



Orchid Core VMS Administrator Guide

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IPConfigure

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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.



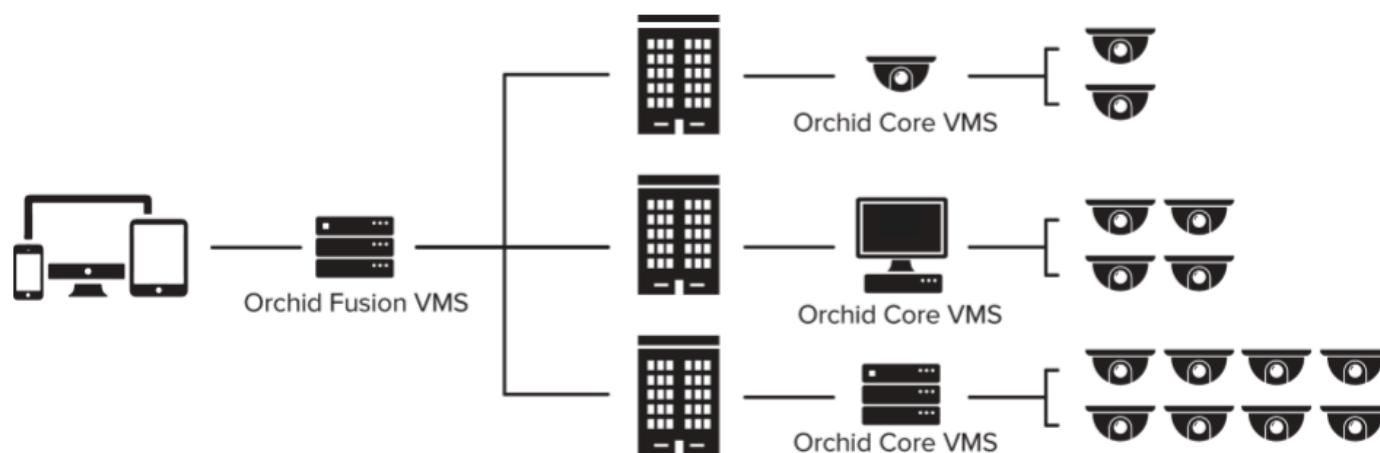
As of March 2021, we have implemented a date-based software version numbering system. From this point forward, the software version number will represent the year and month in which the software was released. For example, version 21.3, the first release with the new numbering system, was released in March of 2021. (Version 2.16 was the last release under the old numbering 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 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 VMS is the perfect solution for large organizations.

Orchid Core VMS and Orchid Fusion 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 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 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.



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
- 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*, and viewing/recording video, please refer to the [Orchid Core VMS User Guide](#).

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). 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.)

✿ Starting with Orchid Core VMS version 2.8.0, the FBGST plugin will no longer be supported. The plugin-compatible web browsers (Chrome version 34, and Firefox version 52) have also reached the end of support. If you were previously using either of these web browsers, you should upgrade to the latest version available.

Signing In

1. 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*)
2. 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.
3. 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.
4. Mark the *Stay signed in* checkbox if you wish to remain signed in even if you close your browser session or reboot your computer. You will remain signed in for approximately 30 days. (If you leave this box unmarked, the system will automatically sign you out if you close your browser session or reboot your computer.)
5. Press **Sign In**.

The image shows the Orchid Core VMS login interface. It features a blue header with the Orchid Core logo and name. Below the header is a white login form. The form contains two input fields: 'Username' and 'Password'. Below these fields are two checkboxes: 'Low-bandwidth mode' and 'Stay signed in'. A blue 'SIGN IN' button is located at the bottom right of the form.

* 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.

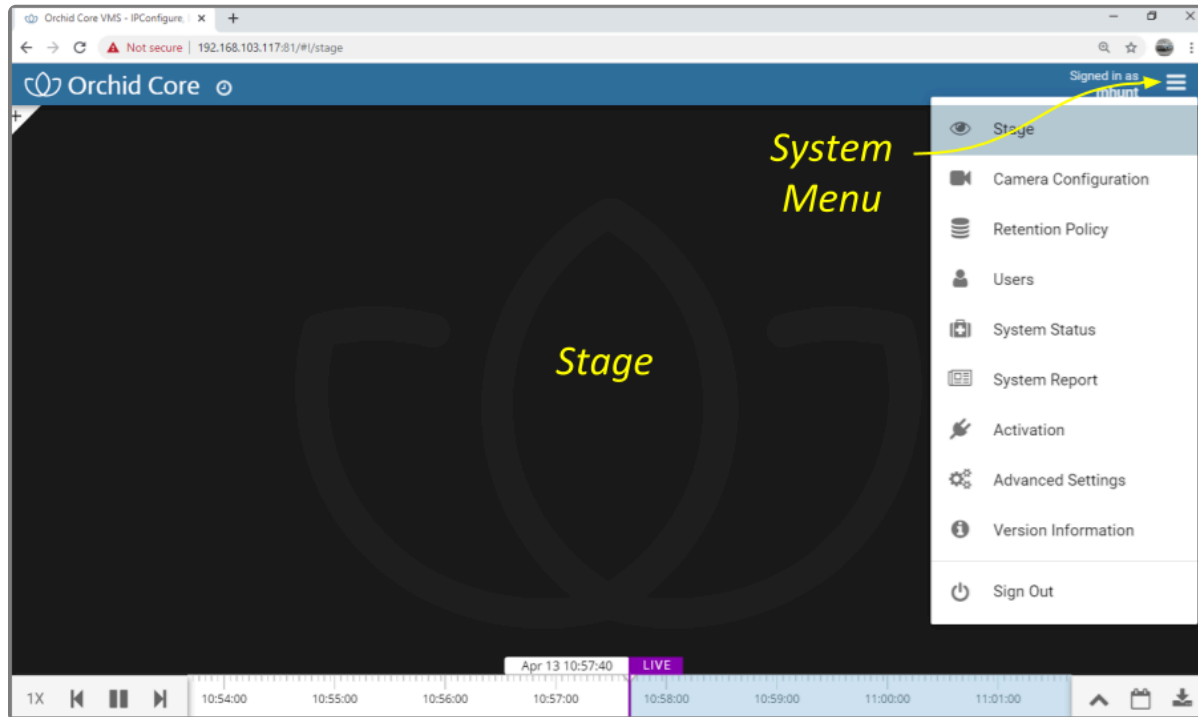
The *System Menu* (accessible from the top-right corner of the screen) is the primary navigation menu and will always be available. It allows the Administrator to access all of the software features like the *Stage*, *Camera Configuration*, *Retention Policy*, etc. For Managers, Viewers, and Live Viewers, 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.

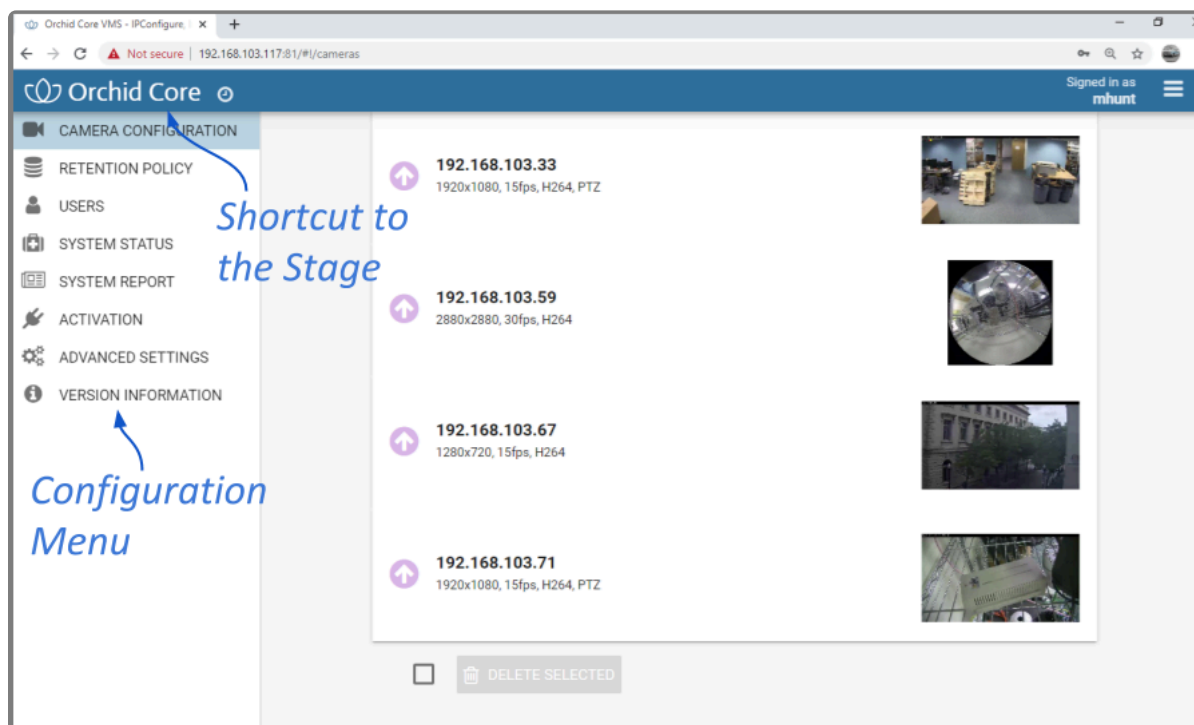


Accessing the Configuration Menu

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* or *Fusion* license.



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

About Orchid Core VMS Licenses

There are three main types of licenses available for the Orchid Core VMS software: *Trial*, *Core*, and *Fusion*. Each license type offers certain capabilities and restrictions.

- **Trial 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 Orchid Fusion VMS.
- When installed on a Linux ARM embedded server, the *Trial* license will allow unlimited cameras and archives, but cannot be linked to Orchid Fusion VMS.

- **Core License**

- The *Core* license offers unlimited archives, but will limit the number of cameras allowed and cannot be linked to Orchid Fusion VMS.

- **Fusion License**

- The *Fusion* license will limit the number of cameras allowed, but offers unlimited archives and can be linked to Orchid Fusion VMS.

Time-Limited Licenses

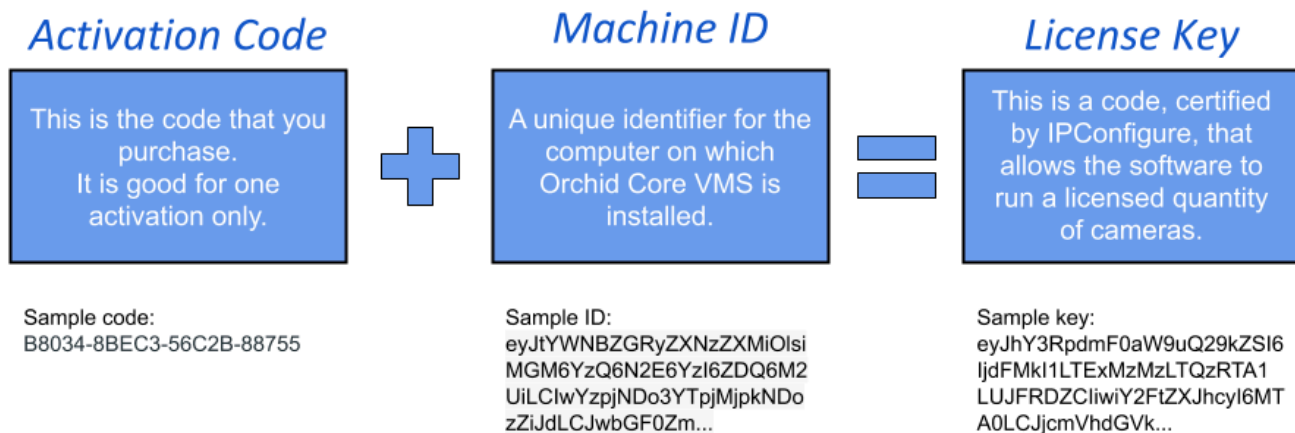
IPConfigure also offers time-limited versions of the *Core* License and *Fusion* License. Generally, these will be used for testing large numbers of cameras or high retention settings (that would be impossible with the standard trial license).

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. With a typical license, when your support expires, Orchid Core VMS will still run, you just can't update/upgrade the software with a version of Orchid Core VMS released after your support expiration. When the time limit expires on a time-limited license, Orchid Core VMS will enter a degraded mode and stop recording video. Previously recorded video will continue to be accessible in this degraded mode. (See [License Errors](#) for more details.)

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.

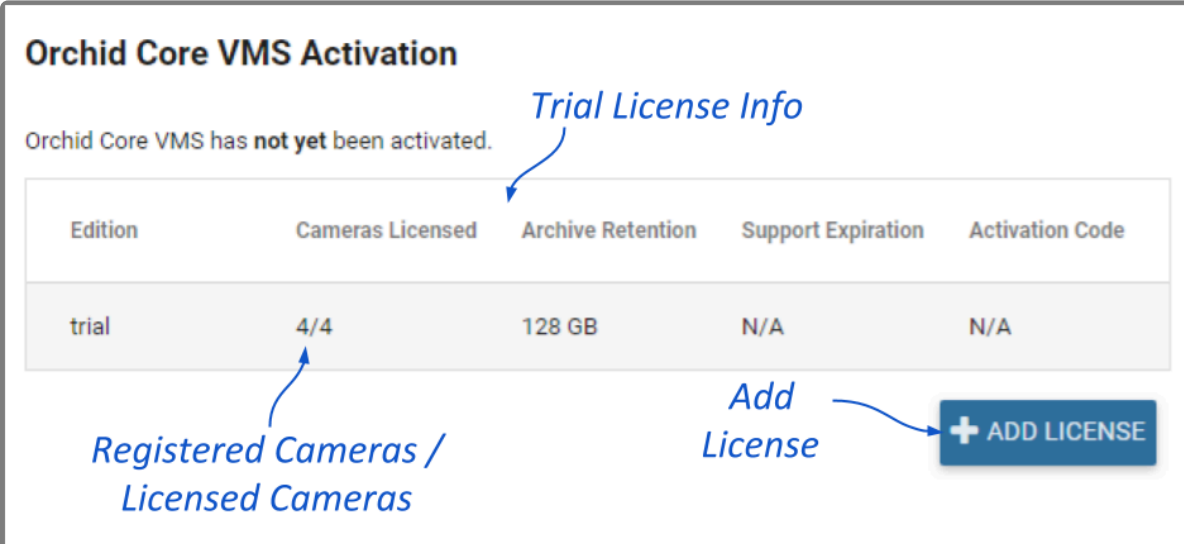
* This quick method of activation requires that the Orchid Core VMS server has an internet connection.



* 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

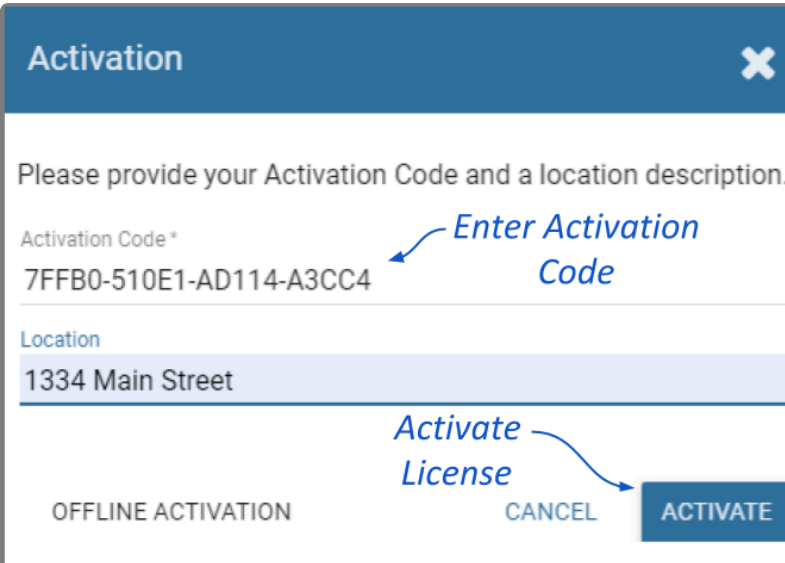
Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
trial	4/4	128 GB	N/A	N/A

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.

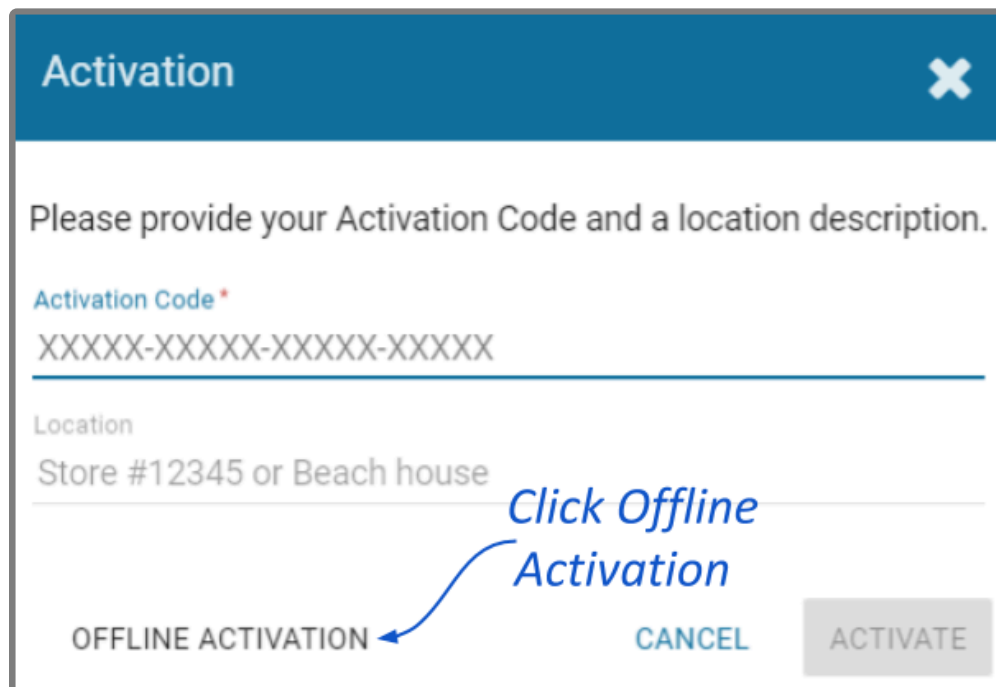
The screenshot displays the 'Orchid Core VMS Activation' interface. At the top, it states 'Orchid Core VMS has **not yet** been activated.' Below this is a table with the following data:

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

Annotations on the screenshot include:

- A blue arrow pointing to the 'trial' edition with the text 'Trial License Info'.
- A blue arrow pointing to the '4/4' value in the 'Cameras Licensed' column with the text 'Registered Cameras / Licensed Cameras'.
- A blue arrow pointing to the '+ ADD LICENSE' button with the text 'Add License'.

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 *

XXXXXX-XXXXXX-XXXXXX-XXXXXX

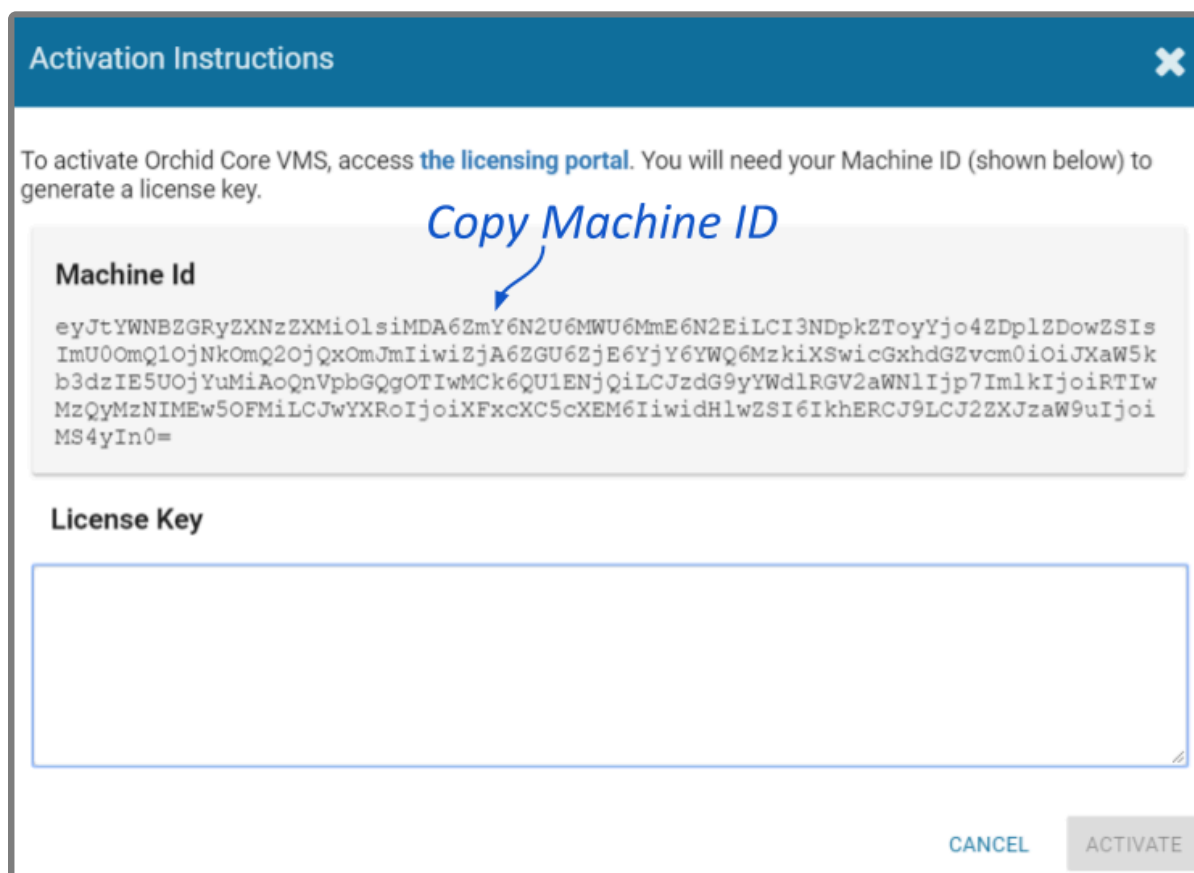
Location

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

eyJtYWNBZGRyZXNzZXMiOlSiMDA6ZmY6N2U6MWU6MmE6N2EiLCI3NDpkZToyYjo4ZDplZDowZSIzImU0OmQ1OjNkOmQ2OjQxOmJmIiwizjA6ZGU6ZjE6YjY6YWQ6MzkiXSwicGxhdGZvcn0iOiJXaW5kb3dzIE5UOjYuMiAoQnVpbGQgOTIwMCK6QU1ENjQiLCJzdG9yYWdlRGV2aWNlIjp7ImlkIjoiriRTIwMzQyMzNIMEw5OFMiLCJwYXRoiXoiXFcxcXc5cXEM6IiwidHlwZSI6IkhERCJ9LCJ2ZXJzaW9uIjoiriMS4yIn0=

License Key

CANCEL ACTIVATE

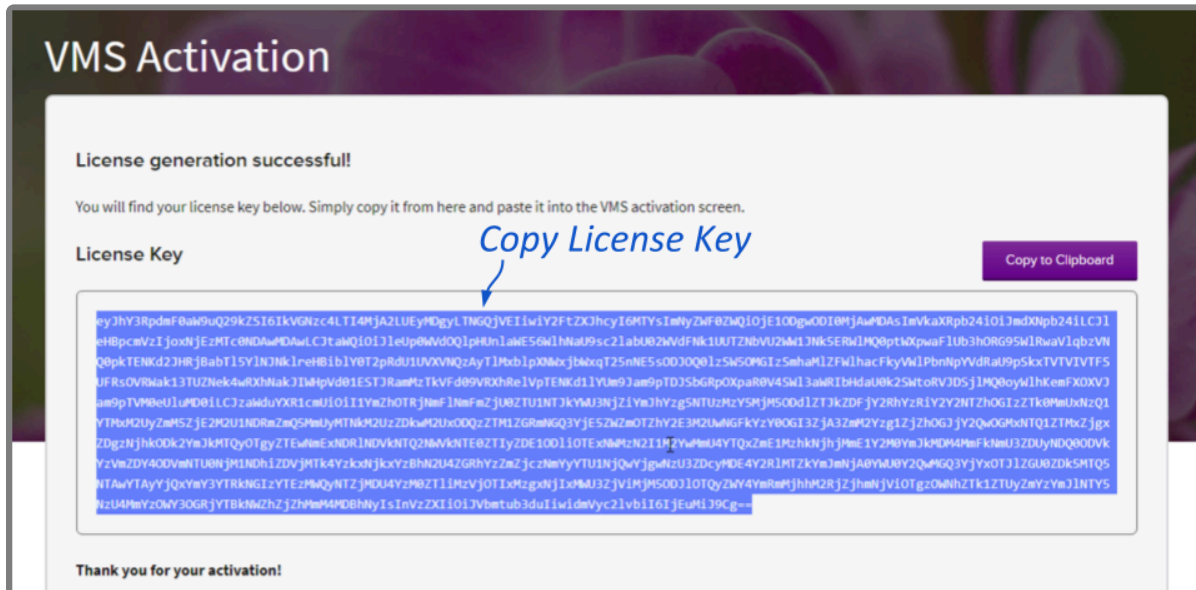
5. Copy your Machine ID. (Click and drag from the beginning to the end of the text string, then click **CTRL+C** to copy it.)
6. Click **CTRL+V** to paste the ID into a text file on a USB drive that you can use on a computer with internet access.

- Using a computer with internet access, go to the following site: <https://www.orchidsecurity.com/activation>.

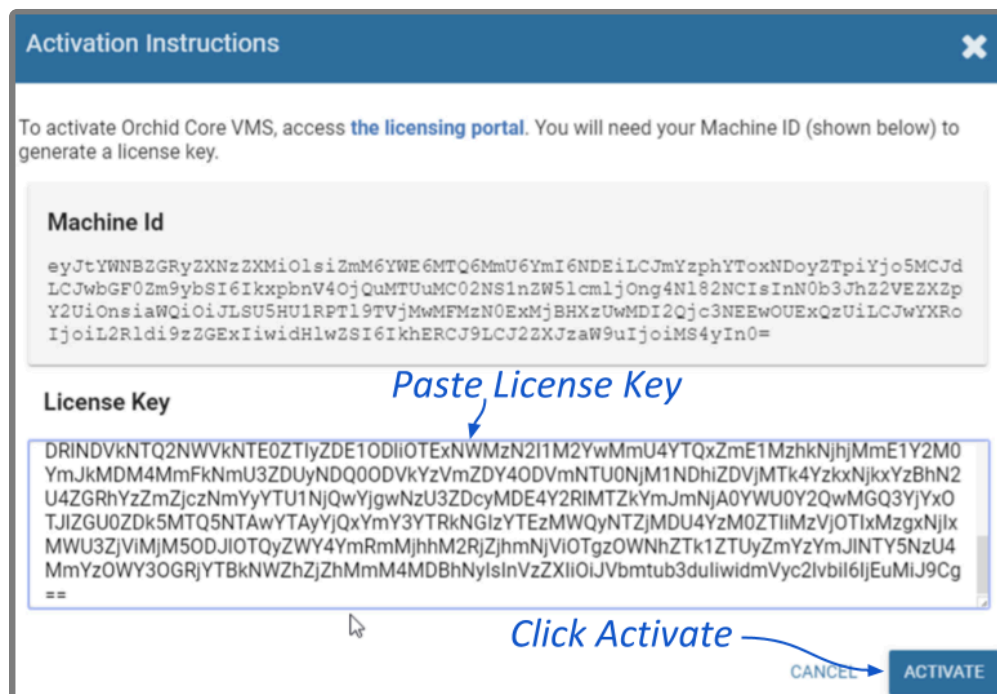
The screenshot shows the 'VMS Activation' web form. It has a title 'VMS Activation' and a subtitle 'To generate a license key, enter your Activation Code and Machine ID. Enter a unique Location Description to associate the license key with a physical location.' Below this is a link: 'Looking to use an add-on, upgrade, or renewal code? Click here.' The form contains three main input fields: 'Activation Code' with a sample value 'EF778-28206-A2082-3FB5D', 'Machine ID' with a long alphanumeric string, and 'Location Description' with a sample value 'e.g. Hot Dog Haven, Store #12'. At the bottom is an 'Activate License' button. Blue arrows and text annotations point to each field: 'Enter Activation Code' points to the Activation Code field, 'Paste Machine ID' points to the Machine ID field, 'Enter Location' points to the Location Description field, and 'Click Activate' points to the Activate License button.

- Paste your machine ID (from the USB drive) into the *Machine ID* field.
- 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)
- 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.
- 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.



12. 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.



- 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


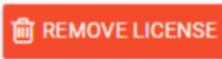
Orchid Core VMS has been activated.

Activation Complete

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
fusion	4/16	Unlimited	Saturday, February 13, 2021 UTC	EF778-28206-A2082-3FB5D

Thank you!

Registered Cameras / Licensed Cameras

 UPDATE LICENSE  REMOVE LICENSE

Orchid Core VMS Activation

Orchid Core VMS has been activated.



License Activated

Your core-timed license will expire in 60 days, 3 hours, 49 minutes, and 52 seconds.

Timed License Countdown

Edition	Cameras Licensed	Archive Retention	Support Expiration	Activation Code
core-timed	8	Unlimited	Monday, October 8, 2018 UTC	59FAD-C92F0-B9559-14D7A

Thank you!

 UPDATE LICENSE  REMOVE LICENSE

This is an example of a time-limited 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* 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

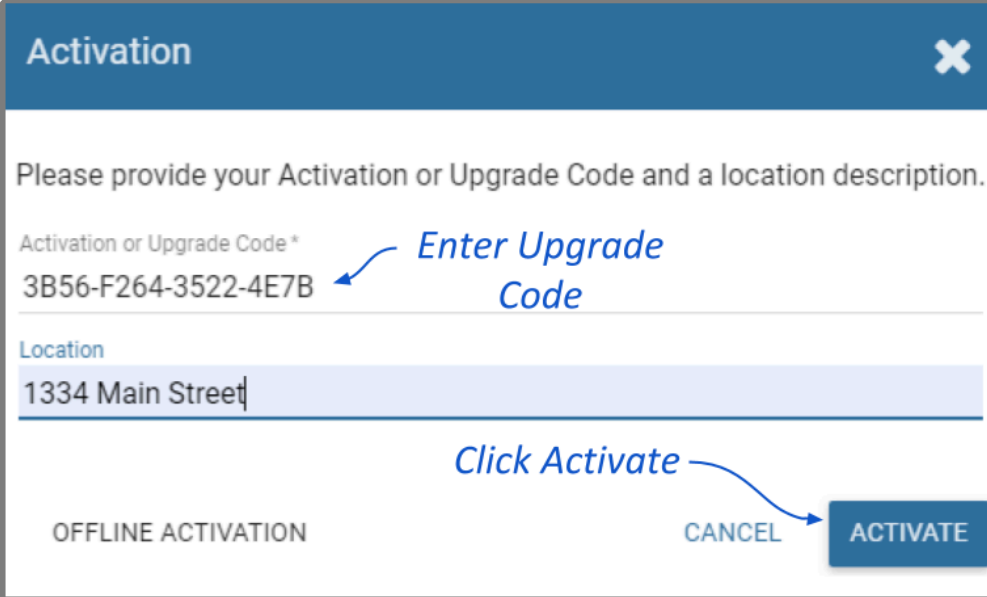
Orchid Core VMS has been activated.

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.



The image shows the 'Activation' dialog box in the Orchid Core VMS Administrator. It has a blue header with the title 'Activation' and a close button. The main text says 'Please provide your Activation or Upgrade Code and a location description.' There are two input fields: 'Activation or Upgrade Code*' containing '3B56-F264-3522-4E7B' and 'Location' containing '1334 Main Street'. Below the fields are three buttons: 'OFFLINE ACTIVATION', 'CANCEL', and 'ACTIVATE'. Blue arrows point to the code field with the text 'Enter Upgrade Code' and to the 'ACTIVATE' button with the text 'Click Activate'.

Activation

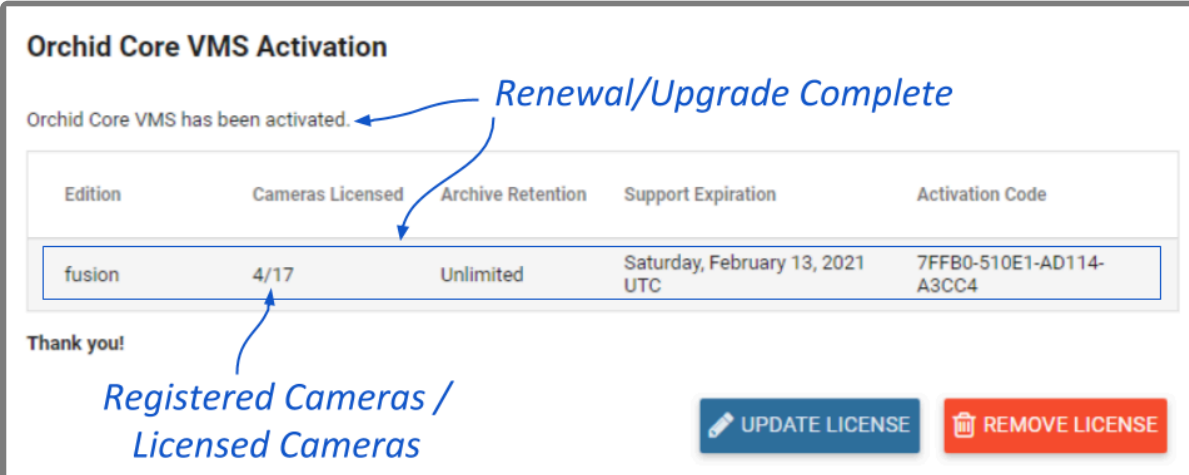
Please provide your Activation or Upgrade Code and a location description.

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

Location
1334 Main Street

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.)



The image shows the 'Orchid Core VMS Activation' completion screen. It has a title 'Orchid Core VMS Activation' and a message 'Orchid Core VMS has been activated.' Below this is a table with license details. Blue arrows point to the message with the text 'Renewal/Upgrade Complete' and to the '4/17' value in the 'Cameras Licensed' column with the text 'Registered Cameras / Licensed Cameras'. At the bottom, there are two buttons: 'UPDATE LICENSE' and 'REMOVE LICENSE'.

Orchid Core VMS Activation

Orchid Core VMS has been activated.

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

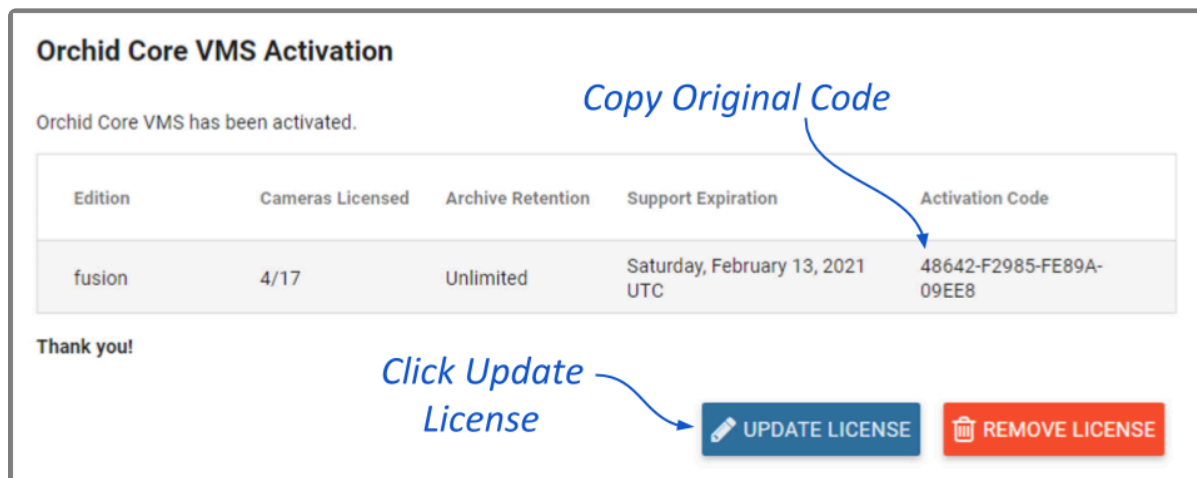
Thank you!

UPDATE LICENSE REMOVE LICENSE

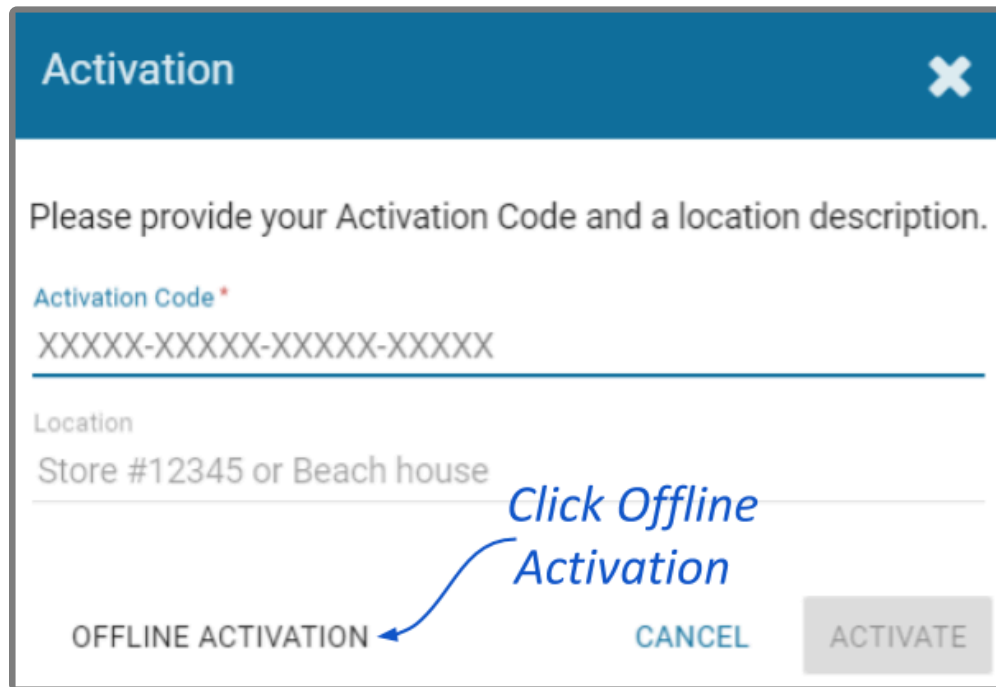
Modifying an Existing License (Offline Method)

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.



Activation

Please provide your Activation Code and a location description.

Activation Code *

XXXXXX-XXXXXX-XXXXXX-XXXXXX

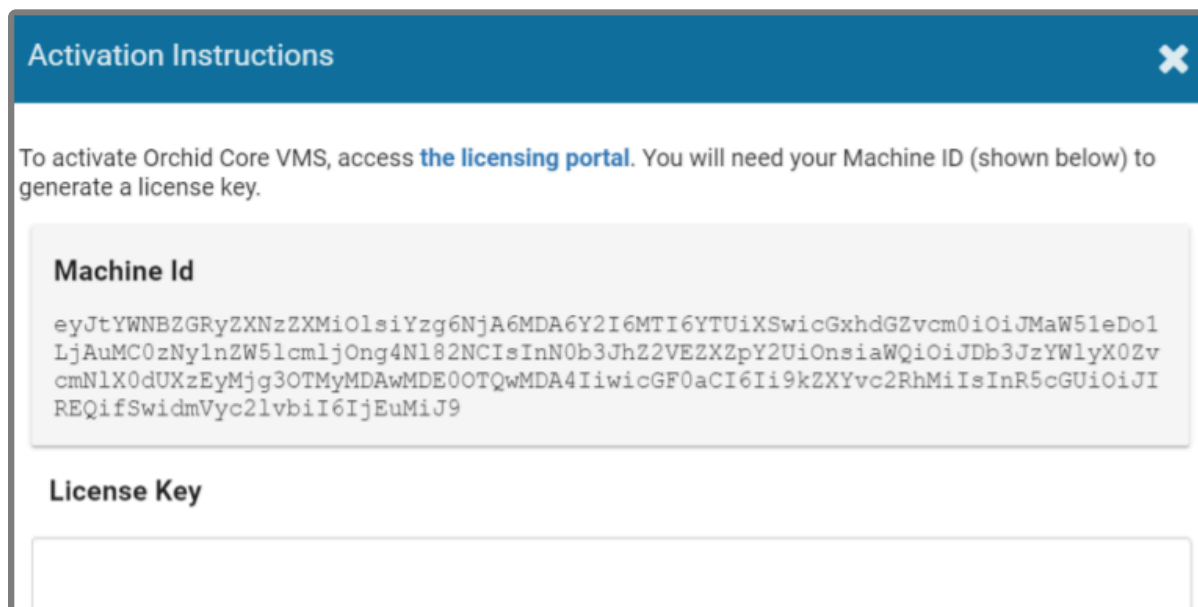
Location

Store #12345 or Beach house

Click Offline Activation

OFFLINE ACTIVATION CANCEL ACTIVATE

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



Activation Instructions

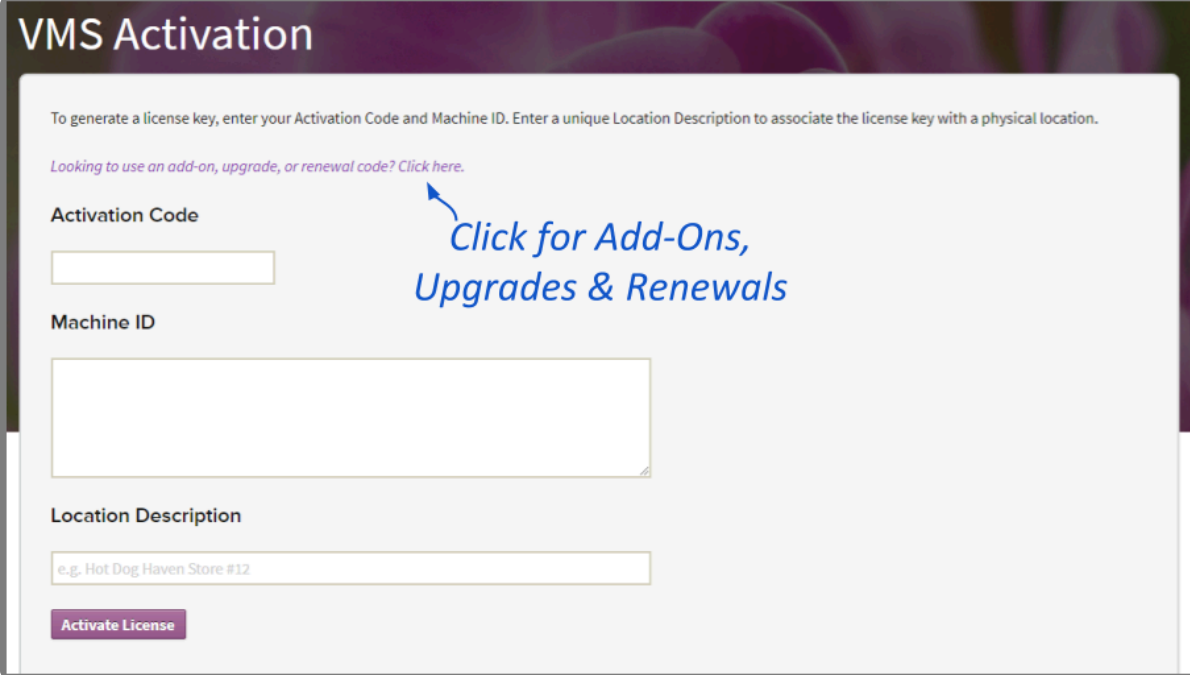
To activate Orchid Core VMS, access [the licensing portal](#). You will need your Machine ID (shown below) to generate a license key.

Machine Id

eyJtYWNBZGRyZXNzZXMiOlsiYzg6NjA6MDA6Y2I6MTI6YTUiXSvicGxhdGZvc0iOiJMaW5leDo1LjAuMCM0zNylnZW5lcmljOng4Nl82NCIsInN0b3JhZ2VEZXZpY2UiOmsiaWQiOiJDb3JzYWlyX0ZvcmlX0dUXzEyMjg3OTMyMDAwMDE0OTQwMDA4IiwicGF0aCI6Ii9kZXlYvc2RhMiIsInR5cGU0iOiJIREQifSwidmVyc2lvbiI6IjEuMiJ9

License Key

- 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.](#)

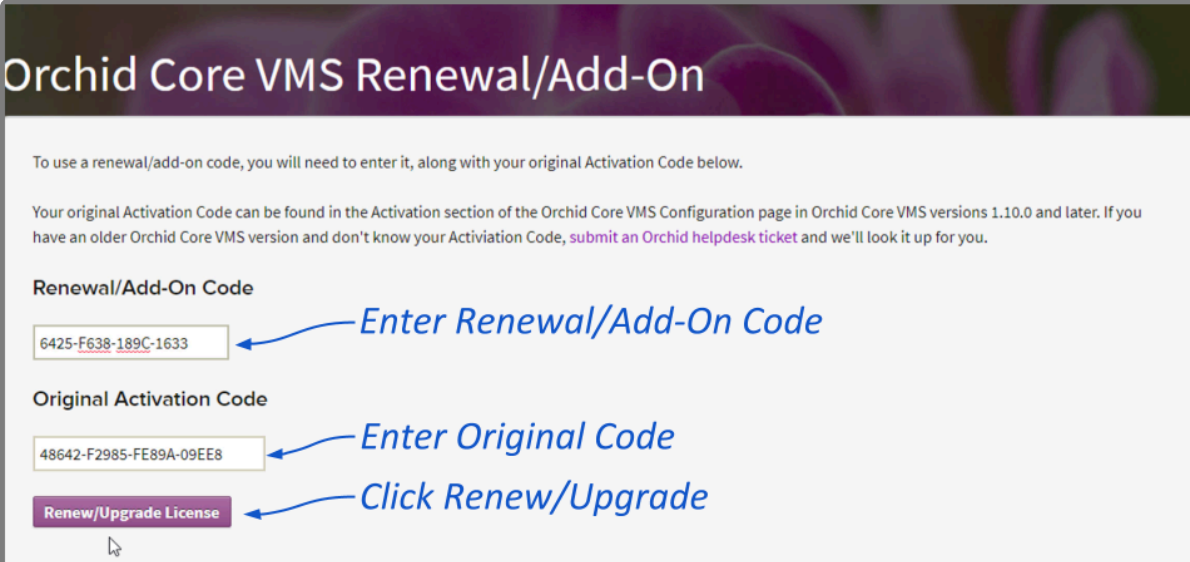
Activation Code

Machine ID

Location Description

Activate License

- Click 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.

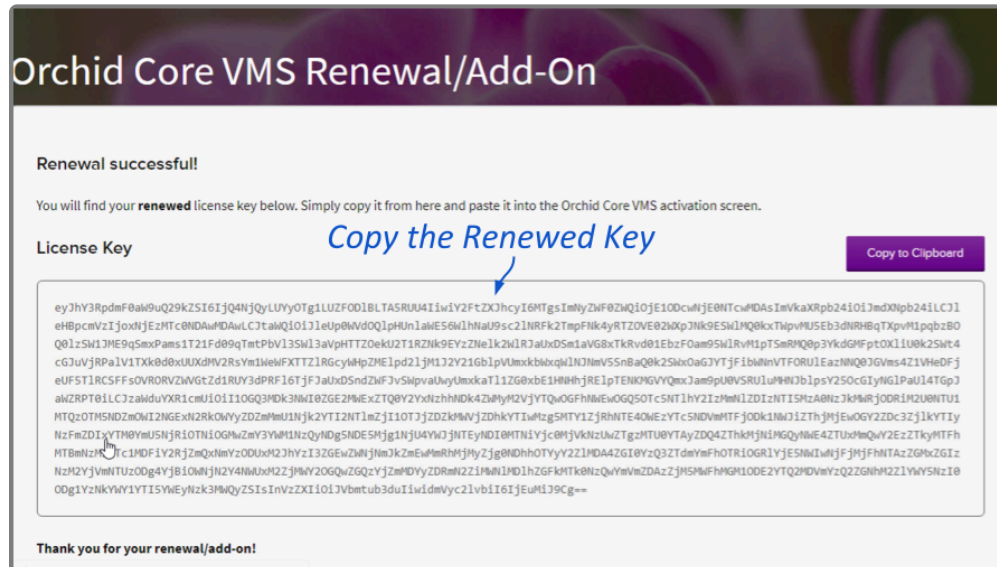
Your original Activation Code can be found in the Activation section of the Orchid Core VMS Configuration page in Orchid Core VMS versions 1.10.0 and later. If you have an older Orchid Core VMS version and don't know your Activation Code, [submit an Orchid helpdesk ticket](#) and we'll look it up for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

Renewal/Add-On Code

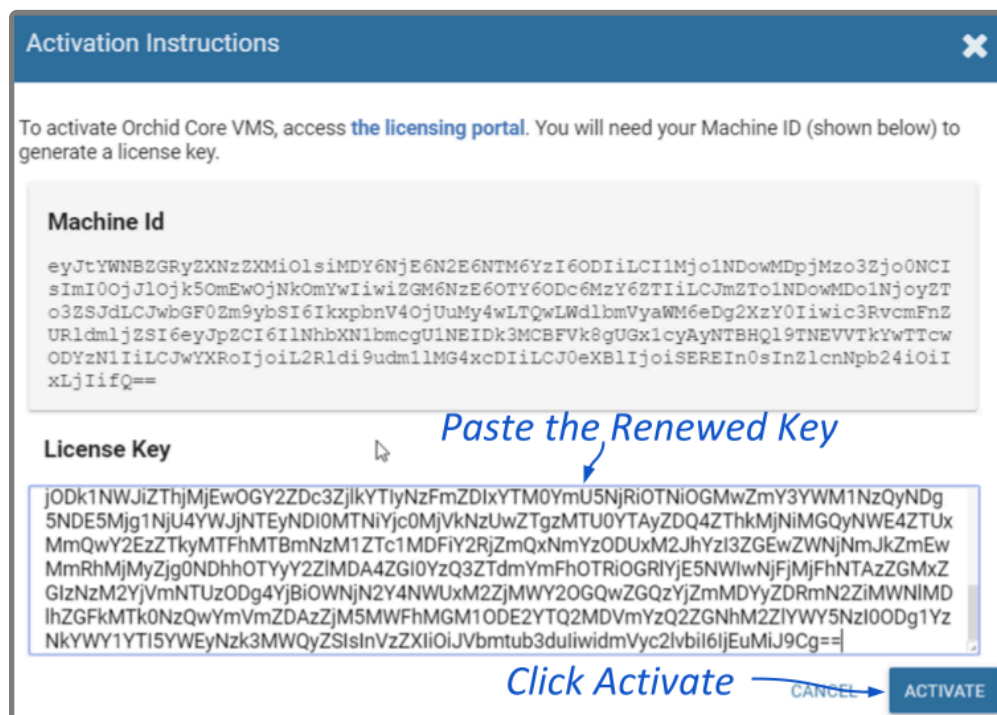
Original Activation Code

Renew/Upgrade License

- 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.
- Go to the *Renewal/Add-On Code* field and enter the code you just purchased.
- 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.



16. 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	Unlimited	Saturday, February 13, 2021 UTC	48642-F2985-FE89A-09EE8

Thank you!

*Registered Cameras /
Licensed Cameras*

 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:

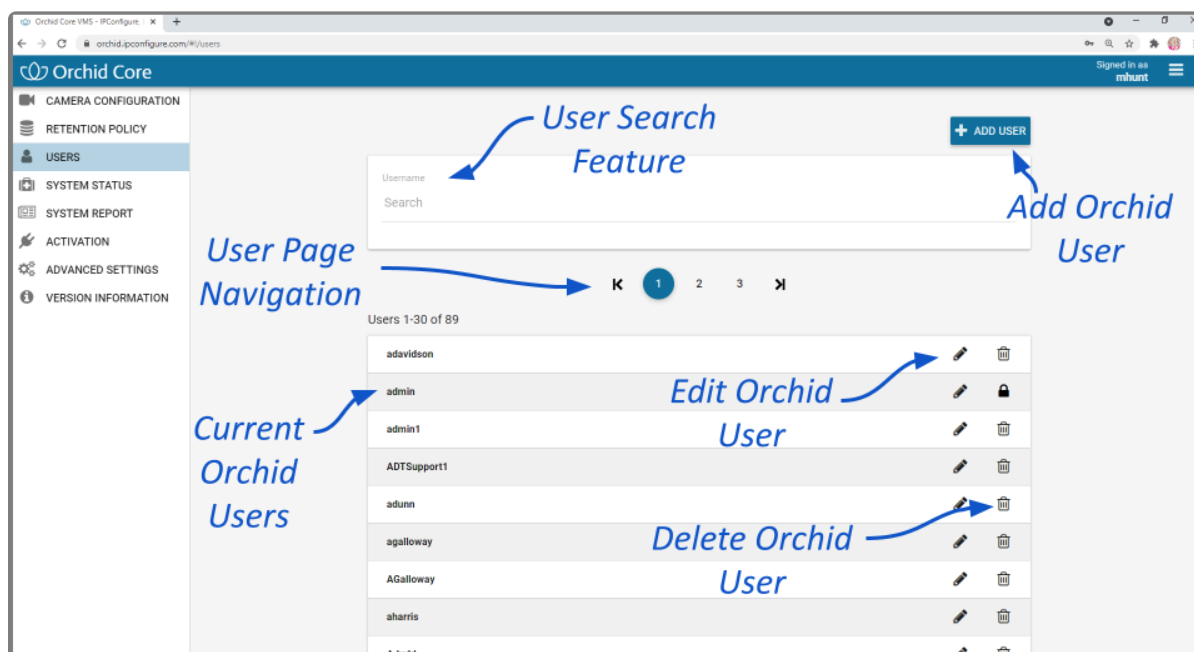
- **Live Viewer:** A *Live Viewer* is only able to view live video.
- **Viewer:** A *Viewer* is able to view live and recorded video.
- **Manager:** A *Manager* can view live and recorded video, export video, view System Reports, and control PTZ Players. (The Manager is not able to create or manage users 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.

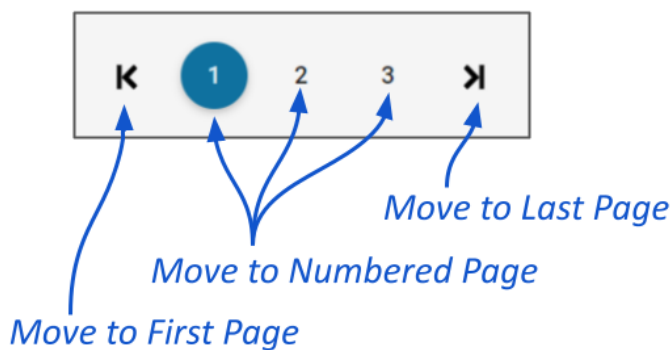
Access the Orchid Core VMS Users List

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 and descriptions of each of the four possible User roles. (You may have to scroll down to view the list of Orchid roles.)

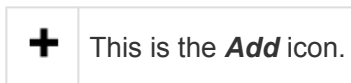


The *Users* screen lists up to 30 Orchid Core VMS users per page (by default). If you have more than 30 users, additional pages will be added automatically. This will also activate the page navigation tools, and the search feature.



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.

A screenshot of a web form titled 'New User for Orchid Core VMS' in a blue header bar with a close button (X) in the top right. The form has a white background. It contains four input fields: 'Username *' (a text field), 'Role' (a dropdown menu with 'Manager' selected), 'Password *' (a text field), and 'Confirm Password *' (a text field). At the bottom right, there are two buttons: 'CANCEL' and 'ADD USER' (which is highlighted in gray).

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.

TempUser2 from Orchid Core VMS

Username *

TempUser2

Role

Manager

Password

Confirm Password

CANCEL

UPDATE USER



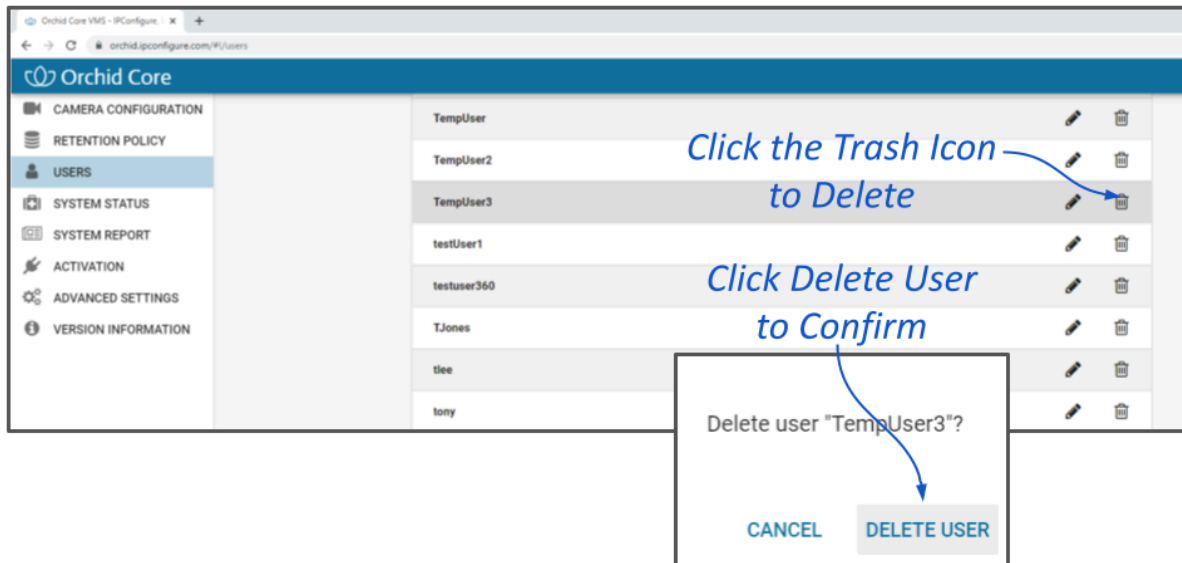
If you try to change your own password, Orchid Core VMS will automatically sign you out.

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

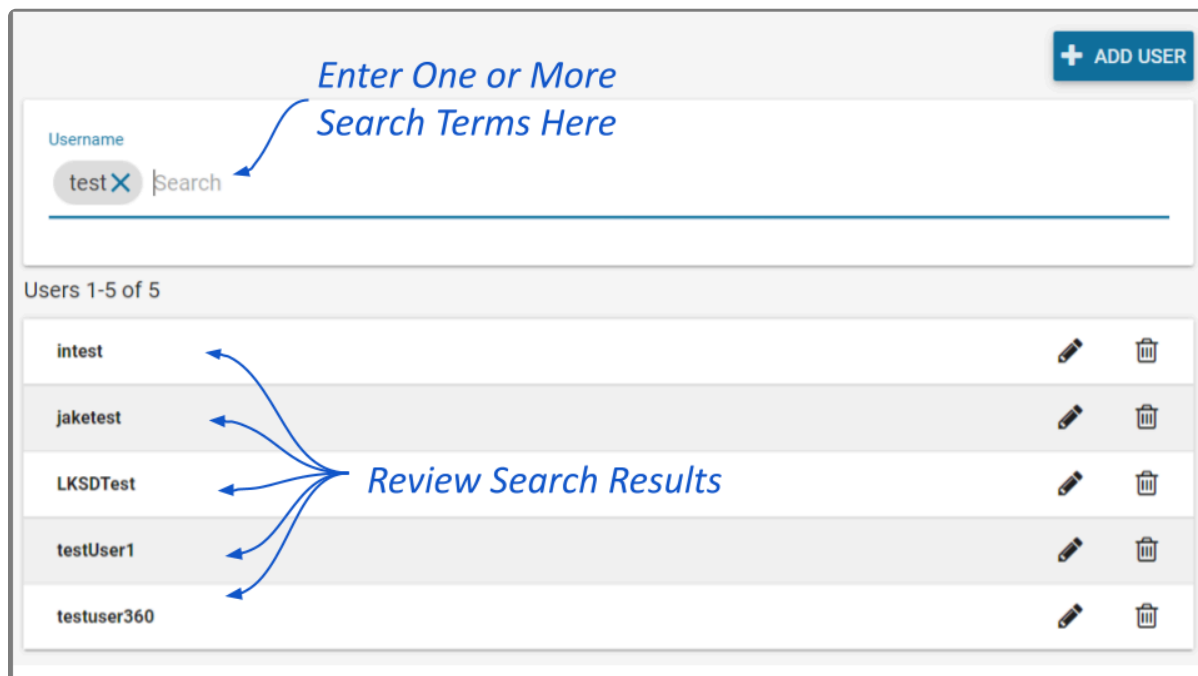
If you have more than 30 registered Orchid Core VMS users (by default), the *Users* list will extend beyond one page. When this happens, the software will automatically activate the user search and page navigation. Especially useful with large systems, these tools will help you find specific users quickly.

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).

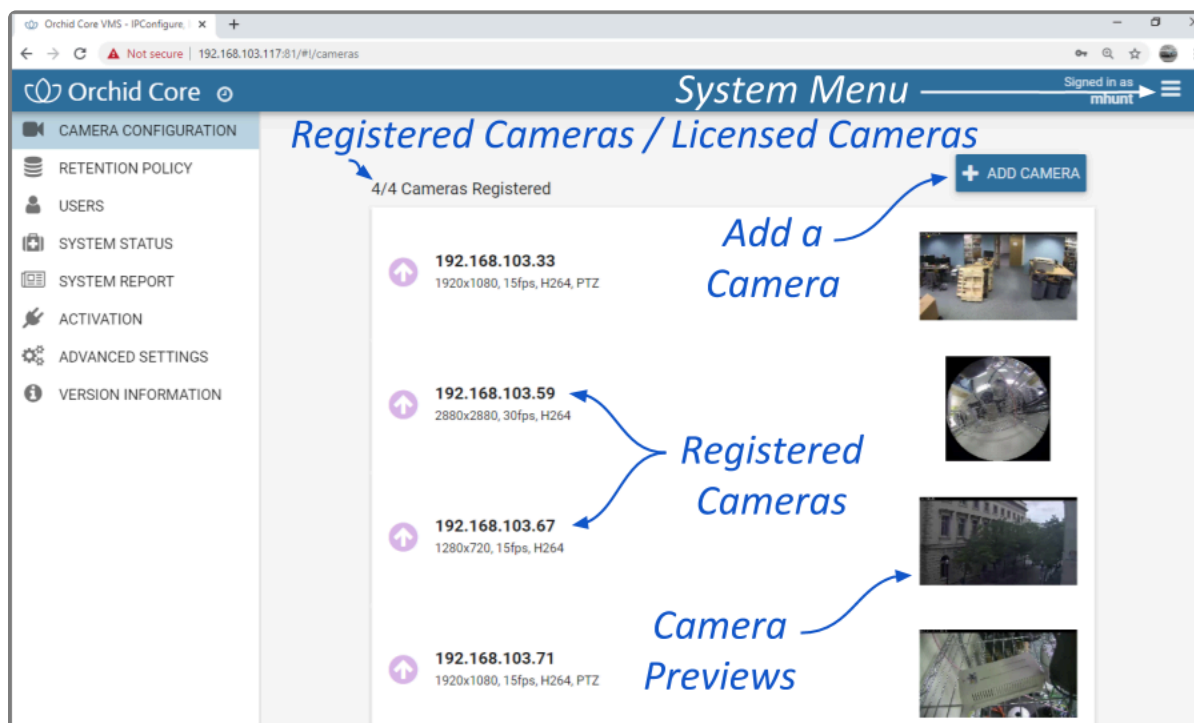


Adding and Managing Cameras

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.



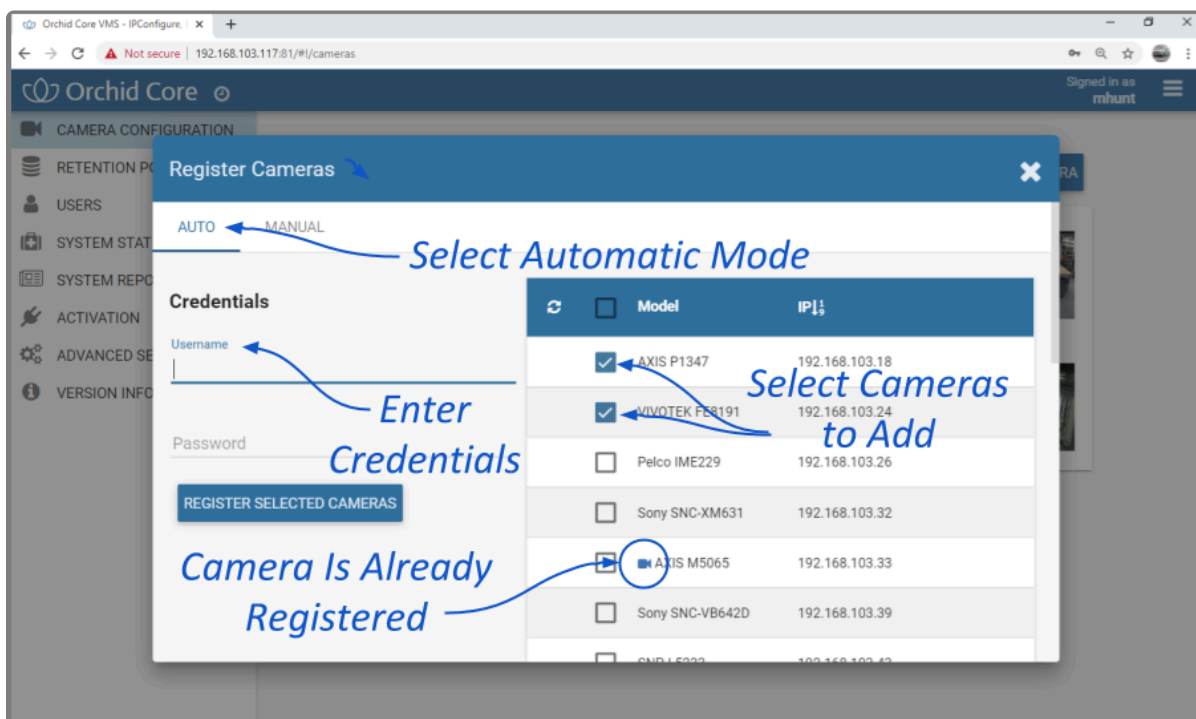
The *Camera Configuration* screen will open with a list of cameras that have already been registered, if any. The process for adding most cameras is typically pretty simple, especially if the camera supports ONVIF auto-discovery.

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. To add a new camera, mark the checkbox next to the camera. (You may select multiple cameras as long as they all use the same ONVIF username and password.)
3. Enter the ONVIF username and password that is setup on the camera(s) you would like to add.
4. 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.

5. 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 Fusion 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.

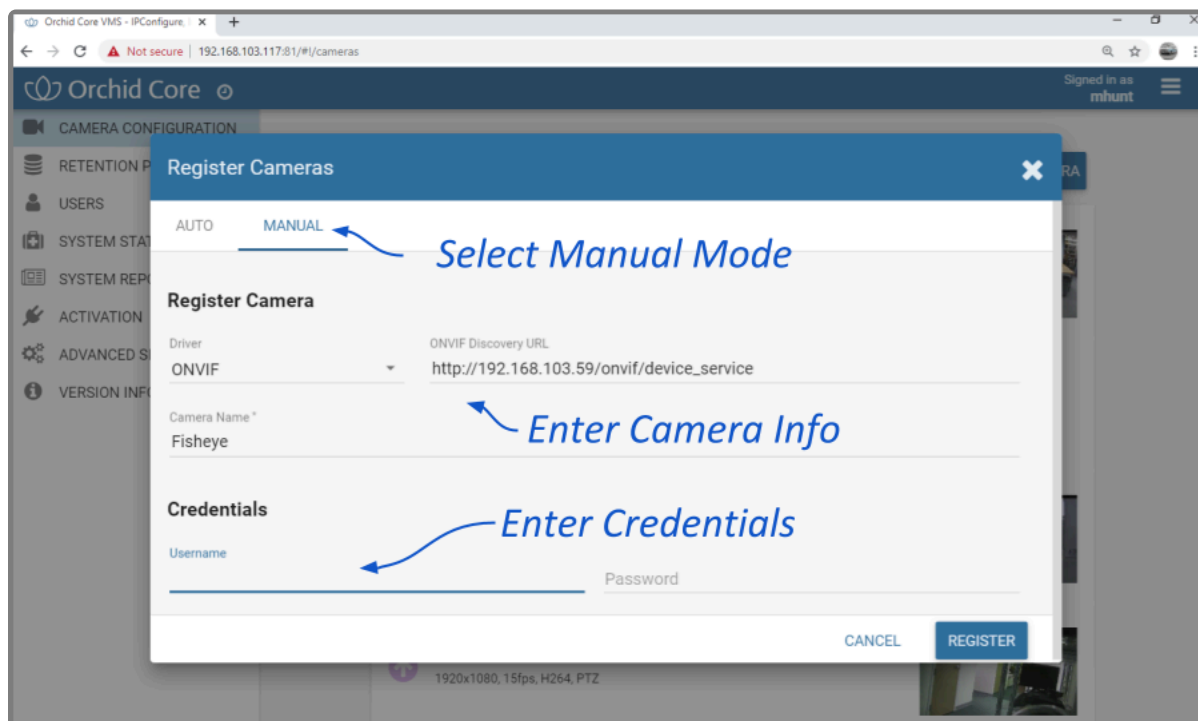
* If you have any trouble adding cameras, please refer to the [*Advanced Topics*](#) section for additional help.

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 2.14, Administrators have the ability to disable the Generic RTSP camera driver, so this driver may not be available.

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.

✿ For some ONVIF cameras, a separate username and password needs to be created specifically for ONVIF. (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](#).

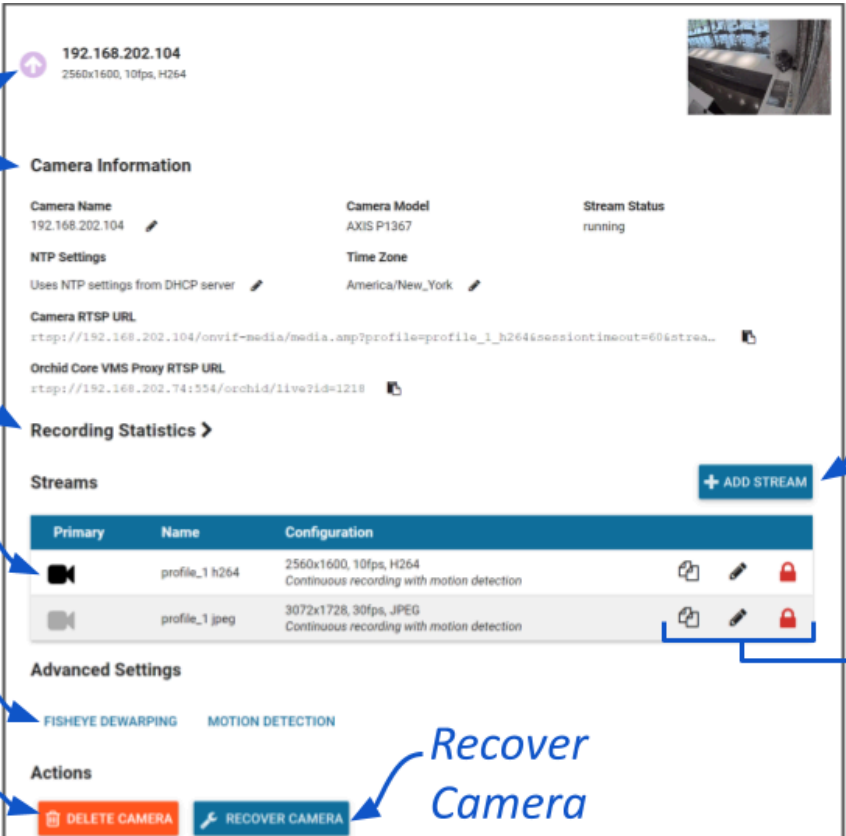
✿ If you have any trouble adding cameras, please refer to the [Advanced Topics](#) section for additional help.

Edit Camera Stream Settings

	This is the Edit pencil icon.
	This is the Expand icon (used to view the list of Recording Statistics).
	This is the Condense icon (used to close the list of Recording Statistics).
	This is the Camera icon. (Black represents the Primary Stream. Gray represents an available camera stream.)

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.)



The screenshot shows the configuration page for a camera with IP 192.168.202.104. The page is divided into several sections, each with a blue arrow pointing to it from a label on the left:

- Camera Info**: Points to the top header area containing the IP address and a small camera thumbnail.
- Recording Stats**: Points to the 'Recording Statistics' section, which includes fields for Camera Name, Camera Model, NTP Settings, Time Zone, Camera RTSP URL, and Orchid Core VMS Proxy RTSP URL.
- Primary Stream**: Points to the 'Streams' table, specifically the first row labeled 'Primary'.
- Advanced Settings**: Points to the 'Advanced Settings' section, which includes 'FISHEYE DEWARPING' and 'MOTION DETECTION' options.
- Delete Camera**: Points to the 'Actions' section, specifically the 'DELETE CAMERA' button.
- Recover Camera**: Points to the 'RECOVER CAMERA' button in the 'Actions' section.
- Add a Stream**: Points to the '+ ADD STREAM' button in the top right of the 'Streams' table.
- Copy, Edit, Or Delete Stream**: Points to the icons (copy, edit, delete) in the rightmost column of the 'Streams' table.

The 'Streams' table contains the following data:

Primary	Name	Configuration	Actions
	profile_1 h264	2560x1600, 10fps, H264 Continuous recording with motion detection	  
	profile_1 jpeg	3072x1728, 30fps, JPEG Continuous recording with motion detection	  

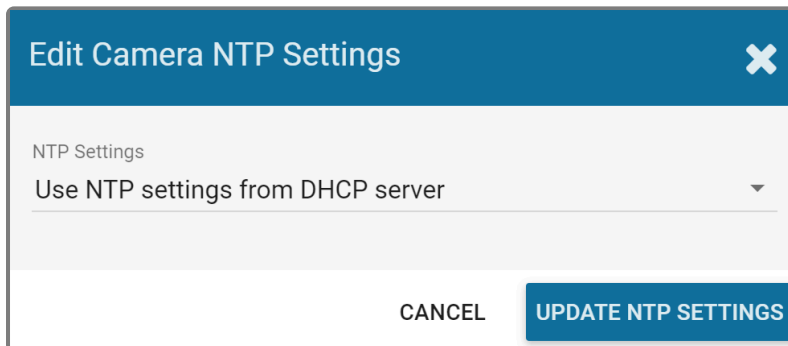
Camera Information

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 camera stream in use. These settings are informational and cannot be altered here; please refer to the [System Status](#) section for status descriptions.

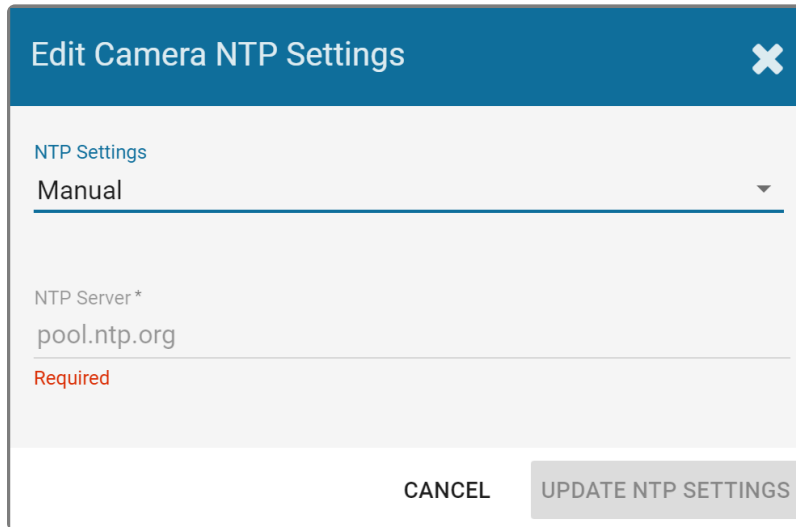
Beginning in version 21.6, Orchid Core VMS will display the NTP settings and the Time Zone setting next. (If the camera was installed while using an earlier version of Orchid, you won't see these settings. To remedy this, you need to [recover](#) your camera.)

2. To change the NTP settings, click the **Edit** pencil to the right of the NTP settings.



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.



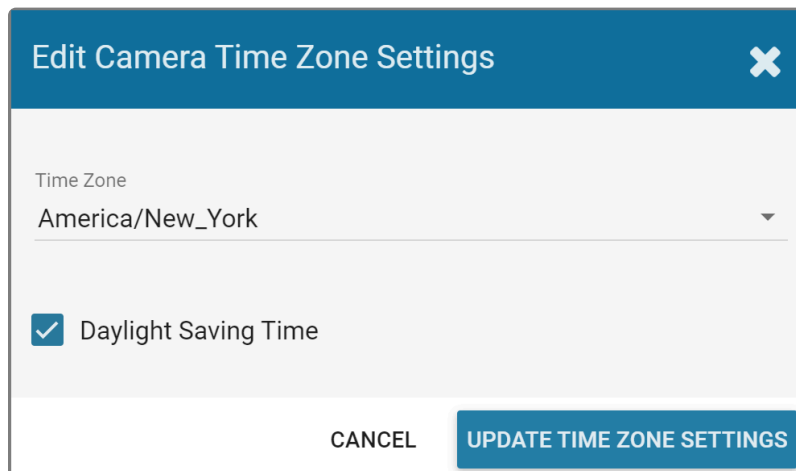
Edit Camera NTP Settings

NTP Settings
Manual

NTP Server *
pool.ntp.org
Required

CANCEL 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.



Edit Camera Time Zone Settings

Time Zone
America/New_York

☒ Daylight Saving Time

CANCEL UPDATE TIME ZONE SETTINGS

The 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 *Camera RTSP URL* (which contains the camera's IP address) represents the video stream that Orchid Core VMS is recording.
- The *Orchid 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

1. Click the **Expand** icon to open the Recording Statistics section. This section will show the statistics

that indicate how the recording stream is performing.

<i>Expanded Recording Statistics</i>		
Recording Statistics ▼		
Average Window	Packet Loss	Bitrate
1m	0%	2.5 Mb/s
5m	0%	2.5 Mb/s
15m	0%	2.5 Mb/s
Last Video File Written		
01/20/2021, 03:01:06 PM CST - 17.9 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.

Streams

A camera stream is a profile with all of the basic settings used by Orchid Core VMS to record video from the camera. The stream currently being used by Orchid Core VMS, the primary stream, is indicated by a darkened camera icon.

1. To select a new stream, click the **Camera** icon located to the left of the name of the stream you want Orchid Core VMS to record with.

✿ Only one stream per camera can be used at a time. However, multiple stream profiles from the same camera can be used if the camera is added to Orchid Core VMS multiple times. (This is especially useful for cameras with [multiple lenses](#).)

2. To edit a stream, click the **Edit** pencil icon (located to the right of the stream name). 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*
profile_0 h264

Recording Style
Continuous recording with motion detection

Motion Style
Camera

Camera Event
RuleEngine/VMD3/vmd3_video_1

Video Settings

Encoder
H264

Bit Rate
4096

Frame Rate
15

GOV Length
15

Profile
Main

Resolution
2048x2048

Quality

CANCEL UPDATE STREAM

Edit Stream Settings

3. Review or change the stream name so users can easily identify the camera stream.
4. 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).

- **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.
- **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.)
- **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.

	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

Beginning with version 21.3, 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. In this case, the Orchid Core VMS server will analyze consecutive frames of video 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.

5. Use the *Recording Style* drop-down list to select a new recording style.
6. 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, VideoSource/MotionAlarm, 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, 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, VideoAnalytics/Motion</i>	Both of these sources provide events during motion, with small differences. <i>VideoSource/MotionAlarm</i> sends a single event based on all windows configured, while <i>VideoAnalytics/Motion</i> returns a single event for each configured motion window.

✿ If your cameras were registered to this Orchid system prior to version 21.3.0, the system will not recognize the metadata events on the cameras, and therefore, camera-based motion detection will not be an available option. To remedy this, 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*
MediaProfile_Channel1_MainStream

Recording Style
Continuous recording with motion adaptive frame rate

Motion Style
Server

Frame Rate During Motion
10

Frame Rate During Non-Motion
1.00

Additional Settings

Video Settings

Encoder
H264

Bit Rate
1000

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
High

Resolution
1920x1080

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.

8. 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.

Stream Settings

Encoder: H264

Bit Rate: 4128

Frame Rate: 18

GOV Length: 18

Profile: Main

Resolution: 1024x768

Quality: 10

Audio Settings

Encoder: G726

Bit Rate: 40

Sample Rate: 8

Low-bandwidth Settings

Decode all frames: Disabled

CANCEL UPDATE STREAM

Scroll Bar

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.

Audio Settings (if supported)

Beginning in Orchid Core VMS version 2.8, audio control is no longer supported at the Player/Stage level. However, the Orchid Core VMS server is still recording audio for those cameras that support it, and this audio will be available in exported video files. Future versions of Orchid Core VMS will support audio over WebRTC.

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, and AAC (recommended if audio is desired).
- **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.)
9. 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.
 10. 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.

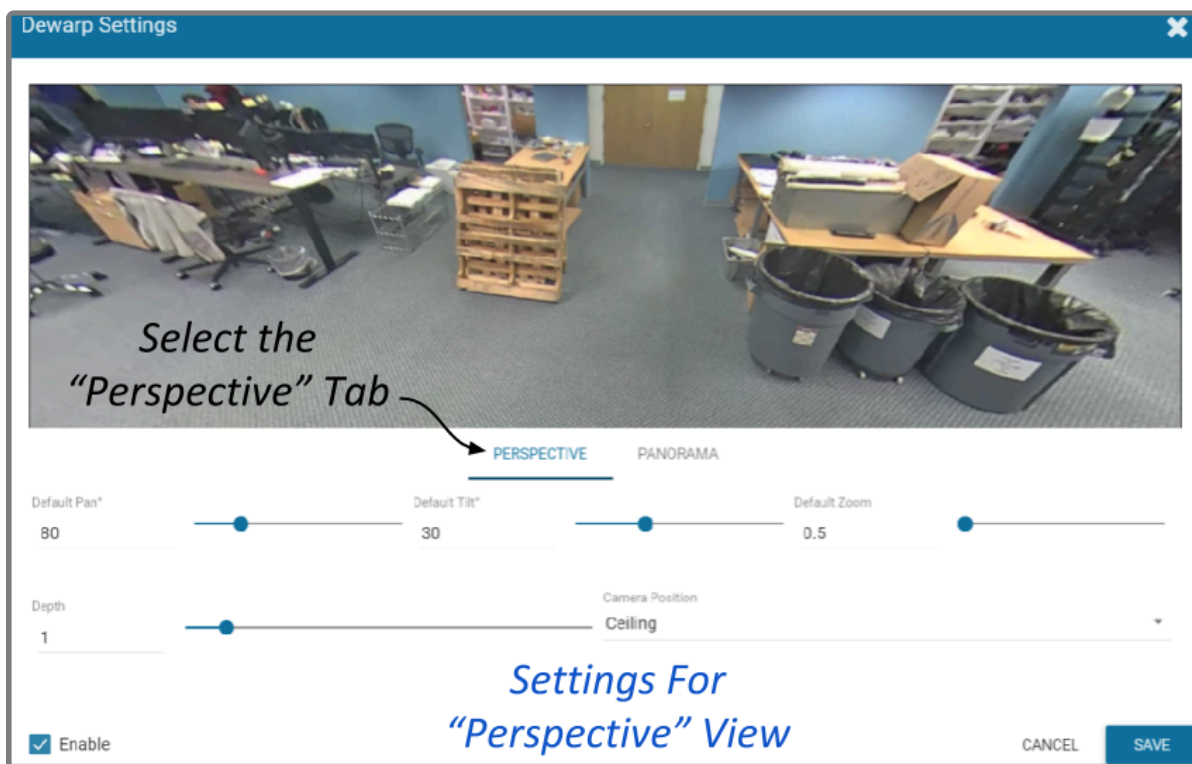
Advanced Settings: Fisheye Dewarping

Starting in Orchid Core VMS version 2.8, 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.



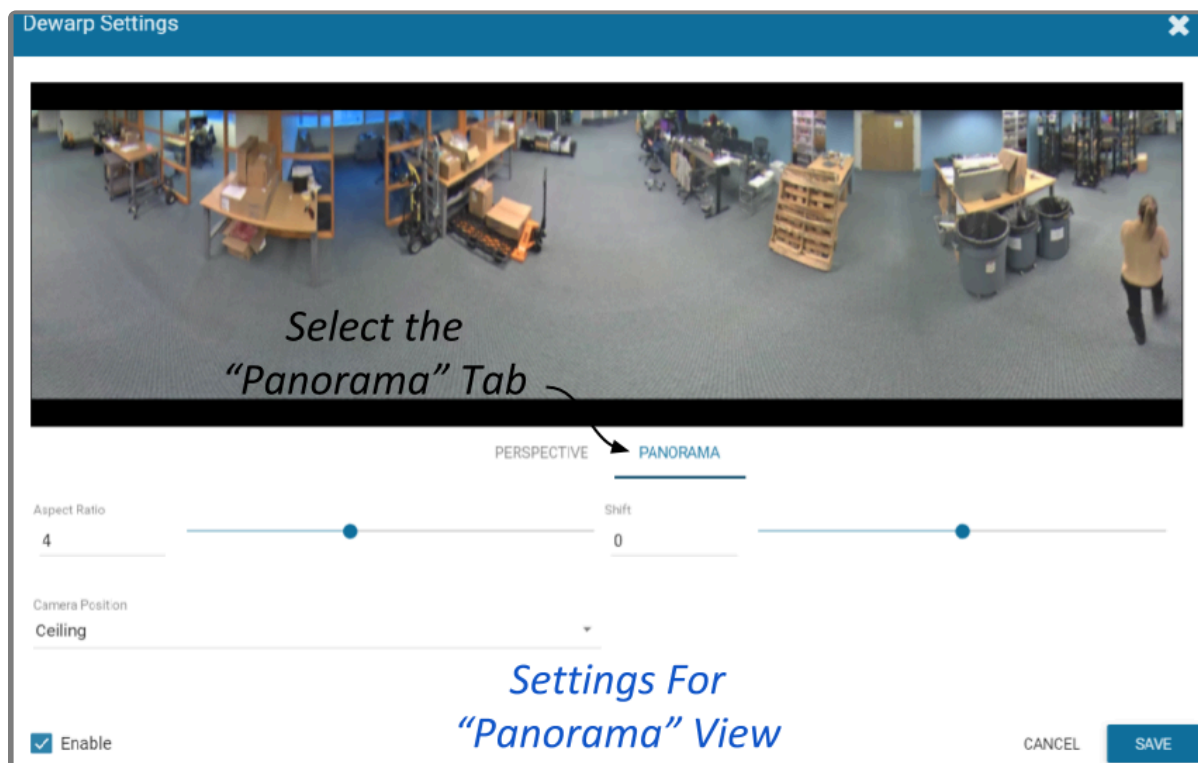
Use the *Perspective* screen to enter settings for the *Perspective* view of the selected camera. The *Perspective* view is a flattened version of the available video from the fisheye camera for which you select a portion of the image as the default view to be displayed on the Player. (The *Perspective* 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.

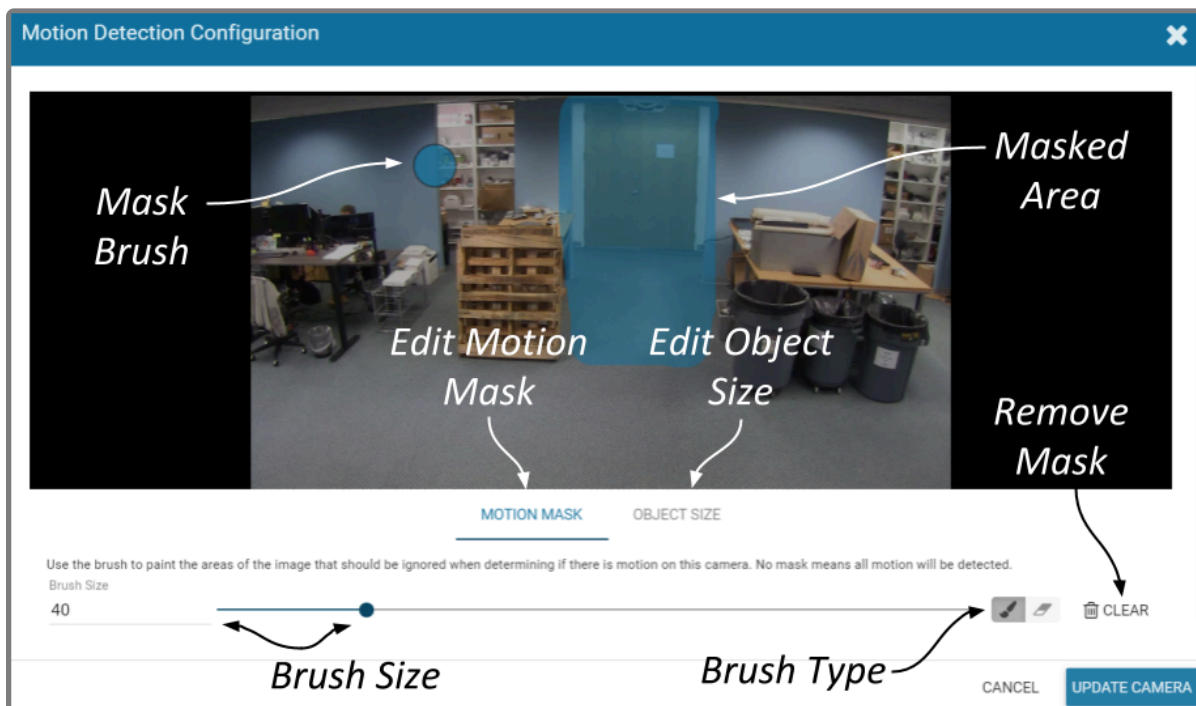
Advanced Settings: Motion Detection

Starting in Orchid Core VMS version 2.6, 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.

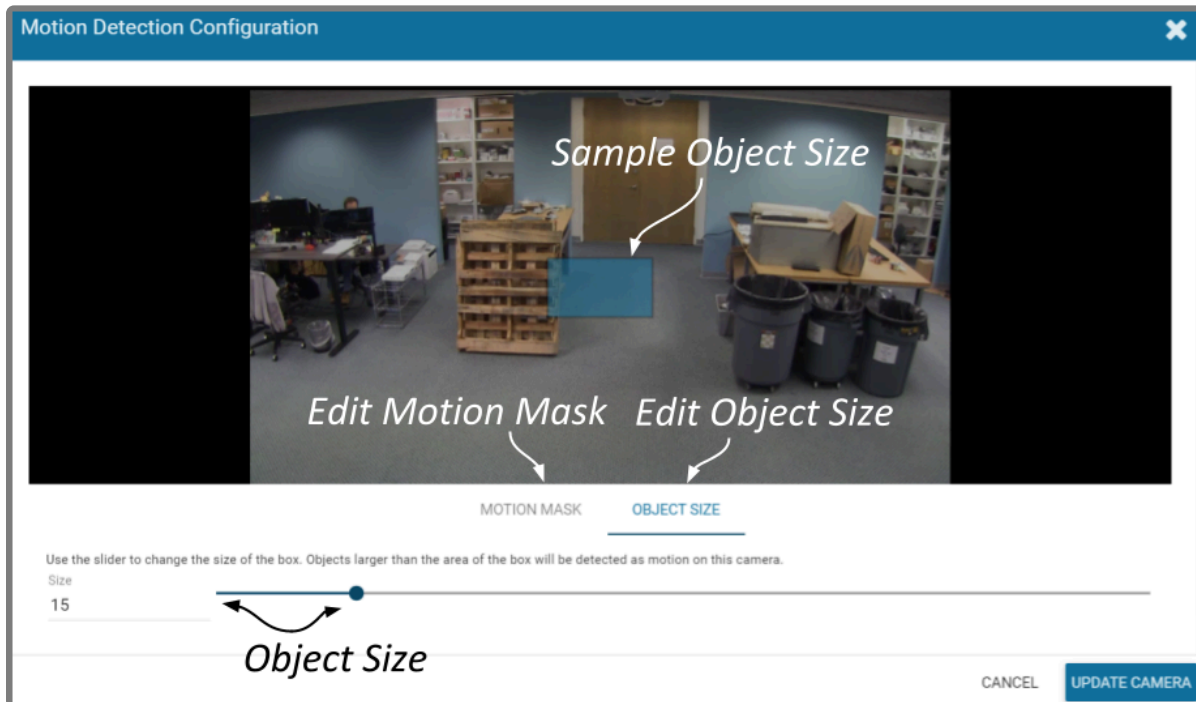
✿ There are some circumstances that will inhibit motion detection. If the motion enters and exits the video image very quickly, the system may not see enough of the frames to detect the motion. If this becomes an issue, you may want to consider reducing the stream GOV setting (which results in more keyframes), 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).

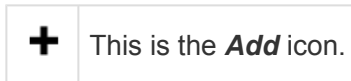


2. Adjust the *Object Size* using either of the following methods.
 - a. Click in the *Size* field and enter a new number or use the up and down arrows to increase and decrease the area.
 - b. Click and drag the slider to increase and decrease the area.
3. To activate motion detection for objects of 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



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.
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 **Copy Stream to Cameras** icon for the stream you want to copy.

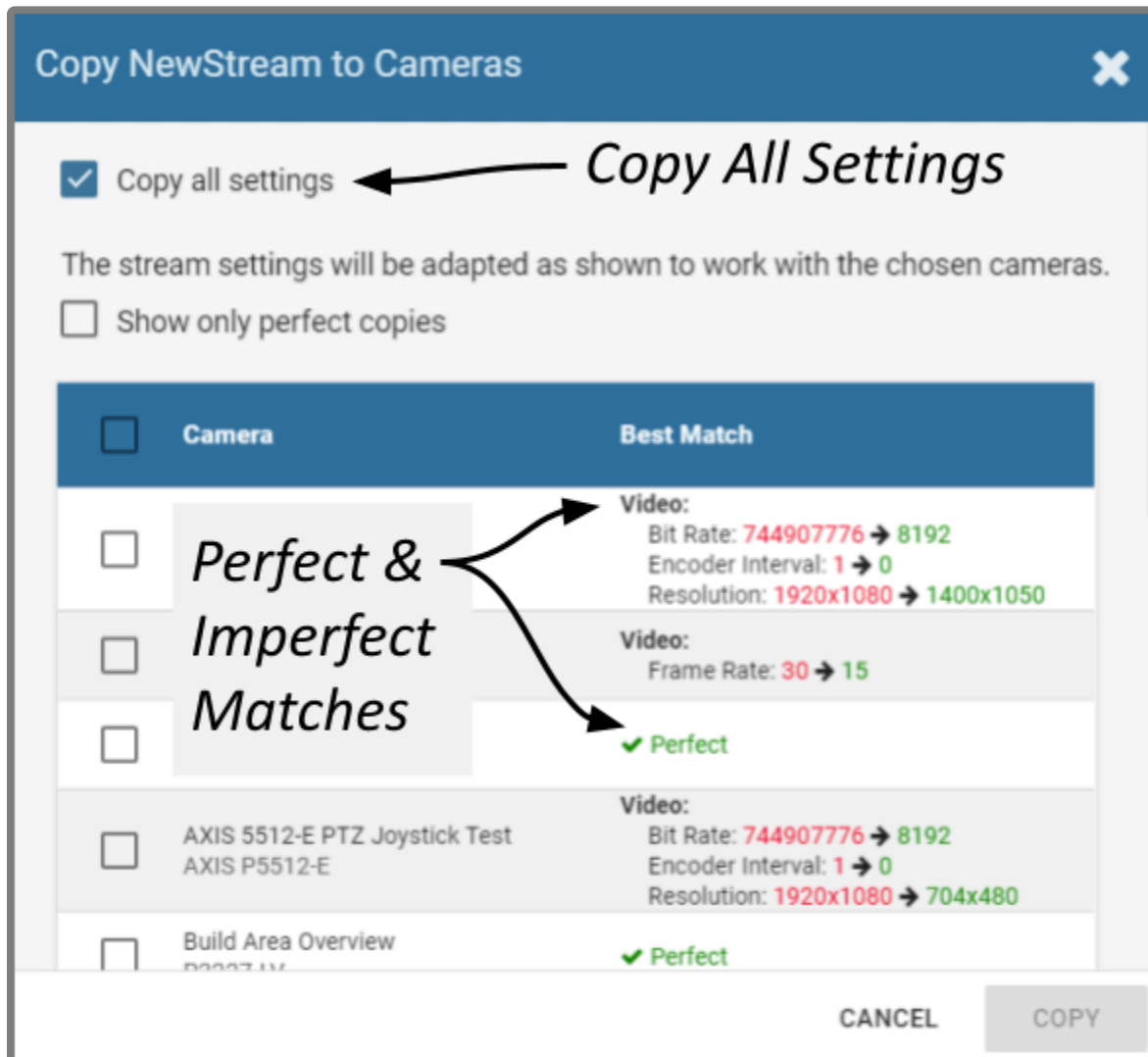
Primary	Name	Configuration			
	profile_1 h264	1280x720, 30fps, H264 Continuous recording with motion detection			
	stream_0498e563	1920x1080, 30fps, H264 Continuous recording with motion detection			
	stream_167696fd	1920x1080, 20fps, H264 Continuous recording with motion detection			

Copy Stream →



RTSP cameras have a limited number of settings that can be edited in Orchid Core VMS. 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.

- Mark the **Setting** checkbox if you decide to copy all of the settings anyway.
- 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**).
- 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 NewStream to Cameras

☐ Copy all settings

Setting	Value
<input type="checkbox"/> Recording Style	Continuous recording with motion detection
<input type="checkbox"/> Motion Style	Server
<input checked="" type="checkbox"/> Video Settings	+ Show 6 hidden fields
<input type="checkbox"/> Audio Settings	+ Show 1 hidden field

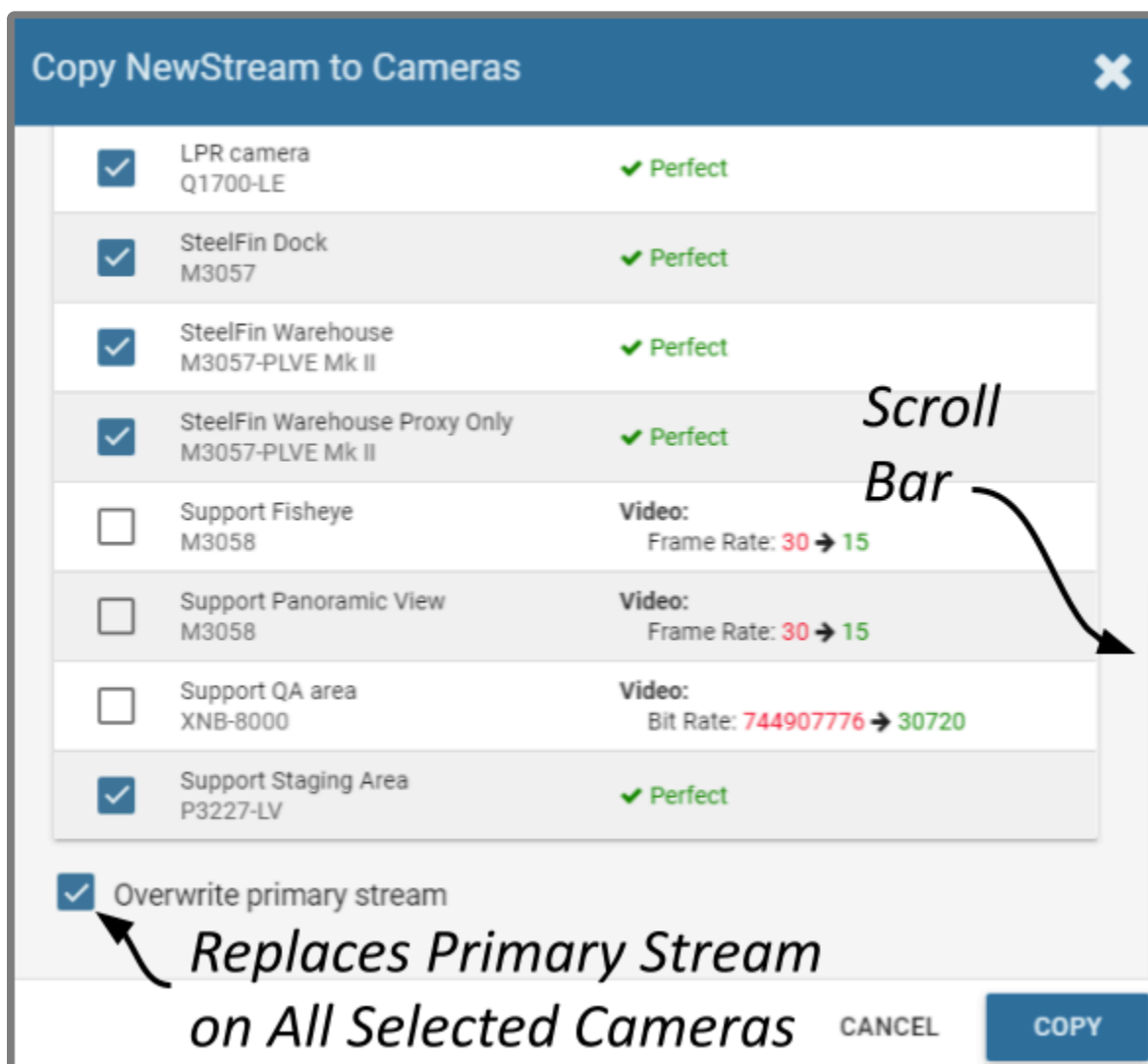
The stream settings will be adapted as shown to work with the chosen cameras.

☒ Show only perfect copies

Camera	Only	Best Match
--------	------	------------

CANCEL COPY

- 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.)
- 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.)
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

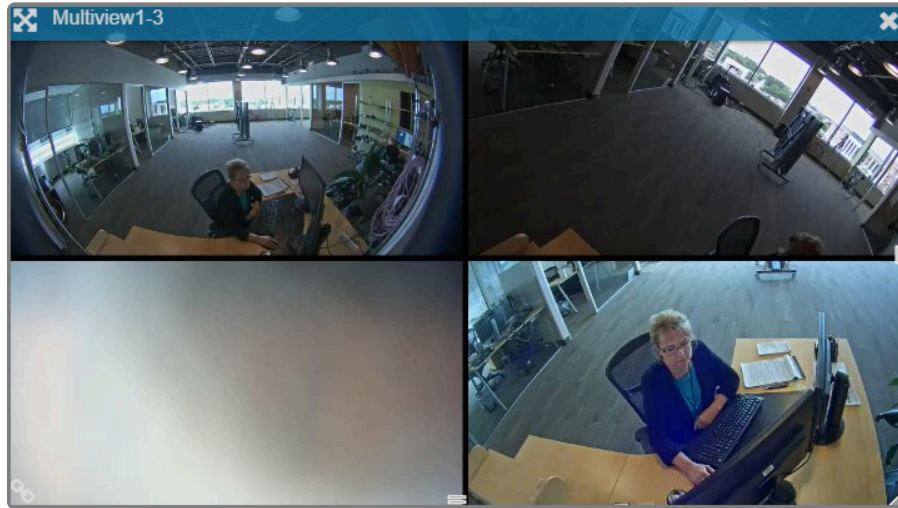
Different Streams

The screenshots show the configuration for three camera instances: Multiview1-1, Multiview1-2, and Multiview1-3. Each instance has its own 'Camera Information' and 'Streams' section. The 'Streams' section for Multiview1-3 is detailed below:

Primary	Name	Configuration
<input checked="" type="checkbox"/>	profile_1 h264	1400x1050, 15fps, JPEG Continuous recording with motion detection
<input type="checkbox"/>	profile_1 jpeg	1280x720, 15fps, JPEG Continuous recording with motion detection
<input type="checkbox"/>	profile_2 h264	1920x1080, 15fps, H264 Continuous recording with motion detection
<input type="checkbox"/>	profile_2 jpeg	1280x720, 15fps, JPEG Continuous recording with motion detection
<input type="checkbox"/>	profile_3 h264	1920x1080, 15fps, 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.



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.

Primary	Name	Configuration	
	H.264	1280x960, 15fps, H264 Continuous recording with motion detection	
	MJPEG	1280x1024, 5fps, JPEG Continuous recording with motion detection	
	MOBILE	320x240, 3fps, JPEG Continuous recording with motion detection	
	stream_10852423	1280x960, 15fps, H264 Continuous recording with motion detection	
	stream_944eb43e	1280x960, 30fps, H264 Continuous recording with motion detection	

Locked Stream (pointing to the MJPEG row)

Delete Stream (pointing to the stream_10852423 row)

2. Click the **Trash Can** icon to the right of the selected stream. 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. This feature may also be used to enable the camera-based motion detection option on certain cameras (by connecting to the metadata capabilities of the camera). Please refer to the [Edit Camera Stream Settings](#) for more details about camera-based motion detection.

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.

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.)

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.

192.168.100.39
752x480, 5fps, H264, G726 Audio, PTZ

Camera Information

Camera Name	Camera Model	Stream Status
192.168.100.39	AXIS Q6042	running

Camera RTSP URL
rtsp://192.168.100.39/onvif-media/media.amp?profile=profile0&sessiontimeout=120&streamtype=...

Orchid Core VMS Proxy RTSP URL
rtsp://orchid.ipconfigure.com:554/orchid/live?id=1560

Streams + ADD STREAM

Primary	Name	Configuration
	stream_4d4124bc	704x480, 24fps, H264 Continuous recording with motion detection
	stream_b8bafcad	752x480, 5fps, H264 Continuous recording with motion detection

Advanced Settings

FISHEYE DEWARPING

Actions

Delete Camera

DELETE CAMERA **RECOVER CAMERA**

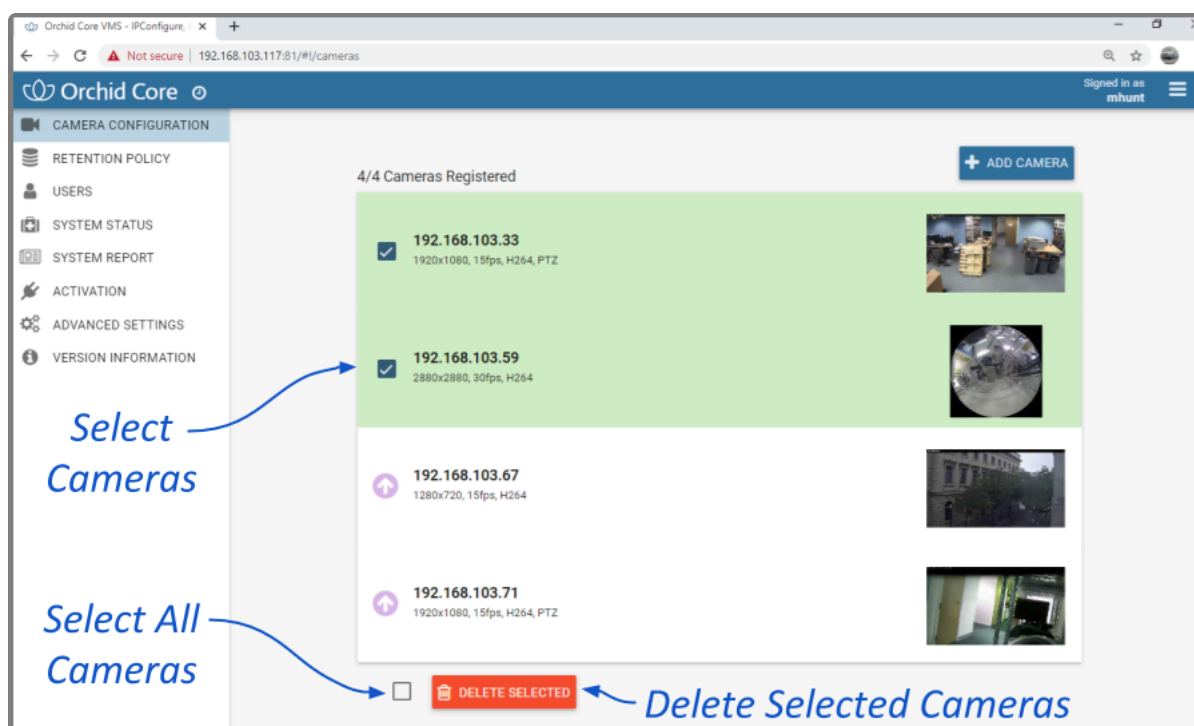
Removing Multiple Cameras



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.

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.

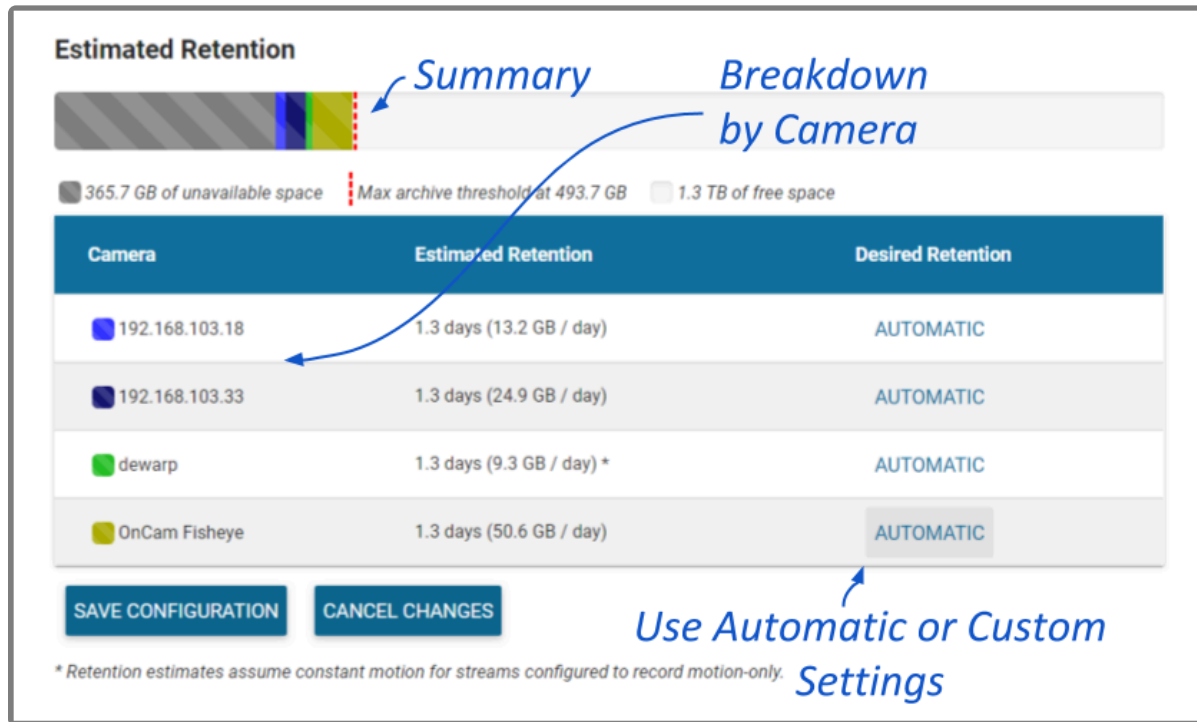
In some applications, there may be cameras for which increased file retention is critical. For these cameras, the Administrator may set specific, minimum retention settings. In these cases, the retention settings for the remaining cameras will be adjusted automatically to share the remaining balance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

- 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.

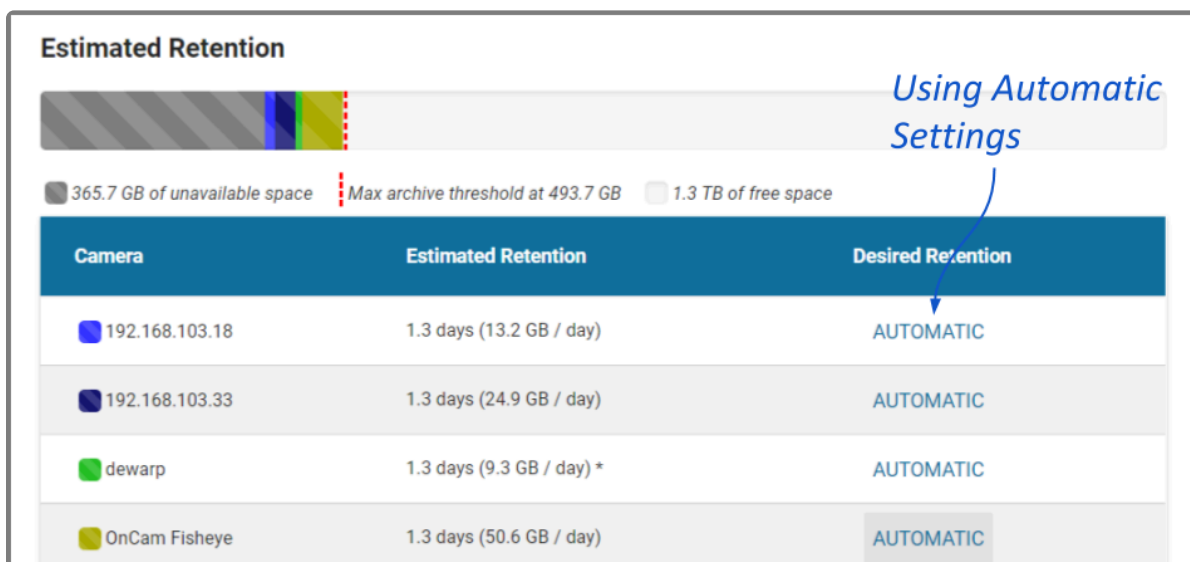
- **Unavailable space:** This space on the disk is marked in grey. It is already in use by other applications and is unavailable to Orchid Core VMS for storing video.
- **Video data:** This space on the disk is marked in various bright colors representing each camera. This space is filled with videos 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.



This example shows that the system will keep approximately 1.3 days worth of video for each camera when all cameras are using the Automatic (default) retention settings.



Estimated Retention

Summary

365.7 GB of unavailable space | Max archive threshold at 493.7 GB | 1.3 TB of free space

Camera	Estimated Retention	Desired Retention
192.168.103.18	8.0 days (14.1 GB / day)	8
192.168.103.33	0.2 days (3.7 GB / day)	AUTOMATIC
dewarp	0.2 days (9.5 GB / day) *	AUTOMATIC
OnCam Fisheye	0.2 days (50.8 GB / day)	AUTOMATIC

SAVE CONFIGURATION CANCEL CHANGES

Note How Custom Settings Impact Estimated Retention

* Retention estimates assume constant motion for streams configured to record motion-only.

In this example, the retention setting for the first camera has been increased to 8 days. After an automatic adjustment, the remaining cameras will have decreased storage capacity at approximately 0.2 days each.

□

Estimated Retention

Summary and Warning

Your current configuration is not possible given your maximum archive threshold. You can save these changes, but you must proceed at your own risk.

Camera	Estimated Retention	Desired Retention
192.168.103.18	10.0 days (13.2 GB / day)	10
192.168.103.33	0.0 days (24.9 GB / day)	
dewarp	0.0 days (9.3 GB / day) *	
OnCam Fisheye	0.0 days (50.6 GB / day)	AUTOMATIC

SAVE CONFIGURATION CANCEL CHANGES

Some Custom Settings Cannot Be Supported

* Retention estimates assume constant motion for streams configured to record motion-only.

In the final example, the retention setting for the first camera has been increased to 10 days. This setting will require so much space that it results in an error. The system estimates that it will not be able to store this much video for camera 1 (or any video at all for the remaining cameras).

□

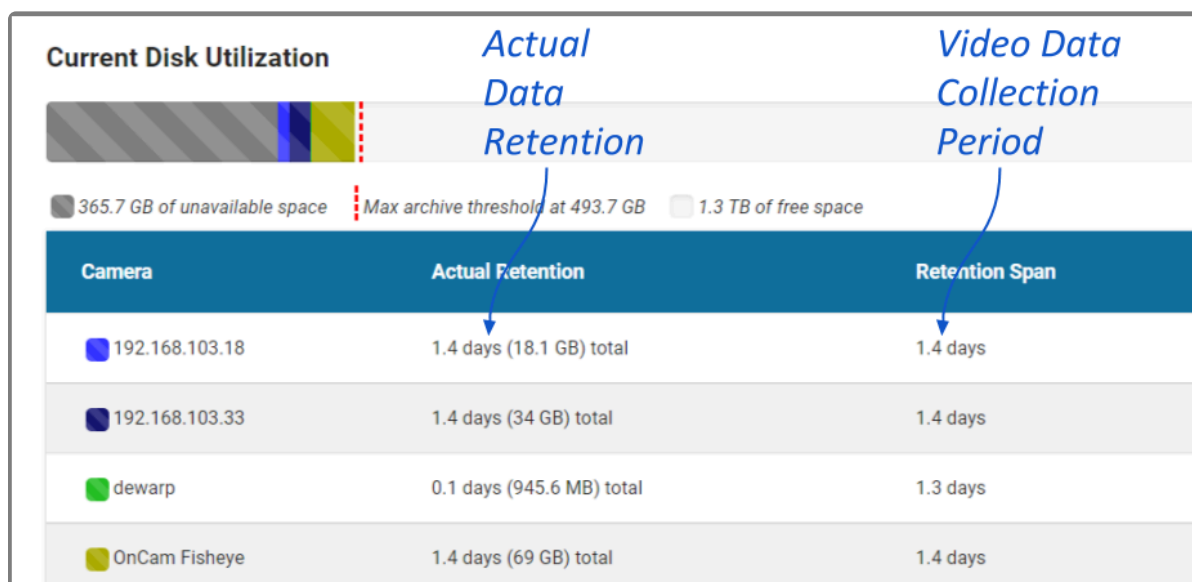
1. To edit the minimum Desired Retention setting for any given camera, click on the corresponding **Automatic** button.
2. Type in a new setting to represent the number of days of video that will be kept for this camera. The remaining estimated retention will automatically be recalculated for all cameras 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

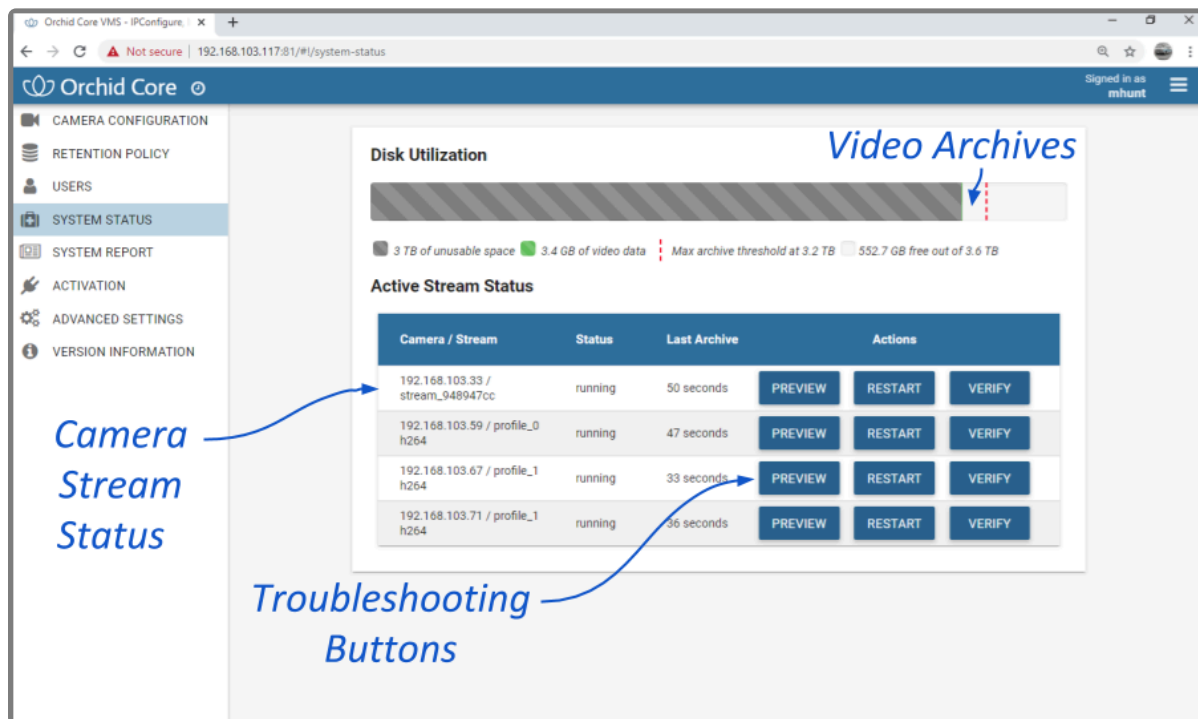
The *System Status* feature in Orchid Core VMS provides an overview of the current disk utilization of the video archives folder and the active streams running in Orchid Core VMS.



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

Accessing the System Status Report

- 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: /archives
- In Windows: C:\archives

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 Camera Stream Status Section

The *Active Stream Status* section of the *System Status* report shows a list of all the active camera streams in Orchid Core VMS, their current status, and how long ago the last archive was saved for that stream.

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.

Troubleshooting the Camera Stream Status

If there are any issues with the streams, you can troubleshoot the issue within Orchid Core VMS by using the **Preview**, **Restart**, and **Verify** buttons:

- **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.
- **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*.
- **Verify:** Pings the camera and confirms whether or not Orchid Core VMS can communicate with the camera successfully. This button will turn green after a successful validation. The button will turn red if the Orchid Core VMS server is unable to communicate with 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.)

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

Viewing the System Report

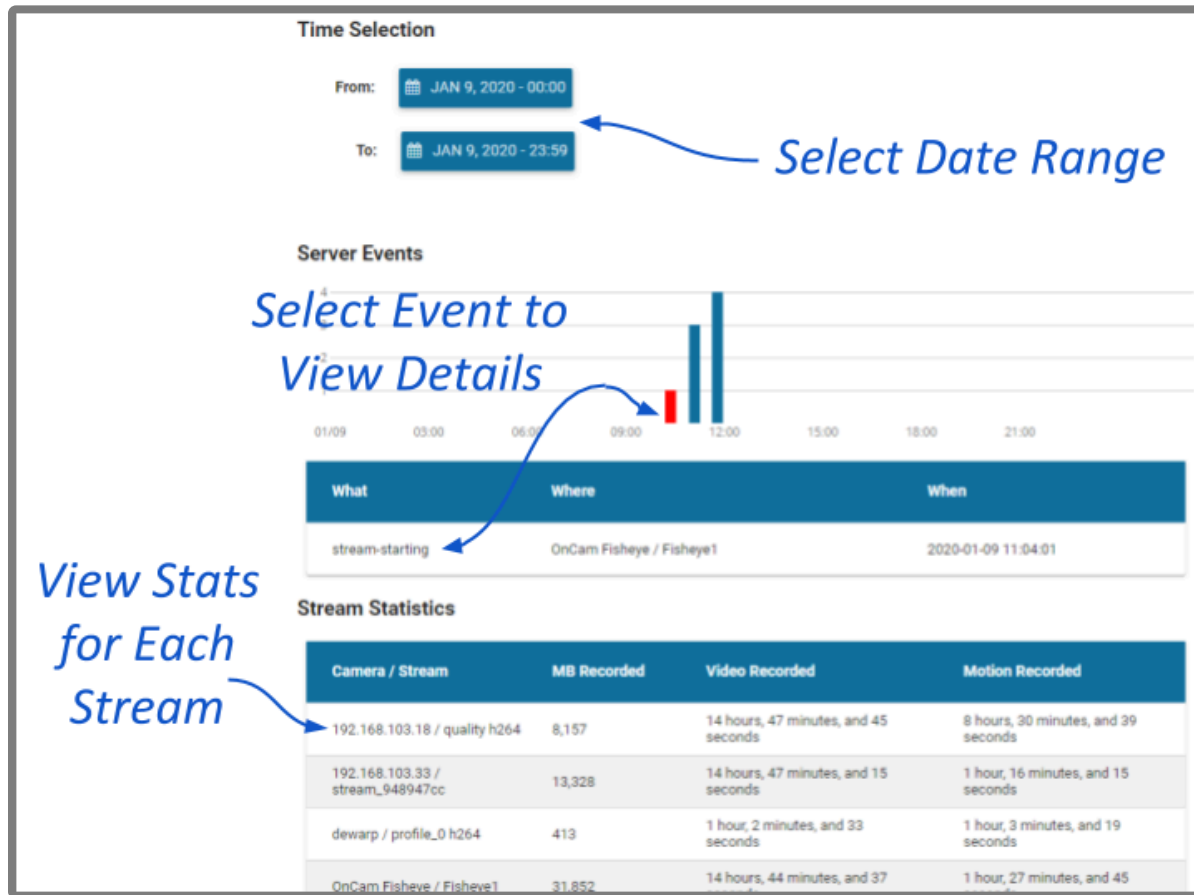
The *System Report* feature in Orchid Core VMS allows Administrators and Managers to view various types of events (such as camera streams starting and stopping) and camera stream statistics during a specified time period. This report also provides access to the Orchid Core VMS system log.



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 VMS has registered (added) this Orchid Core VMS server.
- **Trusted Issuer Removed:** This indicates that the Orchid Fusion 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.

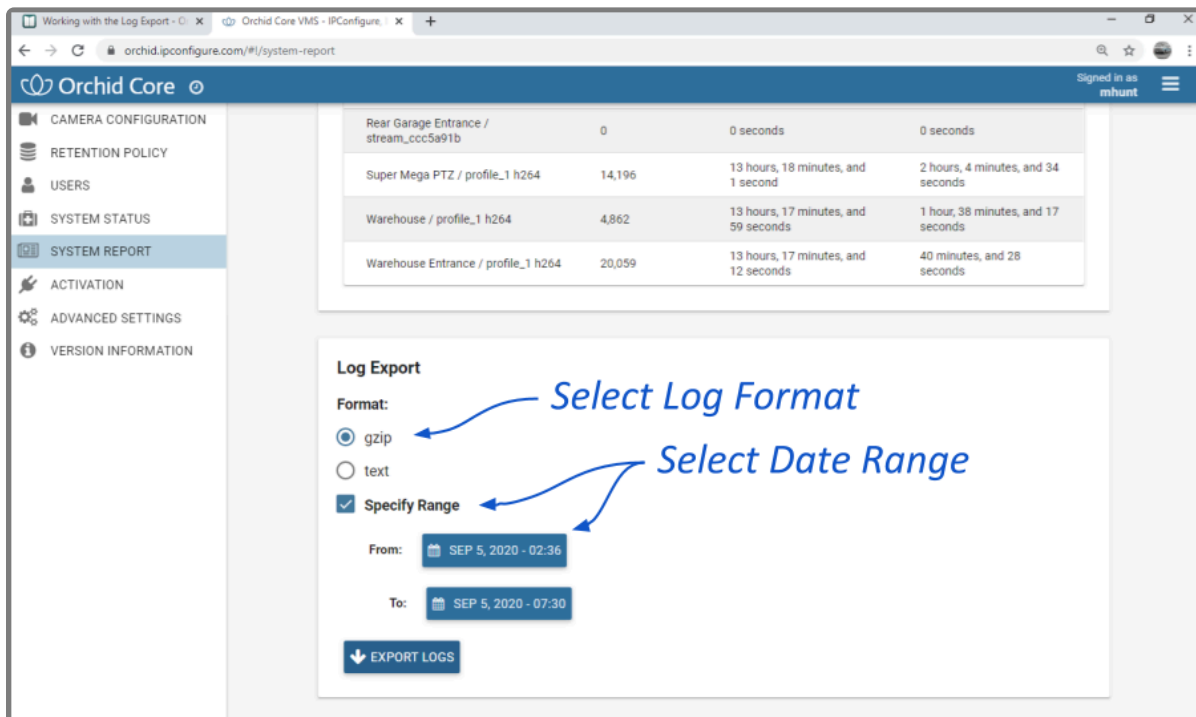
The *Stream Statistics* section lists each of the active camera streams in Orchid Core VMS. For each stream, Orchid Core VMS will show how many megabytes of video was recorded, the length of the recorded video,

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.)

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.



- Select the format you wish to use for the log export:
 - 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.
 - 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.
- 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.
- Once your selections are complete, click the **Export Logs** button.

Advanced Settings

Beginning in Orchid Core VMS version 2.10, Administrators can now edit many of the 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.)

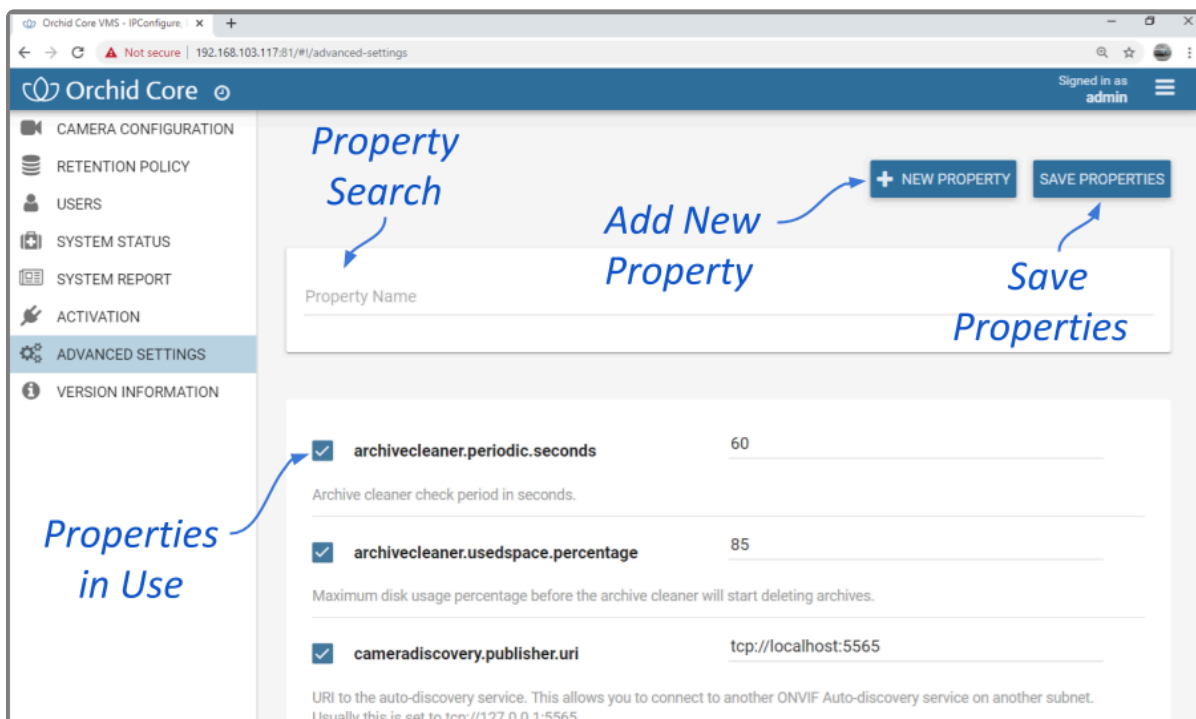


An Administrator is the only role with the ability to access the *Advanced Settings* feature.

Accessing the Advanced Settings

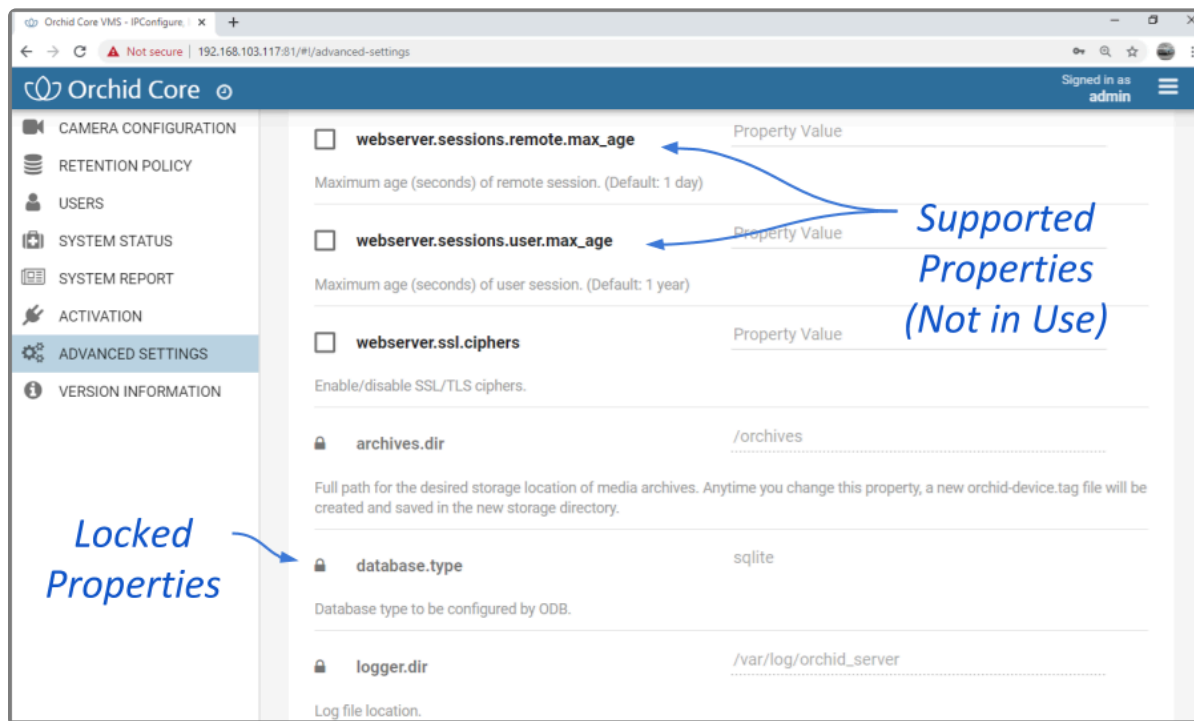
1. To access the *Advanced Settings* screen, open the *System Menu* in the top-right corner of the screen, then select **Advanced Settings**.

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.



✿ Starting in version 2.14, 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

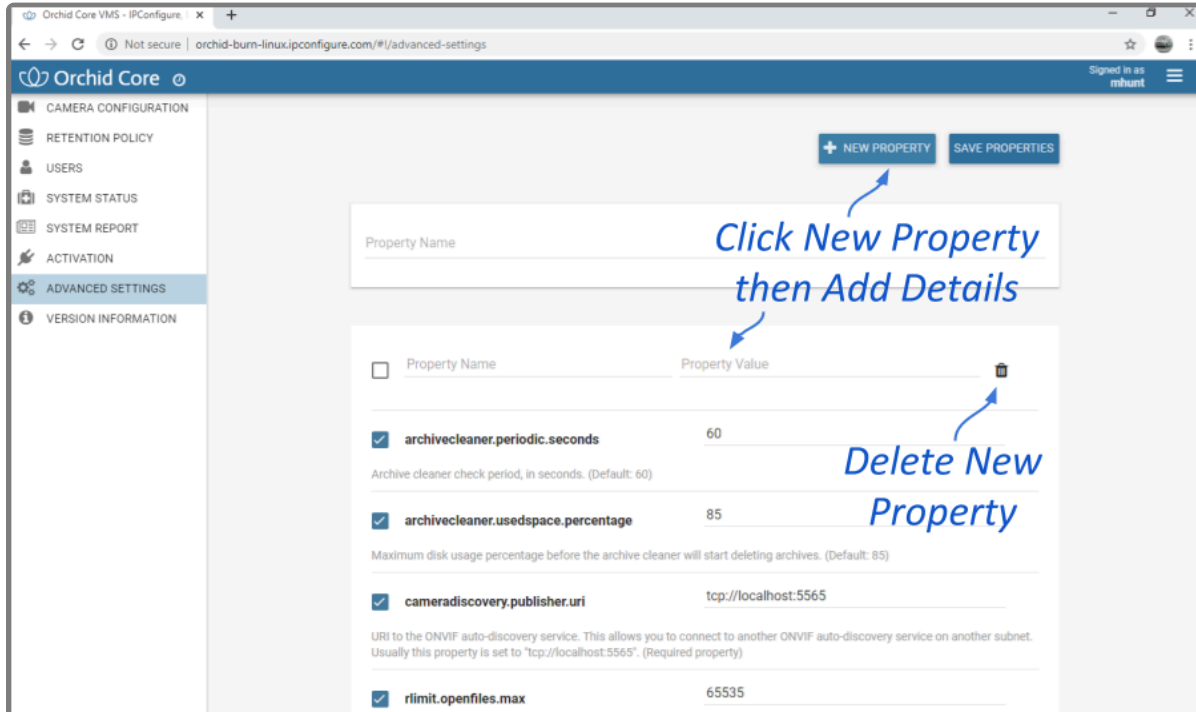
	This indicates that the property is in use.
	This indicates that the property is supported, but not in use.
	This indicates that the property must be changed by editing the Configuration file directly*.

*For details on how to edit the Configuration file, 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.

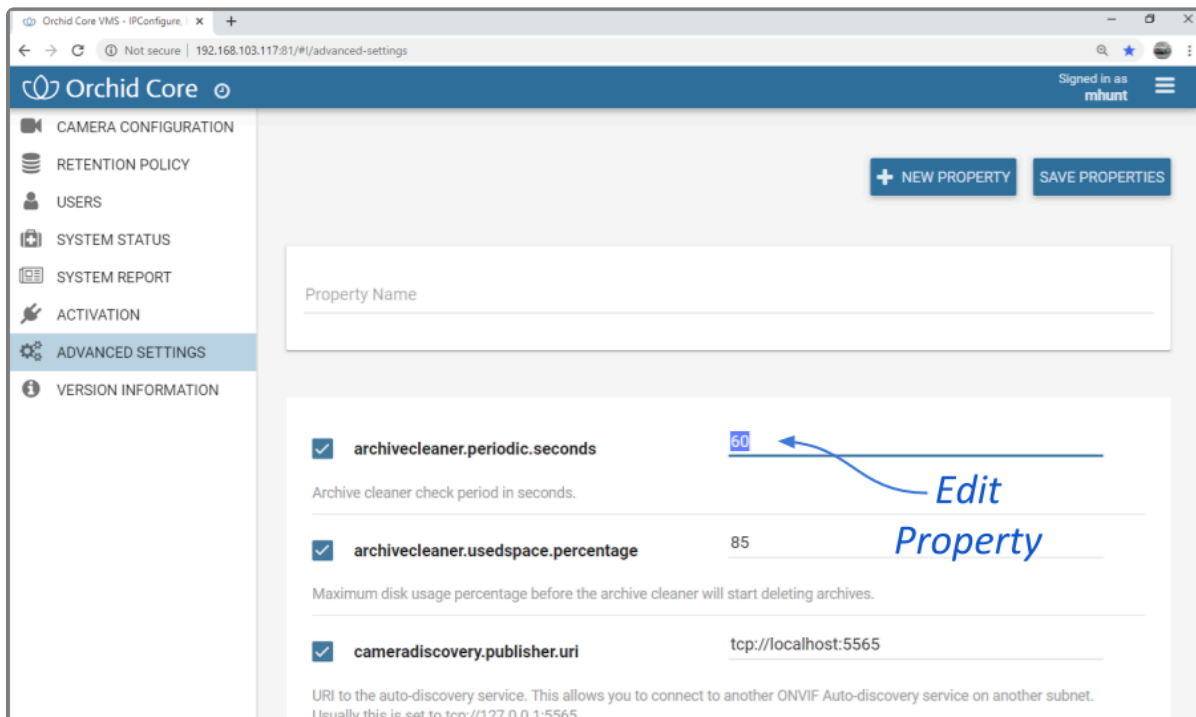


2. Mark the checkbox to activate the new property. (The property must be enabled and saved in order to be added to the Properties list.)
3. Enter a name for the new property in the *Property Name* field. [Property names are not allowed to contain colons (:), equals signs (=), blank spaces, or control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

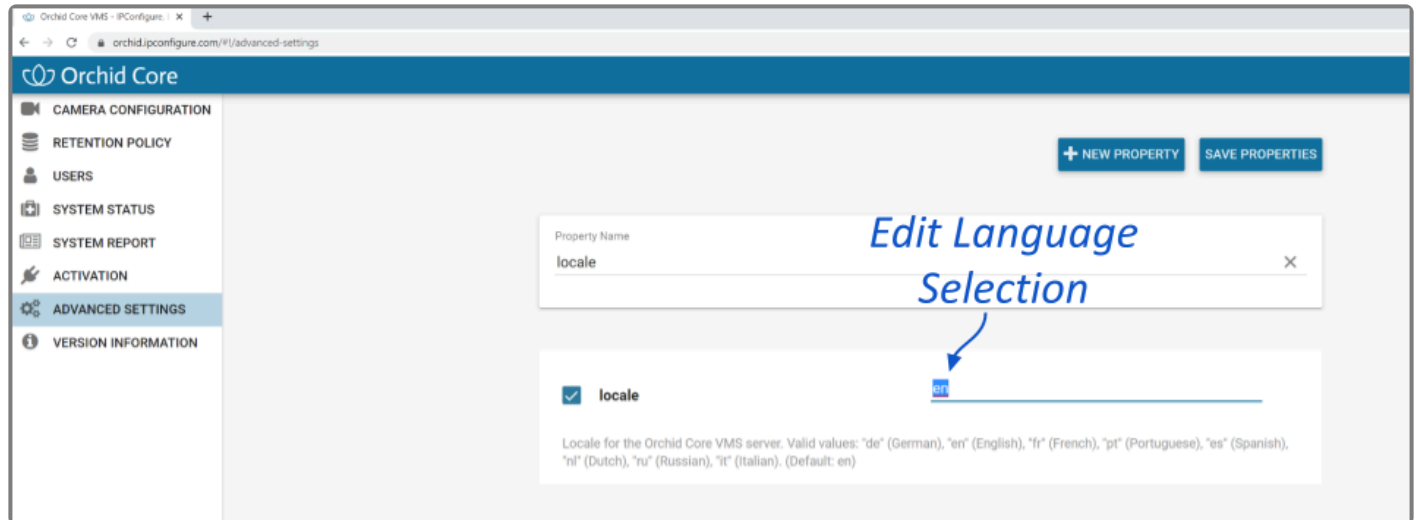


2. Type in a new value.
3. Click the **Tab** key to exit the field or click into another field.
4. If you have no other changes to make, click the **Save Properties** button. Be sure to complete the save (as described later).

Editing the Locale Property

Beginning in version 21.6, 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).

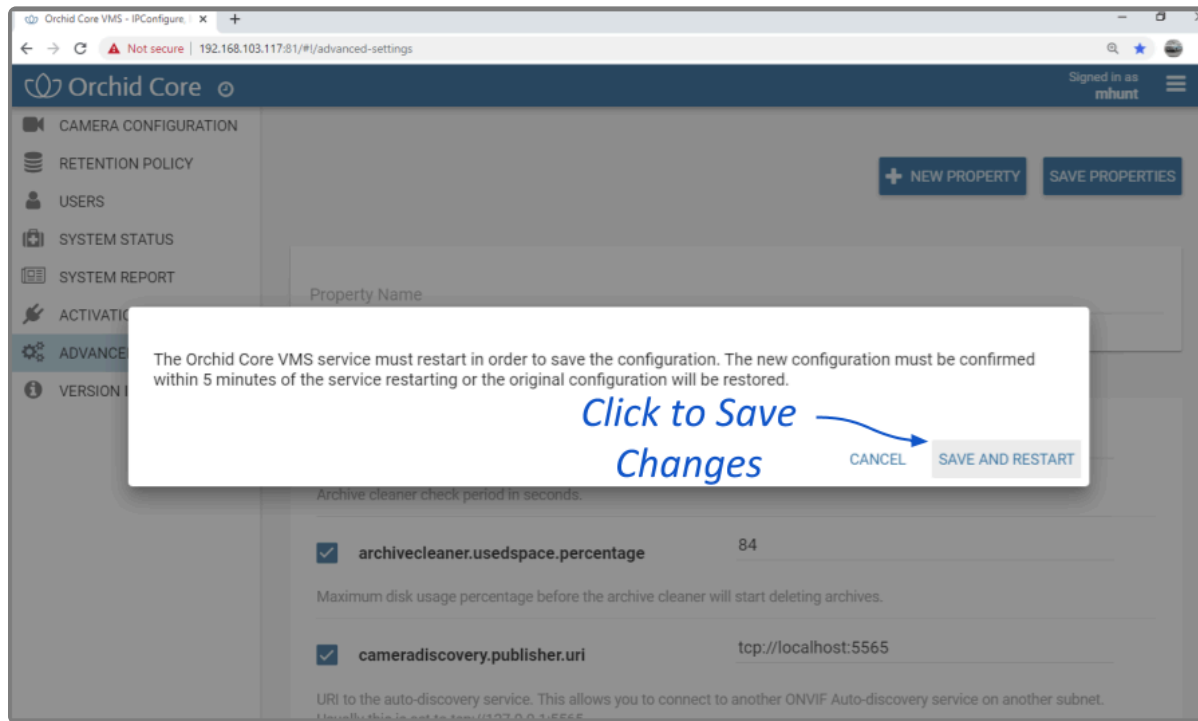
De-Activating a Property

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.

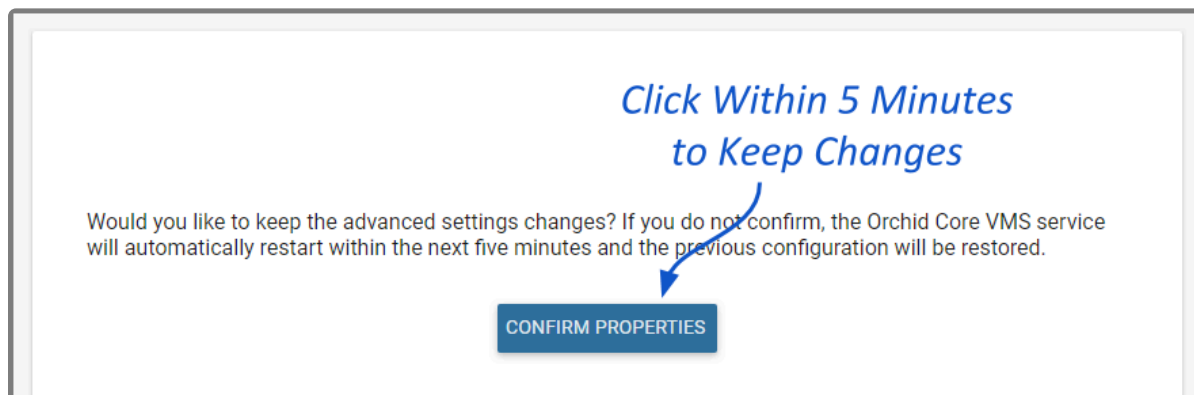


2. Click the **Save and Restart** button to save your changes. The service will restart (as shown in the image below.)

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 **Keep Changes** button (shown below) to keep the new settings.

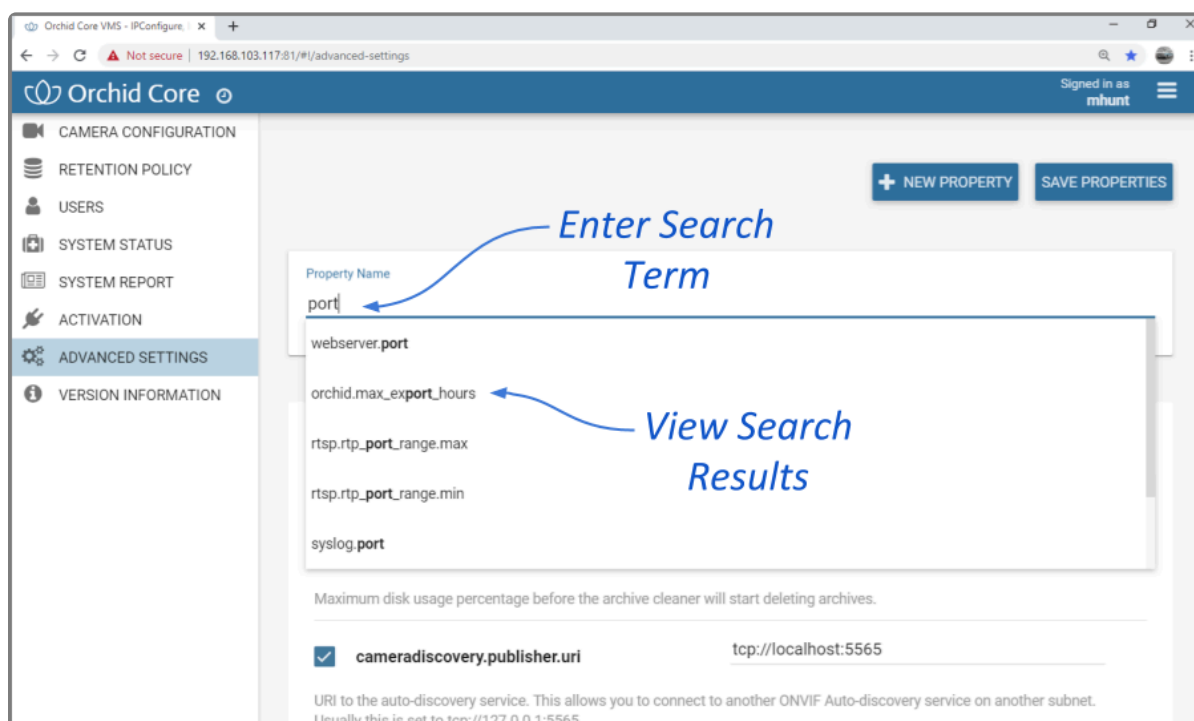


Property Search Feature

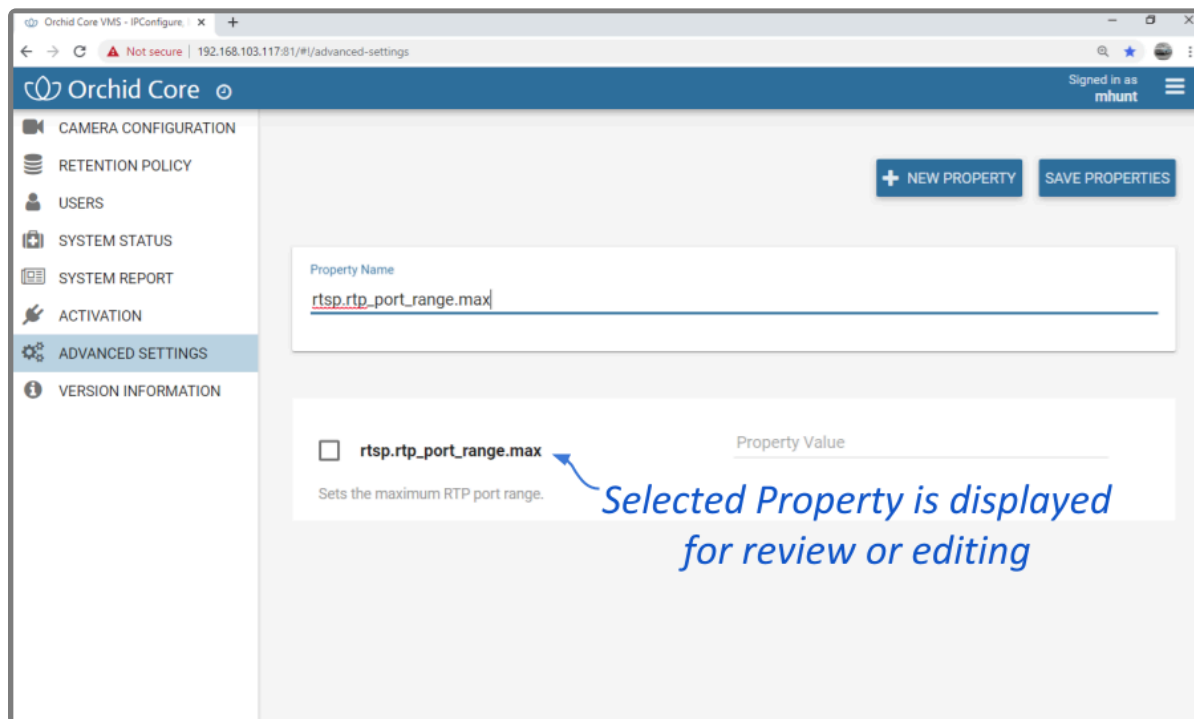
If you need to find a specific property quickly, the *Advanced Settings* screen includes a search feature. The *Property Name* field appears at the top of the screen and supports a single-term search.

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

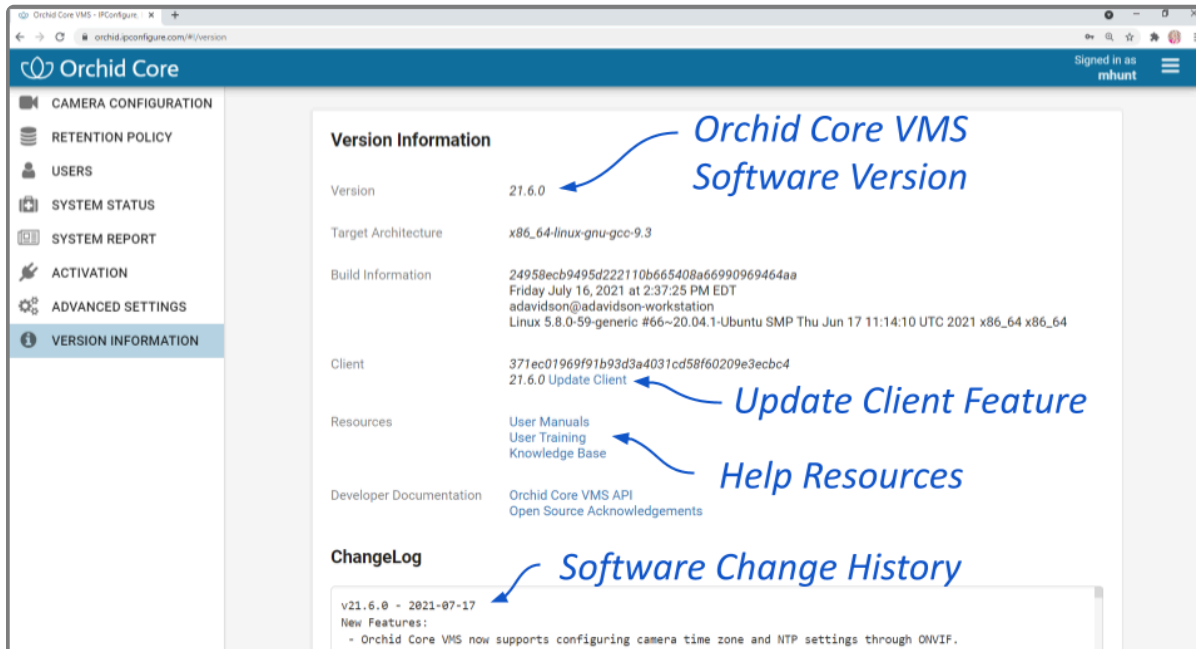
The *Version Information* screen provides very specific information about the Orchid Core VMS software that is installed on your server. It also provides access to the *Update Client* feature, help resources, and important information for IPConfigure technology partners.

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*.

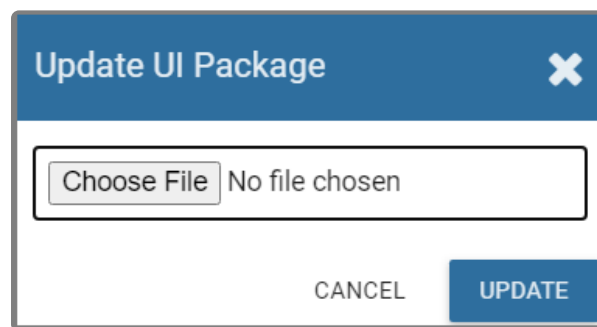


Update Client Feature

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](#).

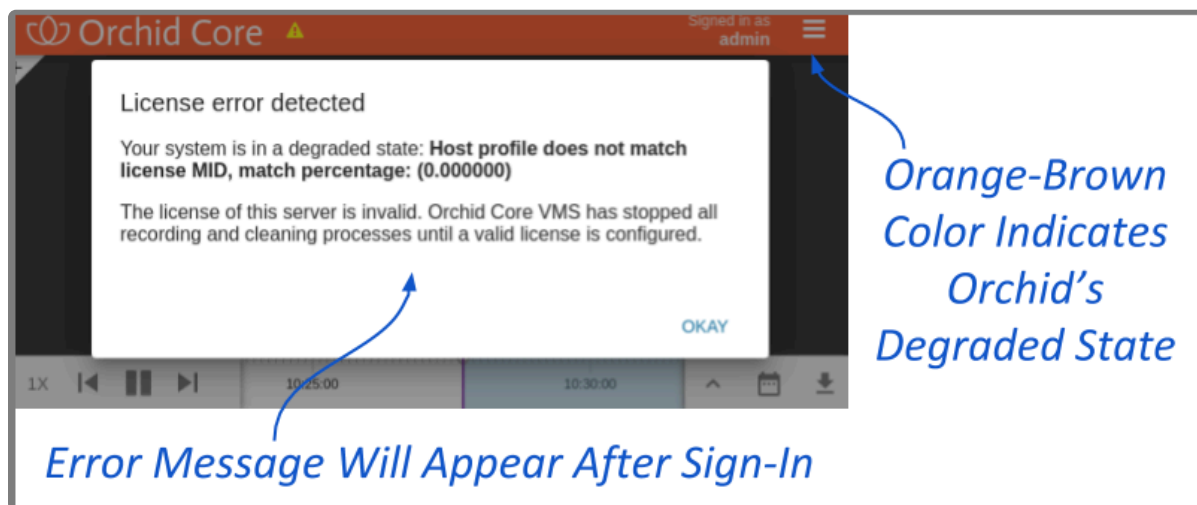
Degraded State

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.)

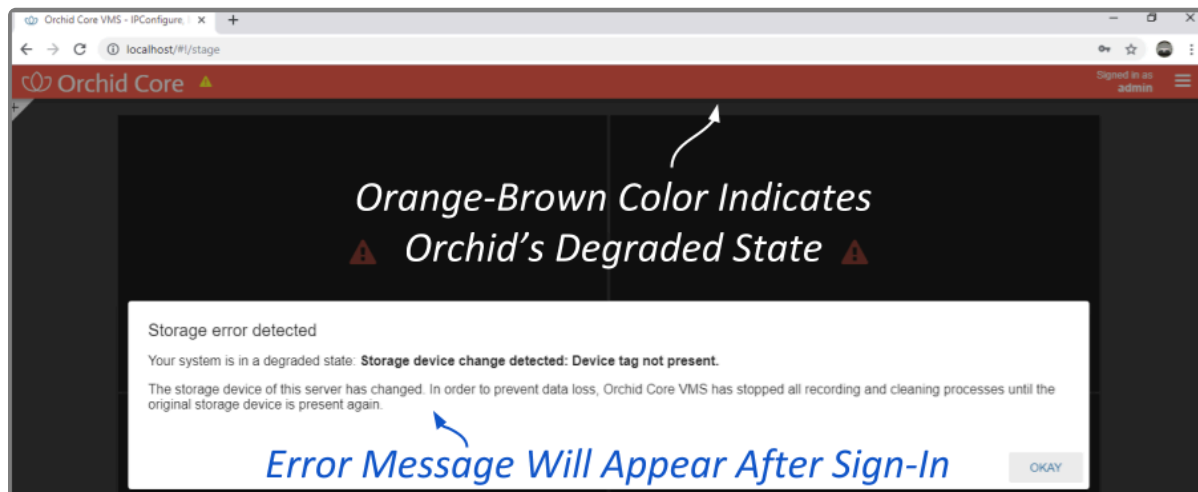
2. Possible solutions include the following:

- 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 “orchives” 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 “orchives” 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 “orchives” 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.
- 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:

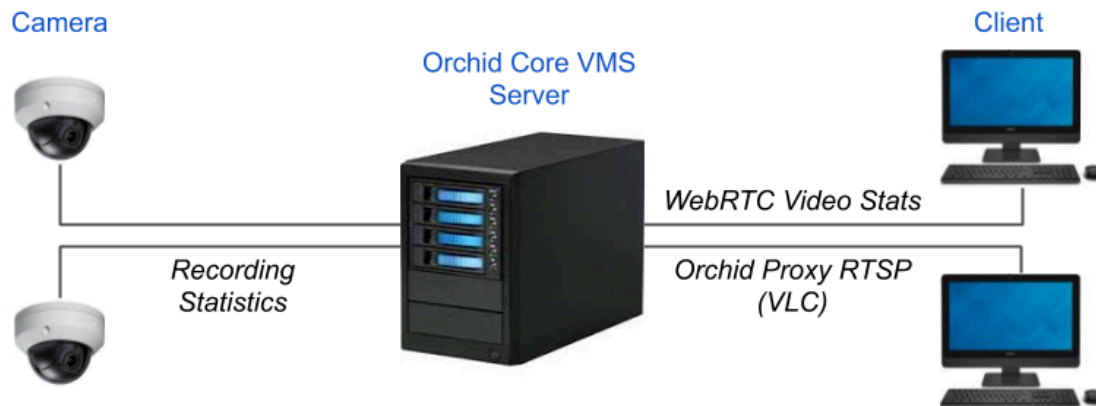
- Use the [System Status](#) feature in Orchid Core VMS to test the camera preview, restart the camera stream, or verify the network connection between the camera and Orchid Core VMS. (This may lead you to try the [Recover Camera](#) feature.)
- Perform the check associated with [packet loss](#).
- If 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 [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 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

Beginning with version 2.16, Orchid Core VMS provides a new way to gauge the performance of the recording stream. 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 and click on the **Expand** icon to view the Recording Statistics section.

Expanded Recording Statistics

Recording Statistics ▼

Average Window	Packet Loss	Bitrate
1m	0%	2.5 Mb/s
5m	0%	2.5 Mb/s
15m	0%	2.5 Mb/s
Last Video File Written		
01/20/2021, 03:01:06 PM CST - 17.9 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.

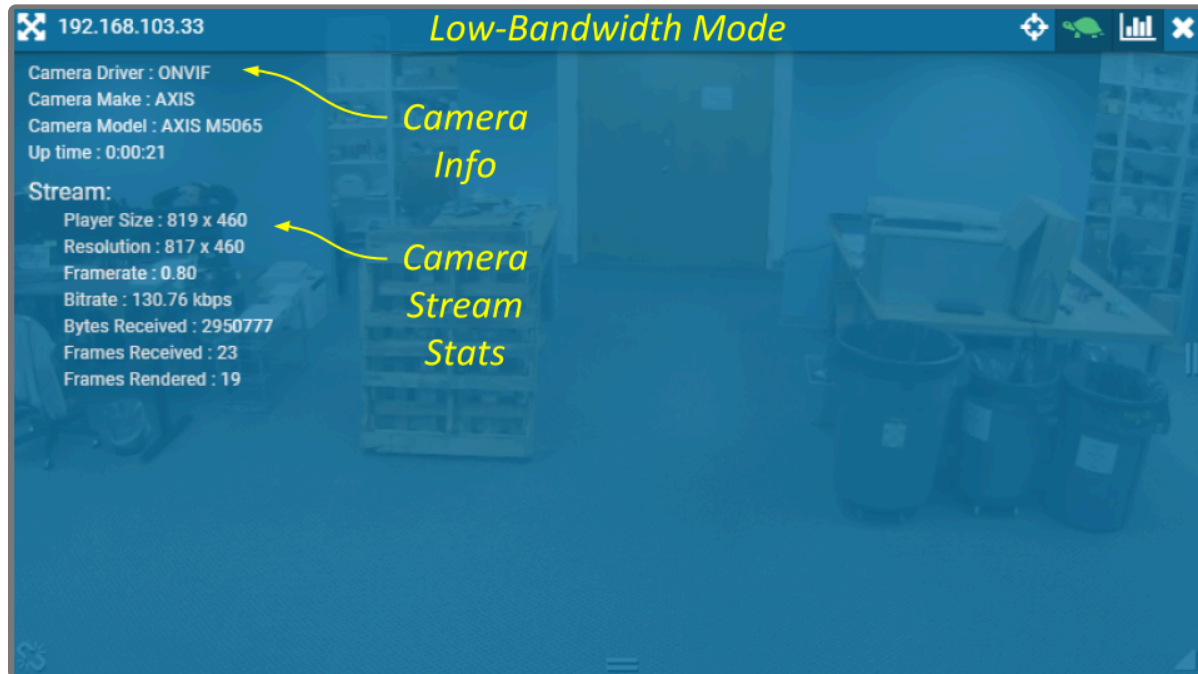
Run a Check Using Video Statistics

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

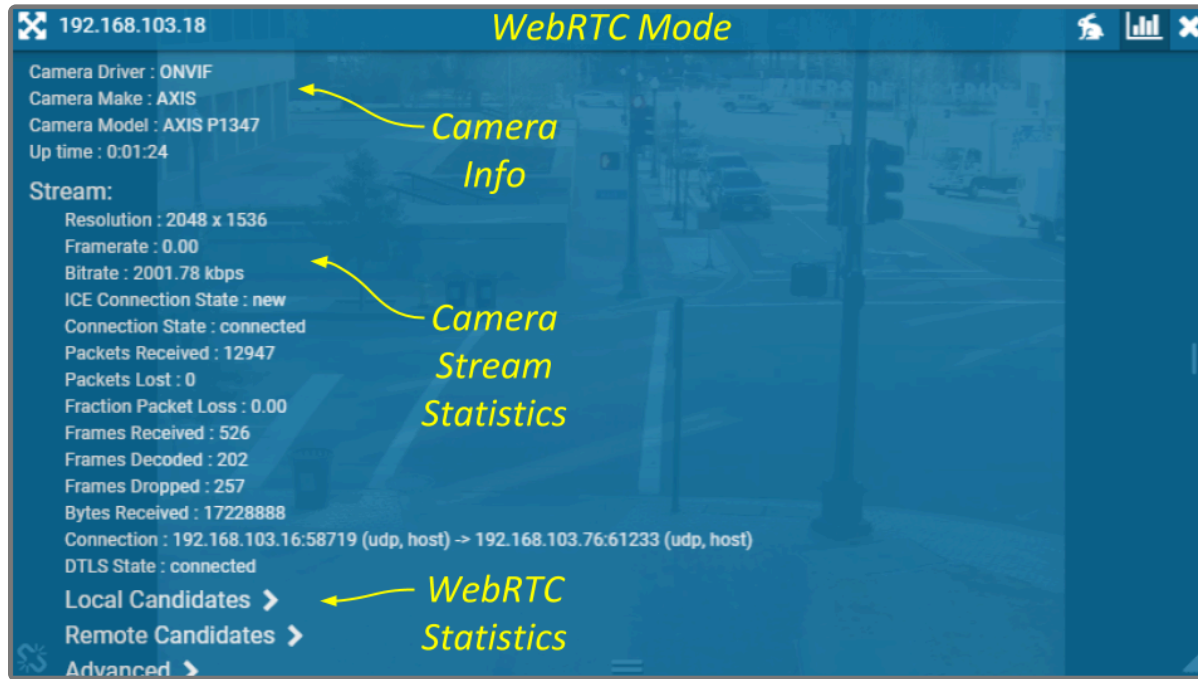
header.

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.

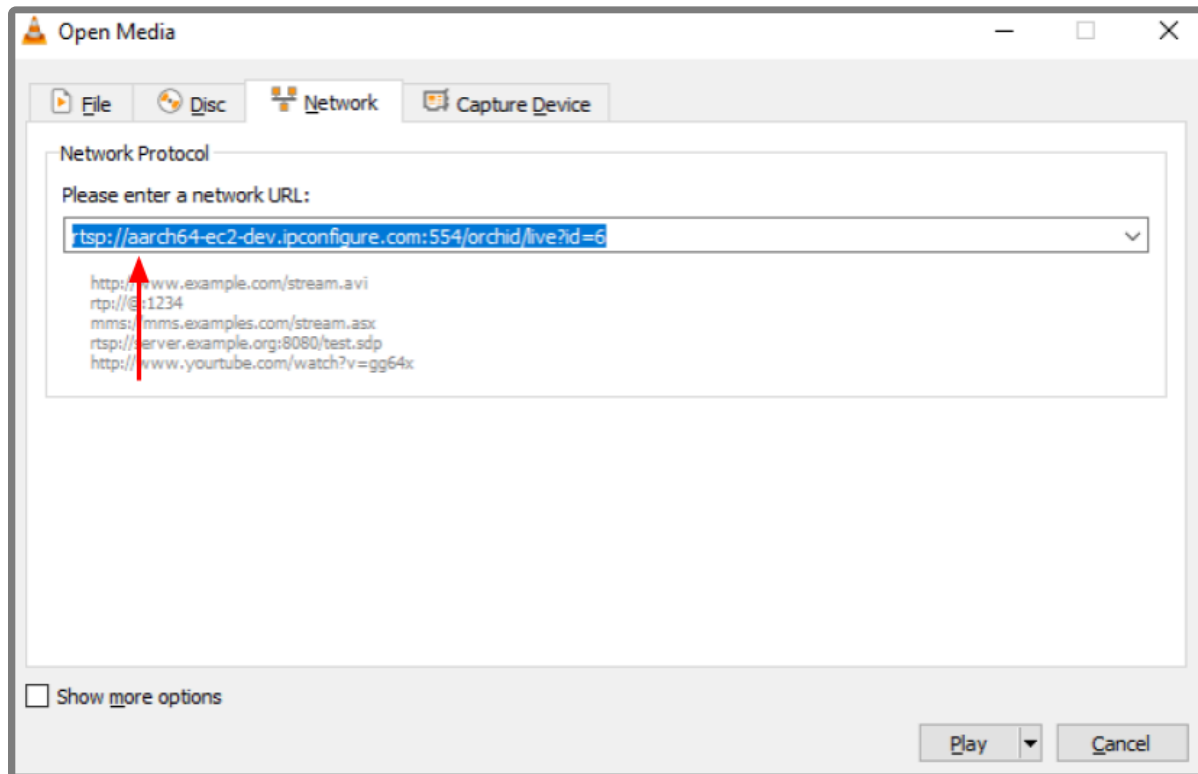


Run a Check Using VLC

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/

1. To start, open VLC on the Orchid Core VMS server. When VLC opens, click **CTRL+N** on the keyboard to open the *Open Media* window (shown below).



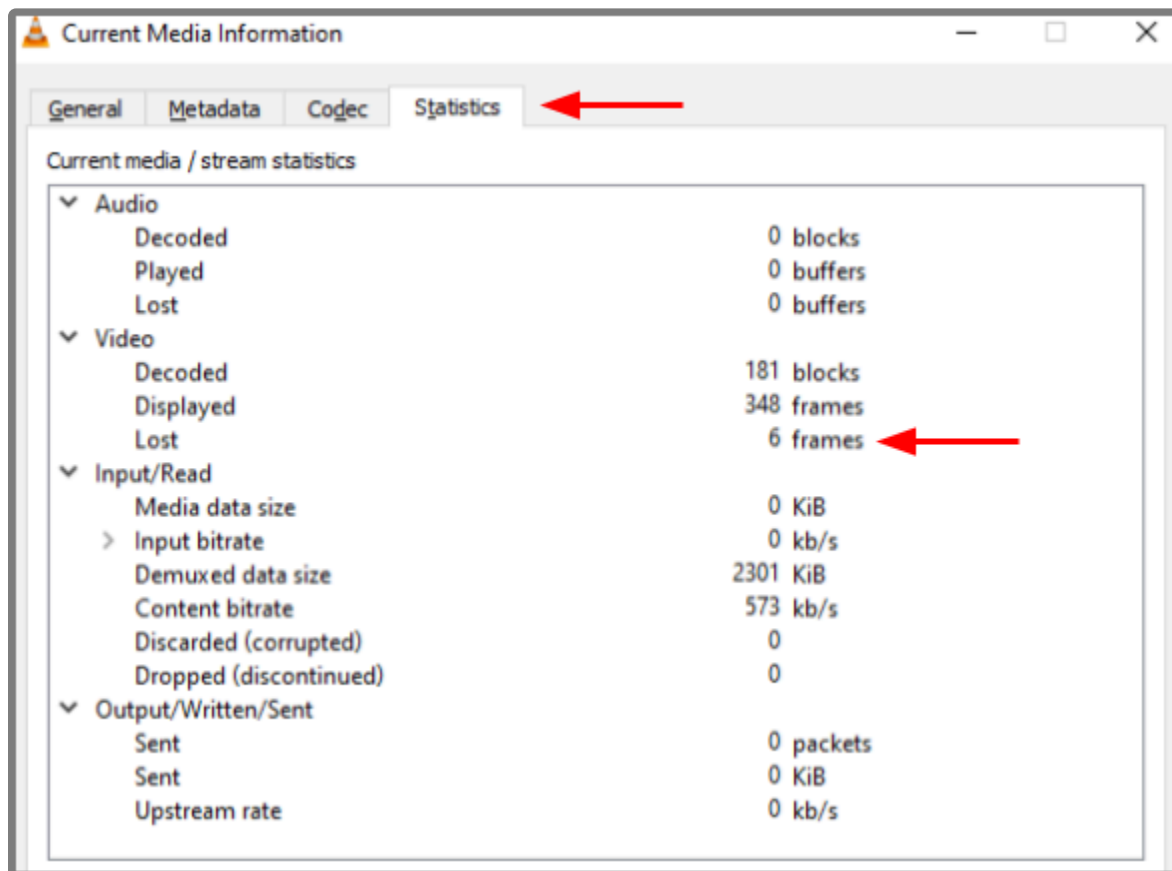
In this example, we'll check for packet loss between the Orchid Core VMS server and the viewing client.

2. In the *Please enter a network URL* field, enter the *Orchid Core VMS 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. [You can use the **One-click Copy** button to copy the URL from the [Camera Information](#) screen (circled in the next image).

The screenshot displays the 'Test Camera' configuration page. At the top, a camera thumbnail shows a warehouse scene. Below it, the 'Camera Information' section includes fields for 'Camera Name' (Test Camera), 'Camera Model' (AXIS P3225-LV Mk II), and 'Stream Status' (running). The 'Camera RTSP URL' is partially visible. A blue box highlights the 'Orchid Core VMS Proxy RTSP URL' field, which contains the URL: `rtsp://aarch64-ec2-dev.ipconfigure.com:554/orchid/live?id=6`. A blue arrow points to the copy icon next to this URL with the text 'One-click Copy'. Below this is the 'Recording Statistics' section with a right-pointing arrow. The 'Streams' section features a '+ ADD STREAM' button and a table with two entries:

Primary	Name	Configuration	
	Stream2	800x600, 30fps, H264 Continuous recording without motion detection	
	stream_58acffa6	1920x1080, 15fps, H264 Continuous recording with motion detection	

- Click the **Play** button to start streaming the camera in VLC. 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.



4. 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 6 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.

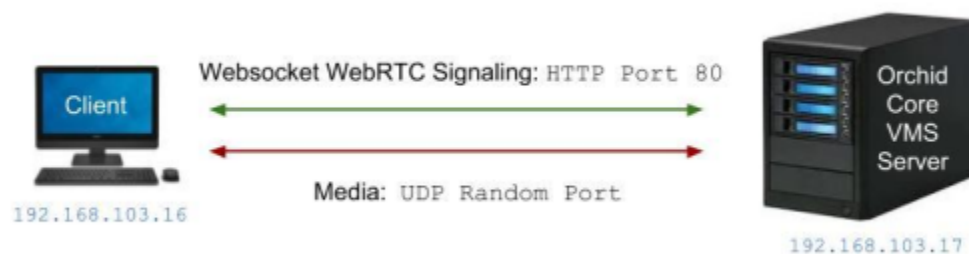
Once network related issues are resolved and VLC is able to stream video from the server without significant frame loss, the Orchid Core VMS client will be able to display video.

About WebRTC

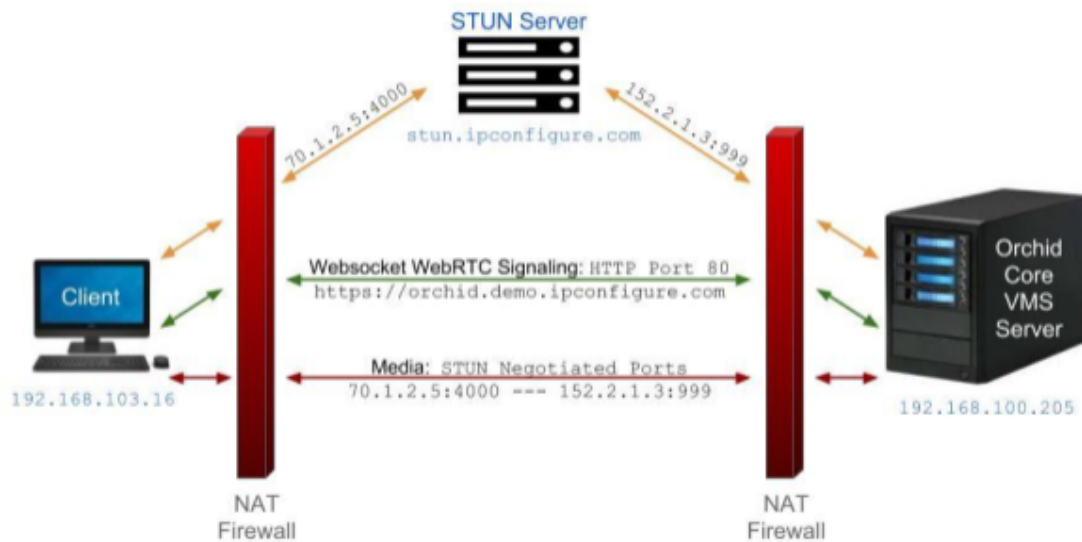
Web Real-Time Communication, or WebRTC, provides users with another method for connecting an Orchid Core VMS server with a client, so that the client may view good quality, live and recorded video. One of the main benefits of WebRTC is that it allows for viewing full-bandwidth video without requiring 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](#).

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 screenshot displays the WebRTC Mode interface in Chrome. The title bar reads "WebRTC Mode (In Chrome)". The interface shows a video stream with the following statistics:

- Stream:
 - Resolution : 2048 x 1536
 - Framerate : 5.94
 - Bitrate : 1080.23 kbps
 - ICE Connection State : connected
 - Connection State : connected
 - Packets Received : 7015
 - Packets Lost : 0
 - Fraction Packet Loss : 0.00
 - Frames Received : 369
 - Frames Decoded : 368
 - Frames Dropped : 0
 - Bytes Received : 9212435
 - Connection : 192.168.103.16:49539 (udp, host) -> 192.168.103.76:58341 (udp, host)
 - DTLS State : connected
- Local Candidates ▼
 - 192.168.103.76:58341 (udp, host)
- Remote Candidates ▼
 - 192.168.103.16:49539 (udp, host)
- Advanced >

Yellow arrows point to specific elements:

- "Connection Status" points to the "ICE Connection State : connected" and "Connection State : connected" lines.
- "Selected Candidate Pair" points to the "Connection : 192.168.103.16:49539 (udp, host) -> 192.168.103.76:58341 (udp, host)" line.
- "Local Candidate" points to the "Local Candidates" section.
- "Remote Candidate" points to the "Remote Candidates" section.

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

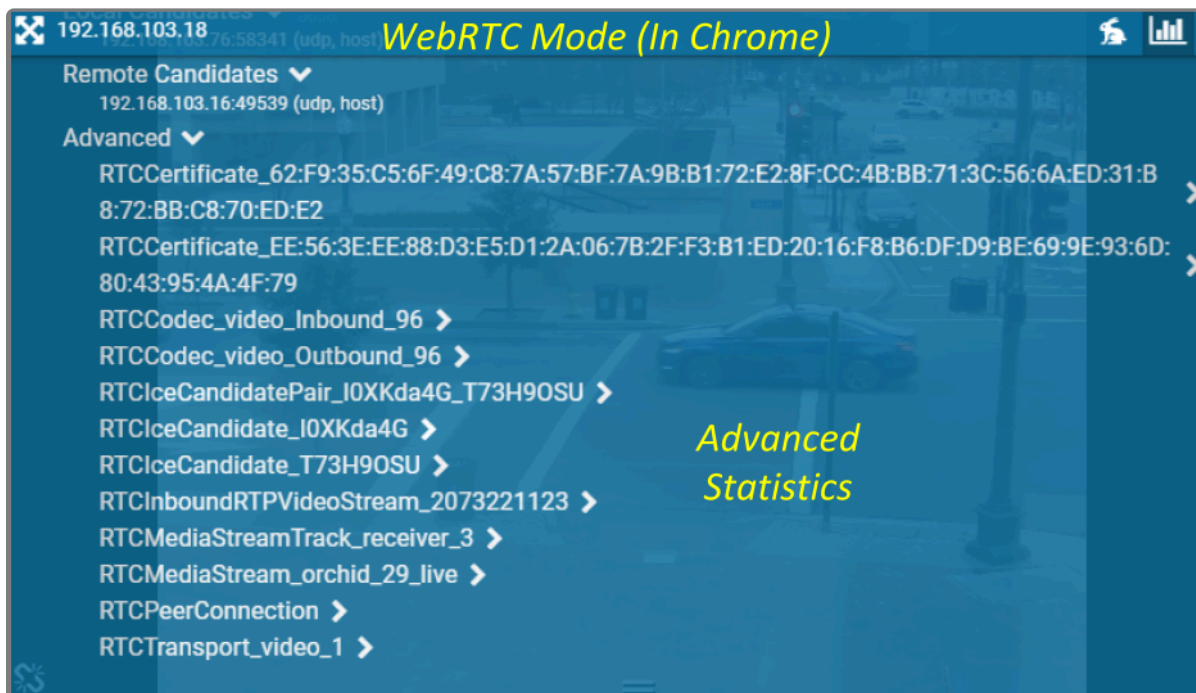
- **ICE Connection State:** This indicates the state of the ICE connection. When "connected," ICE has identified the best way to connect the server and client.
- **Connection State:** This indicates if there is a working connection between the server and the client.
- **Packets Received:** This represents 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.

Under the *Stream* group of statistics, Orchid Core VMS displays additional WebRTC statistics that 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.

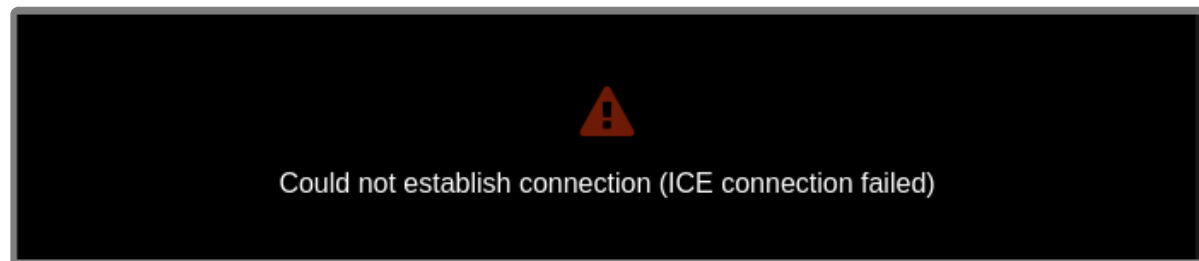
If you don't have video:

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:

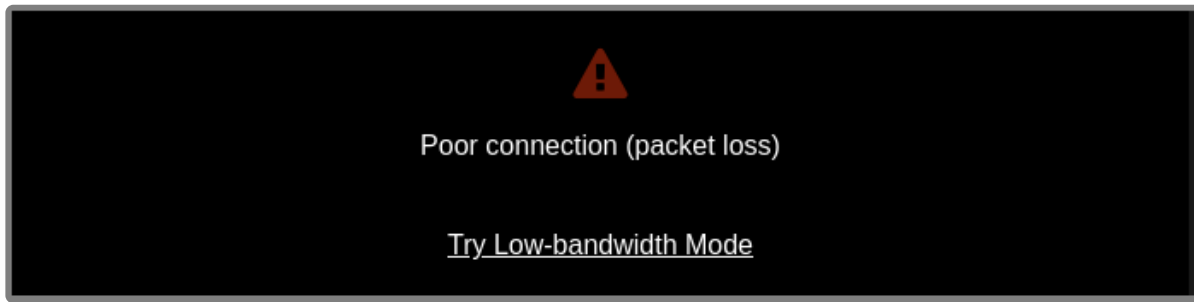
1. Check the *Bytes Received* stat.
2. If the system is receiving bytes, check for Packet Loss.
3. If packet loss exists, try lowering the bitrate (by editing the camera stream settings).

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



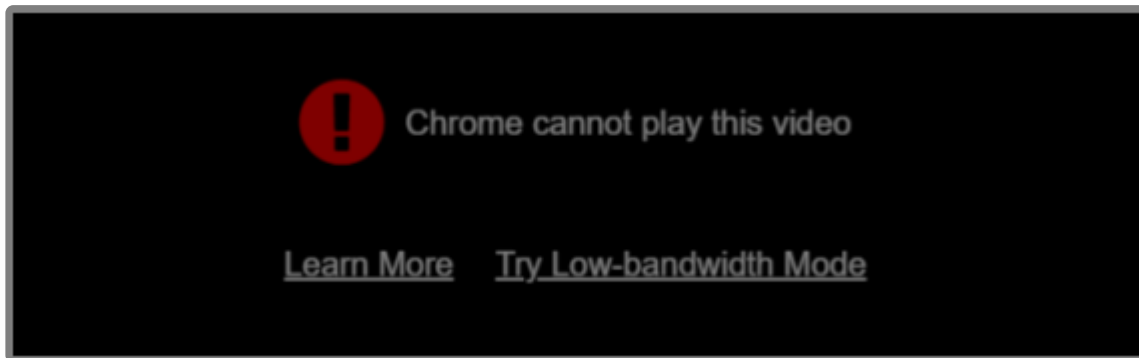
1. You may need to setup a STUN server. (Do this by editing the **webrtc.stun.host** and **webrtc.stun.port** settings using the [Advanced Settings](#) feature.)
2. You should also check your network.

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).
3. If neither 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).
3. If neither 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:

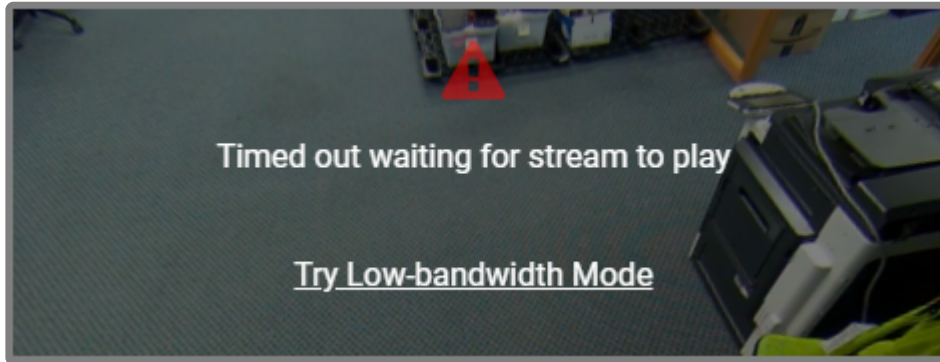
1. Navigate to *chrome://flags*.
2. Search for *mDNS*.
3. At the *Anonymize local IPs exposed by WebRTC* setting, use the drop-down list to select **Disable**.

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

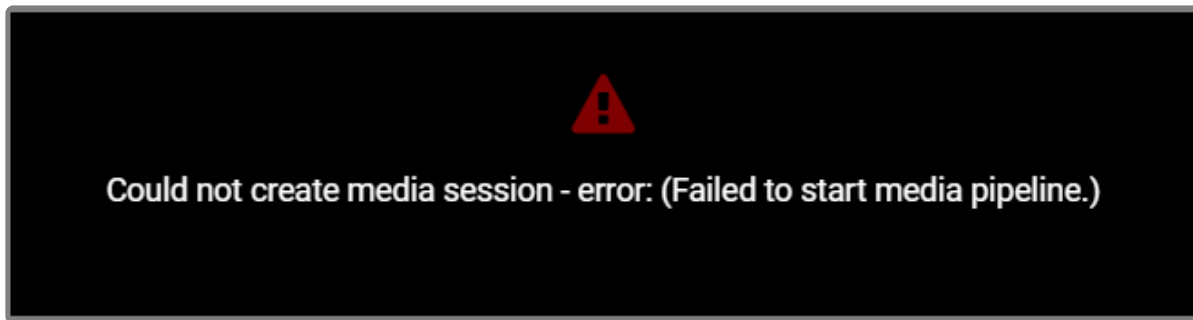
The following are some additional errors that you may encounter in Orchid Core VMS.

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



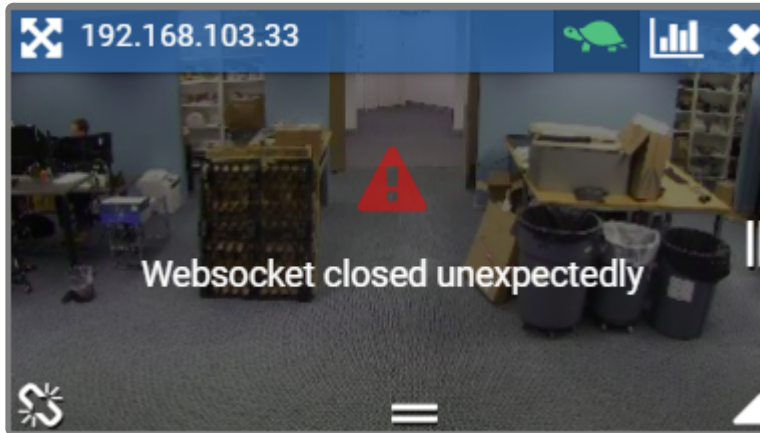
1. Decrease the bitrate (by editing the camera stream settings).
2. Decrease the resolution (by editing the camera stream settings).
3. Switch to Low-bandwidth mode.

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



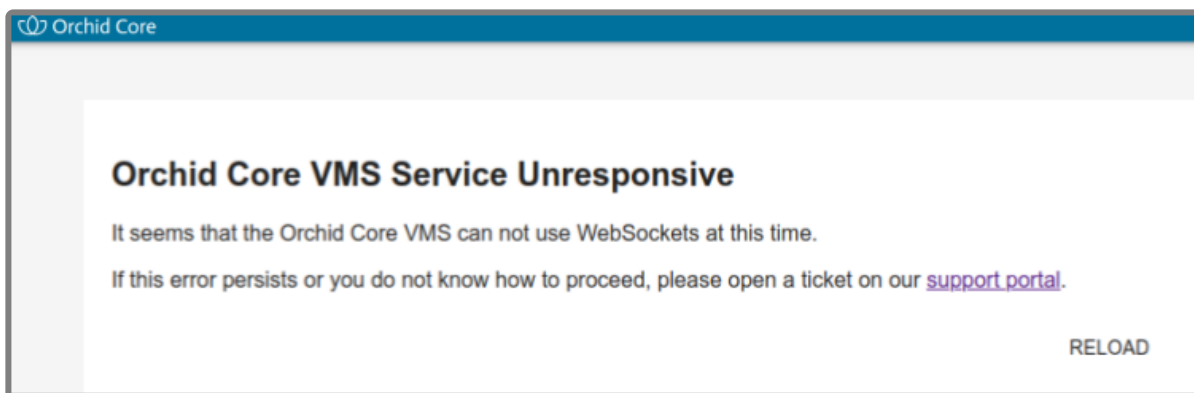
1. Use the *System Status* feature to check on the camera.
 - a. Click the **Restart** button to attempt to reconnect.
 - b. Click the **Verify** button to see if the camera is still connected to the network.
2. Check to see if the camera has power.

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](#).

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.

✿ Starting with Orchid Core VMS version 2.8, the FBGST plugin will no longer be supported. The plugin-compatible web browsers (Chrome version 34, and Firefox version 52) have also reached the end of support. If you were previously using either of these web browsers, you should upgrade to the latest version available.

	Low-bandwidth mode	WebRTC mode
Compatible operating systems	Windows, Linux, macOS, iOS, Android	Windows, Linux, macOS
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 web browser and Orchid Core VMS server	Requires a good connection between web browser and Orchid Core VMS Server
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, 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.

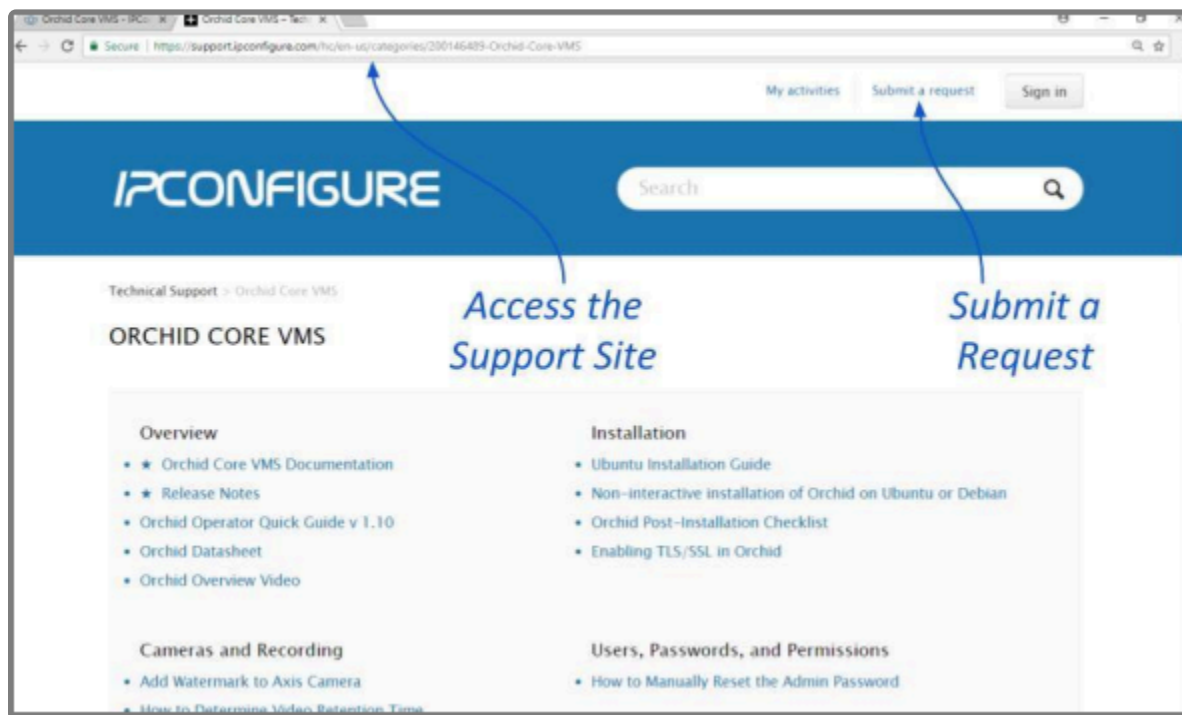
As of December, 2018, IPConfigure's technical support hours are as listed below. For the most up-to-date version of the IPConfigure support schedule, please see support.ipconfigure.com.

IPConfigure Technical Support Hours

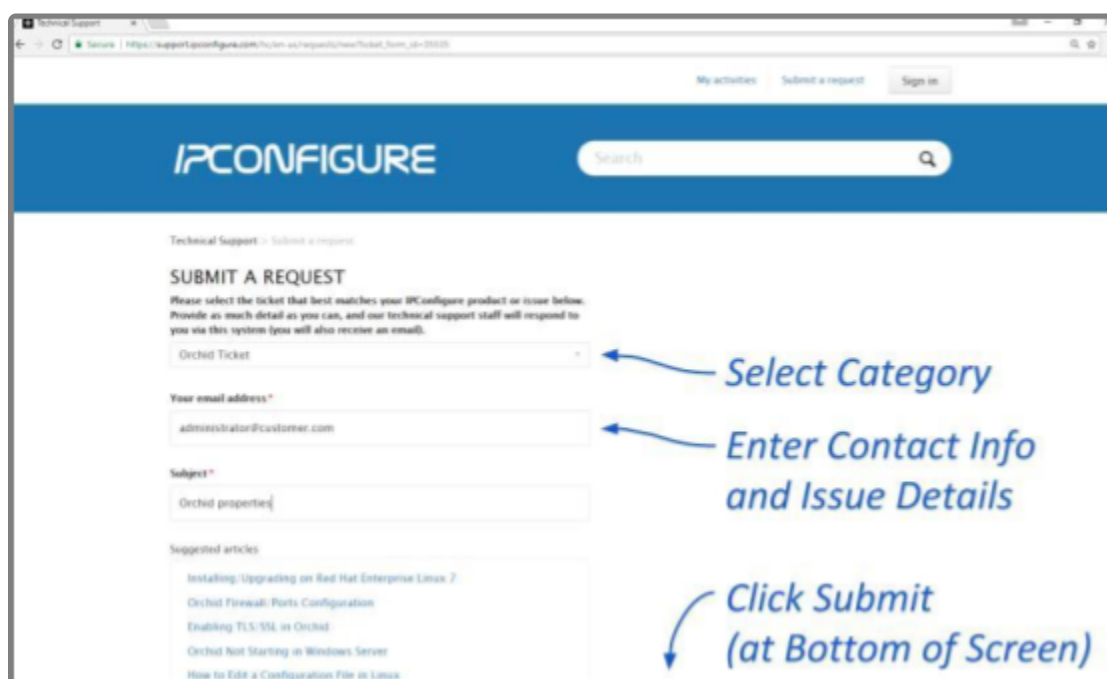
Sunday	Closed
Monday	9:00 AM to 8:00 PM EST
Tuesday	9:00 AM to 12:00 PM, 1:00 PM to 8:00 PM EST
Wednesday	9:00 AM to 8:00 PM EST
Thursday	9:00 AM to 8:00 PM EST
Friday	9:00 AM to 8:00 PM EST
Saturday	Closed

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.