

Orchid Core VMS Administrator Guide

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IPConfigure

Table of Contents

- Introduction 5
 - About the Orchid Product Family 6
 - About the Orchid Core VMS Administrator Guide 8
- How to Sign In 9
 - A Quick Word on Web Browsers and Operating Modes10
 - Signing In.....11
- Getting Started13
 - Accessing the System Menu14
 - Accessing the Configuration Menu15
- Activating Orchid Core VMS16
 - About Orchid Core VMS Licenses17
 - Add a License (Quick Method)19
 - Add a License (Offline Method).....22
 - Modifying an Existing License (Quick Method)26
 - Modifying an Existing License (Offline Method).....28
- Creating and Managing Users32
 - About Orchid Core VMS User Roles33
 - Access the Orchid Core VMS Users List.....34
 - Adding a New User35
 - Editing Existing Users36
 - Deleting Existing Users37
 - Searching for a User38
- Adding and Managing Cameras.....39
 - Adding One or More Cameras (using Auto Mode).....41
 - Adding a Single Camera (in Manual Mode)44
 - Multi-stream Capabilities.....46
 - Edit Camera Stream Settings48
 - Camera Settings.....49
 - Camera Stream Settings.....53
 - Advanced Settings: Fisheye Dewarping63
 - Advanced Settings: Motion Detection66
 - Add a Stream69
 - Copy Stream to Cameras70
 - Cameras with Multiple Lenses74
 - Restarting a Stream76
 - Removing a Stream.....77
 - Recovering a Camera78

Removing a Camera	80
Removing Multiple Cameras	81
Searching for a Camera	82
Retention Policy	83
About Video File Retention	84
Accessing the Retention Policy	85
Changing Desired Retention Settings	86
Reviewing the Current Disk Utilization	89
View the System Status	90
Accessing the System Status Report	91
Reviewing the Stream Status Section	92
Troubleshooting the Camera Stream Status	94
Viewing the System Report	95
Accessing the System Report	96
Working with the Server Events and Stream Statistics	97
Working with the Log Export	99
Defining and Managing Event Subscriptions	100
Access the Event Subscriptions List	101
Adding an Event Subscription	105
Adding an ONVIF Subscription	106
Adding an External Subscription	109
Editing and Deleting an Event Subscription	113
Advanced Settings	116
Accessing the Advanced Settings	117
Editing Properties	119
Property Search Feature	123
Version Information	124
Accessing the Version Information Screen	125
Update Client Feature	126
Advanced Topics	127
Degraded State	128
Trouble Adding a Camera	131
Trouble Viewing the Camera Stream in Orchid Core VMS	132
Checking for Packet Loss	133
About WebRTC	140
WebRTC Statistics	142
WebRTC Troubleshooting	145
Additional Troubleshooting	148
Comparing Orchid Core VMS Operating Modes	151

Additional Support 153

 How to Submit a Support Request 154

Introduction

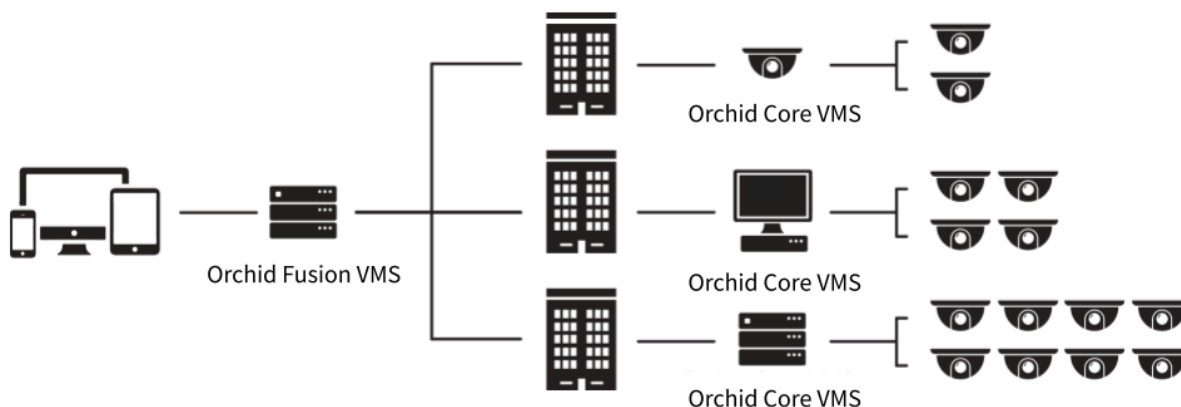
Thank you for your interest in IPConfigure's Orchid Core Video Management System. This guide should provide you with everything you need to know as you prepare the system for readiness. We'll begin with an overview of the product and the user guide, then we'll explain how to activate a license, and add users and cameras to get the system up and running. Once that is done, we'll cover the reporting features and other advanced topics to help you manage and understand the system.

About the Orchid Product Family

Orchid Core VMS is the foundation of IPConfigure's Video Management System. Orchid Core VMS runs on a single server to collect, record, and store video from network cameras. Accessible via an intuitive web browser interface, Orchid Core VMS allows users to view live and recorded video from virtually any web-enabled device.

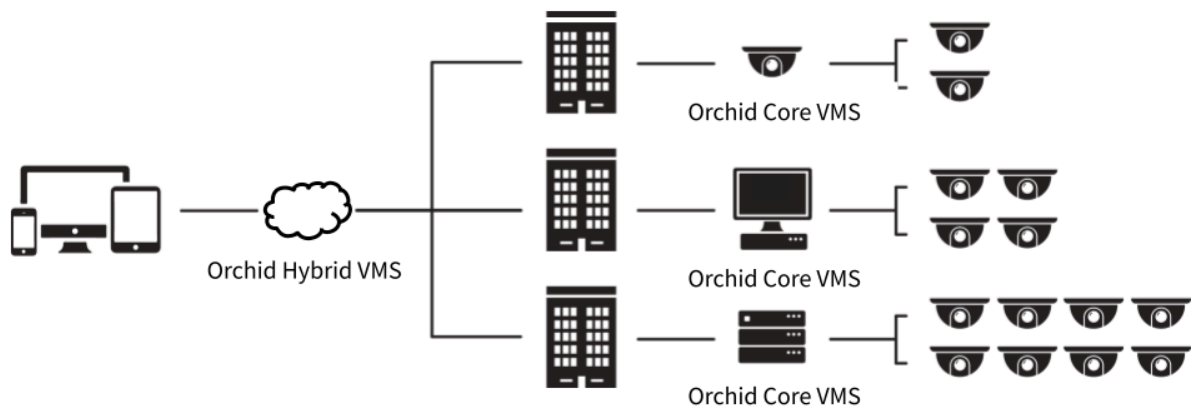
Orchid Fusion/Hybrid VMS is an enterprise software developed to integrate multiple Orchid Core VMS servers from various locations into one seamless management system. Designed to work across a variety of operating systems, camera types and network topologies, Orchid Fusion/Hybrid VMS is the perfect solution for large organizations.

Orchid Core VMS and Orchid Fusion/Hybrid VMS have very similar user interfaces, and both systems allow viewing and exporting video, but there is a key difference between the two. While Orchid Core VMS works on the camera level, Orchid Fusion/Hybrid VMS now works on the camera level and the server level. In Orchid Core VMS, the administrator will "register" network cameras, configure camera stream settings, and establish video retention levels for each camera. Orchid Fusion/Hybrid VMS has the power to "register" both cameras and individual Orchid Core VMS servers, resulting in increased management capabilities to an entire network of Orchid Core VMS servers.



Orchid Fusion and Orchid Hybrid

Orchid Fusion VMS and Orchid Hybrid VMS are nearly identical systems. They are both used to manage multiple Orchid Core VMS servers. Orchid Fusion VMS requires you to have one or more Orchid Core VMS servers and an Orchid Fusion VMS server to manage them. Orchid Hybrid VMS combines on-premise recording with cloud management. So while video is still stored on-site (on an Orchid server), the Hybrid system provides server aggregation, management, and accessibility through the cloud.



About the Orchid Core VMS Administrator Guide

The Orchid Core VMS Administrator Guide is designed for IPConfigure dealers, integrators, or system administrators and is intended to cover the topics that deal with system administration and features that are not part of everyday operation.

This guide includes information on the following topics:

- Signing into the Orchid Core VMS Software
- Getting Started
- Activating the Orchid Core VMS Software
- Creating and Managing Users
- Adding and Managing Cameras
- Understanding the Video Retention Policy
- Viewing System Status and System Report
- Event Subscriptions
- Advanced Settings
- Version Information
- Advanced Topics
- Additional Support

The Advanced Topics section has been expanded to include a variety of topics related to WebRTC. These topics share some general knowledge on WebRTC, how Orchid Core VMS works in WebRTC mode, and troubleshooting tips.

For details on working with the *Stage*, *Timeline Bar*, viewing *Events*, and viewing/recording video, please refer to the [Orchid Core VMS User Guide](#).



Your Orchid Core VMS server may be registered to an Orchid Fusion or an Orchid Hybrid supervisory system. References to those products appear throughout this guide, but may not be applicable to your system.

How to Sign In

Orchid Core VMS can be accessed easily through most modern web browsers, such as the latest versions of Chrome or Firefox. The latest version of Chrome is recommended. Your browser choice, however, will determine the available operating modes for Orchid Core VMS.

* The following web browsers are explicitly *not* supported: Internet Explorer 11, Firefox 52 ESR, and any Google Chrome version older than version 48.

A Quick Word on Web Browsers and Operating Modes

Orchid Core VMS supports Web Real-Time Communication (WebRTC). This technology allows for viewing full-bandwidth, live and recorded H264 video streams within a web browser (without the need to download a plugin). Beginning in version 23.6, Orchid supports WebRTC retransmission by default. With WebRTC retransmission, the web browser can resend video packets to Orchid to help ensure that packets arrive. This improvement allows WebRTC to provide full-bandwidth video even in marginal network conditions.

WebRTC mode and Low-bandwidth mode are available in the following browsers:

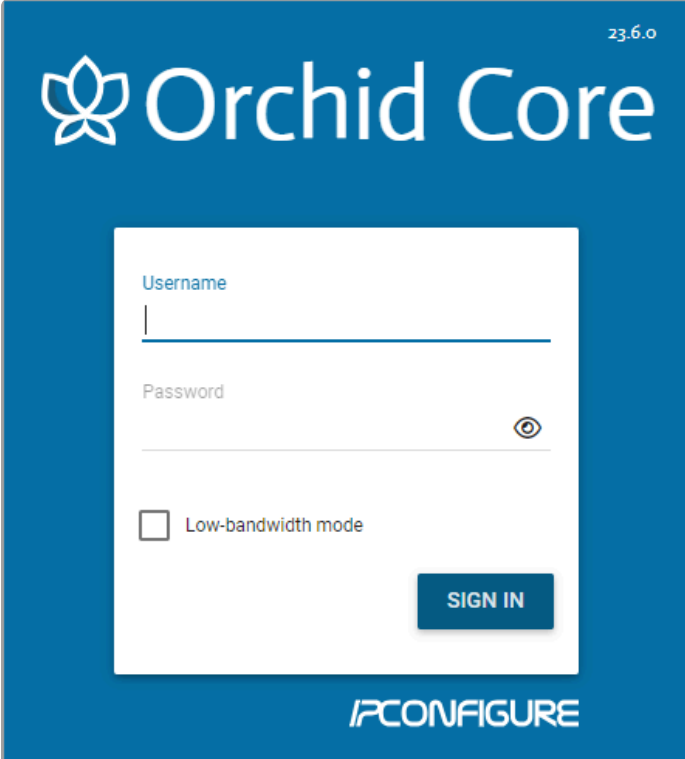
- (Preferred) Google Chrome, version 66 or higher, in a MacOS, Windows, or Linux desktop environment, or on a mobile device
- The latest version of Safari (mobile and desktop)
- The latest version of Mozilla Firefox
- The latest version of Microsoft Edge

All other web browsers support Low-bandwidth mode only. (For a detailed comparison of the two operating modes, please refer to the [Comparing Orchid Core VMS Operating Modes](#) section.)

Signing In

To open Orchid Core VMS on a client device, type the IP address of the Orchid Core VMS server in the web browser address bar. If you are opening Orchid Core VMS on the Orchid Core VMS server itself, you may enter *localhost* in the address bar, or use the Orchid Core VMS program link in the system menu or the Desktop icon, if available. (If the default web server port number was changed to a value other than 80, the IP address or *localhost* will need to be followed by a colon and the web server port number. Example: *localhost:81*)

1. You will be prompted to enter a username and password to sign into Orchid Core VMS. If you are the Administrator and this is your first time signing in, enter the username *admin* and the password you set when Orchid Core VMS was installed. If you are an Orchid Core VMS Manager, enter the username and password provided by your Administrator.
2. If you are using a browser that supports WebRTC mode, you will have the option to run Orchid Core VMS in Low-bandwidth mode. (Mark the *Low-bandwidth mode* checkbox to run in Low-bandwidth mode.) In all other web browsers, you will sign in using Low-bandwidth mode by default.
3. Press **Sign In**. (You will remain signed in for approximately 30 days.)

The image shows the Orchid Core VMS sign-in interface. It has a blue background with the Orchid Core logo and name at the top. The version number 23.6.0 is in the top right corner. In the center, there is a white box containing the login form. The form has two input fields: 'Username' and 'Password'. The 'Password' field has a toggle icon (an eye) to the right of it. Below the password field is a checkbox labeled 'Low-bandwidth mode'. At the bottom right of the white box is a blue button with the text 'SIGN IN'. At the bottom of the blue background, the IPCONFIGURE logo is visible.

* The username and password are both case sensitive.

✿ The *Low-bandwidth mode* checkbox will only be visible if you are using a browser that supports WebRTC mode.

Getting Started

Once you are signed in, you will be ready to work on activating your Orchid Core VMS license and configuring the Orchid Core VMS system. You'll learn much more about the user interface in the [Orchid Core VMS User Guide](#), but for administrative purposes, here's how to find what you need.

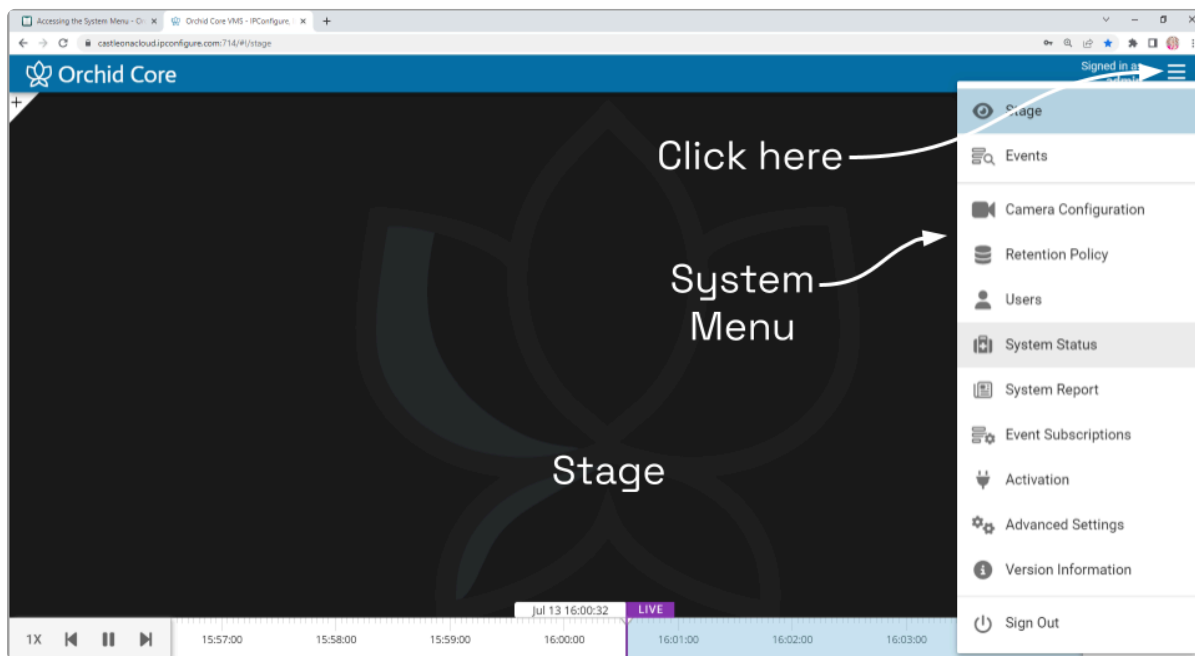
The *System Menu* (accessible from the top-right corner of the screen) is the primary navigation menu and will always be available. It allows the Administrator to access all of the software features like the *Stage*, *Camera Configuration*, *Retention Policy*, etc. For Managers, Viewers, and Live Viewers, the *System Menu* will contain only those items for which the user has permissions. (Access to the *Stage* and Sign Out are exclusively available on the *System Menu* and are available to all users.)

Accessing the System Menu



This is the *Hamburger* icon.

1. To open the *System Menu*, click on the *Hamburger* icon in the top-right corner of the screen.

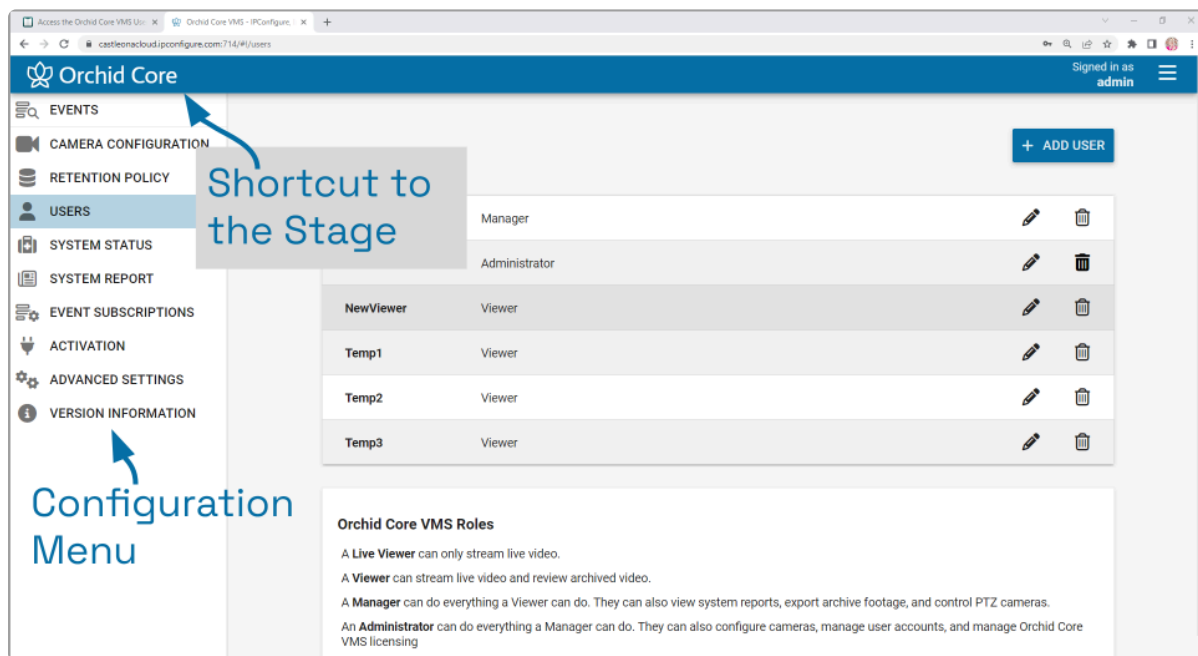


Accessing the Configuration Menu

1. To open the *Configuration Menu*, go to the *System Menu*, then click on any of the available selections except *Stage* or *Sign Out*.

The *Configuration Menu* is a secondary navigation menu that will not be available when the *Stage* is open. It allows the Administrator to access all of the software features except the *Stage* and *Sign Out*. For users without Administrator permissions, the Configuration Menu will contain only those items for which the user has permissions, and will not include the *Stage* and *Sign Out*.

When you are using Orchid Core VMS on a PC (and the web browser is set to zero or minimal zoom), once you access the *Configuration Menu*, it will remain visible on the left side of the screen until you return to the *Stage*.



* Shortcut: To access the *Stage* quickly, just click on the “Orchid Core” portion of the header (as indicated above).

Activating Orchid Core VMS

In order to increase the number of cameras and features available in Orchid Core VMS, it must be activated with a valid *Core*, *Fusion*, or *Hybrid* license.



An Administrator is the only role with the ability to activate Orchid Core VMS.

About Orchid Core VMS Licenses

Beginning in version 23.3, there are four main types of licenses available for the Orchid Core VMS software: *Trial*, *Core*, *Fusion*, and *Hybrid*. Each license type offers certain capabilities and restrictions.

- **Trial License**
 - This is our default, out-of-the-box Orchid license.
 - When installed on a Windows x86-64 server or a Linux x86-64 server, the *Trial* license will allow up to four cameras, and up to 128GB of video archives. The *Trial* version can also be linked to an Orchid Fusion or an Orchid Hybrid VMS system.
 - When installed on a Linux ARM embedded server, the *Trial* license will now allow up to four cameras, and up to 128GB of video archives. This *Trial* license type does not support linking to an Orchid Fusion or Orchid Hybrid VMS system.
- **Core License**
 - The *Core* license offers unlimited archives, but will limit the number of cameras allowed and cannot be linked to an Orchid Fusion or an Orchid Hybrid VMS. When a Core license expires, the Orchid software will continue to work, but you will not qualify for technical support or software upgrades.
- **Fusion License (for Orchid Core VMS)**
 - The *Fusion* license is an Enterprise license. This license will limit the number of cameras allowed, but offers unlimited archives and can be linked to any of our management servers (including a Fusion server, a Hybrid server, or an Alto server). When the *Fusion* license expires, the Orchid server will continue to record, but you will no longer be able to connect to your management server, and you will no longer qualify for technical support or software upgrades.
- **Hybrid License (for Orchid Core VMS)**
 - The *Hybrid* license is an Enterprise license. This license will limit the number of cameras allowed, but offers unlimited archives and can be linked to a Hybrid management server (only). When the Hybrid license expires, the Orchid server will continue to record, but you will no longer be able to connect to the Hybrid management server, and you will no longer qualify for technical support or software upgrades.

✿ When we talk about providing “unlimited archives,” we mean that we won’t set an absolute limit on the archives (such as the 128 GB limit on some *Trial* licenses). The archives will only be limited to the available space on the local Orchid server, or the amount of storage that is available on your management server in the cloud.

Time-Limited Licenses

IPConfigure also offers time-limited versions of the *Core*, *Fusion*, and *Hybrid* licenses. Generally, these will be used as SaaS licenses, and for testing large numbers of cameras or high retention settings (which would be impossible to do with the standard *Trial* license).

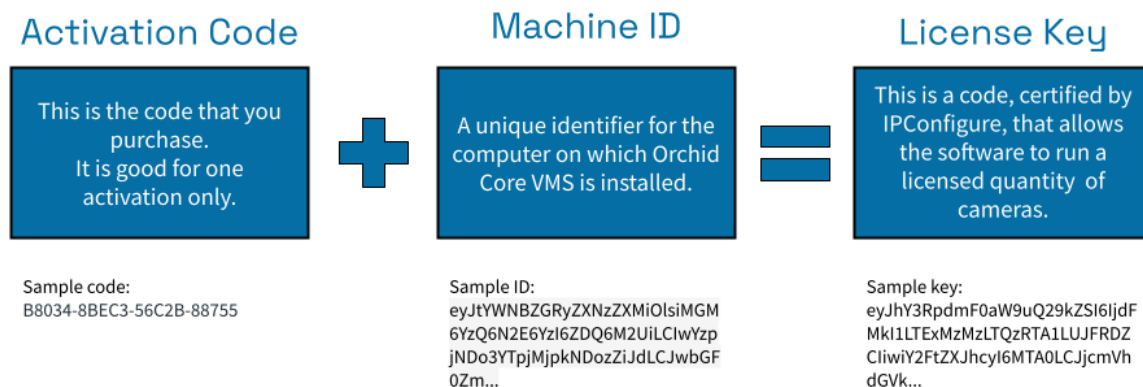
Time-limited licenses are very similar to the standard licenses described above, and allow you to add a certain number of cameras with unlimited video retention. There is an important difference in the way these licenses operate, however, once the timed-limited license expires. Let's look at each of these licenses individually.

- **Core-Timed License**
 - If you have a Core-timed license, and the time limit expires, Orchid Core VMS will enter a degraded mode and will stop recording video. Previously recorded video will continue to be accessible in this degraded mode. (See [License Errors](#) for more details.)
- **Fusion-Timed License (for Orchid Core VMS)**
 - If you have a Fusion-timed license, and the time limit expires, the Orchid Core VMS will enter a degraded mode and will stop recording video. Previously recorded video will continue to be accessible in this degraded mode. At the Fusion server, the Orchid server may remain in the *Servers* list, but you will not be able to view any new video from the degraded Orchid server.
- **Hybrid-Timed License (for Orchid Core VMS)**
 - If you have a Hybrid-timed license, and the time limit expires, the Orchid Core VMS will enter a degraded mode and will stop recording video. In addition, you will lose all access to the Hybrid management server in the cloud.

Add a License (Quick Method)

When you purchase a license, you will be given an activation code. As indicated in the diagram below, the activation code is just the starting point in the process of adding a license. This code, after being paired with your Machine ID, will generate a license key. With this quick method, most of the work is done behind the scenes.

* This quick method of activation requires that the Orchid Core VMS server has an internet connection.



* When you add, remove, or update a license, a *Licensed Changed* event will appear on the [System Report](#).

1. Open Orchid Core VMS and sign in using an administrator level username and password.
2. Once signed into Orchid Core VMS, open the *System Menu* in the top-right corner of the screen and select **Activation**.

* If Orchid Core VMS has not yet been activated, the licensing screen will show that Orchid Core VMS is using the Trial Edition.

Orchid Core VMS Activation

Orchid Core VMS has **not yet** been activated.

Trial License Info

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
trial	4/4	128 GB	N/A	N/A

Registered Cameras / Licensed Cameras

Add License

+ ADD LICENSE

- When the *Orchid Core VMS Activation* screen appears, click the **Add License** button to activate a new license.

Activation ✕

Please provide your Activation Code and a location description.

Activation Code* Enter Activation Code

7FFB0-510E1-AD114-A3CC4

Location

1334 Main Street

Activate License

OFFLINE ACTIVATION CANCEL **ACTIVATE**

- On the *Activation* screen, enter your activation code in the *Activation Code* field. (Sample code: B8034-8BEC3-56C2B-88755)
- Then input a location description that specifies where your Orchid Core VMS server will be located. Common location descriptions are a shop name, number, or location.
- Click the **Activate** button to generate your new Orchid Core VMS license. If the license creation is successful, a screen will appear that indicates success.

Orchid Core VMS Activation



Orchid Core VMS has been activated.

Activation Complete

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
fusion	4/16	Unlimited	Saturday, February 13, 2021 UTC	7FFB0-510E1-AD114- A3CC4

Thank you!

**Registered Cameras /
Licensed Cameras**

 UPDATE LICENSE  REMOVE LICENSE

Add a License (Offline Method)

Use the Offline Activation method if the Orchid Core VMS server doesn't have an internet connection. This activation method is very similar to the activation method used in older versions of Orchid Core VMS.

* When you add, remove, or update a license, a *Licensed Changed* event will appear on the [System Report](#).

1. Open Orchid Core VMS and sign in using an administrator level username and password.
2. Once signed into Orchid Core VMS, open the *System Menu* in the top-right corner of the screen and select *Activation*.

* If Orchid Core VMS has not yet been activated, the licensing screen will show that Orchid Core VMS is using the Trial Edition.

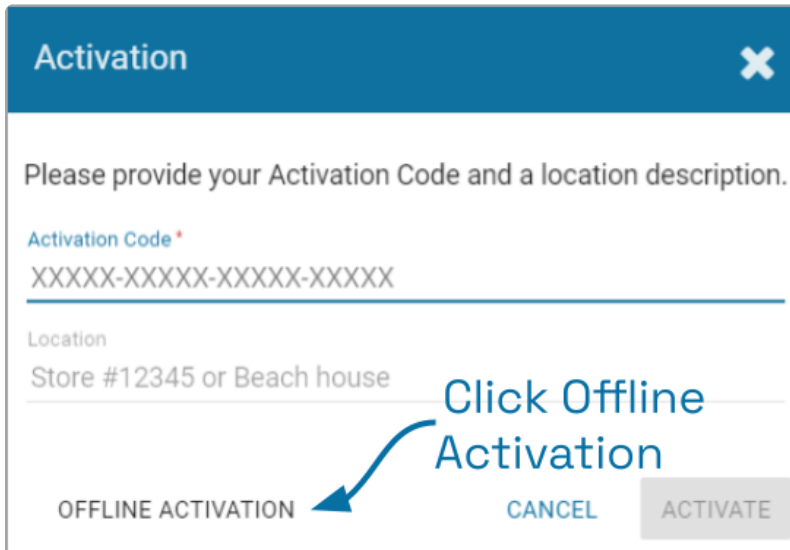
The screenshot displays the 'Orchid Core VMS Activation' interface. At the top, it states 'Orchid Core VMS has **not yet** been activated.' Below this is a table with the following data:

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
trial	4/4	128 GB	N/A	N/A

Annotations on the screenshot include:

- 'Trial License Info' with an arrow pointing to the table.
- 'Registered Cameras / Licensed Cameras' with an arrow pointing to the '4/4' value in the 'Cameras Licensed' column.
- 'Add License' with an arrow pointing to the '+ ADD LICENSE' button.

3. When the Orchid Core VMS Activation screen appears, click the *Add License* button to activate a new license.



Activation

Please provide your Activation Code and a location description.

Activation Code *

XXXXX-XXXXX-XXXXX-XXXXX

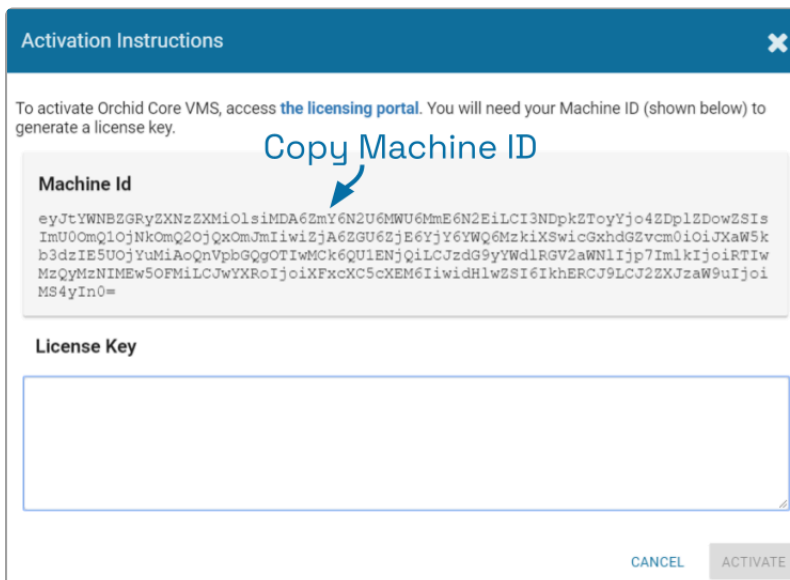
Location

Store #12345 or Beach house

Click Offline Activation

OFFLINE ACTIVATION CANCEL ACTIVATE

4. On the *Activation* screen, click the *Offline Activation* button.



Activation Instructions

To activate Orchid Core VMS, access [the licensing portal](#). You will need your Machine ID (shown below) to generate a license key.

Copy Machine ID

Machine Id

eyJtYWNBZGRyZXNzZXMiOIsiMDA6ZmY6N2U6MWU6MmE6N2EiLCI3NDpkZTcyYj04ZDplZDowZSI6ImU0OjQ1OjNkOmQ2OjQxOmJmIiwia2IjA6ZGU6ZjE6YjY6YWQ6MzkiXSwicGxhdGZvcn0iOiJXaW5kb3dzIE5UOjYyMiAoQnVpbGQgOTIwMCK6QU1ENjQ1LCJzdG9yYWdlRGV2aWN1Ijp7ImkIjo1RTIwMzQyMzNIMEw5OFMiLCJwYXR0Ijo1XFxcXC5cXEM6IiwidHlwZSI6IkhERCJ9LCJ2ZXJzaW9uIjo1MS4yIn0=

License Key

CANCEL ACTIVATE

5. Copy your Machine ID. (Click and drag from the beginning to the end of the text string, then click **CTRL+C** to copy it.)
6. Click **CTRL+V** to paste the ID into a text file on a USB drive that you can use on a computer with internet access.
7. Using a computer with internet access, go to the following site:
<https://www.orchidsecurity.com/activation>.

[illegible]

8. Paste your machine ID (from the USB drive) into the *Machine ID* field.
9. Enter the Activation Code that was provided when you purchased your Orchid Core VMS license into the *Activation Code* field. (Sample code: B8034-8BEC3-56C2B-88755)
10. Enter a location description that specifies where your Orchid Core VMS server will be located. Common location descriptions are a shop name, number, or location.
11. Click the **Activate License** button to generate your new Orchid Core VMS license. If the license creation is successful, a screen will appear that indicates success and includes a License Key. (The License Key looks like a paragraph of random text.)

- ✿ If the activation code has already been used for another machine, then the license generation will fail saying “The provided activation code has already been paired with a different machine ID.” If this happens, you’ll need to either purchase a new Activation Code, or submit a ticket to the IPConfigure Technical Support Team.

[illegible]

- Highlight the license key text and click **CTRL+C** or press the **Copy to Clipboard** button to copy the License Key to a text file on a USB drive, then take it back to the Orchid Core VMS server.

[illegible]

- Click into the *License Key* field on the *Activation Instructions* screen. Click **CTRL+V** to paste the text into the field.
- Click the **Activate** button to activate your new license key.

If the activation was successful, you will see a message at the top of your screen saying “Orchid Core VMS has been activated.” The Edition, Cameras Licensed, Archive Retention, and Support Expiration fields will all be updated to match the license you purchased.

Orchid Core VMS Activation

Orchid Core VMS has been activated. **Activation Complete**

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
fusion	4/16	Unlimited	Saturday, February 13, 2021 UTC	EF778-28206-A2082-3F85D

Thank you!

Registered Cameras / Licensed Cameras

[UPDATE LICENSE](#) [REMOVE LICENSE](#)

Modifying an Existing License (Quick Method)

If you want to add more cameras to the system, upgrade from a *Core* license to a *Fusion* or *Hybrid* license, or simply extend your support agreement, you will need to modify an existing Orchid Core VMS license.

* A valid support agreement is required to install software updates. If your agreement expires, you will be able to install versions of the software that were released before your agreement expired, but you will not be able to install new software updates. (If you attempt to install software that was released after your support expires, your Orchid Core VMS server will not function properly; contact your IPConfigure sales representative to purchase an upgrade or renewal).

* If you have an expired, time-limited license, Orchid Core VMS will enter a degraded state and will stop recording. (See [License Errors](#) for more details.)

* If you add, remove, or update a license, a *Licensed Changed* event will appear on the [System Report](#).

1. Open Orchid Core VMS and sign in using an administrator level username and password.
2. Once you are signed into Orchid Core VMS, open the *System Menu* in the top-right corner of the screen and select **Activation**.


Orchid Core VMS Activation


Orchid Core VMS has been activated.

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
fusion	4/16	Unlimited	Saturday, February 13, 2021 UTC	7FFB0-510E1-AD114- A3CC4

Thank you!

Update
License

 UPDATE LICENSE

 REMOVE LICENSE

3. When the Orchid Core VMS *Activation* screen appears, click the **Update License** button.

Activation

Please provide your Activation or Upgrade Code and a location description.

Activation or Upgrade Code*
3B56-F264-3522-4E7B

Location
1334 Main Street

Click Activate

OFFLINE ACTIVATION CANCEL ACTIVATE

4. When the *Activation* screen appears, enter your *Renewal/Add-On* code into the *Activation* or *Upgrade Code* field.
5. In the *Location* field, enter a description that specifies where your Orchid Core VMS server will be located. Common location descriptions are a shop name, number, or location.
6. Click the **Activate** button. The Orchid Core VMS *Activation* screen should appear and should display updated license information. (In this case, the number of licensed cameras has increased.)

Orchid Core VMS Activation

Orchid Core VMS has been activated.

Renewal/Upgrade Complete

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
fusion	4/17	Unlimited	Saturday, February 13, 2021 UTC	7FFB0-510E1-AD114-A3CC4

Thank you!

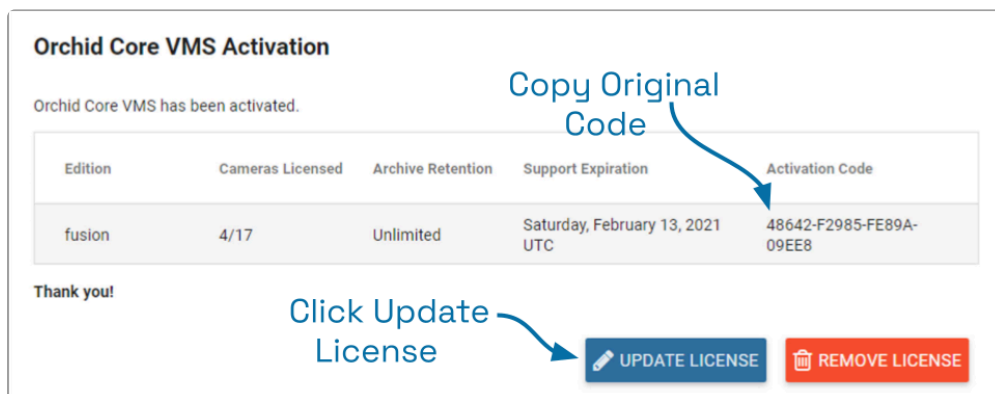
Registered Cameras / Licensed Cameras

UPDATE LICENSE REMOVE LICENSE

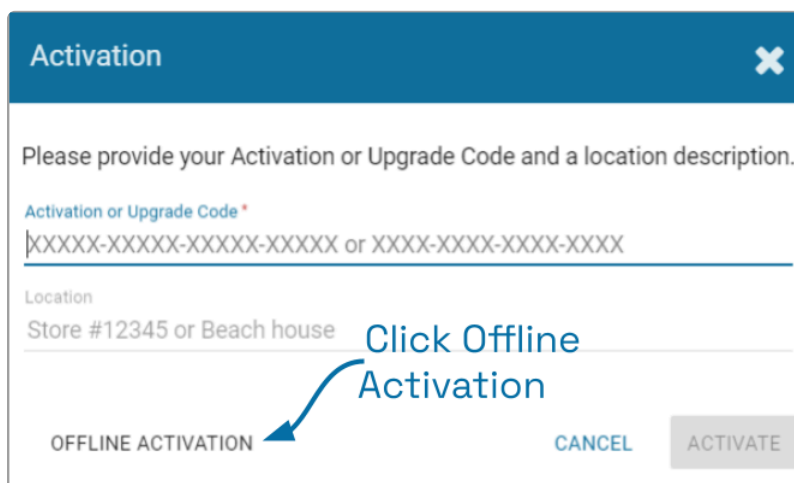
Modifying an Existing License (Offline Method)

Use the Offline renewal/upgrade method if the Orchid Core VMS server doesn't have an internet connection. This renewal method is very similar to the activation method used in older versions of Orchid Core VMS.

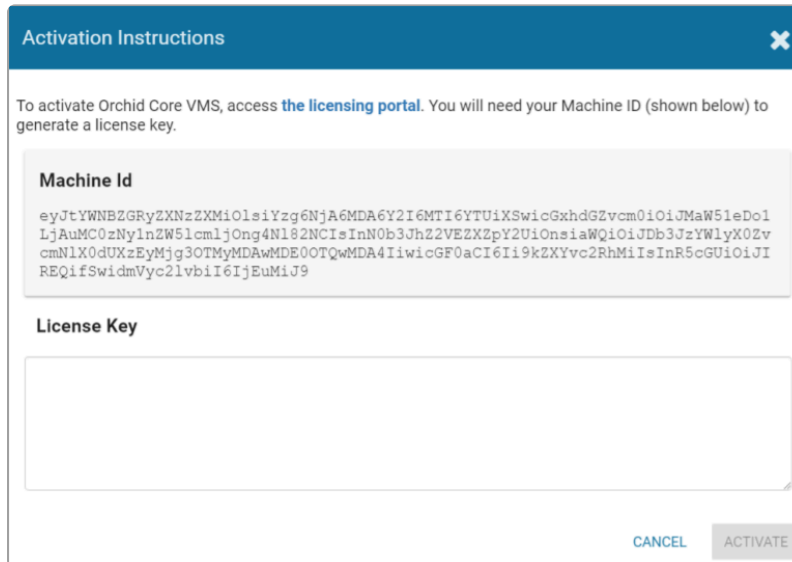
1. Open Orchid Core VMS and sign in using an administrator level username and password.
2. Once signed into Orchid Core VMS, open the *System Menu* in the top-right corner of the screen and select **Activation**.



3. When the *Orchid Core VMS Activation* screen appears, click and drag over your original activation code to select it, then click **CTRL+C** to copy the code. (You will need this code later.)
4. Open a new text file and click **CTRL+V** to paste the original activation code into the text file.
5. Save this text file on a USB drive that you can use on a computer with internet access.
6. Press the **Update License** button.



7. At the *Activation* screen, press the **Offline Activation** button.



Activation Instructions

To activate Orchid Core VMS, access [the licensing portal](#). You will need your Machine ID (shown below) to generate a license key.

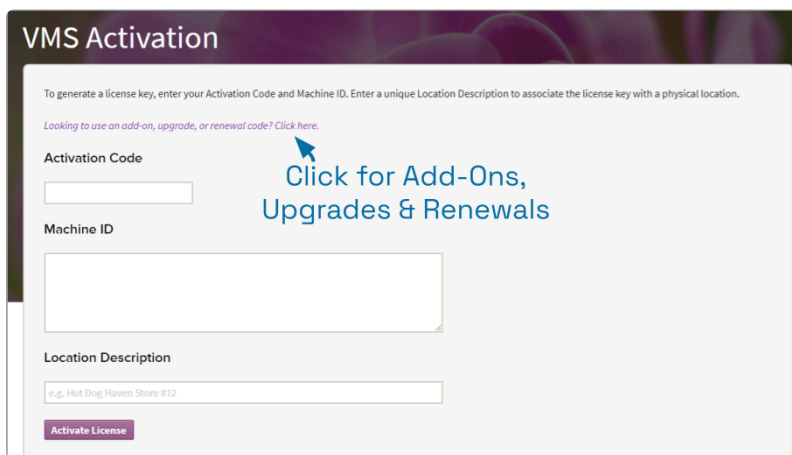
Machine Id

```
eyJtYWNBZGRyZkxzZXMiOlsiYzg6NjA6MDA6Y2I6MTI6YTU1KSwicGxhdGZvcml0iJMaW5leDo1
LjAuMC0zNy1nZW51cm1jOng4N182NCIsInN0b3JhZ2VEZXZpY2UiOmsiaWQiOiJDb3JzYWlyX0Zv
cmNlX0dUXzEyMjg3OTMyMDAwMDE0OTQwMDA4IiwicGF0aCI6Ii9kZXVvc2RhMiIsInR5cGU0iJJI
REQifSwidmVyc2lvbiI6IjEuMiJ9
```

License Key

[CANCEL](#) [ACTIVATE](#)

8. When the *Activation Instructions* screen appears, this is your cue to take your USB drive and find a computer with internet access. Open a web browser and go to www.orchidsecurity.com/activation. The *VMS Activation* screen will appear.



VMS Activation

To generate a license key, enter your Activation Code and Machine ID. Enter a unique Location Description to associate the license key with a physical location.

[Looking to use an add-on, upgrade, or renewal code? Click here.](#)

Activation Code

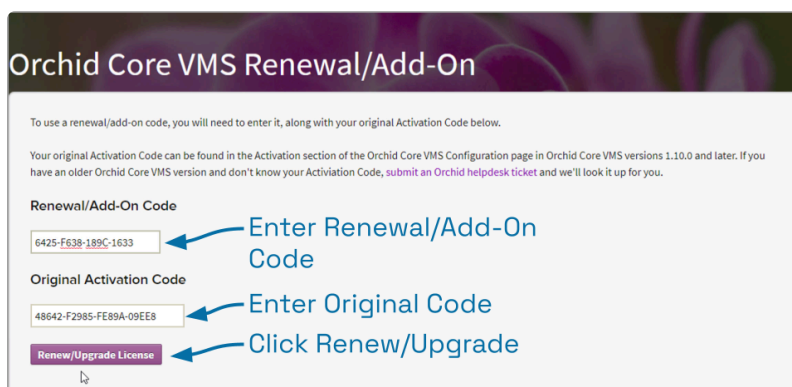
Machine ID

Location Description

[Activate License](#)

Click for Add-Ons, Upgrades & Renewals

9. Click on the link that says: "Looking to use an add-on, upgrade, or renewal code? Click here." The *Renewal/Add-On* screen will appear.



Orchid Core VMS Renewal/Add-On

To use a renewal/add-on code, you will need to enter it, along with your original Activation Code below.

Your original Activation Code can be found in the Activation section of the Orchid Core VMS Configuration page in Orchid Core VMS versions 1.10.0 and later. If you have an older Orchid Core VMS version and don't know your Activation Code, [submit an Orchid helpdesk ticket](#) and we'll look it up for you.

Renewal/Add-On Code

Original Activation Code

[Renew/Upgrade License](#)

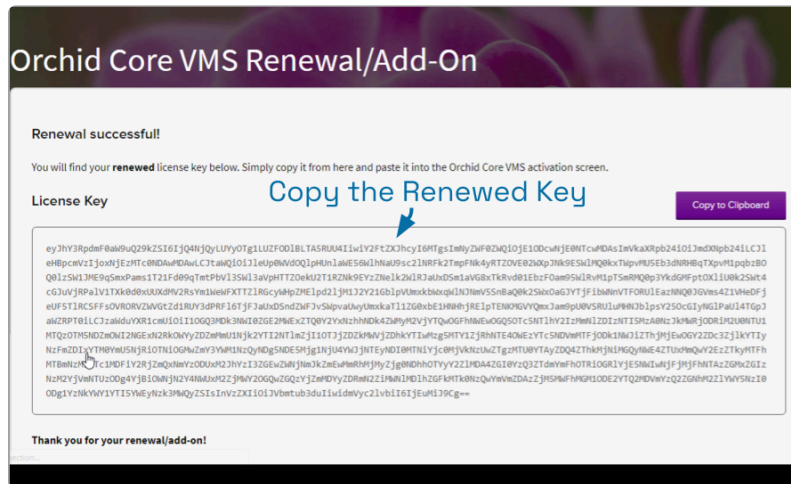
Enter Renewal/Add-On Code

Enter Original Code

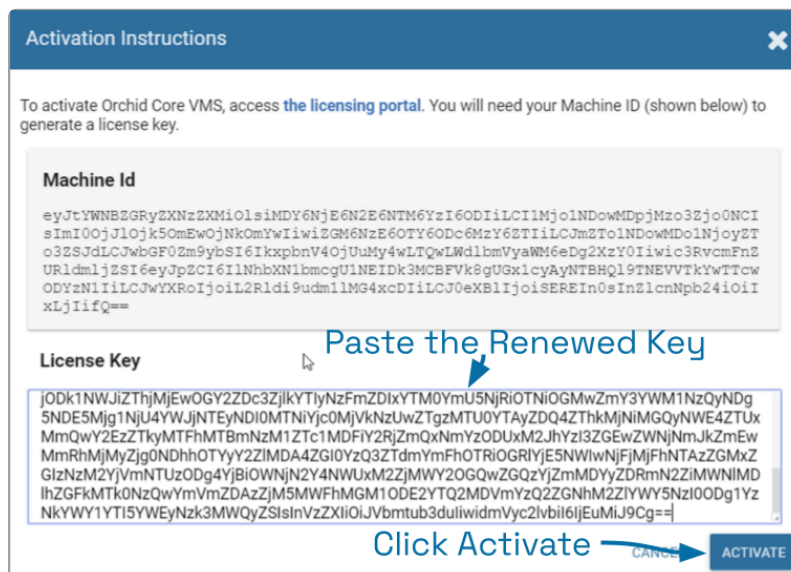
Click Renew/Upgrade

10. Once you reach the *Renewal/Add-On* screen, go to the *Original Activation Code* field and copy the original code from the USB drive and paste it into this field.

11. Go to the *Renewal/Add-On Code* field and enter the code you just purchased.
12. Press the ***Renew/Upgrade License*** button. If successful, the system will generate a *Renewed* license key.



13. Once the renewal is successful, highlight the license key text and click **CTRL+C** to copy the License Key text, then paste it (**CTRL+V**) onto the USB drive.
14. Take the USB drive back to the Orchid Core VMS server.
15. Return to the *Activation Instructions* screen and click into the *License Key* field. Copy the *Renewed* license key text from the USB drive and paste it into the *License Key* field.



- Click the **Activate** button to activate your new license key. If the activation is successful, you will see a message at the top of your screen saying “Orchid Core VMS has been activated.”

Orchid Core VMS Activation

Orchid Core VMS has been activated. ← New License has been Activated

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
fusion	4/18 ← Registered Cameras / Licensed Cameras	Unlimited	Saturday, February 13, 2021 UTC	48642-F2985-FE89A-09EE8

Thank you!

UPDATE LICENSE REMOVE LICENSE

The Orchid Core VMS *Activation* screen should display updated information in the appropriate fields (to match the add-on, upgrade, or renewal you purchased).

Creating and Managing Users

Once installation and activation are complete, Orchid Core VMS is configured with one administrator user by default; this user is created during installation and cannot be removed. Additional users can be created with varying levels of privileges through the *Users* option in Orchid Core VMS's *System Menu*.

✿ An Administrator is the only role with the ability to create and manage users.

About Orchid Core VMS User Roles

There are four different User roles in Orchid Core VMS, each with a different level of access:

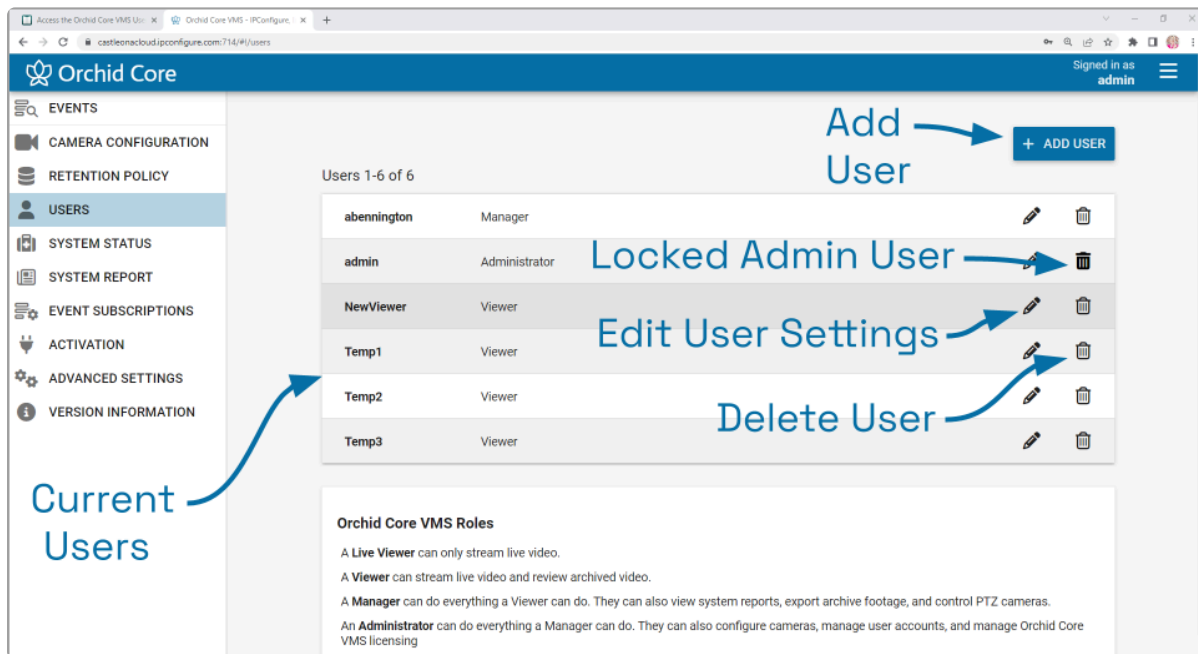
- **Live Viewer:** A *Live Viewer* is only able to view live video.
- **Viewer:** A *Viewer* is able to view live and recorded video, use the *Smart Search* feature, use the *Save Frame* feature, and view *Events*.
- **Manager:** A *Manager* can view live and recorded video, use the *Smart Search* feature, use the *Save Frame* feature, view *Events*, export video, view System Reports, and control PTZ Players. (The Manager is not able to create or manage users or cameras.)
- **Administrator:** An *Administrator* is able to do everything within Orchid Core VMS, including activating Orchid Core VMS, adding new users and cameras, resetting passwords, and viewing System Reports.

User roles are set when you create new users, however, an Administrator may change the role of an existing user by clicking the *Edit* pencil icon. Find out more about editing users later in this section.

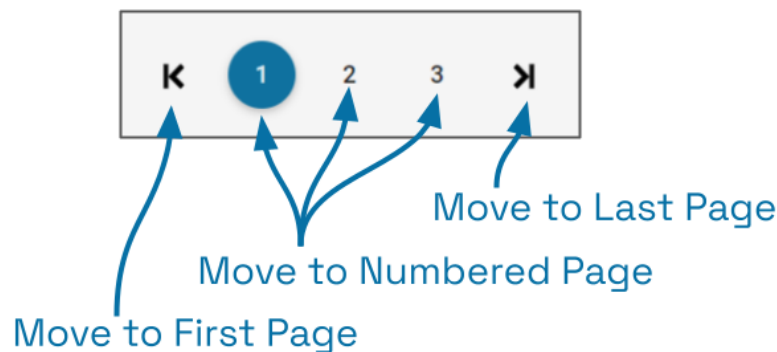
Access the Orchid Core VMS Users List

1. Sign in to Orchid Core VMS as an Administrator.
2. Open the *System Menu* in the top-right corner of the screen and select *Users*.

The Orchid Core VMS *Users* screen lists all of the users that have been added, their assigned roles, and descriptions of each of the four possible User roles. (You may have to scroll down to view the list of Orchid roles.)

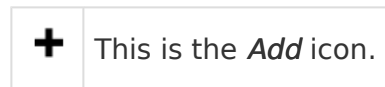


The *Users* screen lists up to 30 Orchid Core VMS users per page (by default). If you have more than 30 users, additional pages will be added automatically. This will also activate the page navigation tools, and the search feature.

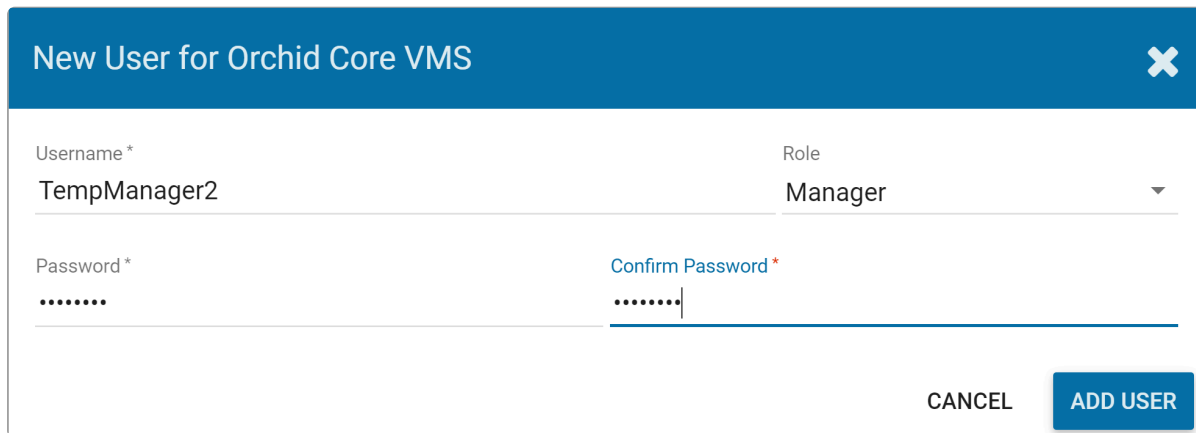


The navigation tools will appear at the top and bottom of the screen. These will allow you to move easily from page to page.

Adding a New User



1. Click the *Add User* button in the top-right corner of the Orchid Core VMS *Users* screen.
2. A *New User* screen will open. Enter the username you would like to set for the new user in the *Username* field.

The screenshot shows a modal window titled "New User for Orchid Core VMS" with a close button (X) in the top right corner. The form contains the following fields:

- Username ***: A text input field containing "TempManager2".
- Role**: A dropdown menu showing "Manager".
- Password ***: A text input field with masked characters (dots).
- Confirm Password ***: A text input field with masked characters (dots).

At the bottom right of the form, there are two buttons: "CANCEL" and "ADD USER".

3. Enter the password for the new user into the two fields labeled *Password* and *Confirm Password*.
4. Select a role for the new user from the *Role* drop-down list. (The role can be updated by an administrator at any time.)
5. Click the *Add User* button at the bottom of the screen to create the new Orchid Core VMS user.

The new user will now appear in the list of users and will immediately have access to Orchid Core VMS.

Editing Existing Users



This is the *Edit* pencil icon.

Nothing is set in stone for Orchid Core VMS users and almost all of the user settings can be updated, as needed. The only user that cannot be completely edited is the default admin user (which has a *Lock* icon in place of the *Trash Can* icon). While the password can be updated, the username and role cannot be changed.

1. To edit a user, click the *Edit* pencil icon to the right of the user you want to update. The *User* screen will open.
2. Edit any of the available fields, as needed.
3. Click the *Update User* button. All of the changes will be effective immediately.

TempUser3 from Orchid Core VMS

Username *

TempUser3

Role

Viewer

Password

Confirm Password

CANCEL

UPDATE USER



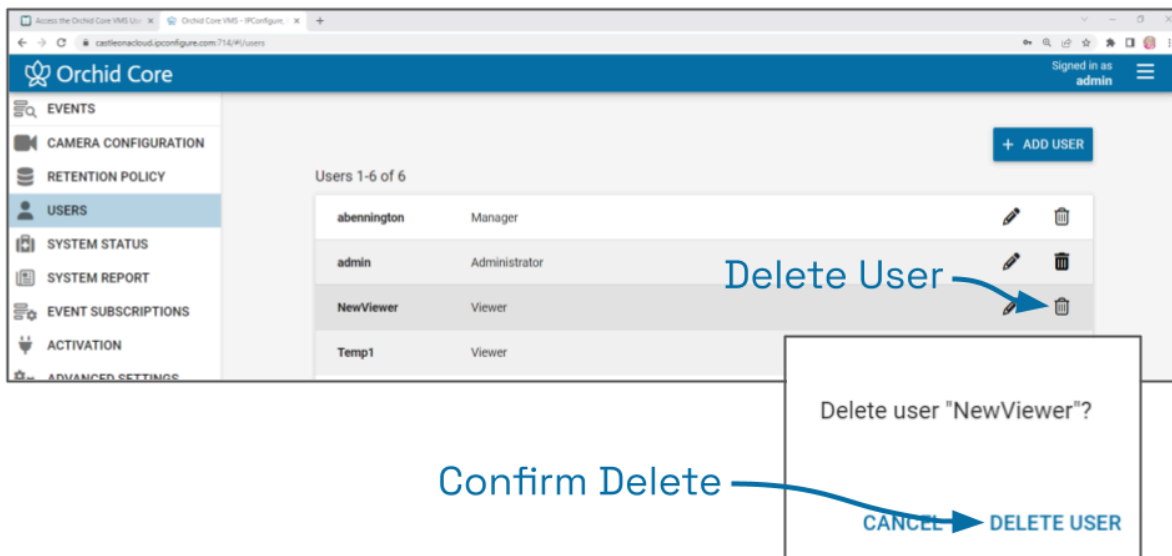
If you try to change your own password, Orchid Core VMS will automatically sign you out.

Deleting Existing Users



This is the *Delete* icon.

1. To delete an existing user, click the *Delete* (Trash Can) icon to the right of the username. Orchid Core VMS will ask you to confirm that you would like to remove the user. Once you confirm you want the user removed, it will be permanently erased.



Searching for a User

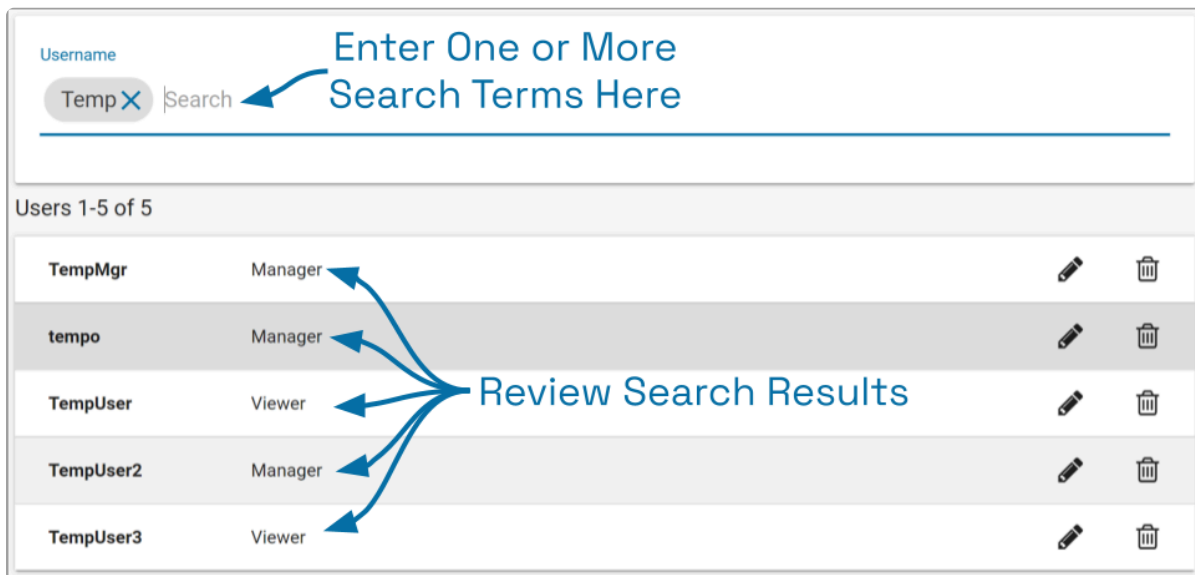
If you have more than 30 registered Orchid Core VMS users (by default), the *Users* list will extend beyond one page. When this happens, the software will automatically activate the user search and page navigation. Especially useful with large systems, these tools will help you find specific users quickly.

Search the Users List

The *Search* field will appear at the top of the *Users* screen. It supports searching by usernames, using single and multiple search tags.

1. Click into the *Search* field to start your search.
2. Type one or more search tags (clicking *Enter* after each).
 - a. A single search tag with multiple terms (words or numbers) will initiate a search for results that include all of the terms in the tag.
 - b. Multiple, single-term search tags will initiate a search for results that include at least one of those tags.

Each time you press *Enter*, the *Users* screen will update to display an alphabetical list of all of the users that contain the tag(s).

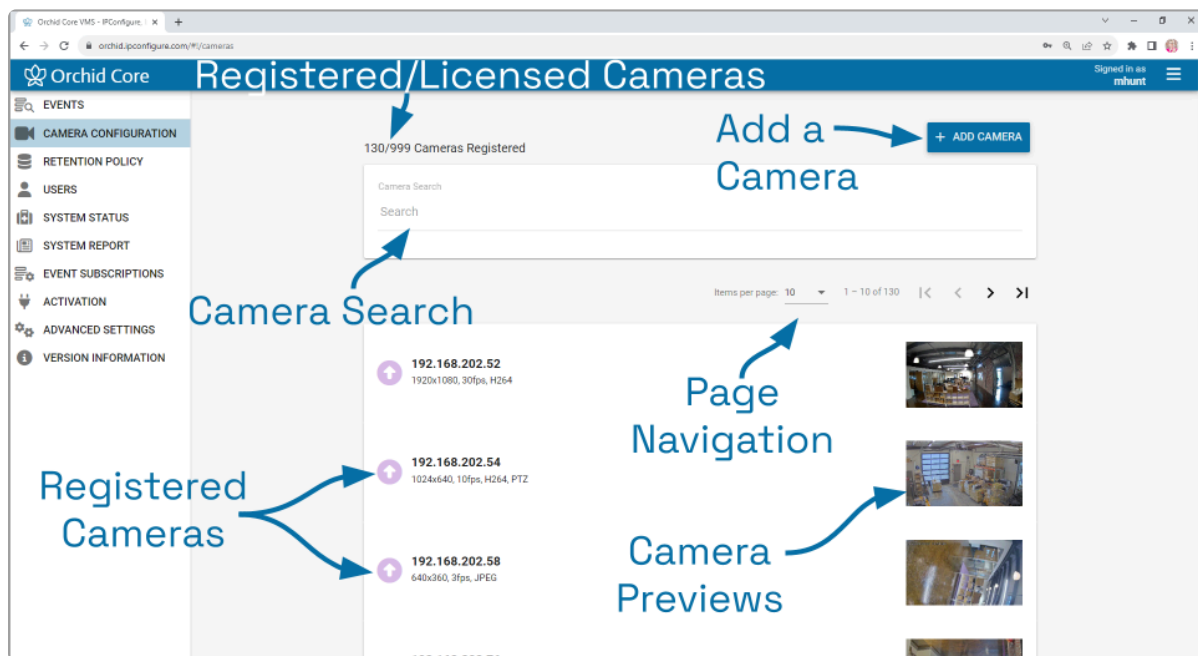


Adding and Managing Cameras

The *Camera Configuration* screen is an important part of the Orchid Core VMS setup process. This screen provides a list of all of the registered cameras (in alphabetical order by camera name) and a preview of each video stream. It is also the starting point for adding cameras, editing camera settings, and deleting cameras.

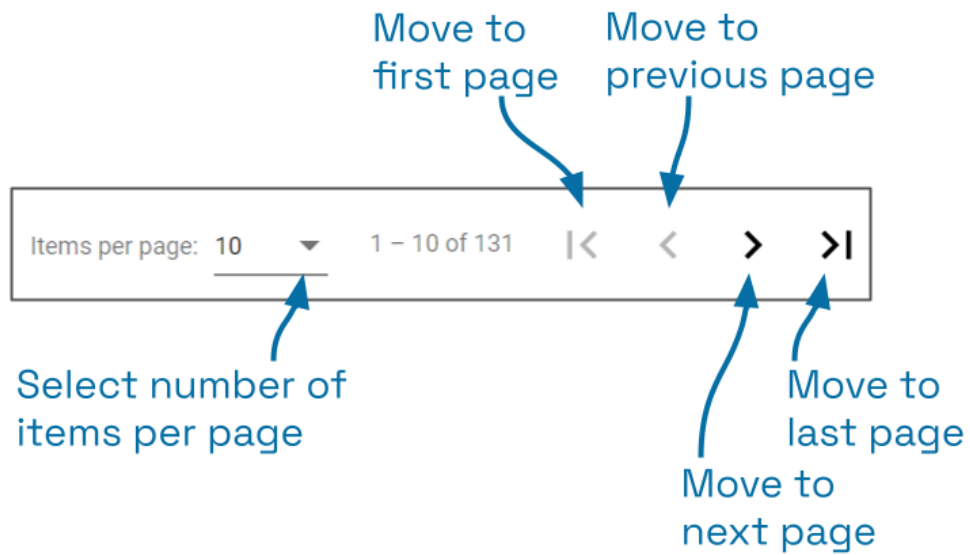
1. To access the *Camera Configuration* screen for Orchid Core VMS, open the *System Menu* in the top-right corner of the screen, then select *Camera Configuration*.

✿ An Administrator is the only role with the ability to add and manage cameras.



The *Camera Configuration* screen will open with a list of cameras that have already been registered, if any. The process for adding most cameras is typically pretty simple, especially if the camera supports ONVIF auto-discovery.

You may configure the *Camera Configuration* screen to list either 10, 20, or 50 cameras per page. Additional pages are added for you automatically. This will also activate the page navigation tools, and the [search](#) feature.



The navigation tools will appear at the top and bottom of the screen. These will allow you to move easily from page to page.

Adding One or More Cameras (using Auto Mode)



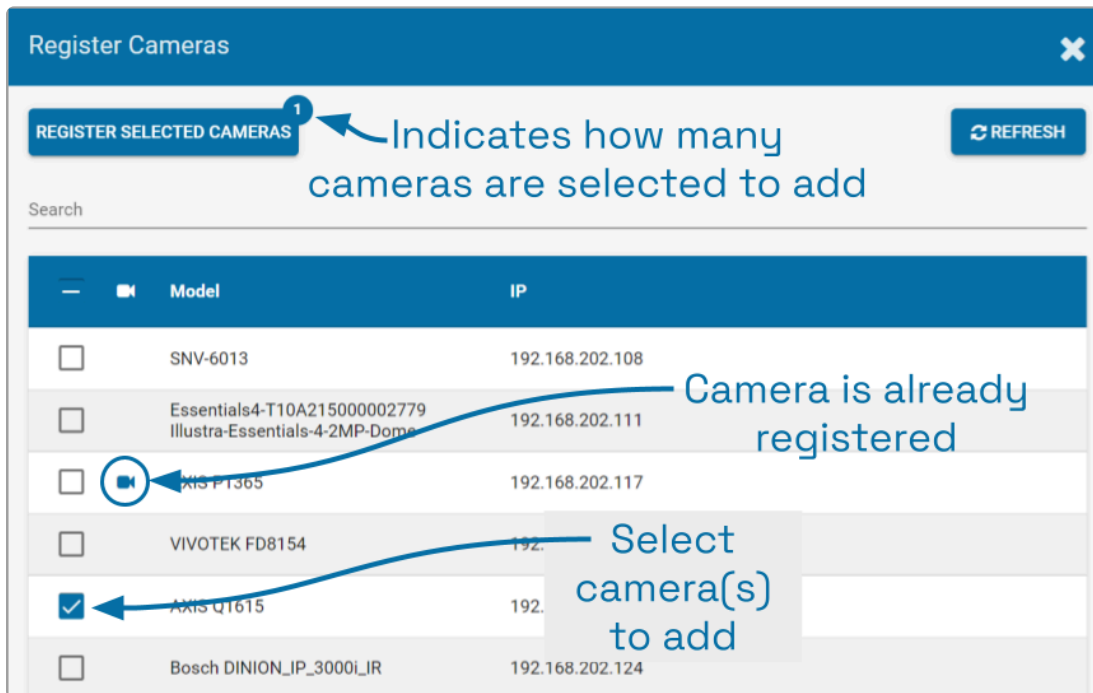
This is the *Add* icon.

1. From the list of registered cameras on the *Camera Configuration* screen, press the *Add Camera* button to access the *Register Cameras* screen. Orchid Core VMS will open the *Register Cameras* screen in *Auto* mode by default. This screen displays a list of all the cameras Orchid Core VMS was able to auto-discover.

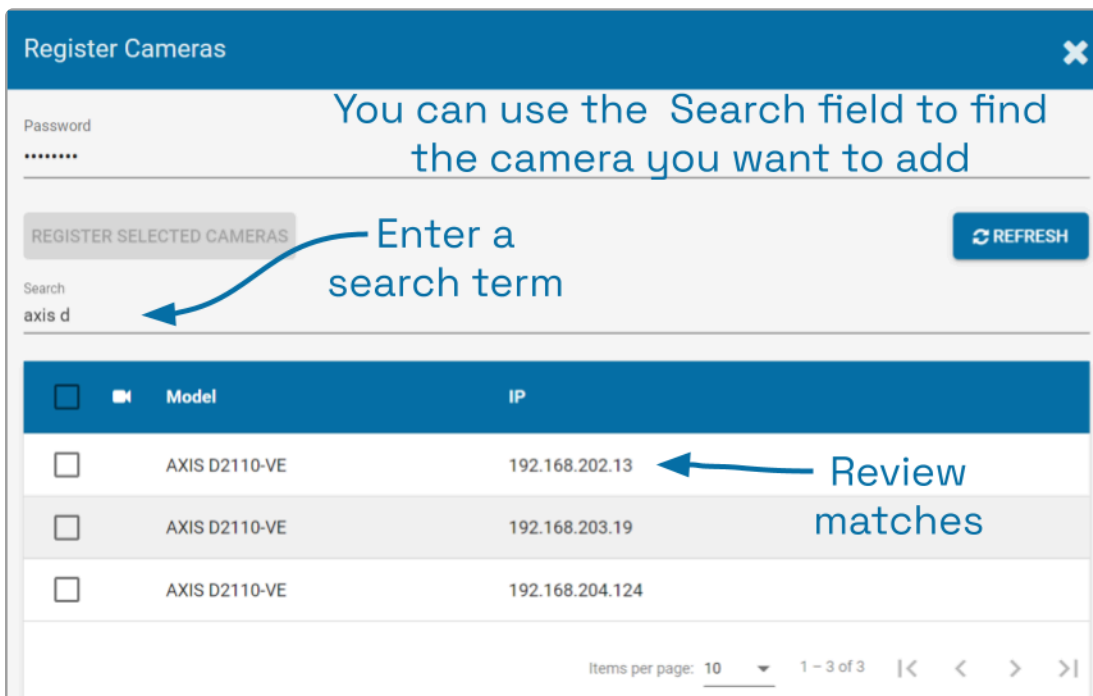


In order for Orchid Core VMS to auto-discover cameras, they must support ONVIF auto-discovery and be located on the same network subnet. If you have cameras that are not automatically discovered, they can always be added manually.

2. Enter the ONVIF username and password that is setup on the camera(s) you would like to add.
3. Scroll down to see which cameras are available. (You may sort this list by camera model, IP address, or registration state. Just click the appropriate column header: the *camera* icon, *Model*, or *IP*.)
4. To add a new camera, mark the checkbox next to the camera.
 - a. You may select multiple cameras as long as they all use the same ONVIF username and password.
 - b. Notice that each time you mark another camera, the *Register Selected Cameras* button will indicate how many cameras have been selected to add.



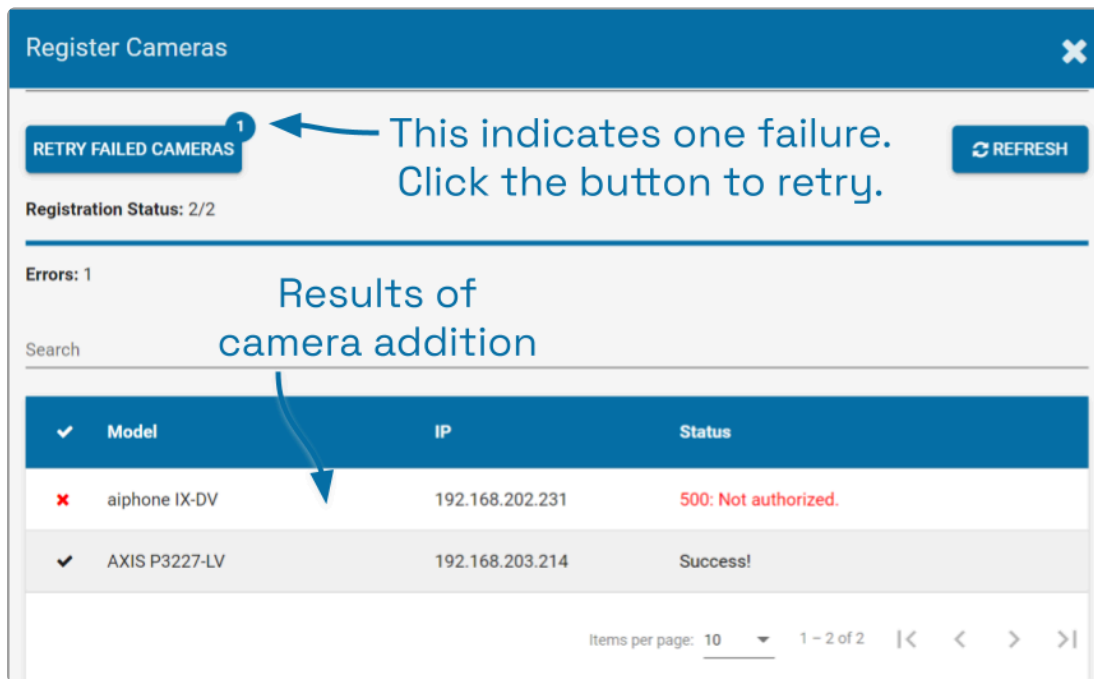
5. If there are a lot of available cameras, you may want to use the *Search* feature to find the cameras you're looking for.
 - a. Click into the *Search* field and enter a term for the search (which should include the camera model or a portion of the IP address). This search only allows for one search tag, but you may use a multiple-term search tag, and it may contain words or numbers. (For example, you could search for a specific camera brand name and model, or you could search using a segment of the camera's IP address.)



6. Review your search results and select cameras, as needed.
7. Once you have made all of your selections, press the *Register Selected Cameras* button to

add the cameras to Orchid Core VMS.

Depending on the number of cameras being added, it may take a few minutes for Orchid Core VMS to add them successfully. When complete, Orchid Core VMS will show a list of all cameras that were successfully and unsuccessfully added. If Orchid Core VMS fails to add a camera, an error message will appear.



8. If you receive an error, you may use the **Retry** button to try the addition again. (In the example above, since the error was *Not authorized*, you might try entering different credentials, then click the **Retry** button.)
9. Go to each of the newly added cameras and enter a unique, descriptive name for each one. (Good camera names are important because they are searchable in Orchid and Orchid Fusion/Hybrid VMS.) You should also review or [edit the camera stream settings](#).

✿ If these newly added cameras will use similar stream settings, use the [Copy Stream to Cameras](#) feature to configure multiple cameras at once.

✿ If you have any trouble adding cameras, please refer to the [Advanced Topics](#) section for additional help.

Adding a Single Camera (in Manual Mode)



This is the *Add* icon.

In the event that Orchid Core VMS cannot auto-discover a camera, it can be added manually.

1. At the *Camera Configuration* screen, press the **Add Camera** button to access the *Register Cameras* screen. Orchid Core VMS will open the *Register Cameras* screen in Auto mode.
2. Select **Manual** mode.

3. Select the appropriate driver (*ONVIF* or *RTSP*) from the drop-down list.

✿ While the Generic RTSP driver is available when adding cameras manually, this is not always guaranteed to work due to the way different manufacturers handle RTSP streams. The recommended driver to use with Orchid Core VMS is ONVIF.

✿ Starting in version 22.9, Orchid Core VMS now supports generic RTSP cameras that use the new H.265 compression standard.

4. Enter the ONVIF Discovery URL, or the RTSP Stream URI (depending on the driver you specified) to match the correct address for the camera being added. Consult with the camera manufacturer's user guide, as needed, for the correct syntax of the address.
5. Enter a unique name for the camera. This will allow you to distinguish the camera from other cameras set up within Orchid Core VMS.

6. Enter the username and password that is setup on the camera being added.

✿ Beginning in version 22.12, Axis cameras will no longer require a separate username and password in order to work with ONVIF. (If you're working in an older version of Orchid, please refer to the [Advanced Topics](#) section for more information.)

7. Press the **Register** button to add the camera to Orchid Core VMS.

When complete, Orchid Core VMS will add the new camera to the list of registered cameras. If Orchid Core VMS fails to add a camera, an error message will appear explaining the issue.

8. Once the camera has been added, you should review or [edit the camera stream settings](#).

✿ If you have any trouble adding cameras, please refer to the [Advanced Topics](#) section for additional help.

Multi-stream Capabilities

When you add a camera to Orchid Core VMS, that camera should come with a Primary stream (which will be used for recording), and several inactive streams, by default. Each of these streams will have different settings such as recording style, resolution, and frame rate. Beginning in version 21.12, Orchid Core VMS and Orchid Fusion/Hybrid VMS support multiple active streams. This means that Administrators may enable a Secondary stream for each camera (with different stream settings), to accommodate different recording and viewing requirements. This provides Users with a variety of streams to choose from when viewing video on the *Stage*.

✳ The use of Secondary streams is optional. Additional recording streams will cause an increase in video storage requirements. Consider evaluating your system's capabilities before implementing secondary recording streams. Check out the "Tips" section below for more information.

Use Cases for Secondary Streams

Assigning secondary streams may be useful from a couple of perspectives, both centered around the amount of data that needs to be processed for viewing and recording video.

Viewing Video

More and more, users want to record video at higher resolutions (such as 1080p, or even higher at 3, 4, or 5 megapixels). With a single, Primary stream, the system is forced to record at this high resolution and decode the video for remote viewing at the same time. That's a lot of data to move. But are those high resolutions really needed on the *Stage*? If the *Stage* is displaying 20 or 30 Players, those Players are going to be relatively small, and in this case, high resolution is essentially wasted. With a Primary and a Secondary stream, you have the ability to choose a lower resolution stream for the *Stage*, while saving the high resolution stream for recorded video.

CPU Usage

In some situations, the Orchid Core VMS server (the recording server) is also used as an on-site viewing workstation. When the server is recording a large number of high resolution video streams, while simultaneously trying to display all of that high resolution video, it takes a lot of computer horsepower to do it. (The more horsepower required, the more expensive the server will be.) If the computer could decode and display lower resolution video for the *Stage*, the server would not need to be quite as powerful, and would be less costly. Primary and secondary streams allow us to view lower resolution video on the *Stage*, while still recording high resolution video to the archives.

Tips for Secondary Streams

Here are some important things to consider when using Primary and Secondary streams.

- If you decide to use Primary and Secondary streams, and plan to record both, keep in mind that both of these streams will consume some amount of disk space.
 - The IPConfigure Design Tool (at calculator.ipconfigure.com) may be used to estimate the amount of disk space you will need to accommodate the Primary and Secondary streams you are planning to configure. The key parameters to select for each calculation are: number of cameras, image resolution, frames per second, and number of days of storage.
- If you decide to enable secondary streams, consider adding “primary” and “secondary” to the stream names (which will make them easier to identify in places like the *System Report*.)
- Motion detection can only be performed on Primary streams.
 - Primary streams may be configured with any of the five available Recording Styles.
 - Secondary streams must be configured with one of the following Recording Styles: Continuous Recording Without Motion Detection or Proxy Only (no video will be recorded).
- Since high-resolution camera streams are more likely to cause problems, it may be best to assign lower resolution streams as Primary streams. (The Primary stream will be used by default when adding a camera to the Stage.)
- Beginning in version 22.3, when you export video:
 - You will be able to select which stream to export.
 - If you do not make a selection, the system will export the stream with the highest resolution.

Edit Camera Stream Settings

After a camera has been added to Orchid Core VMS, settings such as the stream resolution and frame rate can be updated through the camera stream's configuration. While this is true for most cameras, cameras added using the RTSP driver (old cameras and cameras that don't support ONVIF) cannot be edited through Orchid Core VMS. You will need to access those cameras directly to edit settings. (Refer to the camera manufacturer's documentation for more details.)

1. From the list of registered cameras on the *Camera Configuration* screen, click the name of the camera you want to edit. (The list will expand to display all of the information for the selected camera. This includes the camera name, IP address, and all of the available streams.)

Camera Info

Recording Stats

Primary Stream

Secondary Stream

Delete Camera

Recover Camera

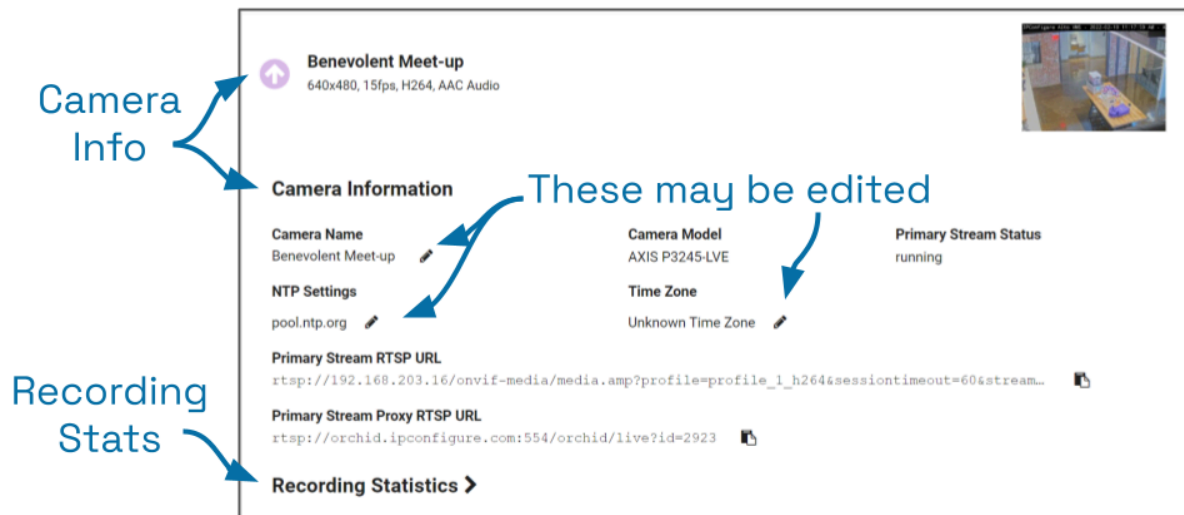
Add a Stream

Stream Pop-up Menu

Advanced Settings

Status	Mode	Name	Configuration
+	📹	profile_1 H264-Primary	640x480, 15fps, H264 Continuous recording with motion detection
-	📹	profile_1 jpeg	1920x1080, 30fps, JPEG Continuous recording with motion detection
+	📹	stream_fab39946-Secondary	1280x960, 30fps, H264 Secondary: Recording
-	📹	TestStream	1920x1080, 15fps, H264 Continuous recording with motion detection

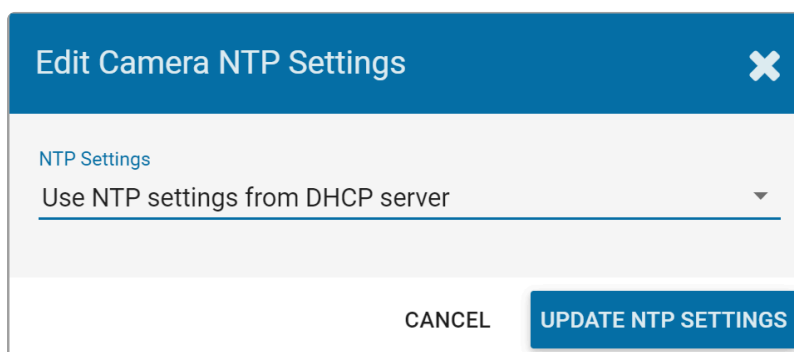
Camera Settings



1. To change the camera name, click the *Edit* pencil to the right of the camera name. Enter a new name in the *Camera Name* field and press the *Update Camera* button. (Remember: The cameras are listed in alphabetical order by camera name.)

This screen also displays the camera model and the status of the Primary camera stream. These settings are informational and cannot be altered here; please refer to the [System Status](#) section for status descriptions.

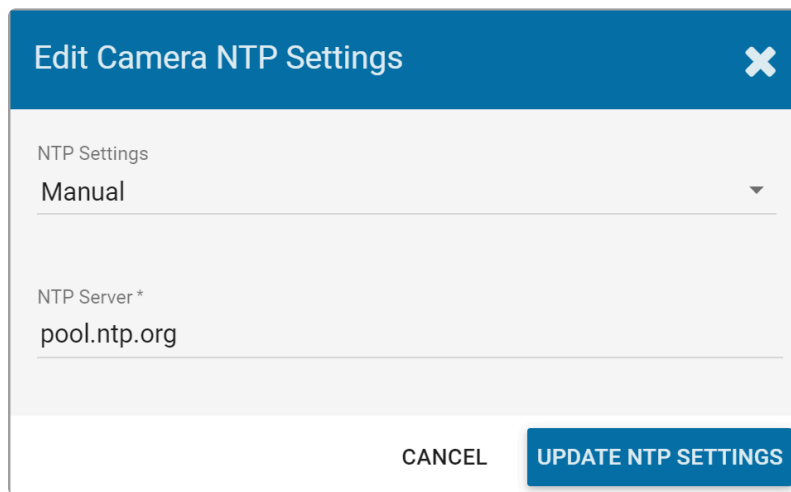
2. To change the NTP settings, click the *Edit* pencil to the right of the NTP settings. (If you don't see the NTP settings, the camera was likely installed in an older version of Orchid. To remedy this, you need to [recover](#) your camera.)



By default, the system will pull the Network Time Protocol (NTP) from the Dynamic Host Configuration Protocol (DHCP) server. If the default is used for all of the cameras, this ensures that all of the cameras on the network are using the same system clock as the Orchid software itself.

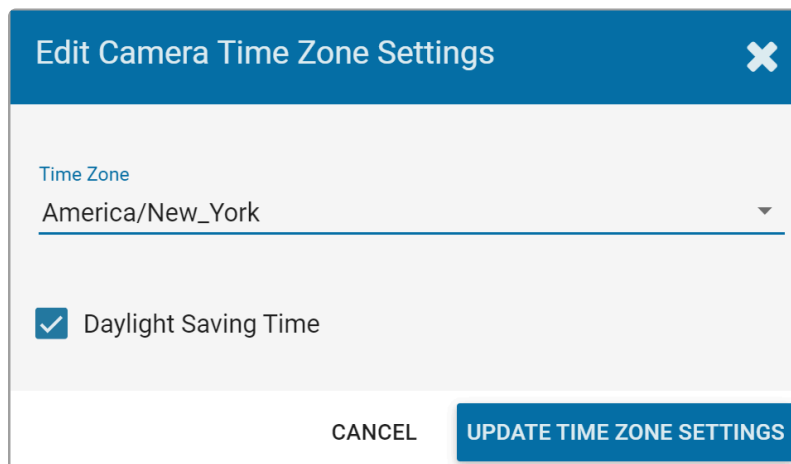
3. If you need to use a different server, do the following:
 - a. Use the *NTP Settings* drop-down list to select *Manual*.

- b. Enter the name of the server you want to use.
- c. When all settings are complete, click the **Update NTP Settings** button.



The dialog box is titled "Edit Camera NTP Settings" with a close button (X) in the top right corner. It contains two main sections: "NTP Settings" with a dropdown menu set to "Manual", and "NTP Server*" with a text input field containing "pool.ntp.org". At the bottom, there are two buttons: "CANCEL" and "UPDATE NTP SETTINGS".

4. If you need to change the time zone for the camera, do the following:
 - a. Click the **Edit** pencil to the right of the Time Zone.
 - b. Use the *Time Zone* drop-down list to select the appropriate time zone.
 - c. Mark the *Daylight Saving Time* checkbox if your region observes daylight saving time.
 - d. When all settings are complete, click the **Update Time Zone Settings** button.



The dialog box is titled "Edit Camera Time Zone Settings" with a close button (X) in the top right corner. It contains two main sections: "Time Zone" with a dropdown menu set to "America/New_York", and a checkbox labeled "Daylight Saving Time" which is checked. At the bottom, there are two buttons: "CANCEL" and "UPDATE TIME ZONE SETTINGS".

Beginning in version 22.3, Orchid Core VMS will display the Transport Protocol setting. This gives you a chance to specify how the video will be transported from the camera to the Orchid Core VMS server.

5. To change the Transport Protocol setting, click the **Edit** pencil to the right of the Transport Protocol setting.

The *Edit Camera Transport Protocol* screen will appear. By default, the system will use the AUTO setting. This means that the system will attempt to connect using UDP and will automatically rollover to TCP if it cannot establish a connection.

6. If you want to select a different setting, do the following:
 - a. Use the drop-down list to find the setting you want to use. Available settings include: AUTO, UDP, UDP_MCAST, HTTP, AND TCP.
 - b. After you make your selection, click the *Update Transport Protocol* button.

The Primary Stream RTSP URL status fields are typically used for troubleshooting. These allow for a comparison of the video coming from the camera and the video as received by Orchid Core VMS to determine where a problem might be occurring.

- The *Primary Stream Camera RTSP URL* (which contains the camera's IP address) represents the video stream that Orchid Core VMS is recording.
- The *Primary Stream Proxy RTSP URL* represents the video that Orchid Core VMS is showing on the *Stage*. (For more details, please refer to the [Advanced Topics](#) section.)

Recording Statistics

	This is the <i>Expand</i> icon (used to view the Recording Statistics and Advanced information).
	This is the <i>Condense</i> icon (used to close the Recording Statistics and Advanced information).

1. Click the *Expand* icon to open the Recording Statistics section. This section will show the statistics that indicate how the Primary recording stream is performing.

Expanded Recording Statistics		
Recording Statistics ▼		
<i>The following statistics are based on the primary stream.</i>		
Average Window	Packet Loss	Bitrate
1m	Video: 0% Audio: 1%	Video: 460.9 Kb/s Audio: 140.6 Kb/s Total: 601.5 Kb/s
5m	Video: 0% Audio: 1%	Video: 462.9 Kb/s Audio: 141.1 Kb/s Total: 604 Kb/s
15m	Video: 0% Audio: 1%	Video: 458.8 Kb/s Audio: 141.1 Kb/s Total: 599.9 Kb/s
Last Video File Written		
02/10/2022, 09:18:31 AM EST - 4.2 MB		

The top section provides the average packet loss percentage over periods of the last 1 minute, 5 minutes, and 15 minutes. It's important to be aware if packet loss is occurring because it may impact the quality of archived video. These averages are updated about every 5 seconds and will mostly be used for troubleshooting. For more information on analyzing the packet loss percentages, please refer to the section on [Checking for Packet Loss](#).)

The top section also displays the average bitrates over the same periods of time. These indicate how much video data is being transferred, per second, from the camera to the Orchid Core VMS server. You may notice that the average bitrates provided here do not match the bitrates that have been configured under Stream settings. This is not unusual and should not cause concern. These bitrate values reflect the reality of your system, and can be used as a reference in making adjustments to the configured bitrate.

* For Players in live WebRTC mode, the bitrates (from camera to server) and the bitrates (from server to client) should be about the same. The packet loss statistics, however, may be different.

The Recording Statistics feature also provides information about the last video file that has been written to the system for this camera stream. This statistic is updated about once per minute. If the camera is configured to record continuously, and the last video file is more than 1 minute old, the system may not be recording this camera stream.

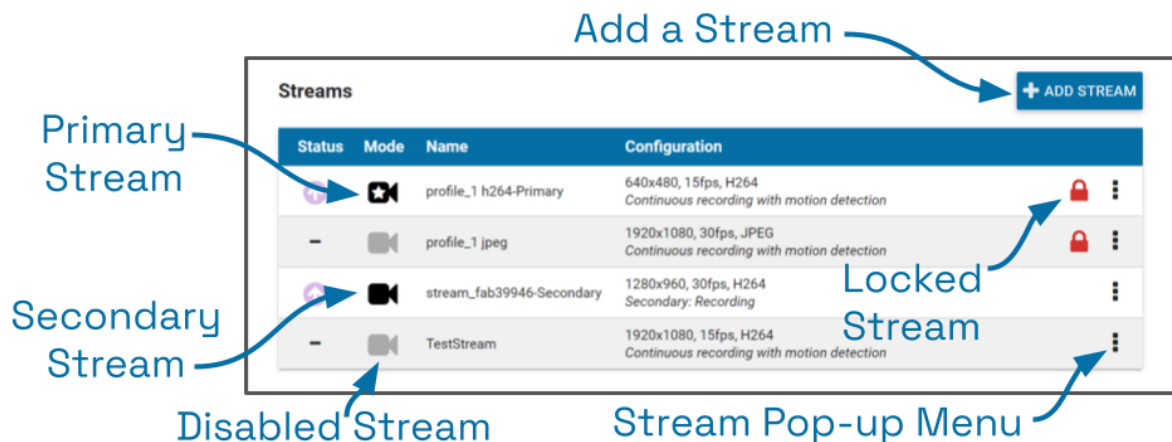
2. Click the **Condense** icon to close the list of Recording Statistics.

Camera Stream Settings

	This is the <i>Camera</i> icon that represents the Primary Stream.
	This is the <i>Camera</i> icon that represents the Secondary Stream (if applicable).
	This is the <i>Camera</i> icon that represents a disabled camera stream.

Streams

A camera stream is a profile with all of the basic settings used by Orchid Core VMS to record video from the camera. Beginning in version 21.12, Orchid Core VMS supports multiple active streams. Each of the available camera streams will be either a Primary stream, a Secondary stream, or a Disabled stream. You can identify them (and assign them) as described below.



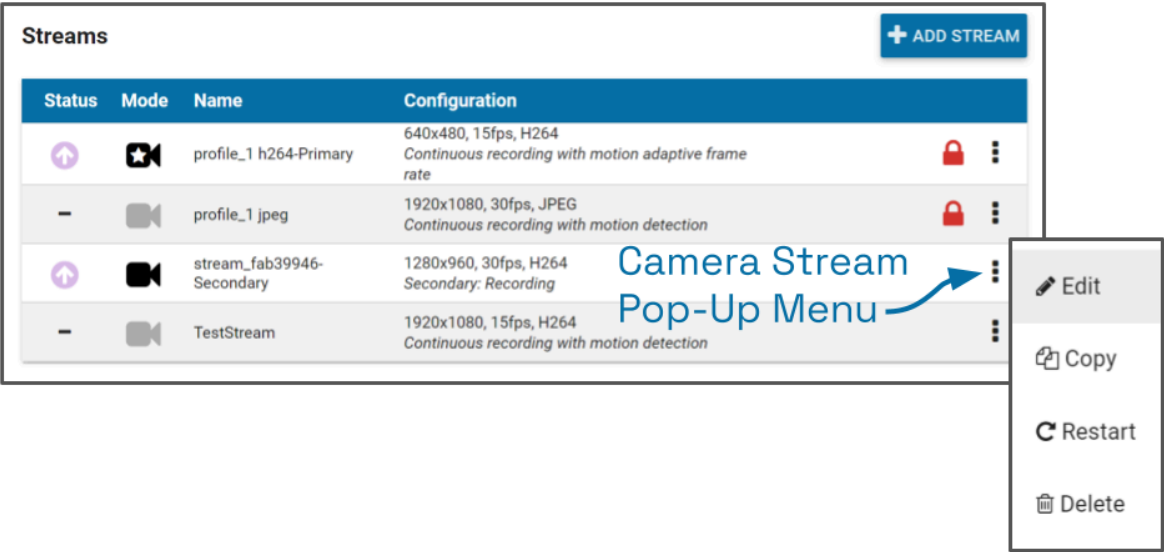
- To reassign a stream, click the *Camera* icon located in the *Mode* column to the left of the name of the stream you want to change. A pop-up menu will appear.
 - Click on the Primary *Camera* icon to make this the Primary stream. (The original Primary stream will become disabled.)
 - Click on the Secondary *Camera* icon to make this the Secondary stream. (You may have more than one Secondary stream. Keep in mind, however, that each stream that is set to record video will consume additional storage space.)
 - Click on the Disabled *Camera* icon to make this an inactive stream.

* The system allows only one Primary stream per camera at a time. However, multiple stream profiles from the same camera can be used as the Primary stream if the camera is added to Orchid Core VMS multiple times. (This is especially useful for cameras with multiple lenses.)

Camera Stream Pop-Up Menu

To the right of each camera stream, you'll find a pop-up menu.

2. Click on the menu to work with each camera stream. (The contents of the pop-up menu will vary based on the stream.)



	This is the <i>Edit</i> pencil icon. Click this icon to make changes to the stream settings.
	This is the <i>Copy</i> Stream icon. Click this icon to copy these stream settings to other camera streams.
	This is the <i>Restart</i> icon. Click this icon to refresh the connection to this camera stream. This option is not available on inactive streams.
	This is the <i>Delete</i> icon. Click this icon to delete the camera stream. This option is not available on locked streams.

3. To edit a stream, click the stream’s pop-up menu and click the *Edit* pencil icon. A screen will appear with all of the stream settings available for editing.

- If you are editing a JPEG stream, available settings may be limited.
- The *Motion Style* setting (pictured below) will only be available on Axis, Hanwha, and Vivotek cameras.

Stream Settings

Name *
stream_f691425e

Edit Stream Settings

Recording Style: Continuous recording with motion detection
Motion Style: Server

Video Settings

Encoder: H264
Bit Rate: 131
Encoder Interval: 1
Frame Rate: 10
GOV Length: 10
Profile: Main
Resolution: 1280x720
Quality: 5

Audio Settings

CANCEL UPDATE STREAM

4. Review or change the stream name so users can easily identify the camera stream. (This is especially helpful on Primary and Secondary streams.)
5. Review or change the *Recording Style* for the camera stream. (Review the information below before making a selection.)

Recording Style

Orchid Core VMS offers five different recording styles to choose from. These recording styles will impact video availability (as shown in the descriptions and table below). (Secondary streams are limited to the following recording styles: Continuous Recording without Motion Detection, and Proxy Only.)

- **Continuous Recording with Motion Detection:** Orchid Core VMS will continuously record video from the camera and perform motion detection. This is the default and recommended setting. (This recording style is not available on Secondary streams.)
- **Continuous Recording without Motion Detection:** Orchid Core VMS will continuously record video from the camera, but will not perform motion detection. This option offers a modest reduction in CPU load on the Orchid Core VMS server.
- **Continuous Recording with Motion Adaptive Frame Rate:** Orchid Core VMS will record at a higher frame rate while motion is detected, and a different (slower) frame rate while no motion is detected. These frame rates are user-selectable (as shown in the screenshot

following the table). (Due to the way H264 compresses video, this recording style typically shows significant savings in disk usage only for inexpensive cameras with noisy sensors, or cameras in low-light environments.) (This recording style is not available on Secondary streams.)

- **Proxy Only:** Orchid Core VMS will provide live video from the camera but will not record video.
- **Recording Only When Motion Detected:** Orchid Core VMS will only record video from the camera when motion is detected. This may result in a reduction in disk usage on the Orchid Core VMS server, however, motion detection accuracy may vary and result in video loss. (This recording style is not available on Secondary streams.)

	Continuous recording with motion detection (Default)	Continuous recording without motion detection	Continuous recording with motion adaptive frame rate	Proxy only, no video will be recorded	Recording only when motion is detected
Recording and playback are available	Yes	Yes	Yes	No	Yes (When motion is detected)
Live view is available in low-bandwidth mode	Yes	No	Yes	No	Yes
Thumbnail previews are available	Yes	Yes	Yes	No	Yes

Motion Style

Orchid Core VMS provides an additional option for Axis, Hanwha, and Vivotek cameras. On these cameras, you will now be able to select server-based motion detection (the default), or camera-based motion detection.

Server-based motion detection means that the Orchid Core VMS software will determine if motion occurs in the recorded video. Starting in version 22.6, the Orchid Core VMS server will analyze all video keyframes for changes that would indicate motion. With this *Motion Style*, you may take advantage of Orchid's advanced *Motion Detection* settings that permit you to select which regions of the camera view are eligible for motion detection, and the minimum object size that qualifies for motion detection.

Camera-based motion detection means that one of the camera's metadata events will be used to detect motion. This can be accomplished in a variety of ways, and will vary by camera. Typically these metadata events will come from the camera's built-in motion detection scheme. In other instances, the camera's I/O port may be connected to an external passive infrared

(PIR) sensor that will detect motion. In any case, the camera-based motion detection feature can provide better support for very high resolution cameras, especially, 360-degree cameras. Any adjustments to the camera-based motion detection will have to be performed through the camera's web interface.

6. Use the *Recording Style* drop-down list to select a new recording style.
7. If you select a recording style that includes motion detection, you may need to make additional selections.
 - a. Use the *Motion Style* drop-down list to select a motion style. Options include *Camera* and *Server*.
 - i. If you select the *Camera* motion style, use the *Camera Event* drop-down list to select the criteria the camera will use to detect motion. Available selections will vary by camera, and selecting the appropriate event may require some experimenting.

Refer to the table below for some common ONVIF camera events.

Camera Type	Event	Description
Axis	<i>RuleEngine/VMD3/vmd3_video_1</i> , <i>VideoSource/MotionAlarm</i> , <i>RuleEngine/MotionRegionDetector/Motion</i>	These three event types will work for camera-side motion detection. They differ slightly with the data types used in their message data, but all three use the VMD engine because they are only available if VMD is installed and running. If in doubt, select <i>RuleEngine/VMD3/vmd3_video_1</i> .
Axis	<i>VideoAnalytics/MotionDetection</i>	This is for cameras with built-in motion detection that pre-dates VMD support. The three Axis events listed above are preferred, if available.
Axis	<i>Device/Sensor/PIR</i>	Use this event type only if you know for certain that PIR sensors are built into your camera. Almost all cameras report this, even cameras that are not equipped with PIR sensors.
Axis	<i>Device/IO/Port</i> , <i>Device/IO/VirtualPort</i>	For cameras using external PIR sensors, this is usually the event that corresponds to movement (e.g. closed circuit = no motion, and open circuit = motion). The difference between <i>Port</i> and <i>VirtualPort</i> depends on how your PIR sensor has been configured. If unsure, try both.
Hanwha	<i>VideoSource/MotionAlarm</i>	Use this event type for camera-based motion detection on Hanwha cameras.
Vivotek	<i>VideoSource/MotionAlarm</i> ,	Both of these sources provide events during motion, with small differences. <i>VideoSource/MotionAlarm</i> sends a single event

	<i>VideoAnalytics/Motion</i>	based on all windows configured, while <i>VideoAnalytics/Motion</i> returns a single event for each configured motion window.
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- ✿ If camera-based motion detection does not appear to be an available option, perform the [Recover Camera](#) procedure on each camera, as needed.

- If you select the *Continuous recording with motion adaptive frame rate* recording style, you will need to set both the *Frame Rate During Motion* and the *Frame Rate During Non-Motion*. (The *Frame Rate During Motion* will dictate the available settings for the *Frame Rate During Non-Motion*. Allowable settings for the *Frame Rate During Non-Motion* range from 1 up to a setting that is less than or equal to the *Frame Rate During Motion*.)

Stream Settings

Name *
stream_f691425e

Recording Style: Continuous recording with motion adaptive frame rate
Motion Style: Server

Frame Rate During Motion: 10
Frame Rate During Non-Motion: 1.00

Video Settings

Encoder: H264
Bit Rate: 131
Encoder Interval: 1

Frame Rate: These values can be manipulated above while Motion Reduction is selected.
GOV Length: These values can be manipulated above while Motion Reduction is selected.
Profile: Main

Resolution: 1280x720
Quality: 5

CANCEL UPDATE STREAM

- ✿ If you selected server-based motion detection, you may use the advanced [Motion Detection](#) settings on the *Camera Configuration* screen to further customize motion detection.

9. If you are editing a Secondary stream, you will notice that the *Recording Style* drop-down list will only offer two options: *Recording* and *Proxy*. The *Recording* setting will provide continuous recording without motion detection, and the *Proxy* setting will provide live video only.

Stream Settings

Name*
stream_b1ca1a68

Secondary Recording Style
Recording

Video Settings

Encoder: H264, Bit Rate: 900, Encoder Interval: 1, Frame Rate: 29, GOV Length: 65, Profile: Main, Resolution: 1280x720, Quality: 70

Audio Settings

Encoder: G711, Bit Rate: 64, Sample Rate: 8

CANCEL UPDATE STREAM

10. Continue to review and change camera stream settings for video, audio and bandwidth as needed. Refer to the definitions below for help in selecting settings.

* You may need to use the scroll bar to view the additional settings in the lower portion of the screen.

Video Settings

Each camera type reports its own default values provided by the camera manufacturer. Use those default values unless otherwise noted.

- **Encoder:** The type of compression used for the camera's video. In WebRTC mode, Orchid Core VMS only supports H264 video. In Low-bandwidth mode, Orchid Core VMS supports

JPEG, MPEG4, and H264 (recommended). (Available selections depend on the camera.)

- **Bit Rate:** The target data size (in kilobits per second) of the compressed video. Increasing this value will typically improve image quality at the expense of increased disk usage and reduced retention. In WebRTC mode, bitrates of 2000 kbps or less tend to work best. The default value is recommended.
- **Frame Rate:** The number of frames per second transmitted within the video stream. Most Orchid Core VMS users are best served by values between 7 and 12. Higher frame rates provide more video detail at the expense of reduced video retention and increased bandwidth usage.
- **GOV Length:** When using H264 compression, this value specifies how often the camera sends a full image frame (instead of a “change frame” which only describes differences between frames). For example, if this is set to 15, Orchid Core VMS will send a full image frame once every 15 frames. Be aware of how this setting may impact video quality. As the GOV length decreases, the system will need to send more keyframes of video (within the set bit rate). This may result in a loss of quality for those keyframes. The default value is recommended.
- **Profile:** When using H264 compression, this specifies an H264 Profile of either Baseline, Main, or High. Higher profiles offer better compression (which means increased retention and lower bandwidth usage) at the expense of increased CPU utilization when decoding video. The highest available profile is recommended.
- **Resolution:** The resolution of video transmitted by the camera. Higher values increase video detail at the expense of reduced video retention and increased bandwidth usage. Most Orchid Core VMS users are best served by resolutions between 1280×720 and 1920×1080.
- **Quality:** This value affects how much the video is compressed. Higher values increase video quality at the expense of increased storage requirements (and thus reduced video retention). The default value is recommended.



Beginning with version 23.3, Orchid includes improved support for cameras that use dynamic frame rates and GOV intervals.

Audio Settings (if supported)

Beginning in Orchid Core VMS version 23.6, audio control is supported at the Player/Stage level in WebRTC mode. If selected, the Orchid Core VMS server will record audio for those cameras that support it. This audio will be available on the *Stage* (in WebRTC only), and in exported video files.

These audio settings will appear on the screen only if the camera supports audio and will determine how the Orchid server records the audio. Each camera type reports its own default settings. Use those default values unless otherwise noted.

- **Encoder:** The type of compression used by the camera’s audio. Orchid Core VMS supports “None” (audio is disabled), G711 (recommended), and AAC.

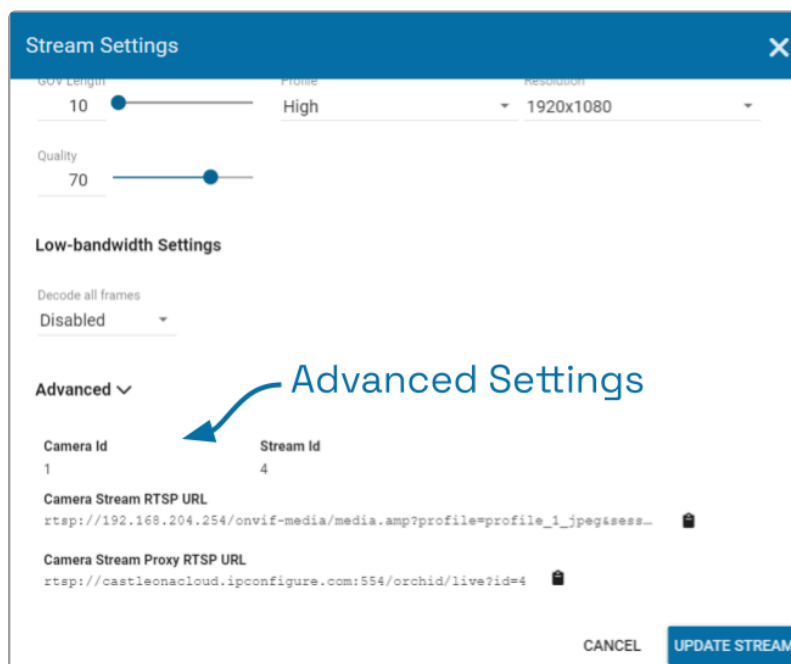
- **Bit Rate:** The target data size (in kilobits per second) of the compressed audio. The default value is recommended.
- **Sample Rate:** Affects the quality of recorded sound. The default value is recommended.

Low-bandwidth Settings

- **Decode all frames:** This setting applies to viewing Live video in Low-bandwidth mode. When *Decode all frames* is disabled, Orchid Core VMS will display only full frames (per the configured GOV length) when viewing live video in Low-bandwidth mode. When *Decode all frames* is enabled, Orchid Core VMS will display every available frame from the camera (regardless of GOV length) when viewing live video in Low-bandwidth mode, assuming sufficient bandwidth exists. *Decode all frames* is disabled by default because enabling this setting will increase CPU use on your Orchid Core VMS server. (For more details on Low-bandwidth mode, please refer to the [Advanced Topics](#) section.)

Advanced

The last section on the screen provides additional information about the camera stream. This includes the Camera ID, the Stream ID, and the URLs, all of which may be helpful for troubleshooting the camera stream.



11. Click the **Expand** icon to view the Advanced stream information.
12. Click the **Condense** icon to close the Advanced stream information.
13. Once the stream settings have been updated, click the **Update Stream** button to save the new stream settings. It may take a few seconds for the settings to change based on the camera being updated.
14. You may review the impact that the stream settings have on video playback for each camera. Simply click on the corresponding thumbnail to watch a current live video feed.

- ✿ Beginning in version 23.3, Orchid Core VMS supports forensic timestamps. These will be enabled by default, but Administrators can disable or customize them by editing the appropriate properties. Please refer to the [*Advanced Settings*](#) topic for more details.

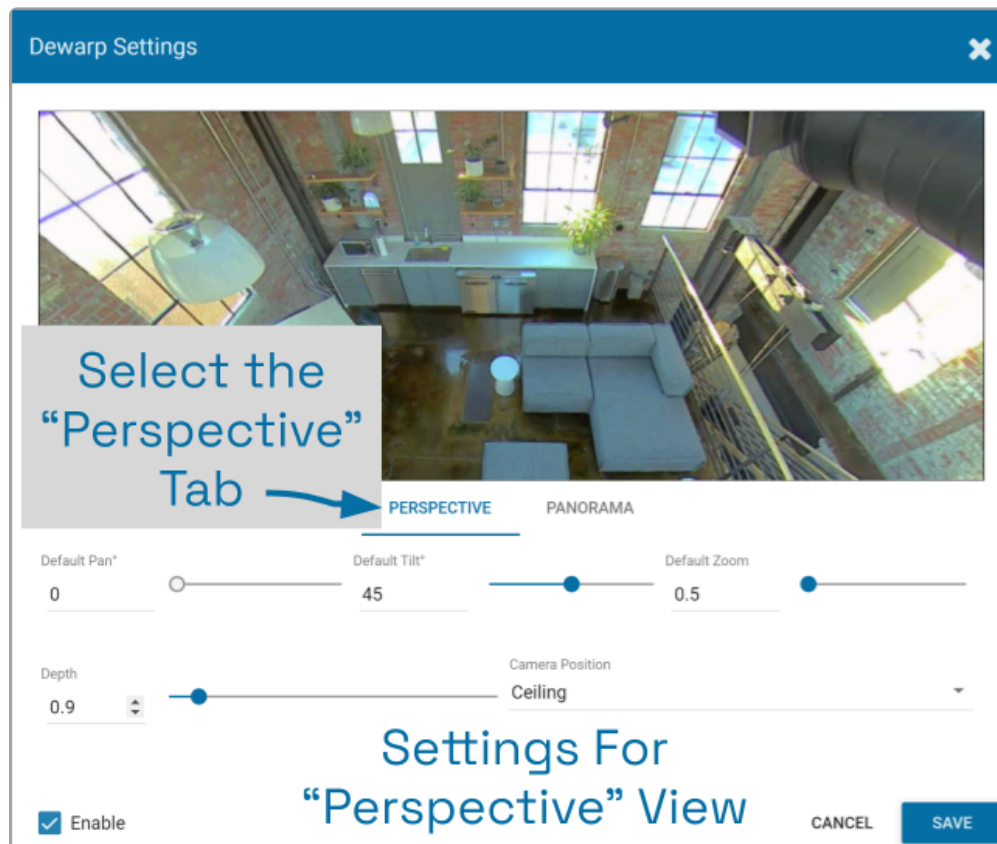
Advanced Settings: Fisheye Dewarping

The *Camera Configuration* screen includes *Fisheye Dewarping* which allows you to manipulate video from fisheye cameras for display on the Player. This feature provides three viewing options: *Off*, *Perspective*, and *Panorama*. This means that you can view the standard fisheye view, or one of two “flattened” views.

For any fisheye camera, the *Dewarp Settings* allow you to enable or disable the dewarping features, and set a default view for the associated Player.

Perspective

1. At the *Camera Configuration* screen, click the camera you want to edit. Then click the *Fisheye Dewarping* link to open the *Dewarp Settings* screen.
2. Select the *Perspective* tab.



Use the *Perspective* screen to enter settings for the *Perspective* view of the selected camera. The *Perspective* view is a flattened version of the available video from the fisheye camera for which you select a portion of the image as the default view to be displayed on the Player. (The *Perspective* view can also be changed at the Player, but that will not change the default.)

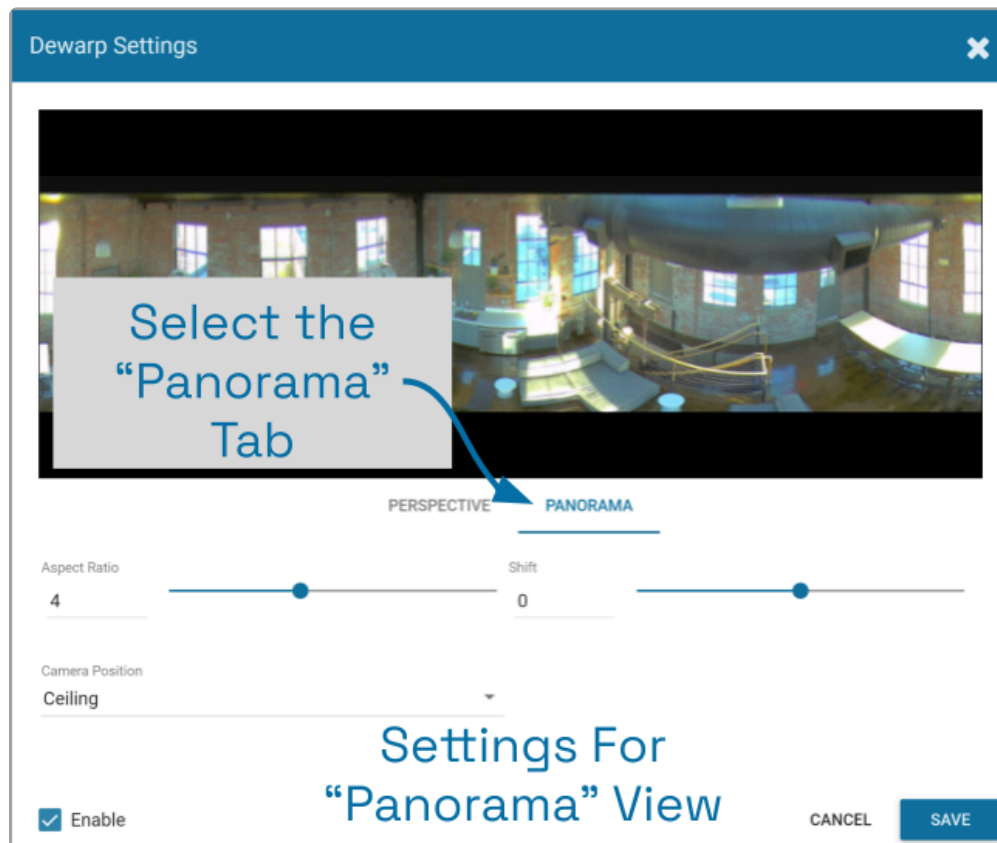
3. Mark the *Enable* checkbox to activate the *Dewarp Settings* (both *Perspective* and

Panorama) for this camera. (If this is not marked, Dewarping features will not be available at the Player.)

4. Use the *Default Pan* slider to move the camera to the right and left to set the default view.
5. Use the *Default Tilt* slider to move the camera up and down to set the default view. (Be aware that it is possible to tilt the view beyond the capability of the camera; if this happens, portions of the screen will appear black.)
6. Use the *Default Zoom* slider to zoom into or out of the image to set the default view. (Be aware that it is possible to zoom beyond the capability of the camera; if this happens, portions of the screen will appear black.)
7. Use the *Depth* slider to stretch or compress the image height to set the default view. (This can cause extreme image distortion at the bottom and top ends of the scale. The default value is likely the best setting.)
8. Use the drop-down list to select the camera's mounting location as Ceiling, Floor, or Wall. (This setting will impact how the software displays the camera image.)
9. Press the **Save** button to save your settings, or **Cancel** to exit without saving.

Panorama

1. Select the *Panorama* tab.



Use the *Panorama* screen to enter settings for the default *Panorama* view of the selected camera. The *Panorama* view is a flattened version of the available video from the fisheye camera. This view displays the entire image and cannot be altered at the Player.

2. Mark the *Enable* checkbox to activate the *Dewarp Settings* (both *Perspective* and *Panorama*) for this camera. (If this is not marked, Dewarping features will not be available at the Player.)
3. Use the *Aspect Ratio* slider to change the amount of Player area the image will fill. You might take some time to experiment with this setting, but the points below describe how it works.
 - a. At the high end of the scale, the image will fill the length of the Player, but the height of the image will be condensed.
 - b. At the center of the scale, the image will fill the length of the Player, and the height of the image will be at its least distorted.
 - c. As you move from the center of the scale to the low end, the height of the image will stretch toward the top and bottom of the Player.
 - d. From the point that the image fills the Player, if you continue to move to the bottom of the scale, the image width will shrink until the image disappears.
4. Use the *Shift* slider to adjust the center point of the image. (If there is a certain part of the image that you prefer at the center of the Player, use the slider to make this adjustment.)
5. Use the drop-down list to select the camera's mounting location as Ceiling, Floor, or Wall. (This setting will impact how the software displays the camera image.)
6. Press the *Save* button to save your settings, or the *Cancel* button to exit without saving.

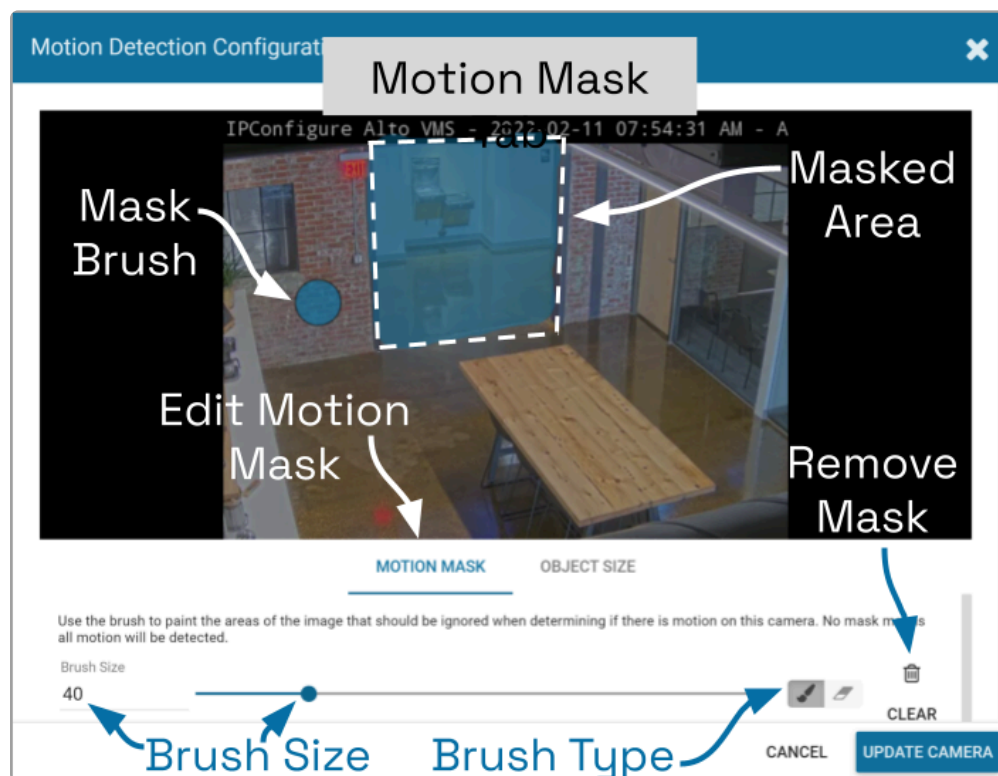
Advanced Settings: Motion Detection

The *Camera Configuration* screen includes *Motion Detection* Settings which allow you to apply camera-specific motion detection settings. The *Motion Detection Configuration* screen provides two tools to reduce the number of “nuisance” motion captures: *Motion Mask* and *Object Size*.

* These settings will only apply on cameras that are configured to use server-based motion detection.

Motion Mask

1. At the *Camera Configuration* screen, click the camera you want to edit. Click the *Motion Detection* link to open the *Motion Detection Configuration* screen.
2. Select the *Motion Mask* tab (just underneath the video image). Use this screen to change the way motion detection is applied to the selected camera.



By default, all cameras are set to detect motion. When motion is detected, a motion event is recorded and will appear on the *Timeline Bar* (which is intended to make video review easier). But sometimes, the camera captures too much motion. There may be objects in the video, like trees, banners, or balloons, that move constantly, increasing the number of motion events to such a degree that it actually makes video review more tedious.

The *Motion Mask* tool allows you to “paint” over one or more areas of the video image, making those areas invisible to motion detection. (You will still see all of the video, but the motion capture feature will ignore the masked area.)

3. Select the *Brush Type*.
 - a. The paint brush will add a masked area to the video image. This area will be ignored by the motion detection feature.
 - b. The eraser will remove masked area from the video image. This area will now be evaluated during motion detection.
4. Adjust the *Brush Size* using either of the following methods.
 - a. Click in the *Brush Size* field and enter a new number or use the up and down arrows to increase or decrease the size of the brush.
 - b. Click and drag the slider to increase or decrease the size of the brush.
5. Position your cursor over the video image and you’ll see a blue circle (the mask paint brush) or a pink circle (the mask eraser). (Adjust the brush size if needed.)
6. Click and drag the brush across the video image to change the masked area.
 - a. If you selected the paint brush, you will add masking to the image.
 - b. If you selected the eraser, you will remove masking from the image.
7. To remove the entire mask, click the *Clear* button.
8. To save the mask (or the cleared image), click the *Update Camera* button.

✿ Due to the variability of the video image that comes with PTZ cameras, the *Motion Mask* feature should not be used with PTZ cameras.

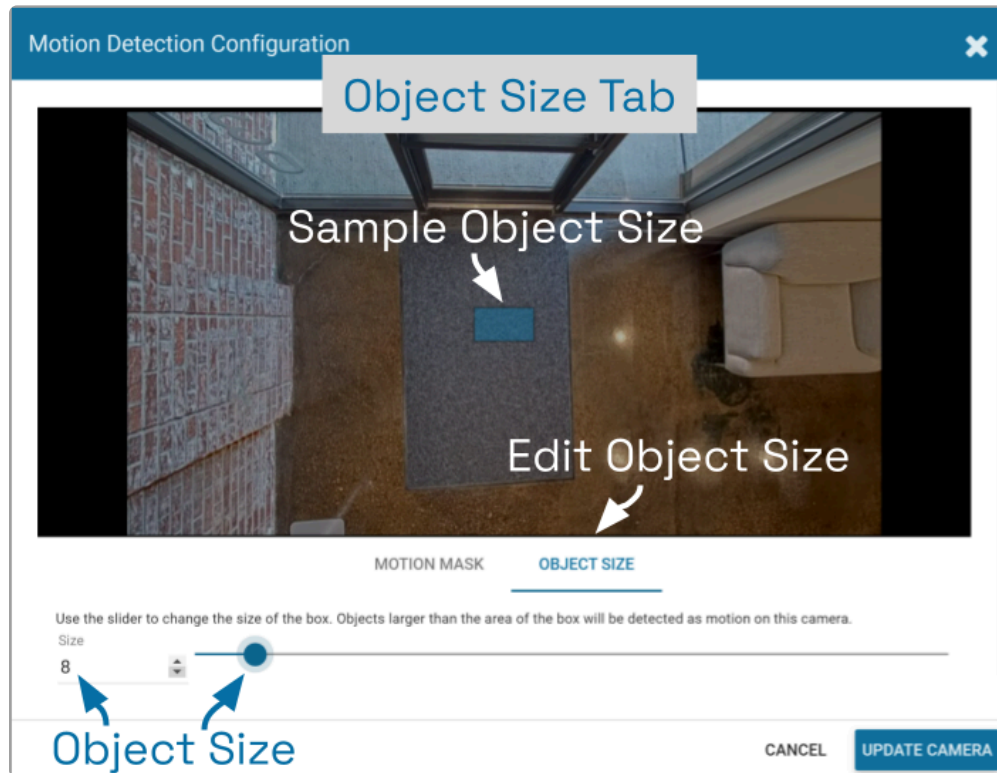
✿ There are some circumstances that will inhibit motion detection. If the motion enters and exits the video image very quickly, the system may not see enough of the frames to detect the motion. If this becomes an issue, you may want to consider reducing the stream GOV setting (which results in more keyframes), or enable the *Decode all frames* option. Keep in mind, however, that this will put additional load on the server.

Object Size

The *Object Size* tool allows you to modify motion detection based on area. This tool instructs the software to ignore the movement of any objects with a smaller area than the selected object size (like small animals and robot vacuum cleaners). (You will still see all of the video, but the motion capture feature will ignore the small stuff.)

1. Select the *Object Size* tab (just underneath the video image). Notice the blue square in the center of the video image. This represents the defined object area. Objects of equal or lesser area will be ignored by motion detection.

For example, if the selected object size (area) is 100, the software will ignore objects with an area of 100 or less. This includes objects that are 10 × 10, 20 × 5, 30 × 3, 45 × 2 and so on (each of which have an area of 100 or less).



2. Adjust the *Object Size* using either of the following methods.
 - a. Click in the *Size* field and enter a new number or use the up and down arrows to increase and decrease the area.
 - b. Click and drag the slider to increase and decrease the area.
3. To activate motion detection for objects of all sizes, set the *Size* to zero.
4. To save the *Object Size* settings, click the **Update Camera** button.

* When selecting the *Object Size*, it may be better to keep it small. As this selection gets larger, the system ignores more motion events (which may be detrimental to your overall objective).

* The *Motion Mask* and *Object Size* tools can be used together to completely customize motion detection for each camera.

Add a Stream



This is the *Add* icon.

Usually you will not need to add a stream unless your camera does not come configured with any streams by default.

1. From the *Camera Information* screen, press the *Add Stream* button to add a new stream for the selected camera. Orchid Core VMS will open a screen in which you will need to enter and modify the settings for the stream.

The image shows a 'Stream Settings' dialog box with a blue header and a close button (X) in the top right corner. The main content area is white. At the top, there is a text input field labeled 'Name *' with a red asterisk. Below it, a red error message says 'Stream name is required.' A blue arrow points from the text 'Enter New Stream Settings' to the 'Name *' field. Below the name field, there are two dropdown menus: 'Recording Style' set to 'Continuous recording with motion detection' and 'Motion Style' set to 'Server'. Below these, there is a section titled 'Video Settings'. It contains several controls: 'Encoder' set to 'H264', 'Bit Rate' set to '0' with a slider, 'Frame Rate' set to '30' with a slider, 'GOV Length' set to '10' with a slider, 'Profile' set to 'High', 'Resolution' set to '640x720' with a dropdown arrow, and 'Quality' set to '50' with a slider. At the bottom right, there are two buttons: 'CANCEL' and 'ADD STREAM'.

2. When all settings have been entered, press the *Add Stream* button to add the new profile to the *Streams* list for the selected camera.


Copy Stream to Cameras



This is the *Copy Streams* icon.

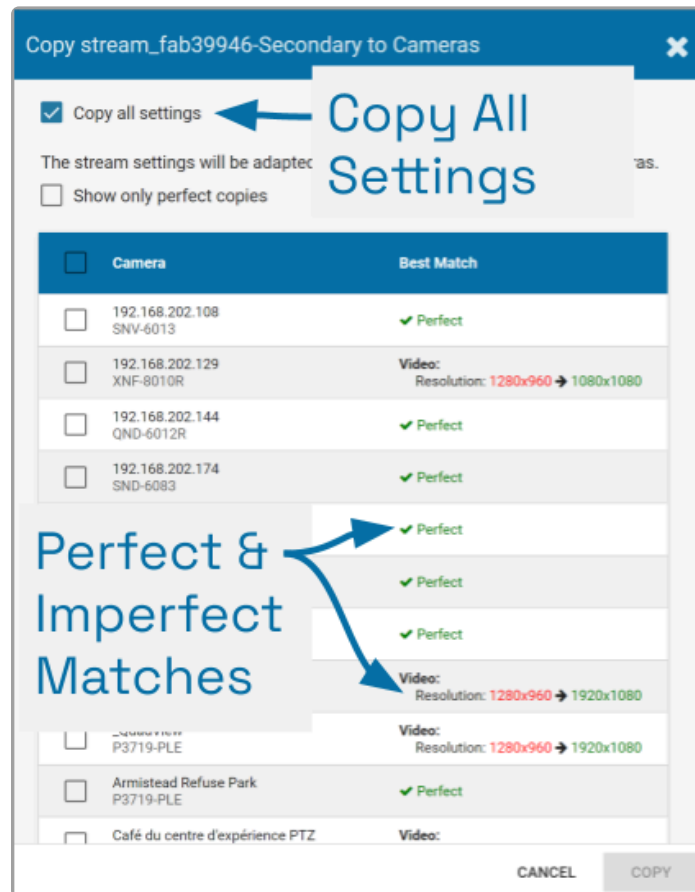
This feature is a shortcut you may use if you have multiple, similarly configured cameras to set up. Once you complete a stream settings profile for one camera, you can copy all (or part) of that profile to one or more cameras with one click. This shortcut is especially useful if you have added multiple cameras at once (using Auto mode).

1. From the list of registered cameras on the *Camera Configuration* screen, click the name of the camera you want to use as a model.
2. Then add or edit a camera stream that contains the settings you would like to copy to other cameras.
3. Once your template profile is complete, click the pop-up menu for the stream you want to copy, then click the *Copy Stream to Cameras* icon.

Streams				+ ADD STREAM	
Status	Mode	Name	Configuration		
		profile_1 h264-Primary	640x480, 15fps, H264 Continuous recording with motion adaptive frame rate		
—		profile_1 jpeg	1920x1080, 30fps, JPEG Continuous recording with motion detection		
		stream_fab39946-Secondary	1280x960, 30fps, H264 Secondary: Recording	Camera Stream Pop-Up Menu 	
—		TestStream	1920x1080, 15fps, H264 Continuous recording with motion detection		

* RTSP cameras have a limited number of settings that can be edited in Orchid Core VMS. The pop-up menu for these cameras will not display the *Copy Stream* icon and are not eligible for the *Copy Stream* feature.

A screen will appear that will allow you to edit and complete the profile transfer to selected cameras.



The screen lists all of the cameras that have been added to the system. It also provides comments to show which cameras are good candidates for the stream settings (which may help you decide if you want to copy all of the settings to all of the cameras.) For each camera that is not a perfect match, Orchid Core VMS will pick the stream setting that is the closest match and indicate how the stream settings will be modified for that camera.

There are several reasons why profile matches might not be perfect. For instance, maybe the “model” camera is configured to use a higher resolution than is supported by the target cameras. In this case, Orchid Core VMS will choose the closest available resolution on the target cameras.

The appearance of this screen will change as different settings are selected. Depending on how many cameras have been added and which settings are selected, you may need to scroll down to see all of the cameras and settings.

4. Mark the **Copy all settings** checkbox to copy all of the stream settings. (These will be copied to all of the cameras selected in the lower half of the screen.)
5. Leave the **Copy all settings** checkbox unmarked if you want the ability to choose which settings will be copied.
 - a. Mark the **Setting** checkbox if you decide to copy all of the settings anyway.
 - b. Mark the checkbox for any of the individual categories that you want to copy (including **Recording Style**, **Video Settings**, **Audio Settings**, and **Decode all frames**).

- c. You may expand the **Video** and **Audio Settings** categories to select individual settings within each, if needed. (Click on the *+Show hidden fields* link to expand the list and the *-Hide fields* link to condense the list.)

Copy stream_fab39946-Secondary to Cameras

☐ Copy all settings

Setting	Value
<input type="checkbox"/> Recording Style	Continuous
<input type="checkbox"/> Motion Style	Sensor
<input checked="" type="checkbox"/> Video Settings	Show 8
<input type="checkbox"/> Audio Settings	Show 1
<input type="checkbox"/> Decode all frames	Disabled

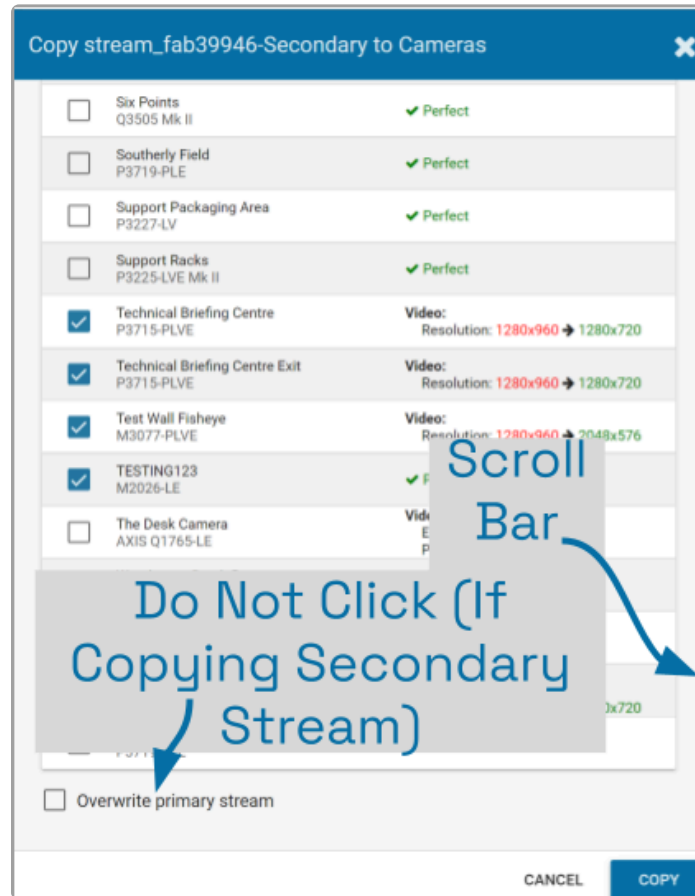
The stream settings will be adapted as shown to work with the chosen cameras.

☒ Show only perfect copies

Camera	Match
<input checked="" type="checkbox"/> 192.168.202.108 SNV-6013	
<input checked="" type="checkbox"/> 192.168.202.144 QND-6012R	
<input checked="" type="checkbox"/> 192.168.202.174 SND-6083	✓ Perfect
<input checked="" type="checkbox"/> 192.168.203.224 XNV-6011	✓ Perfect

CANCEL COPY

6. Mark the **Show only perfect copies** checkbox if you want the software to list only those cameras that can implement the new profile settings exactly. (This checkbox will not appear if there are no camera streams that are a perfect match.)
7. Mark the **Camera** checkbox if you want to copy settings to all of the cameras in the list. Leave the **Camera** checkbox unmarked if you want the ability to choose which cameras will receive the stream settings.



8. Mark the *Overwrite primary stream* checkbox if you want these stream settings to replace the existing primary stream settings on every camera selected. Leave the *Overwrite primary stream* checkbox unmarked if you simply want to add this as a new stream option for each of the selected cameras. (Orchid Core VMS will not record from this new stream.)

✿ IMPORTANT: If you are copying a Secondary stream, leave the *Overwrite primary stream* checkbox unmarked. The copied stream will be added to each of the selected cameras as an inactive stream. You may then reassign the stream as a Primary or Secondary (active) stream.

9. Once your selections are complete, click the **Copy** button to send the stream settings to the selected cameras. It may take a few minutes for the settings to change based on the number and type of cameras being updated.
10. When the copy process is complete, click the **Done** button.

Cameras with Multiple Lenses

There are some camera models that have multiple lenses or offer multiple camera views (such as 180- or 360-degree cameras). To take advantage of this capability, you will need to do the following:

1. Add this camera to the system one time for each available lens.
2. Edit the properties for each of the cameras as follows:
 - a. For ease of identification, provide similar but unique camera names. (For example: Tower1East, Tower1West, and Tower1North.)
 - b. To ensure that you are able to view video from each of the available lenses, select a different primary stream for each of the cameras you added.

In the example below, a multi-lens camera has been added to the system 3 times. Each has a similar (but different) camera name, and each has a different primary stream.

Same Camera, Different Names

Different Streams

Status	Mode	Name	Configuration
—	📹	profile_1 h264	2560x1440, 12fps, H264 Continuous recording with motion detection
—	📹	profile_1 jpeg	2560x1440, 30fps, JPEG Continuous recording with motion detection
—	📹	profile_2 jpeg	2560x1440, 30fps, JPEG Continuous recording with motion detection
—	📹	profile_3 h264	2560x1440, 30fps, H264 Continuous recording with motion detection
—	📹	profile_3 jpeg	2560x1440, 30fps, JPEG Continuous recording with motion detection
—	📹	profile_4 h264	2560x1440, 30fps, H264 Continuous recording with motion detection
—	📹	profile_4 jpeg	2560x1440, 30fps, JPEG Continuous recording with motion detection
—	📹	profile_multiview h264	2560x1440, 30fps, H264 Continuous recording with motion detection

✿ If you find a Camera Stream profile called “multiview” (or something similar) in the list of stream names, select that as the Primary stream if you want to view/record all of the views as one stream. When you add this Player to the *Stage*, it will display all available views as one Player.

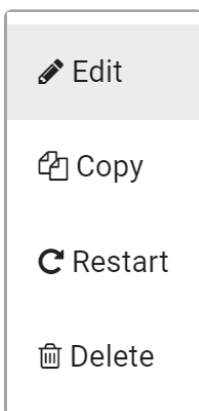


Restarting a Stream



This is the *Restart* icon.

1. To restart a camera stream, go to the *Streams List* for a given camera and identify the stream you want to restart. (This will be either a Primary or a Secondary stream.)



2. Click the stream's pop-up menu, then click the *Restart* icon. The software will reset the connection to the camera stream.

Removing a Stream



This is the *Delete* icon.

1. To remove a single camera stream, go to the *Streams List* for a given camera and identify the stream you want to delete.

Streams				+ ADD STREAM	
Status	Mode	Name	Configuration		
		profile_1 h264-Primary	640x480, 15fps, H264 Continuous recording with motion adap rate	Locked Stream	
—		profile_1 jpeg	1920x1080, 30fps, JPEG Continuous recording with motion detection		
		stream_fab39946- Secondary	1280x960, 30fps, H264 Secondary: Recording	Delete Stream	
—		TestStream	1920x1080, 15fps, H264 Continuous recording with motion dete		

2. Click on the stream's pop-up menu, then click the *Trash Can* icon. Orchid Core VMS will ask you to confirm that you want to delete the stream. Press *Delete* to confirm. This cannot be undone.



A red *Lock* icon indicates that the stream cannot be deleted. This locked state is dictated by the camera and cannot be changed.

Recovering a Camera



This is the *Recover Camera* icon.

If someone edits camera settings (including the IP address) directly at the camera, Orchid Core VMS may be unaware of the new settings and may lose its connection with the camera. Orchid Core VMS helps fix this problem with the *Recover Camera* feature.

The *Recover Camera* tool may also be used to activate features on cameras that were installed using earlier versions of Orchid. For example, recovering the camera may enable the camera-based motion detection option (by connecting to the metadata capabilities of the camera). Similarly, recovering the camera may enable the camera stream settings for NTP and Time Zone. Please refer to the [Edit Camera Stream Settings](#) for more details about camera-based motion detection, NTP Settings, and TimeZone settings.

1. To recover a camera, click the name of the camera you want to recover from the list of registered cameras on the *Camera Configuration* screen.
2. Press the *Recover Camera* button at the bottom of the expanded camera entry. The *Connection Settings* screen will appear.

Connection Settings

Use this to recover and synchronize your camera when:

- The camera's IP address has changed
- The camera's settings have been changed outside of Orchid Core VMS

ONVIF Discovery URL

http://192.168.204.254/onvif/device_service

Credentials

Username

Password

CANCEL

RECOVER CAMERA

3. To refresh the camera settings, simply enter the credentials for the camera, then press the *Recover Camera* button. (The software will pull the camera settings directly from the camera.)
4. To reconnect with the camera, replace the camera's IP address (with the new one) in the

camera's URL field. Then enter the credentials for the camera and press the **Recover Camera** button. (The software will reconnect with the camera at its new IP address, and will also pull the camera settings from the camera.)



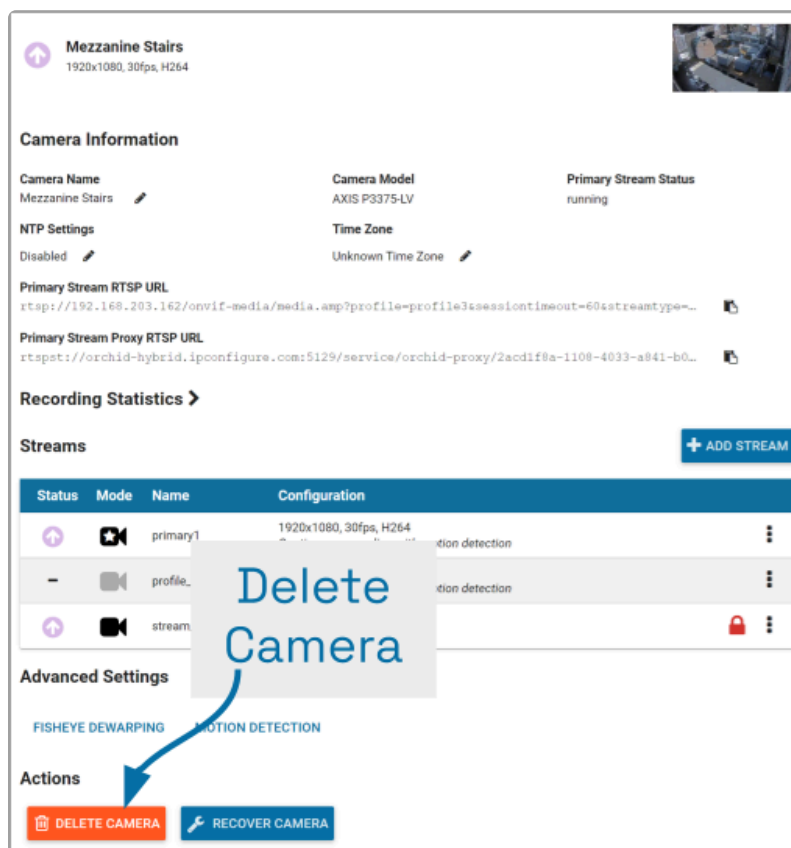
Beginning in version 22.6, the Recover Camera feature no longer requires the replacement camera to have the same MAC address. So if you have to replace a camera, you may use the Recover Camera feature to add the new camera to the system.

Removing a Camera



This is the *Delete* icon.

1. To remove a single camera, do either of the following:
 - a. From the list of registered cameras on the main *Camera Configuration* screen, position the cursor over the Up arrow to the left of the camera you want to delete; the arrow will change into a checkbox. Mark the checkbox, then press the **Delete Selected** button at the bottom of the list. Orchid Core VMS will ask you to confirm that you want to delete the camera. Press **Delete** to confirm. Once a camera is removed, it is no longer available for viewing, playback, recording, export, etc. This cannot be undone.
 - b. From the camera's settings screen, click the **Delete Camera** button (located at the bottom of the screen). Orchid Core VMS will ask you to confirm that you want to delete the camera. Press **Delete** to confirm. Removal may take a few moments.



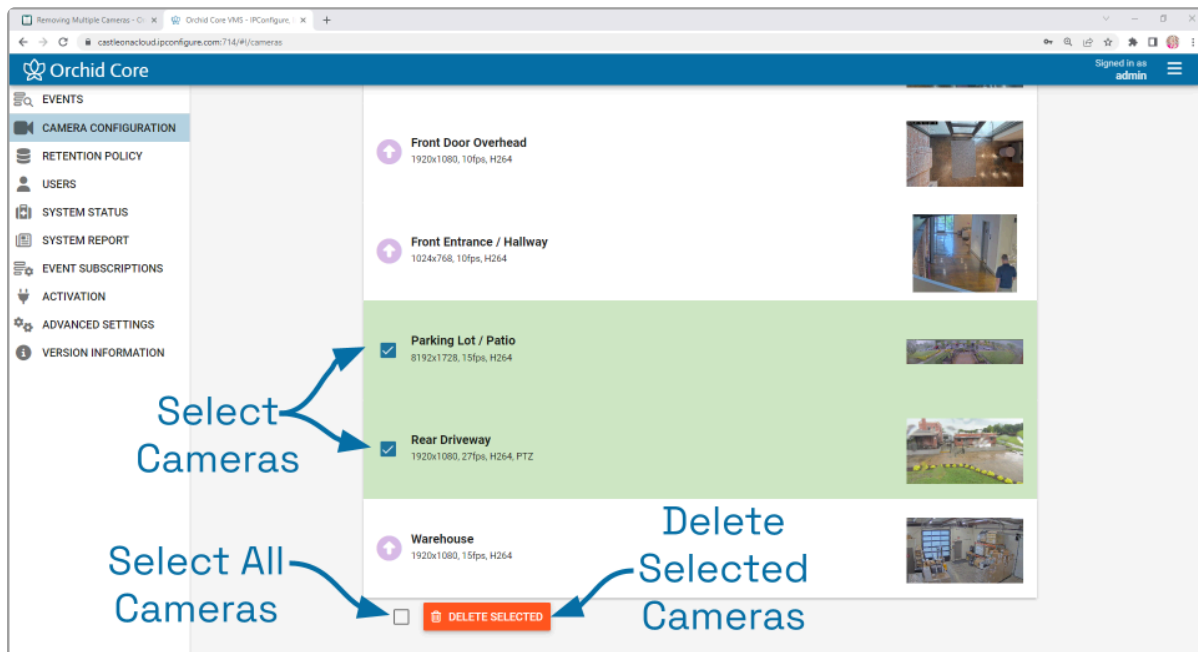
Removing Multiple Cameras



This is the *Delete* icon.

Multiple cameras can be removed from Orchid Core VMS at the same time, if needed.

1. From the list of registered cameras on the main *Camera Configuration* screen, first select the cameras you want to delete. (For each camera you want to delete, position the cursor over the Up arrow to the left of the camera name; the arrow will change into a checkbox. Mark the checkbox.)



2. Once your selections are complete, click the *Delete Selected* button at the bottom of the list. Orchid Core VMS will ask you to confirm that you want to delete the cameras. Press the *Delete* button to confirm. Once the cameras are removed, they are no longer available for viewing, playback, recording, export, etc. This cannot be undone.
3. To delete ALL of the cameras in the list of registered cameras, mark the *Delete Selected* checkbox at the bottom of the list, then click on the *Delete Selected* button. Orchid Core VMS will ask you to confirm that you want to delete the cameras. Press the *Delete* button to confirm. Once the cameras are removed, they are no longer available for viewing, playback, recording, export, etc. This cannot be undone.

Searching for a Camera

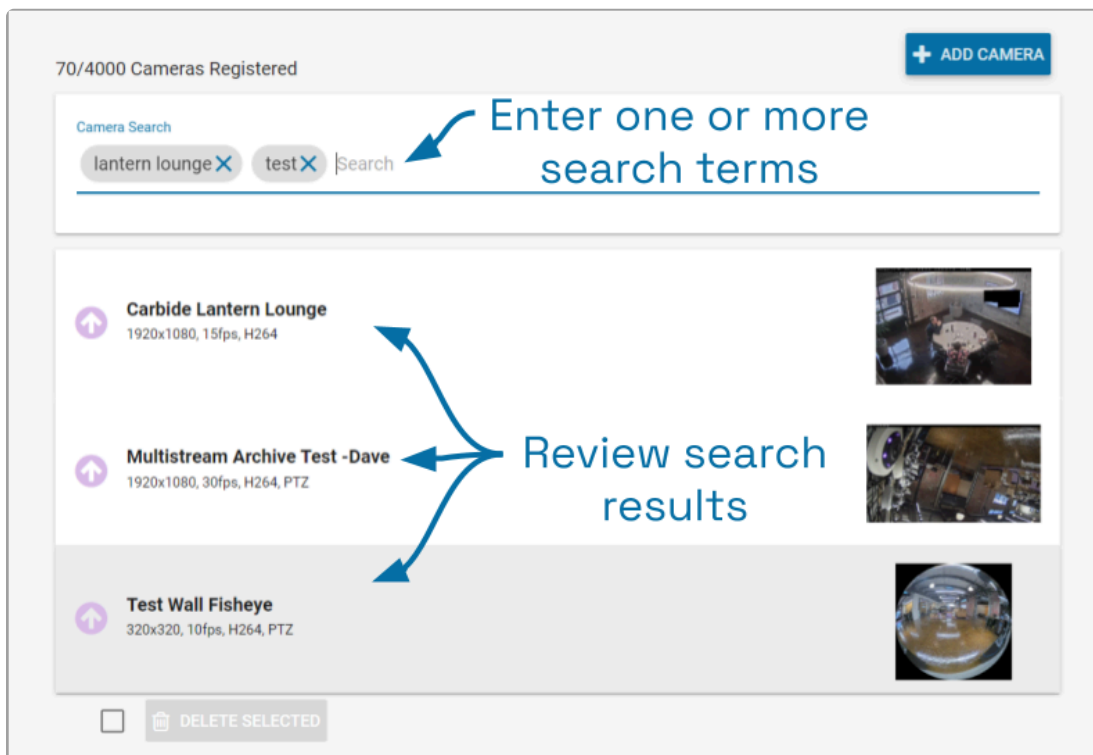
If you have more than one page of registered cameras, the software will automatically activate the camera search and page navigation. Especially useful with large systems, these tools will help you find specific cameras quickly.

Search the Cameras List

The *Camera Search* field will appear at the top of the *Camera Configuration* screen. It supports searching by the camera name, using single and multiple-word search tags.

1. Click into the *Search* field to start your search.
2. Type one or more search tags (clicking *Enter* after each).
 - a. A single search tag with multiple terms (words or numbers) will initiate a search for results that include all of the terms, in order.
 - b. Multiple, single-term search tags will initiate a search for results that include at least one of those tags.

Each time you press *Enter*, the *Camera Configuration* screen will update to display a list of all of the cameras that contain the tag(s).



Retention Policy

The *Retention Policy* feature in Orchid Core VMS allows Administrators to manage video archive retention on a stream by stream basis as well as review current and projected disk utilization.

✿ An Administrator is the only role with access to the *Retention Policy*.

About Video File Retention

To maintain a system for video file retention, Orchid Core VMS determines how much disk space is available on the server. By default, Orchid Core VMS will retain videos until your hard disk is 85% full (the *Cleaner Threshold*), at which point it will begin deleting the oldest videos to make room for new videos. The available video storage space is divided among all the cameras that have been added to Orchid Core VMS based on equal days of retention; however, based on individual camera settings, this doesn't mean that each camera will require the same amount of server storage space.

If no camera-specific retention settings have been entered, Orchid Core VMS will grant each camera the same number of days of video retention. Since each camera may have different settings (such as recording style, frame rate, etc.), and those settings impact video file size, the amount of space required for the same number of days will vary.

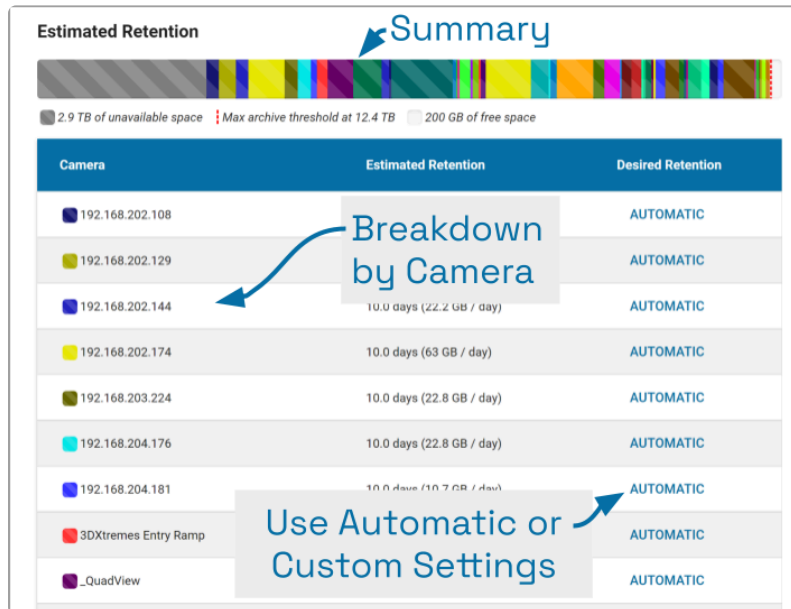
In some applications, there may be cameras for which increased file retention is critical. For these cameras, the Administrator may set specific, minimum retention settings. In these cases, the retention settings for the remaining cameras will be adjusted automatically to share the remaining balance of available storage before the *Cleaner Threshold* is met.

When disk usage reaches the retention limit, Orchid Core VMS will create free space by removing the oldest archives first. The system will ensure, however, that the minimum desired retention settings that have been set are maintained, assuming sufficient disk space is available.

To change the 85% *Cleaner Threshold* setting, use the [Advanced Settings](#) feature.

Accessing the Retention Policy

1. To access the retention settings for Orchid Core VMS, open the *System Menu* in the top-right corner of the screen, then select *Retention Policy*.



At the top of the *Estimated Retention* section, Orchid Core VMS displays a summary of estimated server space usage. Use the cursor to hover over the colored regions of the summary graphic to view the estimated server space usage for each camera.

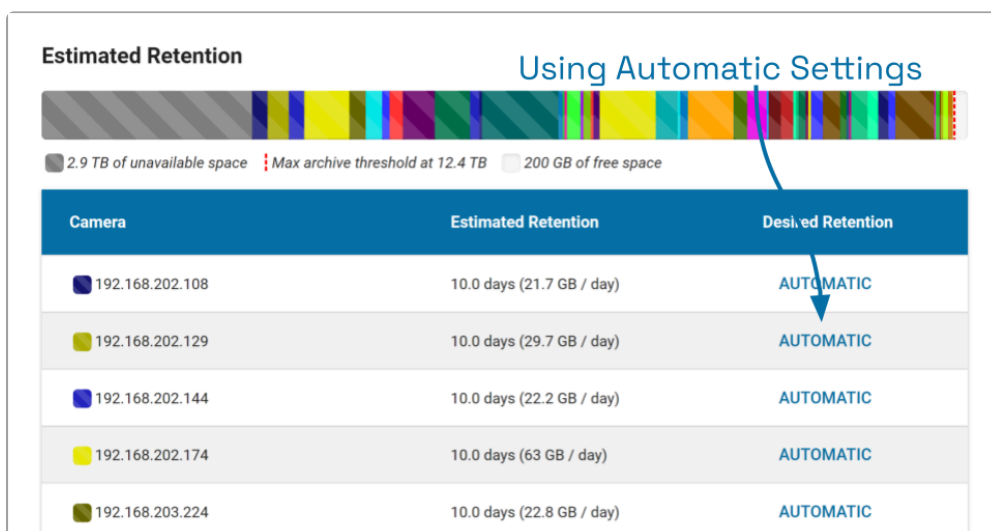
- **Unavailable space:** This space on the disk is marked in grey. It is already in use by other applications and is unavailable to Orchid Core VMS for storing video.
- **Video data:** This space on the disk is marked in various bright colors representing each camera. This space is filled with videos that are managed by Orchid Core VMS. To make space for new video, the oldest videos are continuously and automatically deleted as the *Cleaner Threshold* is reached.
- **Cleaner Threshold:** By default, Orchid Core VMS will attempt to make sure that no more than 85% of your disk space is used. This threshold is marked on the bar by a red dotted line. To change the 85% *Cleaner Threshold* setting, use the [Advanced Settings](#) feature.
- **Free space:** This disk space is not in use by Orchid Core VMS or any other program.

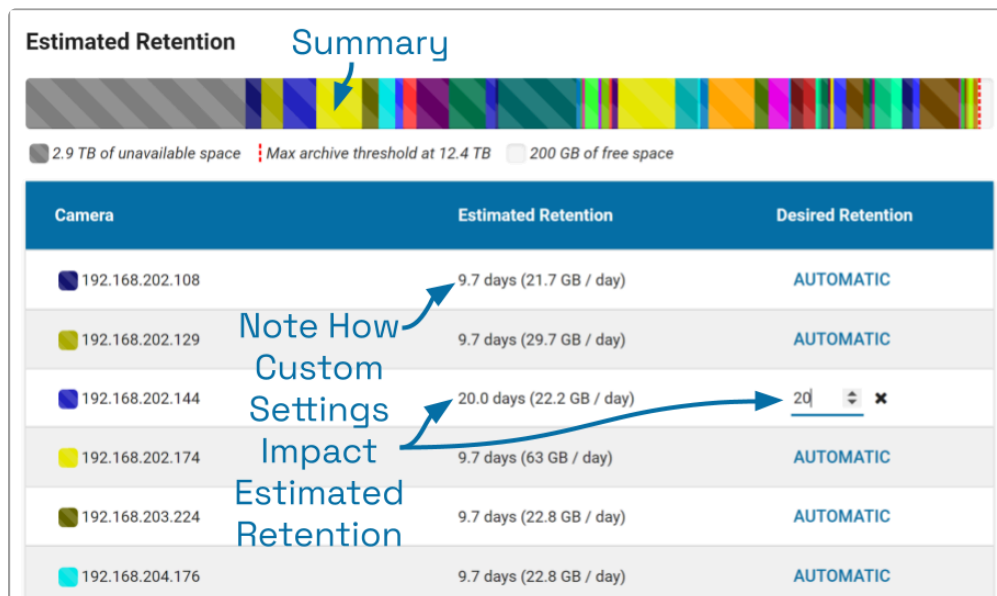
Changing Desired Retention Settings

If you decide that you need to set some specific retention settings, keep a few things in mind.

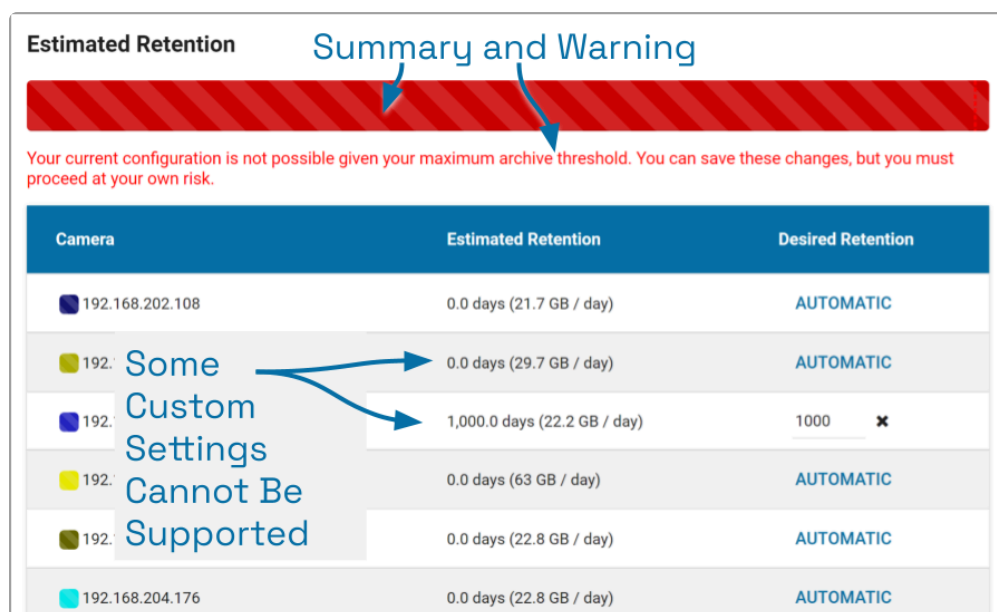
- The amount of space in which Orchid Core VMS may store video files is limited, regardless of what you may attempt to enter as desired retention settings.
- As custom desired retention settings are entered, Orchid Core VMS will automatically re-distribute the remaining available space to the remaining cameras (that are using the Automatic retention settings).
- Increasing the cameras' desired retention settings to inflated numbers may not be realistic, and may result in an error message.
- Keep it simple and let Orchid Core VMS do most of the work. Instead of decreasing some settings and increasing others, keep the Automatic settings for most cameras, and increase the desired retention on cameras that are most critical to the operation.

The following screenshots depict a series of retention scenarios.





□



□

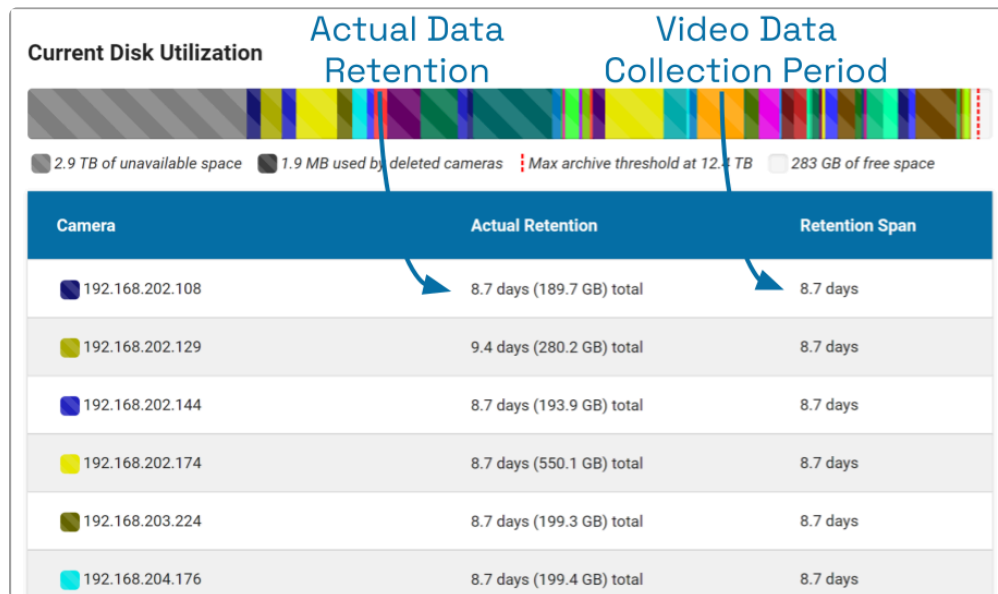
1. To edit the minimum Desired Retention setting for any given camera, click on the corresponding ***Automatic*** button.
2. Type in a new setting to represent the number of days of video that will be kept for this camera. The remaining estimated retention will automatically be recalculated for all cameras that do not have a manually specified retention setting.

If your new setting requires more storage than is physically available on your disk, Orchid Core VMS will flag an error (as pictured previously). To fix this, you'll need to reduce the desired retention to an acceptable level or add more available storage.

3. Repeat steps 1 and 2 for each camera that requires custom, minimum retention settings.
4. To undo the last setting you changed, press the ***Cancel Changes*** button at the bottom of the list. (You can only use this feature before you save the new configuration.)
5. Once all settings have been entered, press the ***Save Configuration*** button at the bottom of the list.
6. To quickly change any setting back to *Automatic*, click the *X* button next to the setting and then press the ***Save Configuration*** button.

Reviewing the Current Disk Utilization

The bottom half of the *Retention Policy* screen displays how the server space is actually being used. Use the cursor to hover over the colored regions of the summary graphic to view the actual server space usage for each camera.



The *Current Disk Utilization* section displays a summary of actual server space usage which includes unavailable space (space used by the operating system and other files), space occupied by video files, and a buffer of free space. It then provides a usage breakdown by camera. This information can be very helpful in diagnosing retention issues.

The *Actual Retention* column shows how many days worth of video is being stored per camera. It also includes how much disk space each camera is consuming. The *Retention Span* column shows the number of days over which the video files have been recorded. This data point is especially helpful for those cameras that are set to record only when motion is detected. (For example, look at the “dewarp” camera above. At first glance, the actual retention reading might cause concern. The *Retention Span* confirms that the system has been monitoring the camera for about the same amount of time as the other cameras.)

You may also use this breakdown to determine if any of the cameras are using excessive disk space. If this is the case, you can then take steps to re-configure the camera (by changing either the minimum desired retention settings or the camera stream settings) and fix the problem.

View the System Status

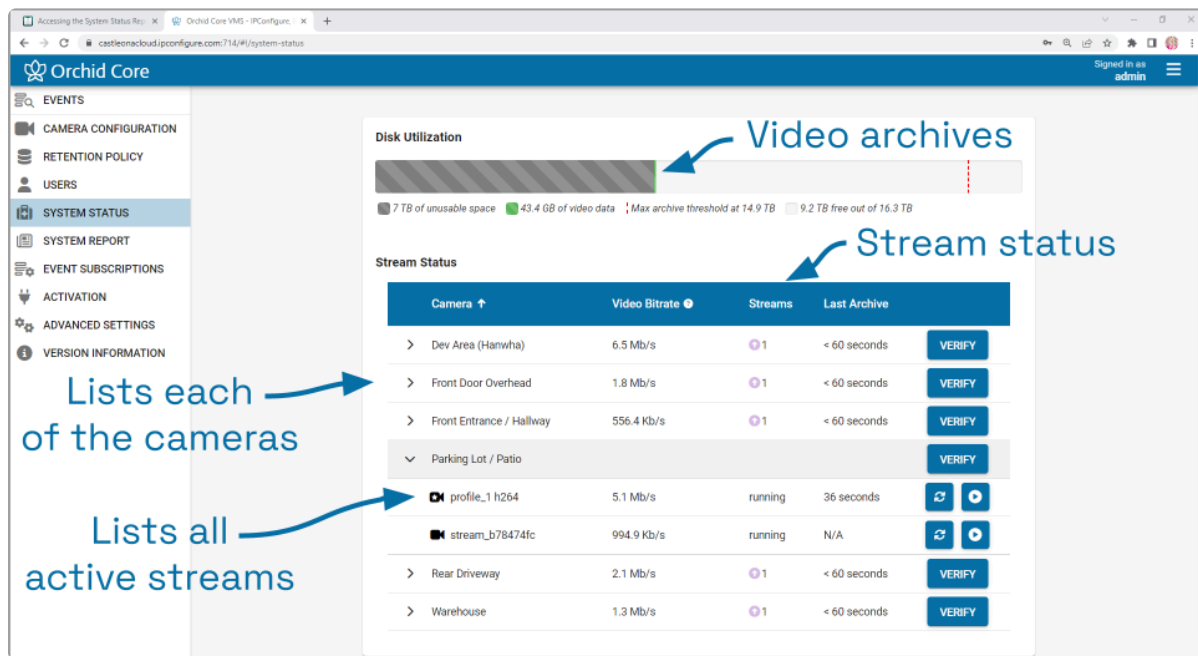
The *System Status* feature in Orchid Core VMS provides an overview of the current disk utilization of the video archives folder, and it allows you to check the status of the active streams running in Orchid Core VMS.



Administrators and Managers are the only roles with the ability to access the *System Status*.

Accessing the System Status Report

1. To access the *System Status* report, open the *System Menu*, then select *System Status*.



The *Disk Utilization* section summarizes how the server space is being used. If the overall amount of total disk space appears low, this may indicate that your recording drive(s) have gone offline and Orchid Core VMS is recording to some other location.







- **Unavailable space:** This space on the disk is marked in grey and is already in use by other applications; it is unavailable to Orchid Core VMS for storing video.
- **Video data:** This space on the disk is marked in green. This space is filled with videos that are managed by Orchid Core VMS. To make space for new video, the oldest videos are automatically deleted as the *Cleaner Threshold* is reached.
- **Cleaner threshold:** By default, Orchid Core VMS will attempt to make sure that no more than 85% of your disk space is used. This threshold is marked on the bar by a red dotted line. To change the 85% *Cleaner Threshold* setting, use the [Advanced Settings](#) feature.
- **Free space:** This disk space is not in use by Orchid Core VMS or any other program.

By default, the video archives folder can be found in the following locations:

- | | |
|-----------------------|---------------------------|
| • In Linux: /orchives | • In Windows: C:\orchives |
|-----------------------|---------------------------|

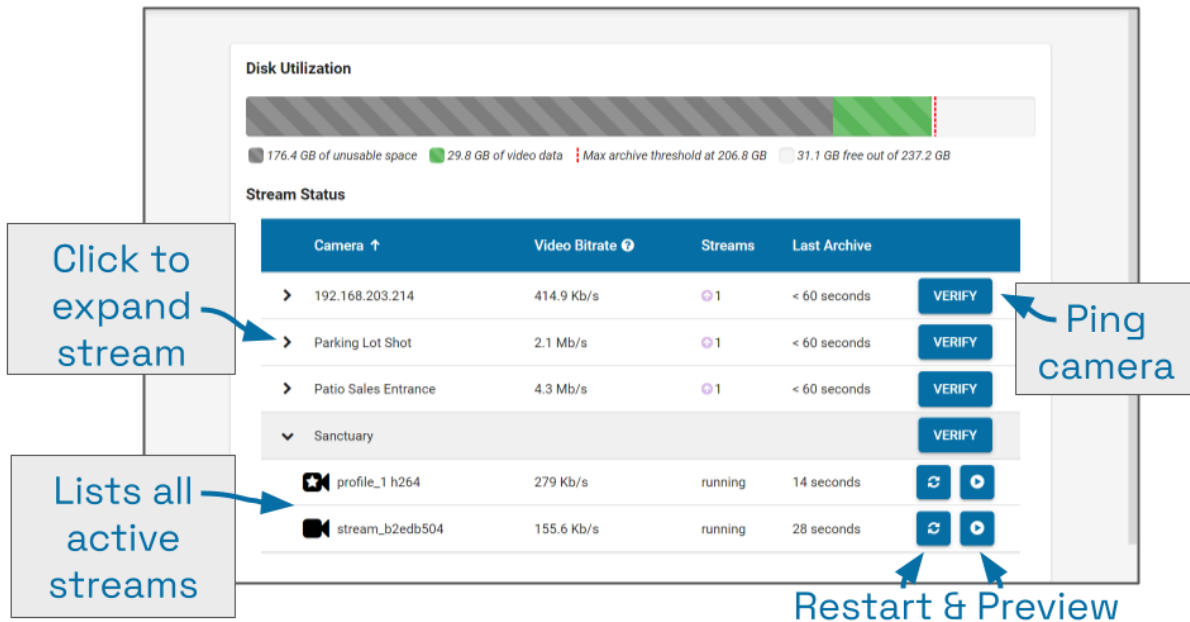
To change the location of the archives folder, please refer to the *Changing the Orchid Core VMS Archives Storage Location* section in the [Orchid Core VMS Installation Guide](#).

Reviewing the Stream Status Section

	This is the <i>Expand</i> icon (used to view camera stream details).
	This is the <i>Condense</i> icon (used to close the camera stream details).
	This is the <i>Camera</i> icon that represents the Primary Stream.
	This is the <i>Camera</i> icon that represents a Secondary Stream (if applicable).
	This is the <i>Restart</i> icon (used to restart the camera stream).
	This is the <i>Preview</i> icon (used to view a preview image from the camera stream).

The *Stream Status* section of the *System Status* report provides a list of all the cameras in Orchid Core VMS. For each camera, the system provides the video bitrate, the current status, the number of active streams, and how long ago the last archive was saved.

1. To view complete camera status details, click on the *Expand* icon next to the desired camera.



Disk Utilization

176.4 GB of unusable space 29.8 GB of video data Max archive threshold at 206.8 GB 31.1 GB free out of 237.2 GB

Stream Status

Camera ↑	Video Bitrate ⓘ	Streams	Last Archive	
➤ 192.168.203.214	414.9 Kb/s	1	< 60 seconds	VERIFY
➤ Parking Lot Shot	2.1 Mb/s	1	< 60 seconds	VERIFY
➤ Patio Sales Entrance	4.3 Mb/s	1	< 60 seconds	VERIFY
▼ Sanctuary				VERIFY
📹 profile_1 h264	279 Kb/s	running	14 seconds	🔄 📺
📹 stream_b2edb504	155.6 Kb/s	running	28 seconds	🔄 📺

Click to expand stream

Lists all active streams

Ping camera

Restart & Preview

Each camera will display a Primary stream, and may also list one or more Secondary streams. The video bitrate will be listed for each of these streams.

The *Video Bitrate* field will display the average video bitrate received by Orchid Core VMS over the last 15 minutes. This provides an indication as to how much video data is being transferred to Orchid. (This is the same bitrate information available within each camera's settings. Providing this data on the *System Status* screen makes it easier to identify one or more cameras that may have exceedingly high bitrates which may be causing system errors.)



A defined stream status will also be provided for each of the active streams. Available stream statuses are:

- **Running:** The stream is currently active and running properly without any errors. It is actively recording and saving video (if configured to do so).
- **Restarting:** The stream is being restarted automatically and should be active again within a few seconds.
- **Idle:** The camera is not responding after being restarted by Orchid Core VMS multiple times and the camera status should be manually verified.
- **Stopping:** The camera stream has been shut down and is in the process of writing the video file. (This will typically happen because another stream has been selected as the primary stream.)

The *Last Archive* field will typically display the amount of time that has passed since the last archive was saved. If Orchid Core VMS has never saved an archive for the camera stream, the software will display *Never* in the *Last Archive* column. Orchid Core VMS writes video archives every minute, so any camera whose *Last Archive* is more than a minute old will be flagged in red, as this indicates video may not be recording.

For details on how to troubleshoot the camera/camera stream, please proceed to the next topic.

Troubleshooting the Camera Stream Status

	This is the Restart icon (used to restart the camera stream).
	This is the Preview icon (used to display a preview image from the camera stream).

The *Stream Status* section also provides several methods for troubleshooting the camera stream. You can troubleshoot using the **Verify**, **Restart**, and **Preview** options. You'll find the **Verify** button at the right end of each of the listed cameras. The **Restart** and **Preview** buttons are at the right end of each camera stream (so you'll need to expand the camera entry to see them).

Stream Status				
Camera ↑	Video Bitrate ⓘ	Streams	Last Archive	
➤ 192.168.203.214	424.5 Kb/s			VERIFY
➤ Parking Lot Shot	2.2 Mb/s			VERIFY
➤ Patio Sales Entrance	4 Mb/s	1	< 60 seconds	VERIFY
▼ Sanctuary				VERIFY
📺 profile_1 h264	3 Mb/s			Restart
📺 stream_b2edb504	344.5 Kb/s	running	35 seconds	Preview

- **Verify:** Pings the camera and confirms whether or not Orchid Core VMS can communicate with the camera successfully. The **Verify** button will turn green if the ping is successful; the button will turn red if Orchid Core VMS is unable to connect to the camera. If the ping command is unsuccessful, the camera's IP address may have been changed directly at the camera. If this is the case, obtain the new IP address and use the [Recover Camera](#) feature to reconnect.
- **Restart:** Closes and restarts the camera stream. You can then use the **Preview** button to verify that Orchid Core VMS is receiving video from the camera stream without having to navigate back to the *Stage*.
- **Preview:** View a live feed of the camera stream. If you are able to see moving video from the camera's feed, then the server and the camera are properly connected.

(Please refer to the [Advanced Topics](#) section for additional help.)

Viewing the System Report

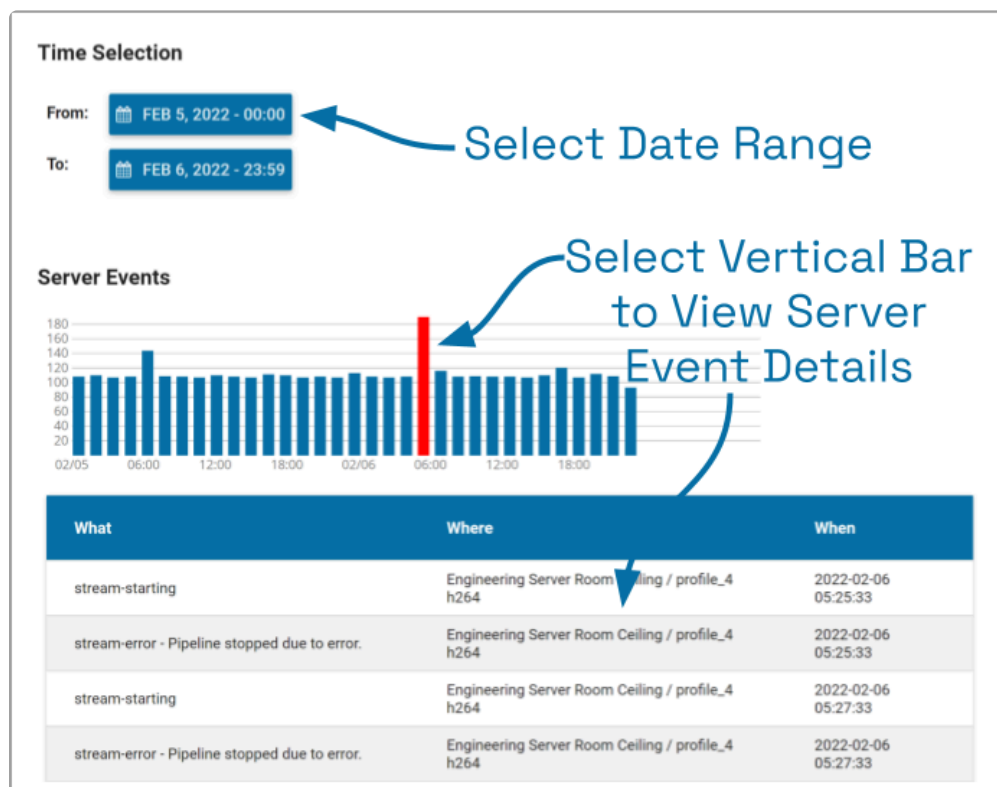
The *System Report* feature in Orchid Core VMS allows Administrators and Managers to view various types of events (such as camera streams starting and stopping) and camera stream statistics during a specified time period. This report also provides access to the Orchid Core VMS system log.



Administrators and Managers are the only roles with the ability to access the *System Report*.

Accessing the System Report

To access the *System Report* for Orchid Core VMS, open the *System Menu* in the top-right corner of the screen, then select *System Report*.



Working with the Server Events and Stream Statistics

By default, the *System Report* will provide a report for the current date (from 12:00 AM to 11:59 PM).

1. To select a new date range for the report, use the *From* and *To* buttons to select the new dates/times for the report in the pop-up calendar and then press the *Go* button. As soon as new dates are chosen, the report will update the *Server Events* and *Stream Statistics* sections.

The *Server Events* graph displays the date and time along the x-axis and the number of events that occurred on the y-axis. For each time period on the *Server Events* graph, a vertical bar will appear if at least one event occurred during that time frame.

Server events include the following:

- **Start:** The Orchid Core VMS server was started.
- **Stop:** The Orchid Core VMS server was stopped.
- **License Changed:** The Orchid Core VMS license has been added, removed, or updated.
- **Entered Degraded State:** The Orchid Core VMS server has entered a state in which it will not operate normally. No new video will be recorded and no existing video will be deleted. (Refer to the [Advanced Topics](#) section for more details.)
- **Trusted Issuer Created:** This indicates that Orchid Fusion/Hybrid VMS has registered (added) this Orchid Core VMS server.
- **Trusted Issuer Removed:** This indicates that the Orchid Fusion/Hybrid VMS server has detached from this Orchid Core VMS server.

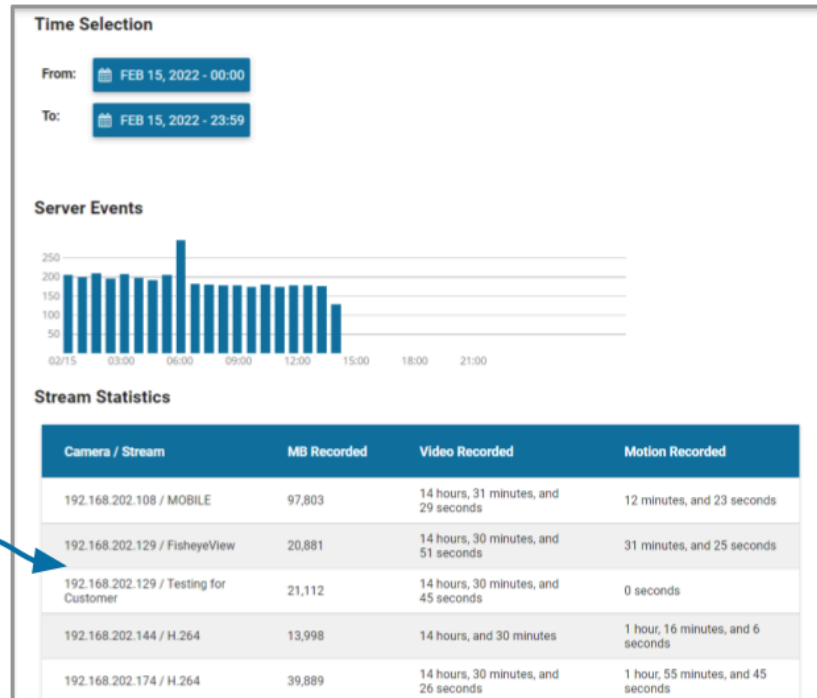
Stream events include the following:

- **Stream-starting:** The stream was started. (System provides the stream name and time.)
 - **Stream-error:** The stream posted an error. (System provides the stream name, time, and error message.)
 - **Failover Failed:** The stream encountered a storage device failure. (System provides the stream name and time.)
2. To view specific details on server events, click on any of the vertical bars. (The selected bar will appear in red.) The server event details for the selected time period will appear in a table beneath the graph. Event details include the date and time.
 3. If there are multiple events within a selected time period, you may double-click on the vertical bar to zoom in for more detail on the time frame.

The *Stream Statistics* section lists each of the active camera streams in Orchid Core VMS. For

each stream, Orchid Core VMS will show how many megabytes of video was recorded, the length of the recorded video, and how much of the recorded video contained motion. (The motion reported here will include both server-based and camera-based motion detection. Keep in mind, however, that server-based motion detection may be further defined using the advanced [Motion Detection](#) settings.)

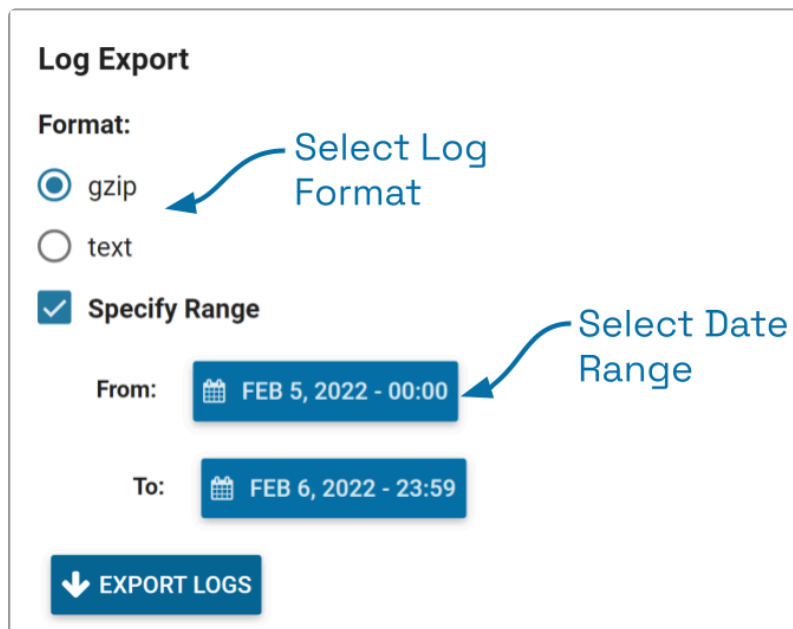
View Stats
for Each
Stream



Working with the Log Export

The bottom half of the *System Report* includes the *Log Export* feature. This feature allows you to view and export Orchid Core VMS system logs into a compressed file or plain text. These logs contain advanced troubleshooting information and are useful when trying to diagnose issues with Orchid Core VMS.

* The *Timeline Bar* displays the time on the client machine while system reports and logs are based on the server time. If there is a discrepancy, click the *Clock* icon (next to the software name in the image below) to view the time gap.



The screenshot shows the 'Log Export' section of a web interface. It includes a 'Format' section with two radio buttons: 'gzip' (selected) and 'text'. A blue arrow points from the text 'Select Log Format' to the 'gzip' radio button. Below this is a 'Specify Range' checkbox, which is checked. A blue arrow points from the text 'Select Date Range' to the 'From' date field. The 'From' field shows a calendar icon and the date 'FEB 5, 2022 - 00:00'. The 'To' field shows a calendar icon and the date 'FEB 6, 2022 - 23:59'. At the bottom is a blue button with a downward arrow and the text 'EXPORT LOGS'.

1. Select the format you wish to use for the log export:
 - a. **gzip**: This option will download the latest log from Orchid Core VMS into a compressed file, allowing it to be viewed on other computers. The gzip-compressed file can be extracted using the `gunzip` command on Linux or a utility such as 7-zip on Windows.
 - b. **text**: This option will display the log within the browser without downloading any files. This file is likely to be very large when a narrow date range is not specified.
2. To specify a date/time range for the log, mark the *Specify Range* checkbox. Then use the *From* and *To* buttons to select the start and end dates/times.
3. Once your selections are complete, click the *Export Logs* button.

Defining and Managing Event Subscriptions

Beginning in version 23.6, Orchid Core VMS Administrators have the ability to define *Event Subscriptions*. *Event Subscriptions* use the power of ONVIF camera events and external systems to detect activity that may require attention. In very simple terms, Orchid is *subscribing* to a data point so that it receives an update when the data point has news. When the update is received, Orchid will incorporate the video that coincides with the event, if configured to do so.

There are two types of subscriptions: *ONVIF* and *External*. An *ONVIF* subscription uses one of the camera's event "topics" as the trigger. (These are available on cameras that support ONVIF metadata streams.) Available topics will vary by camera but may include things like device errors, motion detection, and temperature changes. So, if a camera has an event topic called *Video Source/MotionAlarm*, you could create a subscription that alerts you when that camera detects motion.

An *External* subscription uses input from outside of the VMS (such as an alarm system or access control system). Using webhooks, Orchid will be configured to receive event information from the external system each time the event occurs in the external system. So, let's say you have an access control system with card readers at each of your exterior doors. Using this feature, you can create a subscription for each card reader. Then, every time someone swipes their card, the external system will send event information to Orchid, and a new event will appear in the list for that card reader.

While Orchid is currently capable of handling these *External* events, they may require a varying amount of additional configuration. Some external systems will be able to send data directly to Orchid in one of three supported formats. Other external systems, however, may require additional software to convert their data into an acceptable format for Orchid. (All of this additional work should be performed by your system administrator or integrator.)

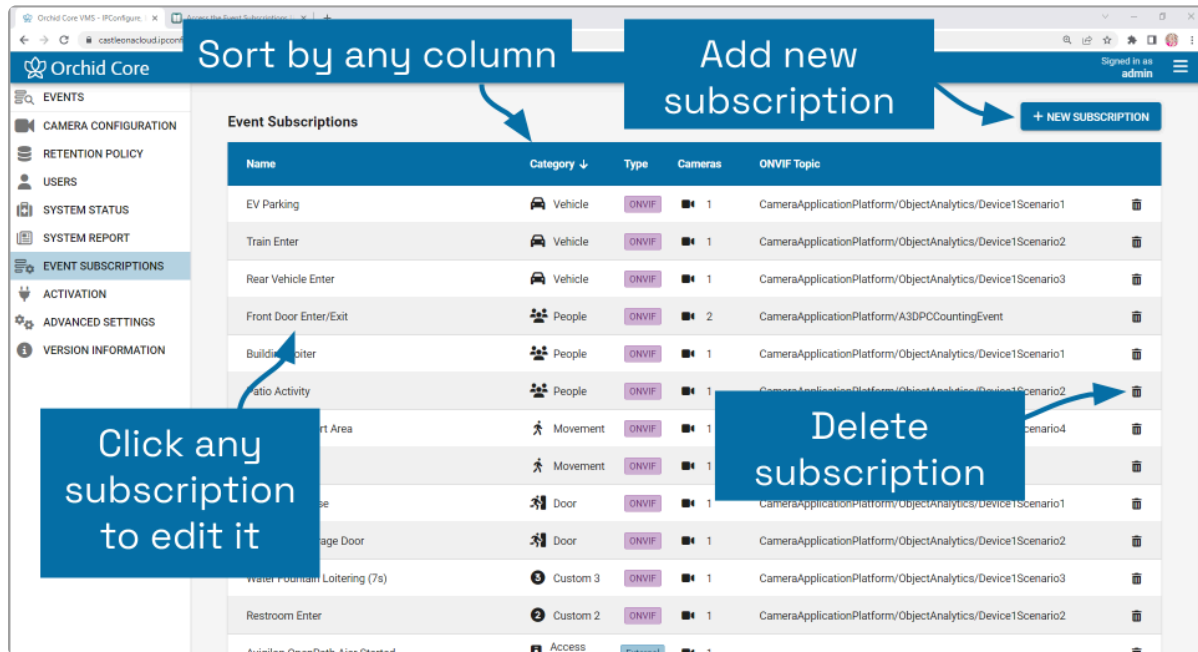
✿ The use of *Event Subscriptions* is optional, but recommended by IPConfigure, because it can help to identify important video quickly.

For information on viewing the actual list of events, please refer to the [Orchid Core VMS User Guide](#).

Access the Event Subscriptions List

1. Open the *System Menu* in the top-right corner of the screen, then select *Event Subscriptions*.

The Orchid Core VMS *Event Subscriptions* screen will appear. This screen displays a list of all of the current *Event Subscriptions*, and gives you the ability to add, edit, sort, and delete them.



2. You may click on any row to open the subscription window for review or editing.

* Much like archived video, as the system reaches the archive threshold, the oldest *Events* will be removed from the list.

Sort the List

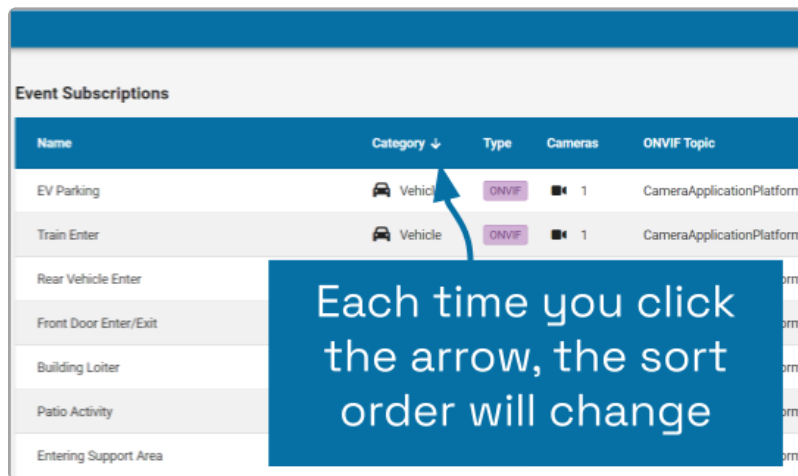
Category ↑

The arrow icon (available for each column in the list) allows you to sort the list.

1. To sort the list, first determine which property you want to use for the sort. Available options are as follows: Name, Category, Type, Camera, and ONVIF Topic.
 - a. **Name:** This option will sort the list by *Event Subscription* name.
 - b. **Category:** This option will sort the list by category. (More details on categories are available below.)
 - c. **Type:** This option will sort the list by subscription type (*ONVIF* or *External*).
 - d. **Camera:** This option will sort the list by the number of cameras associated with the

subscription.

- e. **ONVIF Topic:** This option will sort the list by the ONVIF event type associated with the subscription. This field will be blank for *External* events.
2. Click the arrow next to the column heading you wish to sort by. (Each time you click the icon, the order will switch between ascending and descending.)



















About Subscription Categories

Each subscription will be assigned to a category. Orchid uses these categories to further classify subscriptions, making them easier to identify and sort in the *Events* list.

Predefined Categories


The table below provides a general description of each of the predefined categories. These categories and definitions are merely suggestions. System Administrators may interpret and apply these categories differently.

Icon	Category	Description
	Access Control	Events that originate in an access control system
	Alarm	Events that are tied to specific alarm inputs
	Camera Problem	Events that trigger when the camera has a problem
	Camera Tampering	Events that indicate the camera could be compromised
	Door	Events that focus on entrances/exits

	Item	Events that may indicate an item has been left behind or has appeared
	Lights	Events that occur when lights are turned on or off
	Motion	Events that occur when an object does not remain still
	Movement	Events that occur when an object appears to go from one point to another
	Noise	Events that occur when sound is detected
	People	Events that occur when people are detected
	PIR	Events that occur due to the input from a PIR sensor
	POS	Events that focus on point-of-sale activity
	PTZ	Events that occur when a PTZ camera changes positions
	Vehicle	Events that occur when a vehicle is detected
	Wildlife	Events that occur when an animal is detected

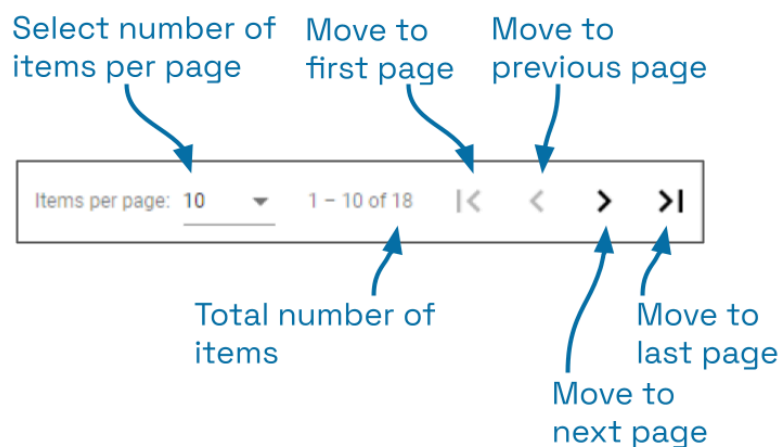
Custom Categories

Ten custom categories are also available. These will be displayed as numbered icons (from 1 to 10).

	Custom	Administrators may use these custom categories to represent more site-specific events.
---	--------	--

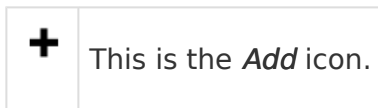
Page Navigation

If you have more than 20 *Event Subscriptions*, page navigation tools will automatically appear at the bottom of the list. These navigation tools will help you move from page to page.

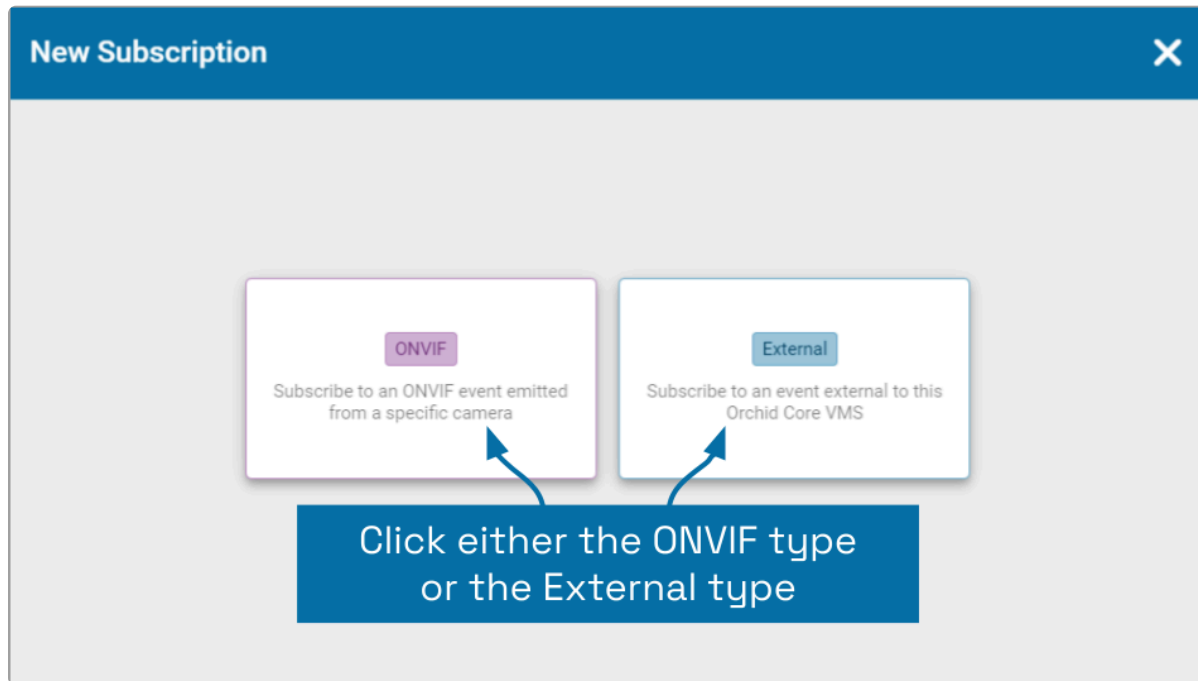


1. Use the Items per page drop-down list to set the number of subscriptions you want to view per screen. Available selections include 10, 20, and 50.
2. Refer to the count to determine which subscriptions are listed on the current screen, and how many total subscriptions are registered to this system.
3. Use the navigational arrows to move to a different screen. From left to right you can: go to the first page, go to the previous page, go to the next page, and go to the last page.

Adding an Event Subscription



1. To add a subscription, click the **New Subscription** button in the top-right corner of the *Events Subscription* screen. A *New Subscription* screen will open.



2. Start by selecting the subscription type. Click on *ONVIF* or *External*. (Remember: An *ONVIF* subscription relies on information from a camera; an *External* subscription uses input from an external system.)

From here, you will need to follow the instructions for the subscription type that you select.

Adding an ONVIF Subscription

- Once you select the *ONVIF* type, enter a name for the subscription. You may want to use a name specific enough that you can easily identify it in the list (such as *Receiving Entrance Motion*).

The screenshot shows the 'New Subscription' dialog box with three tabs: '1 Information', '2 Associated Cameras Optional', and '3 Review'. The 'Information' tab is active. It contains a 'Subscription name' field with the text 'Experience Center South Entrance Tracking', a 'Category' dropdown menu set to 'PTZ', and a 'Source camera' section. The 'Source camera' section displays a grid of camera thumbnails. Annotations with arrows point to specific elements: 'Enter a name' points to the 'Subscription name' field; 'Select a category' points to the 'Category' dropdown; 'Select the camera's ONVIF topic' points to the 'ONVIF Topic' dropdown at the bottom, which is set to 'PTZController/AutoTracking'; and 'Select the camera that will generate the event' points to a camera thumbnail in the grid.

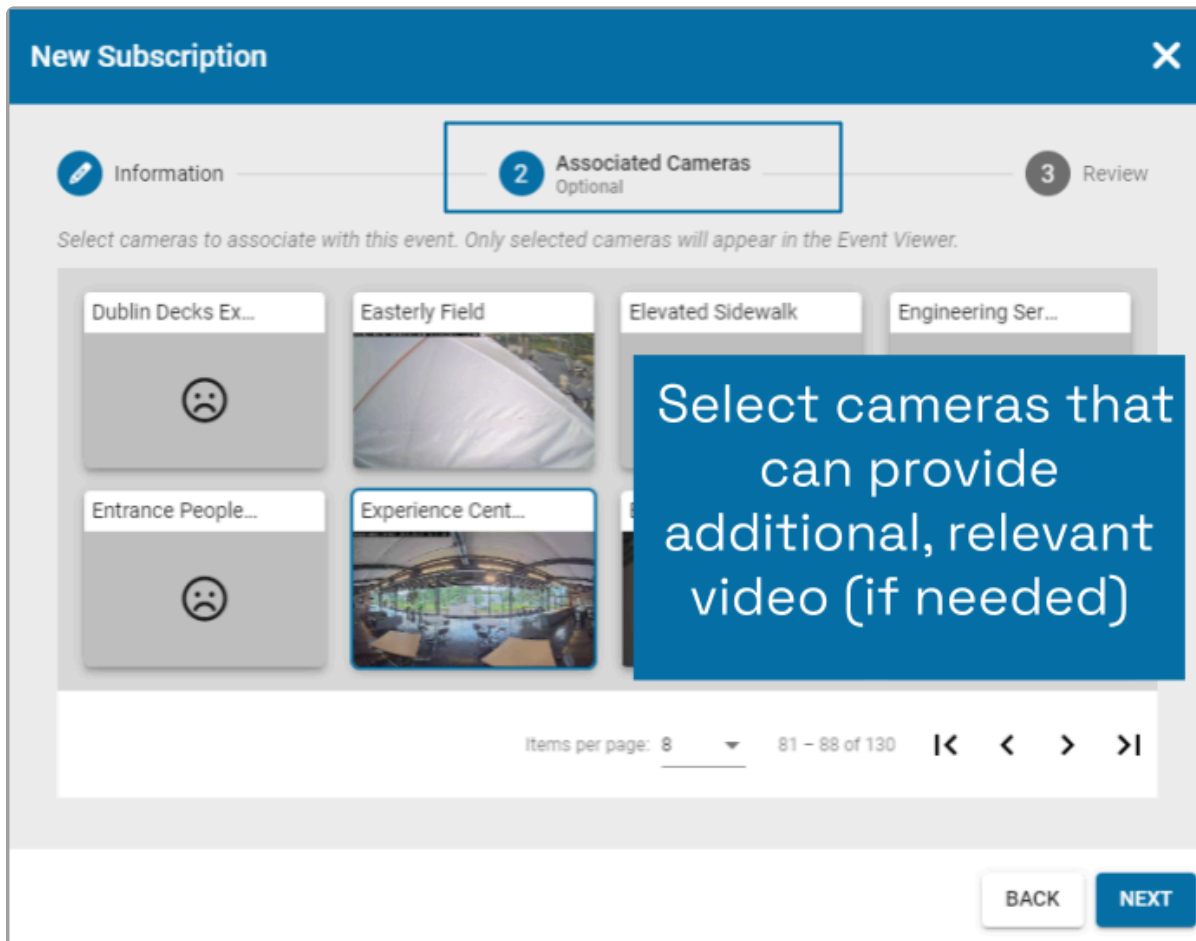
- Next, use the drop-down list to select a category. The category will provide additional information about the subscription and will improve sorting. (Refer back to the earlier [topic](#) for category definitions.)
- Next, select the source camera. This is the camera that will generate an event whenever the ONVIF topic is triggered.
 - Click on the source camera thumbnail to select it.
 - You may need to scroll down or move to another page to find the camera you want to use. (Use the paging toolbar, if needed.)

The screenshot shows a paging toolbar with the following elements and annotations: 'Items per page: 8' with a dropdown arrow, annotated with 'Select number of items per page'; '1 - 8 of 116', annotated with 'Total number of items'; a double left arrow '<<', annotated with 'Move to first page'; a single left arrow '<', annotated with 'Move to previous page'; a single right arrow '>', annotated with 'Move to next page'; and a double right arrow '>>', annotated with 'Move to last page'.

- Below the cameras, use the last drop-down list to select the ONVIF topic. The drop-down list should include all of the data points available from the selected camera. Select the one that will be used to trigger the event.

* If you don't see any ONVIF topics available, or you don't see what you expected, the system may not recognize the ONVIF camera events. To remedy this, perform the [Recover Camera](#) procedure on each camera, as needed.

- Click **Next**.
- Now, you may select one or more associated cameras. Consider selecting cameras adjacent to the source camera that may provide video relevant to the event.
 - The source camera will be preselected. (This camera may be de-selected, if desired.)
 - Having associated cameras is optional, but an event notification with video is a win-win.
 - Video available in the *Event Viewer* will be limited to the cameras you select here.



- When you're finished selecting cameras, click **Next**.
- The last step is to review your selections.
 - If you need to change anything, click on the step you want to return to (*Information* or *Associated Cameras*).

- b. When you are satisfied with your settings, click **Save Subscription**. The new subscription will be added to the *Event Subscriptions* list.


New Subscription ✕

Information

Associated Cameras
Optional


3 Review

Information


Name	Category	Type	Source camera	ONVIF Topic
Experience Center South En...	 PTZ	ONVIF	Experience Cente...	PTZController/Au...

Associated Cameras

Experience Cent...



Experience Cent...





Review subscription settings

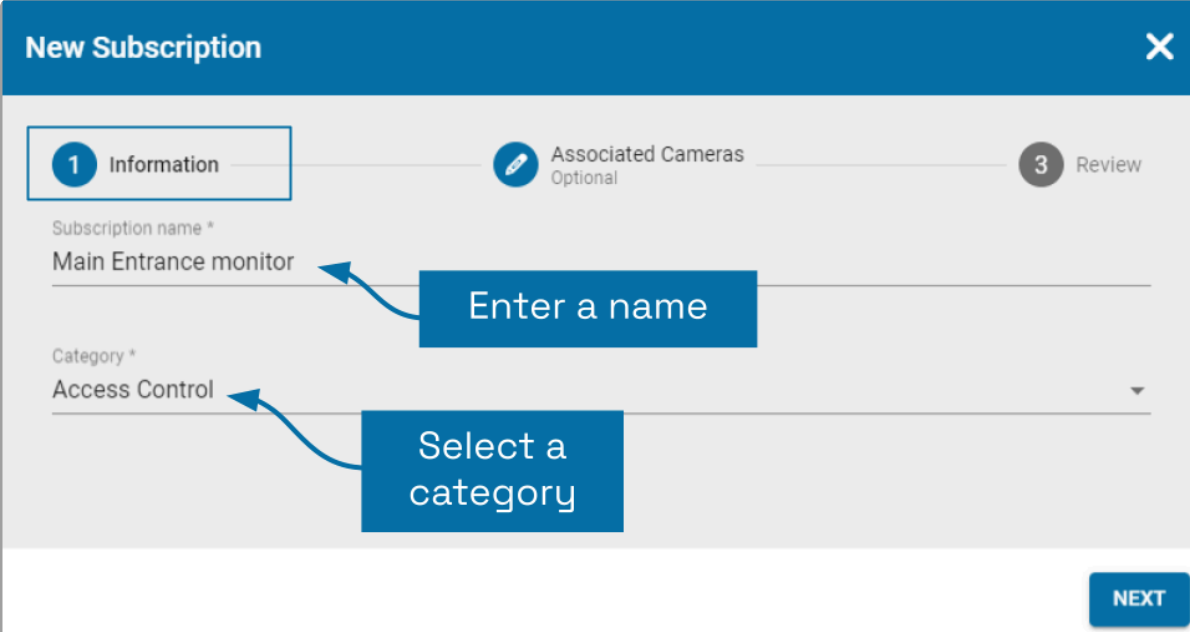
BACK

SAVE SUBSCRIPTION

Adding an External Subscription

	This is the <i>Copy</i> icon.
	This is the <i>Help</i> icon.

1. Once you select the *External* type, enter a name for the subscription. You may want to use a name specific enough that you can easily identify it in the list (such as *Receiving Entrance Swipe*).



2. Next, use the drop-down list to select a category. The category will provide additional information about the subscription and will improve sorting. (Refer back to the earlier [topic](#) for category definitions.)
3. Click **Next** to continue.

The next screen will allow you to select one or more associated cameras.

New Subscription [X]

1 Information — **2 Associated Cameras** Optional — 3 Review

Select cameras to associate with this event. Only selected cameras will appear in the Event Viewer.

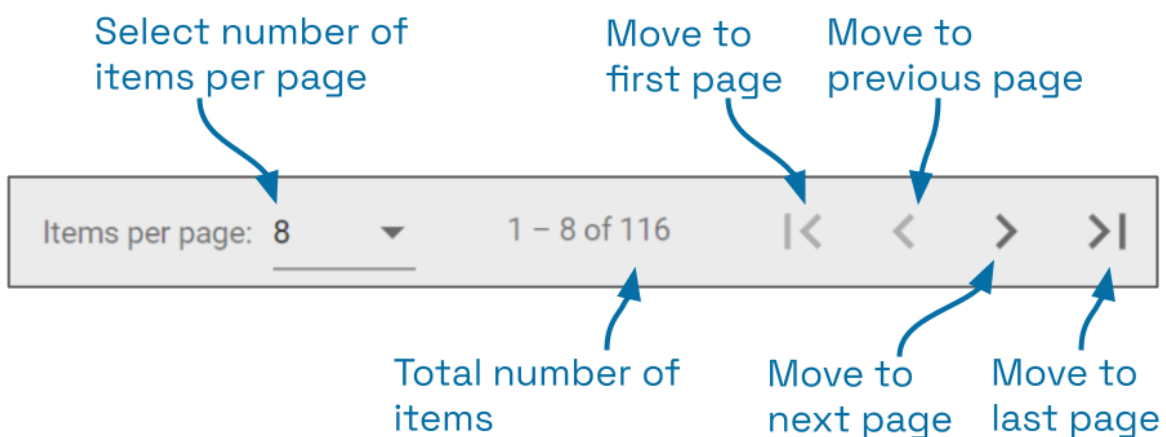
IPCafé oeil de p... IPConfigure Inta... IVA Testing Loading Dock

Loading Dock - ... Loading Dock - ...

Items per page: 8 89 – 96 of 130 |< < > >|

BACK NEXT

4. Select cameras that may provide video relevant to the event.
 - a. Adding associated cameras is optional, but adding video to an event notification makes for a powerful combination.
 - b. Video available in the *Event Viewer* will be limited to the cameras you select here.
 - c. You may need to scroll down or move to another page to find the camera you want to use. (Use the paging toolbar, if needed.)



5. When you're finished selecting cameras, click **Next**.

New Subscription

Information

Associated Cameras
Optional

3 Review

Information

Name	Category	Type
Main Entrance monitor	Access Control	External

Associated Cameras

192.168.204.254

IPConfigure Inta...

Review your settings

BACK

SAVE SUBSCRIPTION

6. The last step is to review your selections.
 - a. If you need to change anything, click on the step you want to return to (*Information* or *Associated Cameras*).
 - b. When you are satisfied with your settings, click **Save Subscription**. The new subscription will be added to the *Event Subscriptions* list.

When you save the *External* subscription, the system creates a Webhook API URL that contains the subscription ID. The external system will need this URL to send updates to Orchid.

7. For the next step, click on the new external subscription in the list. The configuration dialog for the subscription will open.

Main Entrance monitor [X]

Information [Pencil]

Name	Type
Main Entrance monitor	External

Webhook API URL [?] <https://orchid.ipconfigure.com/service/events/metadata/external/3> [Copy]

Associated Cameras [Pencil]

192.168.204.254

IPConfigure Inta...

Copy this URL for use in the external system



CLOSE

As you can see, the Webhook API URL for this subscription has been created.

8. Click the **Copy** icon to copy the Webhook API URL.
9. Now you can paste the URL into the webhook settings on the external system. This tells the external system where to send the event data.
10. Click on the **Help** icon for additional information on the proper format for the POST being sent by the external system.

* Be aware that some external systems will be able to send updates to Orchid directly, using the proper format. Other systems, however, will need additional configuration in order to format the POST so that it is compatible with Orchid. This may require additional software or code that works between the external system and Orchid.

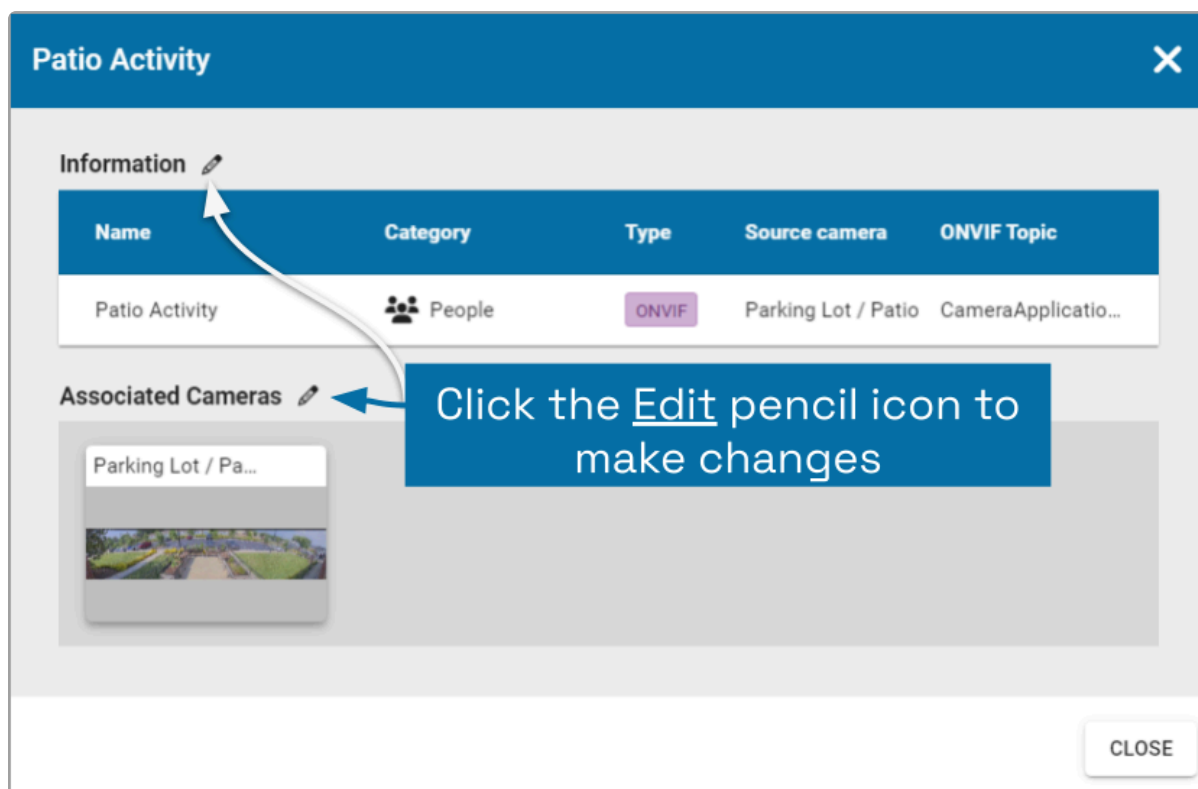
Editing and Deleting an Event Subscription

	This is the <i>Edit</i> pencil icon.
	This is the <i>Delete</i> trashcan icon.

Editing an ONVIF Event Subscription

Editing a subscription is pretty simple. The only item that cannot be changed is the subscription type. (If you find that you've made an error regarding the subscription type, you'll need to delete the subscription and add a new one with the correct type.)

1. To edit a subscription, go to the *Event Subscriptions* list, then click anywhere on the row to open it.



2. Click on the *Edit* pencil icon for the *Information* section if you need to change the name, category, source camera, or ONVIF topic. The *Edit* screen will open.
 - a. Edit settings, as needed.
 - b. When changes are complete, click *Next*.
 - c. You will then have an opportunity to edit the associated cameras. Click *Next* to continue.
 - d. When your review is complete, click *Save Subscription*.

3. Click on the **Edit** pencil icon for the *Associated Cameras* section if you need to add or remove cameras.
 - a. Click on a camera thumbnail to select it or de-select it.
 - b. When changes are complete, click **Next**, then **Save Subscription**.

Editing an External Event Subscription

The only item that cannot be changed is the subscription type. (If you find that you've made an error regarding the subscription type, you'll need to delete the subscription and add a new one with the correct type.)

1. To edit a subscription, go to the *Event Subscriptions* list, then click anywhere on the row to open it.

Avigilon OpenPath Ajar Started [X]

Information [Edit]

Name	Category	Type
Avigilon OpenPath Ajar Started	Access Control	External

Webhook API URL [Help]

<https://castleonacloud.ipconfigure.com:714/service/events/metadata/external/13> [Copy]

Associated Cameras [Edit]

Front Entrance / ...

Click the Edit pencil icon to make changes

CLOSE

2. Click on the **Edit** pencil icon for the *Information* section if you need to change the name or category. The *Edit* screen will open.
 - a. Edit settings, as needed.
 - b. When changes are complete, click **Next**.
 - c. You will then have an opportunity to edit the associated cameras. Click **Next** to continue.
 - d. When your review is complete, click **Save Subscription**.
3. Click on the **Edit** pencil icon for the *Associated Cameras* section if you need to add or remove cameras.
 - a. Click on a camera thumbnail to select it or de-select it.

- b. When changes are complete, click *Next*, then *Save Subscription*.

Deleting an Event Subscription

1. To delete a subscription, go to the *Event Subscriptions* list, then click the *Delete* icon at the far right end of the row.
2. Click the *Delete* button to complete the process.

Advanced Settings

Administrators can now edit many of the Orchid configuration file settings from within the software. (This means that you may be able to eliminate the extra steps that used to be associated with editing the configuration file.)

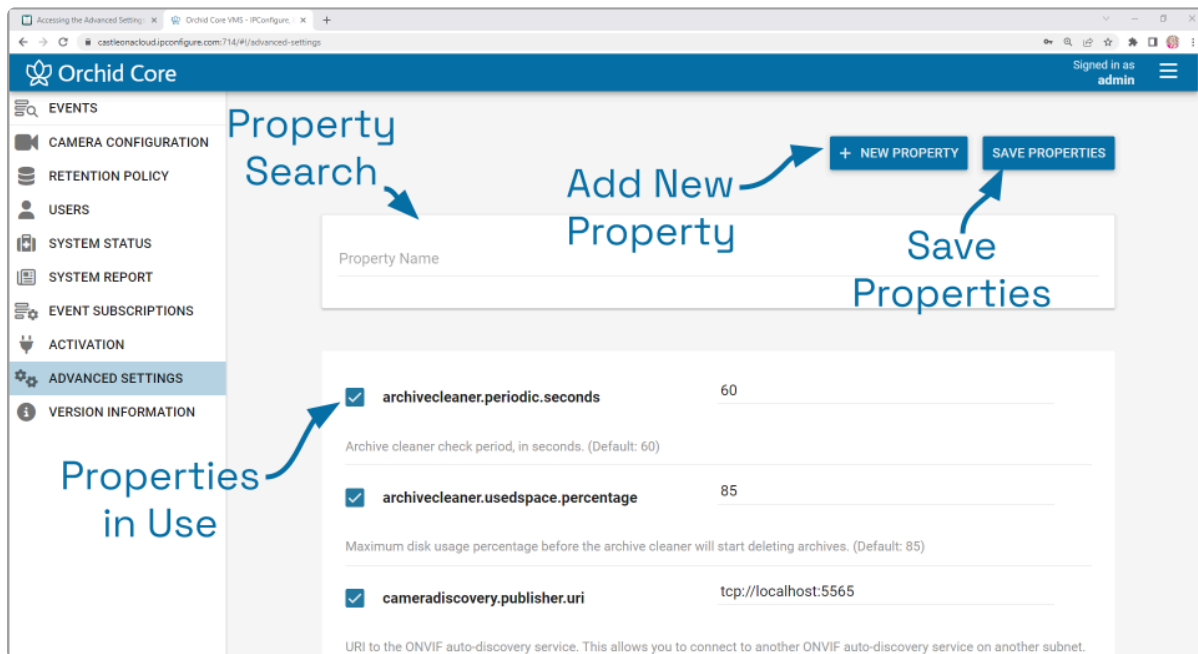


An Administrator is the only role with the ability to access the *Advanced Settings* feature.

Accessing the Advanced Settings

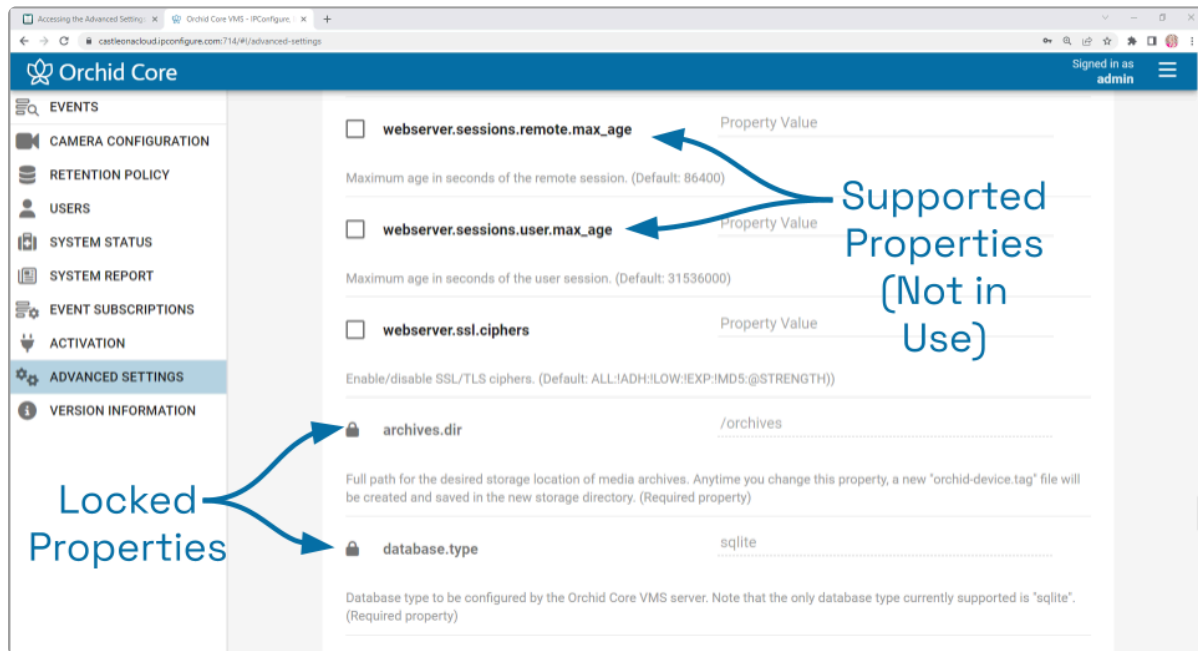
1. To access the *Advanced Settings* screen, open the *System Menu* in the top-right corner of the screen, then select *Advanced Settings*.

The *Advanced Settings* screen lists all of the supported configuration properties, and allows you to add and edit properties. A *marked* checkbox indicates that the setting is currently in use.



If you scroll down toward the bottom of the list you will find properties that are unmarked and locked (as in the image below).




An *unmarked* checkbox indicates that the setting is supported, but is not currently being used. A *locked* setting represents a setting that is critical for system reliability and stability. These settings can only be changed by editing the configuration file directly.



* Administrators have the ability to Lock some of the properties that would normally be available through *Advanced Settings*. (See below.)

For details on how to edit the locked properties, please refer to the *How to Edit a Configuration File* section (for the appropriate operating system), and the *Orchid Core VMS Configuration Settings* section (both of which are in the [Orchid Core VMS Installation Guide](#)).

Editing Properties

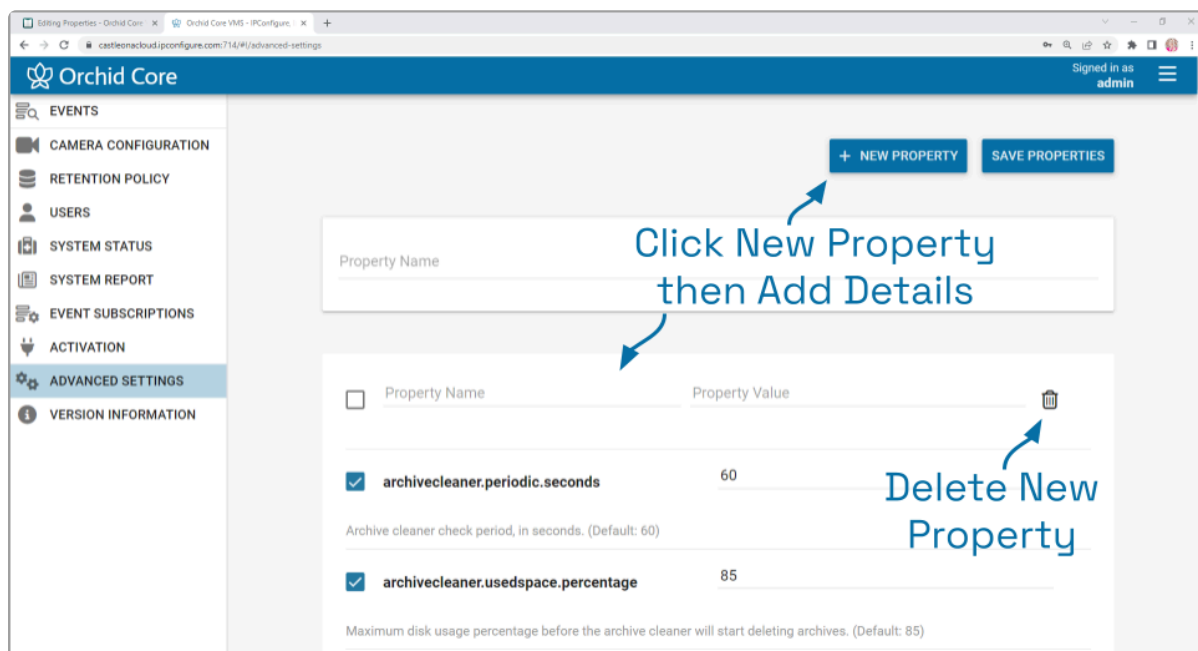
	This indicates that the property is in use.
	This indicates that the property is supported, but not in use.
	This indicates that the property must be changed by editing the Configuration file directly*.

*For details on how to edit the Configuration file in [Windows](#) or [Linux](#), please refer to the Orchid Core VMS Installation Guide.

Creating a New Property

The Advanced Settings feature allows Administrators to add new, undocumented properties to the Configuration file.

1. Click the **New Property** button at the top of the *Advanced Settings* screen. A new, blank property field will appear at the top of the list.

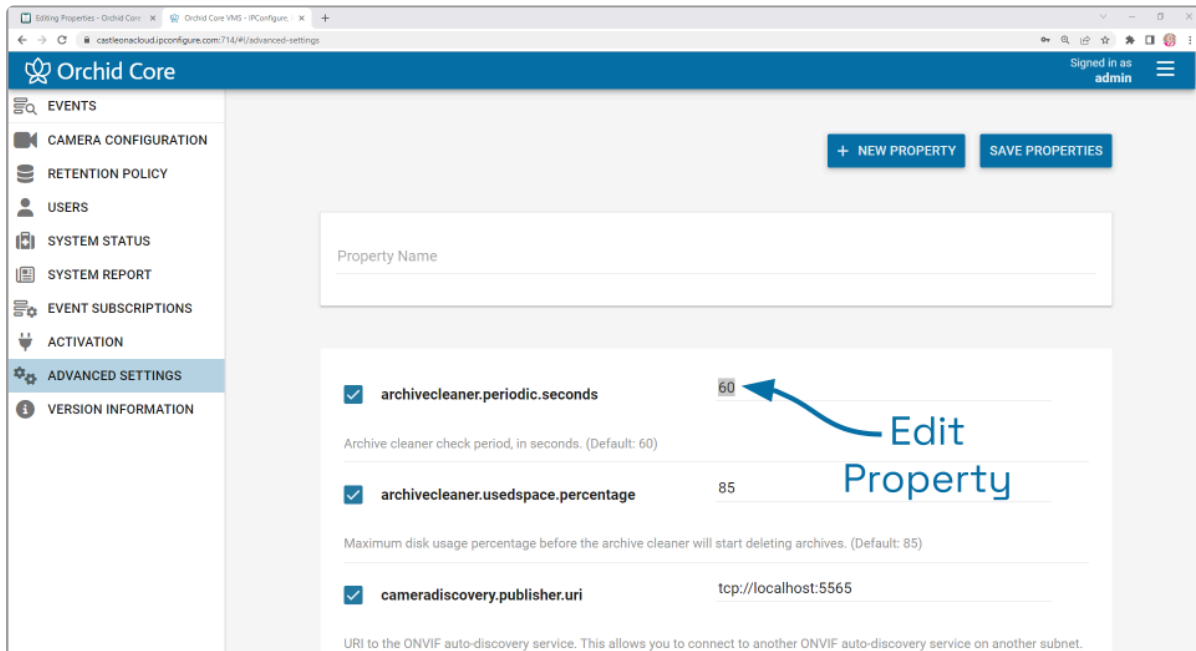


2. Mark the checkbox to activate the new property. (The property must be enabled and saved in order to be added to the Properties list.)
3. Enter a name for the new property in the *Property Name* field. [Property names are not allowed to contain colons (:), equals signs (=), blank spaces, or control characters.]
4. Click the **Tab** key to move to the *Property Value* field.

5. Enter a value for the property.
6. Click the **Tab** key to move to another field.
7. If you decide not to add the new property, just click the **Delete** (Trash Can) icon.
8. If you have no other changes to make, click the **Save Properties** button. Be sure to complete the save (as described later).

Editing Advanced Properties

1. To change an active property, click into the field displaying the property value.

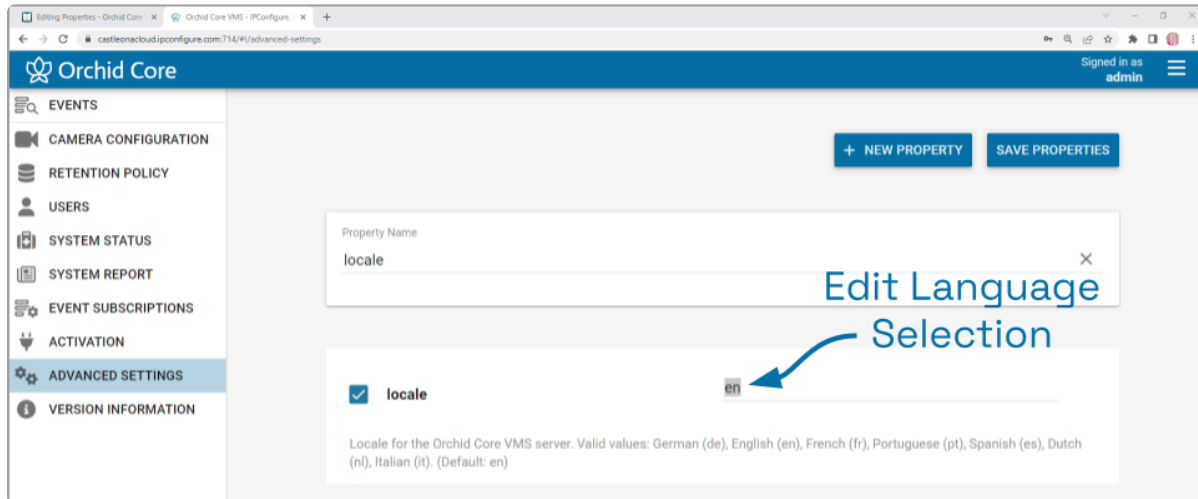


2. Type in a new value.
3. Click the **Tab** key to exit the field or click into another field.
4. If you have no other changes to make, click the **Save Properties** button. Be sure to complete the save (as described later).

Editing the Locale Property

You may change the user interface language by simply editing the locale property.

1. First, find the **locale** property in the list. (We used the **Search** feature. Learn more about that in the next section.)
2. Make sure the checkbox for the **locale** property is marked.
3. Click into the field displaying the property value.



4. Type in the two-letter language designation that represents the language you want to use. Orchid Core VMS now supports the following languages: de (German), en (English), es (Spanish), fr (French), it (Italian), nl (Dutch), pt (Portuguese), and ru (Russian).
5. Click the **Tab** key to exit the field.
6. If you have no other changes to make, click the **Save Properties** button. Be sure to complete the save (as described later).

Activating a New Property

1. To activate an unused property, click the checkbox to add a mark.
2. Click into the field displaying the property value and enter a new value.
3. Click the **Tab** key to exit the field or click into another field.
4. If you have no other changes to make, click the **Save Properties** button. Be sure to complete the save (as described later).

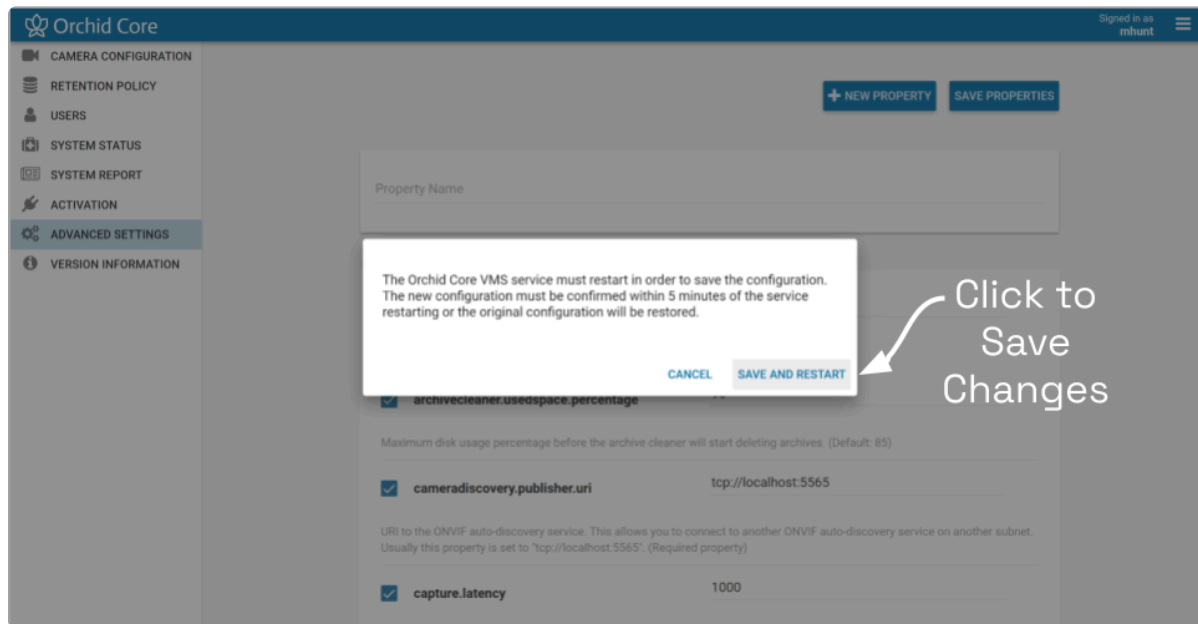
De-Activating a Property

1. To de-activate a property currently in use, click the checkbox to remove the mark.
2. If you have no other changes to make, click the **Save Properties** button. Be sure to complete the save (as described below).

Saving Changes to Advanced Properties

Anytime you make changes to these properties, the Orchid Core VMS service must be restarted in order for the changes to take effect. Be sure to follow this procedure completely to ensure changes are saved.

1. To save changes, click the **Save Properties** button. You'll receive a message that asks you to confirm changes and begin the restart.



2. Click the **Save and Restart** button to save your changes. The service will restart (as shown in the image below.)

The Orchid Core VMS service is restarting in order to save your configuration changes. Once the service starts back up, you will need to confirm the new settings within 5 minutes or the service will restart once more and the previous configuration will be restored.



3. When the restart is complete, you must instruct the system to keep the changes. (You must do this within 5 minutes or the changes will be discarded.) Click the **Confirm Properties** button (shown below) to keep the new settings.

Would you like to keep the advanced settings changes? If you do not confirm, the Orchid Core VMS service will automatically restart within the next five minutes and the previous configuration will be restored.

Click Within 5
Minutes to Keep
Changes

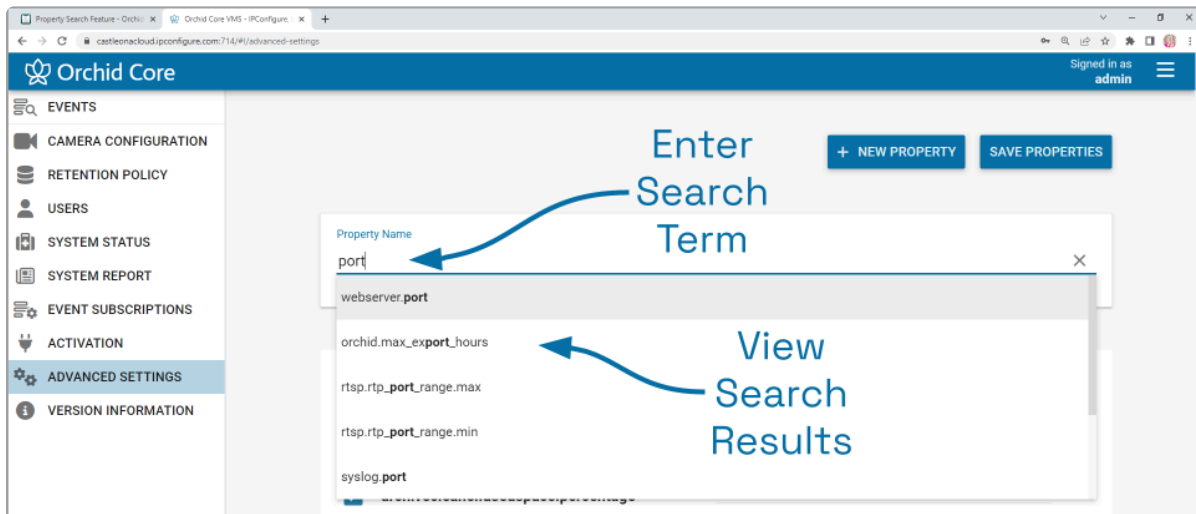
CONFIRM PROPERTIES

Property Search Feature

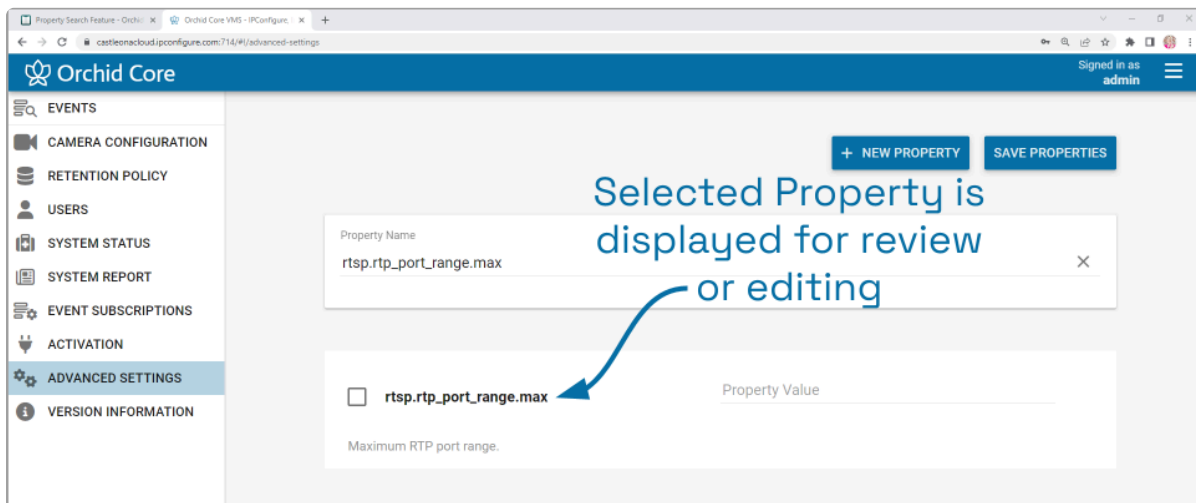
To find a specific property quickly, use the search feature on the *Advanced Settings* screen. The *Property Name* field appears at the top of the screen and supports a single-term search.

1. Click into the *Property Name* field to start your search.
2. Type one word that identifies what you're looking for. (In the example below, we entered *port* as the search term.)

The software will automatically list all of the properties that match the search term.



3. If the list of results contains the property you are looking for, click on that result. The selected property will be displayed for review or editing.



4. If the list of results does not contain the property you are looking for, enter a new search term in the *Property Name* field.
5. To return to the complete *Advanced Settings* property list, delete the contents of the *Property Name* field.

Version Information

The *Version Information* screen provides very specific information about the Orchid Core VMS software that is installed on your server. It also provides access to the *Update Client* feature, help resources, and important information for IPConfigure technology partners.

Accessing the Version Information Screen



This is the *Hamburger* icon.

1. To access the *Version Information* screen, click on the *Hamburger* icon in the top-right corner of the screen, then select *Version Information*.

The screenshot shows the Orchid Core VMS interface. The left sidebar contains a menu with the following items: EVENTS, CAMERA CONFIGURATION, RETENTION POLICY, USERS, SYSTEM STATUS, SYSTEM REPORT, EVENT SUBSCRIPTIONS, ACTIVATION, ADVANCED SETTINGS, and VERSION INFORMATION (highlighted). The main content area is titled 'Version Information' and displays the following details:

Version Information	23.6.0
Target Architecture	x86_64-linux-gnu-gcc-11.3
Build Information	8c8a3a6483e90d3e976cdb0bffa323dc02831c50 Monday July 03, 2023 at 10:38:54 AM EDT jfoytik@jfoytik-workstation-too Linux 5.19.0-46-generic #47~22.04.1-Ubuntu SMP PREEMPT_DYNAMIC Wed Jun 21 15:35:31 UTC 2 x86_64 x86_64
Client	363a27bf47ce43276d2c74c4ed820e752061c962 23.6.0 Update Client
Resources	User Manuals User Training Knowledge Base
Developer Documentation	Orchid Core VMS API Open Source Acknowledgements

Annotations on the screenshot include:

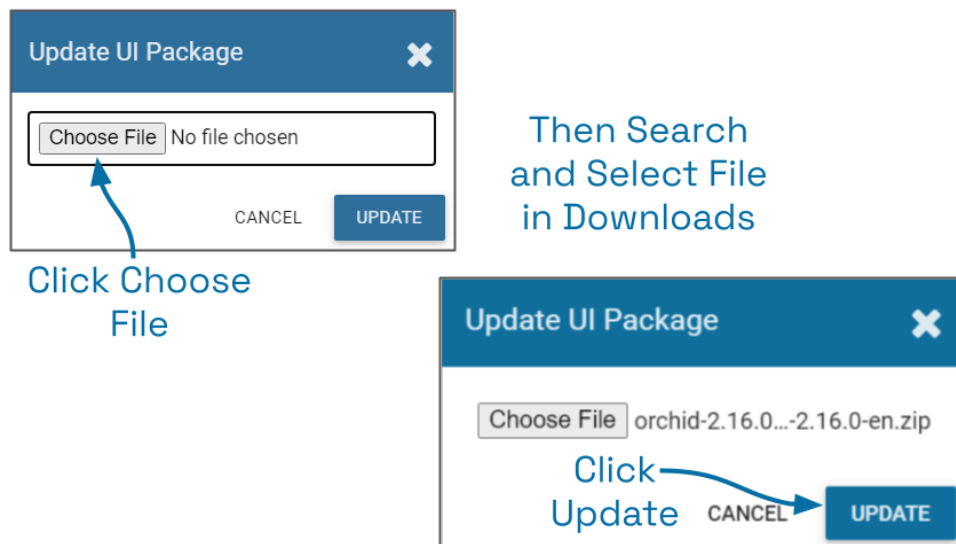
- An arrow pointing to the 'VERSION INFORMATION' menu item in the sidebar, labeled 'Software Change History'.
- An arrow pointing to the '23.6.0' version number, labeled 'Orchid Core VMS Software Version'.
- An arrow pointing to the 'Update Client' link, labeled 'Update Client Feature'.
- An arrow pointing to the 'User Manuals', 'User Training', and 'Knowledge Base' links, labeled 'Help Resources'.
- An arrow pointing to the 'ChangeLog' link at the bottom of the page, labeled 'ChangeLog'.

Update Client Feature

The *Update Client* feature is used to select and apply a different UI Package file to the Orchid Core VMS client machine. This would allow for a quick and easy user interface update (without the need for a completely new installer).

Update Client

1. To view available files, use your web browser to navigate to the following location:
<https://download.ipconfigure.com/orchid/i18n>
2. If you find a file you need to use, download the file. (The version number named in the file that you download must match the version number of your installed Orchid software in order for the update to work.)
3. In the *Client* section of the *Version Information* screen, click on the *Update Client* link to access the *Update UI Package* screen.



4. Click the *Choose File* button.
5. Locate and select the file that you downloaded, then press *Open*.
6. Click the *Update* button to apply the new file.

* In order to view Orchid in another language, the *locale* property must be modified. For details on modifying the *locale* property, please refer to the [Advanced Settings](#) section.

Advanced Topics

As you work with Orchid Core VMS, you may encounter issues that are not typical of daily operation and should be addressed by an advanced user. Please review these topics if you need extra help. For in-depth explanations and additional topics, we encourage you to check our [Knowledge Base](#).

Degraded State

In rare cases, Orchid Core VMS will experience an event that will cause the system to enter a degraded state. To protect archive data, while in this degraded state, Orchid does not record new video or clean out old video archives.

The two subsections below provide details regarding causes and resolutions for the degraded state.

Orchid Core VMS License Errors

If Orchid Core VMS encounters a license error, it will cause the server to enter a degraded state (like that pictured below), and an “Entered Degraded State” event will be logged in the *System Report*.



This can happen if:

- The Orchid Core VMS database is moved to a different system after installation, or if multiple hardware components (like hard drives) are replaced on the Orchid Core VMS server. This causes the licensing information in Orchid Core VMS's database to no longer match the system on which Orchid Core VMS is installed. (These actions disrupt the Machine ID which is an integral part of the license information.)
- A time-limited license expires.

In this degraded state, Orchid Core VMS does not record video but will allow for playback of existing recordings.

1. If this license error occurs, you will receive an error upon signing in. You can click **OKAY** to continue running Orchid Core VMS in this degraded state, but you will see differences in Orchid Core VMS's appearance and capabilities:
 - a. The dialog header will appear in an orange-brown color which indicates Orchid Core

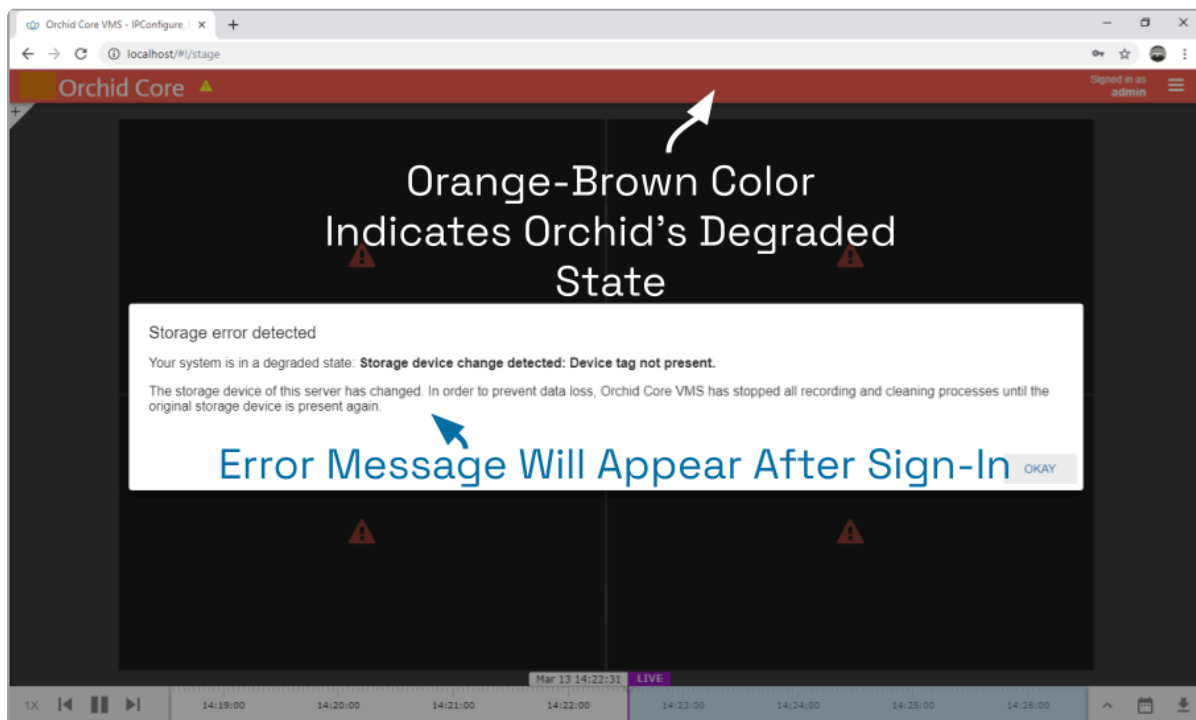
VMS is running in a degraded state.

- b. Orchid Core VMS will not record any new video. (Previously recorded video, however, will be available for playback.)
2. Possible solutions include the following:
 - a. If the database was moved or there was a hardware failure, contact IPConfigure Technical Support for a new license. Then follow the [Modifying an Existing License](#) procedure to update your license.
 - b. If a time-limited license expired, you may apply an old, non-time-limited license (if you have one), or you may contact IPConfigure to purchase a new license.

Orchid Core VMS Storage Device Errors

Orchid Core VMS has a way to alert Administrators and Users that there is a problem with a storage device.

During normal operation, Orchid Core VMS periodically checks on the storage device. To do this, Orchid looks for a specific file (orchid-device.tag) that is saved in the defined “archives” directory. If Orchid does not find the file, or if it does not match the original, Orchid interprets this as a storage error. When this happens, the Orchid Core VMS server will enter a degraded state (like that pictured below), and an “Entered Degraded State” event will be logged in the *System Report*.



This can happen if:

- The Orchid Core VMS “archives” folder is moved to a location different than the one specified in the properties file. This causes Orchid Core VMS to lose contact with the

orchid-device.tag file (that is stored in the “archives” folder).

- There is an actual hardware failure, in which case, Orchid Core VMS will lose contact with the orchid-device.tag file. An alert to the failure of the storage device is critical, especially if the system is configured to store data in an external hard drive or a RAID device.
1. If this storage error occurs, you will receive an error upon signing in. You can click **OKAY** to continue running Orchid Core VMS in this degraded state, but you will see differences in Orchid Core VMS’s appearance and capabilities:
 - a. The dialog header will appear in an orange-brown color which indicates Orchid Core VMS is running in a degraded state.
 - b. Orchid Core VMS will disable all communication and recording with the cameras. Neither live streams nor archive video will be available.
 2. Possible solutions include the following:
 - a. If the “archives” folder was moved, edit the properties file (orchid_server.properties) so that the archives.dir property points to the actual location of the “archives” folder. Then restart the Orchid Core VMS Server service. (For help with these tasks, please refer to the [Orchid Core VMS Installation Guide](#).)
 - b. If there was a problem with the storage device, bring the storage device back to working order (to include the “archives” folder with all of the media files and the original orchid-device.tag file).

Trouble Adding a Camera

If you're having trouble adding a camera to the system, refer to the list of common issues.

- Make sure all of the cameras are connected to the network.
- If you are adding multiple cameras at once, make sure that they all use the same username and password, and they are all on the same subnet. You may also need to check to see if there are multiple IP addresses assigned to the Orchid Core VMS computer. If this is the case, you will likely have to revise the Orchid Core VMS properties. Please refer to the Knowledge Base article [Orchid Not Auto-Discovering Cameras](#) for more details.
- If you are adding a camera manually, make sure that the IP address is correct.
- If you can't find a specific camera on the Register Cameras screen, it may not support ONVIF auto-discovery. Switch to Manual mode and add the camera manually.
- If the camera is old or unusual, it may not support the ONVIF standard. In this case, you will need to register the camera manually, and you will need to select the Generic RTSP driver.
 - When you select this driver, Orchid Core VMS will automatically populate the RTSP Stream URL field. You'll need to update the IP address portion of that entry. You may also need to check the camera's documentation to ensure the syntax is correct.
 - If you add a camera using the Generic RTSP driver, you will not be able to configure the camera settings in Orchid Core VMS. Connect to the camera directly to configure settings.
 - If you need to use the Generic RTSP driver, but it does not appear to be available, check to see if it has been disabled.
- If you're working in an Orchid version older than 22.12, Axis cameras require that a special username and password be set on the camera for use with the ONVIF standard. Please refer to the Knowledge Base article [Configure ONVIF User On Axis Cameras](#) for more details.
- If you are running Orchid Core VMS in WebRTC mode, and a newly added camera doesn't produce video, there may be several reasons why the video is not working. (Please refer to the [WebRTC Troubleshooting](#) section for additional help.)

Trouble Viewing the Camera Stream in Orchid Core VMS

If Orchid Core VMS is not receiving a live video stream from a camera:

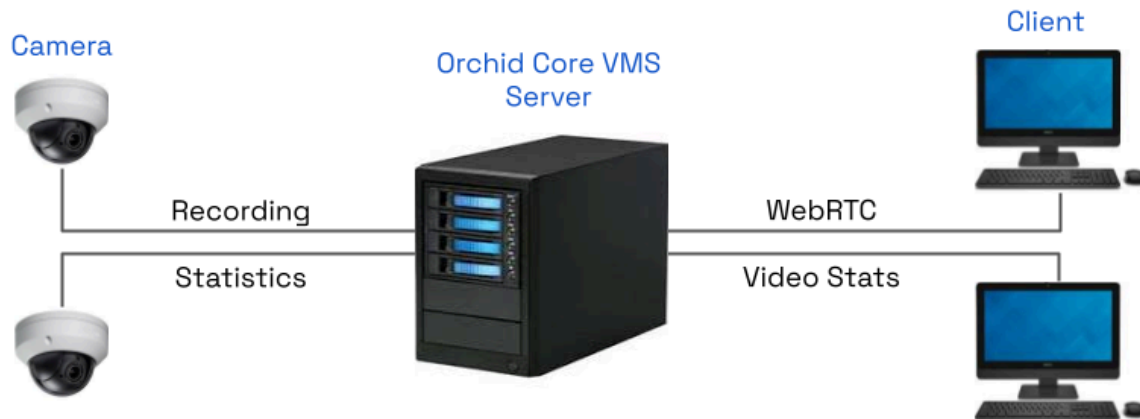
- Try selecting a lower-resolution stream at the Player. (If you haven't already configured Secondary streams, refer to the [Multi-stream Capabilities](#) and [Edit Camera Stream Settings](#) sections for more info. Keep in mind that all Primary and Secondary streams, if they are set to record, will consume additional disk space.)
- Use the [System Status](#) feature in Orchid Core VMS to test the camera preview, restart the camera stream, or verify the network connection between the camera and Orchid Core VMS. (This may lead you to try the [Recover Camera](#) feature.)
- Perform the check associated with [packet loss](#).
- If you are running Orchid Core VMS in WebRTC mode, but one of your Players appears to be stuck in Low-bandwidth mode, check the camera stream settings. Make sure that the Encoder is set to H264. (WebRTC mode does not support JPEG or MPEG4.) (For additional troubleshooting suggestions, please refer to the [WebRTC Troubleshooting](#) section.)

If you have issues with recorded video being unavailable, you may need to check a variety of things:

- Use the *Streams* section of Orchid Core VMS's [Camera Configuration](#) feature to make sure that the recording style is set to record video.
- Use Orchid Core VMS's [Retention Policy](#) to see how much video is actually being stored for any given camera. For critical cameras, you may need to increase the desired retention setting.
- There may be an issue with the system time setting on the Orchid Core VMS server. This can occur when the system time is reset (for daylight savings time, for example). To fix this issue, you should restart the Orchid Server service. (Refer to the appropriate [Windows](#) or [Linux](#) section of the [Orchid Core VMS Installation Guide](#) for more details.) If that doesn't work, you should restart the computer on which Orchid Core VMS is installed.
- There are a small number of ONVIF compatible cameras that display unusual behavior (which can prevent Orchid from being able to record video from these cameras). Using the [Recover Camera](#) feature may resolve the issue with these cameras.
- There may be an issue with packet loss due to network infrastructure. If the packet loss rate is high, Orchid Core VMS may not be able to successfully record the video. There are a couple of ways to check for packet loss. Please refer to the next topic for more details.

Checking for Packet Loss

If video in Orchid Core VMS is unavailable or degraded, you may be experiencing packet loss in one of two locations: either between the camera and Orchid Core VMS, or between Orchid Core VMS and the viewing client. The diagram below indicates which check methods are available to test the different connections.



Run a Check Using the Recording Statistics

Orchid Core VMS provides a way to gauge the performance of the recording stream through the *Camera Configuration* screen. The Recording Statistics feature displays packet loss and bit rate numbers for the video being transmitted from the camera, and also shows when the last video file was recorded.

1. To view the Recording Statistics, go to the *Camera Configuration* screen, click on one of the camera entries, and then click on the **Expand** icon to view the Recording Statistics section.

Expanded Recording Statistics		
Recording Statistics ▼		
The following statistics are based on the primary stream.		
Average Window	Packet Loss	Bitrate
1m	Video: 0% Audio: 1%	Video: 460.9 Kb/s Audio: 140.6 Kb/s Total: 601.5 Kb/s
5m	Video: 0% Audio: 1%	Video: 462.9 Kb/s Audio: 141.1 Kb/s Total: 604 Kb/s
15m	Video: 0% Audio: 1%	Video: 458.8 Kb/s Audio: 141.1 Kb/s Total: 599.9 Kb/s
Last Video File Written		
02/10/2022, 09:18:31 AM EST - 4.2 MB		

The Recording Statistics will provide the percentage of packet loss at the recording stream, averaged over three time periods: 1 minute, 5 minutes, and 15 minutes. A comparison of these averages may give you some indication of the transmission quality both currently and over a longer period of time.

The goal, of course, is to have 0% packet loss on the recording stream so that the archived video is not degraded. The presence of packet loss, even a minimal amount, will have some impact on the quality of the archived video. Video degradation may result in some frames being unviewable, and some frames being marred by video artifacts. If packet loss is high enough, the system may not receive enough data to record any video.

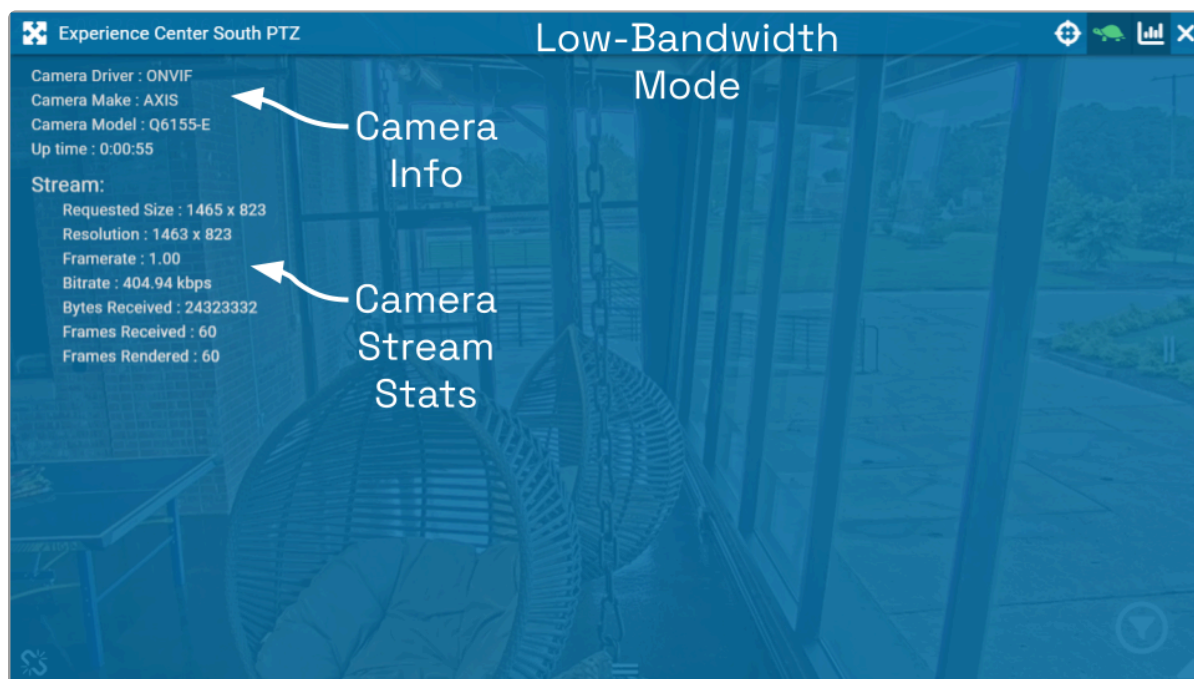
When the Recording Statistics show that packet loss is present, review the three averages to assess the situation. If all of the averages are very low, this suggests that the recording stream has intermittent problems with minor levels of packet loss. In another example, if the 1-minute average is high and the 15-minute average is low, this may indicate that the camera stream is currently having an issue, but over longer periods, is likely transmitting without problems. However, if the 15-minute average is high and the 1-minute average is low, this may signal that the camera stream's connection is not sufficient, which may be a more significant problem, prompting further investigation.

Run a Check Using Video Statistics

In each of its operating modes, Orchid Core VMS will allow you to access statistics for any of the Players on the *Stage*. This may help you in diagnosing issues between the Orchid Core VMS server and clients.

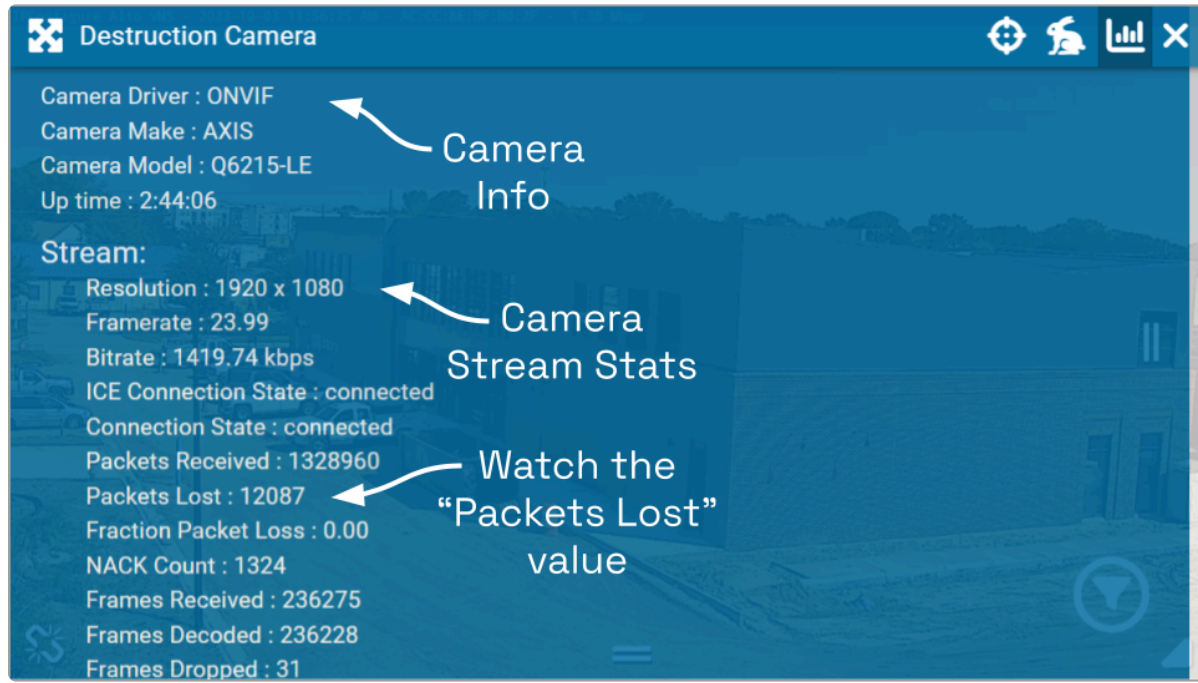
1. To view Player statistics, position the mouse over the image and click on the **Statistics** icon in the header.

In Low-bandwidth mode, the statistics overlay will display a few details about the camera and performance. A comparison of the frames received and the frames rendered should give some indication of how well the video is decoded.



WebRTC mode delivers an expanded list of statistics, which include frames received, decoded, and dropped, plus packets received, and packets lost. If the packets lost stat increases continuously over a period of 30 seconds or more (versus an isolated burst), there may not be sufficient bandwidth between the Orchid Core VMS server and the Orchid Core VMS client.

In addition, this mode provides data points that can be used to identify the candidate pair that is being used to connect the server and the client, as well as the status of this connection. For more details on these statistics, please refer to the [WebRTC Statistics](#) section.

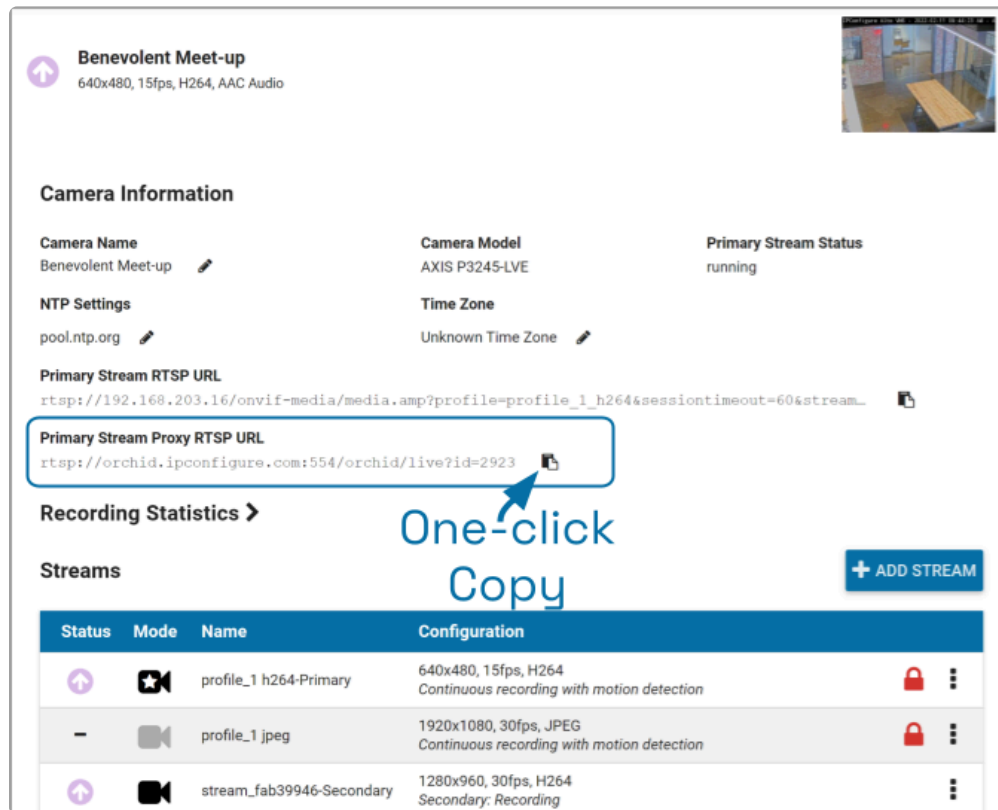


Run a Check Using VLC

This check provides an alternate method to evaluate the video between the Orchid Core VMS server and the client using a third party utility. Before starting this test, ensure you have VLC installed on the Orchid Core VMS server. For installation instructions, please visit VLC's documentation here: https://wiki.videolan.org/Documentation:Installing_VLC/

In this example, we'll check for packet loss between the Orchid Core VMS server and the viewing client.

1. To start, you'll need to get the *Primary Stream Proxy RTSP URL* for the camera that is giving you trouble. Go to the [Camera Information](#) screen and click on the *One-click Copy* button to copy the URL.



Benevolent Meet-up
640x480, 15fps, H264, AAC Audio

Camera Information

Camera Name: Benevolent Meet-up

Camera Model: AXIS P3245-LVE

Primary Stream Status: running

NTP Settings: pool.ntp.org

Time Zone: Unknown Time Zone

Primary Stream RTSP URL: rtsp://192.168.203.16/onvif-media/media.amp?profile=profile_1_h264&sessiontimeout=60&stream...

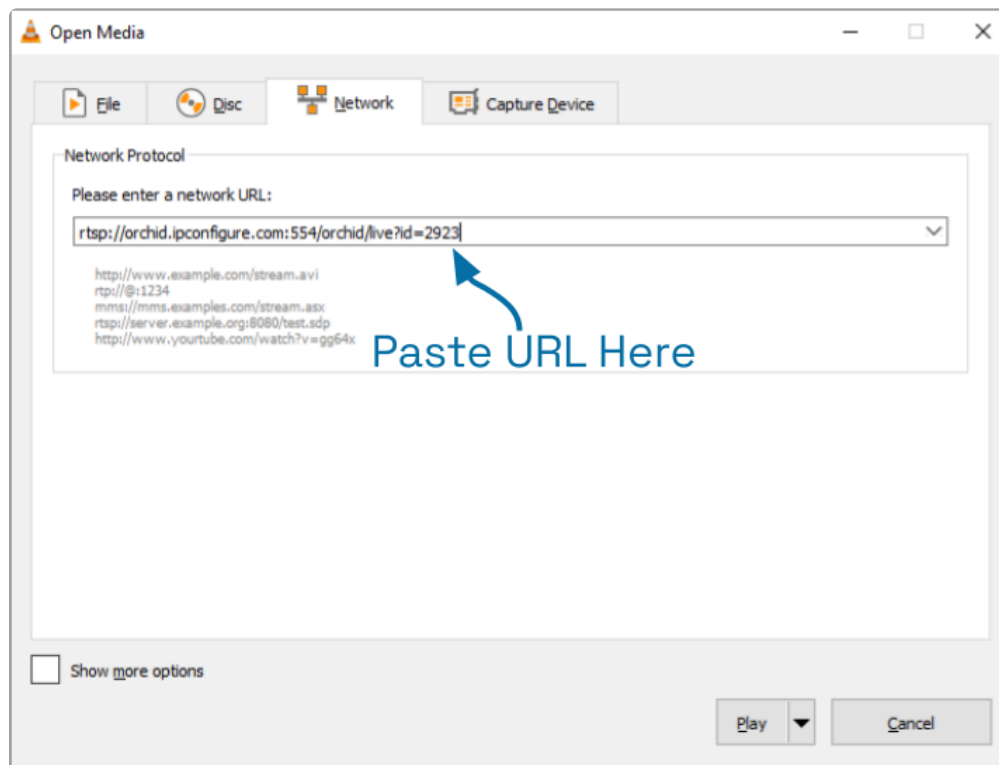
Primary Stream Proxy RTSP URL
rtsp://orchid.ipconfigure.com:554/orchid/live?id=2923

Recording Statistics >

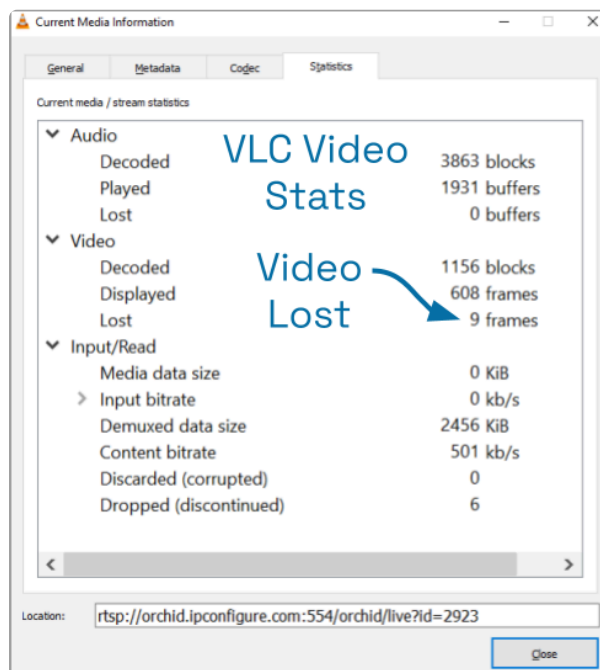
Streams + ADD STREAM

Status	Mode	Name	Configuration	
		profile_1 h264-Primary	640x480, 15fps, H264 Continuous recording with motion detection	
		profile_1 jpeg	1920x1080, 30fps, JPEG Continuous recording with motion detection	
		stream_fab39946-Secondary	1280x960, 30fps, H264 Secondary: Recording	

- Open VLC on the Orchid Core VMS server. When VLC opens, click **CTRL+N** on the keyboard to open the *Open Media* window.
- In the *Please enter a network URL* field, enter the *Primary Stream Proxy RTSP URL* for the camera you want to stream and enter the camera's RTSP credentials — these are the credentials you used when you registered the camera to Orchid Core VMS.



4. Click the **Play** button to start streaming the camera in VLC.
5. Right-click on the video in VLC (or the blank black area if the video has not started playing) and select **Tools**, then **Media Information**. The *Current Media Information* window will open.
6. Click the **Statistics** tab. Under the video section, it will list the number of decoded blocks, displayed frames, and lost frames. If the *Lost* frames count is increasing, the video stream is dropping frames.



In this example, only 9 frames were lost after streaming for a few minutes. This is acceptable and will not prevent video display. However, if the number of lost frames is steadily increasing over a period of 30 seconds or more (as opposed to an isolated burst), there is a network issue that will prevent our software from successfully displaying video.

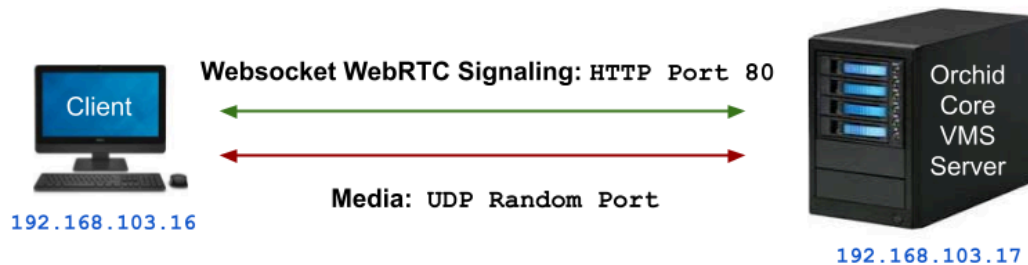
Once network related issues are resolved and VLC is able to stream video from the server without significant frame loss, the Orchid Core VMS client will be able to display video.

About WebRTC

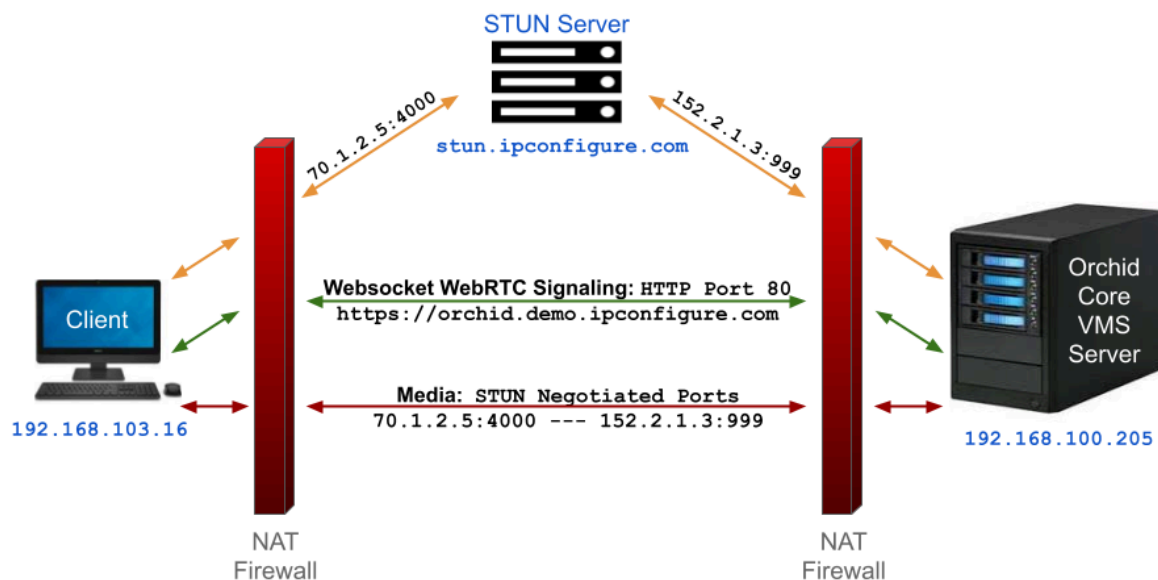
Web Real-Time Communication, or WebRTC, provides users with another method for connecting an Orchid Core VMS server with a client, so that the client may view good quality, live and recorded video. One of the main benefits of WebRTC is that it allows for viewing full-bandwidth video without requiring the client device to download and use a Plugin. In WebRTC mode, the web browser decodes and renders video using accelerated Graphics Processing Unit (GPU) technology. This method requires fewer resources than software decoding which allows for good quality video for a greater number of Players.

Using Interactive Connectivity Establishment (ICE) and a Session Traversal Utilities for NAT (STUN) server, the system identifies and tests several connection candidates to find the best way to connect the server and client for direct media transfer. With a successful connection, WebRTC is able to break through the barriers that sometimes make cross-network communication difficult.

The diagram below illustrates a simple example of direct media transport. In this case, the server and the client are both on the same network, so there is no barrier to a direct connection.



The next diagram illustrates a more complicated situation. The server and the client are on different networks, and are each protected by a firewall. In this case, ICE identifies the best path for connecting the server and the client. Then a STUN server identifies the public IP addresses of the server and the client, and works out a way for them to connect. The media can then be transported between the server and client using the STUN-negotiated ports.



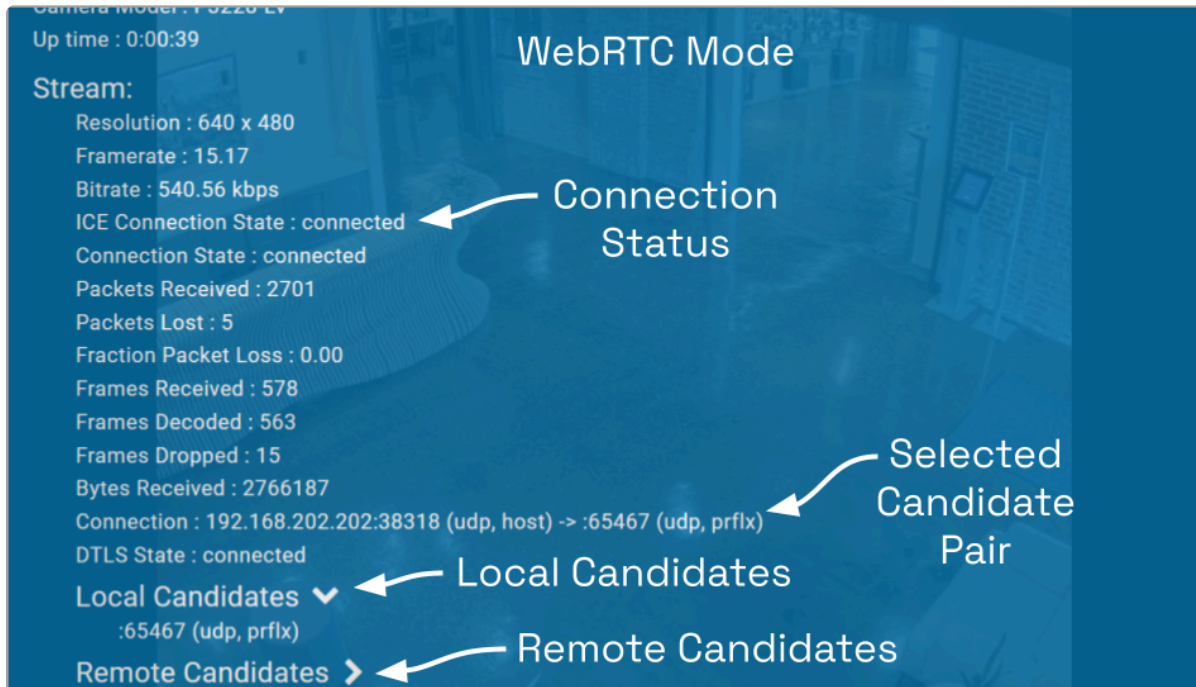
In order to use WebRTC with servers behind a firewall, Orchid Core VMS must have access to a STUN server. By default, Orchid Core will use `stun.ipconfigure.com`, which is publicly available on the internet. For complete details, please refer to the [Orchid Core VMS Installation Guide](#).

Beginning in version 23.6, Orchid Core VMS supports WebRTC retransmission by default. With retransmission, the web browser can resend packets of video to Orchid to make sure that the packets arrive. This improvement allows WebRTC to provide full-bandwidth video even in marginal network conditions.

WebRTC Statistics

In WebRTC mode, Orchid Core VMS supplies not only the standard statistics (like those in Low-bandwidth mode), it also supplies WebRTC statistics. These statistics are available as an overlay on any Player and can be used in troubleshooting.

* Available statistics will vary depending on the web browser in use.

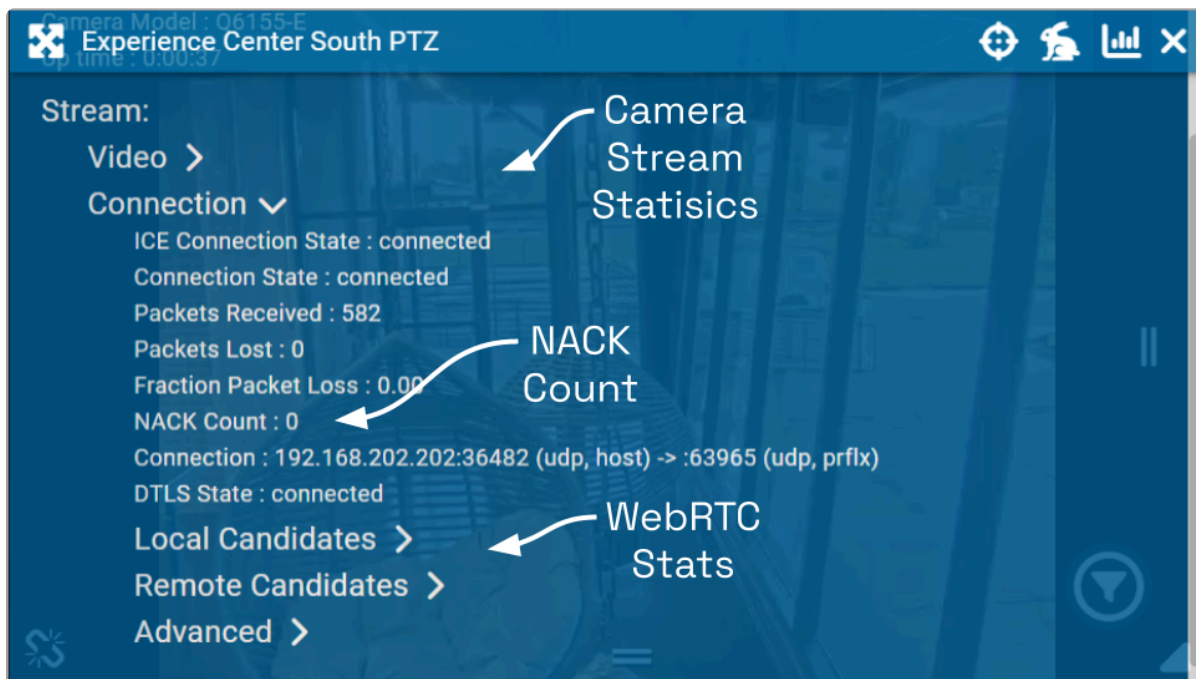


The statistics under the *Stream* heading may include the following:

- **ICE Connection State:** This indicates the state of the ICE connection. When “connected,” ICE has identified the best way to connect the server and client.
- **Connection State:** This indicates if there is a working connection between the server and the client.
- **Packets Received:** This represents the number of video data packets that are transferred from the server to the client.
- **Packets Lost:** This represents the number of video data packets that are dropped during the transfer from the server to the client. (If this number continues to increase, video quality will decrease.)
- **Fraction Packet Loss:** This represents the number of packets lost divided by the number of packets expected.
- **Frames Received:** This is the number of complete video frames that were transferred from the server to the client.
- **Frames Decoded:** This is the number of video frames that the client has decoded.

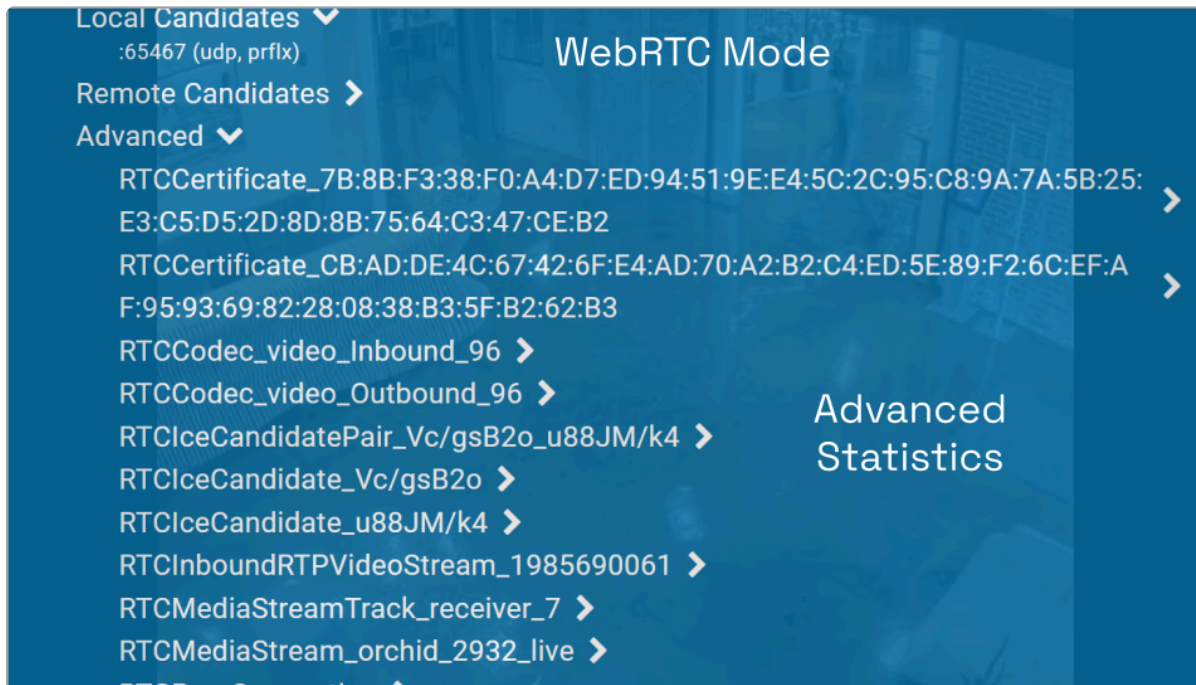
- **Frames Dropped:** This is the number of video frames that the client could not decode and were eliminated.
- **Bytes Received:** Total number of bytes transferred from the server to the client.
- **Connection:** This statistic provides the addresses of both the local and the remote candidates in use, which communications protocol is in use at each candidate, and the candidate types.
- **DTLS State:** This provides the status of the attempts to negotiate a secure connection.

When WebRTC Retransmission is enabled (which is now the default), the WebRTC statistics will also display the NACK count. NACK stands for *negative acknowledgement*. This value indicates how many frames of video the browser expected, but didn't receive. This also indicates how many frames will need to be retransmitted.



Sub-sections of the *Stream* statistics include *Local Candidates* and *Remote Candidates*. These statistics provide insight into the connection candidates that ICE has found and which ones are being used to transport video. Individual entries for the local candidate and remote candidate are presented, and provide the same information as the *Connection* statistic listed above.

The *Advanced* group of statistics provides very detailed information regarding the selected candidate pair, certificates, and video data transport.



For additional details on these and other WebRTC statistics, please refer to documentation that is readily available online. Here's a sample: <https://testrtc.com/webrtc-internals-documentation/>

WebRTC Troubleshooting

If you encounter trouble as you are running Orchid Core VMS in WebRTC mode, refer to these troubleshooting tips.

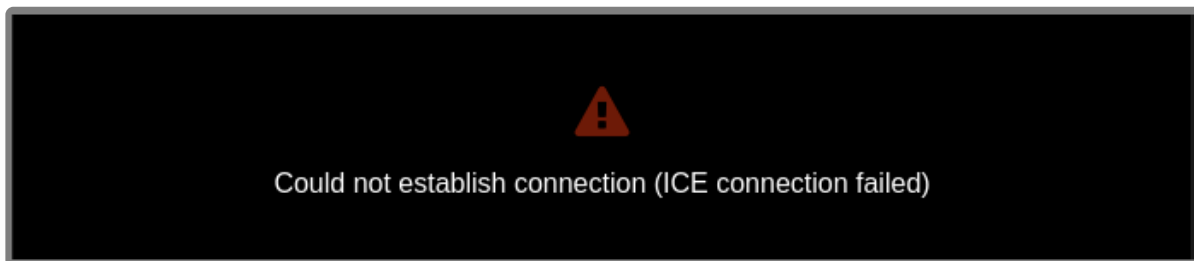
If you don't have video:

1. Activate the Player statistics to see if the *ICE Connection State* reads *connected*.
2. If the *Ice Connection State* does not read *connected*, then none of the connection candidates worked.
3. Make sure that the STUN server is properly setup and configured. (The Orchid Core VMS properties file uses default settings to configure the STUN server. Review these settings and make changes, as necessary, using the [Advanced Settings](#) feature. More detailed information about enabling a STUN server is available in the [Orchid Core VMS Installation Guide](#).)
4. If the connection still fails, the network may be incompatible. Switch to Low-bandwidth mode. (See also, *Incompatible Network* later in this topic.)

If you don't have video, but the *ICE Connection State* is connected:

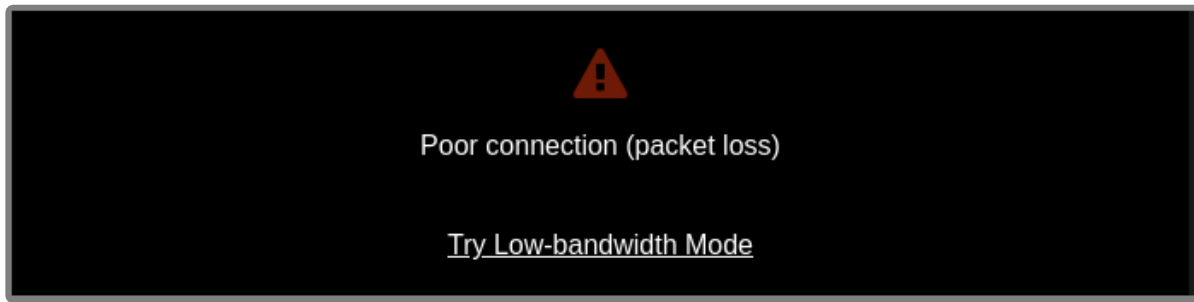
1. Check the *Bytes Received* stat.
2. If the system is receiving bytes, check for Packet Loss.
3. If packet loss exists, try lowering the bitrate (by editing the camera stream settings).
4. Try selecting a lower-resolution stream (if available) to view video.
5. If it's not already enabled, try using WebRTC retransmission. (Please refer to the [Orchid Core VMS Installation Guide](#) for instructions.)

If this error appears, the system was not able to establish an ICE connection:



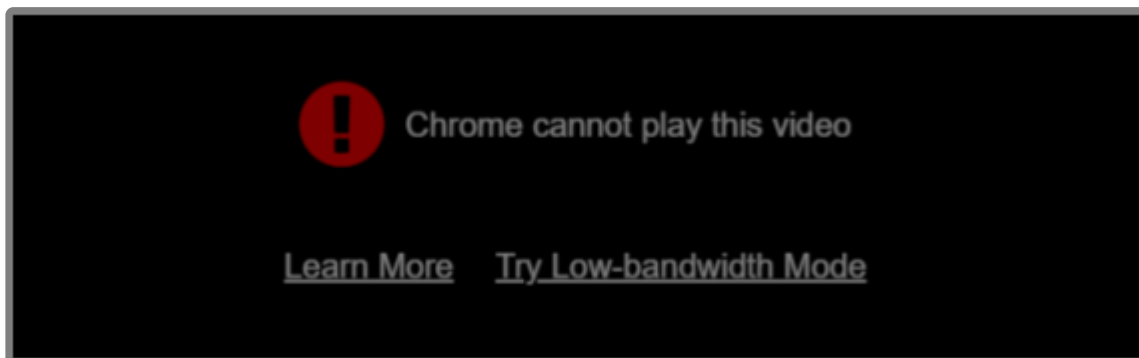
1. You may need to setup a STUN server. (Do this by editing the `webrtc.stun.host` and `webrtc.stun.port` settings using the [Advanced Settings](#) feature.)
2. You should also check your network.

If this pop-up error message appears on a Player, the system may have already detected a certain level of packet loss:



1. Decrease the bitrate (by editing the camera stream settings).
2. Decrease the resolution (by editing the camera stream settings or by selecting a lower-resolution stream, if available).
3. If it's not already enabled, try using WebRTC retransmission. (Please refer to the [Orchid Core VMS Installation Guide](#) for instructions.)
4. If none of these solve the problem, switch to Low-bandwidth mode.

If this pop-up error message appears on a Player, the system may not be decoding the video properly:



1. Decrease the bitrate (by editing the camera stream settings).
2. Decrease the resolution (by editing the camera stream settings or by selecting a lower-resolution stream, if available).
3. If it's not already enabled, try using WebRTC retransmission. (Please refer to the [Orchid Core VMS Installation Guide](#) for instructions.)
4. If none of these solve the problem, switch to Low-bandwidth mode.

Video encoder:

WebRTC does not support JPEG or MPEG4, so it is important to make sure that the camera stream is set properly.

1. Open the *Stream Settings* screen to check the settings.

2. Make sure that the Encoder is set to H264.

GPU decoding:

The web browser you are using may be utilizing GPU to decode video. Some cameras are not compatible with GPU.

1. If you have tried other fixes, try disabling GPU decoding in your web browser. (Please refer to your web browser documentation for details.)

Incompatible Network

When viewing WebRTC on a local network, such as when both Orchid Core VMS and your web browser are on the same LAN, some browsers require the use of mDNS instead of regular IP addresses. In certain circumstances, mDNS may fail and streaming video over WebRTC will not be possible. This can happen when Orchid Core VMS and your web browser are on different local network subnets, and when an operating system doesn't natively support mDNS (such as Windows 7). If this failure occurs, consider disabling the mDNS behavior.

In Chrome, you can disable the mDNS behavior by doing the following:

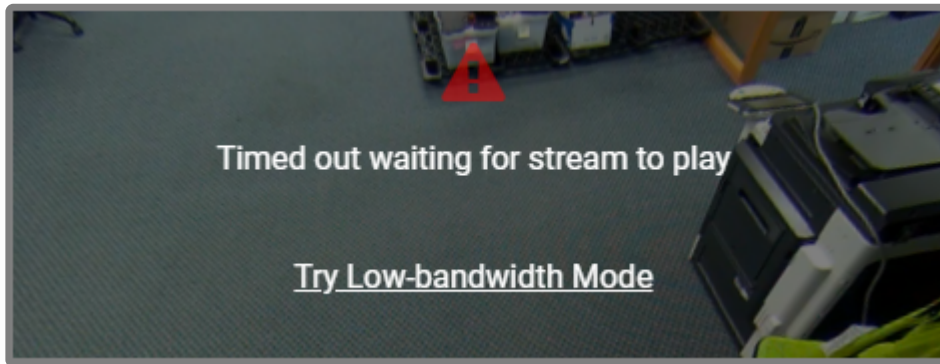
1. Navigate to *chrome://flags*.
2. Search for *mDNS*.
3. At the *Anonymize local IPs exposed by WebRTC* setting, use the drop-down list to select **Disable**.

For a more detailed review of this issue, please refer to the article on the Orchid Core VMS knowledge base at support.ipconfigure.com.

Additional Troubleshooting

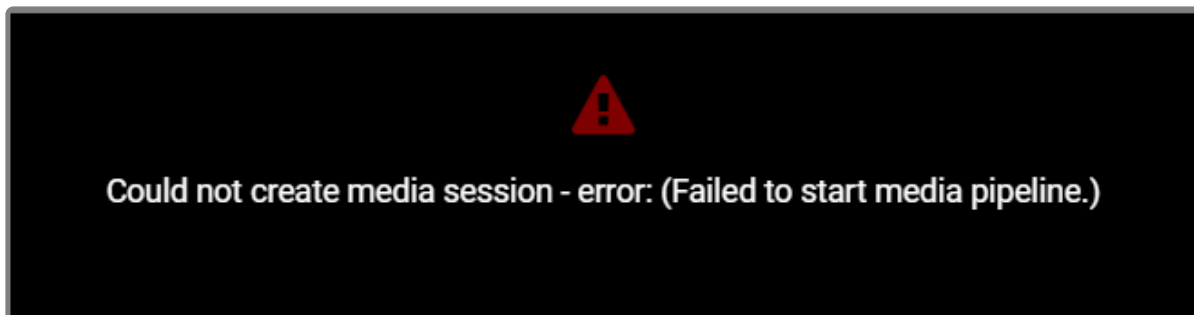
The following are some additional errors that you may encounter in Orchid Core VMS.

If this error appears, it is taking too long for the system to receive enough video data to display the video:



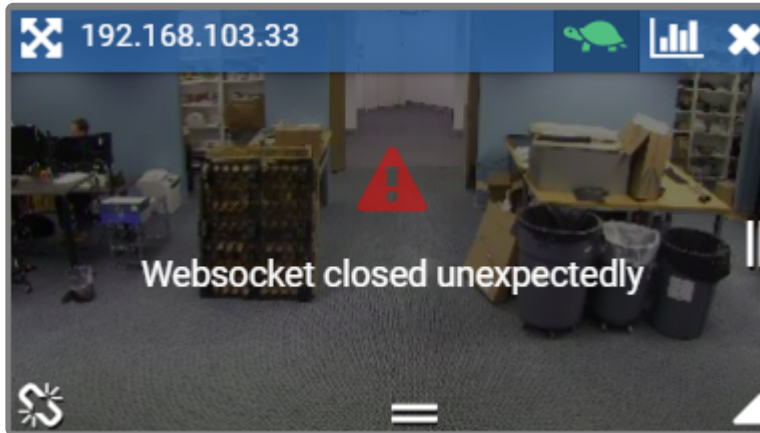
1. Decrease the bitrate (by editing the camera stream settings).
2. Decrease the resolution (by editing the camera stream settings or by selecting a lower-resolution stream, if available).
3. If it's not already enabled, try using WebRTC retransmission. (Please refer to the [Orchid Core VMS Installation Guide](#) for instructions.)
4. If none of these solve the problem, switch to Low-bandwidth mode.

If this error appears, the system can no longer see the camera:



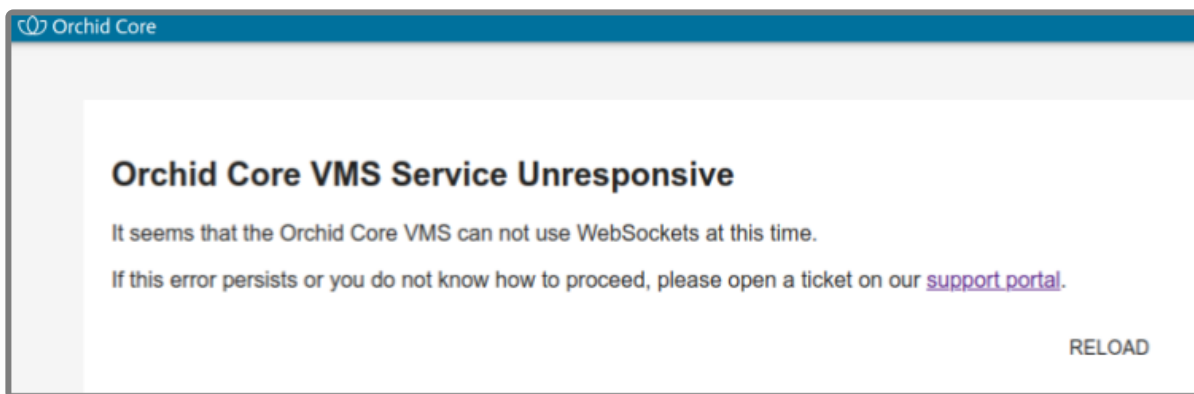
1. Use the *System Status* feature to check on the camera.
 - a. Click the **Restart** button to attempt to reconnect.
 - b. Click the **Verify** button to see if the camera is still connected to the network.
2. Check to see if the camera has power.

If this error appears, the backend server probably shut down the video stream:



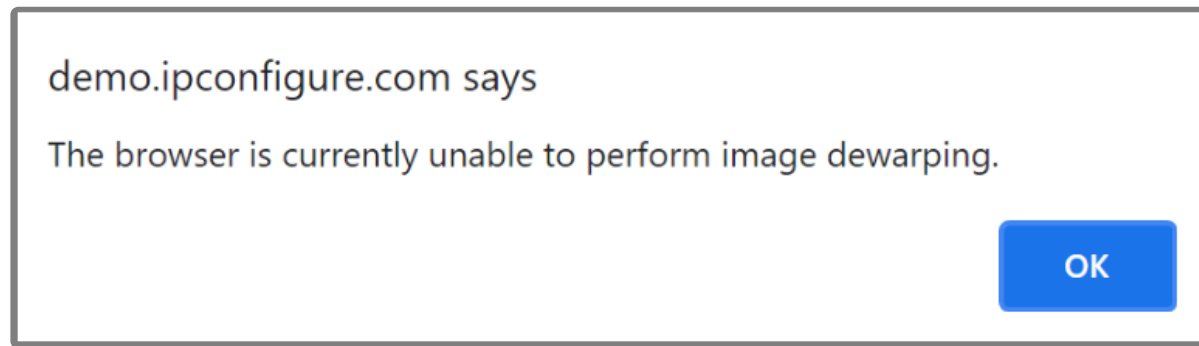
1. Go to the *System Status* screen and use the troubleshooting buttons to check/restart the camera stream.
(This error is not likely to appear.)

If this error appears, the connection between the client and server has dropped:



1. Press the *Reload* button to refresh the Orchid Core VMS page (which may solve the problem).
2. If reloading doesn't solve the problem, contact [Support](#).

If this error appears, the browser may not have enough resources to draw the dewarped image:



The process to display a dewarped image on the *Stage* requires extra work from the web browser. If you have more than one dewarped camera on the *Stage*, that extra work is multiplied, making it increasingly more difficult to complete all necessary tasks.

1. Consider switching dewarping *Off* for one or more of the dewarped cameras on the *Stage*.
2. Consider lowering the number of dewarped cameras on the *Stage*.



Another possibility is that the web browser does not support the graphics processing unit (GPU).

1. Try switching to another web browser.

Comparing Orchid Core VMS Operating Modes

Orchid Core VMS supports operation in WebRTC mode and the original Low-bandwidth mode. The benefit of WebRTC mode is that it allows for viewing full-bandwidth, live and recorded video streams through a web browser without requiring a plugin. The availability of these operating modes will depend on your web browser and operating system. The table below provides a high-level comparison of the operating modes.

	Low-bandwidth mode	WebRTC mode
Compatible operating systems	Windows, Linux, macOS, iOS, Android	Windows, Linux, macOS, iOS, Android
Compatible web browsers	Most modern web browsers (Microsoft Internet Explorer is not supported)	The latest versions of Mozilla Firefox, Microsoft Edge, Safari (desktop and mobile), and Google Chrome (version 66 or higher on a desktop or mobile device)
Network requirements	Works well even on slow connections between the web browser and the Orchid Core VMS server	Prior to version 23.3, WebRTC required a good connection between the web browser and the Orchid Core VMS Server. Orchid versions 23.3 and greater should work well even if the connection between the web browser and Orchid is marginal (as long as WebRTC retransmission is enabled).
Video decoding	Decoding is done on the Orchid Core VMS server	Decoding is done on the client machine
Additional configuration required for viewing servers behind a firewall	None (assuming web interface is already accessible)	STUN server
Video quality	Frame rate that throttles to match available bandwidth	Native, unthrottled frame rate

Supported video file types	H264, H.265, JPEG, MPEG4	H264
Audio support	No	No
PTZ camera support	Yes	Yes
Video statistics	Yes (Minimal)	Yes (Overload)
Mode is selectable (at sign in and per Player)	Yes	Yes
Mode indicator		

Additional Support

Orchid Core VMS users with questions or issues should first contact their Company's Orchid Core VMS System Administrator. Barring any internal corporate policies, an Administrator may escalate the technical support request.

- Tier 1 Support: Orchid Core VMS System Administrator
- Tier 2 Support: Integrator or Dealer
- Tier 3 Support: IPConfigure Technical Support Resources

IPConfigure's Orchid Core VMS Knowledge Base: The [Orchid Core VMS Knowledge Base](#) is freely and publicly available on IPConfigure's support website, and includes detailed information for a variety of Orchid Core VMS issues. The Knowledge Base covers everything from basic Orchid Core VMS usage to advanced installation and configuration scenarios.

IPConfigure's Email-based Trouble Ticket System: Any Orchid Core VMS customer with a valid Orchid Core VMS Support Agreement can submit trouble tickets using the IPConfigure support website at <http://support.ipconfigure.com>. Orchid Core VMS trouble tickets are resolved over email by IPConfigure's highly trained Technical Support Team. (Please see the next topic for instructions.)

IPConfigure's Telephone Support Line: Customers with an Orchid Core VMS Express Support Agreement may call IPConfigure's Telephone Support toll-free at 855-440-1077, or direct at 757-520-0587 (during the times listed below). Orchid Core VMS Express Support is complimentary for one year with all new Orchid Core VMS license purchases.

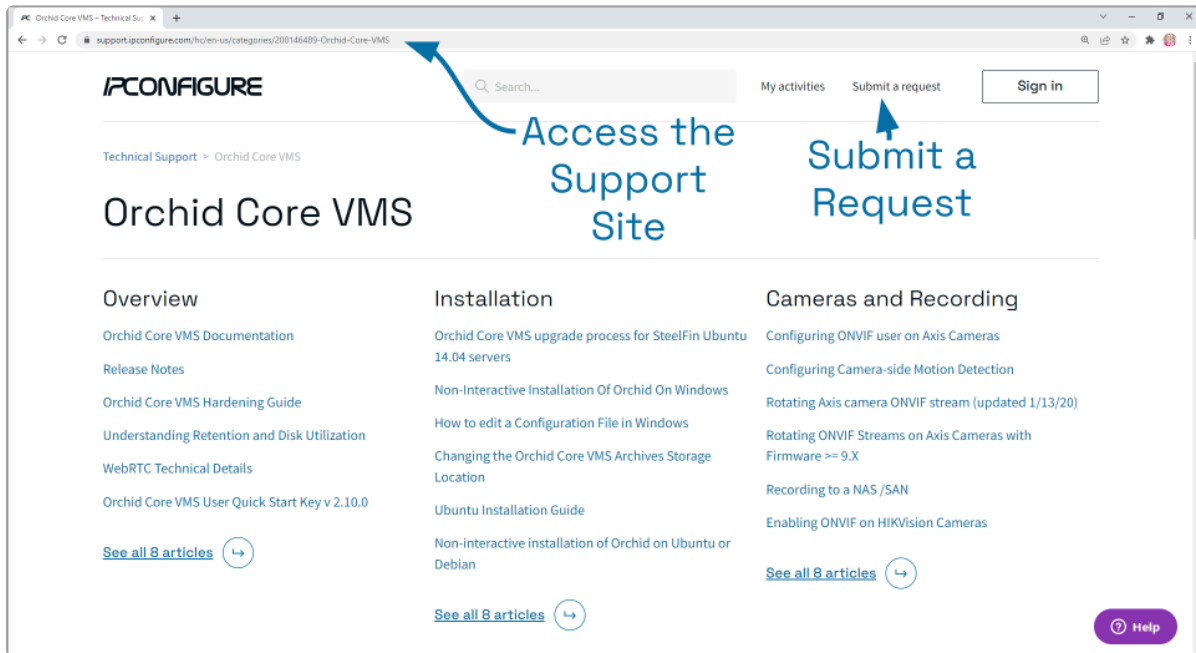
IPConfigure's technical support hours are as listed below. For the most up-to-date version of the IPConfigure support schedule, please see support.ipconfigure.com.

IPConfigure Technical Support Hours

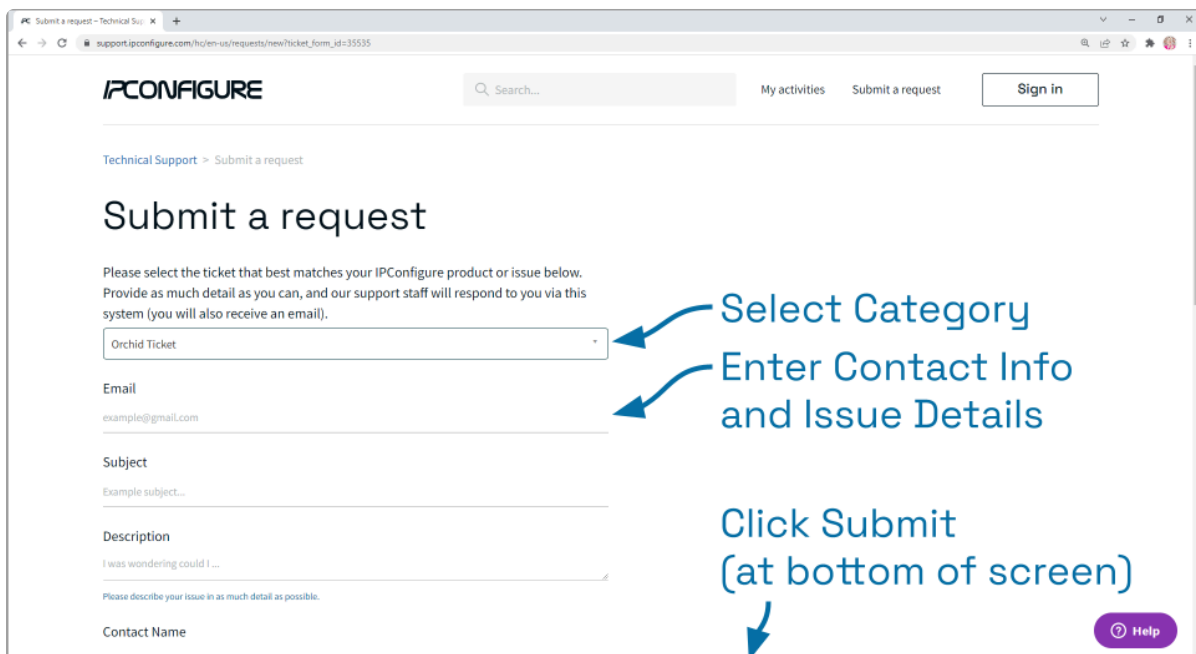
Sunday	Closed
Monday	9:00 AM to 8:00 PM EST
Tuesday	9:00 AM to 12:00 PM, 1:00 PM to 8:00 PM EST
Wednesday	9:00 AM to 8:00 PM EST
Thursday	9:00 AM to 8:00 PM EST
Friday	9:00 AM to 8:00 PM EST
Saturday	Closed

How to Submit a Support Request

1. Visit our technical support site at: <http://support.ipconfigure.com>
2. Click on the *Submit a request* link in the top-right corner of the screen.



3. When the support request screen appears, use the drop-down list to select the product or issue that best matches your support need.



4. Enter your contact information, a description of your question/problem, the version number of your Orchid Core VMS software, your Orchid Core VMS server type, and IPConfigure SteelFin server serial number (if applicable). Please provide as much detail as

possible about the problem and attach screenshots and system logs (if available).

✿ To find the Orchid Core VMS software version number, go to the *System Menu* and select *Version Information*.

5. When all the available information has been entered, press the ***Submit*** button at the bottom of the screen.

The IPConfigure Technical Support Team will respond to your request as soon as possible.

✿ For additional help with Orchid Core VMS, please visit our training site at training.ipconfigure.com.