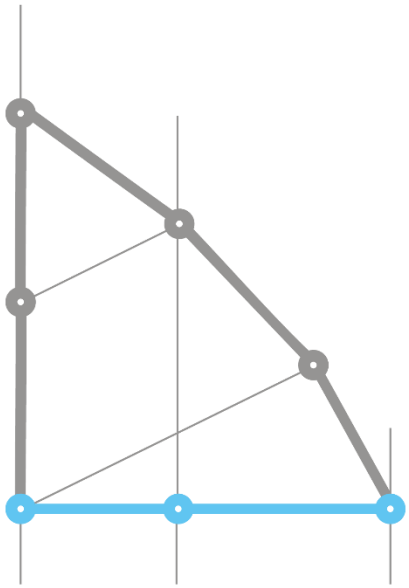


shark
platform

Shark Platform

Installation Manual 2025 R1

Contents

NON-DISCLOSURE & CONFIDENTIALITY CLAUSE

This document contains Systeminence proprietary information and is supplied to you purely to enable you to evaluate details concerning Systeminence products and services. This document (including any part hereof) is not to be disclosed or transferred outside your organization without prior written consent of a duly authorized representative of Systeminence and may not be copied or reproduced in any form or by any means except internally within your organization to enable such evaluation. It is submitted based on the information currently available to Systeminence. None of the information contained in this document shall be contractually binding unless and until this document is accepted and executed by the parties.

Copyright, trademarks, and disclaimer

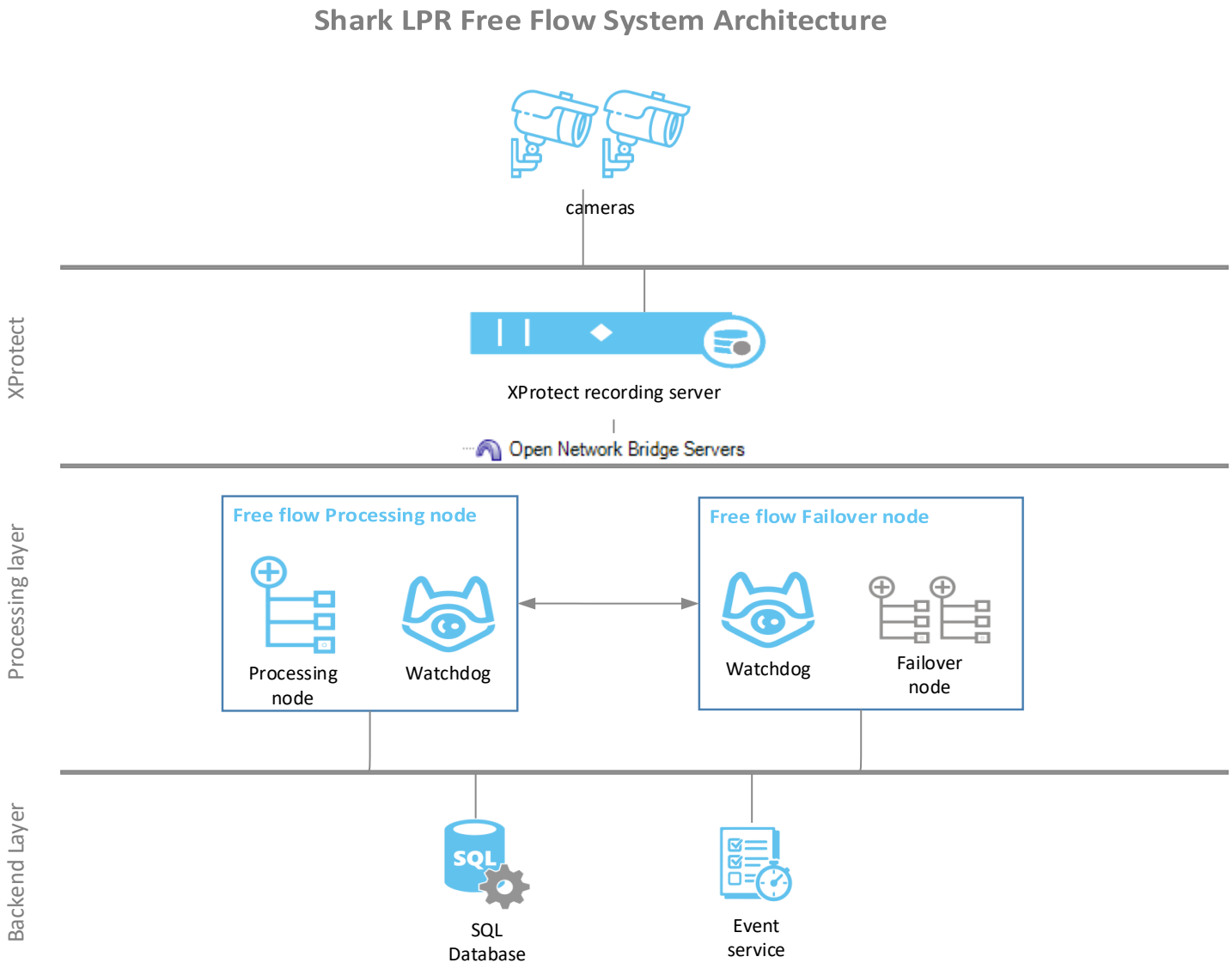
Trademarks

Shark Platform is a registered trademark of Systeminence Offshore SAL.
Microsoft and Windows are registered trademarks of Microsoft Corporation.
All other trademarks mentioned in this document are trademarks of their respective owners.

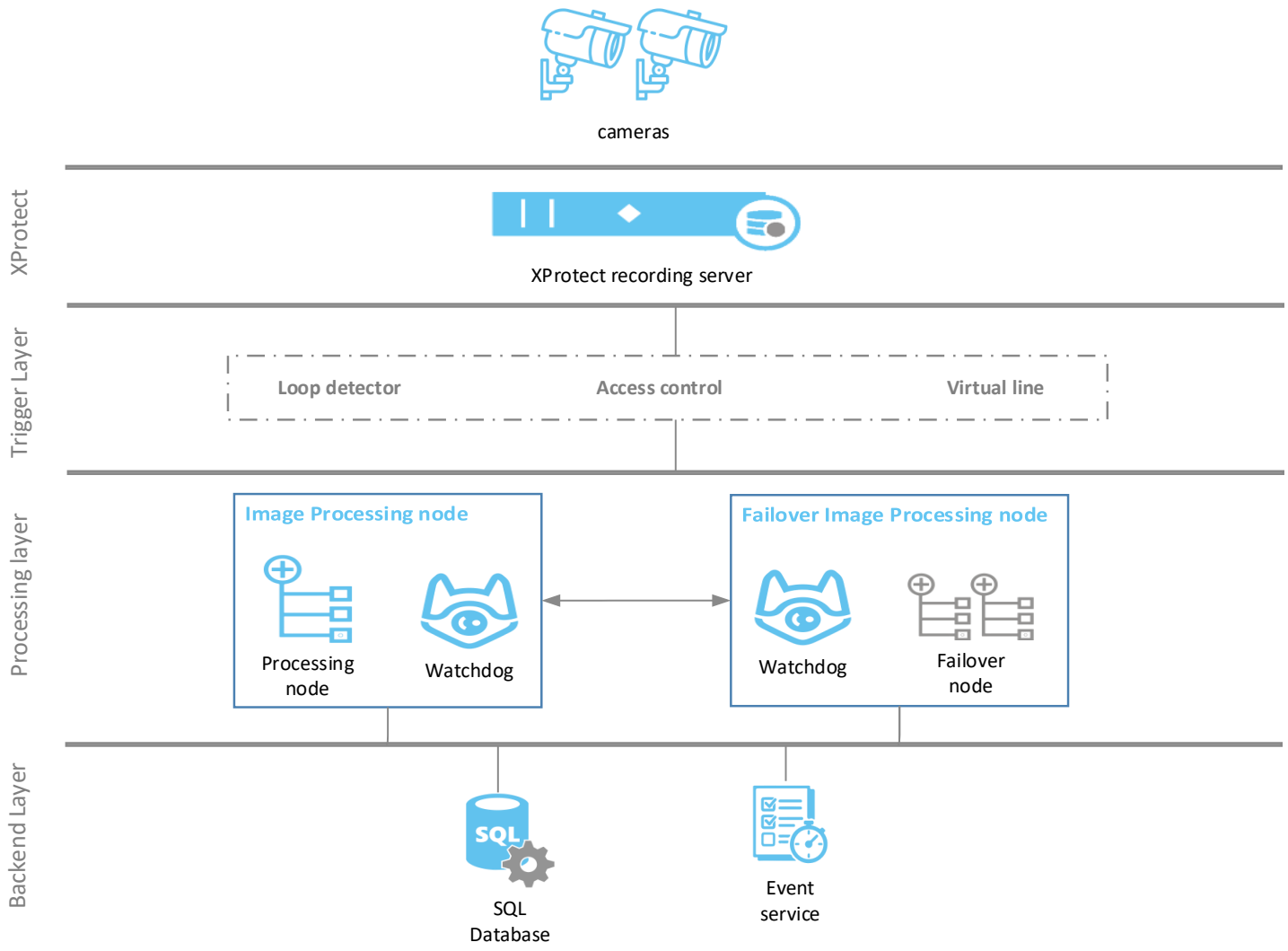
Disclaimer

This text is intended for general information purposes only, and due care has been taken in its preparation.
Any risk arising from the use of this information rests with the recipient, and nothing herein should be construed as constituting any kind of warranty.
Systeminence Offshore SAL reserves the right to make adjustments without prior notification.

System architecture and components

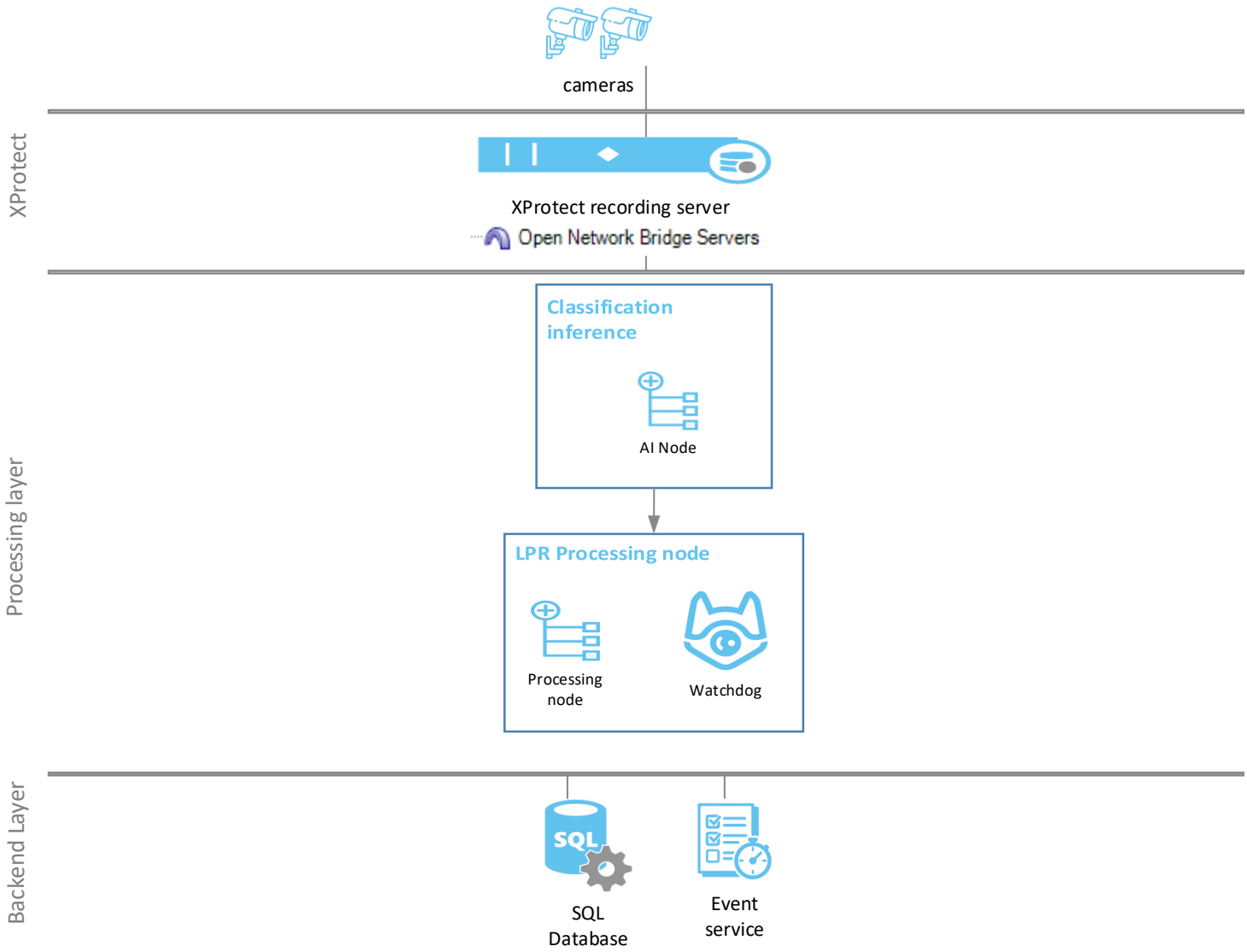


Shark LPR Entrance System Architecture

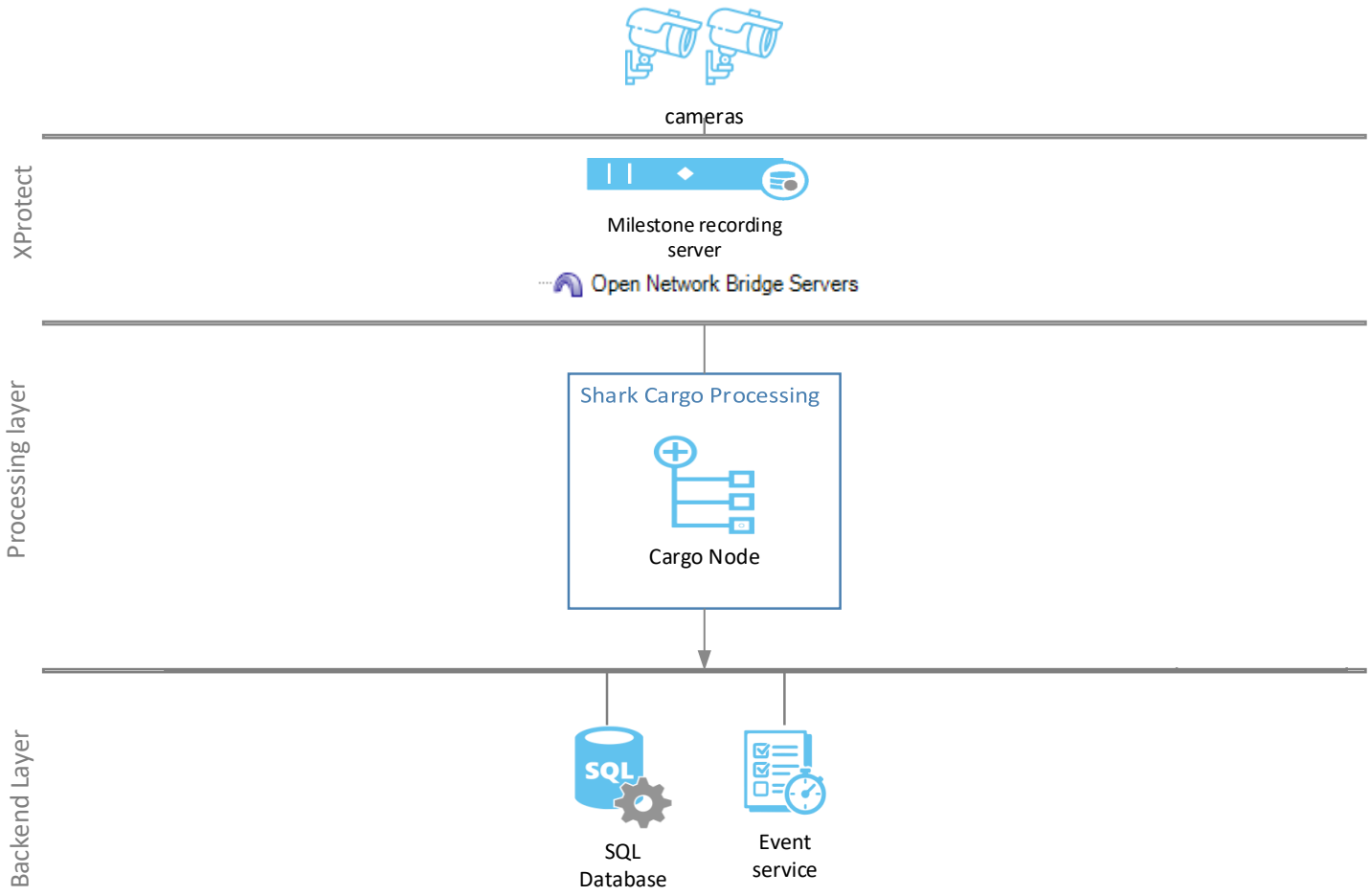


systeminence

Shark AI System Architecture



Shark Cargo System Architecture



Pre-Installation requirements

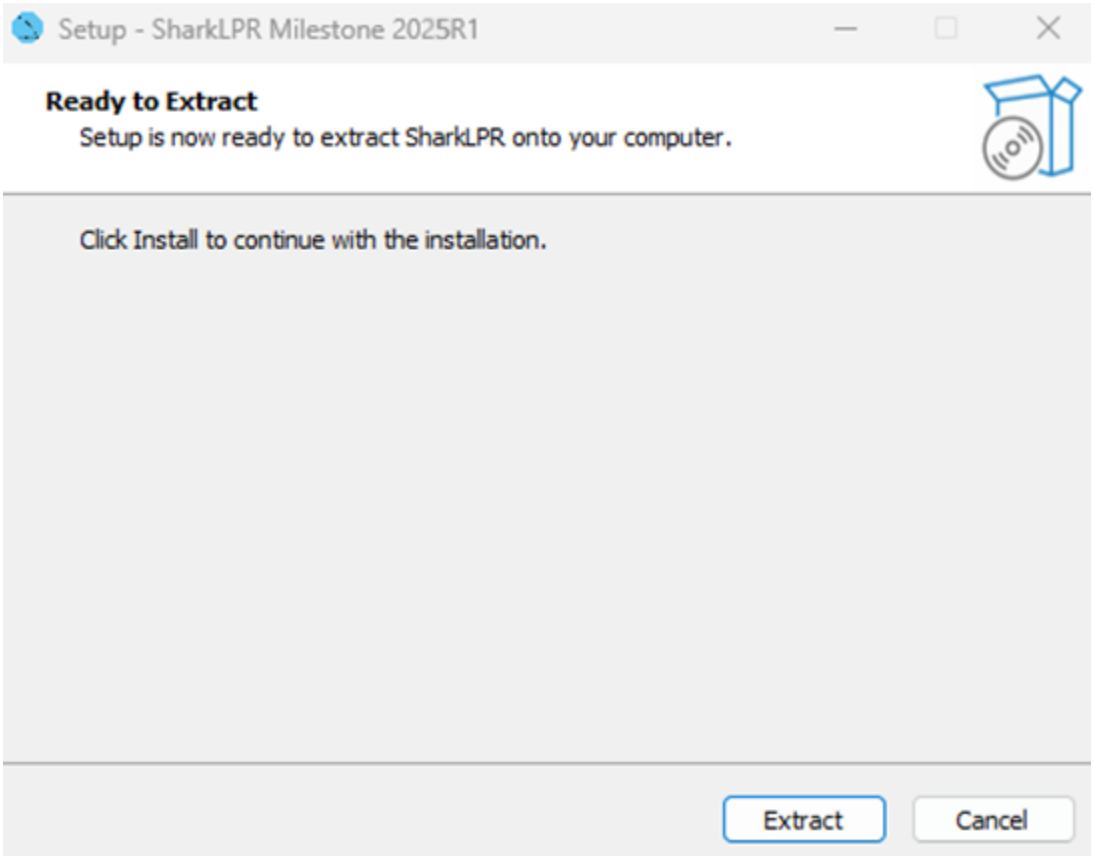
To successfully install the Shark license plate recognition system, you must ensure the following prerequisites are met:

- SQL server 2019 or above must be installed. You can download it from the provided LINK. To note that SQL client authentication should be enabled on the SQL server and the provided user shall have “sysadmin” rights
- Visual C++ 2015-2022 Redistributable will be installed during the installation of Shark LPR. In case of installation failure, please download it from the provided LINK.
- .NET framework 4.8 will be installed during the installation of Shark LPR. In case of installation failure, please download it from the provided LINK.
- Your NVidia GPU driver version should be 14.1722 or higher. You can check your GPU driver version by opening CMD and typing "NVIDIA-SMI".
- Lastly, you'll need to install the IIS feature and enable ASP.NET versions 3.5 and 4.7. However, if you need to install Shark Platform on the same machine as XProtect, these features will already be installed.

Shark LPR Installation

Extraction

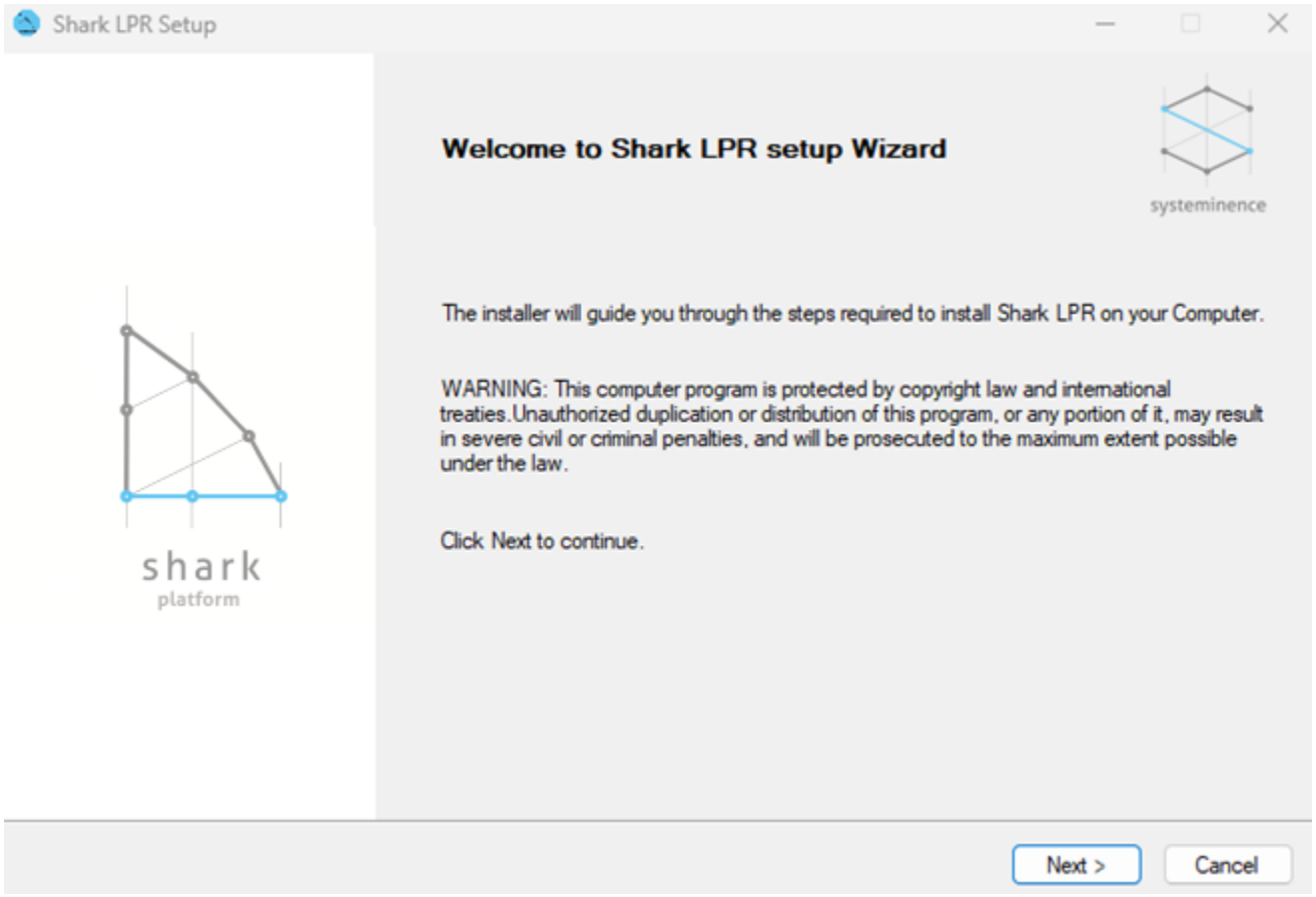
After downloading the SharkLPR application, it's essential to first unblock the executable file to prevent Windows security restrictions from interfering with the installation. To do this, locate the downloaded SharkLPR.exe file and right-click on it, then select "Properties" from the context menu. In the Properties dialog, look for the "General" section at the bottom and check the "Unblock" checkbox if present, then click "OK" to apply the changes. This step is crucial as Windows may block downloaded executable files as a security measure, and unblocking ensures the application can run properly.
Once you've unblocked the file, double-click the SharkLPR .exe application to begin the installation process. The extraction wizard will automatically start and display the extraction destination path where the package files will be extracted. The default extraction location is set to **C:\windows\temp\sharkLPR**, though you can modify this path if you prefer to extract the files to a different directory. The wizard interface will show you the selected destination and provide options to browse for an alternative location if needed.



Follow the steps below to successfully install the shark License Plate Recognition (LPR) System.

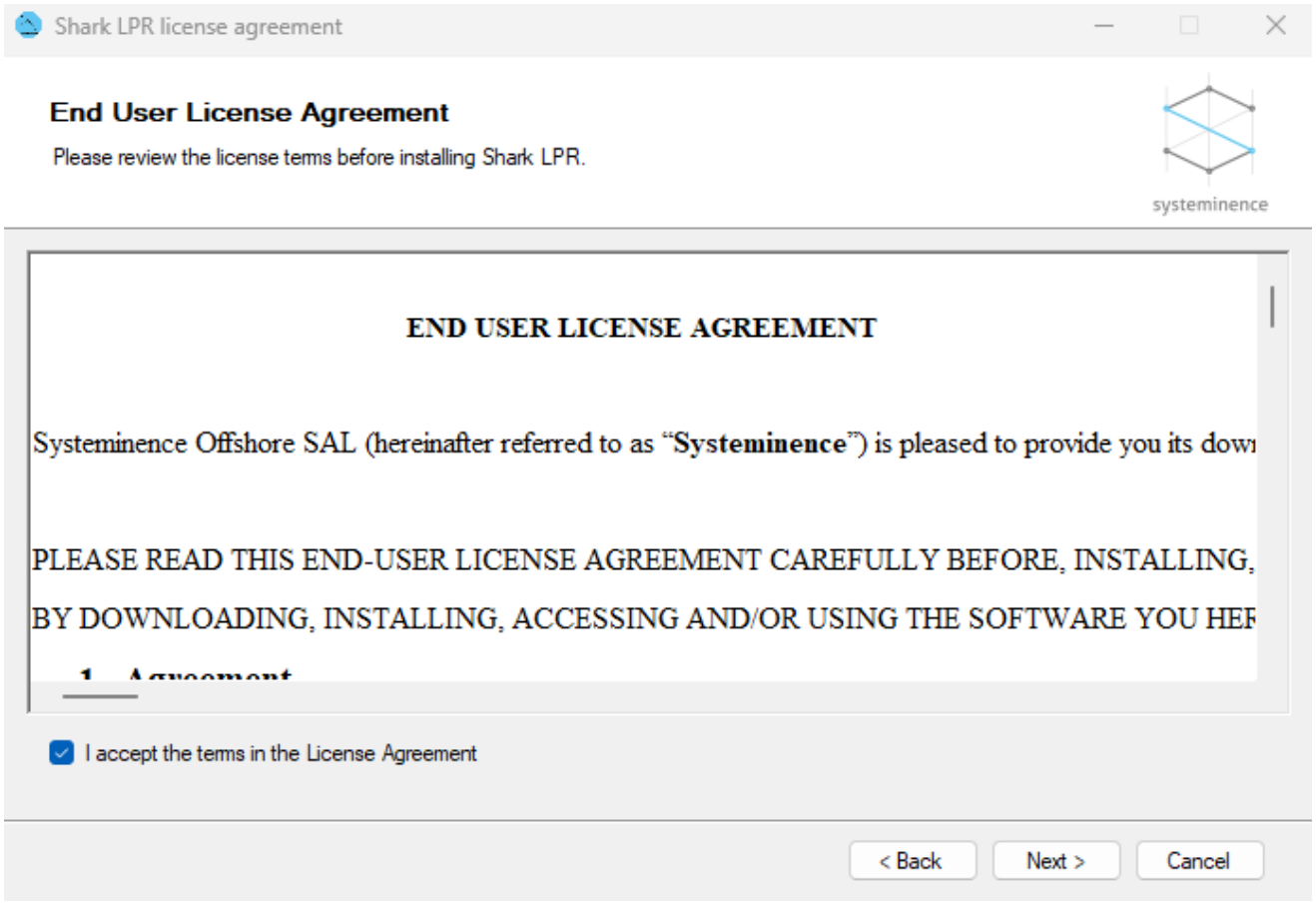
Initial Installation

- Right-click on the Shark LPR Installer.exe and select "Run as administrator".
- In the welcome screen that appears, click “Next”.



End User License Agreement (EULA)

Read and accept the End User License Agreement (EULA), then click “Next”.

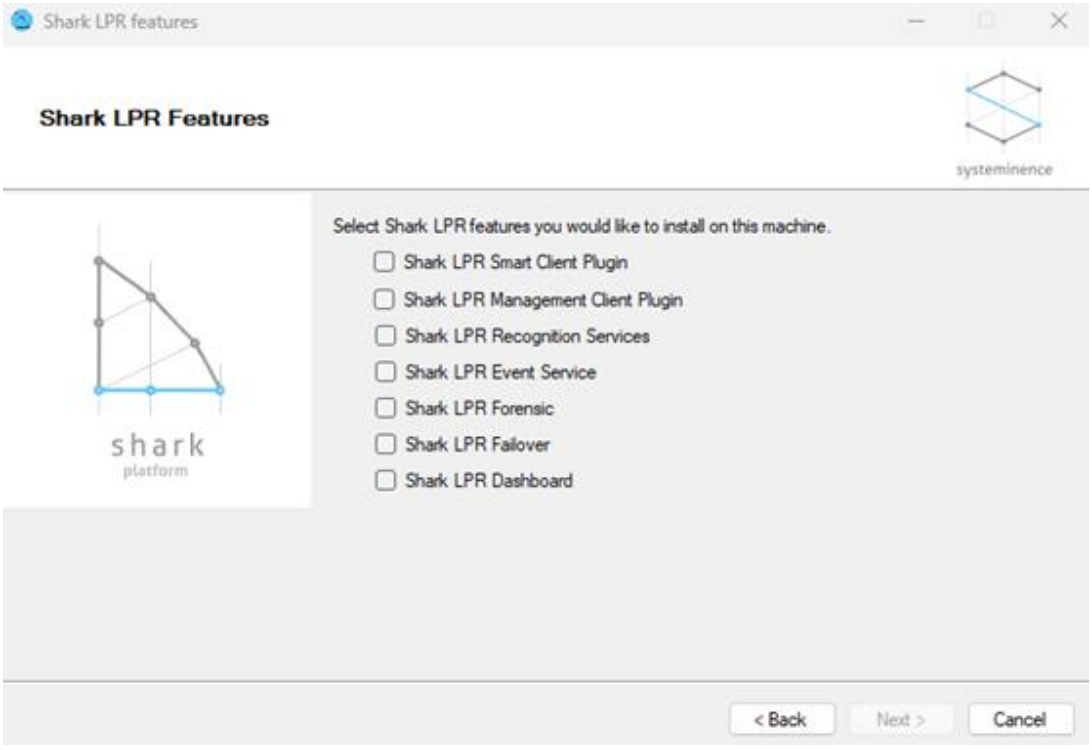


Features

In the Shark LPR feature window, select the features required for installation, then click “Next”.

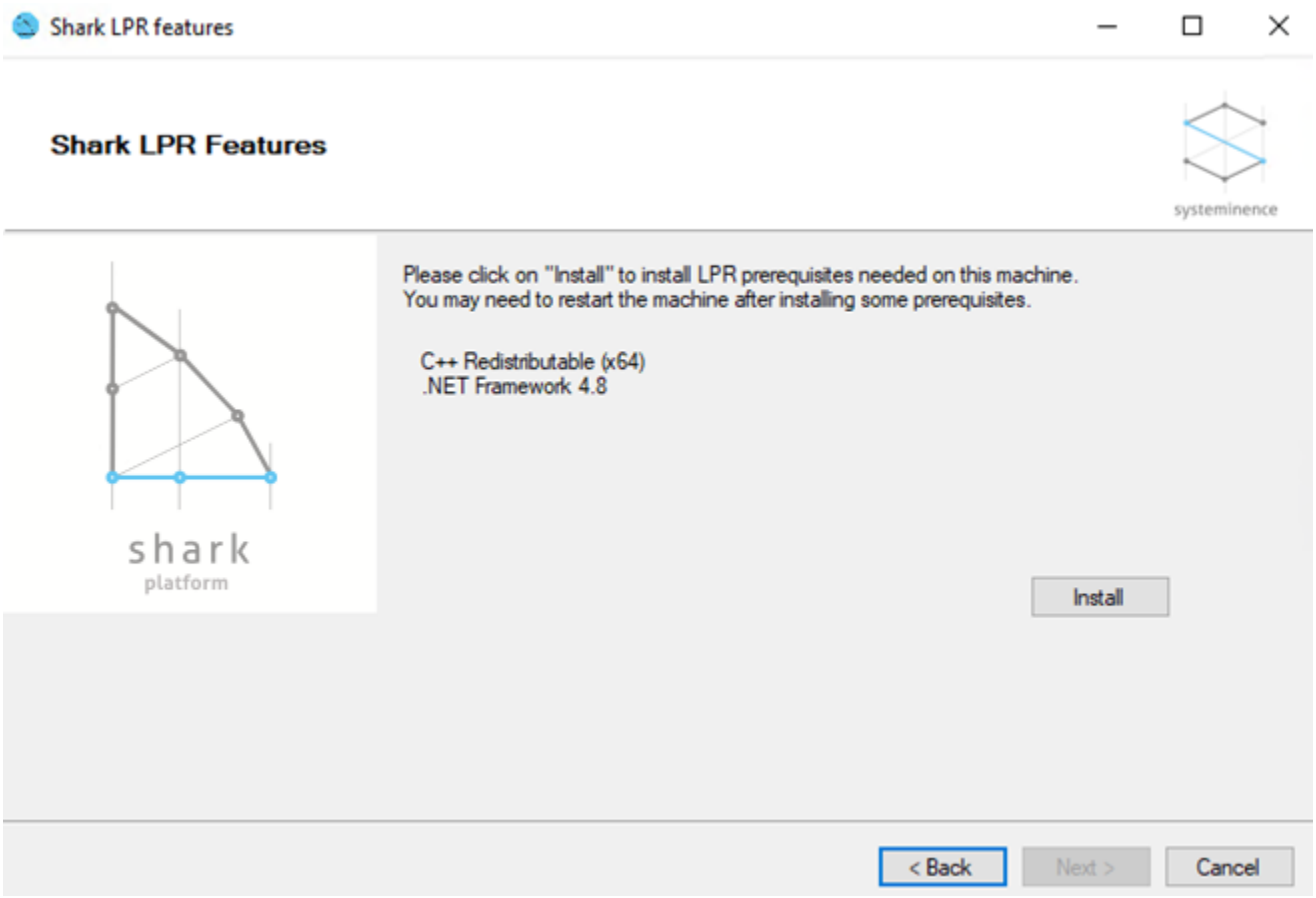
From this window, choose only the components relevant to your specific setup and desired functionality:

1. Shark LPR smart client plugin: This plugin allows operators to monitor live data, alerts, and license plate information. It's essential for daily operation and plate tracking.
2. Shark LPR Management client plugin: This plugin empowers administrators to configure Shark LPR settings, manage users, and fine-tune system behavior. It's crucial for system customization and control.
3. Shark LPR Processing node services: These Windows services perform the core license plate recognition tasks:
    - Shark LPR Recognition: Pulls video streams from VMS or cameras, extracts license plates, and generates results. This service is the heart of real-time plate recognition.
    - Shark LPR Image recognition: Operates based on input trigger to process defined number of frames to extract license plates, and generates results. This service is mostly used on slow speed car movement.
    - Shark LPR Listener: Takes extracted plate data from the recognition service, saves it to the database, and triggers alerts for listed plates. It ensures data persistence and timely notifications.
    - Shark LPR Watchdog: This windows service monitors the status of Shark LPR recognition and Shark LPR listener. In case any of these services are down, Shark LPR watchdog will try to start it again within 30 seconds. In failover architecture, Shark LPR watchdog monitors the health of Shark LPR recognition and Shark LPR listener. In case of any service failure, Shark LPR watchdog will initiate the failover process.
4. Shark LPR event service: This Windows service handles notifications and database maintenance tasks. It keeps your system informed and data organized.
5. Shark LPR forensic: This standalone application analyzes recorded videos to extract license plates for later search and investigation. It's ideal for post-event analysis and evidence gathering.
6. Shark LPR Failover: This service provides redundancy for Shark LPR recognition services.
7. Shark LPR Dashboard: This web-based interface displays customizable dashboards summarizing system activity and key metrics. It requires IIS and provides a comprehensive overview for administrators.



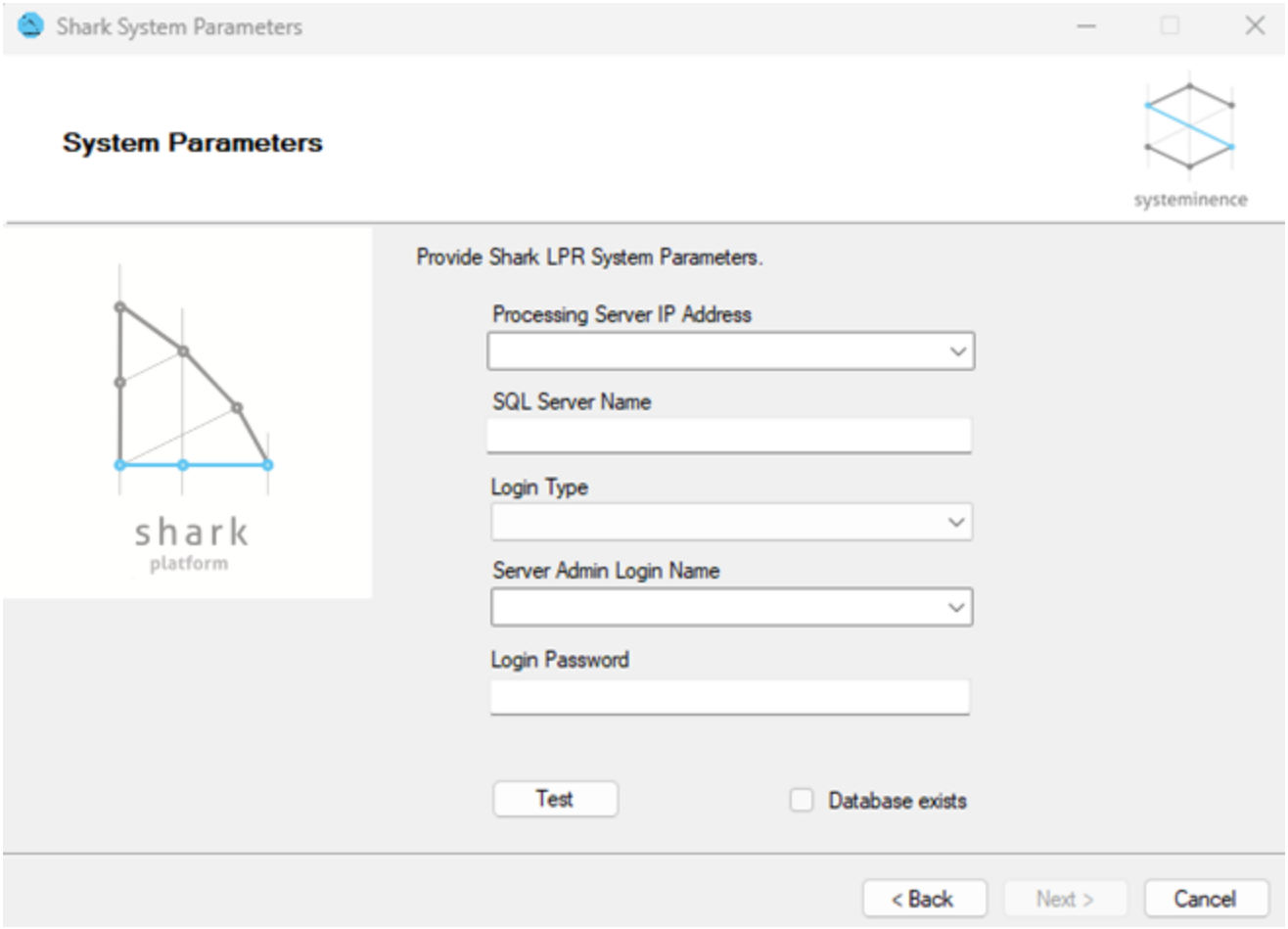
Prerequisites

Click “Install” in the next window to install the prerequisites. Please note, the installation of the .Net Framework requires a Windows restart. After restarting, the installation will resume automatically.



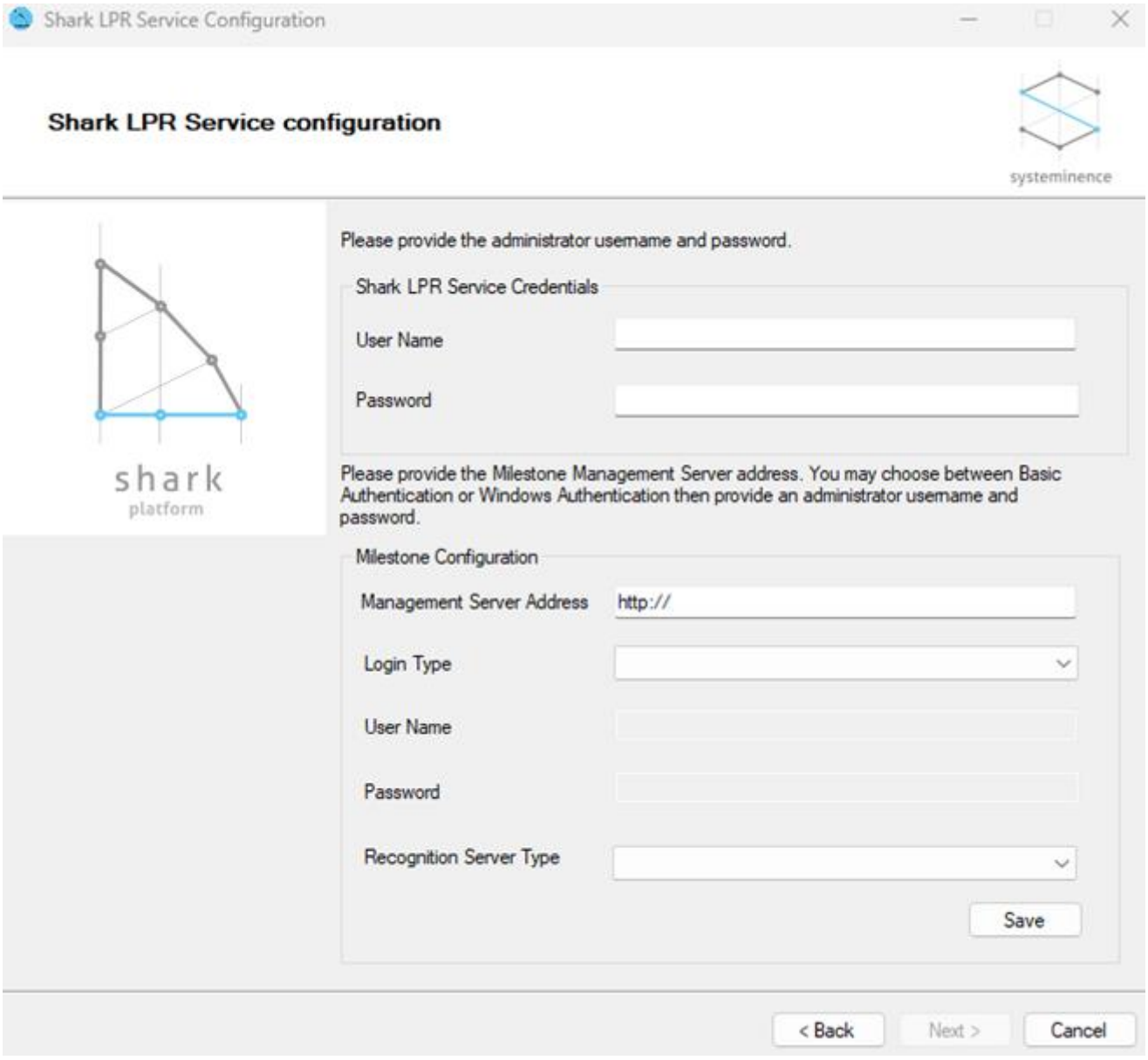
Management Application Installation

- Choose the processing Server IP address.
- Enter the SQL Server name.
- Login Type: Choose either SQL Server Authentication or Windows Authentication:
    - SQL Server Authentication: Enter the User ID and Password of a SQL Server account.
    - Windows Authentication: Uses the credentials of the user running the setup. No additional login details are needed.
- Click “Test”. If the Shark LPR database already exists, the installer will automatically check the "Database exists" checkbox.



Service configuration

- The first section is designated for Shark LPR Service credentials.
- The second section is for configuring the Management Server credentials.
- Additionally, the recognition server type can be selected as either Free Flow or Entrance.



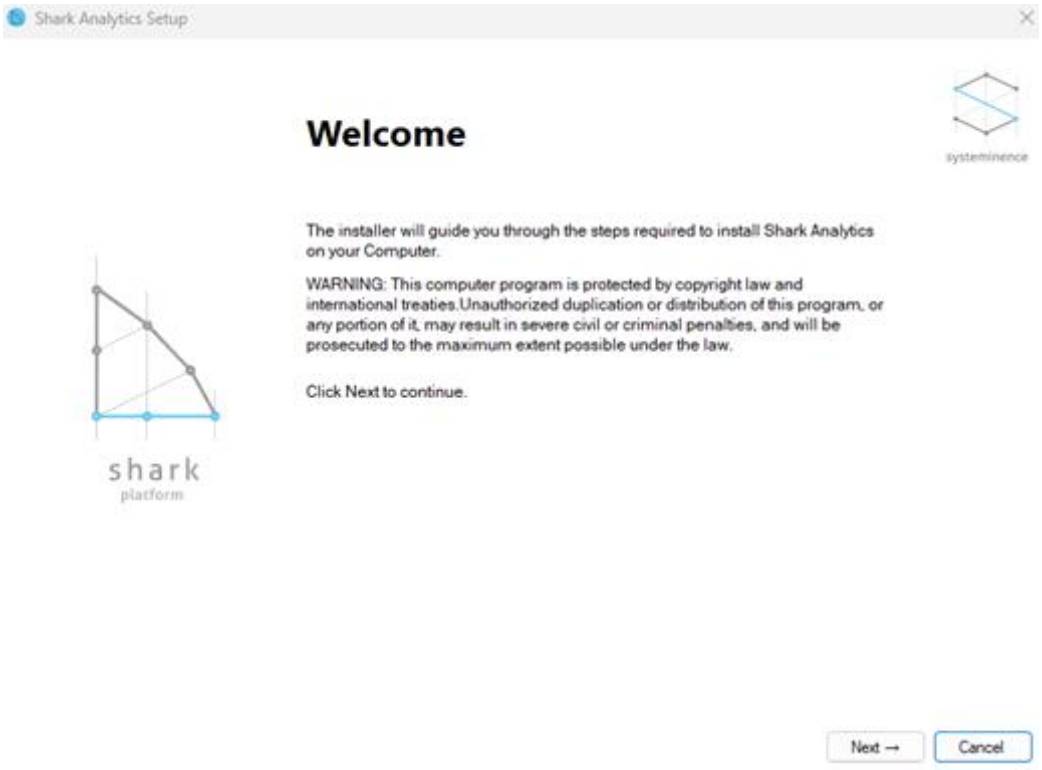
- After saving the configuration and clicking "Next," the installation process will begin.
- After the installation is completed, Microsoft Edge will be installed automatically.
- For any issues encountered during the installation, please refer to our troubleshooting guide or contact our support team on support@systeminence.com.

Shark Analytics Installation

After downloading the Shark AI package, begin the installation process by running the installer.

Welcome page

The installation wizard opens with a Welcome page that provides an overview of what will be installed. This page serves as the entry point to the Shark Analytics setup process.
Click the **Next** button to proceed to the next step of the installation process.



End User License Agreement (EULA)

The second step in the installation process presents the End User License Agreement. This page requires you to review and accept the legal terms and conditions before proceeding with the installation.

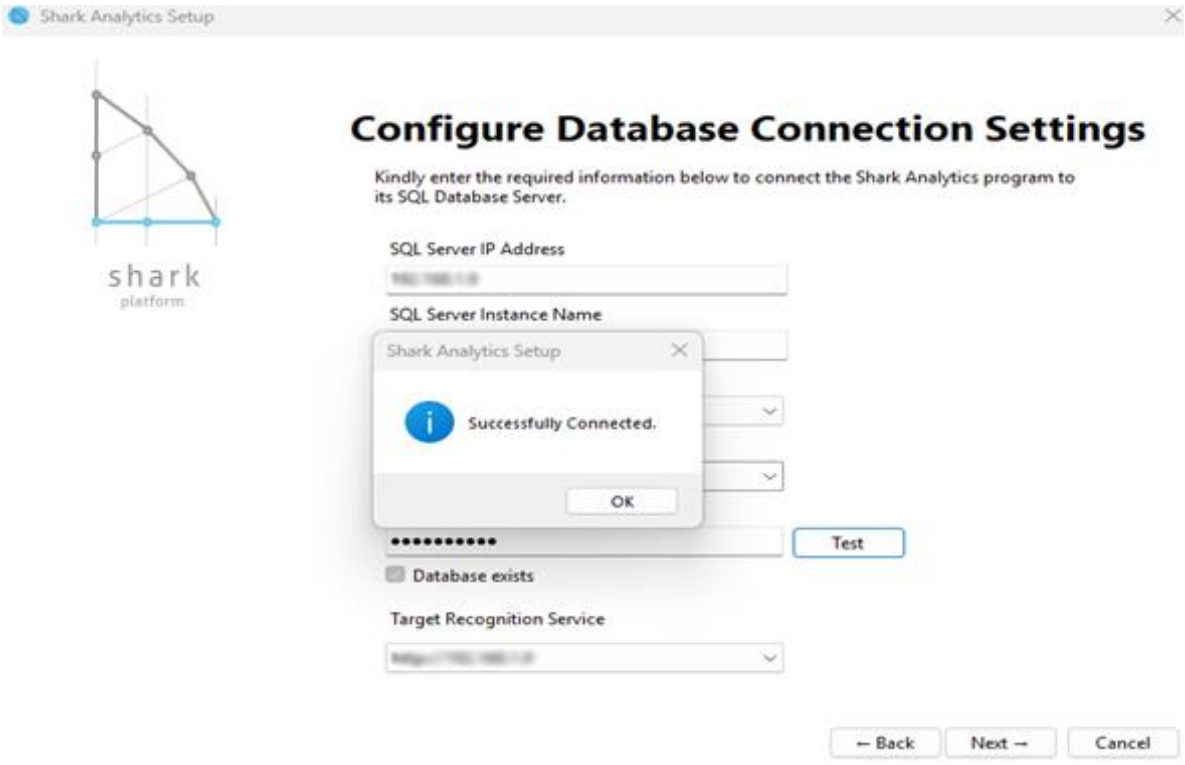
The third step involves configuring the database connection settings. Shark AI must point to the Shark LPR Database, and you need to choose which recognition service to connect to (if multiple recognition services are installed under one database).
This page allows you to:

- Enter the database IP address where the recognition services are installed
- Provide database credentials (username and password)
- Configure the SQL Server instance name
- Test the database connection
- Verify the target recognition service connection

Important: When the "Target Recognition Service" checkbox is checked, it indicates that the installation is on the right path and the system can properly connect to the recognition services.

Database Configuration Fields:

- **SQL Server IP Address**: Enter the IP address of the server hosting the Shark LPR Database.
- **SQL Server Instance Name**: Specify the SQL Server instance name.
- **Authentication Method:** Choose between Windows Authentication or SQL Authentication:
  - **Windows Authentication**: Uses the credentials of the user running the setup (default option).
  - **SQL Authentication**: Allows you to provide a specific SQL user account created in SQL Server.
- **Target Recognition Service**: Select the specific recognition service from the dropdown (if multiple services are available under the same database). This is used to recognize the plate number of the violated vehicle.

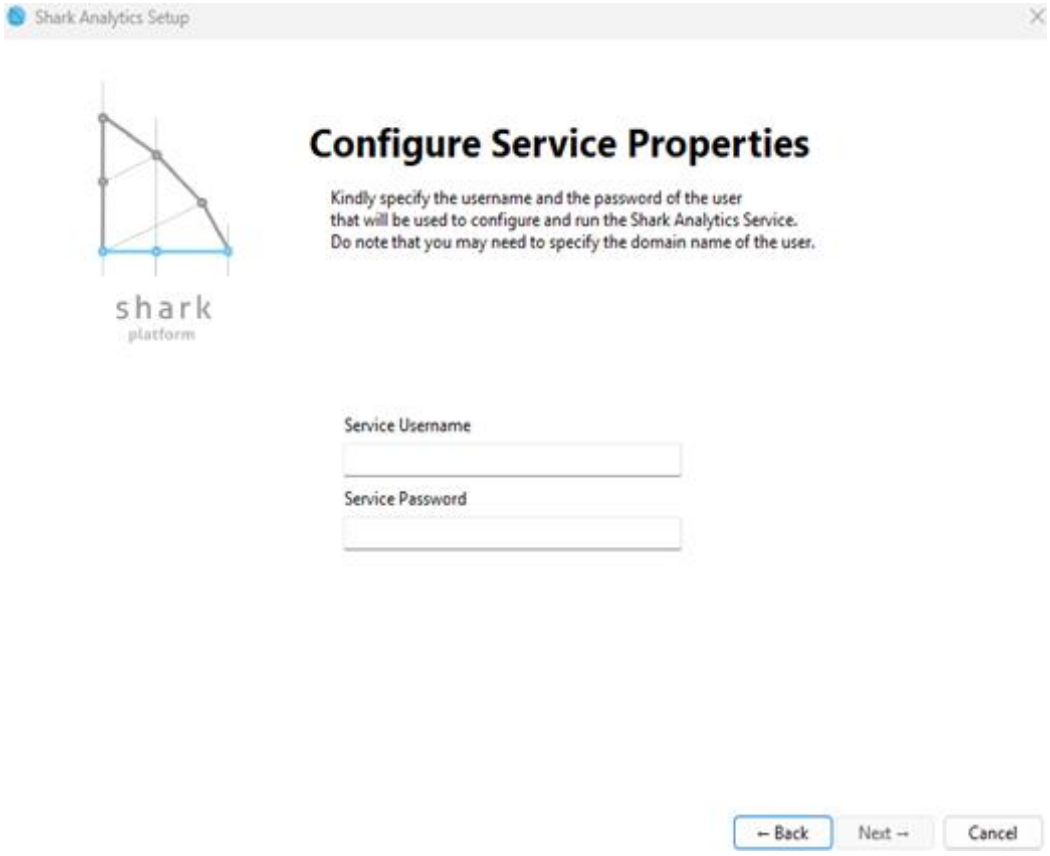


The fourth step requires you to configure the service properties by specifying the credentials for the user account that will be used to run the Shark Analytics Service. This user must have **administrator privileges** to ensure proper service operation.

Service Configuration Fields:

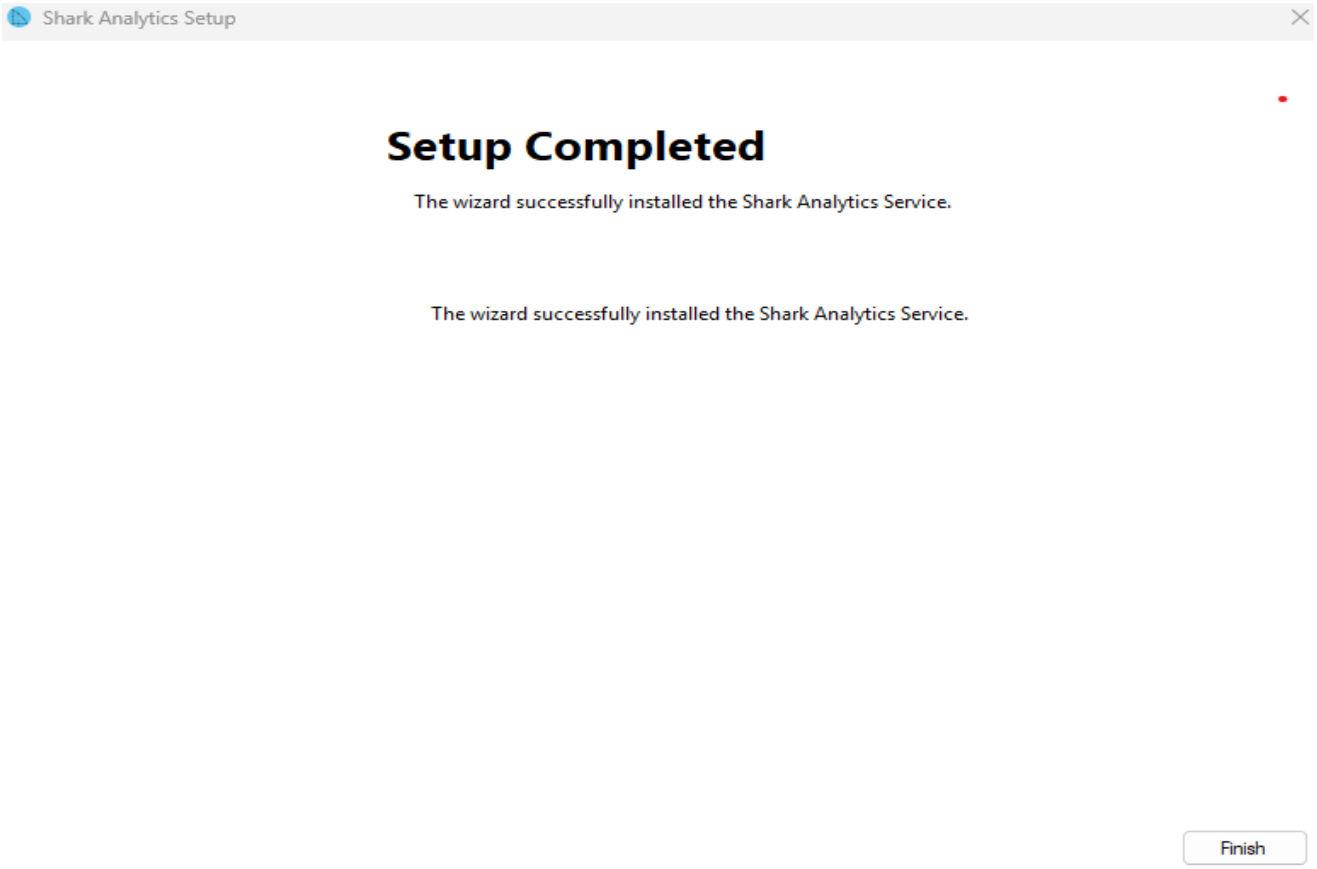
- **Service Username:** Enter the username in the appropriate format
  - **For domain users: "**Domain\username"
  - **For local users: "**.\username"
- **Service Password**: Enter the password for the specified user account.

Click **Next** to proceed after entering the service credentials.



Setup Completed

The final step confirms that the installation process has been completed successfully. This page indicates that the Shark Analytics Service has been installed and configured properly on your system.



The UI component of Shark AI is now installed and visible in the Analytics Servers tab in XProtect Management Client. This installation adds two main components to your system:

1. **Shark Media Service**
    a. **Purpose**: Pulls camera(s) added in Analytics camera in Xprotect Recording Server
    b. **Critical Role**: Docker cannot run without this service running
    c. **Installation Type**: Windows Service
    d. **Location**: C:\Program Files\Systeminence\Shark LPR\Services\Media Service
2. **Shark AI Service**
    a. **Purpose:** Contains configuration and models for the AI processing
    b. **Location**: C:\Program Files\Systeminence\Shark LPR\Services\Shark AI
    c. **Contents**:
        i. **config folder:** Docker pulls its configuration from here
        ii. **models folder:** Contains AI processing models
    d. **Customization**: You can configure these components according to your specific needs

The next step is to proceed with the Docker Desktop installation to complete the full Shark AI system setup.

Docker Desktop Installation

The second component of Shark AI requires Docker Desktop to run the containerized AI services. Follow these steps to install and configure Docker Desktop for Shark AI.

Step 1: Download Docker Desktop
Download Docker Desktop from the official Docker website:
https://www.docker.com/products/docker-desktop/

Step 2: Install Docker Desktop
Run the downloaded installer and follow the standard Docker Desktop installation process. Complete all installation steps as prompted by the installer.

Step 3: Configure Docker Container
After Docker Desktop installation is complete, you need to set up the Shark AI container using PowerShell commands.

1. Open PowerShell as Administrator
    - Right-click on PowerShell and select "Run as Administrator"
2. Pull the Systeminence Shark AI Image
    - Execute the following command to download the latest Shark AI image:

```
docker pull systeminence/shark-ai:latest
```

    - After pulling this image, you should see in the Docker images field a new image created as shown in the screenshot below:

3. Run the Shark AI Container
    - Execute the following command to create and run the Shark AI container:

```
docker run -it --gpus all --cpus=16 --memory=8g --restart unless-stopped --net=bridge -v /run/desktop/mnt/host/wslg/.X11-unix:/tmp/.X11-unix -v "C:\Program Files\Systeminence\Shark LPR\Services\Shark AI/config:/app/config" -v "C:\Program Files\Systeminence\Shark LPR\Services\Shark AI/models:/app/models" -v "C:\Program Files\Systeminence\Shark LPR\Services\Shark AI/outputs:/app/outputs" -v "C:\Program Files\Systeminence\Shark LPR\Services\Shark AI/logs:/app/logs" -e NVIDIA_VISIBLE_DEVICES=all -e NVIDIA_DRIVER_CAPABILITIES=all -e DISPLAY=:0 --name shark-ai systeminence/shark-ai:latest
```

    - After running this command, you should see in the Docker Container field a new container created as shown in the screenshot below: