SOFTWARE TEAM A Nihon Kohden Company Version: 04	Technical Documentation **SmartLink** (v3.26) Basic UDI: 805750990SMARTLINK3WM **INSTALLATION, UPDATE AND MAINTENANCE MANUAL**

Document Change Management

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	Name	Function	Date	Signature
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Reviewed by	Thainà Scherer	QARA	2024-07-12	
Approved by	Andrea Forcolin Cominotto	TDIR	2024-07-12	

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1. GENERAL INFORMATION

1.1. Manufacturer Contact Details

Legal manufacturer name: Software Team srl Tecnologie Informatiche Avanzate
Address: Via Carducci 39 – 20099 – Sesto San Giovanni (Milano – Italy)
SRN: IT-MF-000024883
e-mail: softwareteam@swt.it
Phone: +39 02 84148166
Fax: +39 02 87183477

1.2. Trademarks

Trademarks, trade names and company names used in this document are for identification purposes only and are the property of their respective owners.

2. DOCUMENT INTENDED PURPOSE AND READERS

This document gives IT technicians and System Administrators instructions on how to install, configure and update **SmartLink Rev 26** and its components.

3. SMARTLINK DOWNLOAD AND INSTALLATION

3.1. Technical Information

For information on the technical requirements for the server that hosts SmartLink please refer to the document: *SL - Technical Requirements v01.*

The installation procedure will guide you through the installation and configuration of MySQL, IIS, .Net Framework and SmartLink components.

3.2. Environment Description

SmartLink environment is composed of three different networks: data source network, SmartLink network and hospital network.

The data source network is the network between the data source (e.g., the central station) and the patient monitors.

SmartLink network is a simple connection between the data gateways (e.g., central station) and the SmartLink Server. This network could carry heavy broadcast traffic. This is a separated network: the data

source and SmartLink server have separated network cards to manage this traffic. SmartLink network must be set up. The SmartLink server can be installed on a dedicated PC placed close to the data source gateway, or in a server room on physical or virtual server machines.

The Hospital network is the actual network used by hospital applications. SmartLink server accesses this network to communicate with the web server, which can be located anywhere in the hospital network. SmartLink server is connected to the hospital network using a separate network card. This network is also used for communication between the SmartLink server and SmartPager.

3.3. Pre-Requisites

- **Tools SmartLink**
- **Setup SmartLink**
- **LiveUpdate SmartLink**
- **SmartLink License**

3.3.1 Download

Go to www.swt.it → Private Area → SmartLink installation and download the following installation files:

- **Tools SmartLink**
- **Setup SmartLink**
- **LiveUpdate SmartLink**



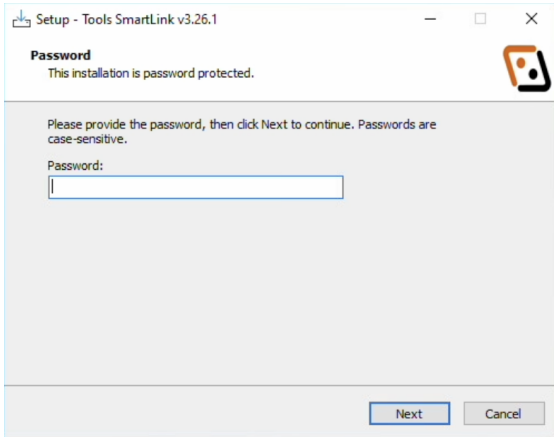
3.4. SmartLink Installation Order

SmartLink must be installed by running the aforementioned installation files, in the following order:

- **Tools SmartLink**
- **Setup SmartLink**
- **LiveUpdate SmartLink**

3.4.1.1 SmartLink Tools

1) Double-click *ToolsSmartlink.exe* and click *Next* to start the installation of the software needed by SmartLink to work.
2) When asked for the password, insert it to proceed.

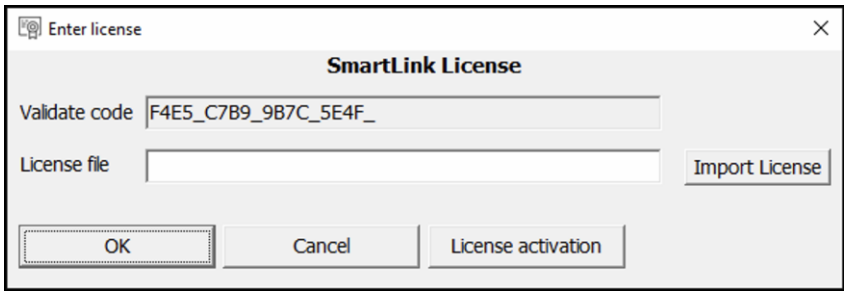


3) Follow the steps of the wizard and click Finish when the installation is complete.

3.4.1.2 SmartLink Setup

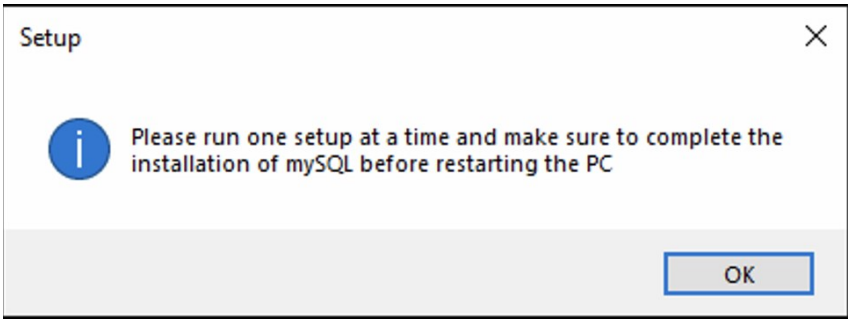
NOTE: As per the SmartLink technical requirements, the server on which SmartLink shall be installed, must be a clean installation of Windows.

1) Double-click on *SetupSmartlink.exe*, import your license and click on *Ok*. The installation won't begin if you fail to import the license, or if it is invalid.



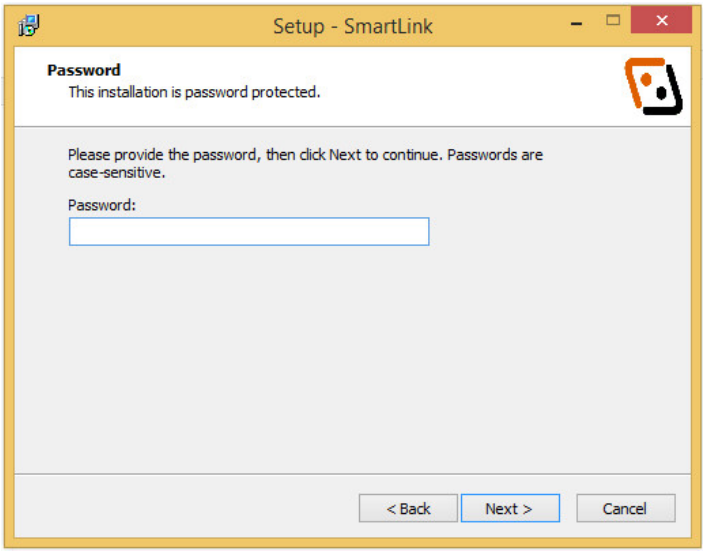
NOTE: License can be requested at https://www.swt.it/smartlink-license-activation/

Once the license is imported, the following screen is shown, press *Ok* to proceed.

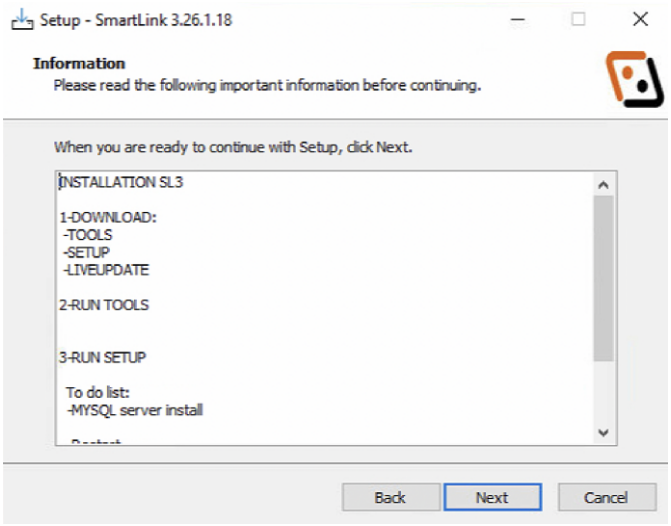


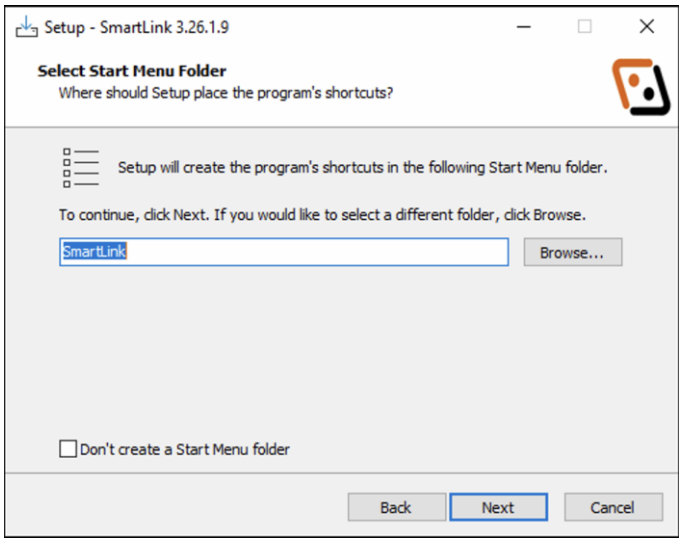
2) The installer will prepare to install the following components:
   - Internet Information Service 6 (IIS 6)
   - Visual C++ 2010 Redistributable
   - MySQL 5.5 environment
   - Open JDK 17

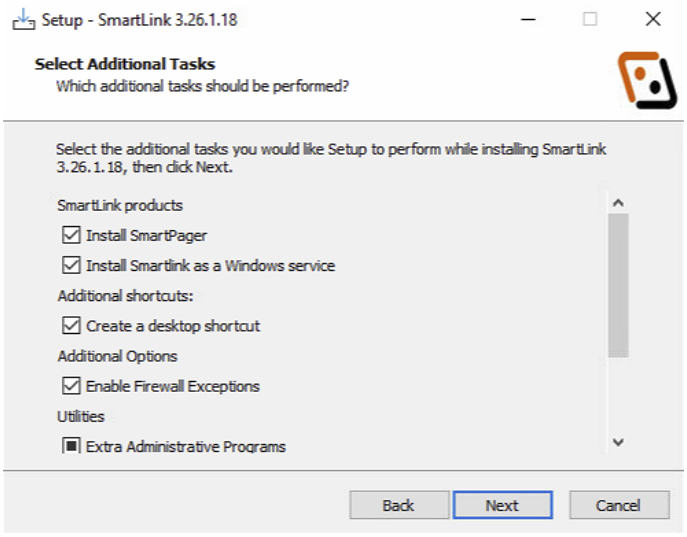
   When asked for the password, insert it to proceed

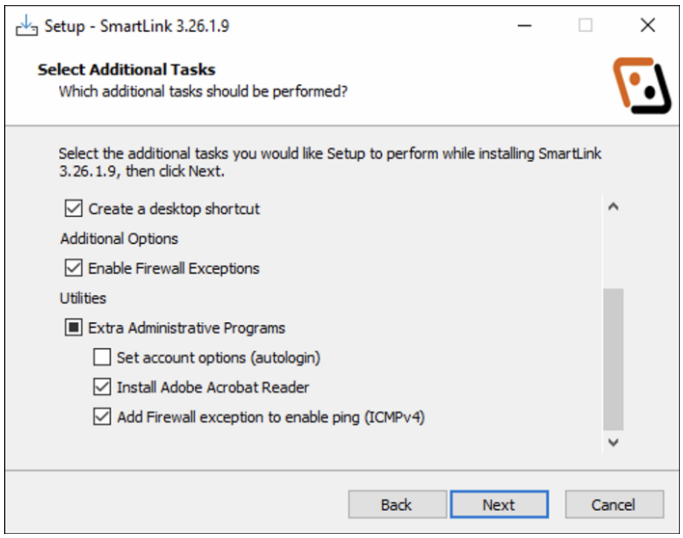


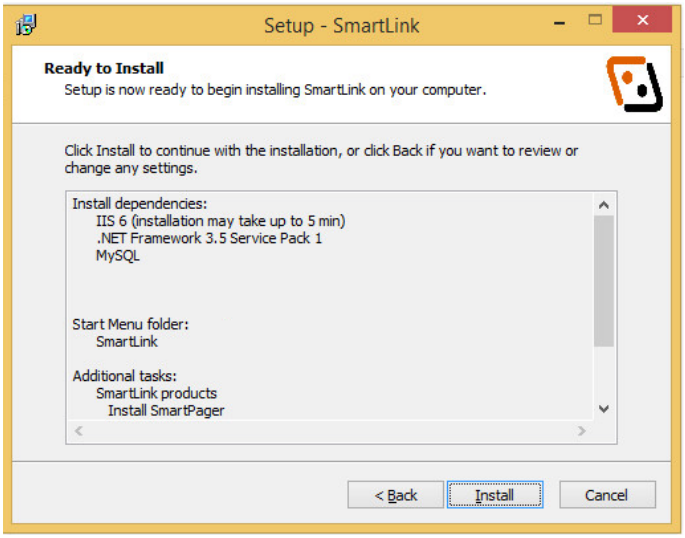
3) Follow the steps of the wizard without changing the default settings:

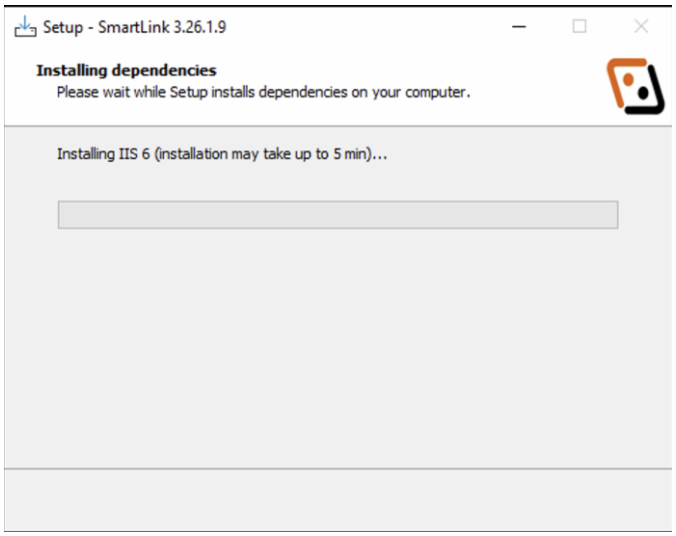



Setup - SmartLink 3.26.1.9
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
SmartLink
Browse...
Don't create a Start Menu folder
Back
Next
Cancel

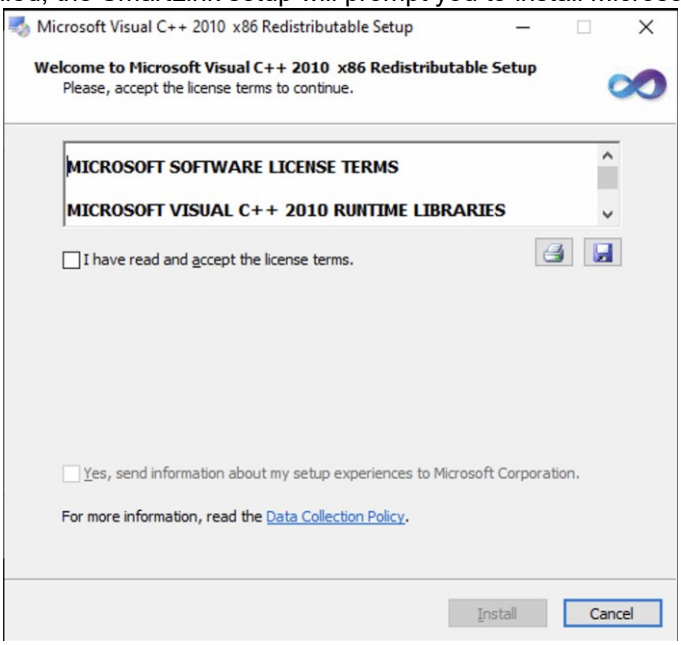

Setup - SmartLink 3.26.1.18
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing SmartLink 3.26.1.18, then click Next.
SmartLink products
Install SmartPager
Install Smartlink as a Windows service
Additional shortcuts:
Create a desktop shortcut
Additional Options
Enable Firewall Exceptions
Utilities
Extra Administrative Programs
Back
Next
Cancel


Setup - SmartLink 3.26.1.9
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing SmartLink 3.26.1.9, then click Next.
Create a desktop shortcut
Additional Options
Enable Firewall Exceptions
Utilities
Extra Administrative Programs
Set account options (autologin)
Install Adobe Acrobat Reader
Add Firewall exception to enable ping (ICMPv4)
Back
Next
Cancel


Setup - SmartLink
Ready to Install
Setup is now ready to begin installing SmartLink on your computer.
Click Install to continue with the installation, or click Back if you want to review or change any settings.
Install dependencies:
IIS 6 (installation may take up to 5 min)
.NET Framework 3.5 Service Pack 1
MySQL
Start Menu folder:
SmartLink
Additional tasks:
SmartLink products
Install SmartPager
< Back
Install
Cancel

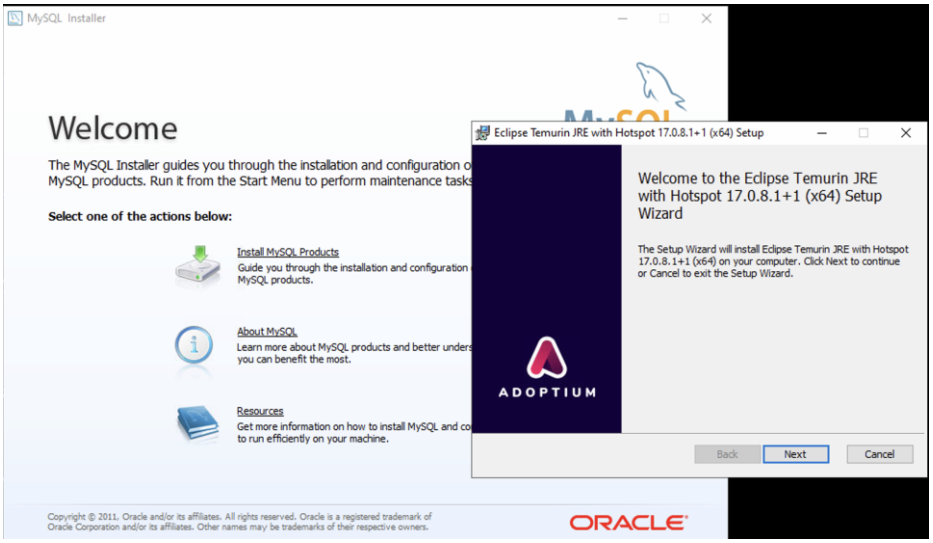


4) SmartLink Setup will check if IIS is already installed on your computer. If IIS is not installed, SmartLink Setup will launch the default procedure to add Windows components.
5) After IIS has been installed, the SmartLink setup will prompt you to install Microsoft Visual C++ 2010



Make sure to check the *License Agreement* check box and click on *Install.*

6) After the successful installation of Visual C++ the SmartLink setup will open two installation wizards:
   6.1. MySQL
   6.2. Open JDK

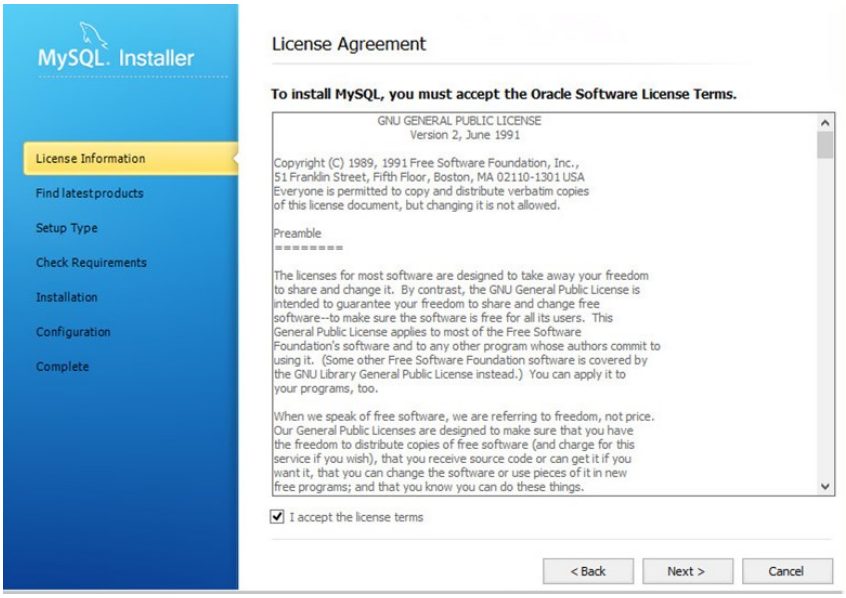


NOTE: Make sure to install them one at a time.

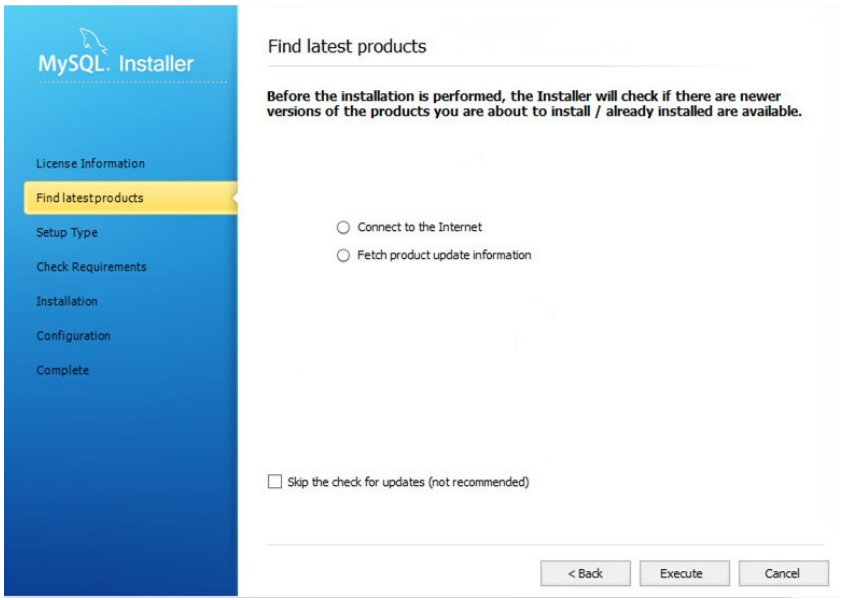
7) Once the MySQL installation wizard opens, click on *Install MySQL Products*



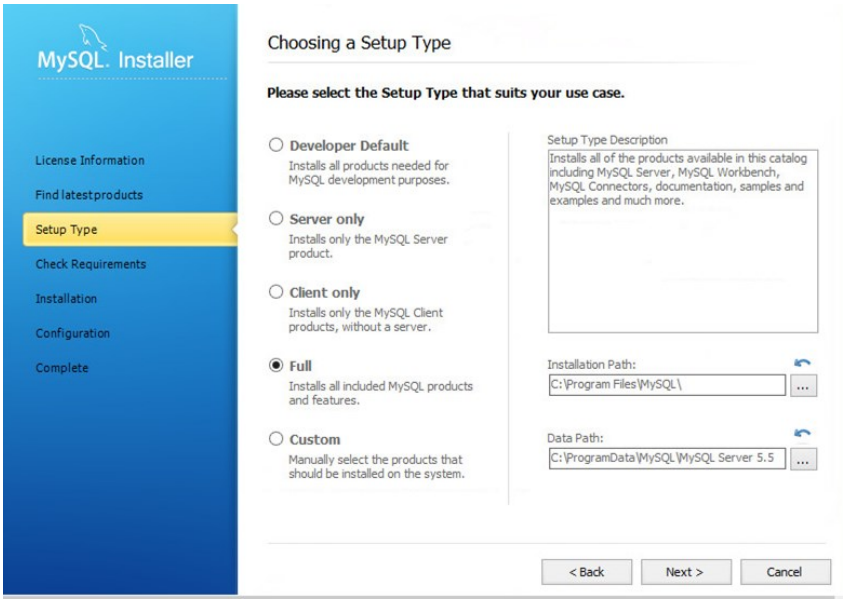
8) Accept the license terms and click *Next.*



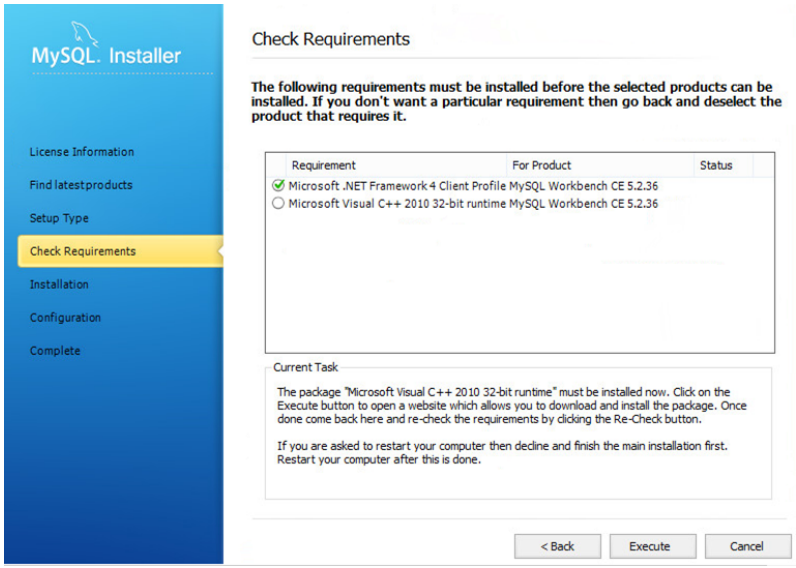
9) Check *Skip the check for updates* and click *Execute.*



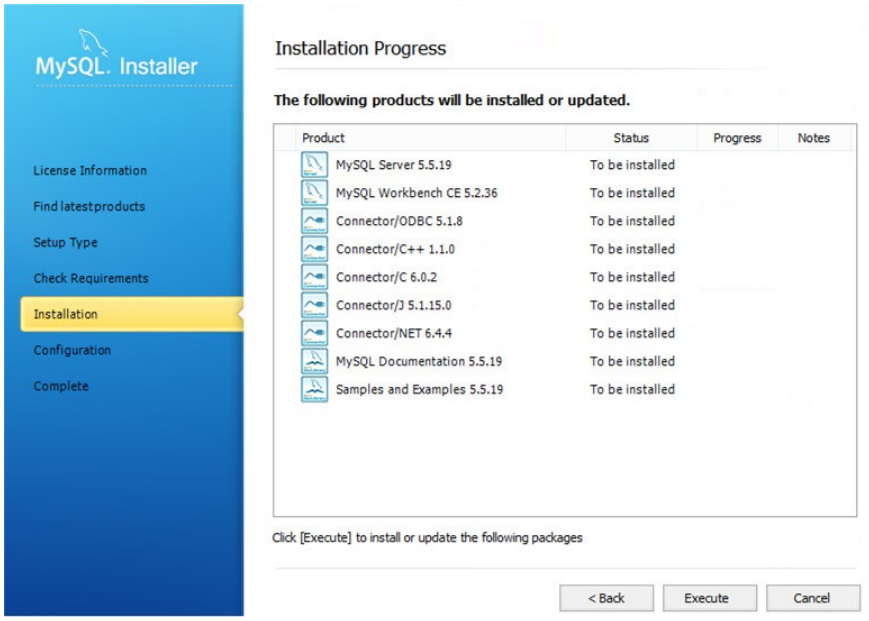
10) Choose the *Full* setup and click *Next.*

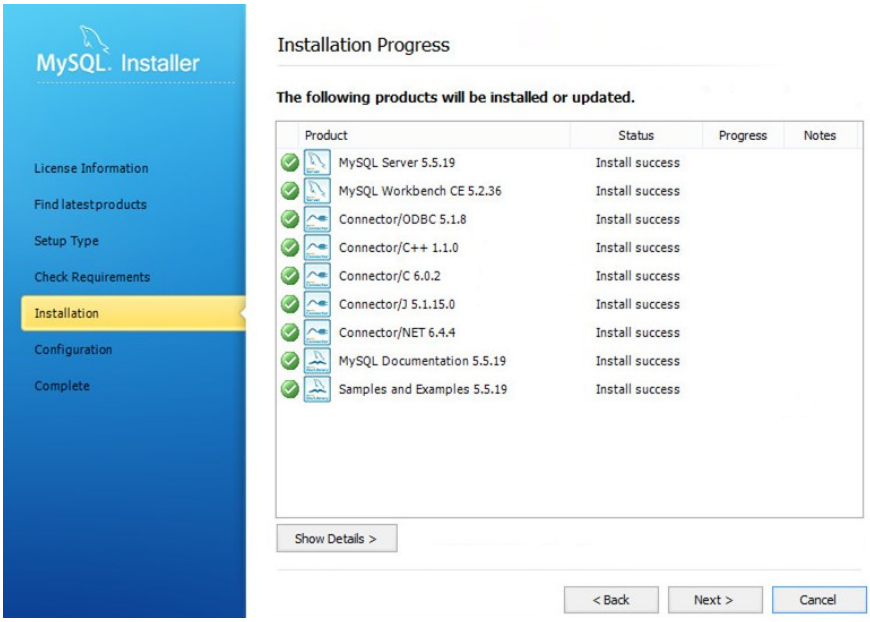


11) Click *Execute*.



12) Proceed with MySQL installation by clicking *Execute* and then *Next.*

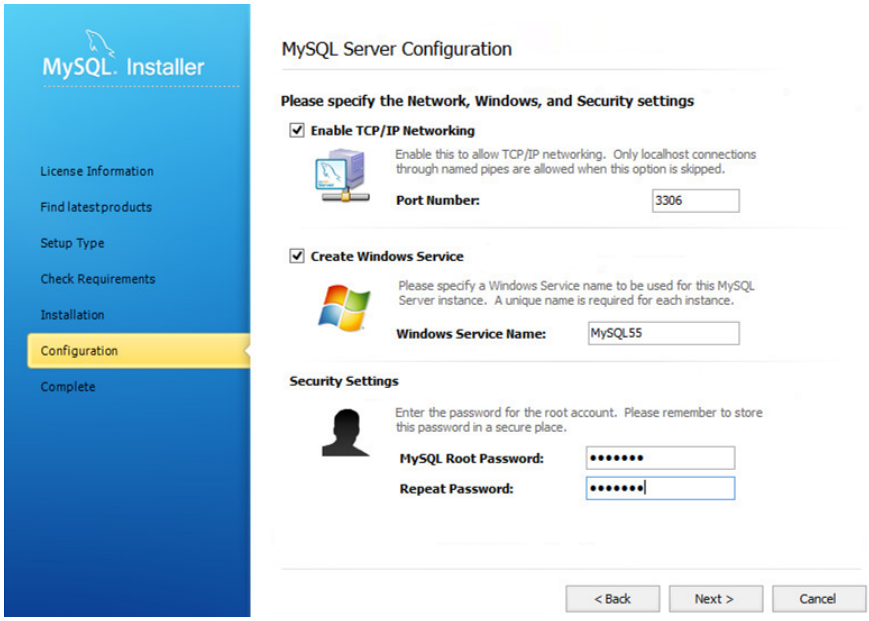




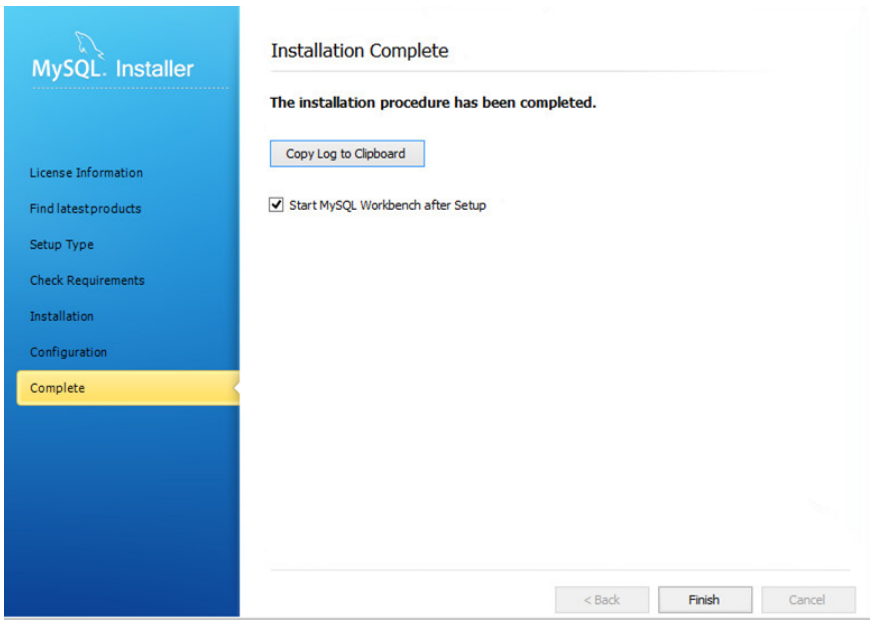
13) Select *Server Machine* and click *Next.*



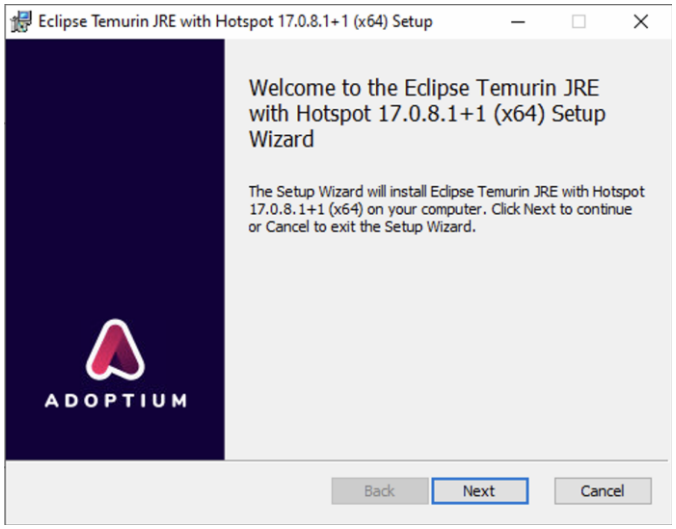
14) Fill in the fields as shown in the image below and use the password provided by *Software Team*.



15) Check *Start MySQL Workbench after Setup* and click *Finish.*

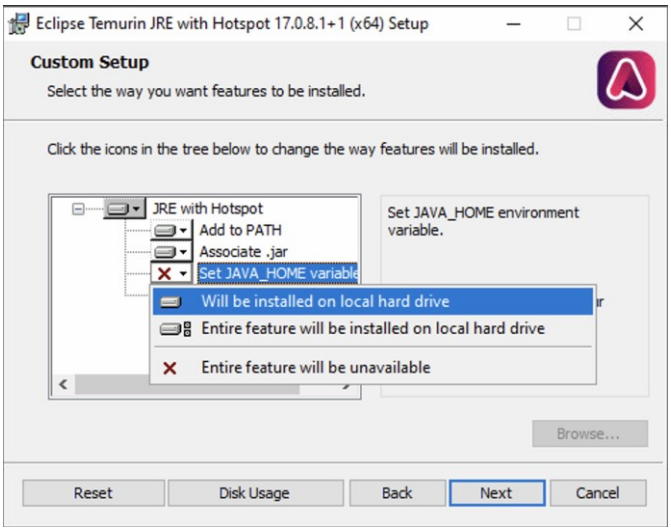


16) Now to install Open JDK click on *Next*

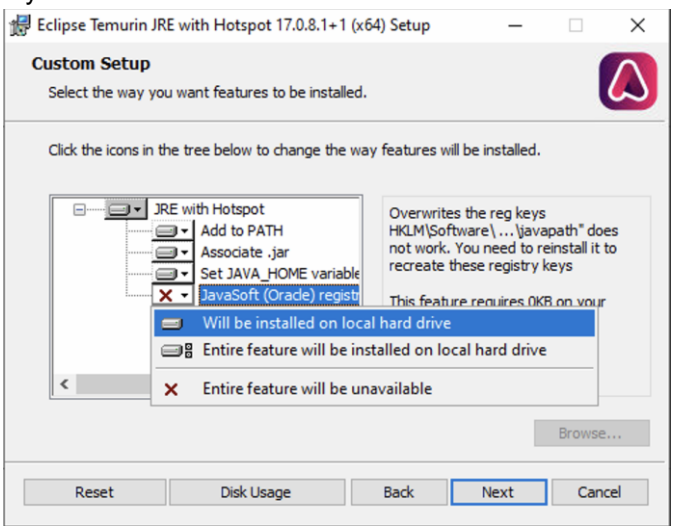


17) Make sure to set the following settings before Clicking on Next

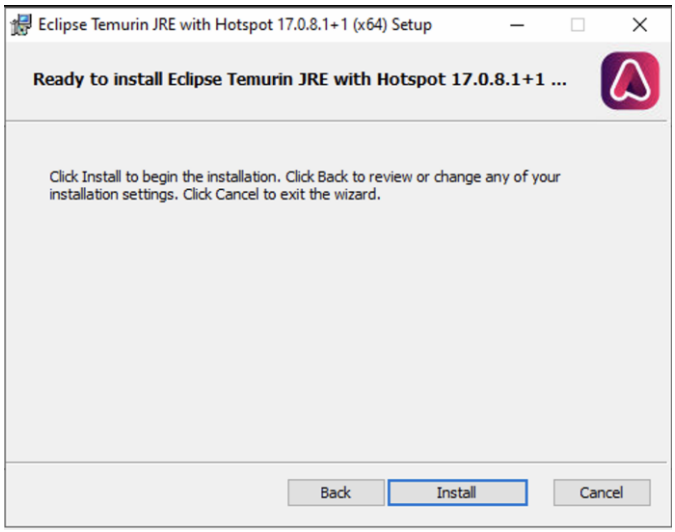
17.1. JAVA HOME VARIABLE



17.2. Open JDK Registry Keys

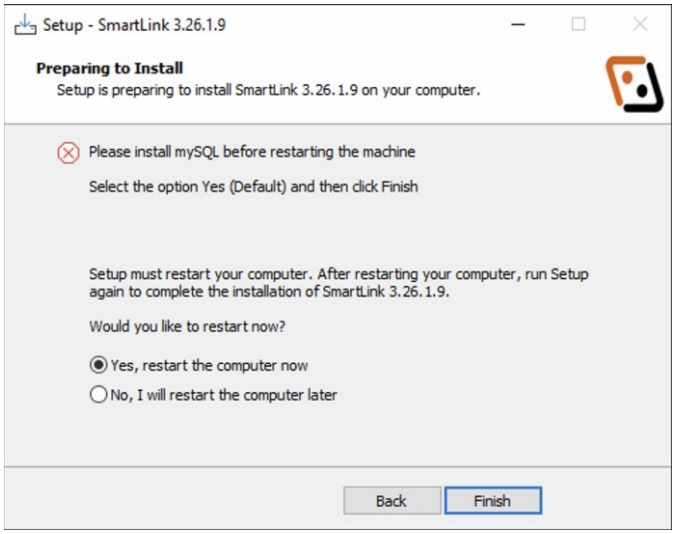


18) Click on *Next* to go to the next page and click on *Install*.

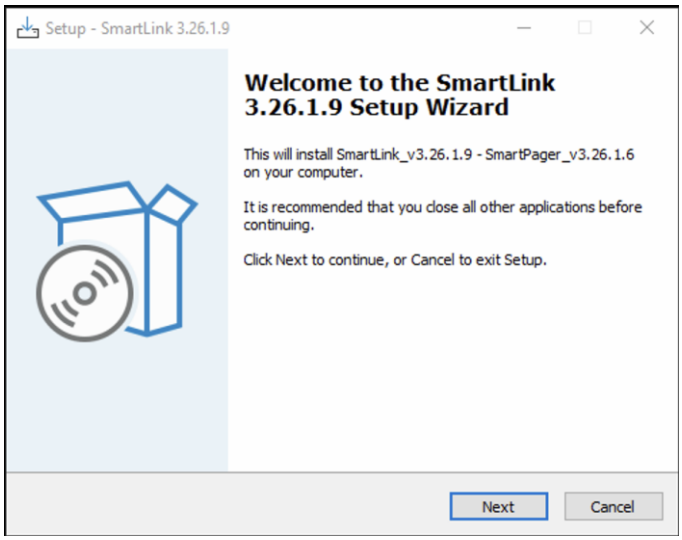


And finally click on *Finish*

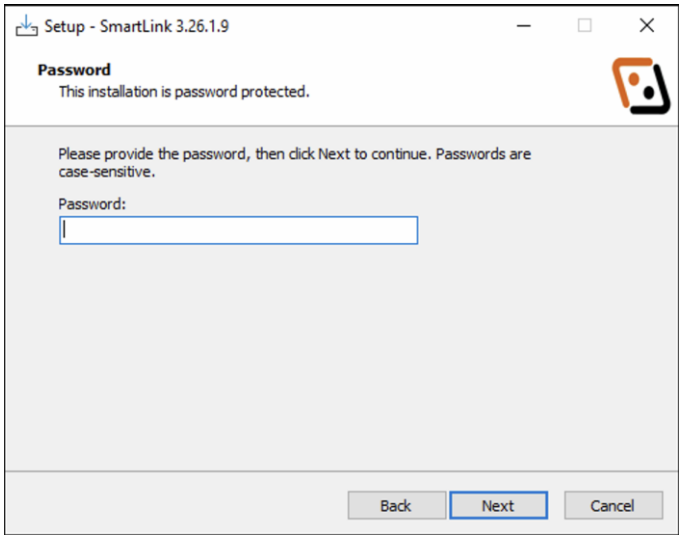
19) When both MySQL and Open JDK are installed correctly, you have to select the first option and click on *Finish* to restart the server and begin the second part of the installation.

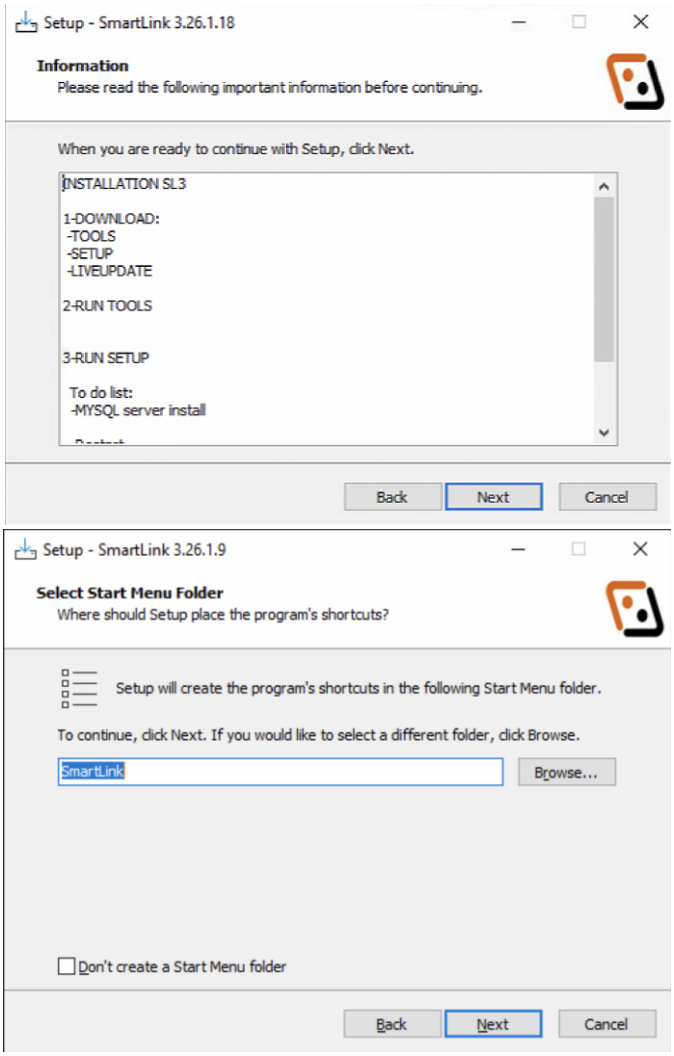


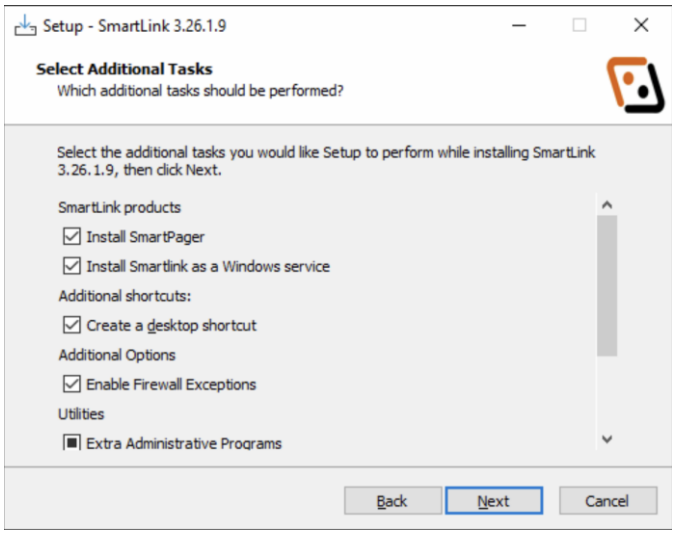
20) After the system has restarted successfully, the Smartlink setup wizard will open automatically. Click on *Next* to begin the second part of the installation.



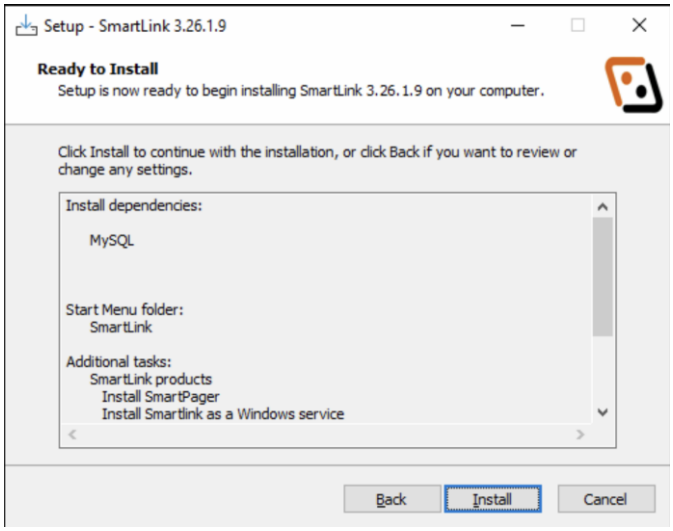
21) Insert the password and click on *Next* until you reach the *Ready To Install* page.



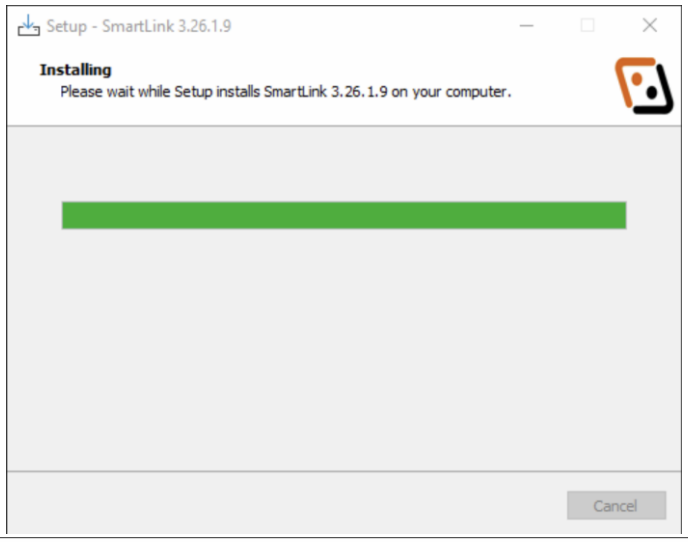

Setup - SmartLink 3.26.1.18
Information
Please read the following important information before continuing.
When you are ready to continue with Setup, click Next.
INSTALLATION SL3
1-DOWNLOAD:
-TOOLS
-SETUP
-LIVEUPDATE
2-RUN TOOLS
3-RUN SETUP
To do list:
-MYSQL server install
Back
Next
Cancel
Setup - SmartLink 3.26.1.9
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
SmartLink
Browse...
Don't create a Start Menu folder
Back
Next
Cancel

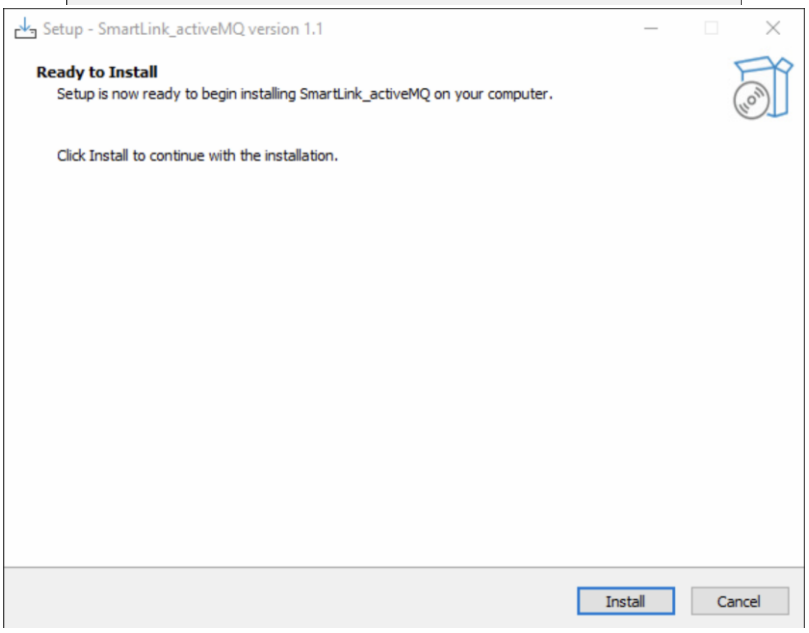


22) Click on *Install* to begin the second part of the installation.

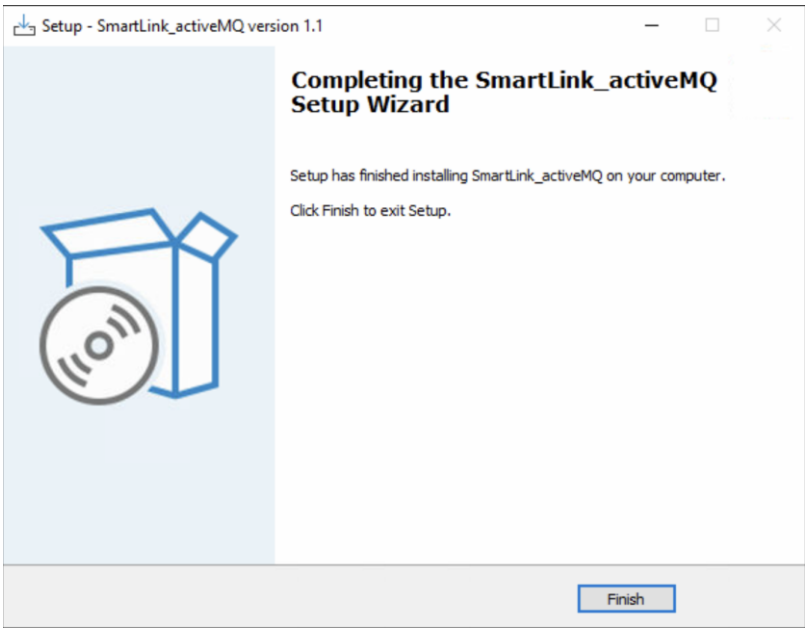


23) During the installation of the *SmartLink Modules* the ActiveMQ Setup wizard will open, click on *Install* to begin its installation.

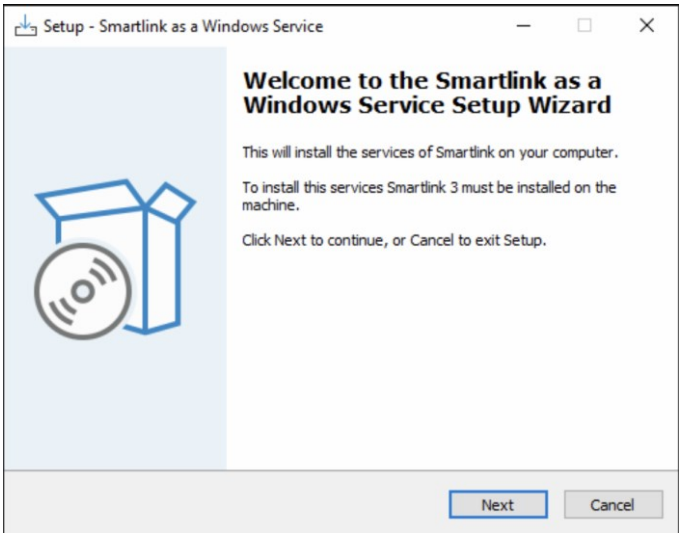


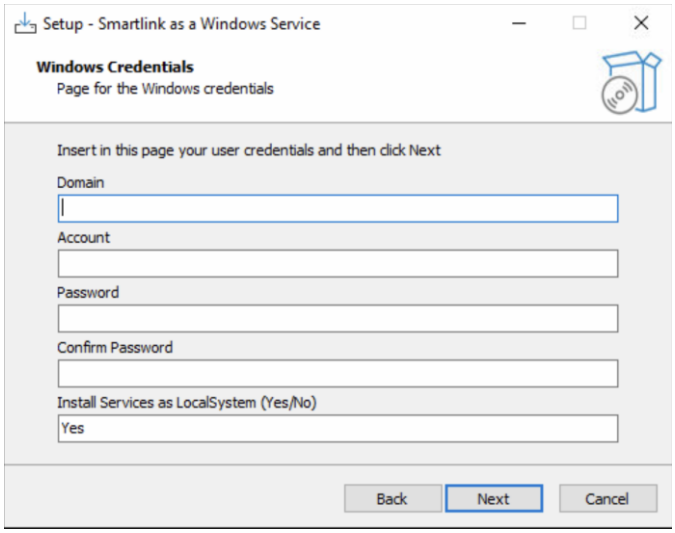


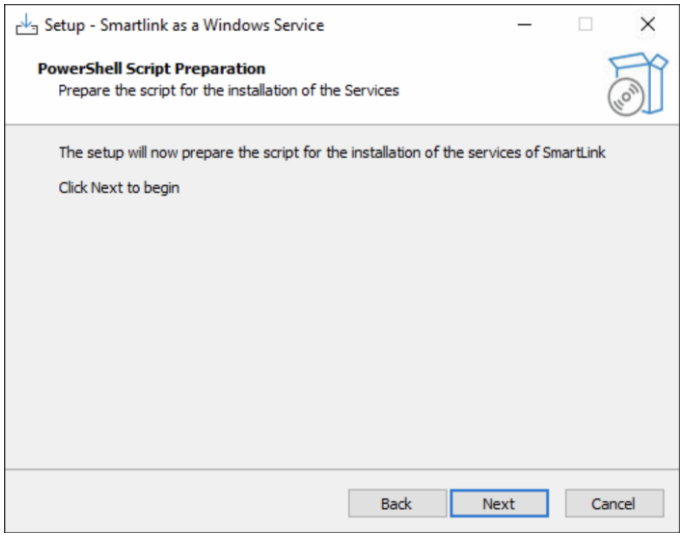
24) To complete the installation of ActiveMQ click on *Finish.*

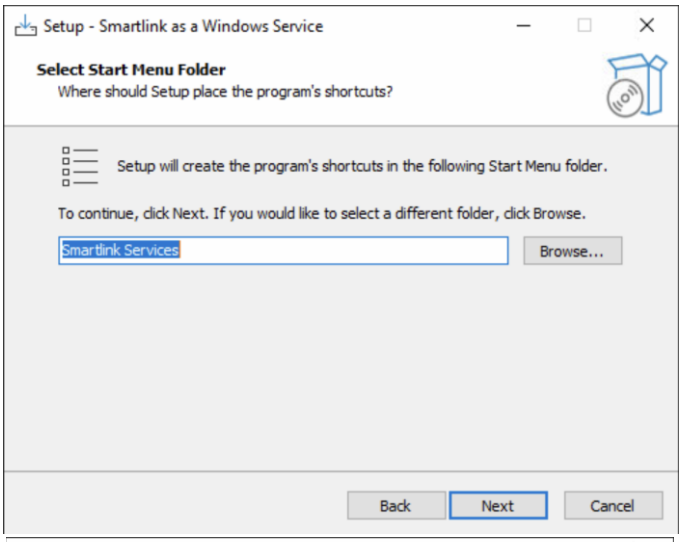


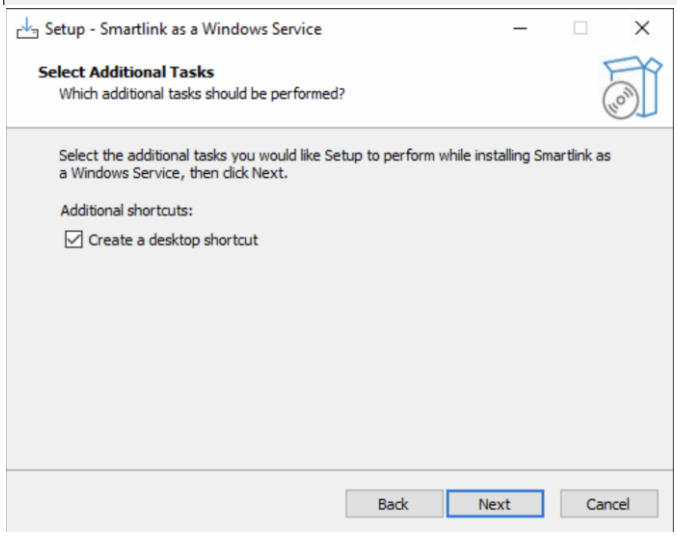
25) Once ActiveMQ is correctly installed the *SmartLink Setup Wizard* will begin installing the *SmartLink Services*. To begin their installation, click on *Next* until you reach the *something page*.

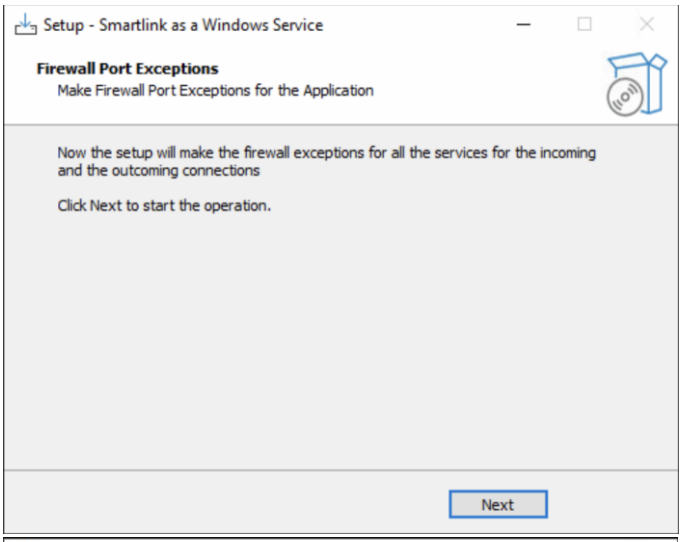


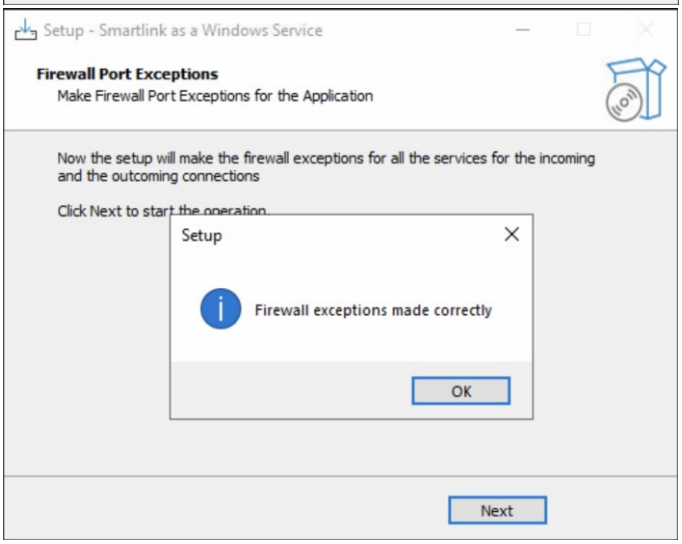

Setup - Smartlink as a Windows Service
Windows Credentials
Page for the Windows credentials
Insert in this page your user credentials and then click Next
Domain
Account
Password
Confirm Password
Install Services as LocalSystem (Yes/No)
Yes
Back
Next
Cancel

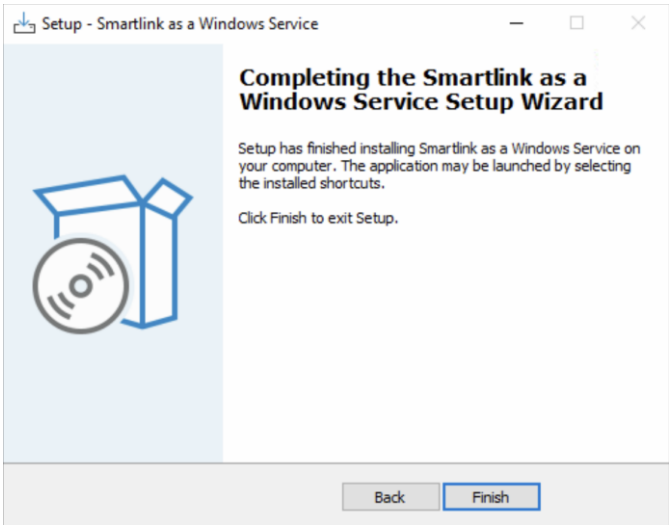

Setup - Smartlink as a Windows Service
PowerShell Script Preparation
Prepare the script for the installation of the Services
The setup will now prepare the script for the installation of the services of SmartLink
Click Next to begin
Back
Next
Cancel


Setup - Smartlink as a Windows Service
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Smartlink Services
Browse...
Back
Next
Cancel

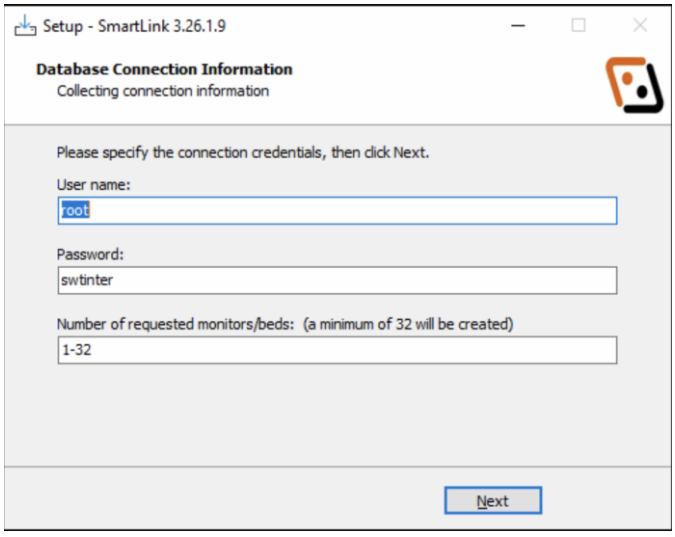

Setup - Smartlink as a Windows Service
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing Smartlink as a Windows Service, then click Next.
Additional shortcuts:
Create a desktop shortcut
Back
Next
Cancel

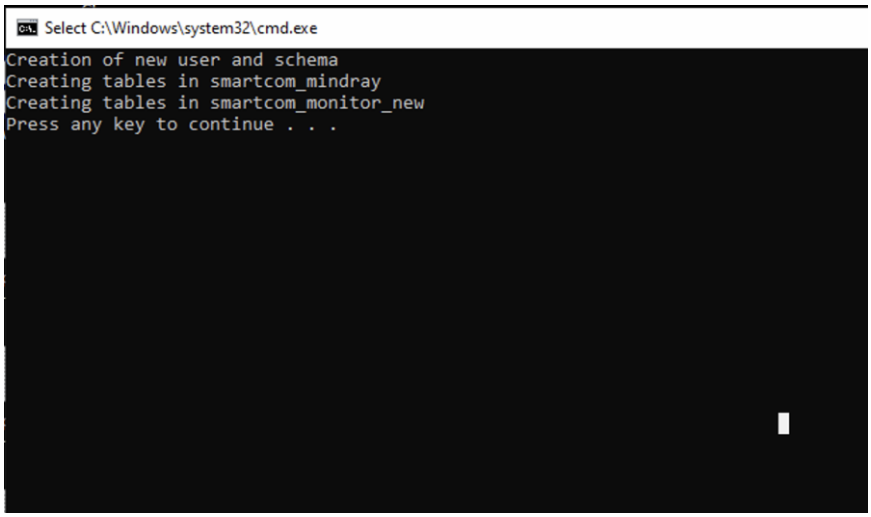

Setup - Smartlink as a Windows Service
Firewall Port Exceptions
Make Firewall Port Exceptions for the Application
Now the setup will make the firewall exceptions for all the services for the incoming and the outcoming connections
Click Next to start the operation.
Next


Setup - Smartlink as a Windows Service
Firewall Port Exceptions
Make Firewall Port Exceptions for the Application
Now the setup will make the firewall exceptions for all the services for the incoming and the outcoming connections
Click Next to start the operation.
Setup
Firewall exceptions made correctly
OK
Next

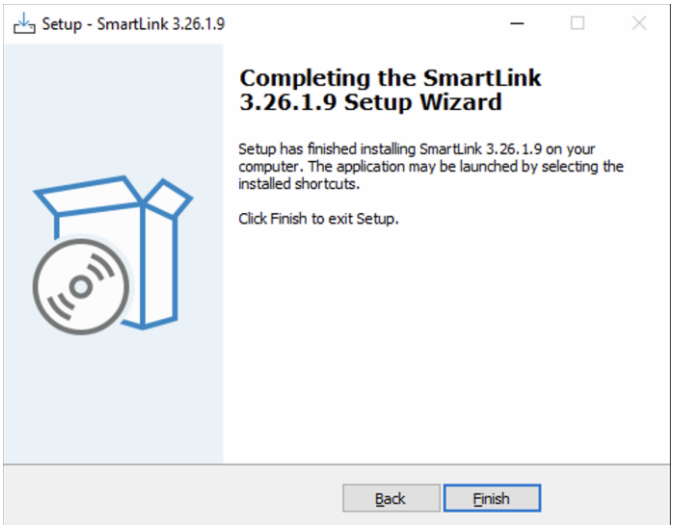


26) Once The firewall exceptions and Services installation are completed the *SmartLink setup wizard* will open the database configuration page.

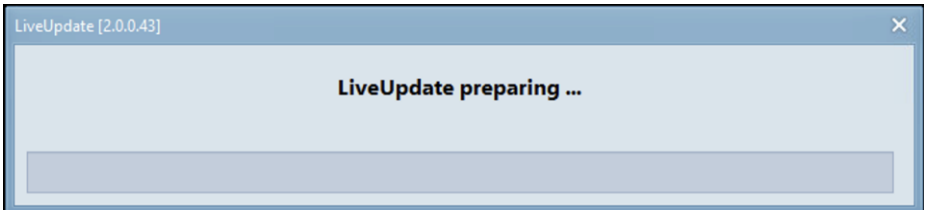


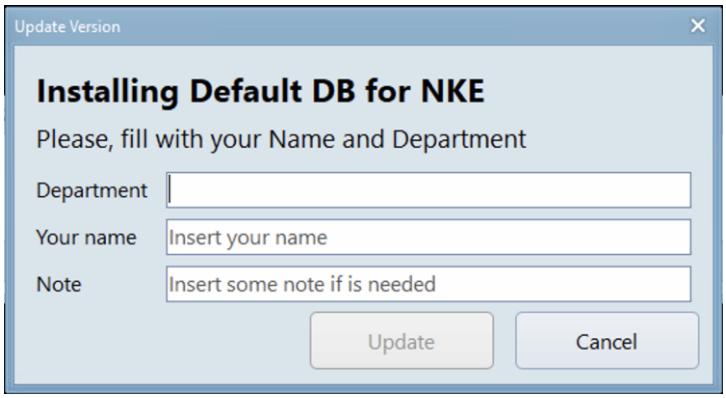


27) Click on *Finish*

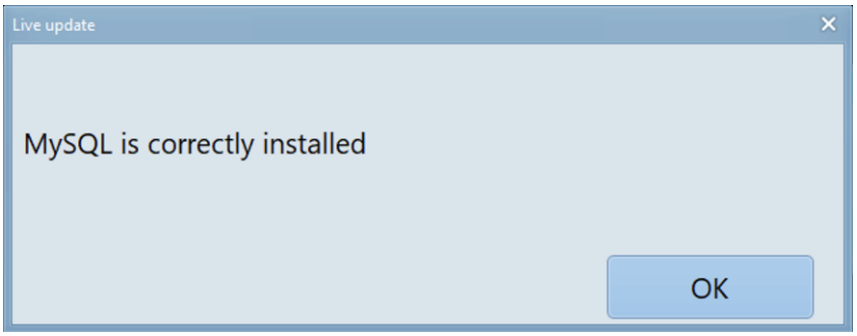


28) When the setup has finished, the liveupdate procedure will start. Insert your name and department and click on *Update*





29) Click on *Ok* to finish the SmartLink installation.



3.4.1.3 SmartLink LiveUpdate

3.4.1.3.1 Update Requirements

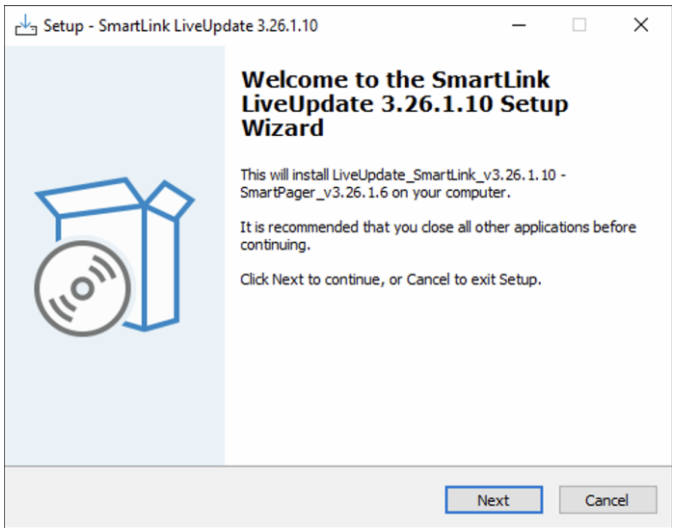
SmartLink updates are only allowed starting from *SmartLink Version 3 Rev 11*

3.4.1.3.2 LiveUpdate Procedure

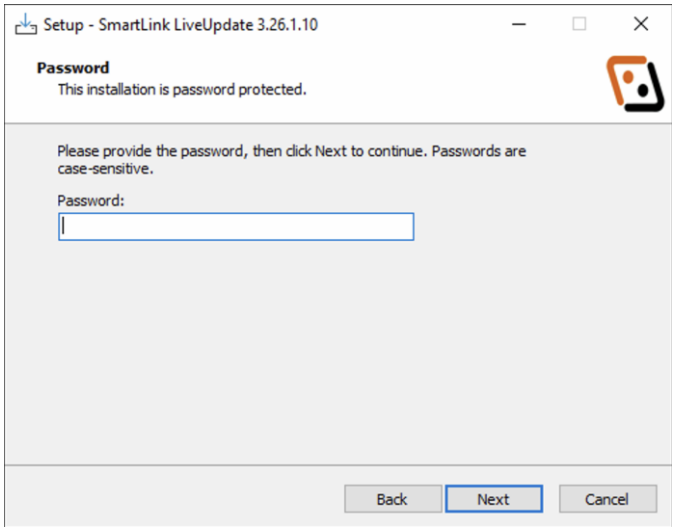
Before starting the *Liveupdate Procedure*, make sure to stop ALL the SmartLink and XFramework services.

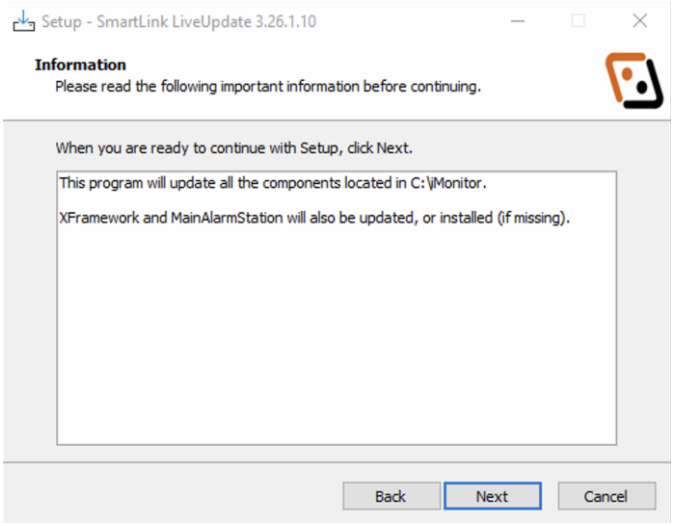
To learn more about how to stop the *SmartLink Server* services, go to the *SmartLink Operation Mode* Section.

1) To begin the LiveUpdate setup, double click on the LiveUpdate executable and click on *Next* to begin the installation.

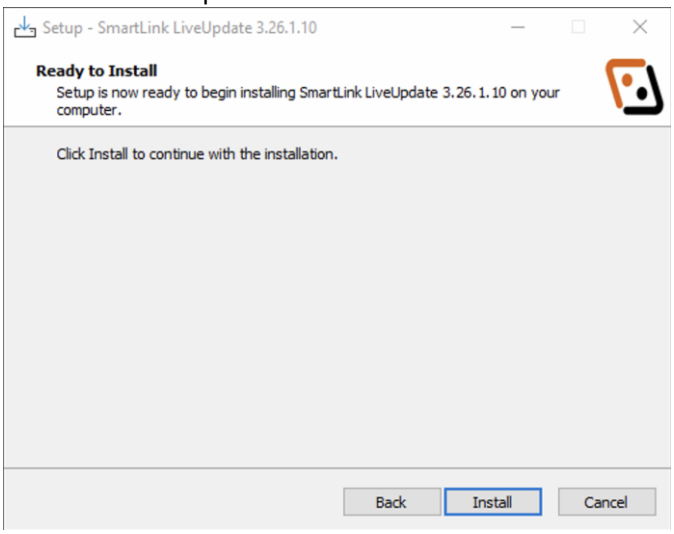


2) Insert the password to proceed and click on *Next* until you reach the *Ready to install* page.





3) Click on *Install* to begin the installation process.



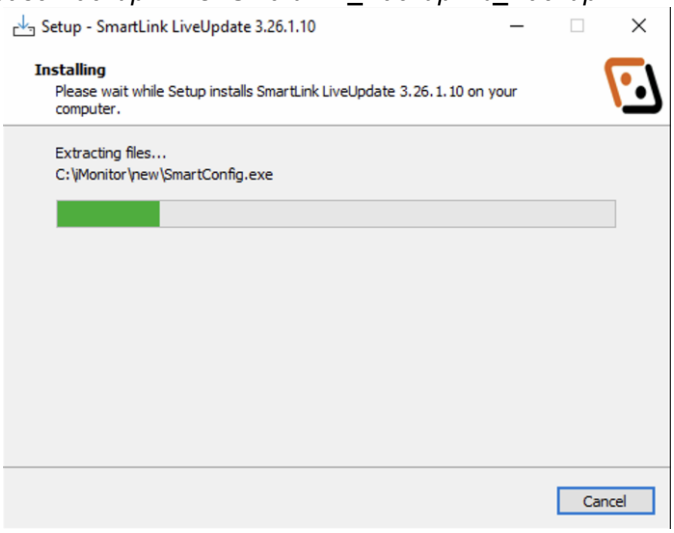
a. Before installing any updates, the *LiveUpdate Procedure* will back up the current installation. The backup will consist of the following folder in their respective locations:
    i. Imonitor (SmartLink installation folder)
        1. *"C:\Imonitor" -> "C:\SmartLink_Backup\ iMonitor_Backup dd-mm-yyyy hh;mm;ss"*
    ii. Main Alarm Station

1. "C:\ProgramFiles\Main Alarm Station"-> "*C:\SmartLink_Backup\Main Alarm Station_Backup dd-mm-yyyy hh;mm;ss*"

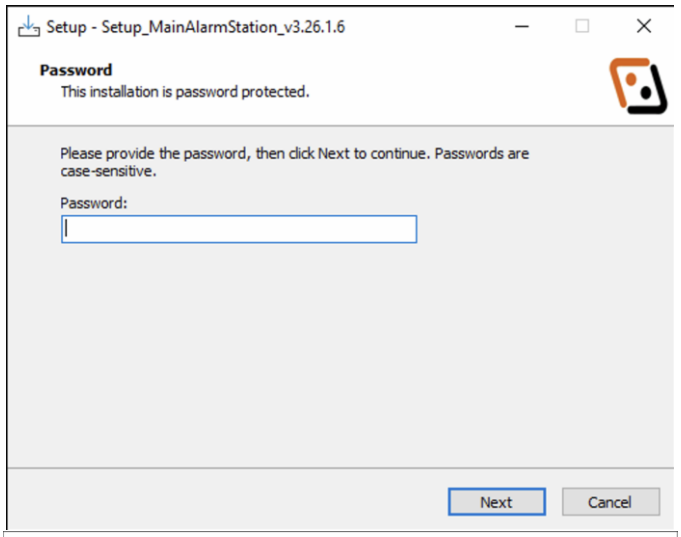
iii. XFramework

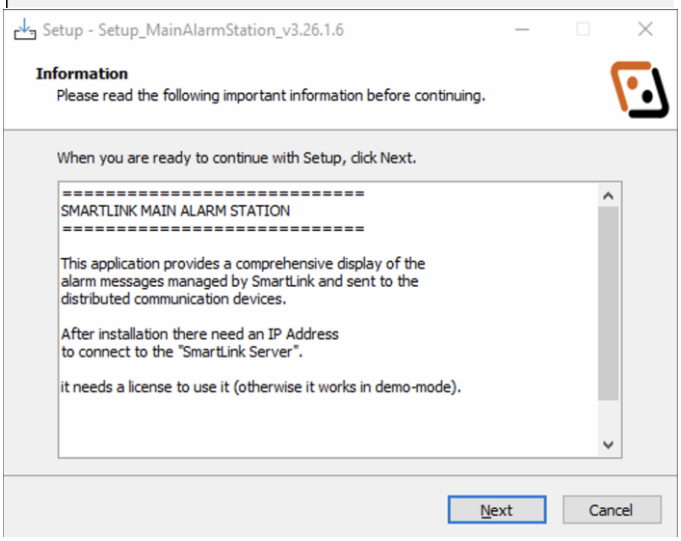
1. *"C:\xframework" -> "C:\SmartLink_Backup\XFramework_Backup dd-mm-yyyy hh;mm;ss*

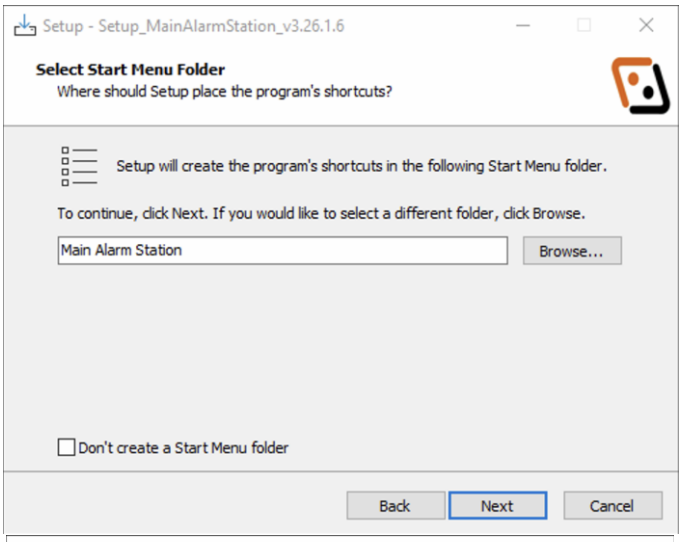
iv. Database Backup -> "C:\SmartLink_Backup\Db_Backup"

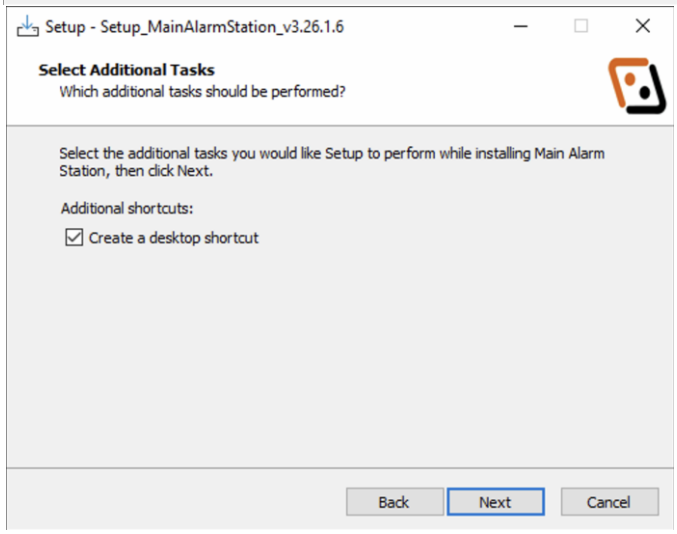


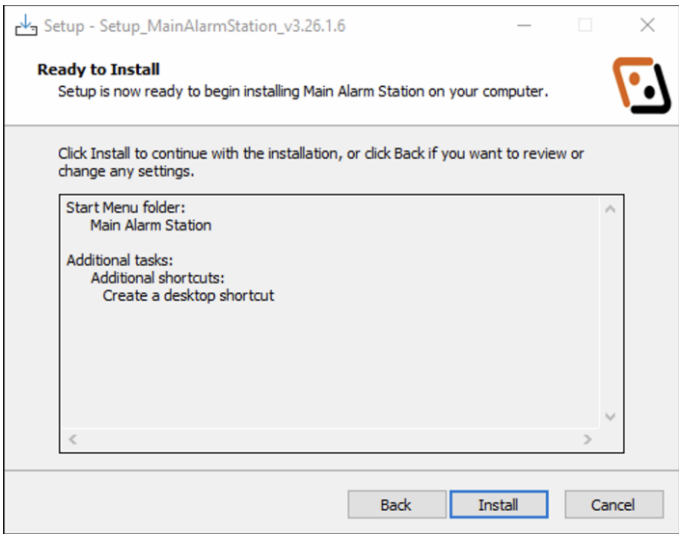
4) Once the installation is completed, The LiveUpdate Setup Wizard will bring up the Main Alarm Station installer. To begin the installation, insert the password and click on *Next until you reach the Ready to install page.*


Setup - Setup_MainAlarmStation_v3.26.1.6
Password
This installation is password protected.
Please provide the password, then click Next to continue. Passwords are case-sensitive.
Password:
Next
Cancel

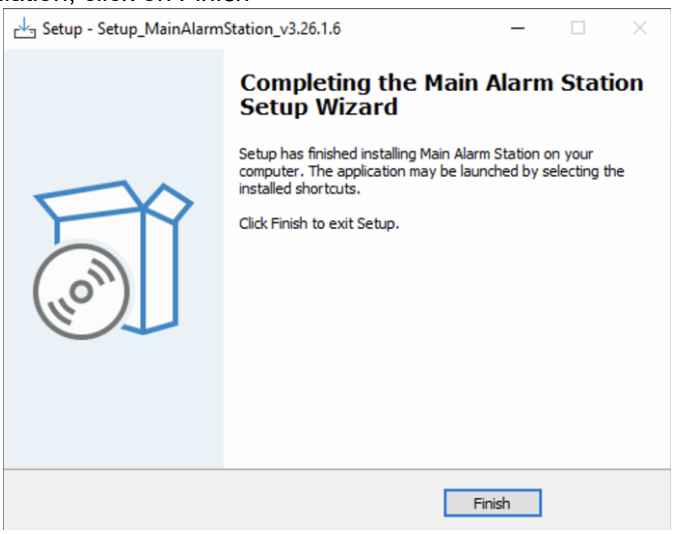

Setup - Setup_MainAlarmStation_v3.26.1.6
Information
Please read the following important information before continuing.
When you are ready to continue with Setup, click Next.
==========
SMARTLINK MAIN ALARM STATION
==========
This application provides a comprehensive display of the alarm messages managed by SmartLink and sent to the distributed communication devices.
After installation there need an IP Address to connect to the "SmartLink Server".
it needs a license to use it (otherwise it works in demo-mode).
Next
Cancel


Setup - Setup_MainAlarmStation_v3.26.1.6
Select Start Menu Folder
Where should Setup place the program's shortcuts?
Setup will create the program's shortcuts in the following Start Menu folder.
To continue, click Next. If you would like to select a different folder, click Browse.
Main Alarm Station
Browse...
Don't create a Start Menu folder
Back
Next
Cancel


Setup - Setup_MainAlarmStation_v3.26.1.6
Select Additional Tasks
Which additional tasks should be performed?
Select the additional tasks you would like Setup to perform while installing Main Alarm Station, then click Next.
Additional shortcuts:
Create a desktop shortcut
Back
Next
Cancel

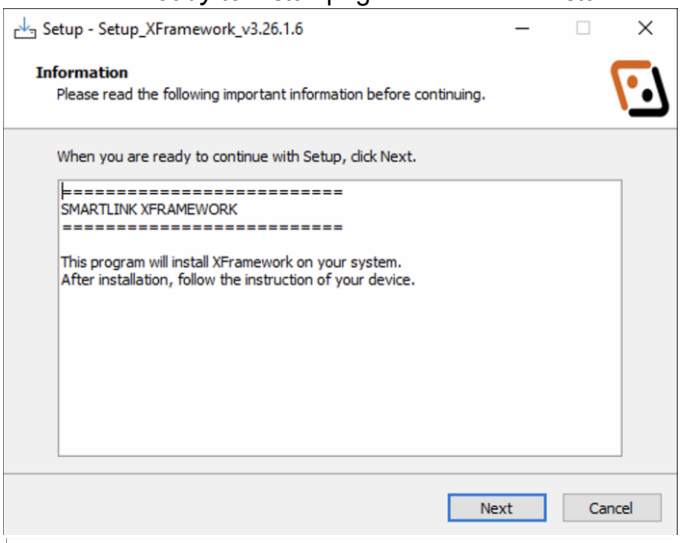


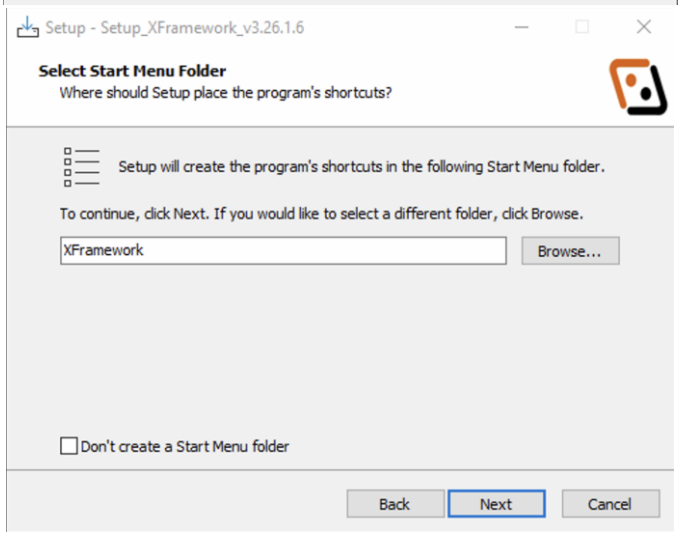
5) To complete the installation, click on *Finish*

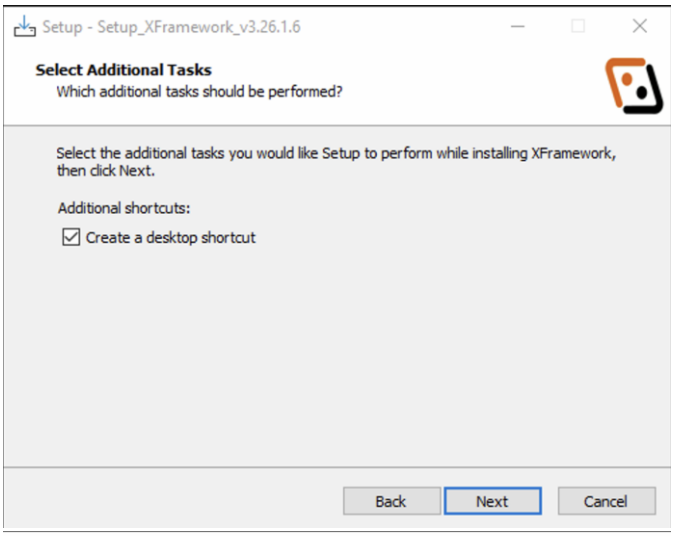


6) Once the Main Alarm Station installation is completed, the XFramework installation will begin. Click on Next to start the installation.

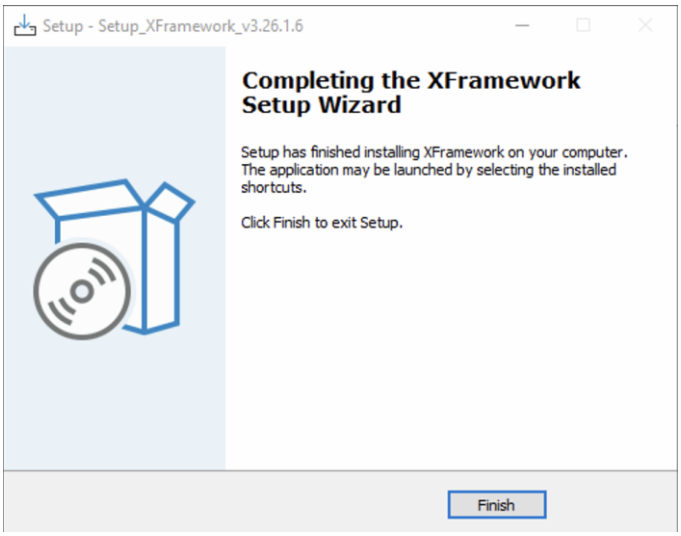
7) Click on *Next* until you reach the *Ready to install* page and click on *Install*.



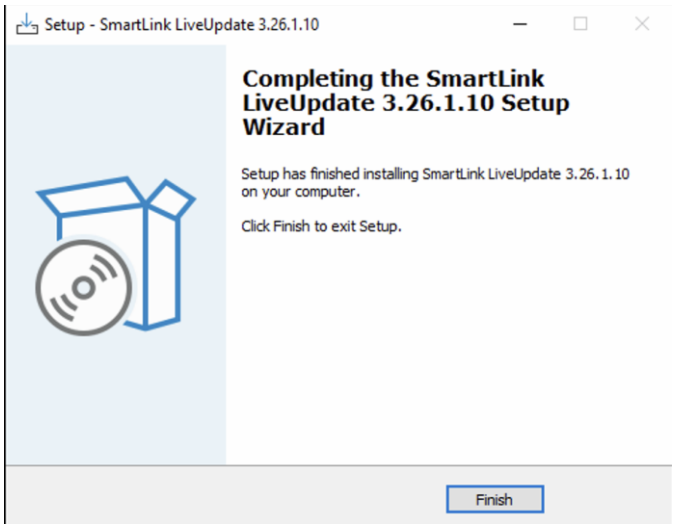


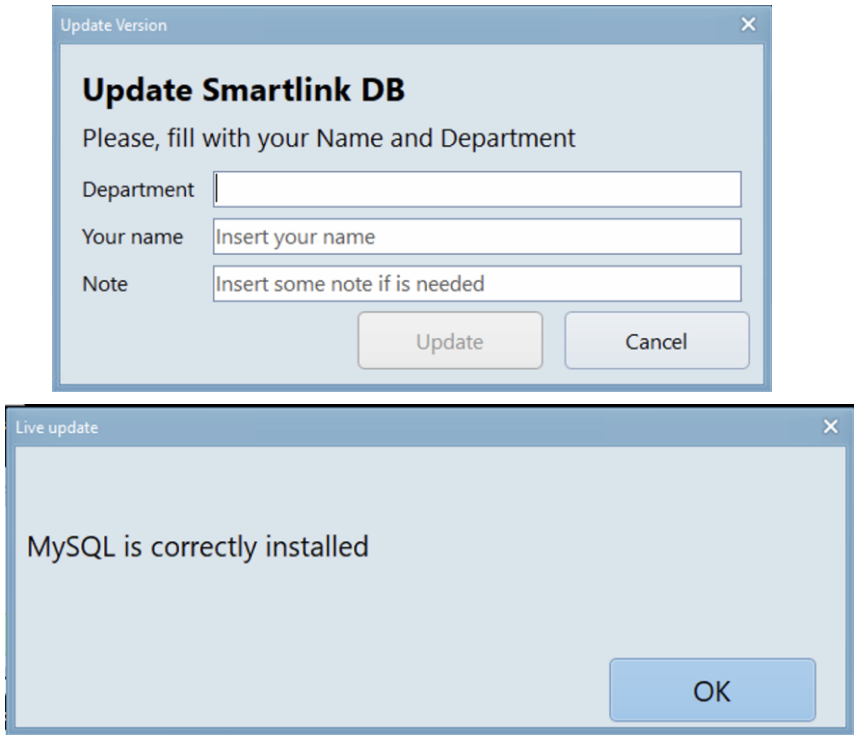


8) Click on *Finish* to complete the XFramework installation.



9) To complete the LiveUpdate procedure, click on *Finish* and when prompted, insert the requested information to finish.





3.5. Updating an existing SmartLink installation

To update an existing SmartLink installation (Rev. 11 to Rev. 25), refer to chapter 4.4.1.3

4. SMARTLINK OPERATION MODE

To start the SmartLink server, you'll have to start all the Smartlink components services.

To do so, follow the steps below:

4.1. Service Mode

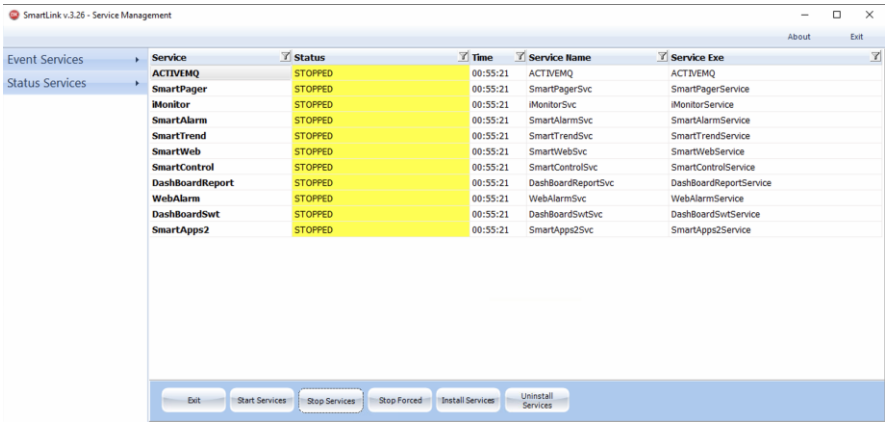
4.1.1 Service Management

SmartLink services can only be managed from the SmartLink server.

To do so, open ***StartSmartLink*** and click on ***Settings*** and finally on ***Service Configuration.***



The service configuration page will allow you to do the following actions regarding the SmartLink services:



- Start the services.
  - Using the *Start Services* button
- Stop the services.
  - Using the *Stop Services* button

- If the services couldn't be stopped, you can use the *Stop Forced* button to force stop the services.

- Install services.
  - Using the *Install Services* button
- Uninstall services.

Use the *Exit button:*

- To exit from the application

5. SMARTPAGER ADVANCED SETTINGS AND SMARTPHONE SETUP

5.1. Android Environment Setup

To use SmartPager on one of the validated smartphones (Refer to the SmartLink Technical Requirement document for the list of validated smartphones), each smartphone needs to be configured according to our requirements to fulfill the intended use.

To do so, follow the steps below:

5.1.1 Generic options

- Set the lock screen to *None*
- Set the screensaver to *None*
- Set the screen timeout to the maximum number of minutes allowed
- Set the *Navigation Mode* to *3-button navigation*

5.1.2 Samsung Smartphones running One UI

- Set Side Button to open the *power off menu* when its pressed and held
- Disable *Double Press* of the Side Button
- Disable *Edge Panels*

5.1.3 Pixel 6a

- Set Side Button to open the *power off menu* when its pressed and held

5.1.4 Xiaomi Redmi Note 13 Pro

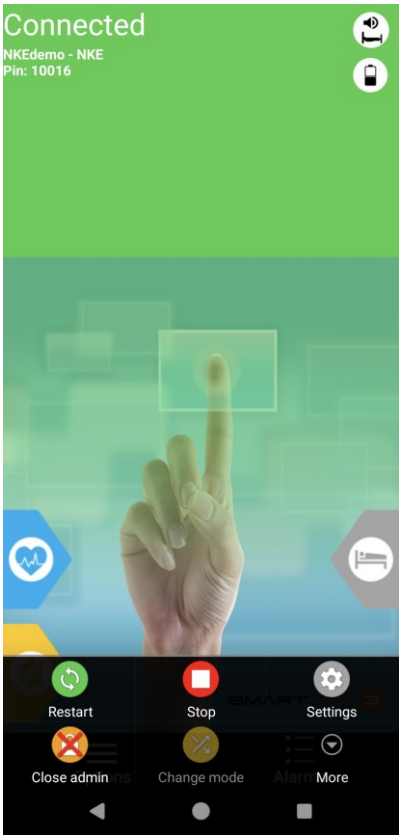
- Set Side Button to open the *power off menu* when its pressed and held
- Disable *Double Press* of the Side Button
- Disable *Edge Panels*

5.2. SMARTPAGER APPLICATION - ADMINISTRATOR OPTIONS

NOTE: To have more information about the SmartPager user options, refer to chapter 3 in the following manual: *SL – User Manual v01*.

To access SmartPager Administrator Options Menu, from the application home screen tap *Options* → *Admin*.

In the Administrator Menu six options are available:



5.2.1 Restart

Reboots the application service, meaning that SmartPager will automatically disconnect and reconnect to the SmartLink server. If you notice that the screen frequently changes to Poor Connection (yellow background) you may want to try rebooting the service.

5.2.2 Stop

Stops the service, meaning that SmartPager will not be able to receive alarms. When the service is stopped, SmartPager will not try to reconnect to the server until the service is manually restarted. While in this condition, the application home screen background is black and says, “Not Connected”.

5.2.3 Close Admin

Logs out from the Administrator Options and goes back to User mode.

5.2.4 Settings Menu

5.2.4.1 Basic Configuration

- **IP Address**

The IP address of SmartLink Server.

5.2.4.2 Server Update Options

These options are automatically set when the pager connects to the SmartLink server.

- **Take config from server:**
  - Yes → The pager will receive its configuration from the SmartLink server.
  - No → You can set a configuration that is different from the server one.
- **Show background opt.:**
  - Yes → Allows using SmartPager in background mode, which means that it is possible to use the phone outside of SmartPager (you can use the phone, messages, contacts, and settings) while SmartPager is still connected and able to receive alarms in the background. If an alarm occurs, or the pager disconnects (the screen becomes red) SmartPager comes back to the top of the screen.
  - No → You cannot exit from the application, and SmartPager remains always in the foreground.
- **Show “stop” opt.**
  - Yes → it shows stop options also if you aren't an administrator.
  - No → if you are not an administrator you can't shut down the application
- **Set Sound**

Set the volume of the alarm sound (high, middle, default, no sound, only vibration).

- **Low battery %**

Set the level of battery from which a notification will be received.

- **Show Widget**

Activates the widget when SmartPager is used in background mode.

- **Show Beds list**
- **Admin Password**

  Changes the Administrator password.

- **Ask Confirm Take In Charge**

  Activates a confirmation prompt when you take in charge of an alarm.

- **Set minimum sound value**

  Sets a minimum volume value under which the user cannot go.

5.2.4.3 Other Options

- **Log activation**

  Allows the activation of base or advanced log.

5.2.5 MORE

- **Always On Top/Background Mode**: Tapping on this option will switch between *Always On Top* and *Background* Mode
- **Stop Service**: Tapping on this option will stop the SmartPager service; If the service is succesfully stopped, SmartPager stops all the connections with the SmartLink server and, therefore, stops receiving any alarms.
- **Change Department:** Allows you to connect to one of the available departments.

6. SYSTEM SETUP - WIZARD IT

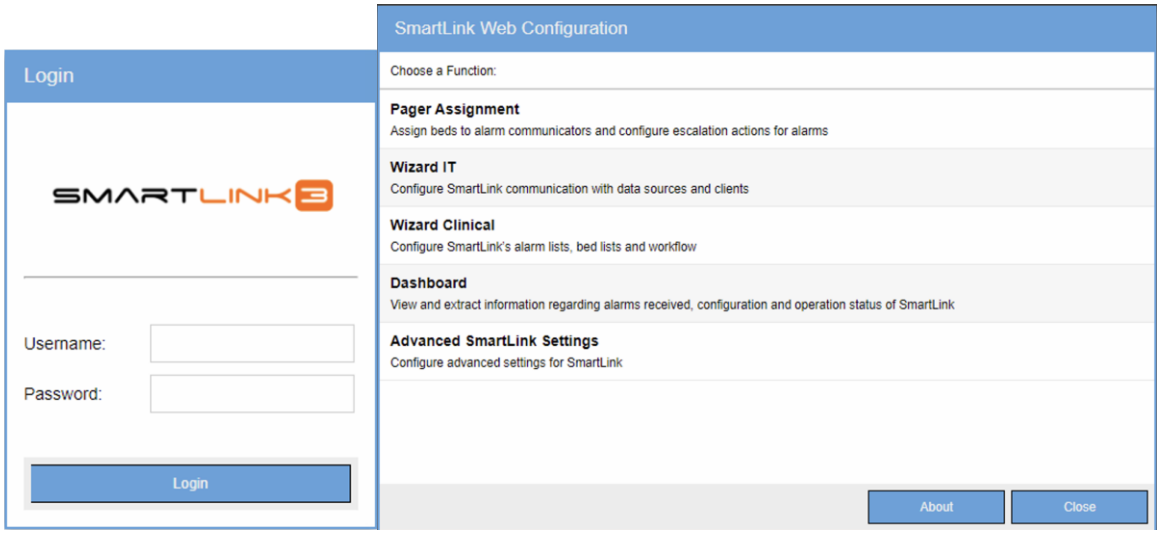
The Wizard IT is a tool that allows the IT Technician to activate the license, configure the settings of the installation and the department, install, and configure SmartPager, connect and configure the central station\gateway and activate the mail alarm.

To access the Wizard IT functions, open Google Chrome or Firefox and type:

http://**[ServerIP]***:20010/smartlinkwebapp

* Change **[ServerIP]** with the IP address of the server (e.g. http://192.168.1.1:20010/smartlinkwebapp).

Once you're connected, insert your Username and Password and, on the page that follows, click *Wizard IT.*



To switch from one section to another, click on the options button in the upper-right corner, or by clicking on the *next* button.

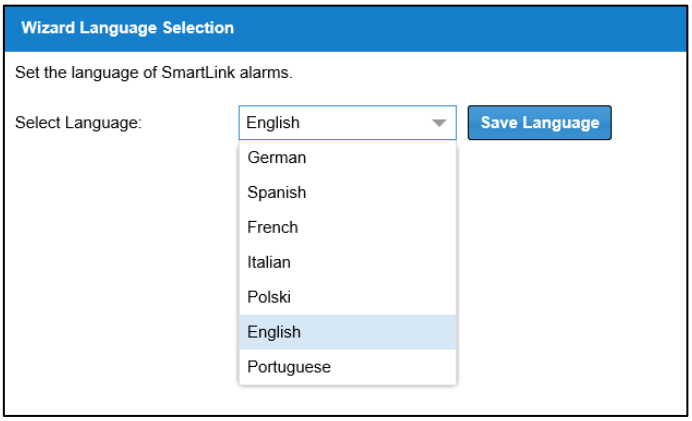


6.1. Check License

Check License: shows the current status of the license:

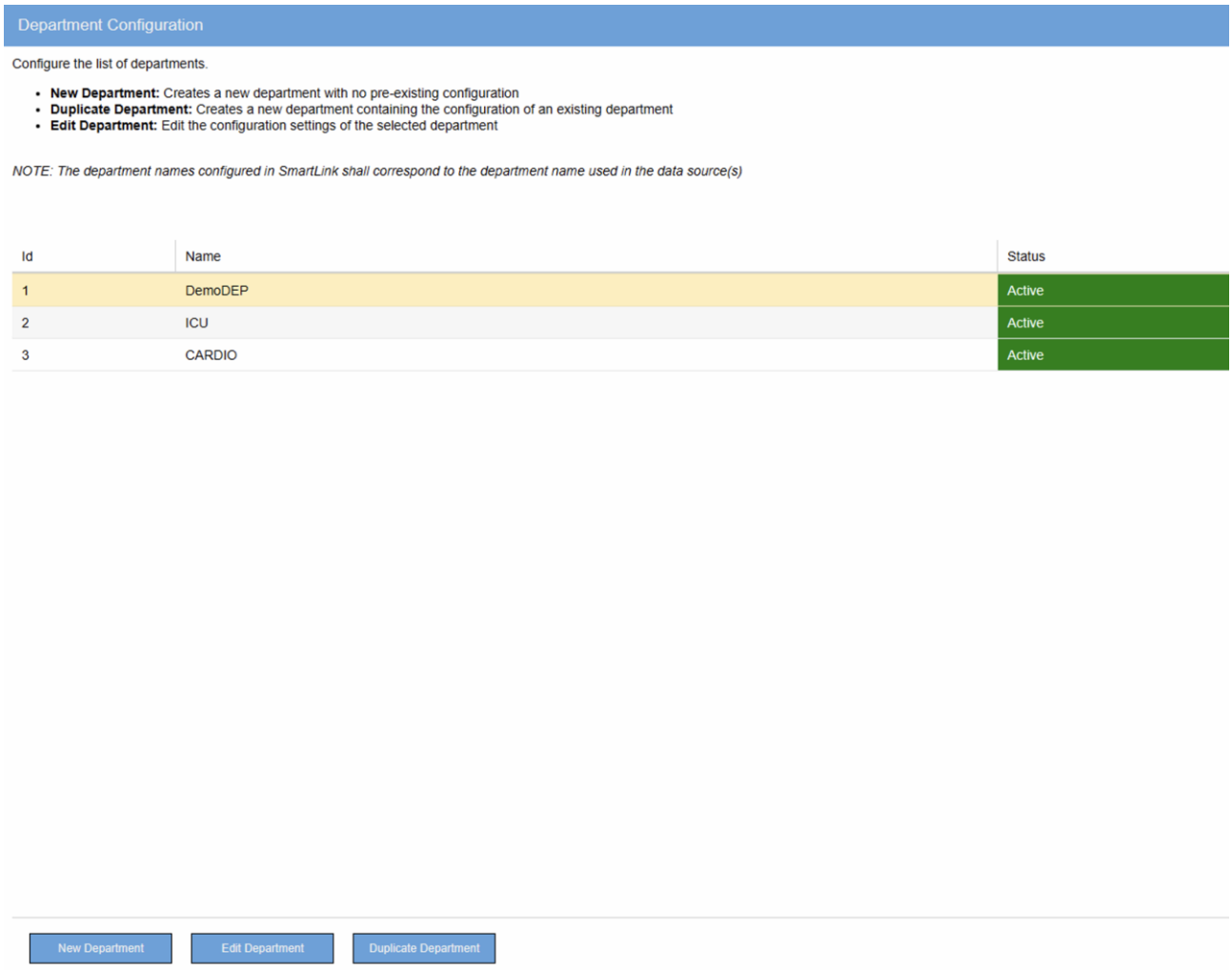
6.2. Language Selection

From this section, you can set in which language you want SmartLink to display the alarms (this applies also to SmartPager). Select the language from the drop-down list and click “Save Language”.



6.3. Department Configuration

This page allows you to configure the hospital wards to be managed:



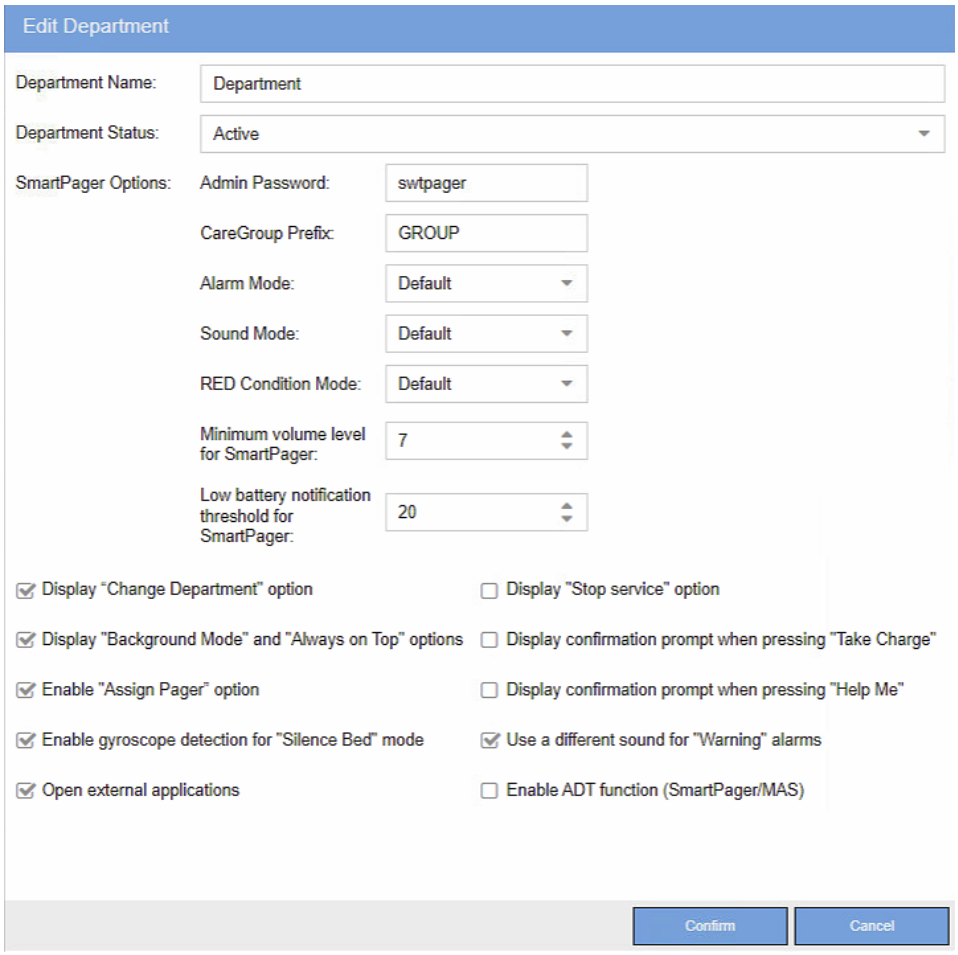
Select the department you would like to edit and click on *Edit Department* to configure said department.

New Department: Creates a new department with no pre-existing configuration

Duplicate Department: Creates a new department containing the configuration of an existing department

Edit Department: Edit the configuration settings of the selected department

Click on *Edit* to modify the departments' options:



Department Name: The name of the deparment. Department name(s) configured in SmartLink shall correspond to the department name(s) used in the data source(s)

Department Status: The status of the department. Departments can be set as:

- *Not active*: Alarms coming from the department are not forwarded to the alarm communicators
- *Active*: Alarms coming from the department are forwarded to the alarm communicators

SmartPager Options:

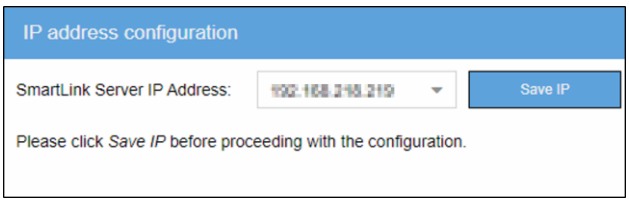
- *Admin password*: The password used to access administration settings on SmartPager
- *Alarm mode*: The mode in which new alarms are displayed on SmartPager. Alarm mode can be set as:
    - *Default*: Newest alarms are displayed on SmartPager on arrival.
    - *Dialog Box*: On alarm arrival, a confirmation prompt to view the new alarm is displayed on SmartPager
- Sound mode: The mode in which alarms are notified acoustically on SmartPager. Sound mode can be set as:
    - *Default*: Alarms are notified acoustically with 4 consecutive beeps
    - *Continuous sound alert*: Alarms are notified acoustically with a continuous beeping
    - *Continuous sound alert for Critical (H) alarms*: Alarms of the Critical (H) group are notified acoustically with a continuous beeping
- *RED condition mode*: The mode in which RED condition is notified on SmartPager. RED condition mode can be set as:
    - *Default*: Disconnection to the server is notified with a red screen and a periodical double beep
    - *Incremental*: Disconnection to the server is notified with a red screen and a double beep
- *Minimum volume level for SmartPager*: The minimum sound level allowed for SmartPager
- *Low battery notification threshold for SmartPager*: The battery level in which SmartPager shall start notifying the user of “Low battery“
- *Display change department button on Smartpager*: The option to display the change department on SmartPager
- *Display “Background Mode“ and “Always on Top“ buttons on SmartPager*: The option to display the “Background Mode” and “Always on Top“ toggle on SmartPager-
- Pager assignment on SmartPager: The option to enable pager assignment directly on SmartPager
- Movement detection for SmartPager during “Silence Bed“ → The option to enable gyroscope movement detection for SmartPager when a bed is silenced

- Open external applications: The option to use an external application to view patient parameters when pressing the “Real Time“ button on SmartPager
- Display Stop Service button: The option to display the “Stop Service“ button on SmartPager
- Request confirmation for "Take charge" on SmartPager: The option to enable a confirmation prompt when pressing the “Take Charge” button on SmartPager
- Request confirmation for “Help me“ on SmartPager: The option to enable a confirmation prompt when pressing the “Help me“ button on SmartPager
- Specific sound for warning alarms: it enables a specific sound for warning (L) alarms on the pager.
- Enable ADT function (SmartPager/MAS): it enables the ADT function on the pager.

6.4. SmartPager Configuration

From this section, you can set the IP address of the SmartLink server.

Open the drop-down menu to see the list of the IP addresses assigned to the network cards of the SmartLink server. Choose the IP address assigned to the network card connected to the hospital network, then click “Save IP”.



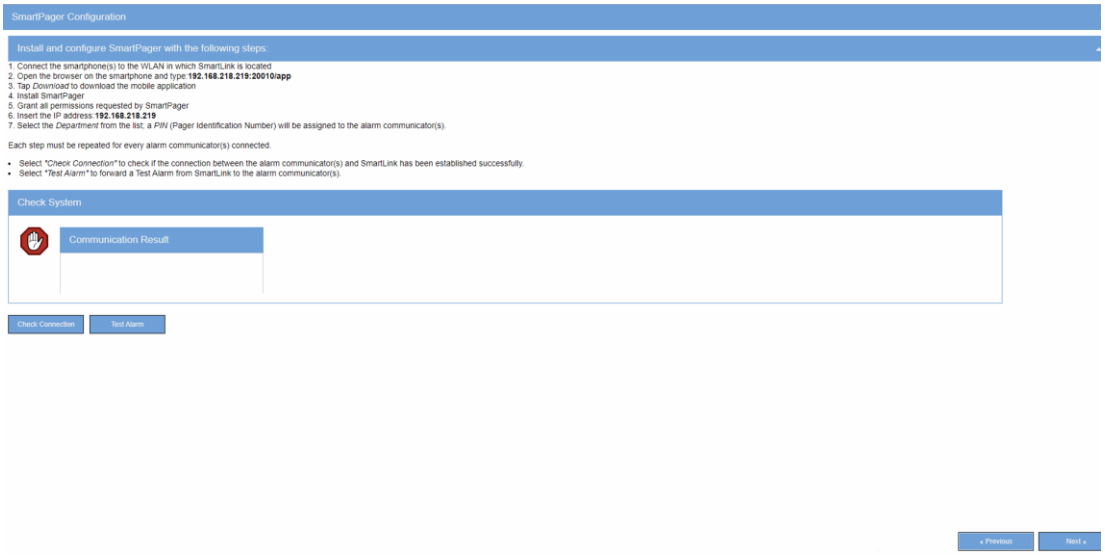
6.5. SmartPager Installation

This section guides you through the installation and configuration of the SmartPager application on the smartphones that will be used as paging devices.

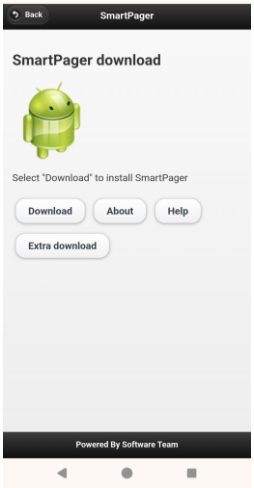
On the smartphone:

1) Enable WiFi and connect to the same network as the SmartLink server,

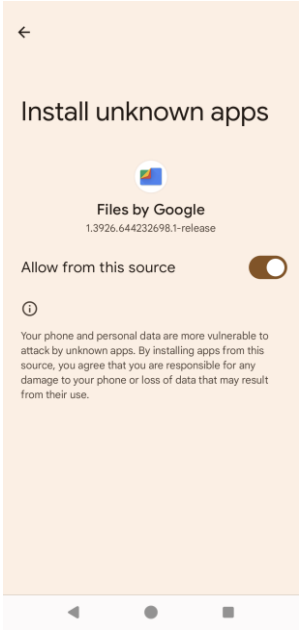
2) Open the web browser and type ***[IP Address]*:20010/app** where *[IP Address]* is the SmartLink server IP, which you can find on the wizard:



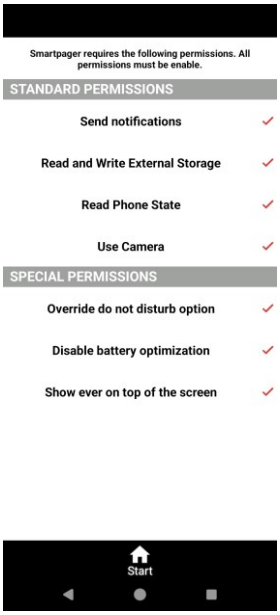
3) Tap “Download”, wait until it’s completed and run the *SmartPager.apk* file.

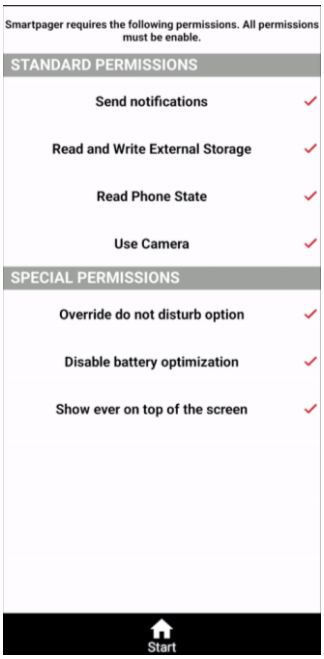


4) You may be asked permission to install applications from unknown sources:

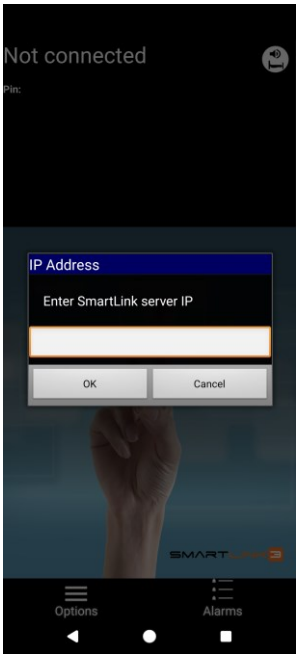


5) When the application first starts, a set of permission shall be granted. The application will not start unless all required permissions are granted.

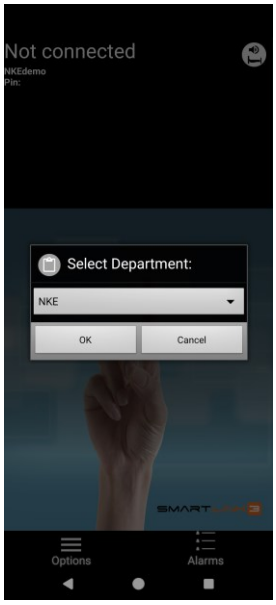




6) The application then asks for an IP address: insert the SmartLink server IP address.



7) Choose the department from which you want to receive the alarms.



8) A PIN (Pager Identification Number) is then automatically assigned to the pager.

If the pager is correctly configured, you will see a green background that confirms that the pager is connected to the SmartLink server and is able and ready to receive the alarms.



Repeat the same procedure to configure all the other smartphones.

On the Wizard, you can check the list of pagers connected to SmartLink and if the SmartPager server is connected (Communication Result) by clicking “Check Connection”.

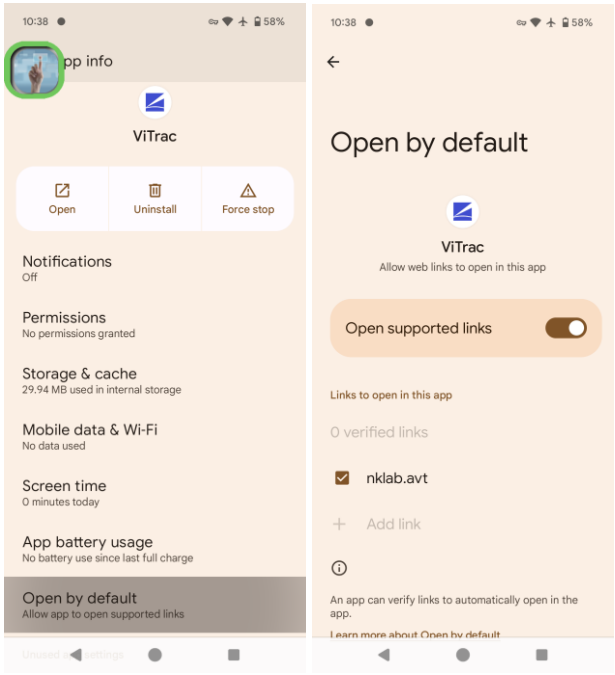
After checking the pagers, you can also send a test alarm to verify that the pagers are able to receive alarms. Click “Test Alarm” and an alarm will be sent to all the connected pagers.



6.5.1 Configuring External Applications for “Real Time” button

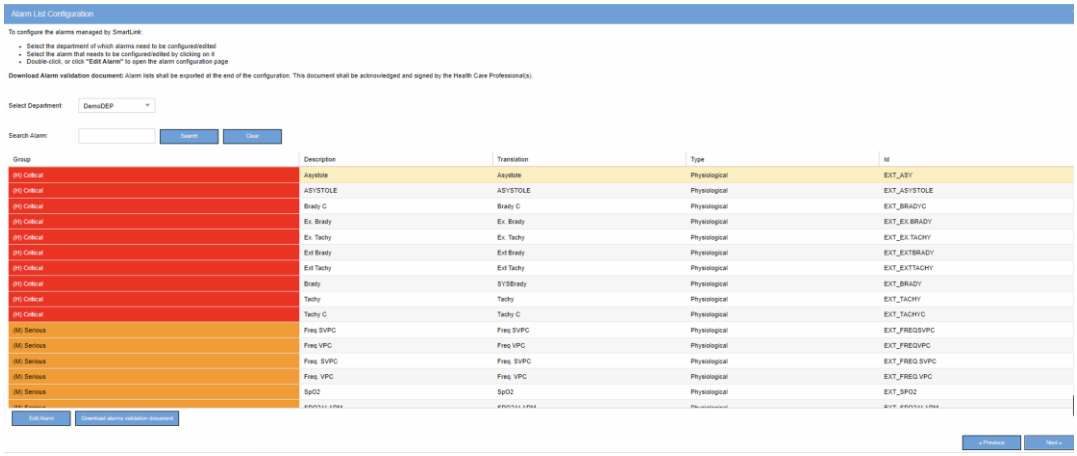
SmartPager allows the user to view more details regarding alarms by opening external applications such as “Vitrac”, to do so, it is necessary to configure the external application to open supported links.

This can be done by long pressing the external application’s icon, press info and navigate to the “Open by default” section, then “Add link”.



6.6. Alarm Description

This section allows configuring the alarm list.

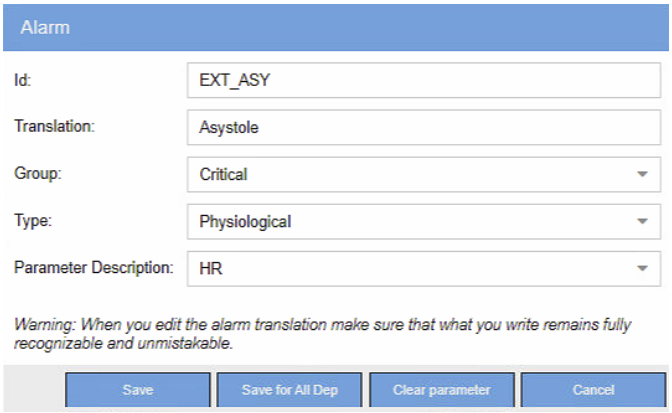


To configure the alarms list:

1. **ID**: The identifier of the alarm
2. **Translation**: The alarm name shown on the alarm communicators
3. **Group**: The severity of the alarm. Alarm groups are the following:
    1. **Critical:** Alarms of the highest priority (H) (RED) - immediate operator response is required
    2. **Serious:** Alarms of medium priority (M) (ORANGE) - prompt operator reponse is required
    3. **Warning:** Alarms of low priority (L) (YELLOW) - operator awareness is required and future action might be needed
    4. **Technical***:* Alarms of the technical nature (T) (BLUE) - examples of technical alarms can be *SpO2 probe detached*, *Monitor disconnected*, *Communication with Gateway lost*
    5. **Not Managed**: Alarms set to not be managed by SmartLink, thus, not to be forwarded to alarm communicators
    6. **Unknown:** Alarms that have not been registered in the system and require further configuration - the user shall decide whether said alarm must be managed or not

4. **Save**: Applies the changes made to the alarm for the single department
5. **Save for all departments**: Applies the changes made to the alarm for all the departments

Select an alarm and click "Edit Alarm" to change the Classification Group and the Alarm Translation (that is the one that is shown on SmartPager when the alarm is received). You can save the changes for the current department only or all the departments.



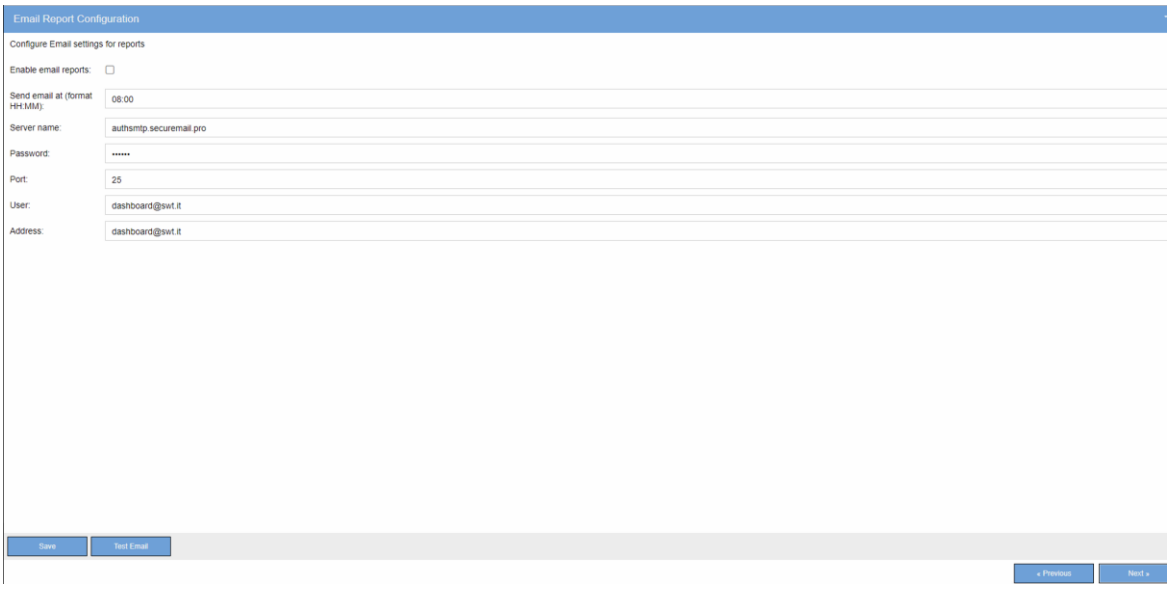
"*Download alarms validation document*" allows you to download the edited list of alarms so that for each department it is possible to test it.

NOTE: the alarms shown are active alarms. To activate an alarm that is "*Not managed*" click "*ALL*" in "*Alarm source*".

Download Alarm validation document: Alarm lists shall be exported at the end of the configuration. This document shall be acknowledged and signed by the Health Care Professional(s).

6.7. Dashboard Email Test

This section allows you to configure the email server for receiving status emails from the SmartLink installation.



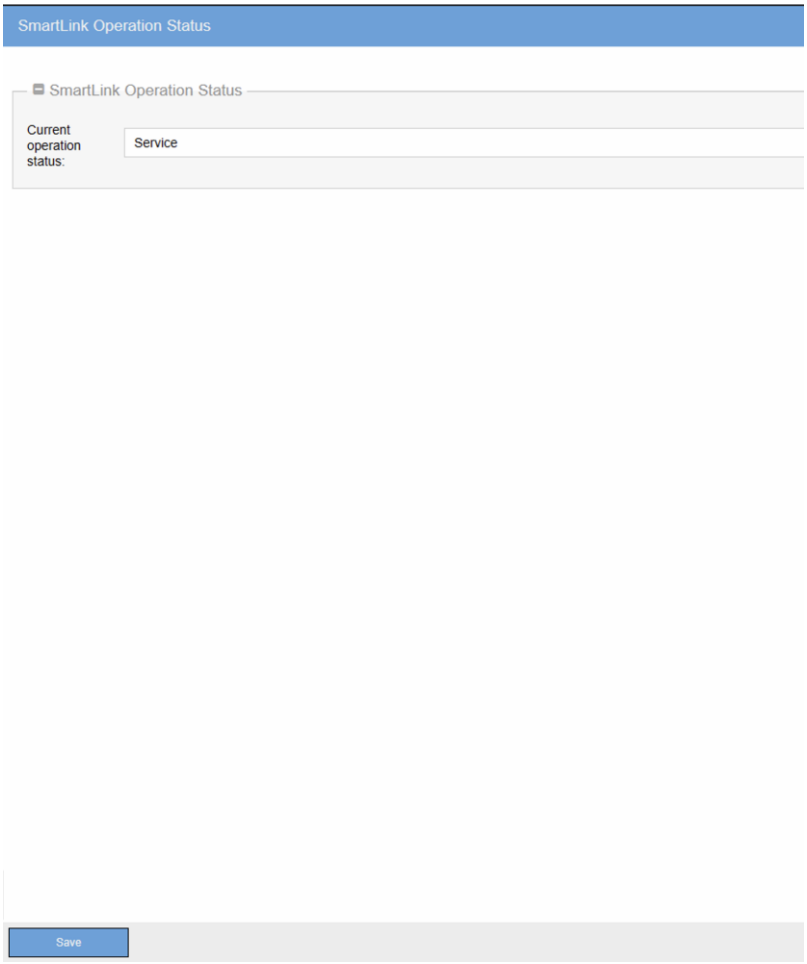
Wizard Email Report configuration

to send automatic reports of SmartLink, the following fields shall be configured:

- Server Name: Name of the email server
- Password: Password of the email server
- Port: Port used by the email server
- Schedule email: the time in which automatic reports shall be sent (reports are sent daily)

6.8. Other Options

This page shows you SmartLink's operation status mode.

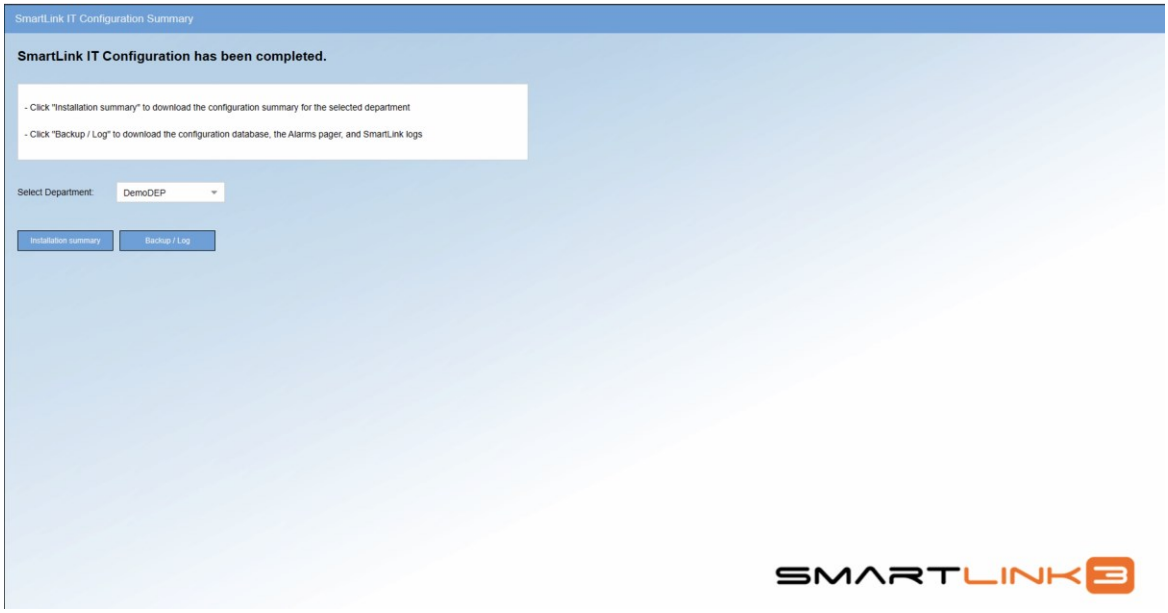


1. SmartLink mode:
    - Service: SmartLink runs as a Windows service.
    - Application: SmartLink runs as a Windows application.

6.9. Finalization

This is the last Wizard IT section. From here:

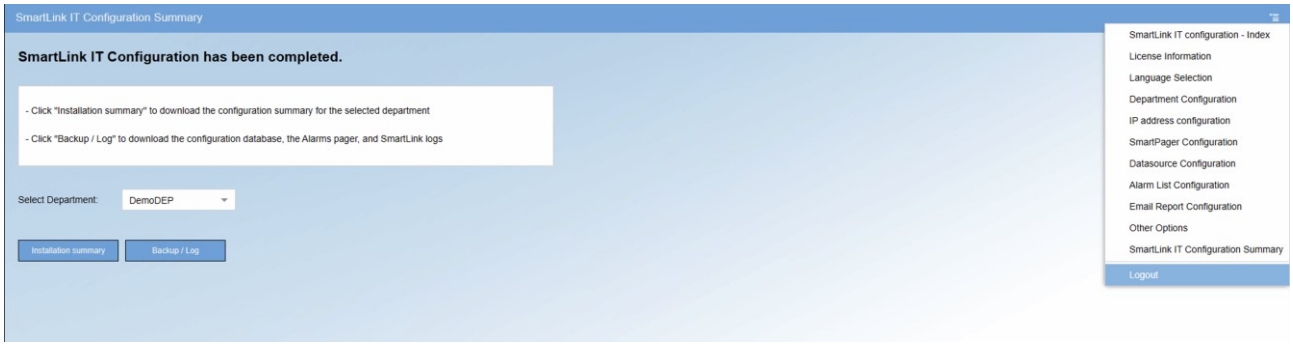
- Click "Installation summary" to download the configuration summary of the selected department.
- Click "Backup / Log" to download the configuration database of the selected department,



At the end of the installation, the technician shall download the Installation Summary validation document: This document shall be acknowledged and signed by the Health Care Professional(s), The Technician responsible for the installation and the Clinician that configured the SmartLink Server.

6.10. Logout

From the options menu, you can log out from the current session to change the user.

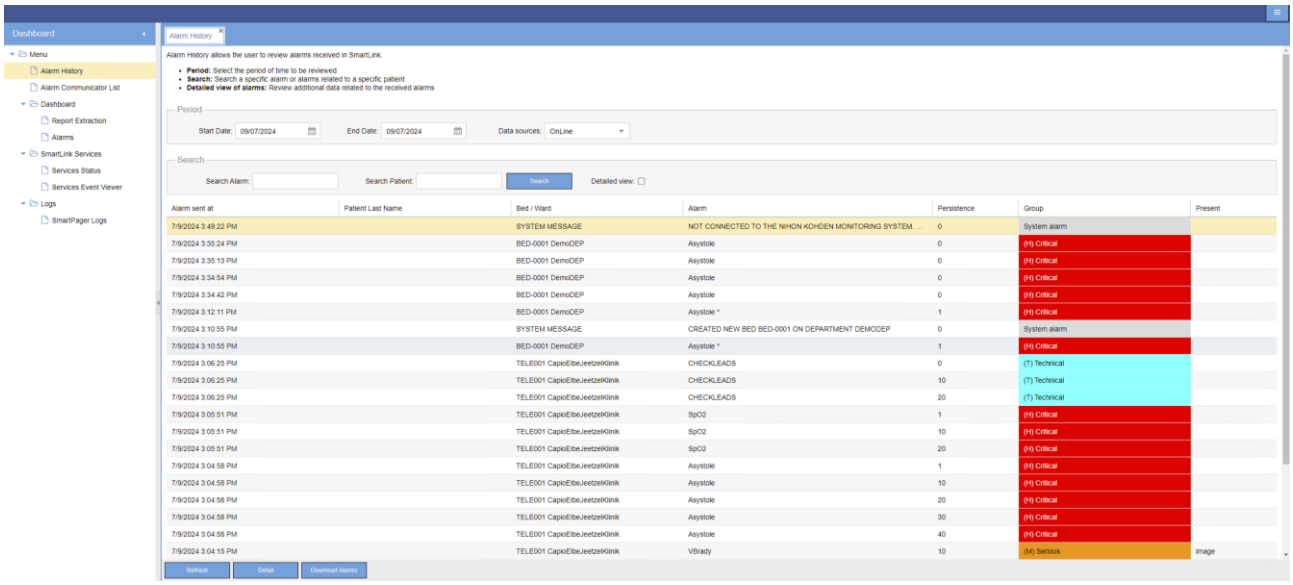


7. DASHBOARD

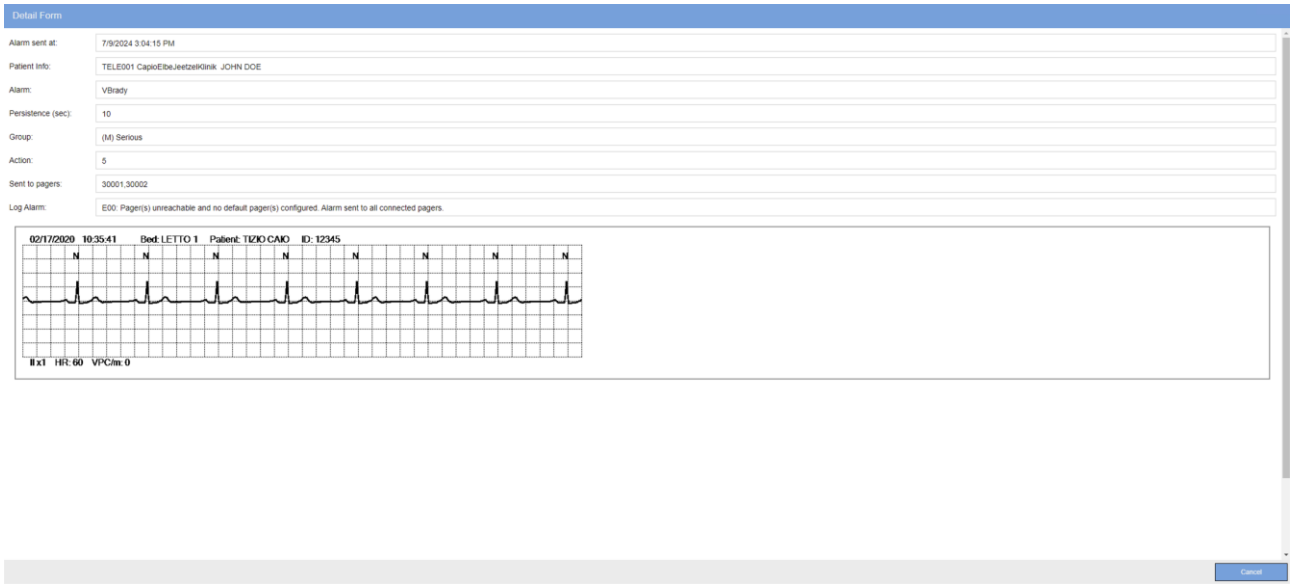
Dashboard allows the user to view and extract information regarding pagers, alarms and the system.

7.1. Alarm History

Alarm History displays an overview of alarms received by the system and sent to the pagers



Double clicking on an alarm, or clicking the “Detail” button after highlighting an alarm, will display further information of the alarm



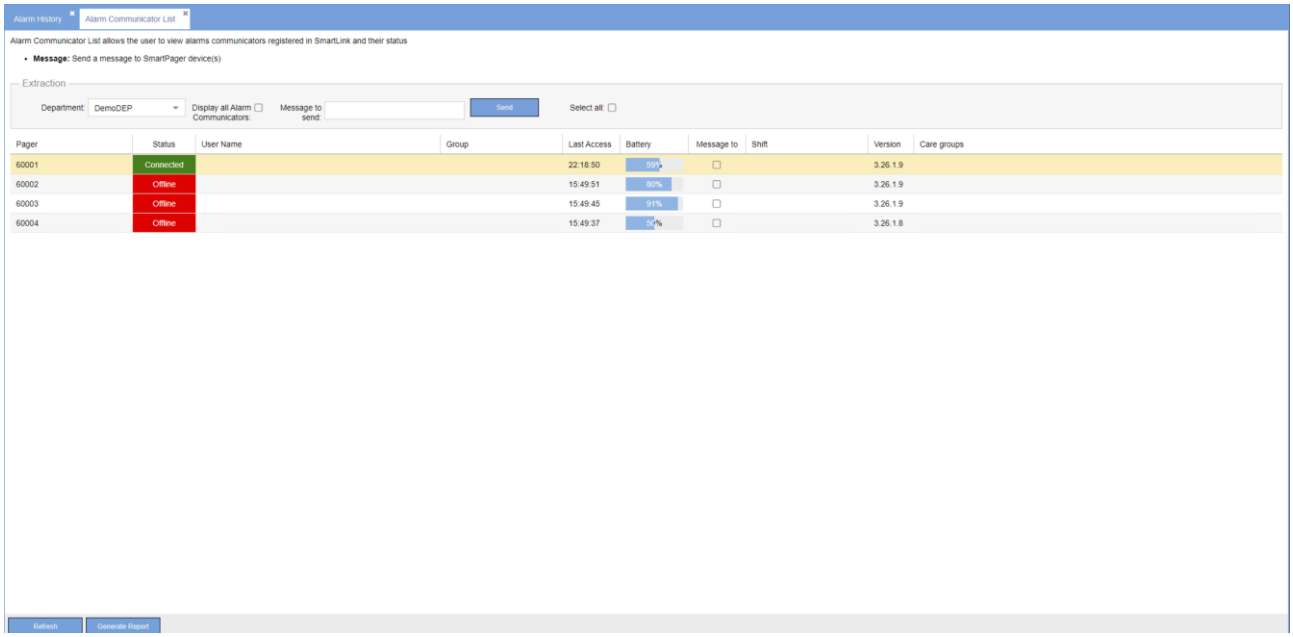
- **Alarm sent at**: date and time of the alarm being registered in the system
- **Patient info**: information regarding the source of the alarm and details about the patient

- **Alarm**: the name of the alarm
- **Persistence**: the persistence time at which the alarm has occurred
- **Group**: the severity group of the alarm
- **Action**: the escalation action which performed for that alarm
- **Sent to pagers**: pagers to which the alarm has been sent
- **Log Alarm**: log information of the alarm

An image containing the waveform data will be shown in the alarm details, if present.

7.2. Alarm Communicator List

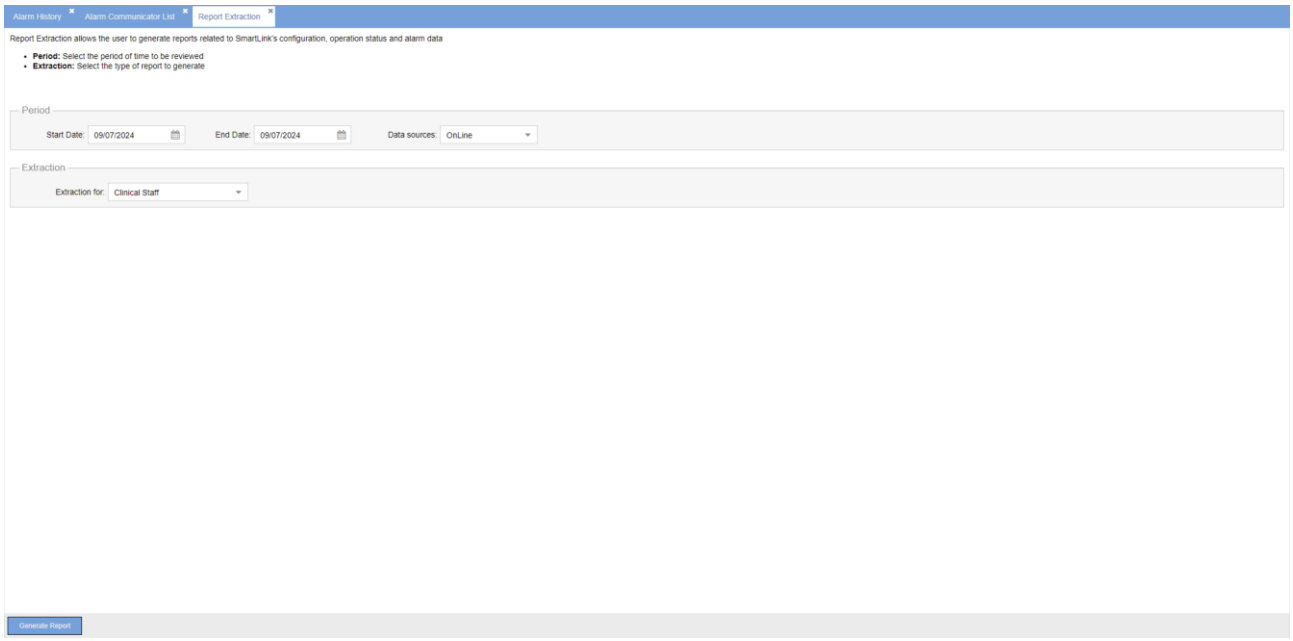
Information regarding the status of Alarm Communicators (SmartPager, MAS) can be found in the Alarm Communicator List section



Connection status, PIN, time of last access, battery levels and client versions can be found, as well as the possibility to send administrative messages to the pagers.

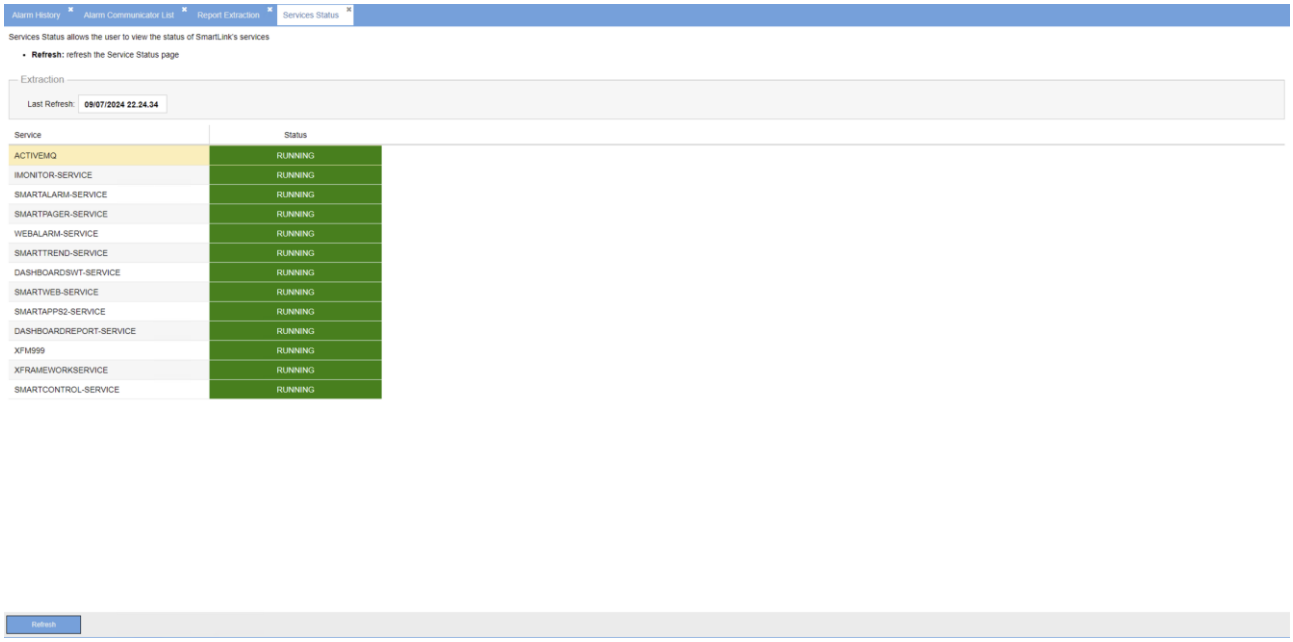
7.3. Report Extraction

Reports regarding the alarm data, operation status and configuration of the system can be generated in the “Report Extraction” section



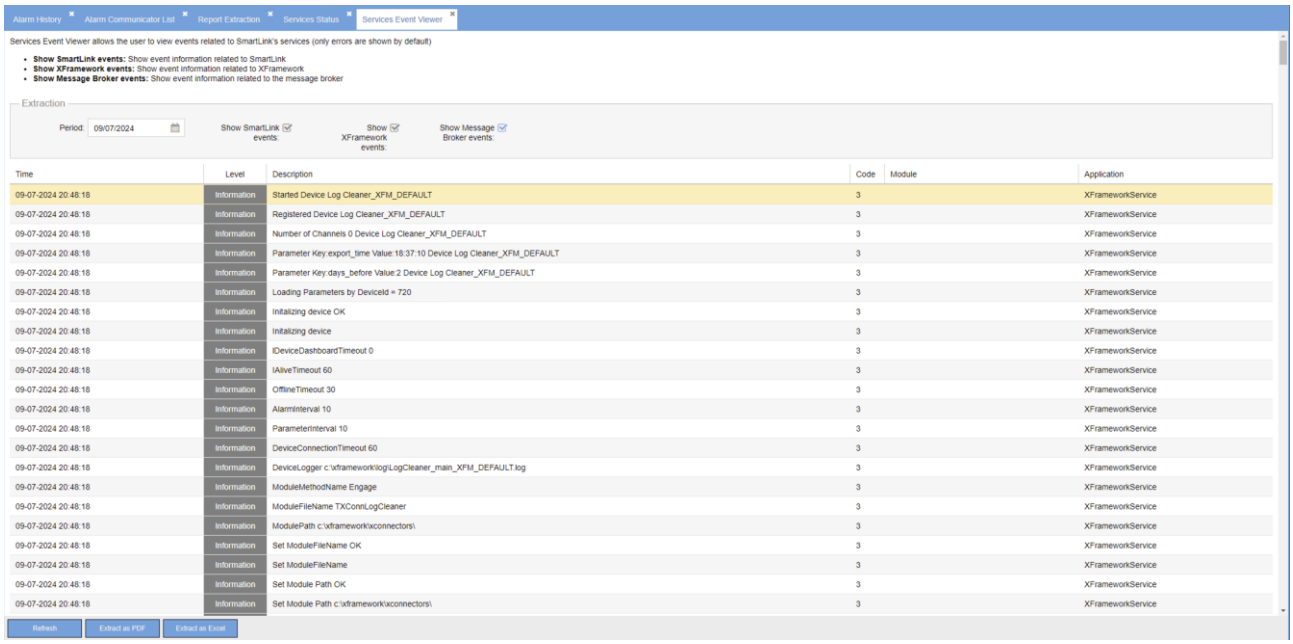
7.4. Service Status

Status information regarding SmartLink services can be viewed in the “Service Status” section



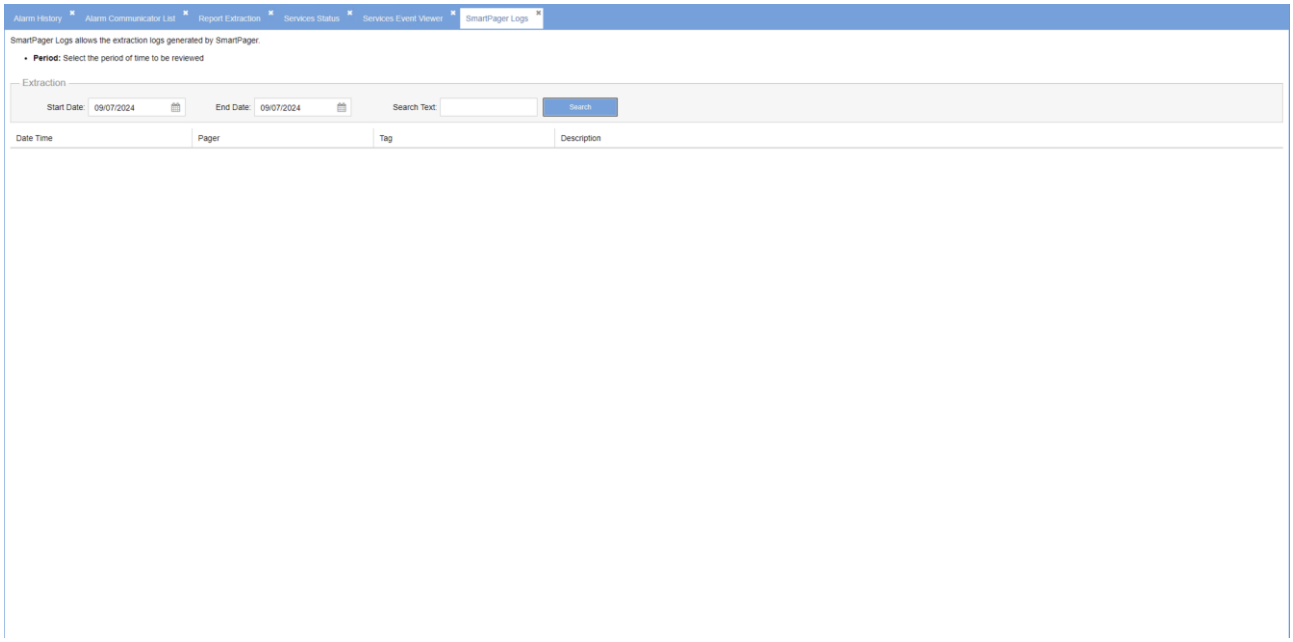
7.5. Service Event Viewer

Information regarding SmartLink, XFramework and Broker events can be found in the “Service Event Viewer” section

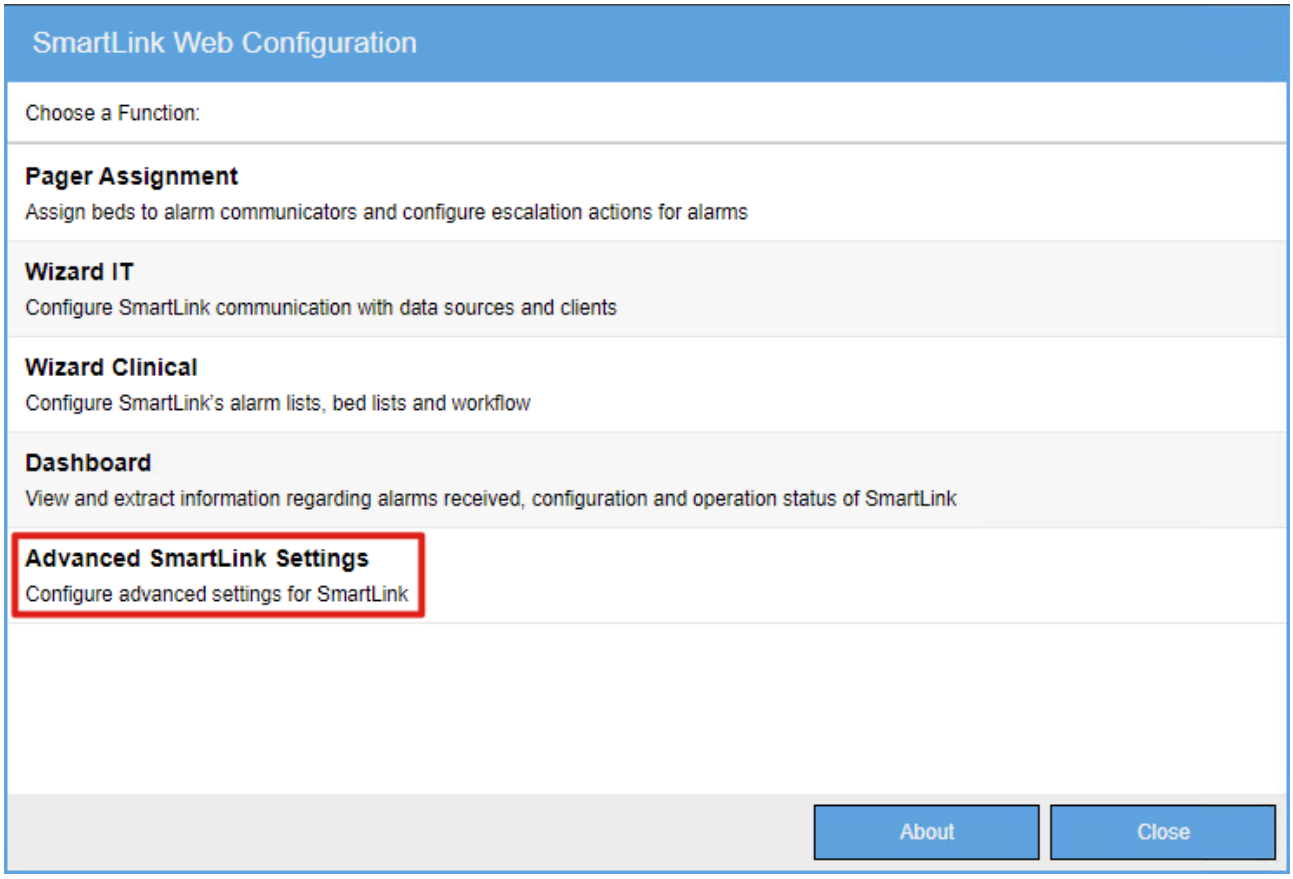


7.6. SmartPager Logs

Communication logs sent by SmartPager can be found in the “SmartPager Logs” section.



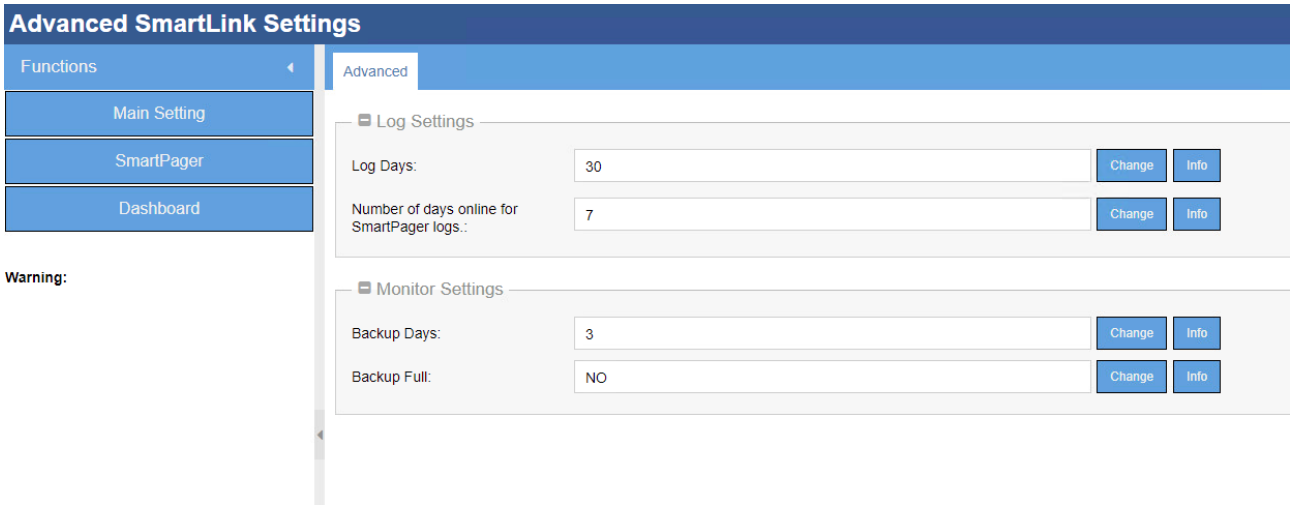
8. SYSTEM SETUP – ADVANCED SMARTLINK SETTINGS



The menu allows you to change some advance settings of the SmartLink installation.

8.1. Main Settings

SmartLink will periodically perform backups in the database.



LOG SETTINGS:

- **Log Days:** Number of days SmartLink logs are stored in the database
- **Number of days online for SmartPager logs:** Number of days SmartPager logs are stored in the database

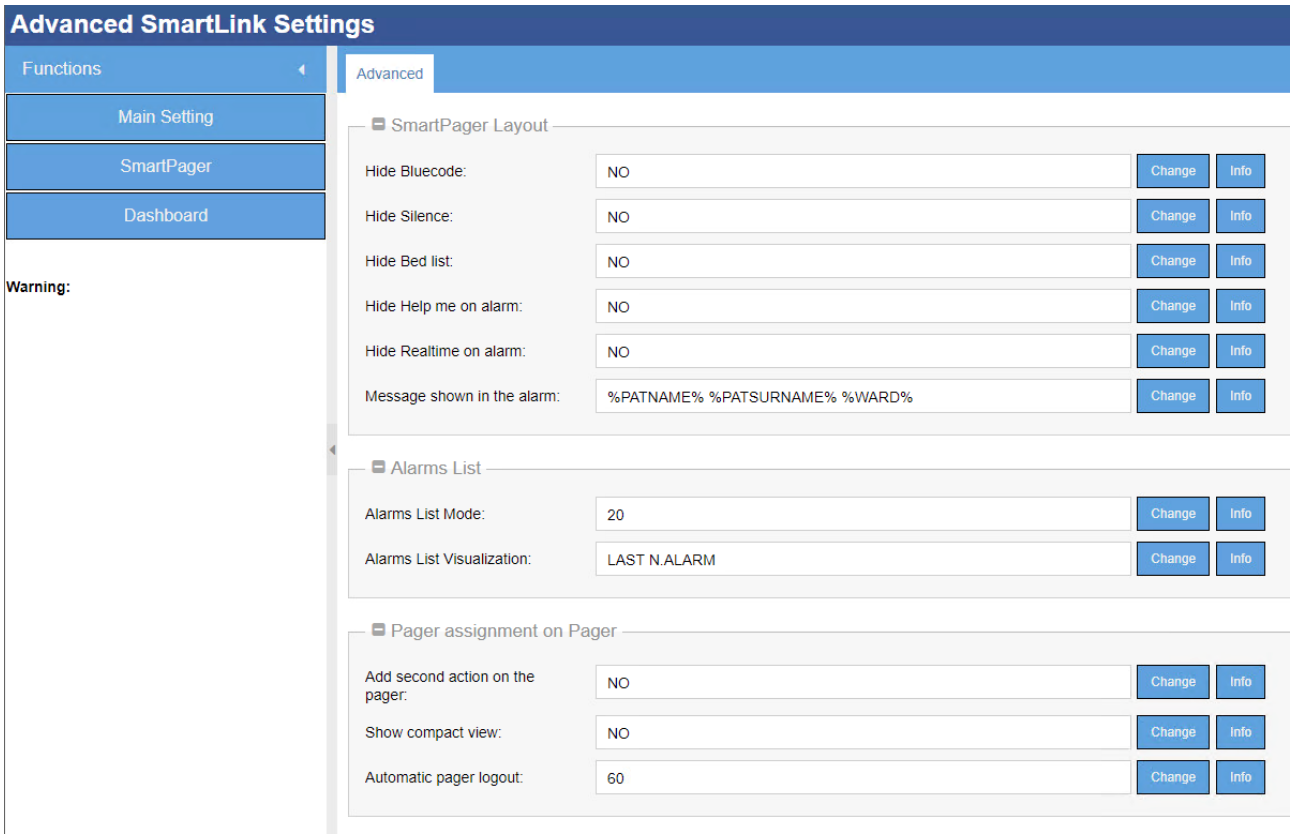
MONITOR SETTINGS:

SmartLink will periodically perform backups in the disk.

- **Backup Days:** Number of days SmartLink logs are stored in the disk.
- **Backup Full:** If set to YES, SmartLink configuration, logs and monitor data will be backed up. If set to NO, only SmartLink configuration will be backed up.

SmartLink will periodically perform backups in the disk.

8.2. SmartPager



SMARTPAGER LAYOUT:

SmartPager layout can be adjusted with the following settings:

- **Hide Bluecode:** hide the “Code Blue” slider from SmartPager
- **Hide Silence:** hide the “Silence Bed” slider from SmartPager
- **Hide Bed list:** hide the “Bed List” slider from SmartPager
- **Hide Help me on alarm:** hide the “Help Me” button from the alarm page
- **Hide Realtime on alarm:** hide the “Real Time” button from the alarm page
- **Message shown in the alarm:** define the information that shall be displayed when an alarm occurs
    - **%PATNAME%** to display the patient’s name
    - **%PATSURNAME%** to display the patient’s surname
    - **%WARD%** to display the department name

ALARM LIST:

Amount of alarms displayed in SmartPager's alarm list can be adjusted with the following settings:

- **Alarm List Mode:** a numerical value which will be used according to the visualization mode which has been set
- **Alarm List Visualization:** define how alarms will be displayed in the alarm list
    - **LAST N.ALARM:** the numerical value specified in **Alarm List Mode** is the amount of alarms displayed in the alarm list
    - **LAST N.HOURS:** alarms occurred in the last "x" hours will be displayed in the alarm list. **"x"** corresponds to the numerical value specified in **Alarm List Mode**

PAGER ASSIGNMENT ON PAGER:

Pager assignment on Pager can be adjusted with the following settings:

- **Add second action on the pager:** display the second action on SmartPager during pager assignment
- **Show compact view:** display the pager assignment grid in a compact view
- **Automatic pager logout:** if the pager does not connect to SmartLink for the specified amount of hours, its user will be automatically disassociated.

SMARTPAGER LAYOUT:

SmartPager layout can be adjusted with the following settings:

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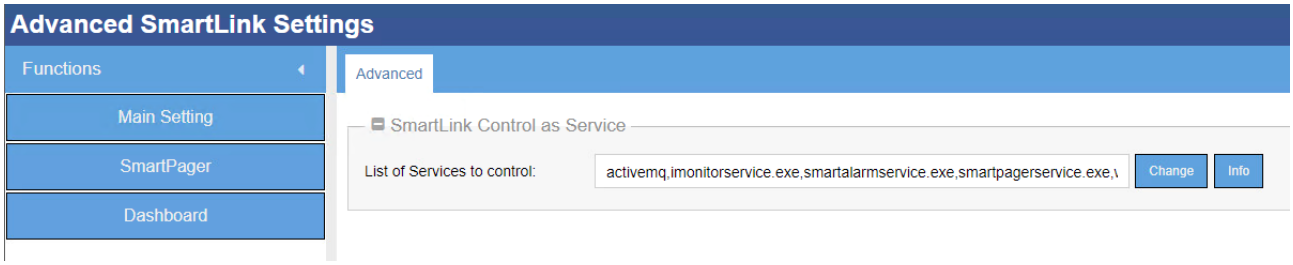
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- **Automatic pager logout:** if the pager does not connect to SmartLink for the specified amount of hours, its user will be automatically disassociated.

8.3. Dashboard



SMARTLINK CONTROL AS SERVICE:

- **List of Services to control:** Services which SmartLink will attempt to restart in case of interruption.

9. NKE - INSTALLATIONS

9.1. NKE MIGRATION

After performing the update to Rev 26, NKE installations will have to use an additional setup called "*NKE Migration REV26*".

This setup will transfer over the settings that you had customized before the update to REV 26.

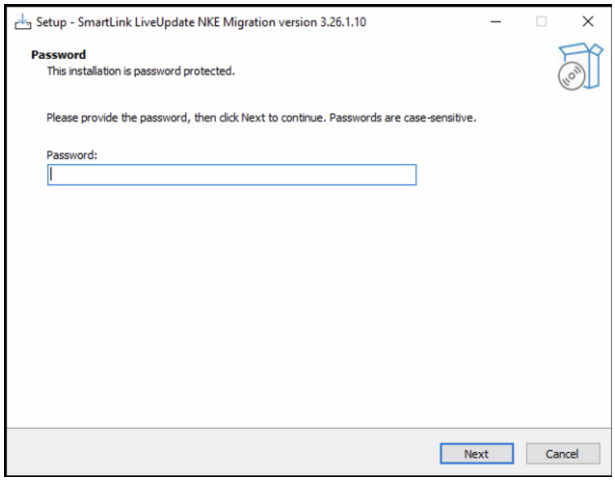
What will be transferred over are the following:

- Alarms
- Users
- Shifts
- Departments
- Escalation Rules (Actions)

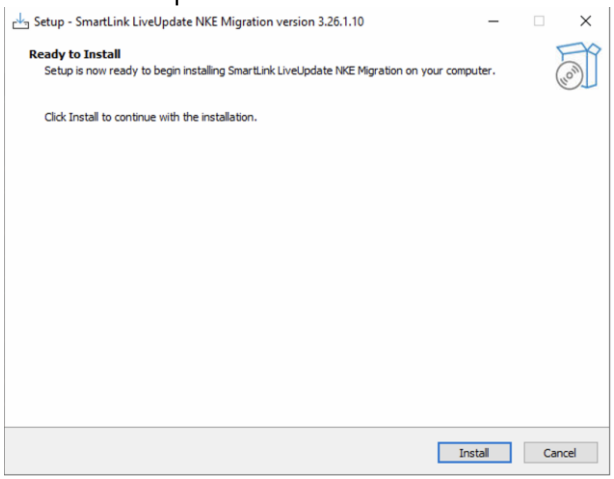
To do so, download the *SmartLink LiveUpdate NKE Migration* setup file and start the installation process by double clicking on it.

To begin the installation, follow the steps below:

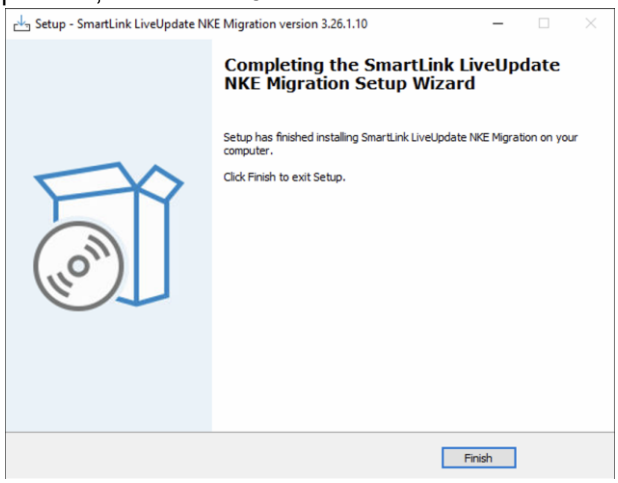
1. Insert the password and click on *Next*.



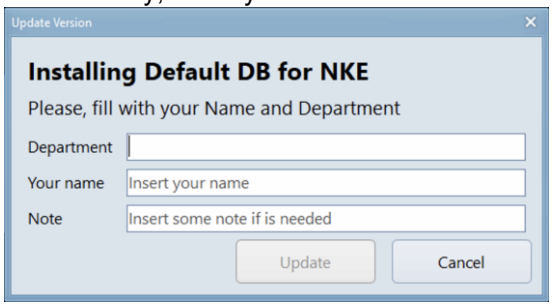
2. Click on *Install* to begin the installation process.



3. To finish the installation process, click on *Finish.*



4. To complete your Migration successfully, insert your information and click on *Update.*



10. BACKUP & RESTORE

10.1. SmartLink Installation Backup Procedure

To back up a full SmartLink installation, you will have to back up the following components:

- **SmartLink Configuration ->** The SmartLink configuration file that can be backed up from Wizard IT and downloaded to a desired location. *(For more details on how to obtain a SmartLink configuration Backup, go to the SmartLink Configuration Backup section)*
- **SmartLink Installation Directory ->** *C:\iMonitor*
- **XFramework Directory ->** *C:\xframework*

- **Main Alarm Station Directory ->** C:\Program Files\Main Alarm Station

NOTE
After you have successfully updated to SmartLink Rev 26, your SmartLink installation will already be backed up in the following directory:

C:\SmartLink_Backup

This directory will contain:

- SmartLink installation directory
  - *"C:\SmartLink_Backup\iMonitor_Backup dd-mm-yyyy hh;mm;ss"*
- XFramework directory
  - *"C:\SmartLink_Backup\xframework_Backup dd-mm-yyyy hh;mm;ss"*
- Main Alarm Station directory
  - *"C:\SmartLink_Backup\Main Alarm Station_Backup dd-mm-yyyy hh;mm;ss"*
- Database Backup directory
  - *"C:\SmartLink_Backup\DB_Backup"*

They will be used during the restore phase to restore the SmartLink installation to the state that it was backed up in.

10.2. SmartLink Installation Restore Procedure

The Restore process will enable you to restore a previously backed up SmartLink installation, using a Backup obtained from the "Backup Phase" Section (Please refer to the "Backup Phase" for more details on how to obtain a complete SmartLink backup).

For the sake of simplicity, it is going to be assumed that your SmartLink installation backup is stored in the default backup location -> *C:\SmartLink_Backup.*

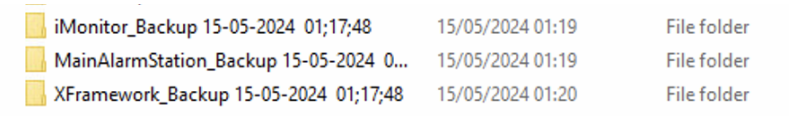
If you moved your SmartLink installation backup folders to a different location, remember to refer to your new location, and follow the steps accordingly.

To start off, make sure to stop all the SmartLink and XFramework services, before following the steps below.

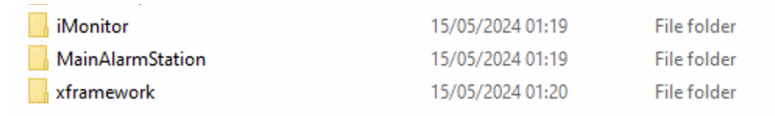
Restore the installation folders:

1. Delete the following directories:
    a. C:\iMonitor
    b. C:\Program Files\Main Alarm Station
    c. C:\Xframework
2. Take the installation folders you backed up previously and that you want to restore, and rename them in the following manner:
    a. *C:\SmartLink_Backup\iMonitor_Backup dd-mm-yyyy hh;mm;ss -> Imonitor*
    b. C:\SmartLink_Backup\XFramework_Backup dd-mm-yyyy hh;mm;ss -> xframework
    c. C:\SmartLink_Backup\Main Alarm Station_Backup dd-mm-yyyy hh;mm;ss -> Main Alarm Station

Before



After



3. Copy the renamed folders to their respective directories like described below:
    a. C:\SmartLink_Backup\iMonitor -> C:
    b. C:\SmartLink_Backup\xframework -> C:
    c. C:\SmartLink_Backup\Main Alarm Station -> C:\Program Files

You should end up with the following directory tree:

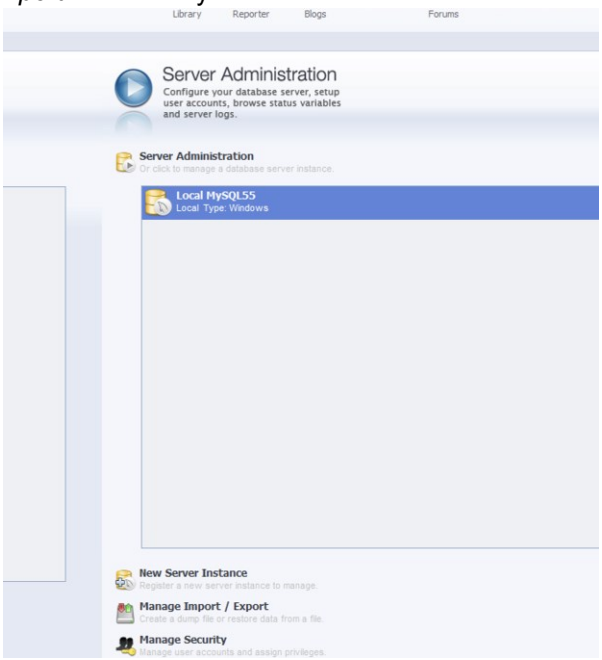
```
C:/
├── iMonitor
├── xframework
└── Program Files/
    └── MainAlarmStation
```

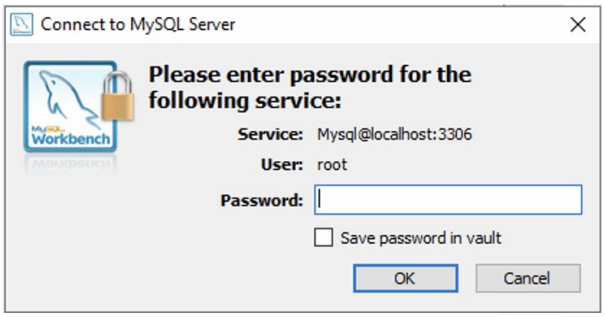
Restoring Database:

To complete the restore phase, you will have to restore the SmartLink Database.

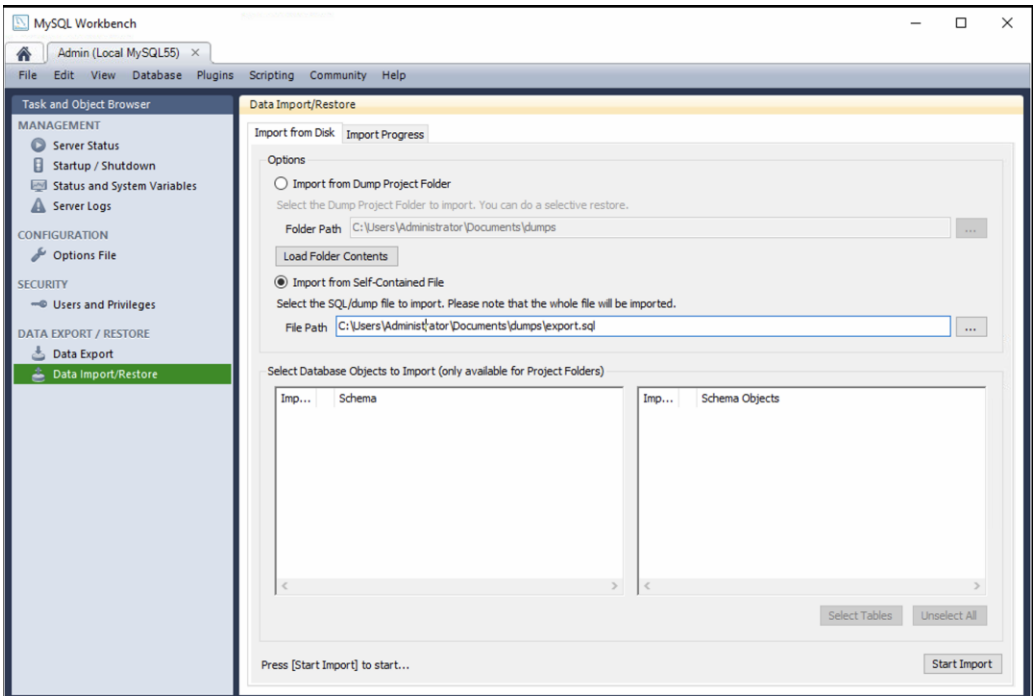
To do so, follow the steps below:

- Open MySQL Workbench
- Click on *Import/Export* and insert your user credentials.



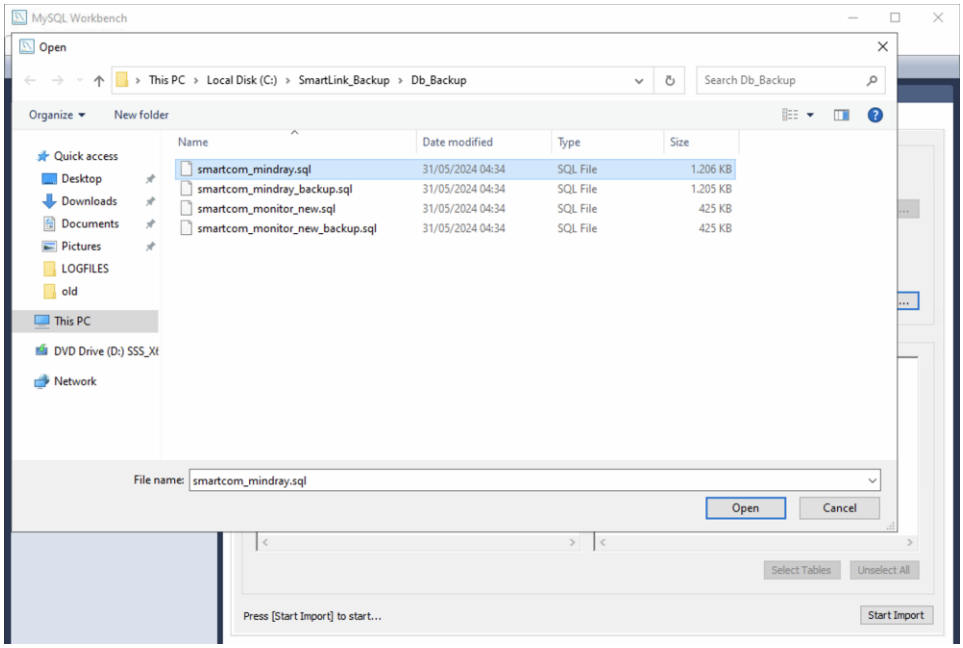


- Click on *Data Import/Restore*

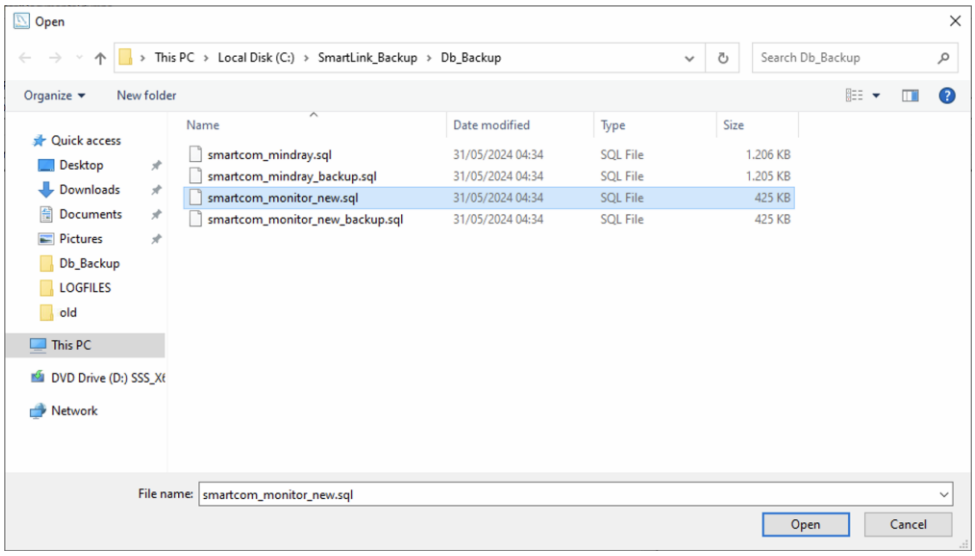


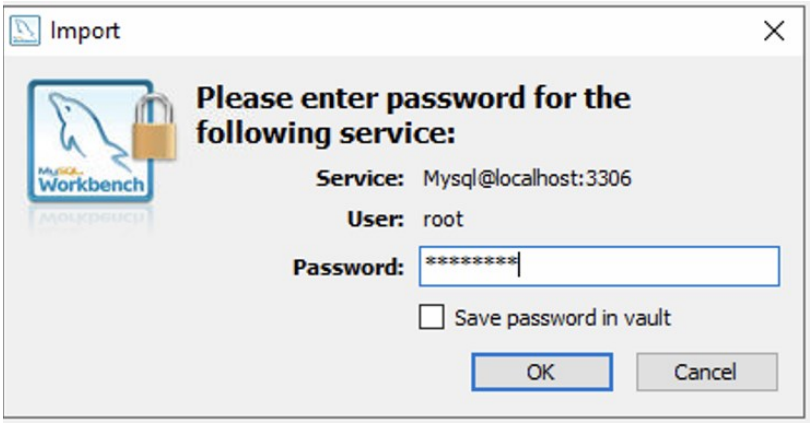
- Select *Import from Self-Contained File* and click on the "…" (*Browse button)* to select the database backup to restore.
    - We will be restoring the following two files to restore the two databases used by SmartLink:
        - *C:\SmartLink_Backup\DB_Backup*

- smartcom_mindray.sql
- smartcom_monitor_new.sql



- So first, restore *smartcom_mindray* by selecting *smartcom_mindray.sql*
  - Click on *Open*
  - Click on *Start Import* and insert the password when prompted to confirm.
- Now restore *smartcom_monitor_new* by selecting *smartcom_monitor_new.sql*
  - Click on *Open*
  - Click on *Start Import* and insert the password when prompted to confirm.

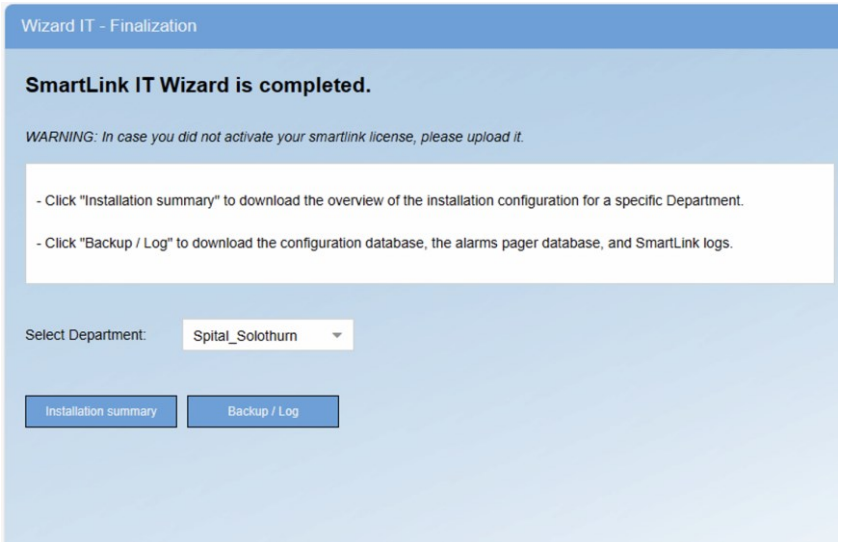




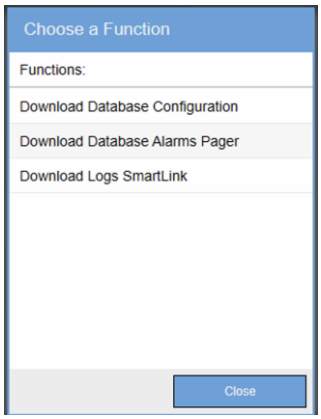
10.3. SmartLink Configuration Backup

To back up the SmartLink Configuration follow the steps below:

1. Open the SmartLink It Wizard
2. Navigate to the *Finalization* page.



3. Click on "*Backup / Log"* button and choose the function "*Download Database Configuration"*



4. Your SmartLink configuration backup will be downloaded to the *Downloads* folder.
   a. Extract the *.sql* file and copy it to a safe location. This file will be used to restore your configuration during the SmartLink Configuration restore phase.

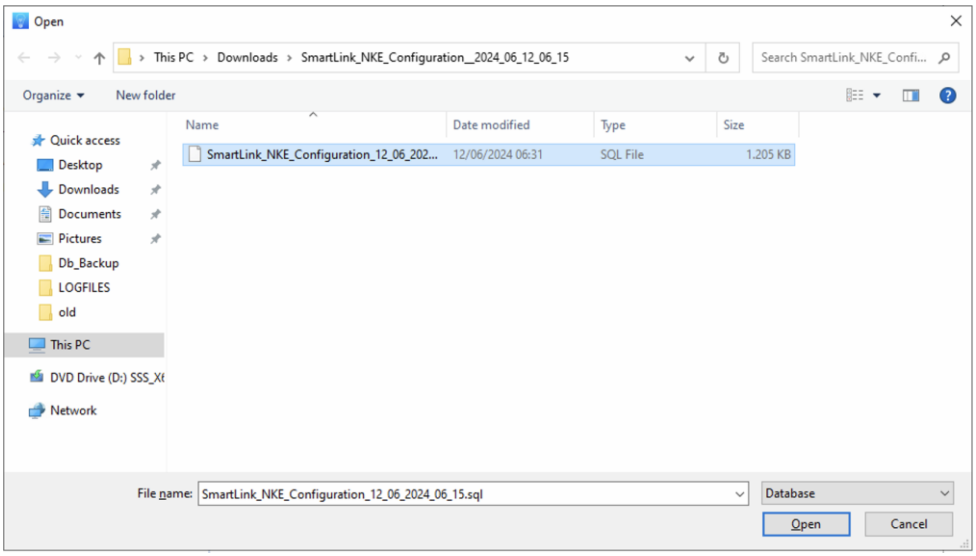
10.4. SmartLink Configuration Restore

To restore a SmartLink Configuration Backup, stop all the SmartLink and XFramework services and follow the steps below.

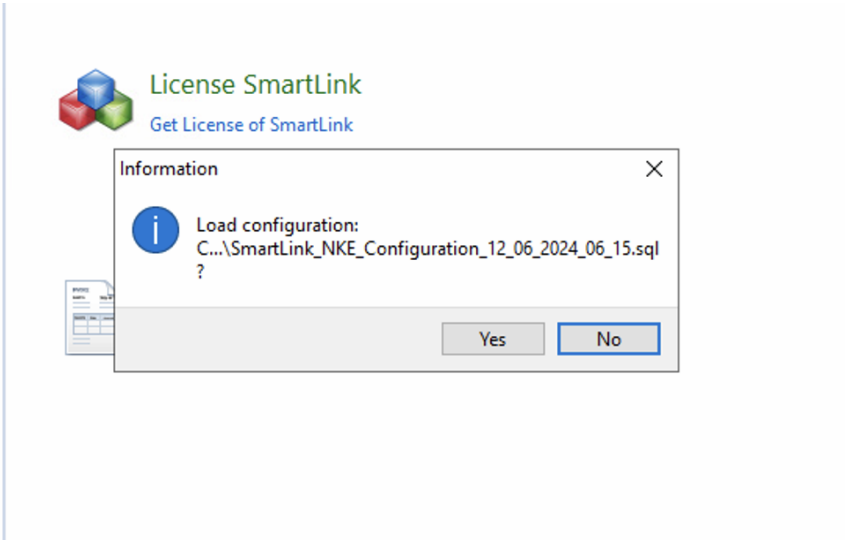
1. Open ***StartSmartLink***, click on ***Settings*** and finally on ***SmartLink Configuration***

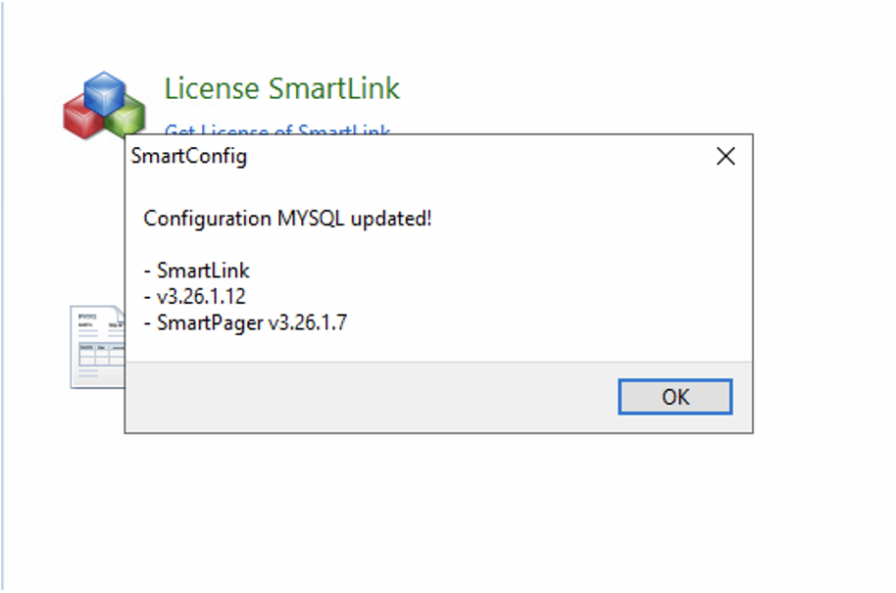


2. Login using the administrator credentials and click on *Log/Backup*
   - Choose *Load Data* and then click on *Load Configuration*
3. Navigate to the directory in which you have stored your SmartLink configuration backup file, select it and click on *Open.*



4. Click on *Yes* to confirm and then on *Ok*



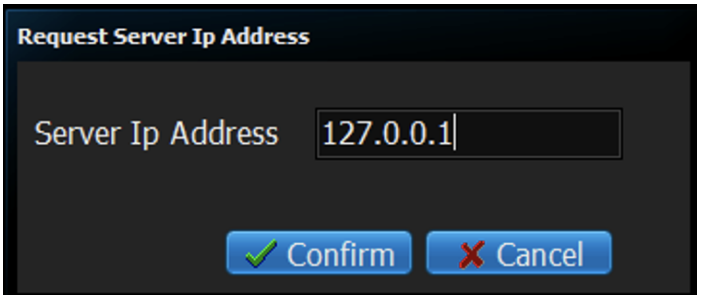


11. MAIN ALARM STATION CONFIGURATION

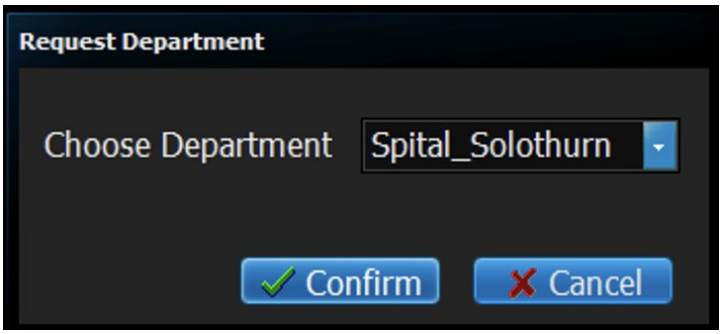
Note: *to install the Main Alarm Station on a separate machine, retrieve the installer from the SmartLink server machine from the following path: C:\iMonitor\SetupModules*

To configure the Main Alarm Station start it by double clicking on the shortcut on the desktop.

On its first boot, the Main Alarm Station will prompt you for the SmartLink server ip adress, insert it and click on *Confirm.*



Choose the department from which you want to receive alarms and press again on *Confirm.*

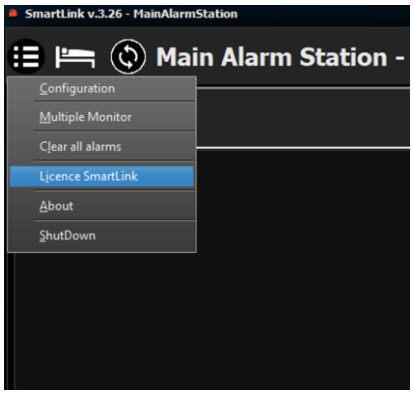


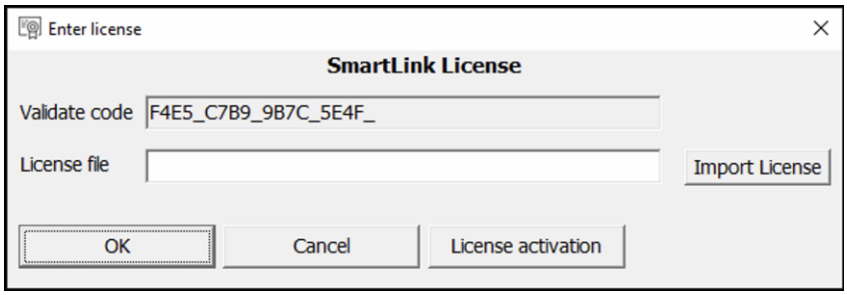
11.1. License

To use the Main Alarm Station, you need a valid license.

NOTE: License can be requested at https://www.swt.it/smartlink-license-activation/

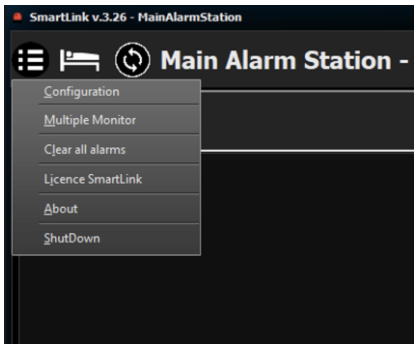
Once you have received the license, to import it you have to navigate to the upper left corner and click on the menu button and, choose *License SmartLink*.

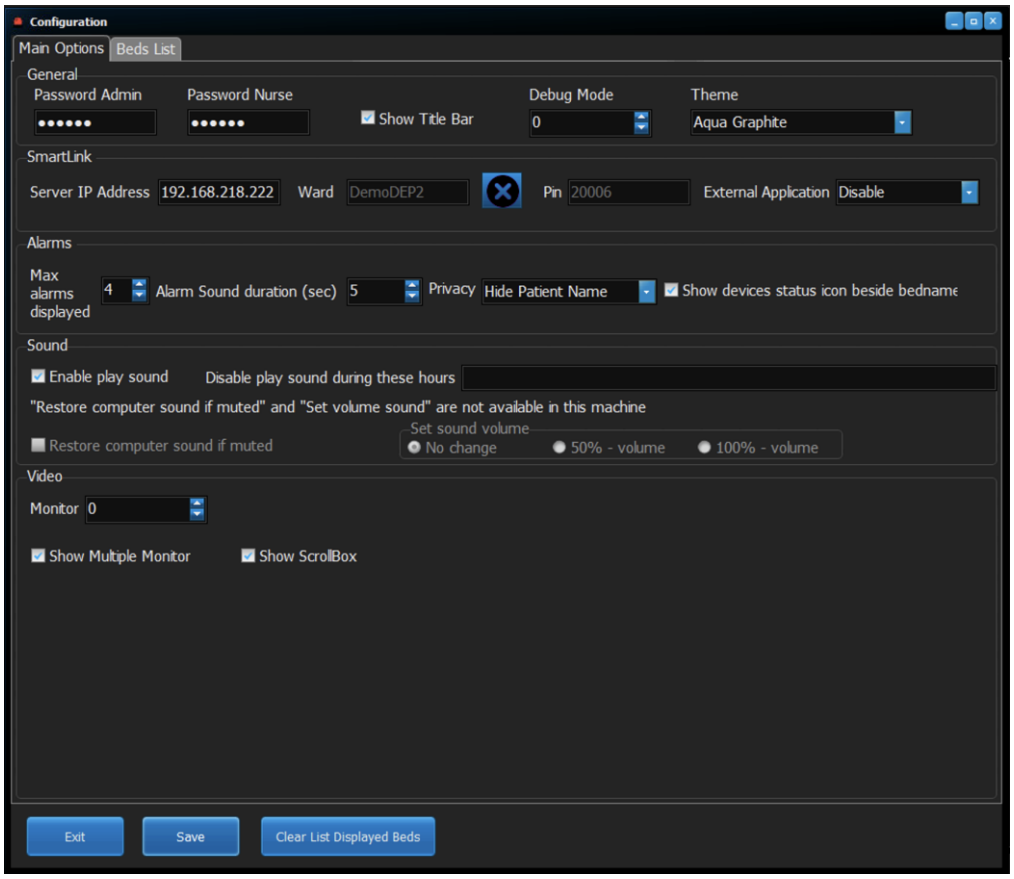




11.2. Configuration

In the upper left corner, you can access the Main Alarm Station configuration by clicking on the menu button and then on *Configuration*





General:

- Password Admin: Administrator password
- Password Nurse: Password used by the nurse to access bed configuration menu
- Show title bar: Shows the task bar when checked and hides it when deselected
- Debug Mode: This option is reserved for the Software Team technicians and is for debugging purposes
- Theme: lets you apply a theme from the available themes through the dropdown menu
- Server IP address: IP address of the SmartLink server
-  : Resets the assigned PIN number and resets the department to which the MAS was connected
- External Application: Enables the use of a third party integrated program (e.g. Vitrac)

Alarms:

- **Max Alarms Displayed**: Maximum number of alarms that shall be displayed at the same time under the bed name on the main screen
- **Alarm Sound Duration**: The number of seconds the alarm shall sound for
- **Show devices status icon beside bed name**: shows the connection status next to the bedname
- **Privacy**:
  - Hides the patient's information
  - Masks patient information (substituting the patient's info with asterisks
  - Show patient name: Shows the patient's information

Sound:

- **Enable play sound**: enables sound
- **Disable play sound during these hours**: disables sound during the hours specified in the field (e.g. 12, 13, 14 etc)
- **Restore computer sound if muted**: re-enables the machine's sound if muted on an operating system level.
- **Set sound volume**: sets the volume to 50%, 100% or follows the operating system level.

Video:

- **Show multiple monitor**: lets you move the Main Alarm Station window to the desired screen
  - Monitor: The screens follow the numbers assigned by the operating system
- **Show scrollbox**: shows a scrollbox on the main screen

Buttons:

- Exit: allows you to exit from the menu
- Save: allows you to save your configuration

For more information about the Main Alarm Station, please refer to the following manual:

SL – User Manual v01 Chapter 6.