

Oscar Setup and Configuration Guide

This guide provides step-by-step instructions to install and configure the OpenSensorHub (OSH) Node for OSCAR.

System Requirements

Java Version: Java 21 must be installed on your system in order to run OpenSensorHub.

Network Setup

All devices intended to communicate with the OSCAR Node must be configured to run on the **same IP subnet**.

Installation

1. Download OSCAR:

- Download the latest OSCAR distribution.
- Unzip the downloaded file to a desired location on your machine.

2. Run the node:

- **On Windows:** Double-click **launch.bat** (may appear as just launch). If you don't see the extension, enable file extensions in your file explorer. You may also open it in a terminal.
- **On Linux/macOS:** Double-click the **launch.sh** or open a terminal and run `./launch.sh`

3. Access the Admin Panel

- Open Google Chrome and go to:
<http://localhost:8282/sensorhub/admin>
- Use the default credentials:
 - **Username:** admin
 - **Password:** oscar

4. Access the OSCAR Viewer GUI:

- On your Google Chrome browser open a new tab and go to:
<http://localhost:8282>

Configuration

Networking

- All devices (cameras and RPMs) being connected will need to be on the same subnet (or reachable via ping) as a computer running OSH node.
- You must know each device's **local IP address** when configuring drivers.

Before You Start

Before setting up your first **Lane System**, it is a good idea to know approximately how many lanes you will be adding to the node. If adding more than 5 lanes, then it is highly suggested starting with the [Database](#) configuration section. You will need to create a new System driver database for every 5 **Lane Systems**, and you will need to update the System UID in the “Lanes Database”

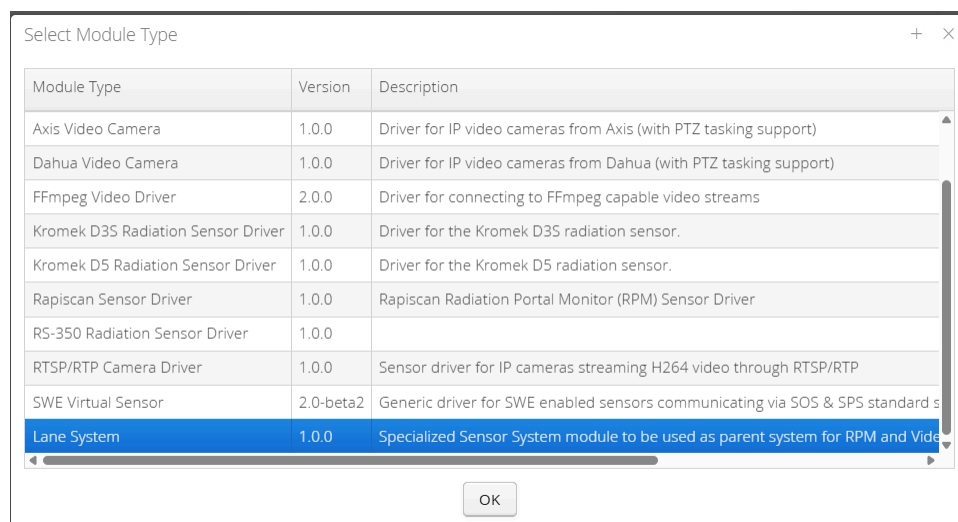
Setting up a Lane System

A **Lane System** organizes one Radiation Portal Monitor (RPM) and two video cameras and eases the deployment of a lane.

It allows you to create a RPM, two camera drivers, and the occupancy process in one configuration and adds them to the selected database.

Configuration

1. Right click the empty space under “**Sensors**”
2. Click “**Add New Module**” and select “**Lane System**”



3. Fill out the following field:

- **Module Name:** Descriptive name for the Lane, with a max limit of 12 characters
- **Unique ID:** Descriptive unique id for the lane.(ie., northlane1)
- **Description** (optional)
- Check “**Auto Start**” to start automatically.
- Check “**Delete Data on Lane Removal**” if you want the data removed from the database when a lane is deleted.
- **Lane Group ID:** This ID is used to identify and group lanes into a single automated database.
 - Group ID of -1 will mean no grouping and it will use the default system UID for the Lane System and will be added to the default “Lanes Database”
 - In the case that there will be more than 5 Lane Systems, you will need to update this value to automate a new system driver database to group the next 5 lanes in.

New Lane System

Configuration

[General](#)
[Fixed Location](#)
[Fixed Orientation](#)
[Lane Options Config](#)
[README](#)

Module Class

com.botts.impl.system.lane.LaneSystem

Module Name

North Lane 1

Module ID

6a8b3c25-b23d-4840-8872-481fd72a9b3c

Description

SensorML URL

UniqueID

northlane1

Last Updated

2025-05-23 17:48:04 (UTC)

Lane Group ID

-1

☒ Auto Start

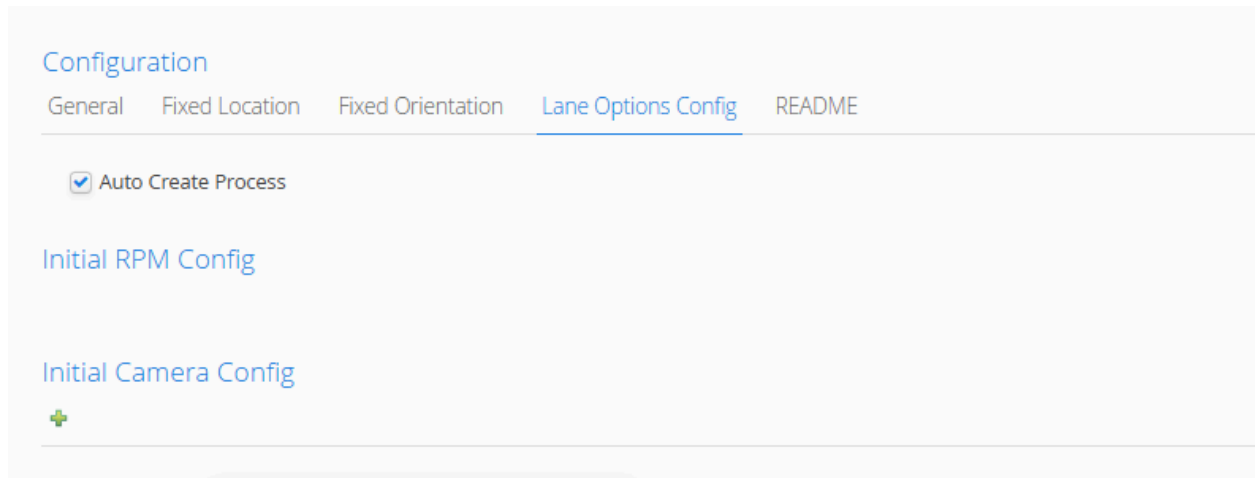
☒ Delete Data on Lane Removal

4. Optionally provide a **Fixed Location** for the lane.
5. Fill out the Lane Options Config:

Lane Options Config

Under the “**Lane Options Config**” tab there are a few options to rapidly deploy your lane.

1. Click the “**Add**” button to see the options listed below.



2. Configure the lane by filling out the options below:

Auto Create Process

Checking this box will create the “Occupancy Process” automatically based on the Lane Systems configuration. This requires the lane system to have an associated camera and rpm. This process helps reduce the amount of storage required by only saving video during alarming occupancies.

Initial RPM Config:

- To set up an initial Radiation Portal Monitor (RPM)
 1. click the “**Add**”
 2. Choose the RPM types: **Aspect** or **Rapiscan**.
- Rapiscan RPM Configuration:
 - Provide the following details:
 - **Unique ID:** A distinct id for the device.
 - **Label:** A user-friendly name.
 - **Remote Host:** The IP address or hostname of the Rapiscan device.
 - **Port:** The communication port number.

Initial RPM Config

Unique ID	<input type="text" value="aspect-01"/>
Label	<input type="text" value="Aspect RPM"/>
Remote Host	<input type="text" value="localhost"/> 
Remote Port	<input type="text" value="502"/>

- Aspect RPM Configuration:

The Lane System will create the RPM driver using the following configuration fields. It will automatically add connection options to the RPM configuration on initialization. The driver will have a 5 second timeout, and 10 reconnect attempts.

- Provide the following details:
 - **Unique ID:** A distinct id for the device.
 - **Label:** A user-friendly name.
 - **Remote Host:** The IP address or hostname of the Aspect device.
 - **Port:** The communication port number.
 - **Address Range:** The Range of the device address to be monitored (e.g., 1-32).

Initial RPM Config

Unique ID	<input type="text" value="aspect-01"/>
Label	<input type="text" value="Aspect RPM"/>
Remote Host	<input type="text" value="localhost"/> 
Remote Port	<input type="text" value="502"/>

Find device within address range

From	<input type="text" value="1"/>
To	<input type="text" value="32"/>

Initial Camera Config

- To set up the initial Camera Config
 1. Click the **add** icon (the green plus sign)
 2. Choose between the Camera types: **Sony**, **Axis**, or **Custom**

- Sony Camera Configuration

- Provide the following details:
 - **Unique ID:** A distinct id for the device.
 - **Label:** A user-friendly name.
 - **Remote Host:** The IP address or hostname of the Rapiscan device.
 - **Username:**
 - **Password:**

- Axis Camera Configuration

- Provide the following details:
 - **Unique ID:** A distinct id for the device.
 - **Label:** A user-friendly name.
 - **Remote Host:** The IP address or hostname of the Rapiscan device.
 - **Username:**
 - **Password:**
 - **Stream Codec:** Select between H264 or MJPEG video codec.

- Custom Camera Configuration

If you have a custom camera that is neither a Sony or an Axis camera, you can still configure the camera using the Custom camera type.

- Provide the following details to configure the video camera:
 - **Unique ID:** A distinct id for the device.
 - **Label:** A user-friendly name.
 - **Remote Host:** The IP address or hostname of the Rapiscan device.
 - **Username:** (optional)
 - **Password:** (optional)
 - **Stream Path:** The endpoint to access the video stream. Do not include the username, password or remote host.

6. Select “**Apply Changes**” to save your changes

7. Right click on the Lane in the left tab under “**Sensors**” and select “**Start**”

Check for Data

1. Navigate to the “**Database**” tab on the left of the Admin panel. Select “Federated Database” and choose the RPM driver from the table.

2. If the RPM driver is receiving data you will see values under the “Neutron Count” output as well as the “Connection Status” will be true. I suggest checking this for all the drivers you create under your Lane System.

Manually Setting up a Lane System

Under this section, you will learn how to manually configure each of the drivers that make up a Lane System. This section is for when you are using a Lane System but you do not configure the “Lane Options” or you need to update a driver after the initial configuration of a Lane System.

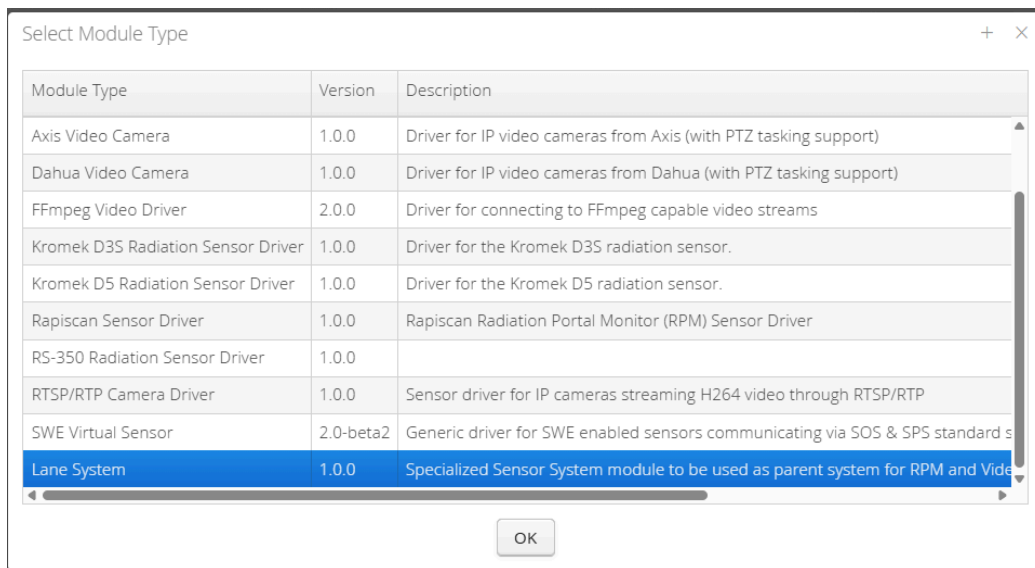
Adding a Lane System

A **Lane System** organizes one Radiation Portal Monitor (RPM) and two video cameras and eases the deployment of a lane.

It allows you to create a RPM, two camera drivers, and the occupancy process in one configuration and adds them to a singular database.

Configuration

1. Right click the empty space under “**Sensors**”
2. Click “**Add New Module**” and select “**Lane System**”



3. Fill out the following field:
 - **Module Name:** Descriptive name for the Lane, with a max limit of 12 characters
 - **Unique ID:** Descriptive unique id for the lane.(ie., northlane1)
 - **Description** (optional)
 - Check “**Auto Start**” to start automatically.

- Check “**Delete Data on Lane Removal**” if you want the data removed from the database when a lane is deleted.

OpenSensorHub

Shutdown Logout Save

Sensors

New Lane System LOADED

New Lane System

Configuration

General Fixed Location Fixed Orientation Lane Options Config README

Module Class

Module Name

Module ID

Description

SensorML URL

UniqueID

Last Updated

Lane Group ID

☐ Auto Start

☒ Delete Data

ID used for grouping lanes together in their own database. The default (-1) means that lanes will have no group and use the default UUID of urn:osh:system:lane:*

4. Optionally provide a **Fixed Location** for the lane.
5. Select the Lane Options Config. Here we are just going to add the system to the “Lanes Database”


New Lane System

Configuration

[General](#) [Fixed Location](#) [Fixed Orientation](#) [Lane Options Config](#)


☒ Auto Create Process

Lane Database Config

Lane Database Id 

Initial RPM Config

Initial Camera Config



6. Click “Apply Changes” and then right click the Lane under the “Sensors” tab and click “Start”

Adding and Configuring a Rapiscan Driver

Configuration

1. Right click on your Lane under the “Sensors” tab and “**Add New Submodule**”, then select “**Rapiscan Sensor Driver**” from the list.
2. Fill out the following fields for the Rapiscan Driver:
 - **Serial Number**: This can be the device's serial number or just a unique ID.
 - **Module Name**: A user-friendly name.
 - **Auto Start**: To automatically start the driver after initialization.

New Rapiscan Sensor Driver

Configuration

[General](#) [Communication Provider \(TCP\)](#) [Position Config](#) [Setup values from RPM hardware \(if applicable\)](#) [Eml Config](#)

Module ID

Module Class

Module Name

Description

SensorML URL

Serial Number

Last Updated

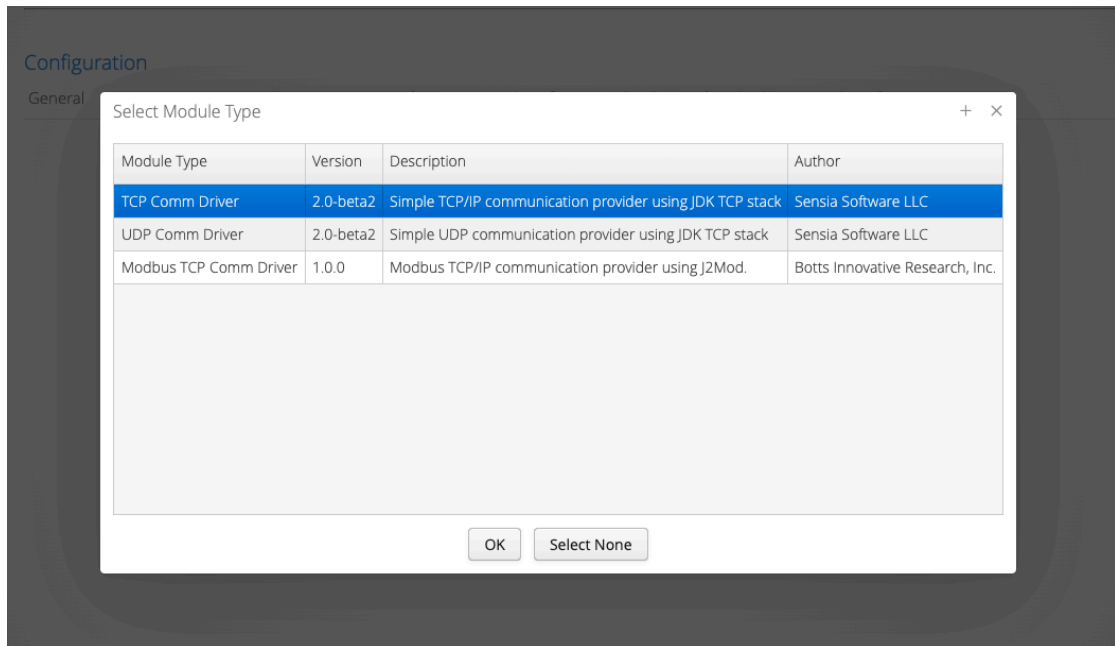
Lane ID

☒ Auto Start


Data Source Info

Unique ID: urn:osh:sensor:rapiscan:rpm002

3. Select the **Communication Provider** tab and **"Add"**. Then select **"TCP Comm Driver"** from the list.
4. Fill out the following fields:
 - **Remote Host** will be the IP of the Rapiscan System
 - **Remote Port** for Rapiscan is 1600 by default
 - **Connection Options:** Set **Connection Timeout** to 6000, **Reconnect Period** to 1000 and **Max Reconnect Attempts** to 10




Protocol Options

Remote Host 

Local Address

User Name

Password 

Remote Port

☐ EnableTLS

Connection Options

Connection Timeout

Reconnect Period

Max Reconnect Attempts

☒ Check Reachability

5. **Position** Configuration is not required since we may have added that to our Lane parent system.
6. On first start the driver will use default Setup Values for the RPM. It will update these values when it receives Setup Messages from the RPM (this occurs daily at midnight or anytime the values are changed on the hardware. If your system is not using the default

values you can enter the setup values on the Driver in the “**Setup Values for RPM Hardware**” tab. They will continue to update once they receive the setup message from the RPM.

7. If using EML you can enter the required values and select “**Enable EML Analysis**” in the “**EML Config**” tab.
8. Select “Apply Changes” and “Save”
9. Right click on the Rapiscan Driver under the **Sensor** tab and select “**Start**”
 - ****Parent System (Lane) must be started before starting any Subsystem (rpm driver or camera driver).**

Adding and Configuring an Aspect Driver

Configuration

1. Right click on your Lane under the Sensors tab and “Add New Submodule”, then select “Aspect Sensor Driver” from the list.
2. Fill out the following fields for the Aspect Driver:
 - **Serial Number:** This can be the device's serial number or just a unique ID.
 - **Module Name:** A user-friendly name.
 - **Auto Start:** To automatically start the driver after initialization.

New Aspect Sensor Driver

Configuration

General

Communication Provider

Position Config

Module Class	<input type="text" value="com.botts.impl.sensor.aspect.AspectSensor"/>
Module Name	<input type="text" value="Lane 1 Aspect Sensor Driver"/>
Module ID	<input type="text" value="fca6e9d9-c17b-4293-bcad-03dad35d43cd"/>
Description	<input type="text"/>
SensorML URL	<input type="text"/>
Serial Number	<input type="text" value="aspect001"/>
Last Updated	<input type="text" value="2025-05-21 03:59:34 (UTC)"/>
Lane Id	<input type="text" value="1"/>
<input checked="" type="checkbox"/> Auto Start	

3. Select the Communication Protocol tab and “**Add**”. Then select “**Modbus TCP Comm Driver**” from the list.

4. Fill out the following fields:

- **Remote Host** will be the IP of the Aspect System
- **Remote Port** for Aspect is 502 by default
- **Address Range:** (From- To) If you have multiple Aspect Systems on this IP endpoint you will need to narrow down the device ID range for the system you want to connect to. You can find this number in the Yantar control application. If you only have one system at this ip endpoint then you can leave these fields as is and the driver will discover the device.

The screenshot shows a configuration interface with two main sections: "Protocol Options" and "Connection Options".

Protocol Options

- Remote Host:** A text input field containing "192.168.8.10" with a search icon to its right.
- Remote Port:** A text input field containing "502".
- Find device within address range:** A section with two input fields: "From" containing "1" and "To" containing "32".

Connection Options

- Connection Timeout:** A text input field containing "5000".
- Reconnect Period:** A text input field containing "10000".
- Max Reconnect Attempts:** A text input field containing "10", which is highlighted with a blue border.
- Check Reachability:** A checkbox that is checked, with the label "Check Reachability".

4. Position Configuration is not required since we may have added that to our Lane parent system.
5. Select **"Apply Changes"** and **"Save"**
6. Right click on the Aspect Driver under the Sensor tab and select **"Start"**
 - ****Parent System (Lane) must be started before starting any Subsystem (rpm driver or camera driver).**

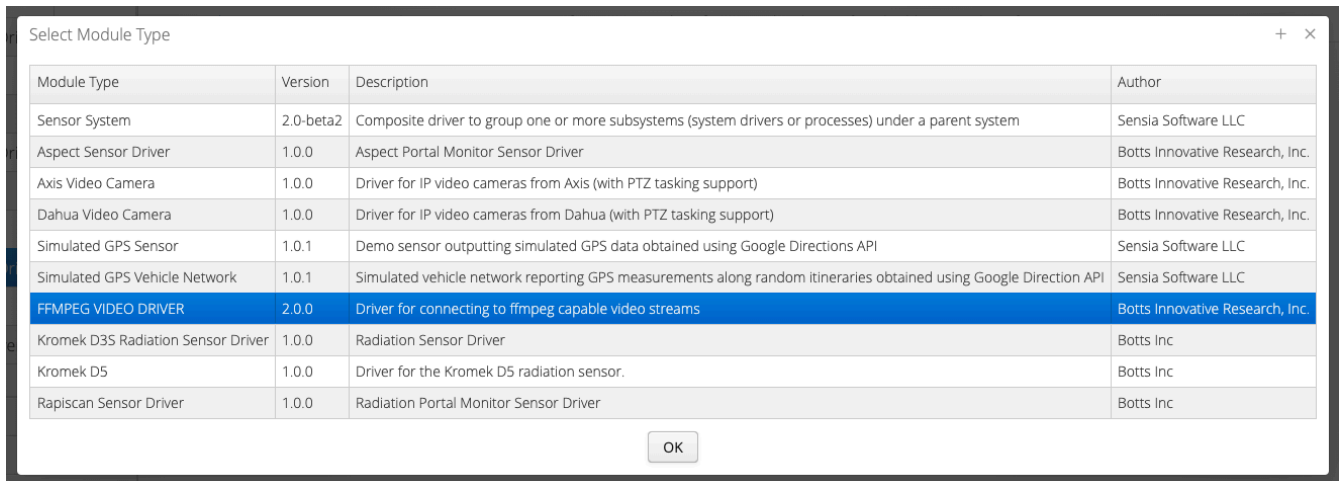
Check for Data

1. Navigate to the **"Database"** tab on the left of the Admin panel. Select "Federated Database" and choose the Aspect driver from the table.
2. If the RPM driver is receiving data you will see values under the "Neutron Count" output as well as the "Connection Status" will be true. I suggest checking this for all the drivers you create under your Lane System.

Setting up Camera Drivers

Configuration

1. Right click on your Lane under the Sensors tab and **"Add New Submodule"**, then select your camera model or select **"FFMPEG Video Driver"** (a generic driver that should connect to most camera feeds) from the list of video drivers in the list.



2. Fill out the following fields for the Camera Driver:

- **Serial Number:** This can be the device's serial number or just a unique ID.
- **Module Name:** A user-friendly name.
- **Auto Start:** To automatically start the driver after initialization.

3. Connection Options:

- **Connection String:** Provide the full URL for the video stream. (e.g. rtsp://IP Address:552/video endpoint)
 - To determine the video endpoint, consult the camera's user guide or google the model number with the "connection address"
 - The FFMPEG driver supports a wide range of video streaming protocols, we are demonstrating using RTSP in this guide as it is one of the most common video stream protocols. Its default port is 552.
- **FPS:** the amount of video frames per second. I suggest updating the number of frames to be between 24-30 FPS.
- Select **"Ignore Data Timestamps"**
- Check the **"TCP"** if you want to use the TCP protocol when decoding the video frames. Else it will use UDP by default.

New FFmpeg Video Driver

Configuration

General Connection Position Config Connection Config

File Path	<input type="text"/>
Connection String	<input type="text" value="rtsp://192.168.3.1:552/video/stream1"/>
FPS	<input type="text" value="30"/>
	<input type="checkbox"/> Loop
	<input checked="" type="checkbox"/> Ignore Data Timestamps
	<input checked="" type="checkbox"/> TCP

4. Select “**Apply Changes**” and “**Save**”
5. Right click on the Camera Driver under the Sensor tab and select “**Start**”
 - **Parent System (Lane) must be started before starting any Subsystem (rpm driver or camera driver).

Check for Data

1. Navigate to the “**Database**” tab on the left of the Admin panel. Select “Federated Database” and choose the camera driver from the table.
2. If the camera driver is receiving data you will see values under the “Video” tab.

Databases

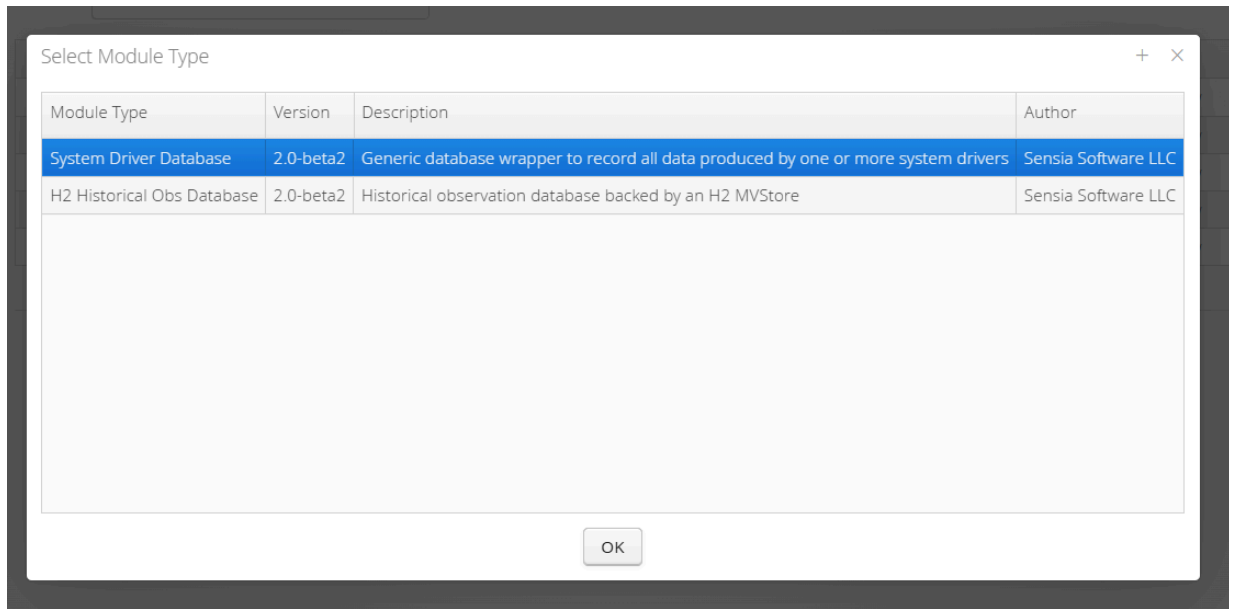
Up to 5 “**Lane Systems**” should be added to a single system driver database. By default all Lane Systems created will be added to the initial “Lanes Database”. If you plan to add more than 5 Lane Systems, then this should be updated by following the steps under the Maintenance to [Update the System UIDs for a driver database](#). When configuring a Lane System, you will have the option to select a Lane Database, follow the steps carefully to ensure that the Lane System is added to the database correctly.

All **Occupancy Data Processing** modules will be added to a shared driver database called “**Occupancy Video Database**”.

Creating a System Database:

Configuration

1. Navigate to the Database tab on the left. Click in the empty space, select “**Add New Module**”, and choose “**System Driver Database**”.



2. Give the Database Module a name related to the lanes you are creating it for (ie “Site Name - North Lanes - Database”).
3. For System UUIDs, select the green plus sign to add a new System UUID to the list
4. In the “**Select an Observing System**” window, Click the text box under Manual Entry.
5. Enter the following “**urn:osh:system:lane:[unique identifier to be the prefix of the Unique ID of the Lane Systems]:*** ”
(e.g., **urn:osh:system:lane:north:***) This means when you create a **Lane System**, under the Unique ID you should include “north:[id]”

Select an Observing System

Manual Entry

urn:osh:system:lane:north:*

Search

System UID

urn:ornl:client:adjudication:lane5

urn:ornl:client:adjudication:lane4

urn:ornl:client:adjudication:lane2

urn:ornl:client:adjudication:lane3

urn:ornl:client:adjudication:lane1

New Lane System

Configuration

General

Fixed Location

Fixed Orientation

Lane Options Config

Module Class com.botts.impl.system.lane.LaneSystem

Module Name ORNL North Lane 1

Module ID b6ad42fb-3a0f-4f5c-8dc0-e7c587761760

Description

SensorML URL

UniqueID north:lane1

Last Updated 2025-05-22 16:30:28 (UTC)

☒ Auto Start

☒ Delete Data on Lane Removal

6. Check the “**Auto Start**” box.

New System Driver Database

Configuration

General Database Config Automatic Purge Policy

Module Class

Module Name

Module ID

Description

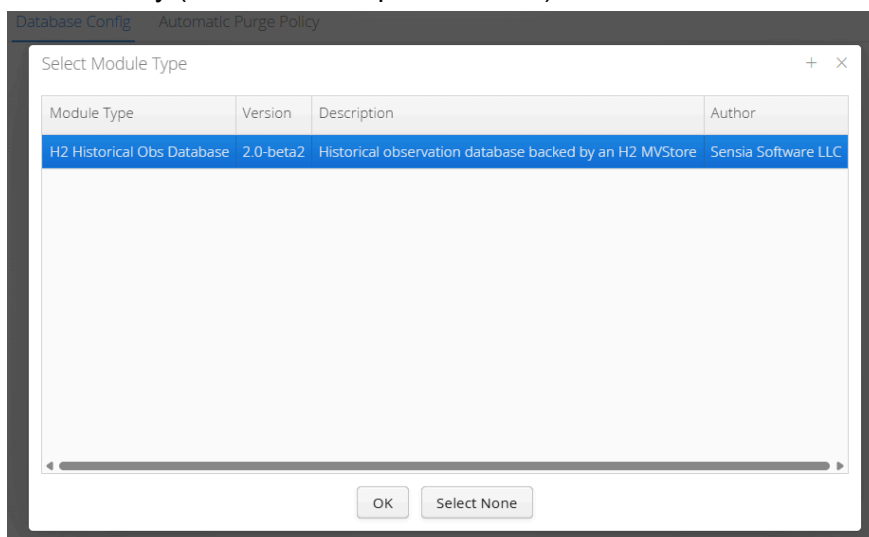
System UUIDs + ×

Database Number

Min Commit Period

☒ Auto Start

7. Select **Database Config** tab at the top, select **“Add”**, choose **H2 Historical Obs Database**, and give the database a file name in the **“Storage Path”** field. This path is relative to the OSCAR directory so if you provide only a file name it will save in the top of this directory (filename example: lanes.db)



Configuration

General Database Config Automatic Purge Policy

Module Class

Module Name

Description

Storage Path

ID Generator

SEQUENTIAL

UID_HASH

Database Number

Memory Cache Size

Auto Commit Buffer Size

Auto Commit Period

Auto Compact Fill Rate

☐ Use Compression

☐ Read Only

☐ Compact On Close

☐ Index Obs Location

8. Under the **Automatic Purge Policy** tab select the plus sign at the top, select the plus sign for **System UIDs**
9. Click the textbox under **Manual Entry** and enter “**urn:osh:sensor:ffmpeg:***”, and select **OK**
10. You can set the Purge Period and Record Age to whatever suits your storage needs but we recommend 120 seconds for both

Configuration

General Database Config Automatic Purge Policy

Item #1 × +

System UIDs urn:osh:sensor:ffmpeg:* + ×

Purge Execution Period 120

Max Record Age 120

☒ Enabled

11. Click “**Apply Changes**” and then “**Save**”
12. Right click the new database module and click “**Start**”

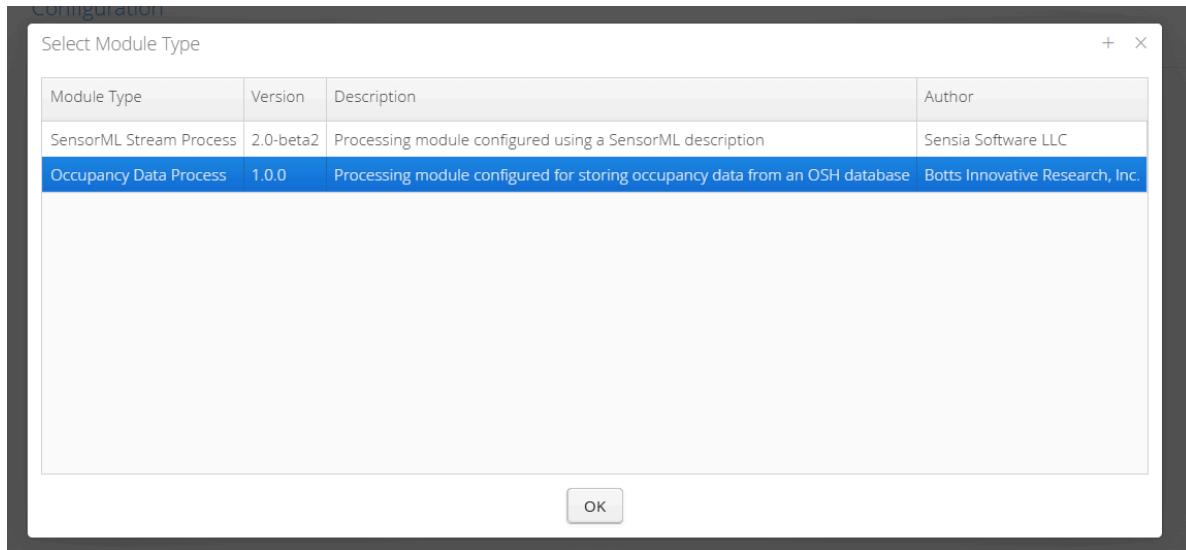
Processing

Occupancy Database Process

The Occupancy Process is crucial to help reduce the amount of storage by only saving video data during an alarming occupancy. If you are creating a Lane System, under the “**Lane Options Config**” you can check the “**Auto Create Process**” to create this module for you.

Configuration

1. Navigate to the Processing tab. Click in the empty space, select “Add New Module”, and choose “Occupancy Database Process”.



2.

2. Fill out the following fields:

- **Module Name:** Choose a name related to the Lane System that you are associating it with (ie "North Lane 1 Process).
- **Description (optional):**
- **Serial Number:** UniqueID for the process

North Lane 1 Database Process

Configuration

General

Module Class	com.botts.impl.process.occupancy.OccupancyProcessModule
Module Name	North Lane 1 Database Process
Module ID	241f6664-37ec-4271-b1e3-496d3463e7f3
Description	
Serial Number	northlane1
Parent System (Containing RPM)	urn:osh:system:lane:northlane1

☐ Auto Start

3. For the Parent System, select the search icon, and choose the **Parent System** of the lane.
4. Click **“Apply Changes”** and **“Save”**
5. Right click the **“Process”** on the left in the “Processing” tab and select **“Start”**

Maintenance

Sensors

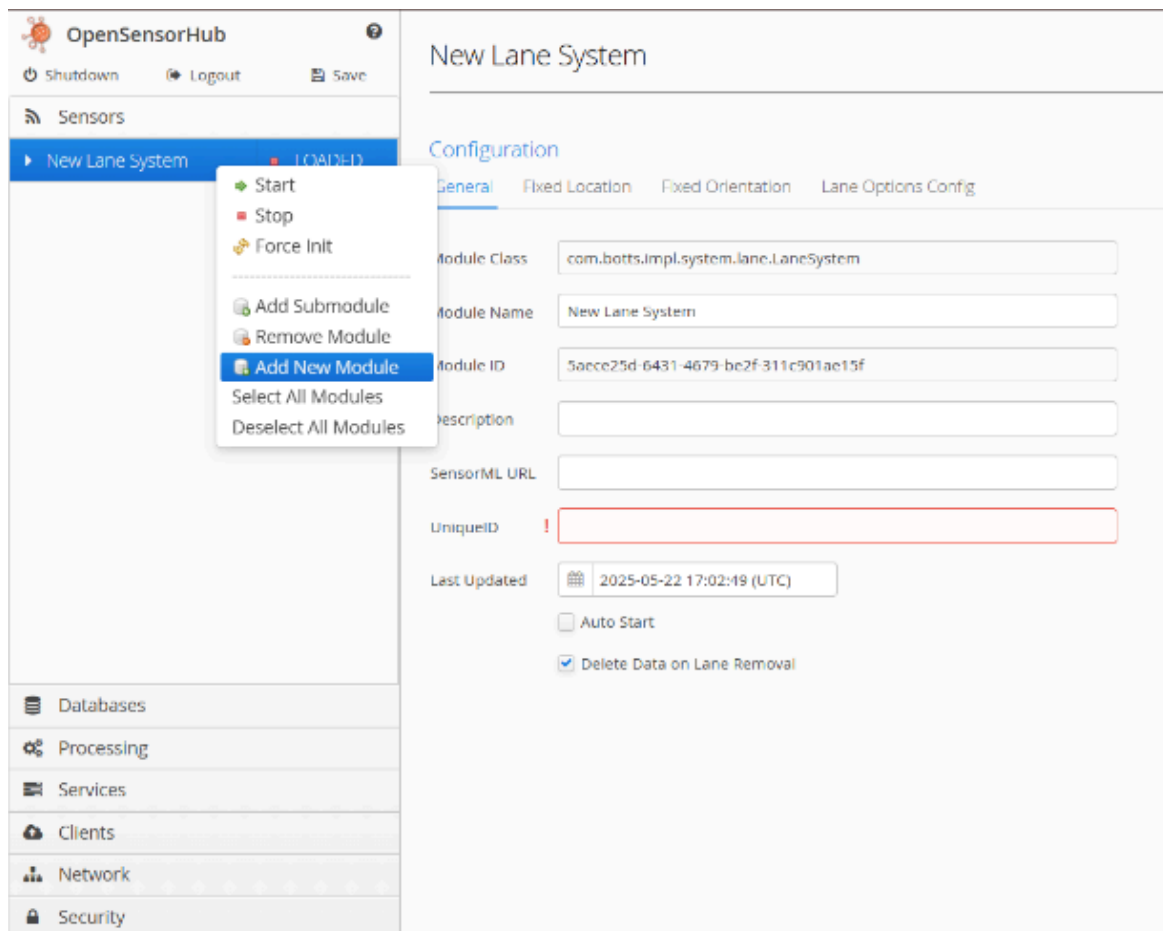
How to Add Modules in OpenSensorHub

There are two ways to add a module in OpenSensorHub. The first way is by right clicking on the empty space in one of the panels, and the other way is by right clicking on an existing module in the panel.

1. Under any tab right click on an empty space and select the “Add New Module”

The screenshot displays the OpenSensorHub web interface. On the left, a sidebar contains navigation links: Shutdown, Logout, Save, Sensors, New Lane System (highlighted), Databases, Processing, Services, Clients, Network, and Security. A context menu is open over the 'New Lane System' link, showing options: Add New Module (selected), Select All Modules, and Deselect All Modules. The main content area is titled 'New Lane System' and contains a 'Configuration' section with tabs: General (active), Fixed Location, Fixed Orientation, and Lane Options Config. The configuration fields include: Module Class (com.botts.impl.system.lane.LaneSystem), Module Name (New Lane System), Module ID (d8aa08a3-b3ef-4fa2-b849-bee842c09bf1), Description (empty), SensorML URL (empty), UniqueID (empty with a red exclamation mark), Last Updated (2025-05-22 17:04:29 (UTC)), Auto Start (unchecked), and Delete Data on Lane Removal (checked).

2. The other way is by right clicking on an existing module in the lane. Depending on whether that module is a System, or a Driver module you will have the option to “Add New Module”.



3. Then you can select which module you would like to add from the table, and press **OK** to add the module.

Databases

Removing Systems from a Database

1. Select the database module in the “**Databases**” that is associated with your Lane System.
2. Under “**Database Content**” select the row from the table that you want to remove from the database.
3. Right click on the row after selecting it and click “**Delete All System Data**”. This will remove all the related system’s data from the database including submodules

Database Content		
Search *		
System UID	Name	Validity
urn:osh:system:lane:db1:lane5	lane5	2025-05-21T20:20:20Z / now
urn:osh:system:lane:db1:lane4	Lane4	2025-05-21T20:20:20Z / now
urn:osh:system:lane:db1:lane2	Lane2	2025-05-21T22:16:41Z / now
urn:osh:system:lane:db1:lane3	Lane3	2025-05-21T22:05:19Z / now
urn:osh:system:lane:db1:lane1	Lane1	2025-05-21T20:16:27Z / now

4. You can verify the system's data was removed from the database by looking through the table for the system and/or its associated submodules.

Updating the Initial System UIDs in a Database

By default the “**Lanes Database**” will add all Lane Systems created to its database. This is because under the System UIDs the default value provided in the initial build has this database handling all modules with the UID **urn:osh:sensor:lane:*** to its list. Here are the steps to update that initial setting.

1. Navigate to the Database tab, and select the “**Lanes Database**” from the list
2. Under the System UIDs, select the item in the list and click the X icon to remove it from the list.

Lanes Database

Configuration

General

Database Config

Automatic Purge Policy

Module Class

org.sensorhub.impl.database.system.SystemDriverDatabase

Module Name

Lanes Database

Module ID

3daf4141-25f7-4f1e-abb2-4eb27300b0dd

Description

System UIDs

urn:osh:system:lane:*

+

×

Database Number

5

Min Commit Period

10000

☒ Auto Start

General module configuration

3. Click the green plus sign icon to add a new **System UID** to the list.
4. In the “**Select an Observing System**” window, Click the box under Manual Entry.

- Enter the following “**urn:osh:system:lane:[unique identifier to be the prefix of the Unique ID of the Lane Systems]:*** ”
(e.g., **urn:osh:system:lane:north:***) This means when you create a **Lane System**, under the Unique ID you should include “north:[id]”

Select an Observing System

Manual Entry

Search

System UID	Name	Validity
urn:orn:client:adjudication:lane5	Adjudication System - lane5	2025-05-22T02:28:18Z / now
urn:orn:client:adjudication:lane4	Adjudication System - Lane4	2025-05-22T02:28:18Z / now
urn:orn:client:adjudication:lane2	Adjudication System - Lane2	2025-05-22T02:28:18Z / now

- Click “**OK**” to add it to the list and select “**Apply Changes**”

It is recommended that you load lanes in the Admin User Interface at <http://localhost:8282/sensorhub/admin>. However, we know this may be tedious for multiple deployments.

If you try to load multiple lanes in your database via the config.json file, you **MUST** ensure that lanes are grouped by their “groupID” configuration. You will not have to worry about this if lanes are manually configured in the Admin UI. By default, lanes will be in groups of 3 in each database.

However, if you load multiple lanes and identify their groupIDs correctly, then you may encounter an error where multiple instances of the same database will load. These duplicated databases that failed to load are safe to delete. You may use the multi-select tool and remove the duplicated databases.

The screenshot shows the OpenSensorHub Admin UI. On the left is a sidebar with navigation links: Shutdown, Logout, Save, Sensors, and Databases. The 'Databases' section is expanded, showing a list of databases including Federated Database, OSCAR Client Config Database, SOS Database, Connected Systems API Database, Persistent Video Database, Group 1 Lanes, Group 0 Lanes, and two instances of 'Group 0 Lanes' (one with a green status icon and one with a red status icon). A context menu is open over the red 'Group 0 Lanes' entry, showing options: Start, Stop, Force Init, Remove Module, Add New Module, Select All Modules, and Deselect All Modules.

The main content area is titled 'Group 0 Lanes' and shows a configuration page. At the top, there is an error message: 'Cannot start module. Cannot instantiate underlying database org.sensorhub.impl.datastore.h2.MVObsSystemDatabase'. Below this, the 'Configuration' tab is active, showing fields for Module Class (org.sensorhub.impl.database.system.SystemDriverDatabase), Module Name (Group 0 Lanes), Module ID (a767a463-bd69-42ee-84c1-d48bb22fc777), and Description. The System UID field is set to 'urn:osh:system:group:0:*'. There are also fields for Module Number (5) and Limit Period (10000), and a checkbox for 'Auto Start' which is checked.

Processing

Restarting a Stopped Module

If one of the process modules has stopped, there are a few things we can do to check what caused it to stop.

1. Check the Process and take note of the error at the top of the screen
2. Navigate to the associated **Lane System** under the **Sensors** tab and check the **RPM Driver** to see if it is still connected and running.
3. If the RPM Driver stopped, we can try restarting the module and take note of the error that caused the module to stop.
4. To restart the module, right click on the driver and click "**Force Init**", after it is in an initialized state, right click on the driver and click "Start"
5. After the RPM module is back in a started state, we can go check on the process module again.
6. Right click on the process and click '**Force Init**' to reinitialize the module, and then right click on the module in the left panel and select "**Start**"
7. If the process starts then we can deduce that the error was due to the RPM driver not running properly.

If the process module does not restart after taking these steps we can try removing the process and creating a new one.

1. To remove a module, right click on the module and select "**Remove Module**"
2. To add a new process module, we can follow the steps under the Configuration section about [Processing](#).

OSCAR Client Viewer Setup Guide

This guide walks you through viewing and managing local and remote nodes using the OSCAR Client.

Servers

Viewing a Remote Nodes Client

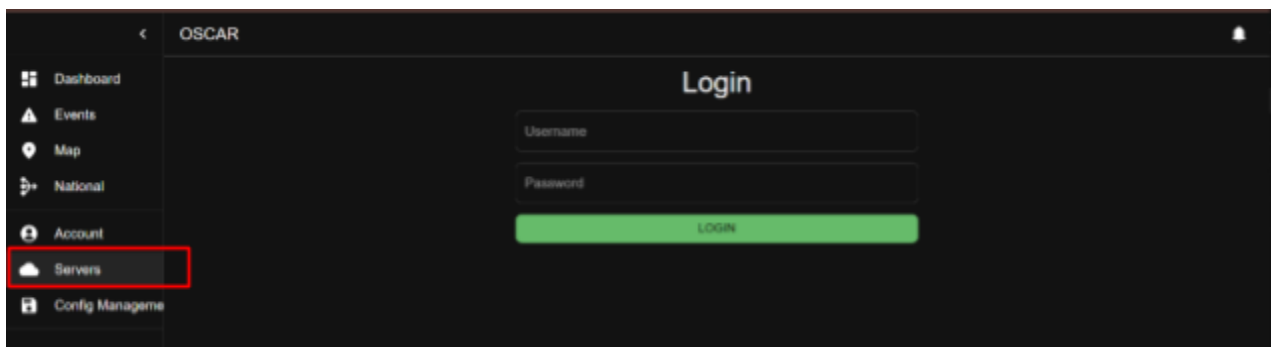
To access a remote node:

1. Identify the **public IP address** of the node
2. Open **Google Chrome**
3. Enter the following URL into the browser:
 - **Client Viewer:**

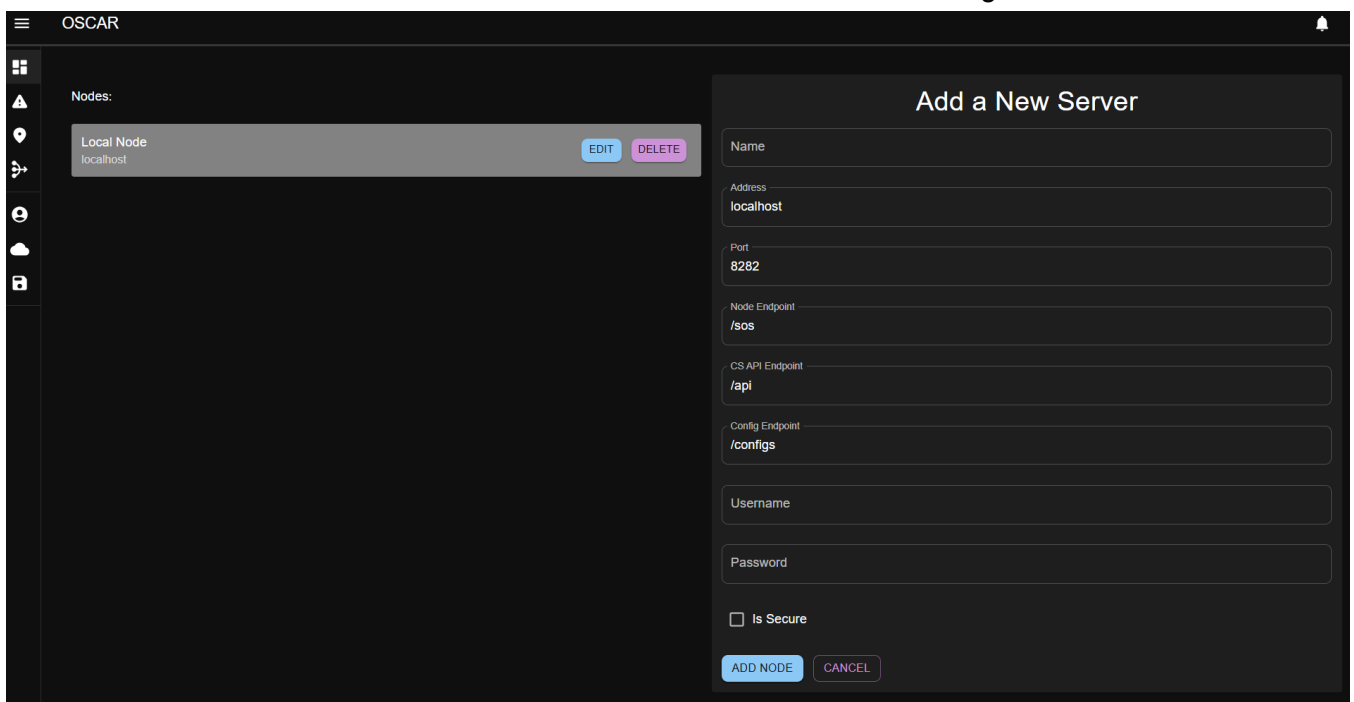
- [http://\[ip-address\]:8282](http://[ip-address]:8282)
 - **Admin Panel:**
 - [http://\[ip-address\]:8282/sensorhub/admin](http://[ip-address]:8282/sensorhub/admin)
4. Press **Enter**. You should see the OSCAR viewer or the Admin Panel depending on which URL you navigated to.

Adding a Remote Node to the Client

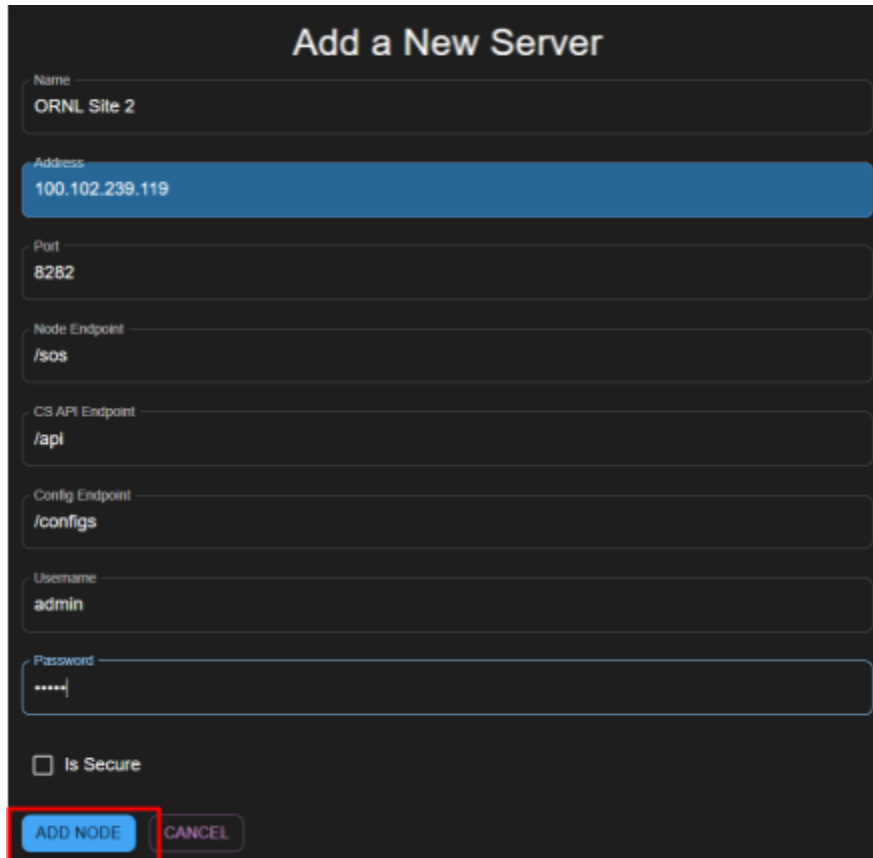
1. Open Google Chrome
2. Go to your OSCAR Viewer Client:
 - [http://\[ip-address\]:8282](http://[ip-address]:8282)
3. Click the “**Cloud**” icon on the left sidebar or select “**Servers**” from the expanded menu.



4. On the **Servers** page:
- The **Nodes** list is on the left
 - The form to “**Add a New Server**” or “**Edit Server**” is on the right



5. Fill out the following fields in the form
 - **Name:** Descriptive name for the new node
 - **Address:** Public IP address of the new node
 - **Username:** admin (default)
 - **Password:** oscar (default)
 - **Is Secure:** (Check this box if the connection uses HTTPS)
6. Click “Add Node”



Add a New Server

Name
ORNL Site 2

Address
100.102.239.119

Port
8282

Node Endpoint
/sos

CS API Endpoint
/api

Config Endpoint
/configs

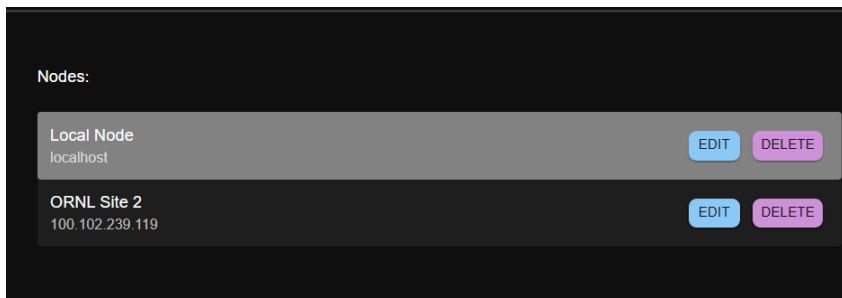
Username
admin

Password

☐ Is Secure

ADD NODE **CANCEL**

7. Verify the new node is connected by visiting the “**Dashboard**” page or the “**National Site**” page. Snackbar notifications will confirm if the node is reachable.

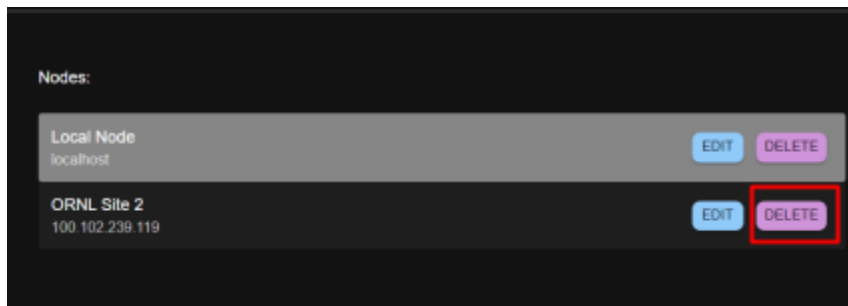


Nodes:	
Local Node localhost	EDIT DELETE
ORNL Site 2 100.102.239.119	EDIT DELETE

Removing a Remote Node to the Client

⚠ You cannot remove the default/local node (the first node listed).

1. Access the Oscar Client viewer by opening up Google Chrome:
 - [http://\[ip-address\]:8282](http://[ip-address]:8282)
2. Navigate to the **Servers** page (**Cloud** icon)
3. Under the list of nodes, click the purple **“Delete”** button next to the node you want to remove.



Editing an Existing Server

1. Access the Oscar Client:
 - [http://\[ip-address\]:8282](http://[ip-address]:8282)
2. Navigate to the servers page by clicking the **“Cloud”** icon or expanding the navigation menu and clicking the **“Servers”** tab
3. Click the **“Edit”** button by the node that you want to edit



4. The **Edit Form** will open on the right side of the panel
5. Make any modifications to the node, and click **“Save”**

Edit Node

Editing Node: node-9ad2a09a-b5a6-2460-a395-4df9efc849b1

Name

Remote Node

Address

localhost

Port

8282

Node Endpoint

/sos

CS API Endpoint

/api

Config Endpoint

/configs

Username

admin

Password

☐ Is Secure

SAVE CHANGES

CANCEL