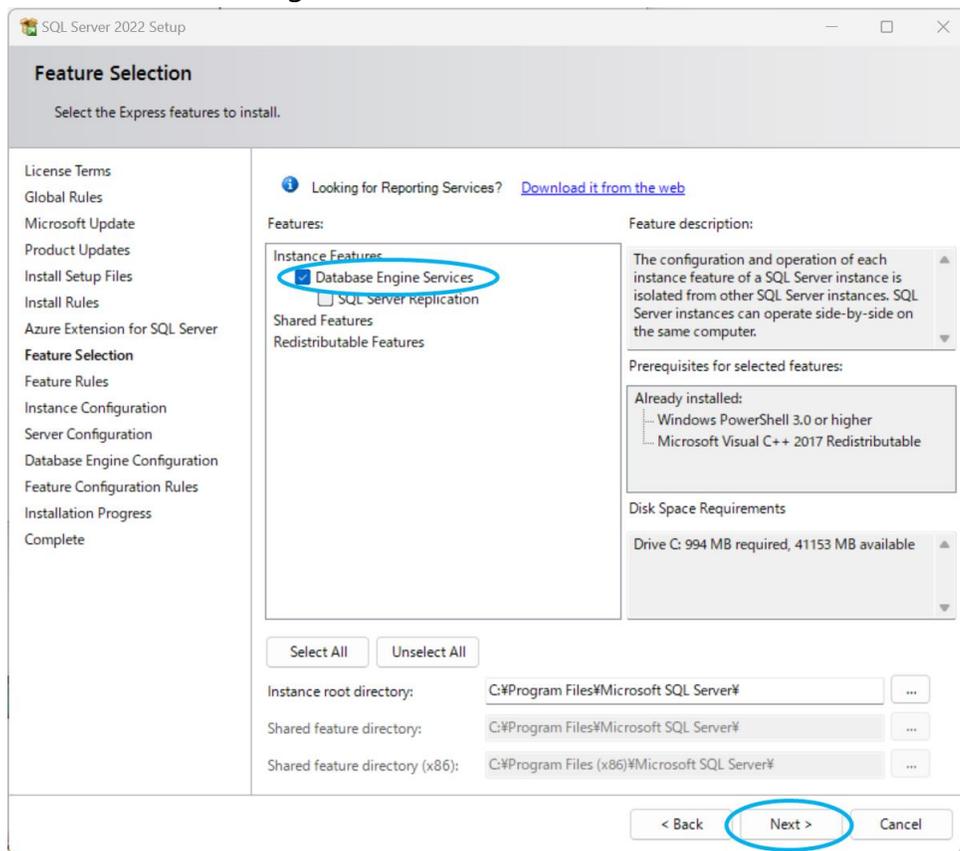
12. Click "Next".



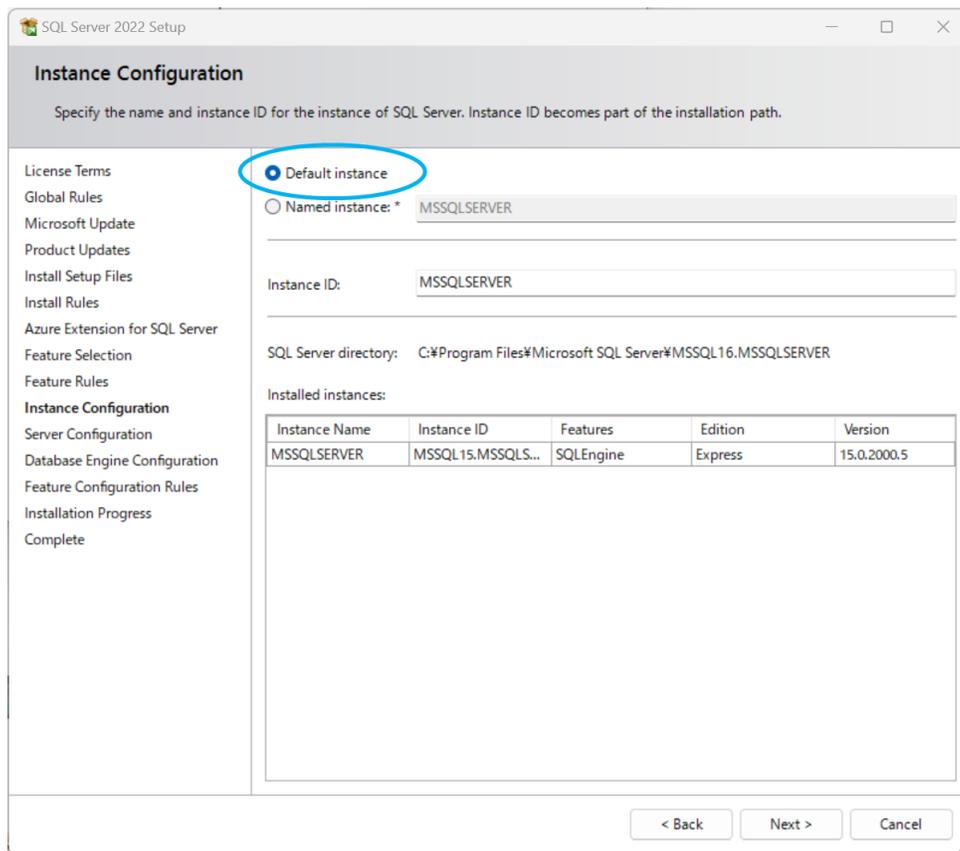
13. Click "Next".



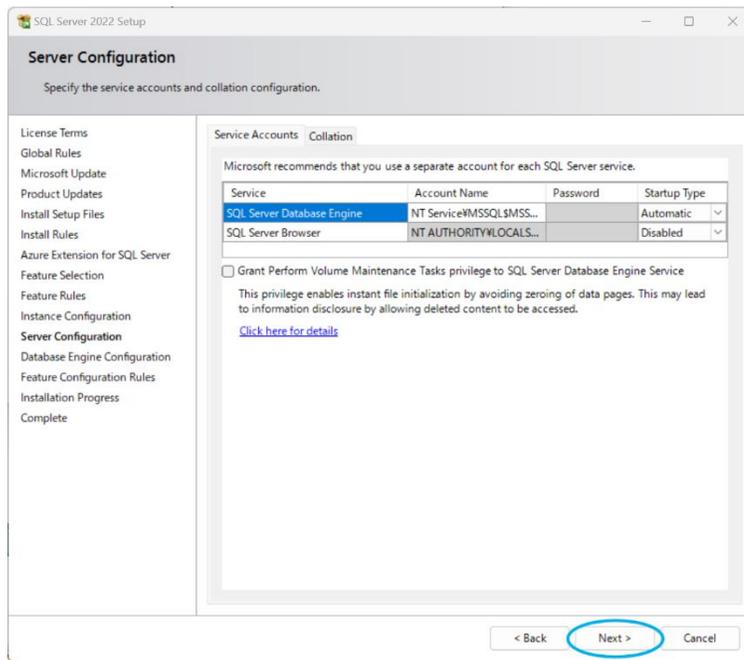
14. Check "Database Engine Services" and click "Next".



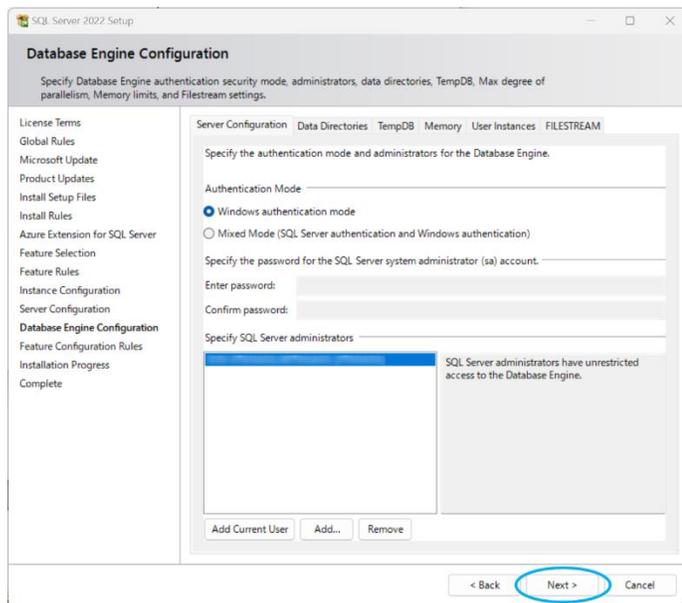
15. Select "Default instance".



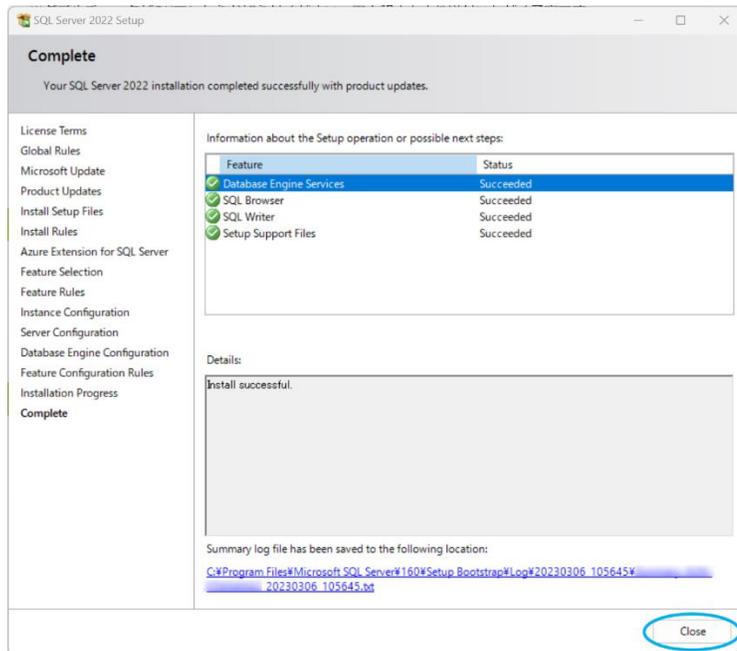
16. Click "Next".



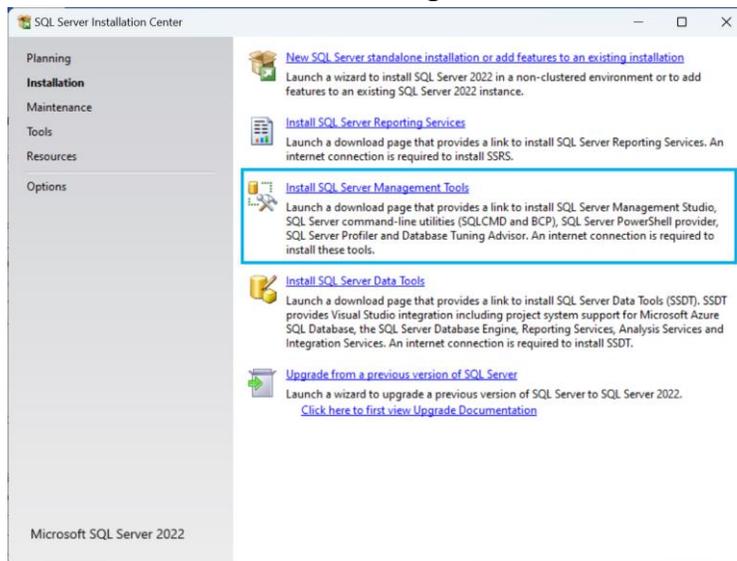
17. Click "Next".



18. Click "Close".



19. Click "Install SQL Server Management Tools".



## 20. Download the installer.

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Distributed Replay

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SQLCMD

SSB Diagnose

SQL Server Data Tools (SSDT)

SQL Server Management Studio (SSMS)

Learn / SQL / SQL Server /

# Download SQL Server Management Studio (SSMS)

Article • 03/13/2023 • 48 contributors [Feedback](#)

**Applies to:** [SQL Server](#) [Azure SQL Database](#) [Azure SQL Managed Instance](#) [Azure Synapse Analytics](#)

SQL Server Management Studio (SSMS) is an integrated environment for managing any SQL infrastructure, from SQL Server to Azure SQL Database. SSMS provides tools to configure, monitor, and administer instances of SQL Server and databases. Use SSMS to deploy, monitor, and upgrade the data-tier components used by your applications and build queries and scripts.

Use SSMS to query, design, and manage your databases and data warehouses, wherever they are - on your local computer or in the cloud.

## Download SSMS

[Free Download for SQL Server Management Studio \(SSMS\) 19.0.2](#)

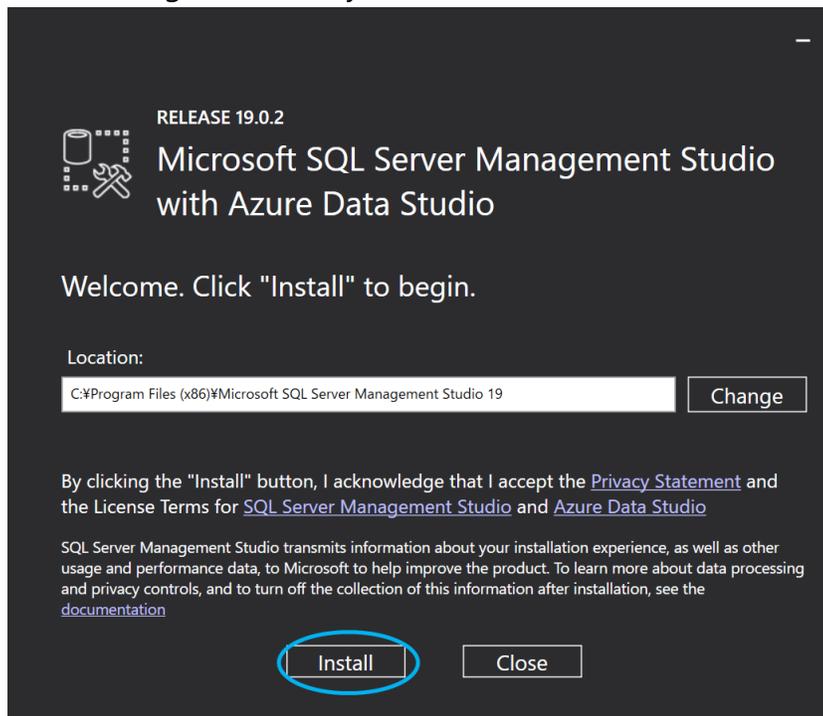
SSMS 19.0.2 is the latest general availability (GA) version. If you have a *preview* version of SSMS 19 installed, you should uninstall it before installing SSMS 19.0.2. If you have SSMS 19.x installed, installing SSMS 19.0.2 upgrades it to 19.0.2.

- Release number: 19.0.2
- Build number: 19.0.20209.0
- Release date: March 13, 2023

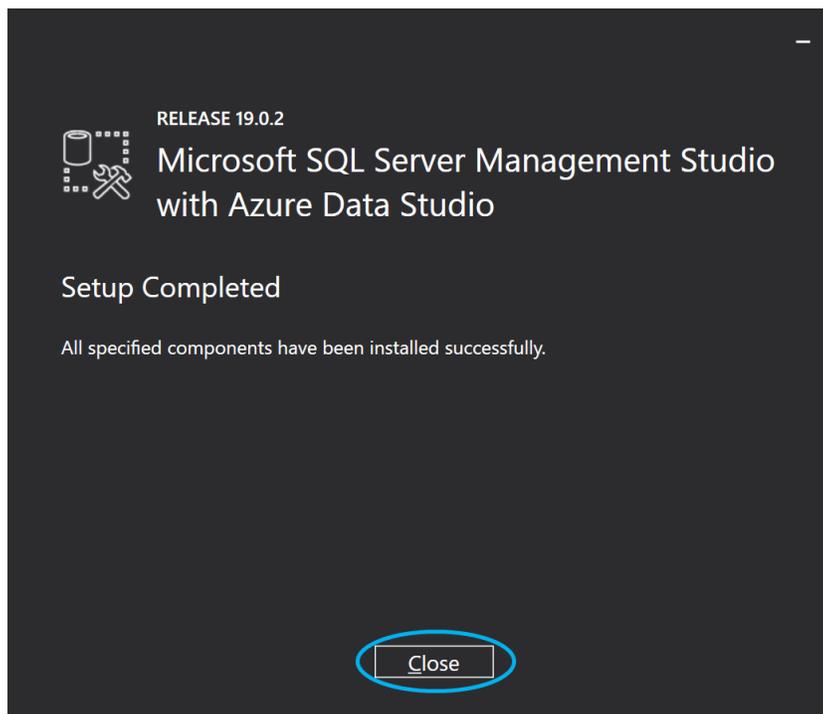
By using SQL Server Management Studio, you agree to its [license terms](#) and [privacy statement](#). If you have comments or suggestions or want to report issues, the best way to contact the SSMS team is at [SQL Server user feedback](#).

## 21. Start up the downloaded installer "SSMS-Setup-ENU.exe".

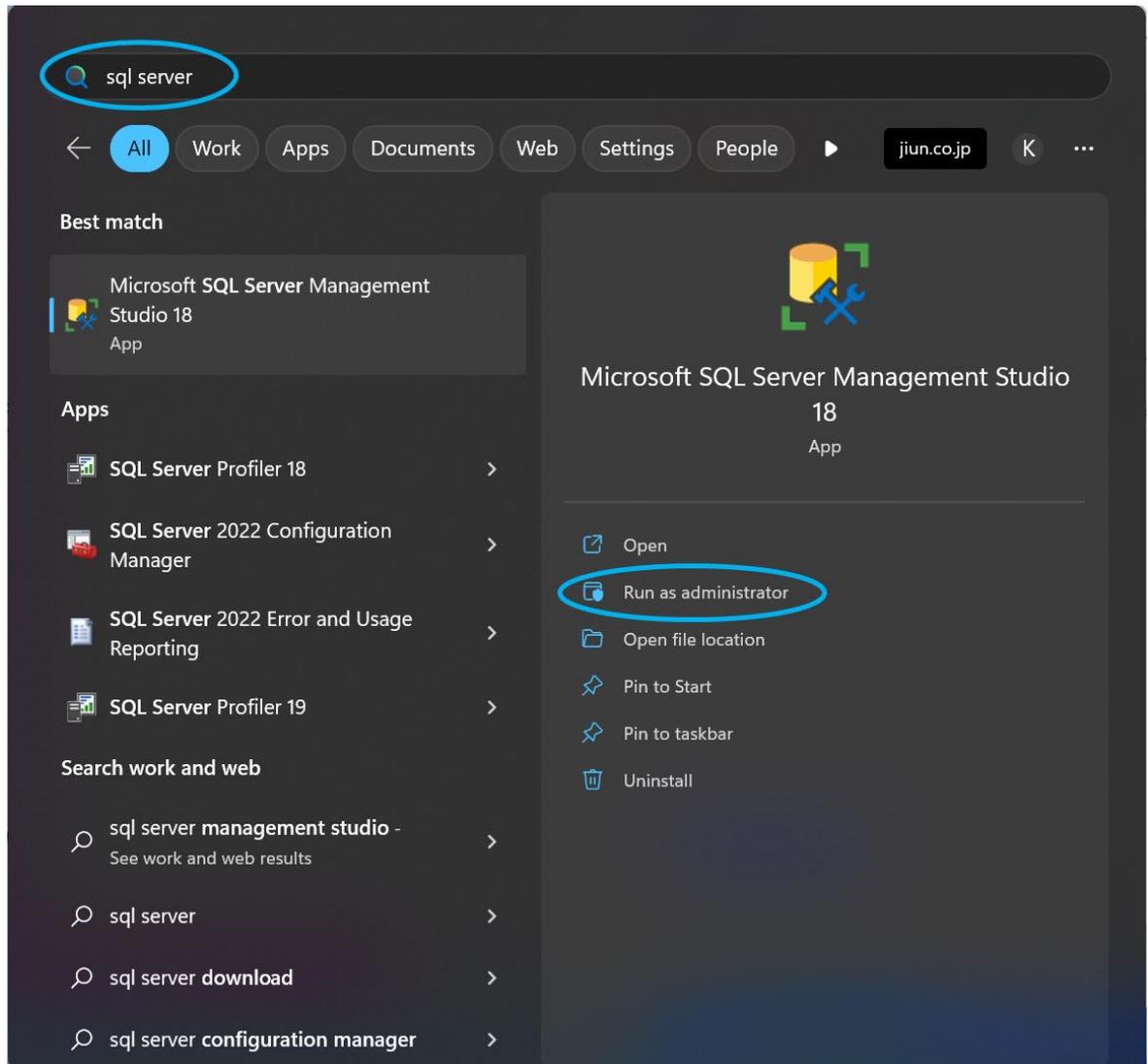
22. Read through the Privacy Statement and the License Terms and click "Install".



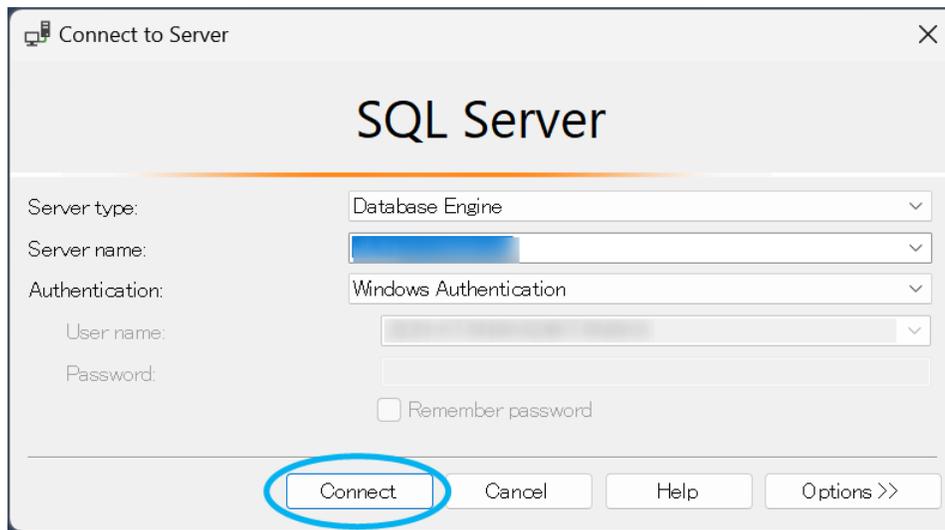
23. Click "Close".



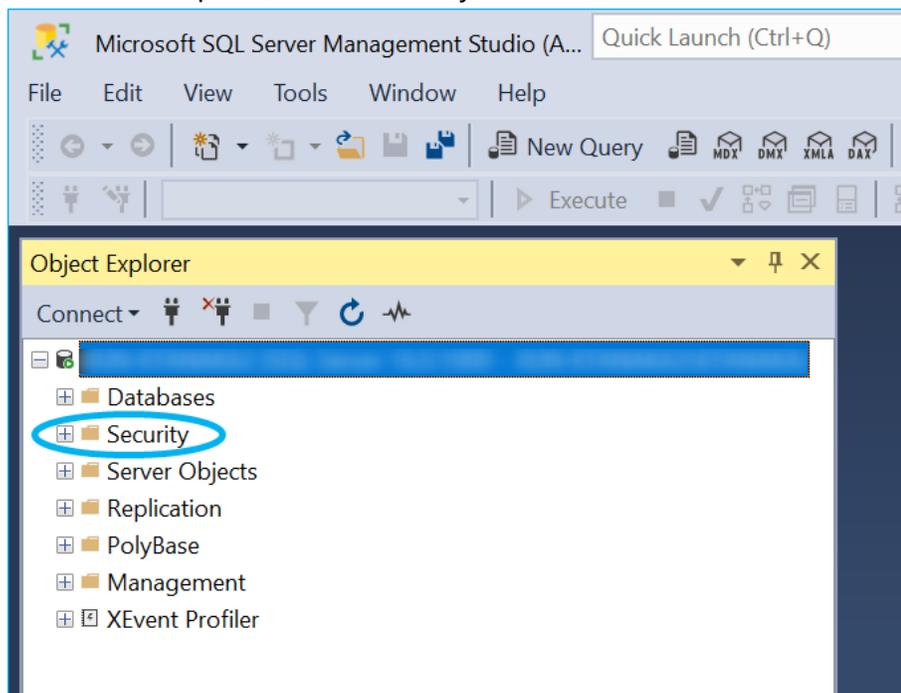
24. Launch SQL Server Management Studio. Open  Start Menu and type "sql server" in the search bar. Then click "Run as administrator" on SQL Server Management Studio.



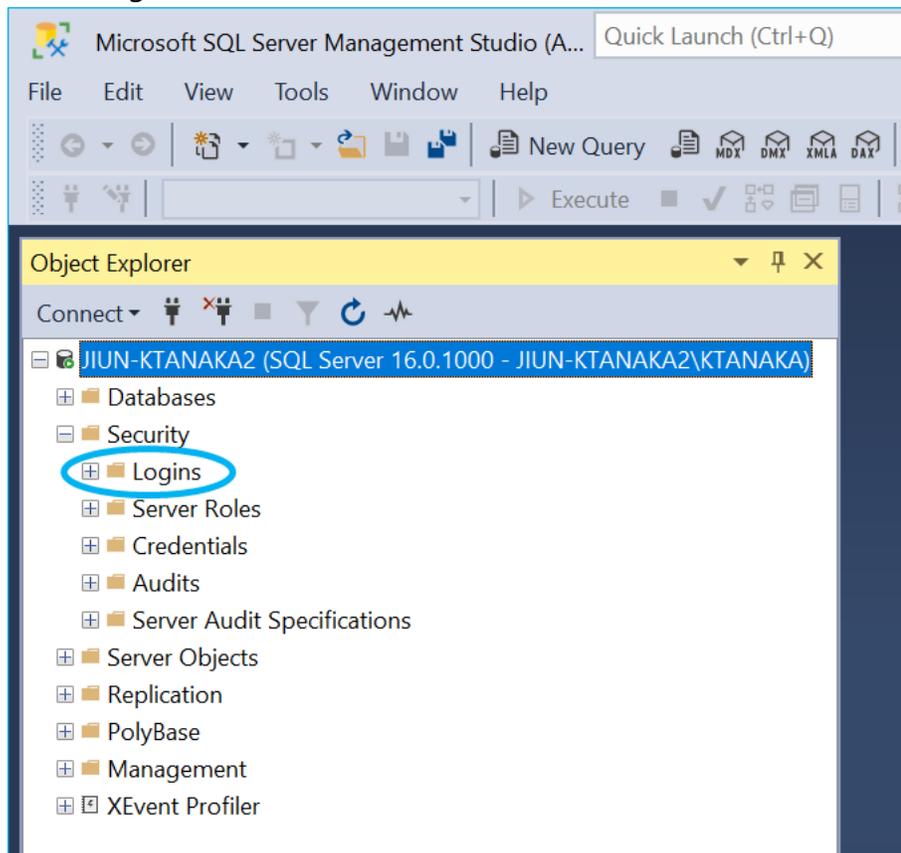
25. Click "Connect".



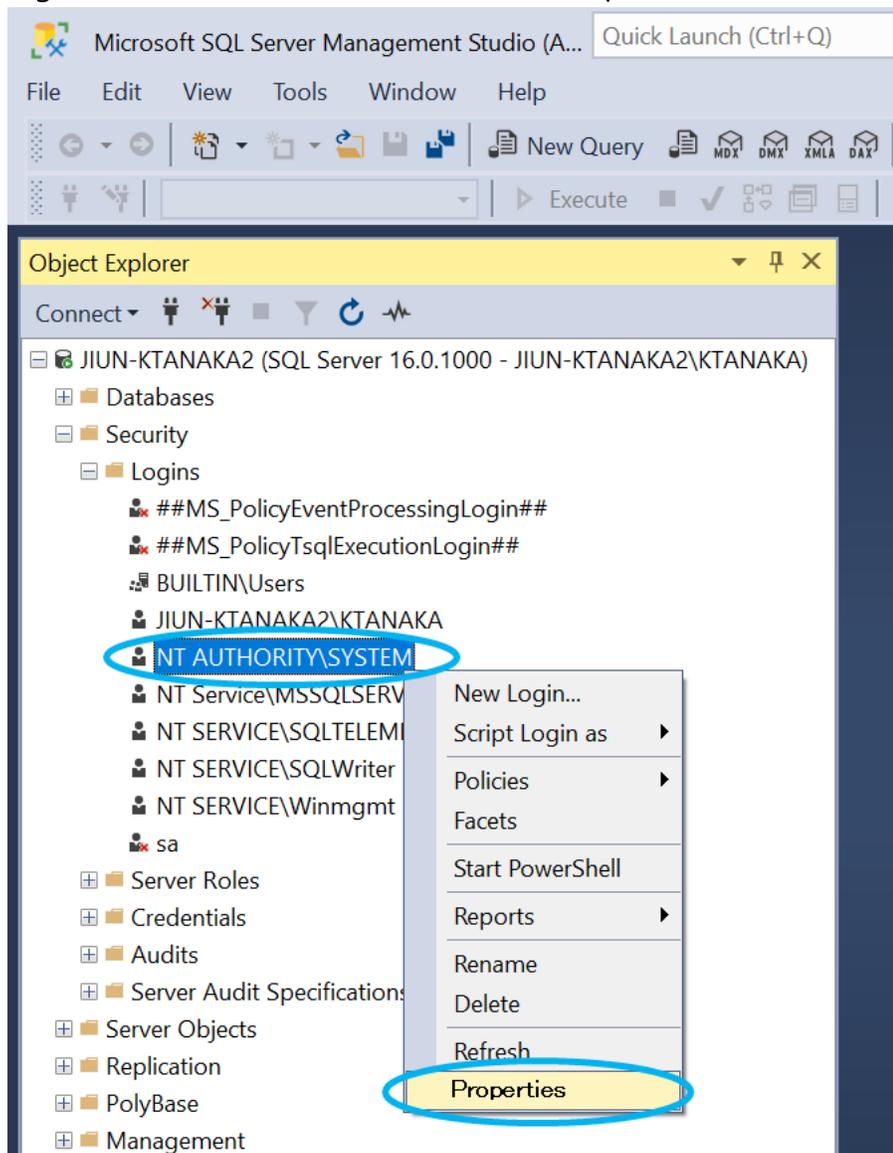
26. From the left pane, click "Security".



27. Click "Logins".

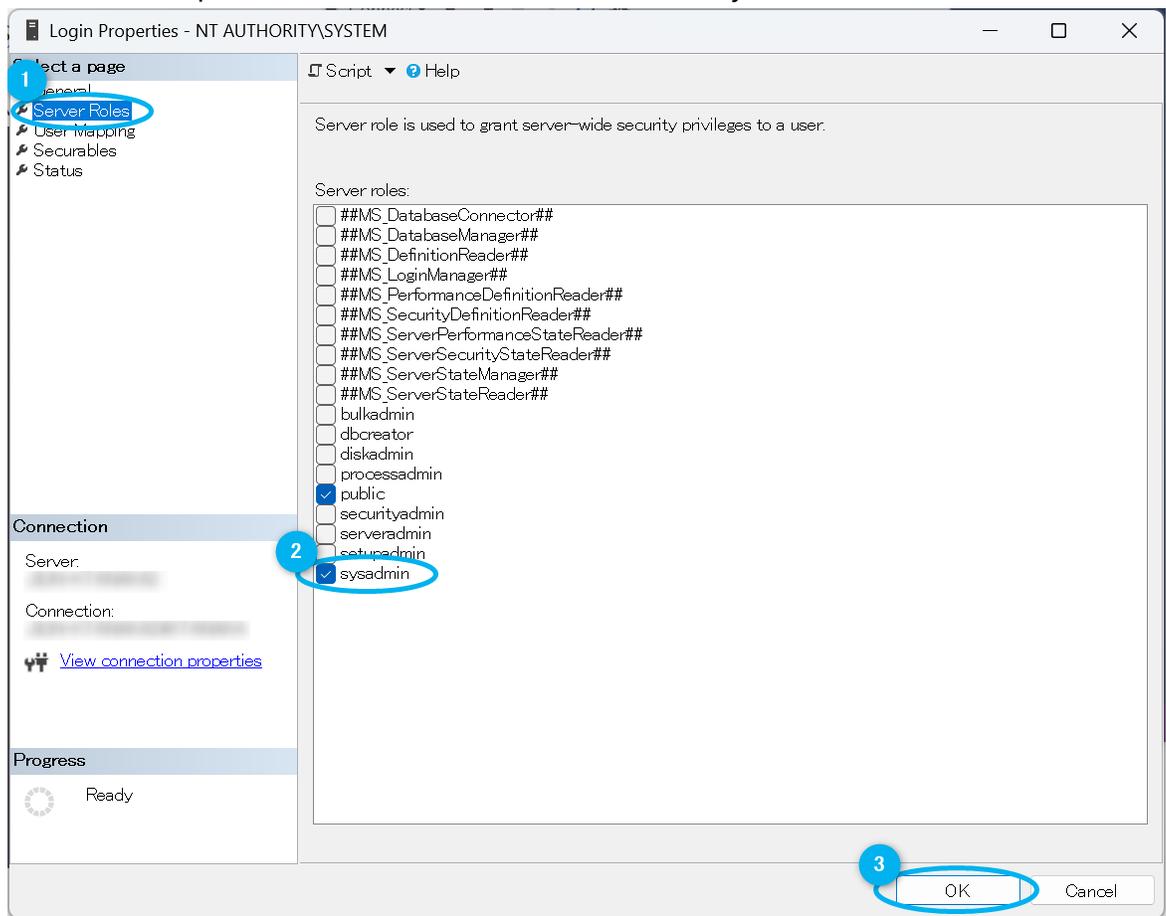


28. Right-click "NT AUTHORITY" and click "Properties".



Info: When SonicDICOM PACS accesses the database, "NT AUTHORITY" is the user name because SonicDICOM PACS operates as a Windows service.

29. From the left pane, click "Server Roles" and check "sysadmin" then click "OK".

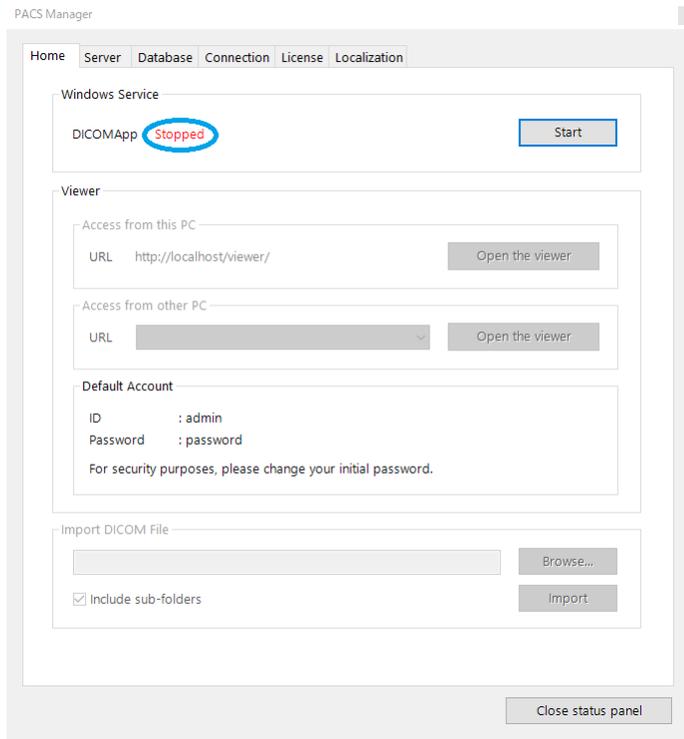


Info: When SonicDICOM PACS starts up, it needs to build database file. So "sysadmin" permission is necessary.

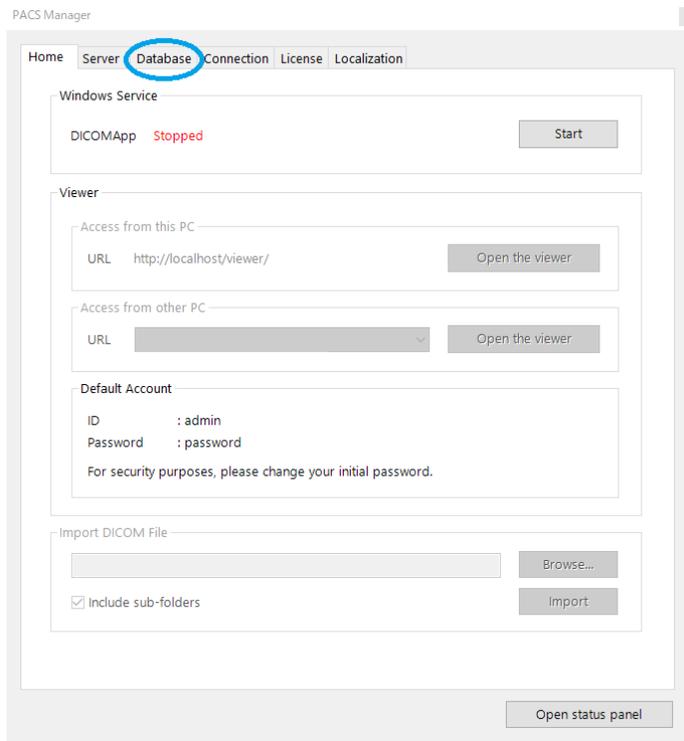
## Change the database to Microsoft SQL Server

7. Make sure that the status of DICOMApp is "Stopped".

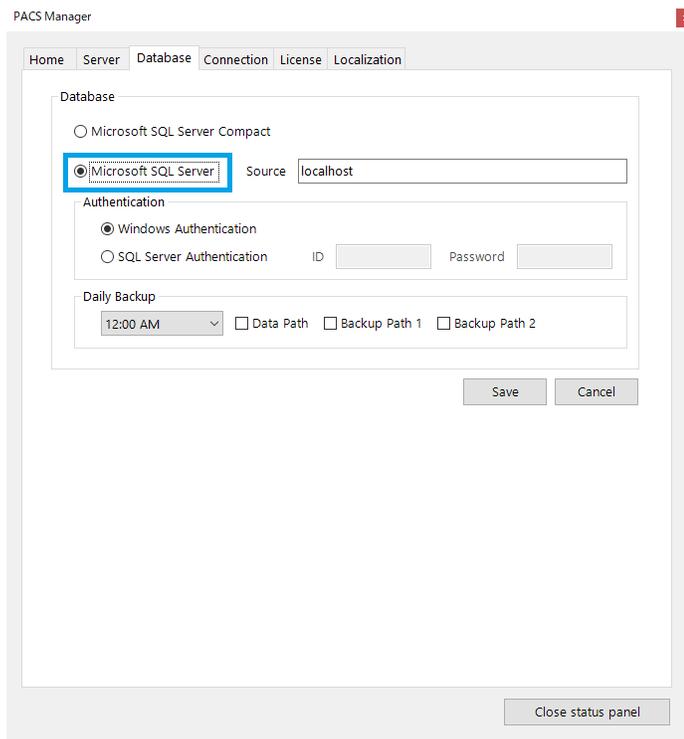
If the status of DICOMApp is "Running", click "Stop" to stop SonicDICOM PACS.



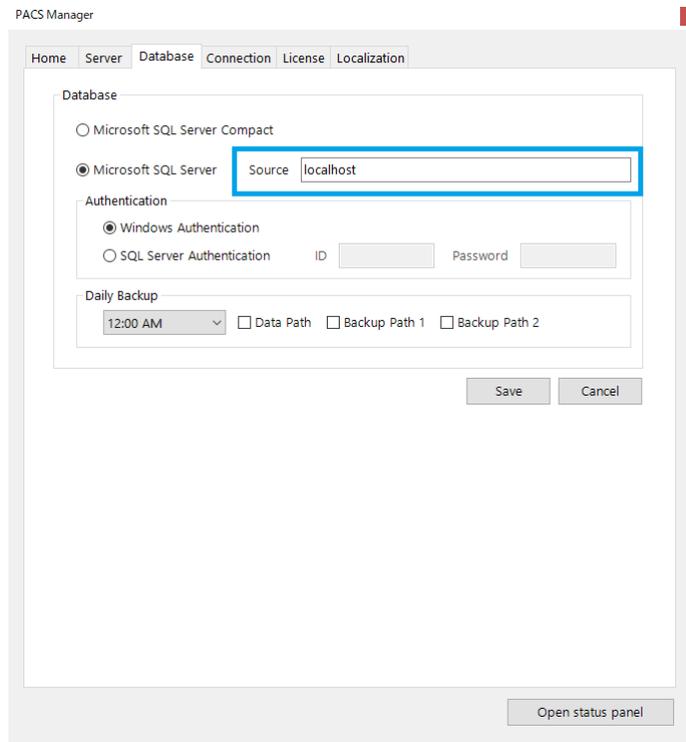
8. Click the "Database" tab.



9. Select "Microsoft SQL Server".



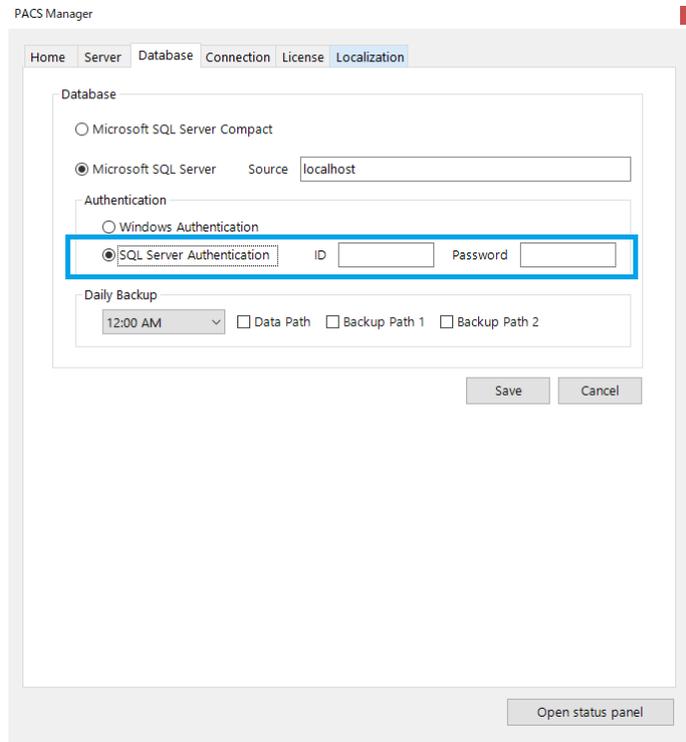
10. Enter the instance name in "Source". If you selected the "Default instance" when you installed Microsoft SQL Server, enter "localhost".



The screenshot shows the 'PACS Manager' application window with the 'Database' tab selected. The 'Database' section has two radio buttons: 'Microsoft SQL Server Compact' (unselected) and 'Microsoft SQL Server' (selected). Below the 'Microsoft SQL Server' option is a text box labeled 'Source' containing the text 'localhost'. The 'Authentication' section has two radio buttons: 'Windows Authentication' (selected) and 'SQL Server Authentication' (unselected). Below 'SQL Server Authentication' are two text boxes labeled 'ID' and 'Password'. The 'Daily Backup' section has a dropdown menu set to '12:00 AM' and three checkboxes: 'Data Path', 'Backup Path 1', and 'Backup Path 2', all of which are unchecked. At the bottom right of the window are 'Save' and 'Cancel' buttons. At the bottom center of the window is an 'Open status panel' button.

11. Under "Authentication", select the authentication method.

If you select "SQL Server Authentication", enter relevant "ID" and "Password".

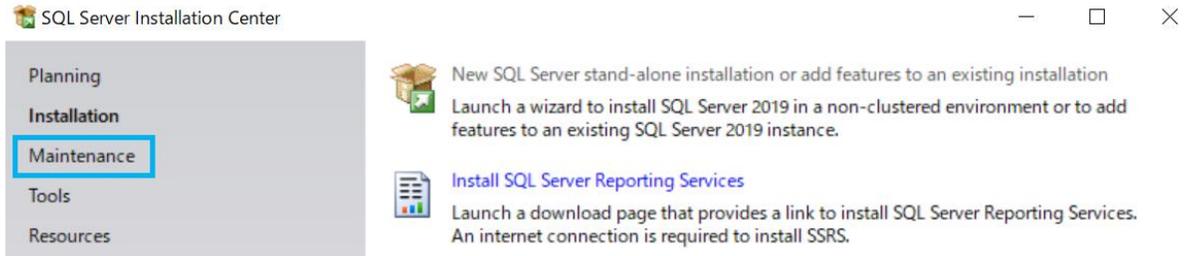


The screenshot shows the 'Localization' tab in the PACS Manager application. The 'Database' section has 'Microsoft SQL Server' selected with a source of 'localhost'. In the 'Authentication' section, 'SQL Server Authentication' is selected, and the 'ID' and 'Password' fields are highlighted with a blue box. The 'Daily Backup' section shows a time of '12:00 AM' and three unchecked checkboxes for 'Data Path', 'Backup Path 1', and 'Backup Path 2'. 'Save' and 'Cancel' buttons are at the bottom right, and an 'Open status panel' button is at the bottom center.

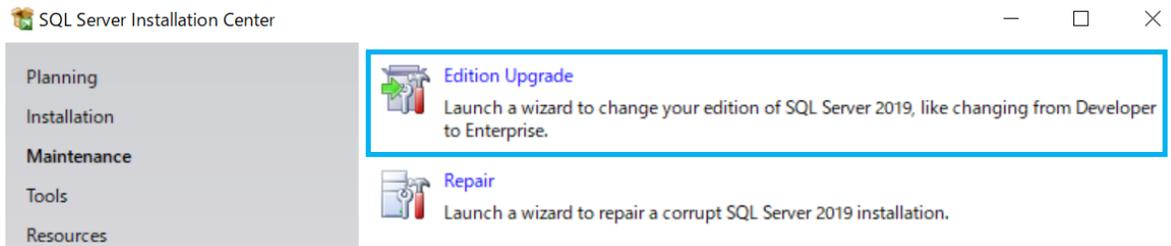
12. Click "Save".

## Upgrade to Microsoft SQL Server Standard

1. Start "setup.exe" of Microsoft SQL Server Standard you obtained.
2. Click "Maintenance".

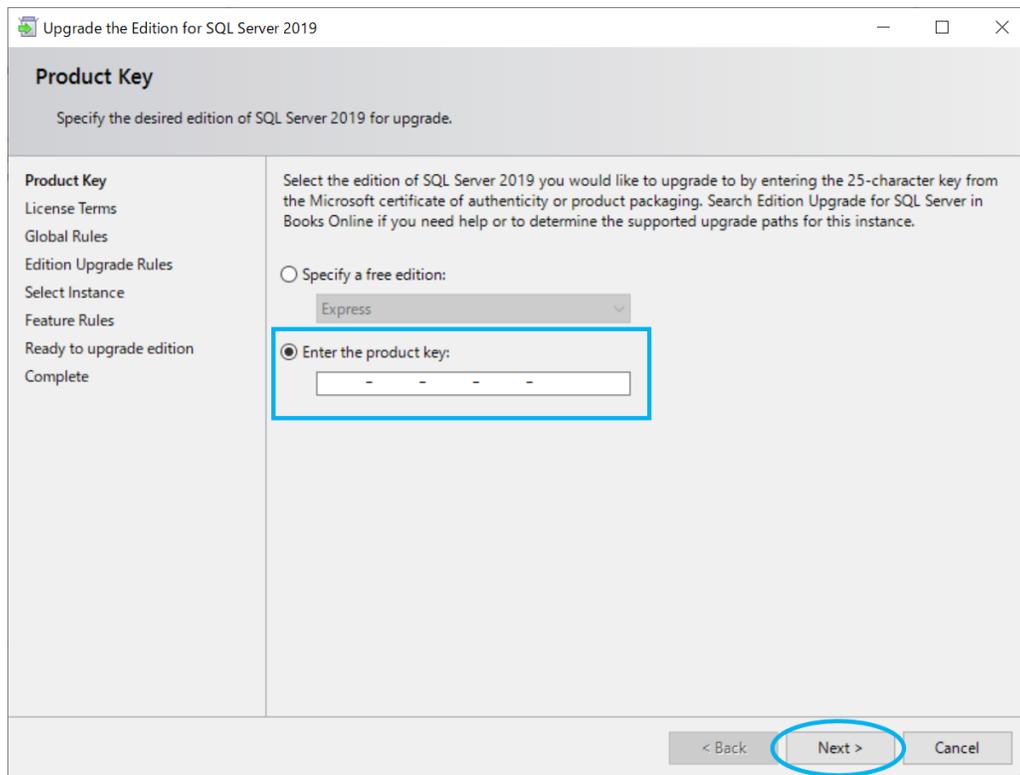


3. Click "Edition upgrade".



4. Enter the Product Key

5. Click "Next".



6. Read through the "License Terms" and check "I accept the license terms." after confirming the content.
7. Click "Next".
8. Select an instance of SQL Server.  
If you selected the "Default instance" in step 17., select "MSSQLSERVER".
9. Click "Next".
10. Click "Upgrade".
11. Click "Close".

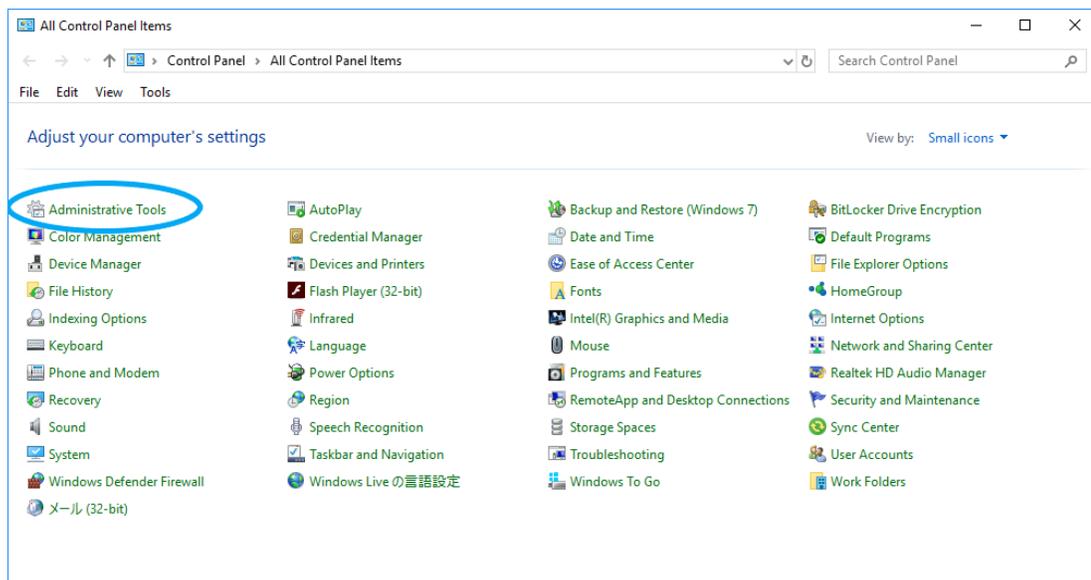
## 2. Store Data in NAS

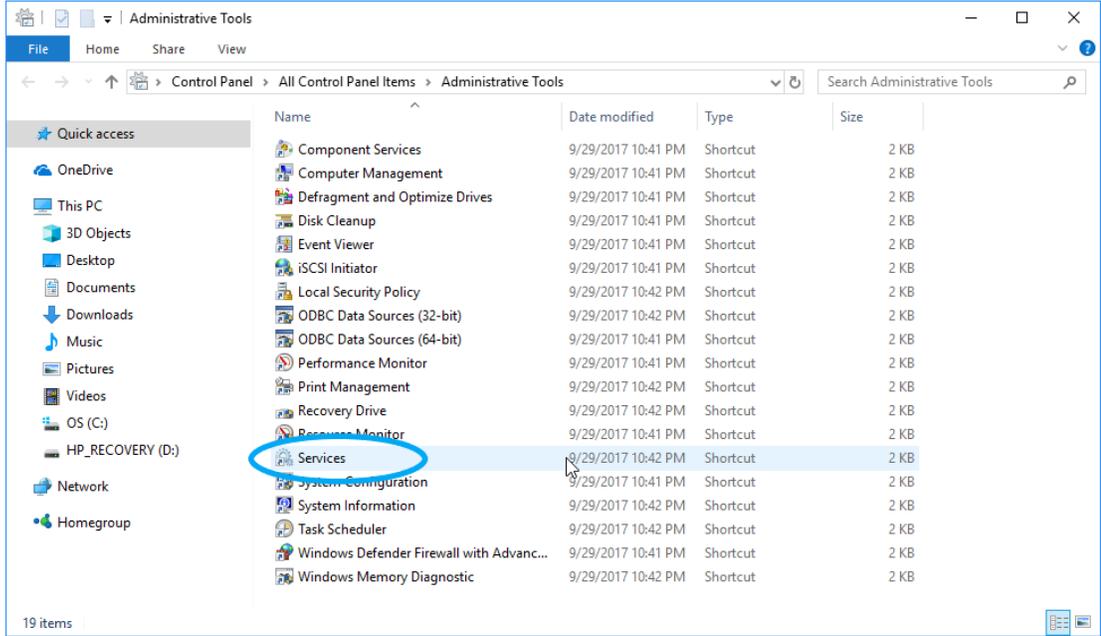
You can change storage locations of DICOM files and log files to a network path such as NAS.

### Enable to use network path

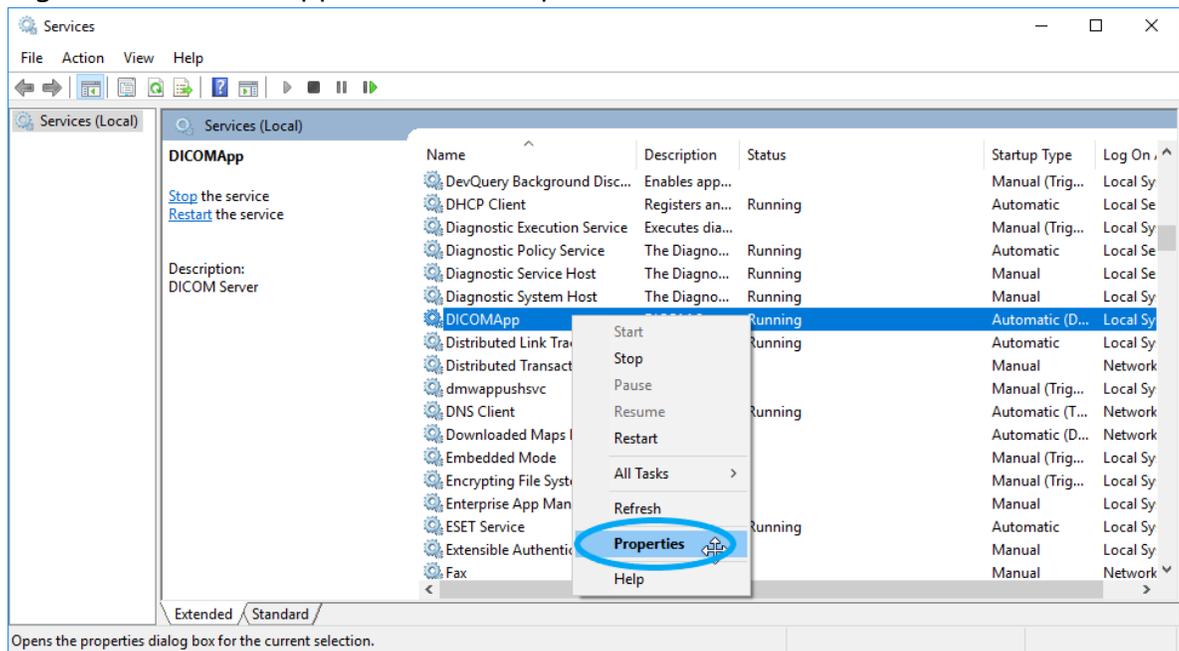
SonicDICOM PACS runs as a Windows service "DICOMApp". By default, the Windows user who executes "DICOMApp" is "Local System". With the Windows OS specifications, this default user "Local System" cannot use network path. So in order to enable SonicDICOM PACS to use network path, you need to change the Windows user who executes "DICOMApp".

1. Open the Control Panel.
2. Click "Administrative Tools > Services".

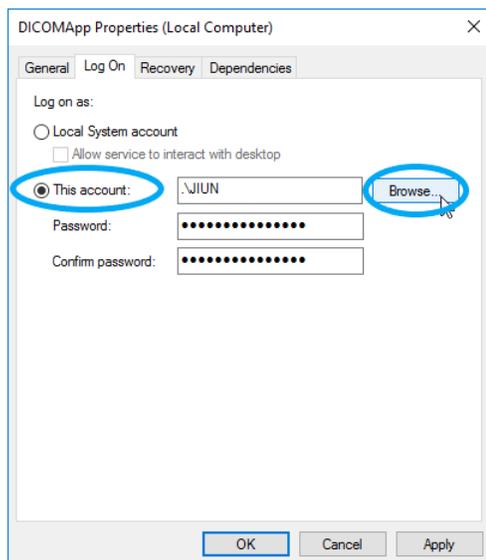




3. Right-click "DICOMApp" and click "Properties".

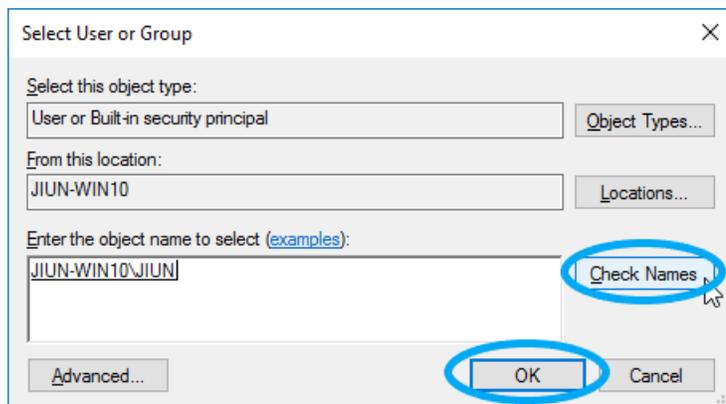


4. Click "Log On" tab.
5. Select "This account".
6. Click "Browse...".



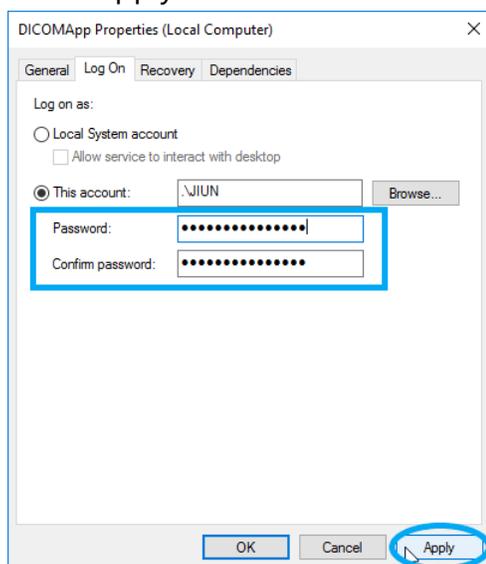
7. Select the name of Windows user who executes DICOMApp.

8. Click "Check Names" and click "OK".

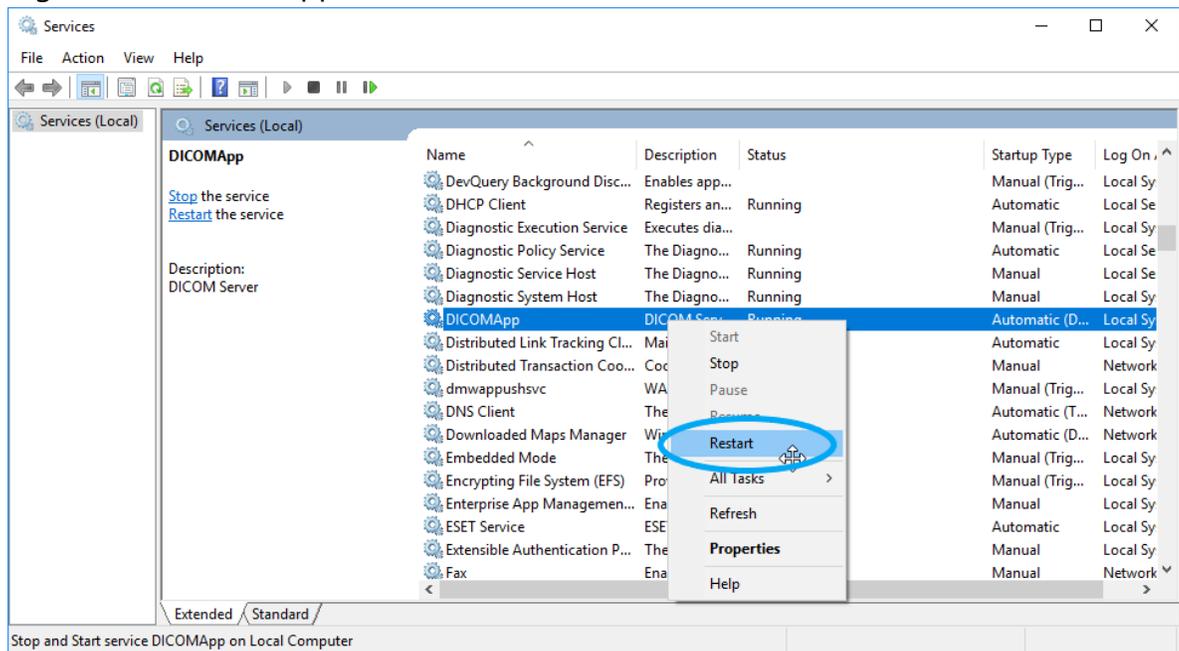


**NOTE: This Windows user need to have Administrator authorization.**

9. Enter the password of Windows user that you entered just now  
10. Click "Apply".



11. Right-click "DICOMApp" and click "Restart".



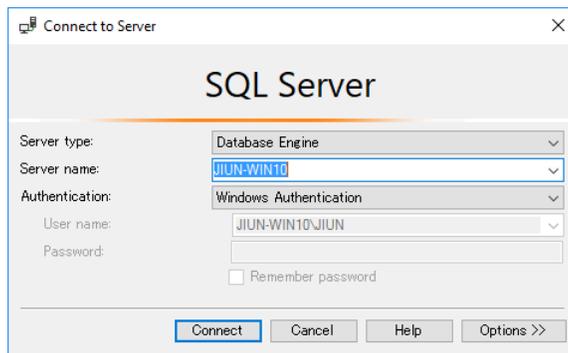
12. Change NAS settings to permit the Windows user access who is specified in step 8.
13. Check whether the Windows user specified in step 8. can access to optional folders in NAS.
14. Change store locations of files to network path by using PACS Manager.  
At this time, you need to be already logged in Windows OS as the user that executes PACS Manager.

### Set up permission in Microsoft SQL Server

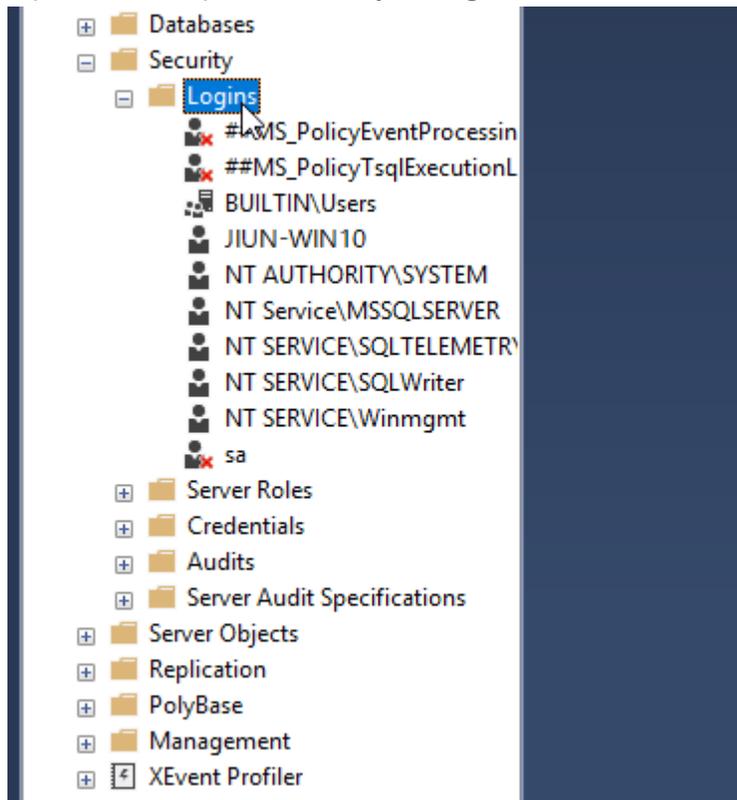
If you have upgraded Microsoft SQL Server Compact to Microsoft SQL Server for SonicDICOM PACS database, you need to set up additionally.

1. Start up Microsoft SQL Server Management Studio.

2. Click "Connect".



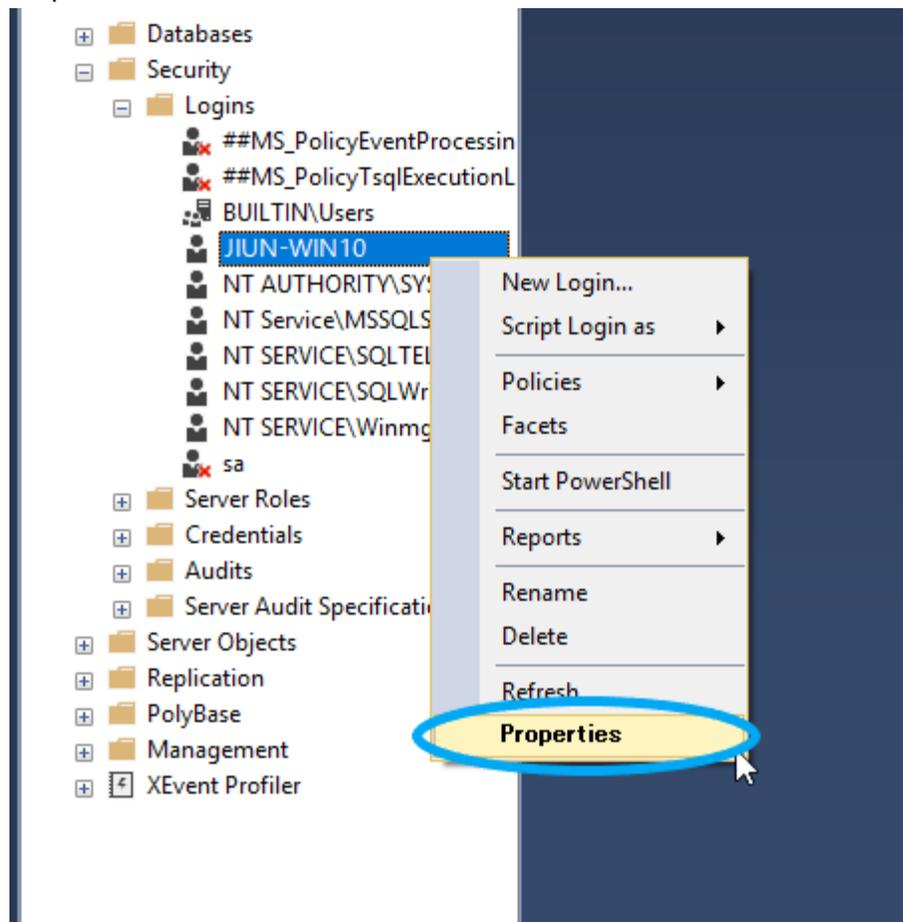
3. Open the left pane Security > Logins.



4. If there is not the Windows user specified in step 8. in this list, add with the following process.

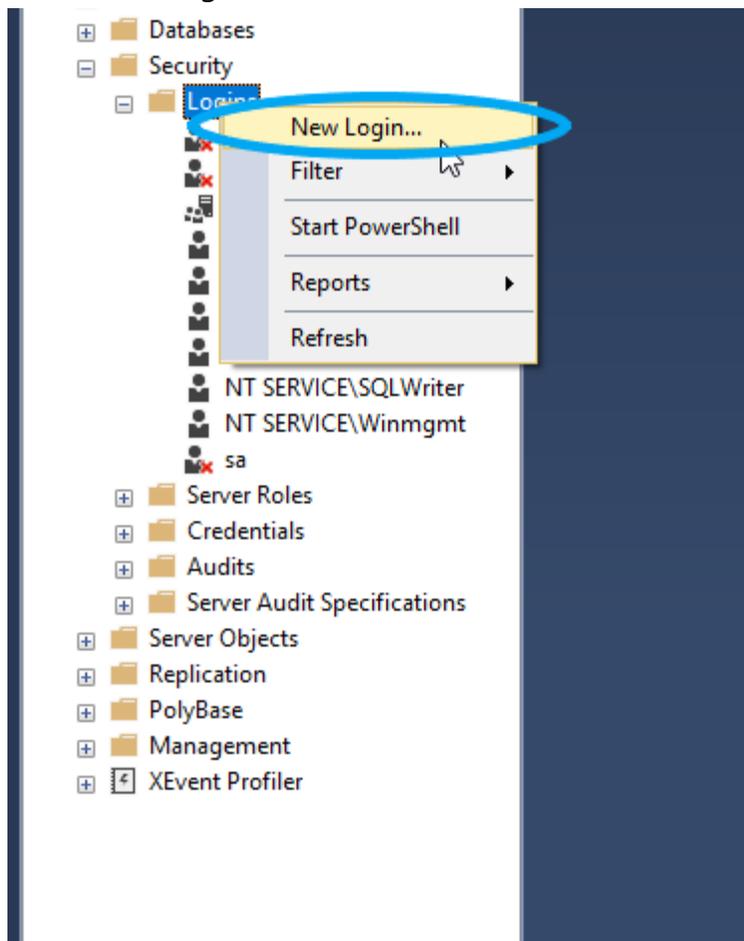
If there is, right-click the user, and click "Properties", and then continue with

step 26.

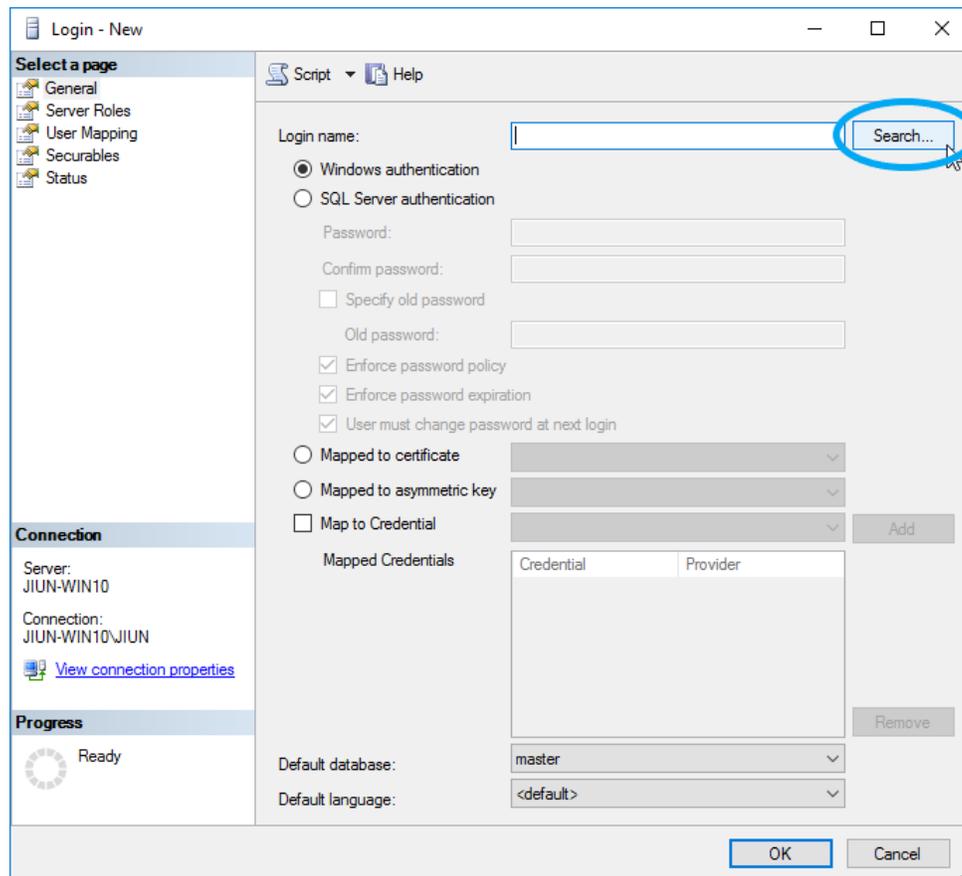


5. Open the left pane "Security" and right-click "Logins".

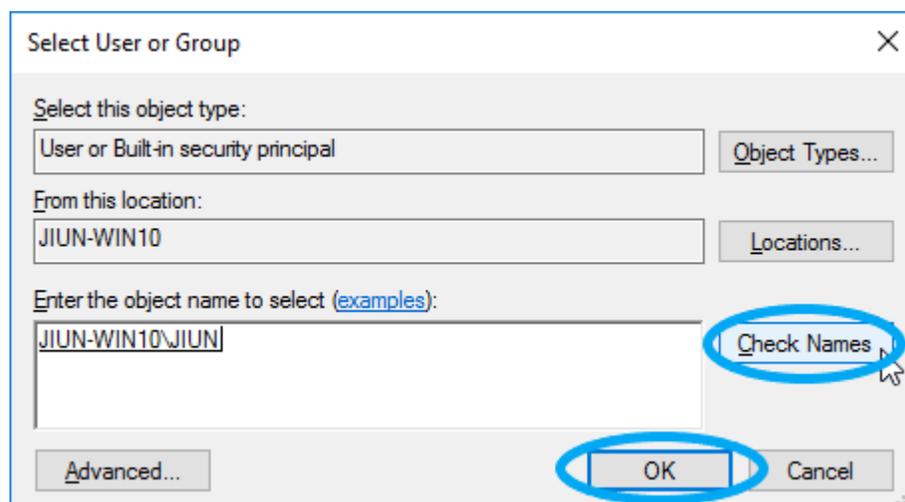
6. Click "New Login...".



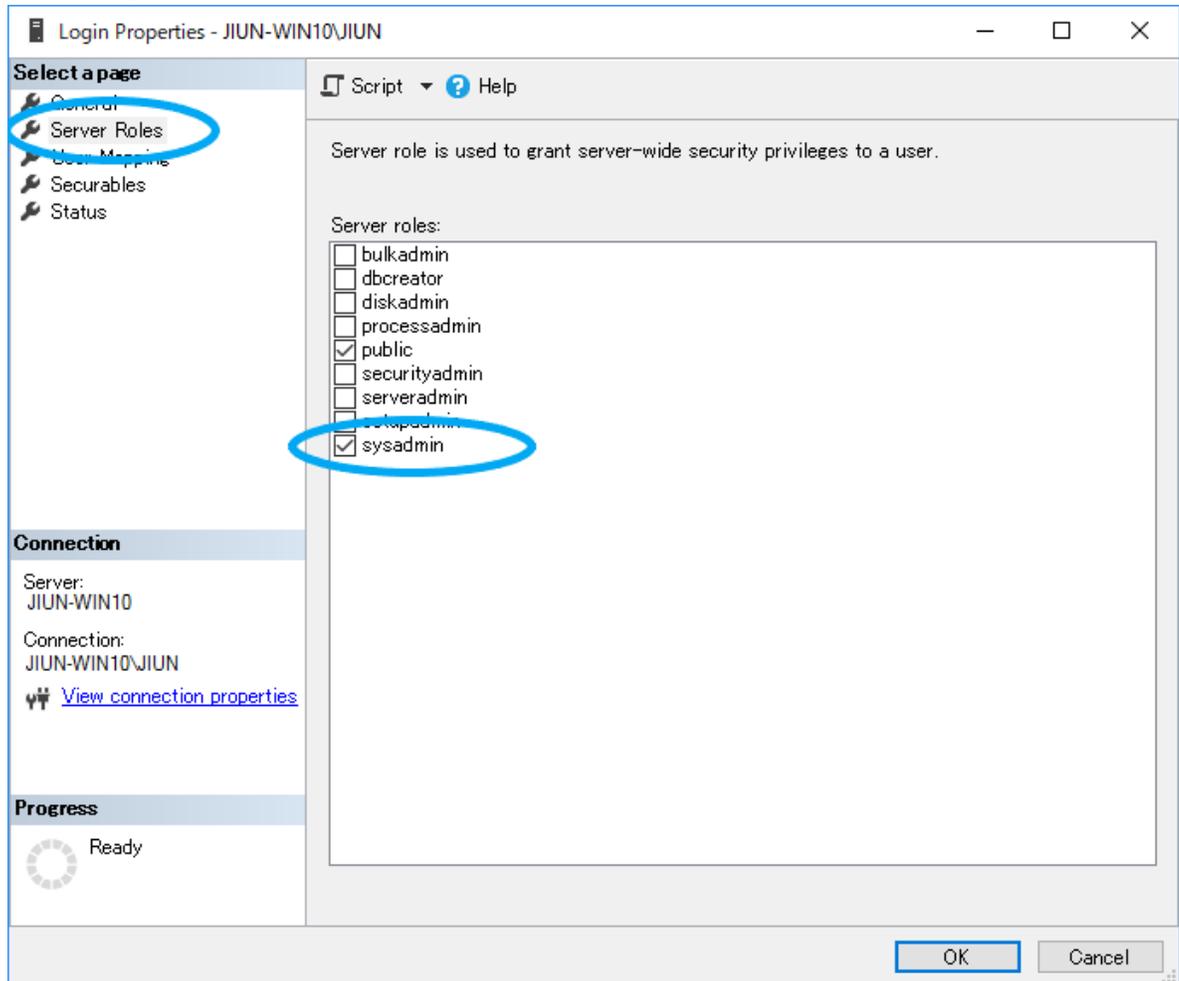
7. Click "Search...".



8. Enter the name of Windows user.
9. Click "Check Names".
10. Click "OK".



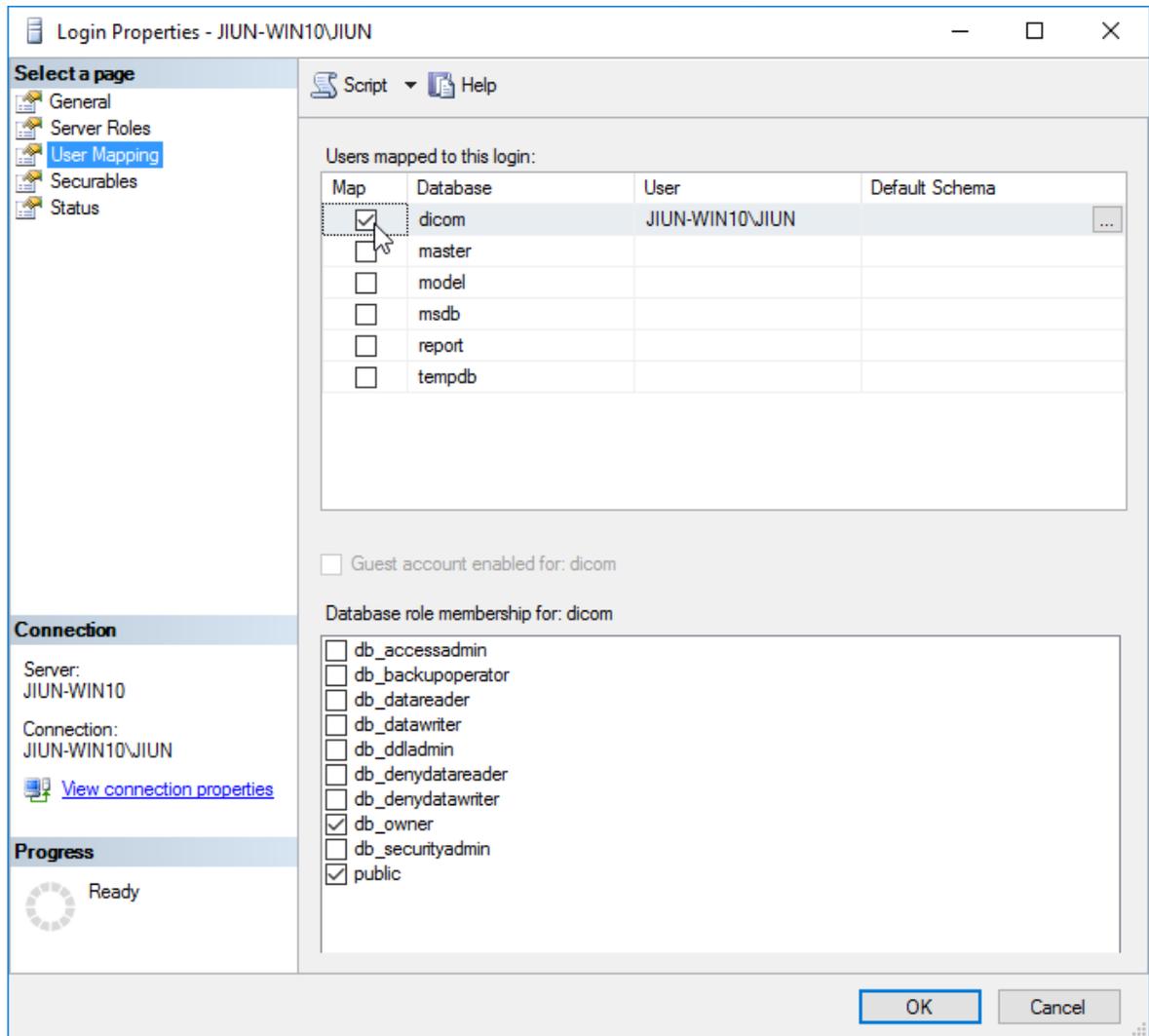
11. Click "Server Roles" on the left pane.
12. Check "sysadmin".



13. Select "User Mapping" on the left pane.

14. If "dicom" is in the database, check "db\_owner".

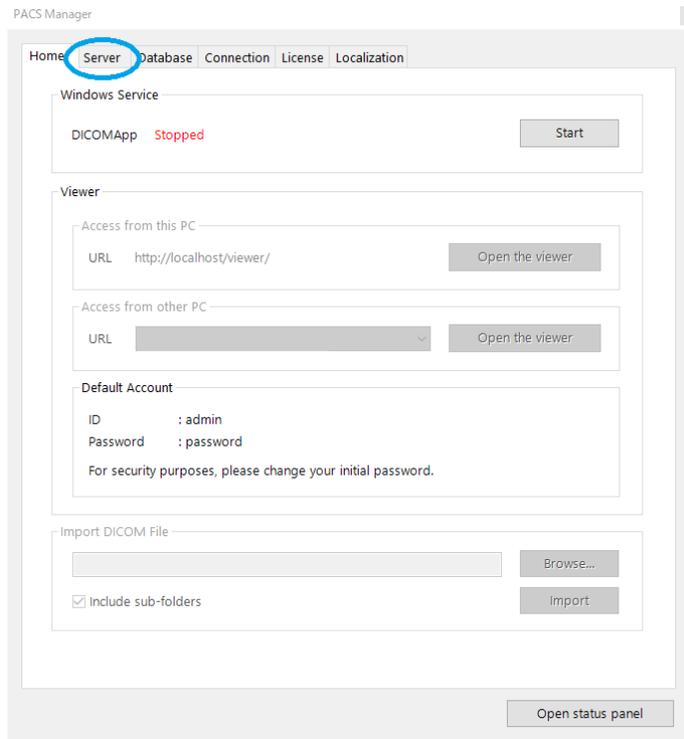
If "dicom" does not exist, you do not need do anything.



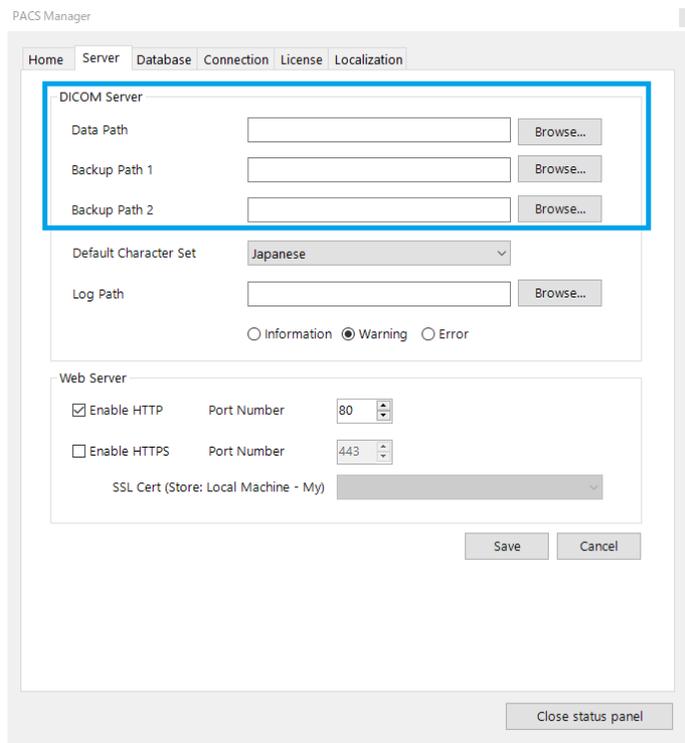
15. Click "OK".

## Specify NAS as the storage location for DICOM files and log files

1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop PACS.
4. Click the "Server" tab.



5. Under the “DICOM Server”, click “Browse...” of Data Path or Log Path.



5. Select NAS.
7. Click “Save”.
8. Import DICOM files and check it can be stored properly.

If you changed Log Path to network path, perform any operation and check that the log file can be created in the specified path properly.

If you do not have DICOM files, you can download sample DICOM files from following URL: [https://files.sonicdicom.com/sonicdicom\\_sample.zip](https://files.sonicdicom.com/sonicdicom_sample.zip)

## 4. Restore Database

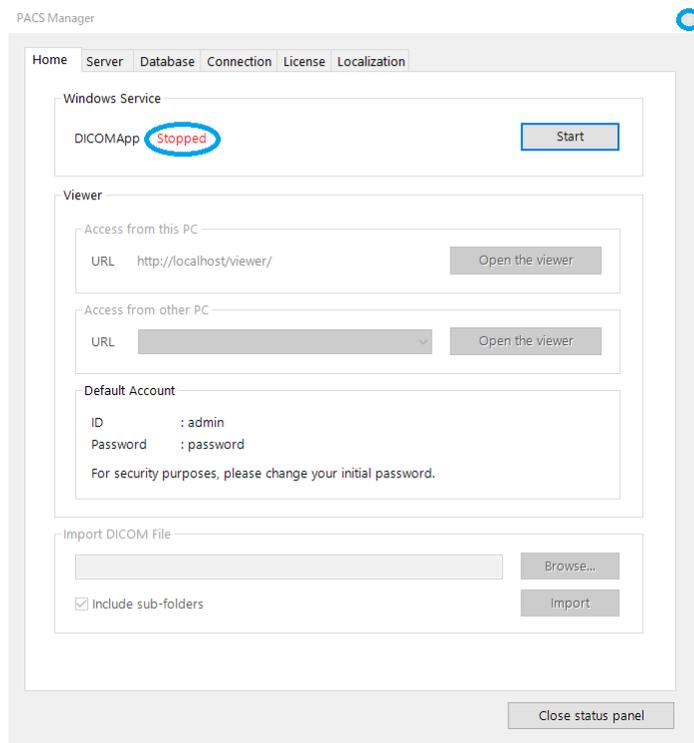
You can restore the database using the database file you backed up.

For information on how to set up backup, please refer to the following link.

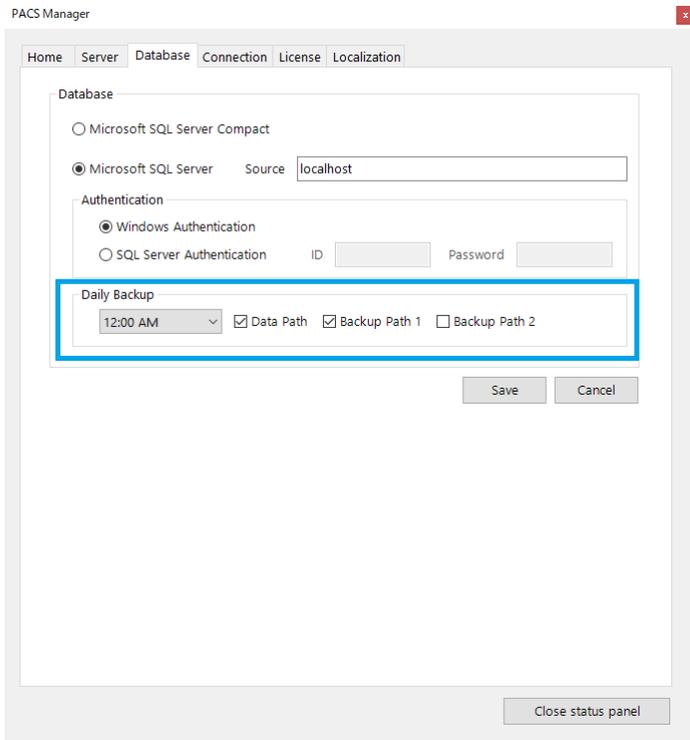
Reference Link: [PACS Manager > Set up Database Backup](#)

7. Make sure that the status of DICOMApp is "Stopped".

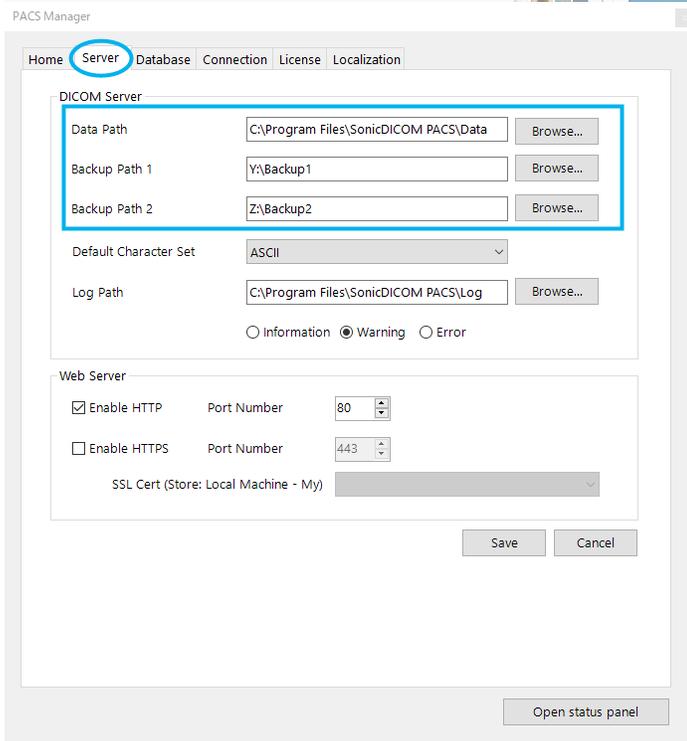
If the status of DICOMApp is "Running", click "Stop" to stop PACS.



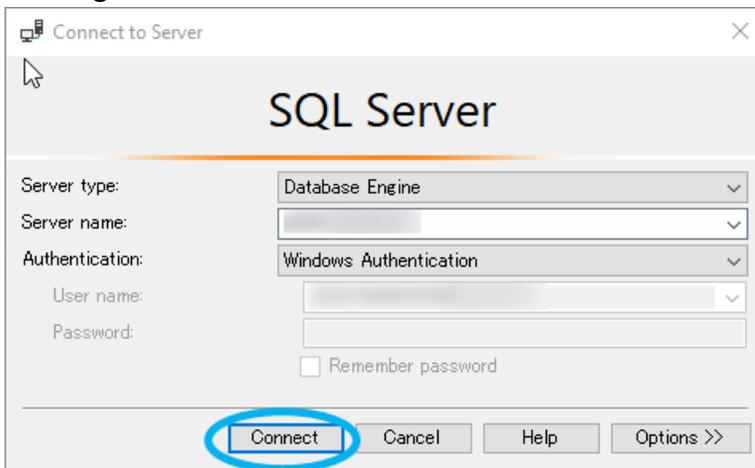
- Click the "Database" tab to see the backup location for the database file. If "Data Path" is checked, database files are stored in Data Path.



- Click the "Server" tab to see where the path (Data Path, Backup Path1, Backup Path2) is set.

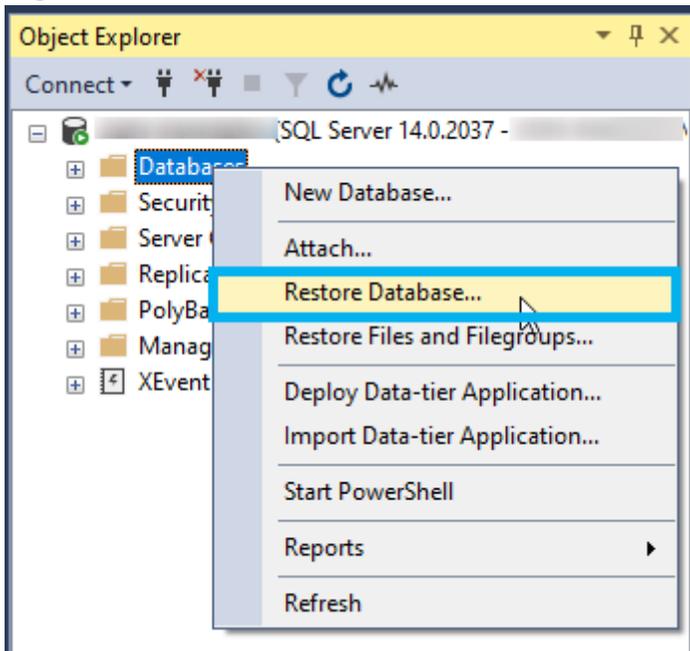


10. Launch Microsoft SQL Server Management Studio.
11. Make sure the displayed "Server Name" is the same as the instance that PACS is using and click "Connect".

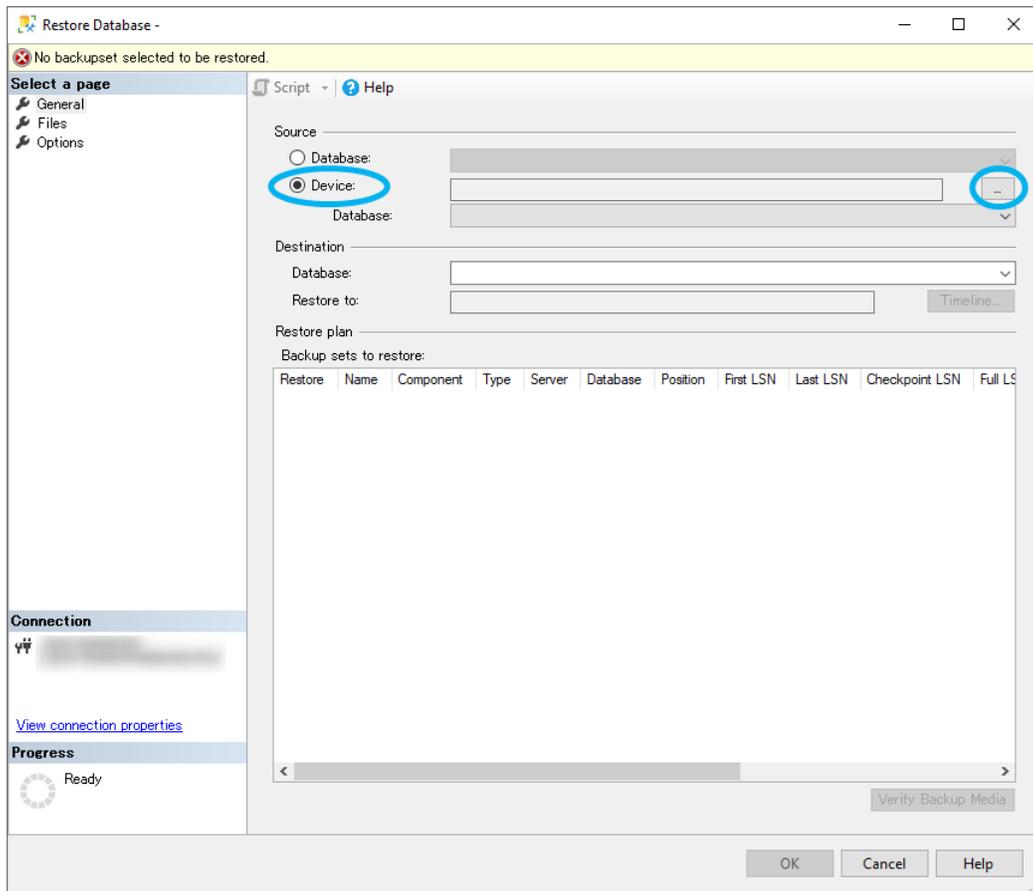


Info: If you use "Default instance", Computer Name will be displayed.  
 If you use an instance other than "Default instance", Computer Name¥Instance Name will be displayed.

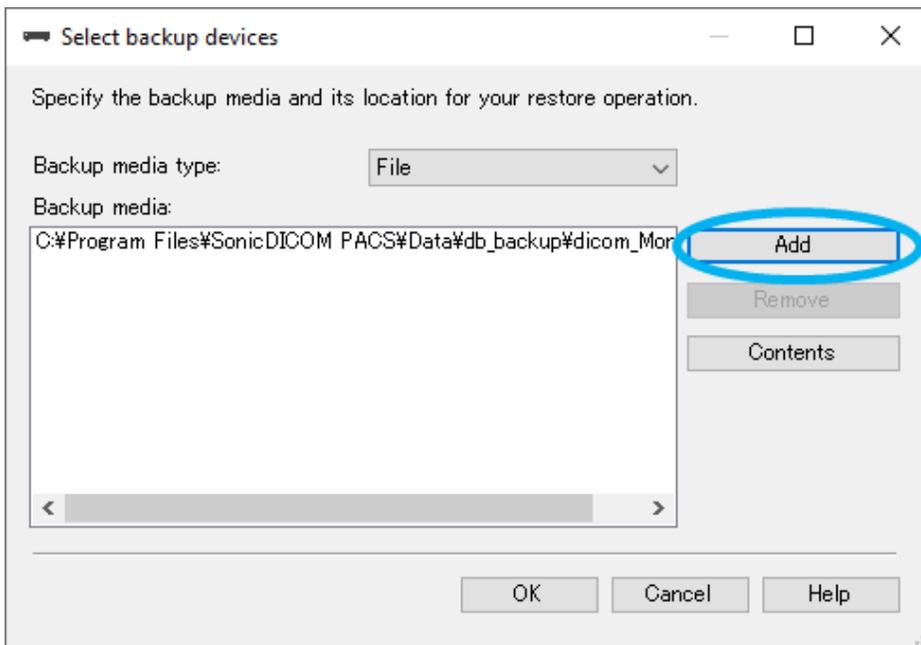
12. Right click "Database" and Click "Restore Database".



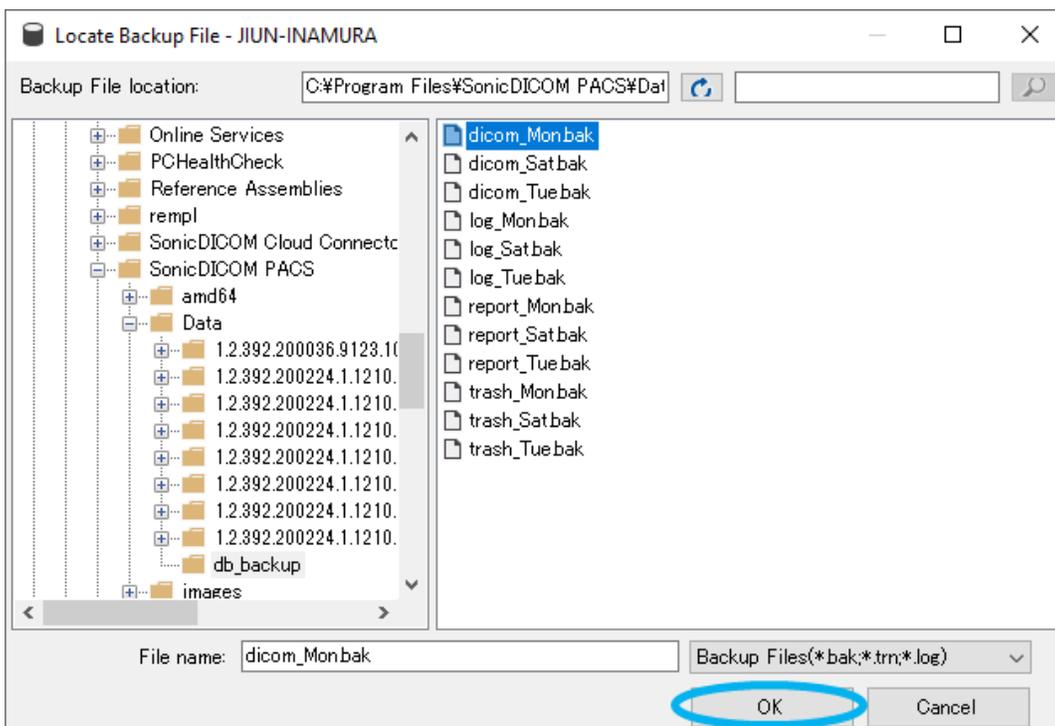
13. Click "Device" and click "...".



14. Click "Add".



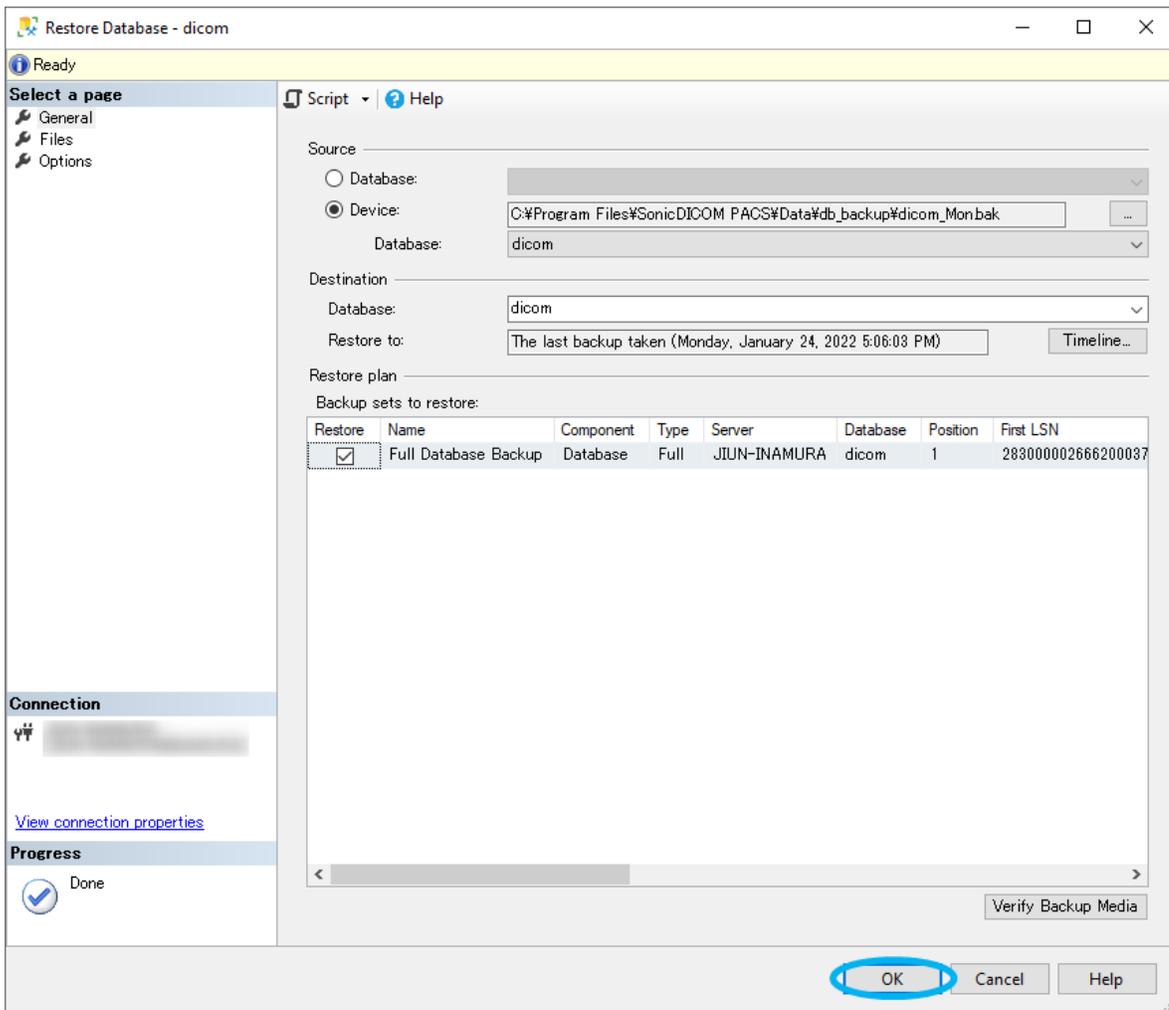
15. Select the database file to be restored and click "OK".



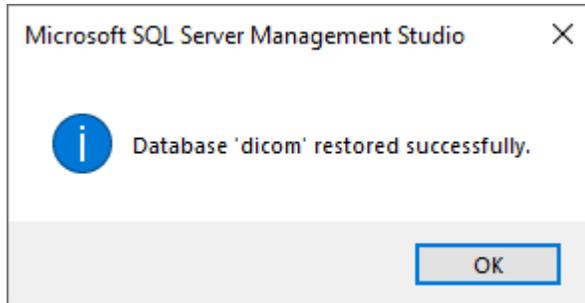
Info: A backup of the database files is created for each day of the week.

The backed up file names will be <original file name>\_<day of the week>.bak.  
E.g. dicom\_Mon.bak, log\_Mon.bak, etc.

16. Click "OK"



17. When the selected database file has been successfully restored, the following dialog will be displayed.



18. Repeat the steps from 8. to 11. with all the database files created on the same day of the week as the one selected in 8. to restore.

**WARNING: Be sure to use all database files created on the specific day of the week. Restoring with only a part of database files may cause unexpected behavior. Also, please be careful not to mix files created on different days of the week.**

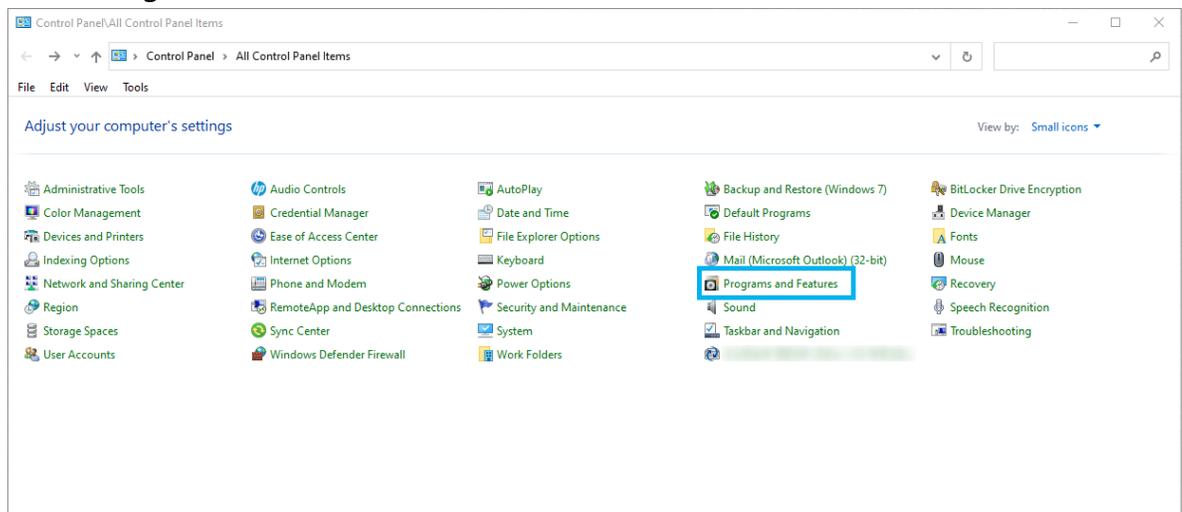
## 5. Enable HTTPS

You can enable HTTPS communication using PACS Manager.

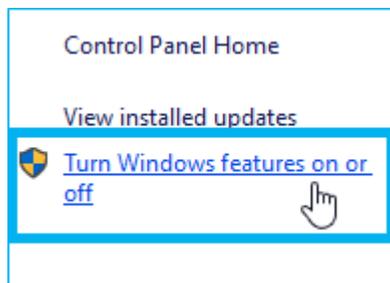
To enable HTTPS communication, you need to install IIS (Internet Information Services) and issue a server certificate.

### How to install ISS (Internet Information Services)

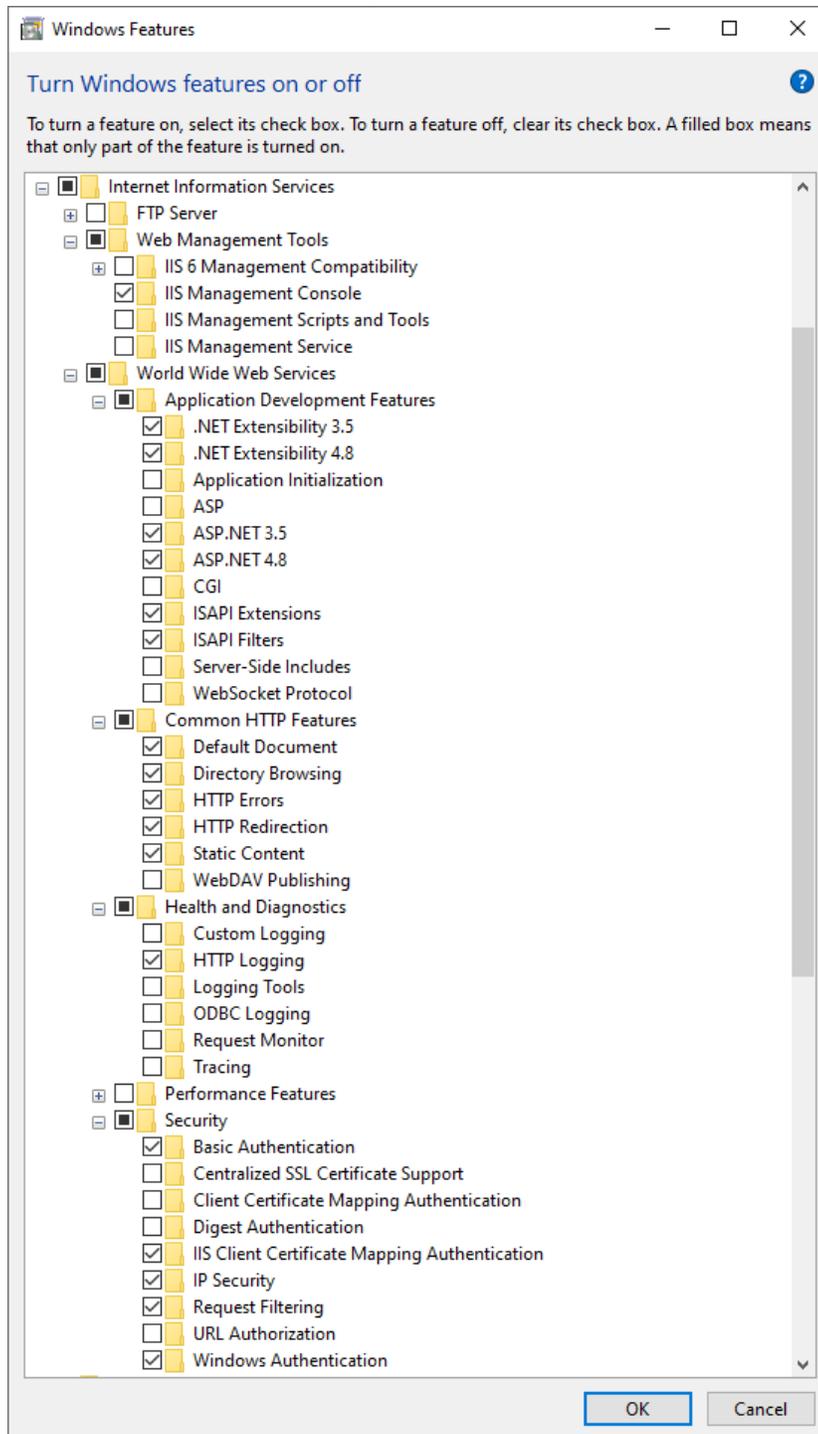
1. Open "Control Panel".
2. Click "Programs and Features".



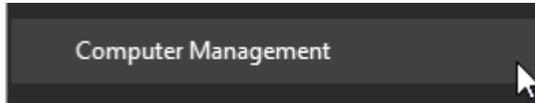
3. Click "Turn Windows features on or off".



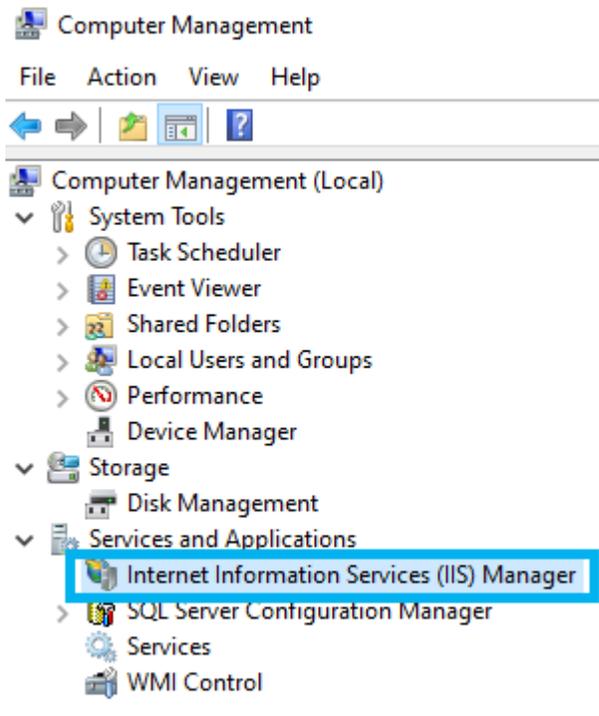
4. Expand the "Internet Information Services" folder. As shown in the image below, check the features you want to use in IIS. Then click "OK".



5. Right click "Start".
6. Click "Computer Management".



7. See "Internet Information Services (IIS) Manager" under the group of "Services and Applications".

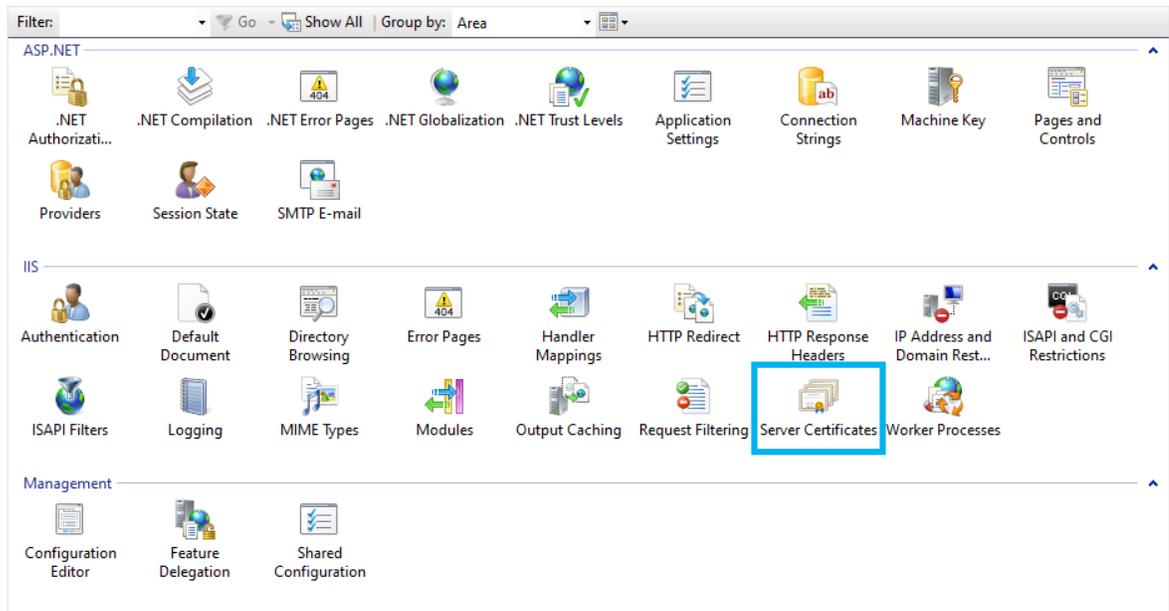


### Creating a Server Certificate

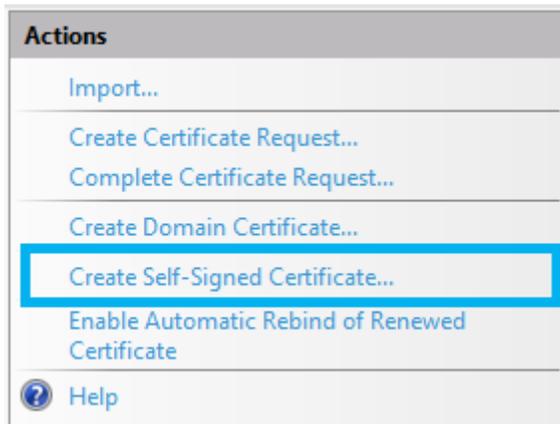
### Creating a Self-Signed Certificate

19. Click "Windows Administrative Tools > Internet Information Services (IIS) Manager".

20. Click "Server Certificates".

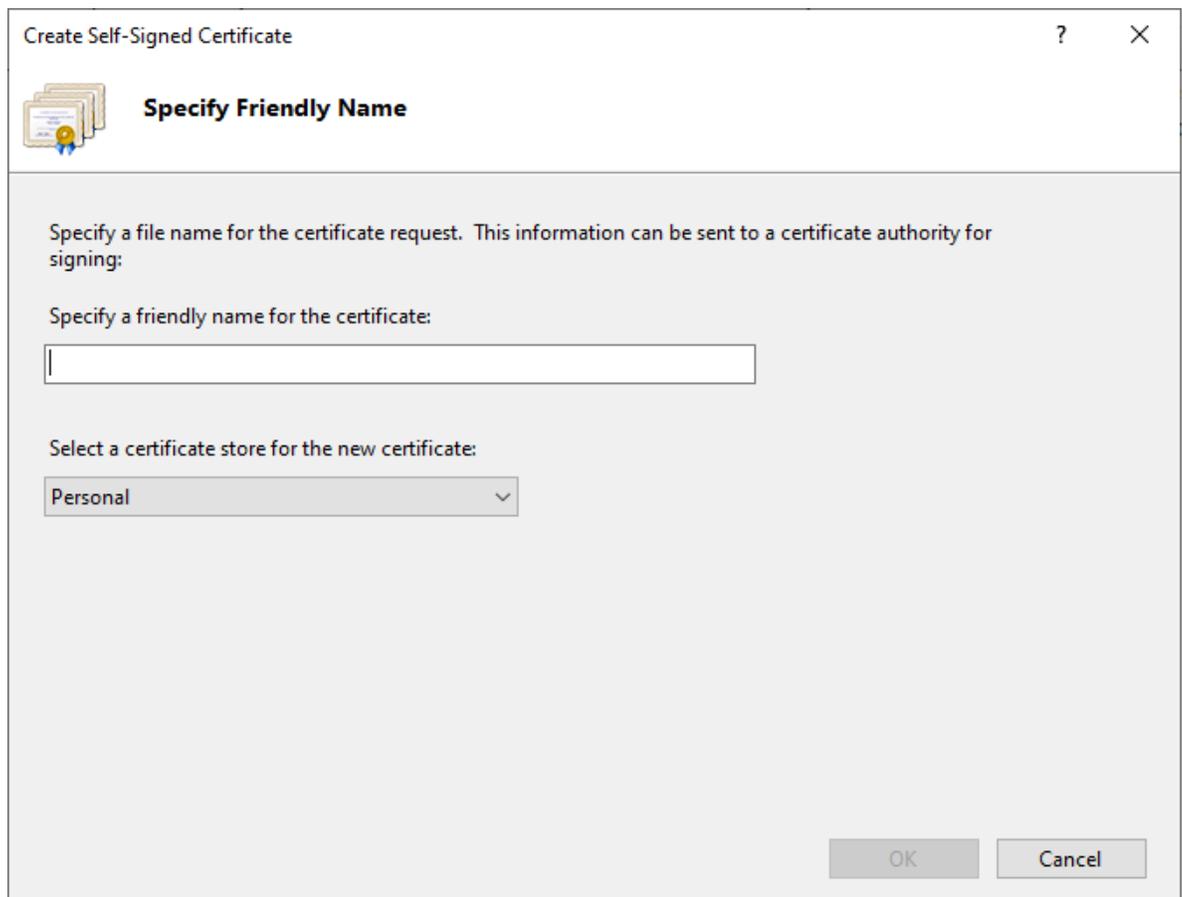


6. Click "Create Self-Signed Certificate".



6. Enter any given name in the field of "Specify a friendly name for the certificate".

7. Click "OK".



**NOTE: The created certificate is valid for one year.**

### Using a certificate purchased from Certification Authority

Please refer to the following URL.

<https://www.digicert.com/kb/csr-creation-ssl-installation-iis-10.htm>

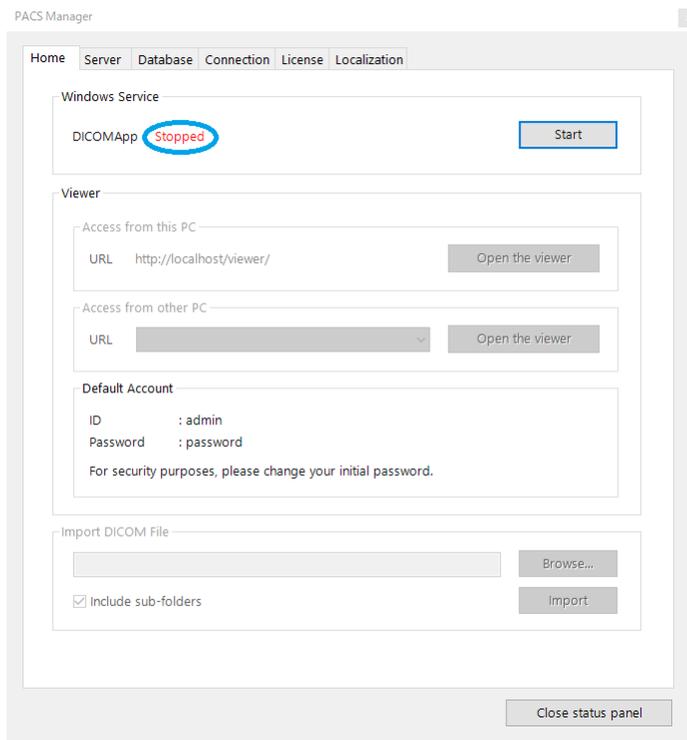
1. Create a CSR using IIS.

For creating a CSR, please refer to the article "1. IIS 10: How to Create Your CSR on Windows Server 2016"

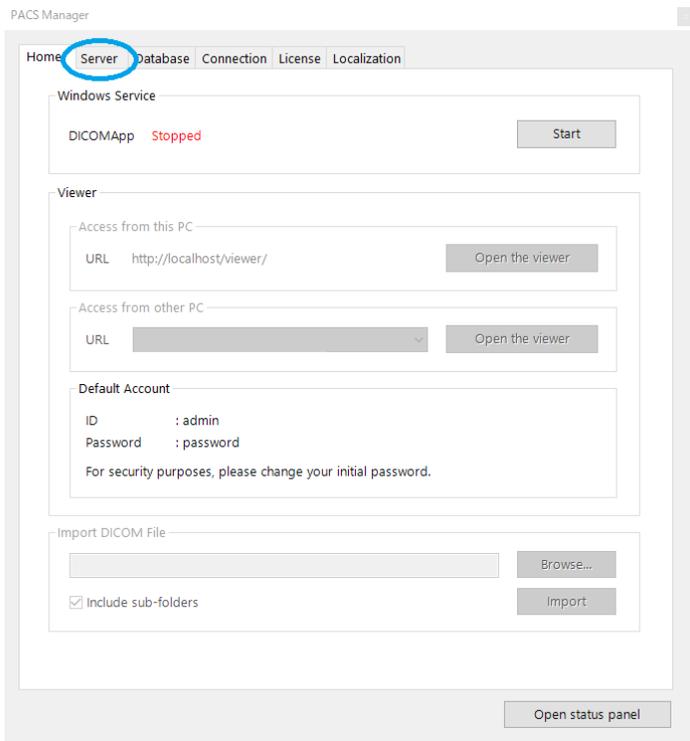
2. Purchase a Server Certificate from Certification Authority and install it.  
For the installation procedure, please refer to the article "2. IIS 10: How to Install and Configure Your SSL Certificate on Windows Server 2016"

### Enabling HTTPS communication

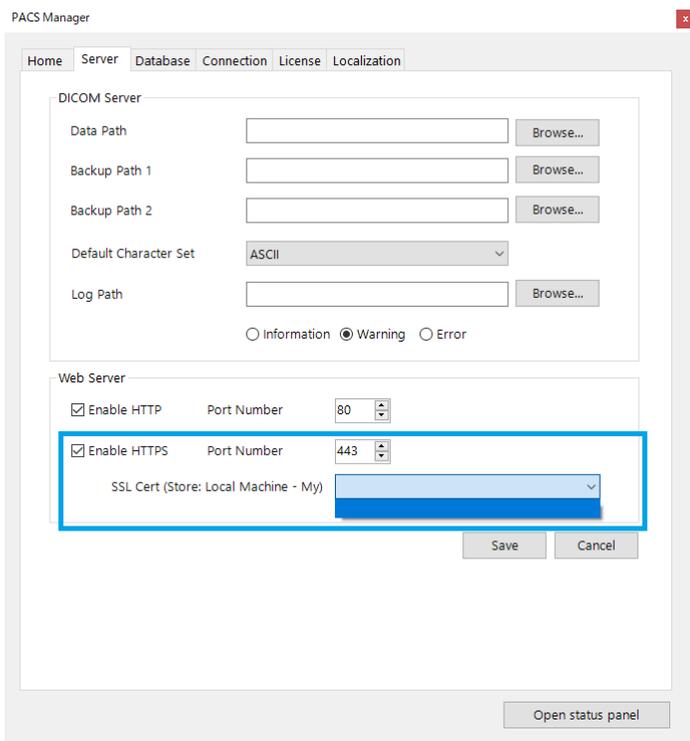
1. Make sure that the status of DICOMApp is "Stopped".  
If the status of DICOMApp is "Running", click "Stop" to stop PACS.



2. Click the "Server" tab.



3. Check "Enable HTTPS".

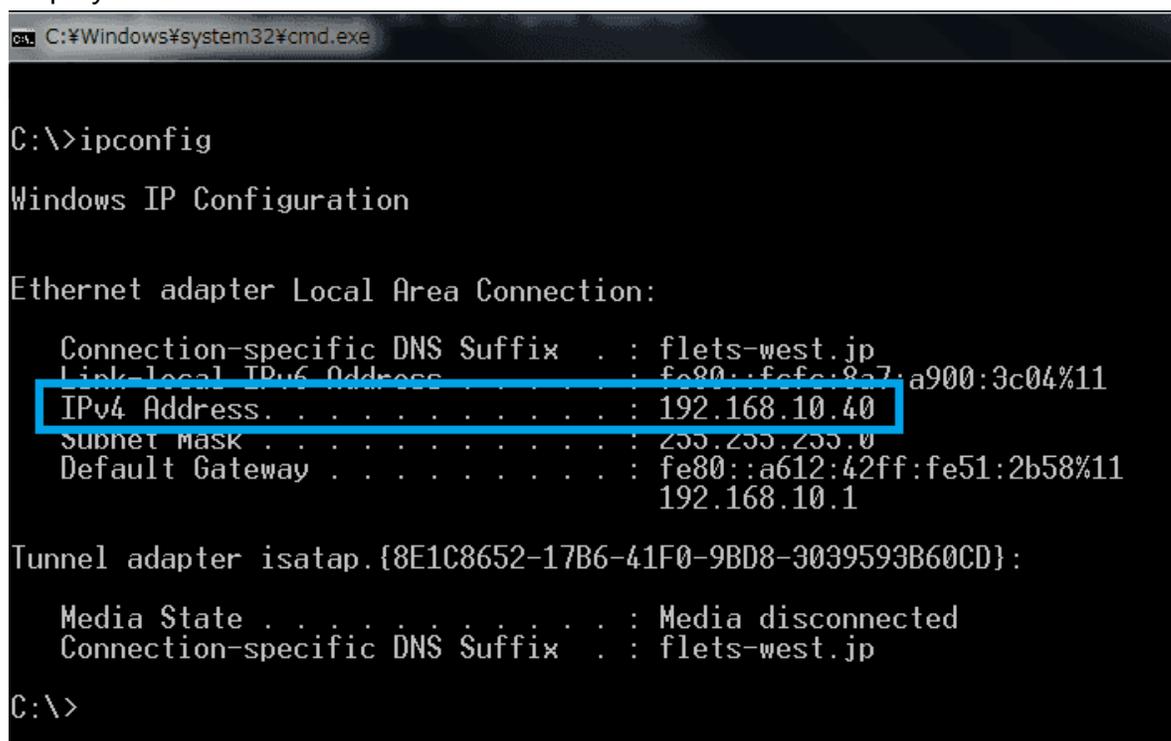


4. In the select menu "SSL Cert", select the Server Certificate that has been issued.
5. Click "Save".

## TIPS

### How to check your IP Address

1. Press [Win] + [R]. Then "Run" will appear.
2. Enter cmd in this field, press [Enter]. Command Prompt will start up.
3. Enter ipconfig in Command Prompt, and press [Enter]. IP Address will be displayed.



```
C:\>ipconfig

Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : flets-west.jp
    Link-local IPv6 Address . . . . . : fe80::fefe:837:a900:3c04%11
    IPv4 Address. . . . . : 192.168.10.40
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : fe80::a612:42ff:fe51:2b58%11
                                192.168.10.1

Tunnel adapter isatap.{8E1C8652-17B6-41F0-9BD8-3039593B60CD}:

    Media State . . . . . : Media disconnected
    Connection-specific DNS Suffix  . : flets-west.jp

C:\>
```

## How to set IP Address

To set IP Address, knowledge of network is necessary.

Changing IP Address settings could be a cause problem to other computers that are connected in the same network.

Please make sure you understand network and please set IP Address properly.

If you do not understand, please ask your network administrator or another person who can assist.

1. Press [Win] and open Control Panel.
2. In the search box, enter "adapter", and then click "View network connections" that is under Network and Sharing Center.
3. Right-click the connection that you want to change, and then click "Properties".
4. Click "Networking" tab.
5. Click "Internet Protocol Version 4 (TCP/IPv4)" that is under "This connection uses the following items", and then click "Properties".
6. In the window of "Internet Protocol Version 4 (TCP/IPv4) Properties", click "Use the following IP address". And then, enter IP address that you want to use in fields of "IP address", "Subnet mask", and "Default gateway".

