User Guide

Valerus VMS

Updated for Valerus version 20

XX281-00-07

Document Number: 8009-8281-00-07 Rev: 11/19

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Introduction

Vicon's Valerus VMS is a browser based application. It provides a web client with a single point of management for the entire system, no matter the size. All Recording Servers (NVRs), cameras and devices and other resources are added, configured and operated using the configuration section in the application. The VMS can be purchased as software only and installed on a PC meeting the minimum requirements or it can be purchased preinstalled on Vicon Valerus certified hardware offered exclusively by Vicon.

This manual describes how to configure and operate Vicon's Valerus video management software (VMS).

Starting the Application

Running the Application for the First Time

Being a fully web based solution, it is necessary to browse to the Valerus application server, which is also serving as the web server, in the same way as browsing to any web site. Either enter the IP address of the application server in your web browser (if that IP address is not known, check the server on which Valerus application server was installed) or, if your network has defined server names, browse to that computer's name.

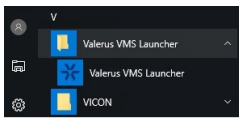
Tip! If the browser is being run on the same PC where the application server is running, browse to the local IP by using the loopback address:

- http://127.0.0.1 –or- http://localhost

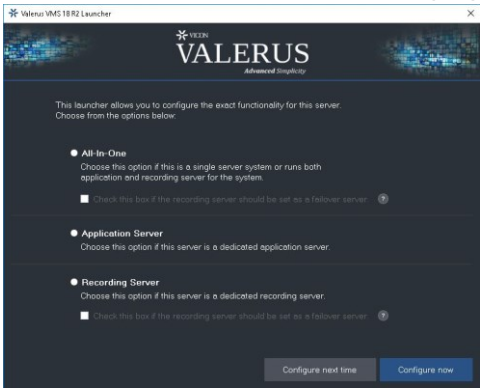
Each system requires only one Application Server. The Application Server can be either a dedicated unit or a Recording Server defined as an All-In-One unit that runs both the application and recording server for the system. If the Valerus software has been installed on customer-supplied hardware, follow the instructions in the Software Installation manual to define the server from the Valerus Launcher as All-In-One, a dedicated Application Server or a Recording Server. If your hardware was purchased from Vicon, and a dedicated Application Server (Model VLR-APPSRV) was purchased, this is the server. If the system only includes one or multiple Recording Server(s) purchased from Vicon, one of the Recording Servers must be defined as an All-In-One server from the Valerus Launcher.

Note: Along with the installation of Valerus come a number of necessary third party components, including one that handles NTP. Vicon recommends using this on the Application Server and disabling it on any NVRs that are in the system, as the NVRs synchronize with the time on the Application Server.

The Valerus Launcher can be accessed from the Windows Start menu.

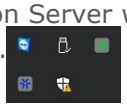


Click on the Valerus VMS Launcher to display the following screen.



From this screen, the server can be redefined as an All-In-One, Application Server or Recording Server by selecting that radio button and clicking Save. Additionally, from this screen an NVR can be designated as a failover NVR (note that an NVR can be *either* a standard NVR or a failover NVR, but not both).

You can identify the type of server a unit is running in two ways. The Application Server will have a shortcut for Valerus on the desktop. Additionally, icons will display in the Windows Sys tray.



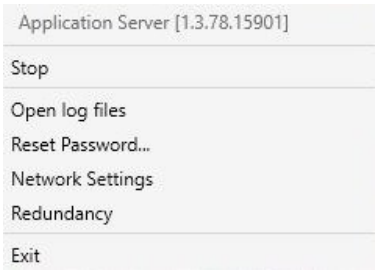
The Application Server will have a green icon and the Recording Server will have a blue icon ; an All-In-One server will have both a green and blue icon in the tray. Any server in the system can later be redefined in this same manner, for example if the system grows and then requires a dedicated Application Server.

By default Valerus is using the standard port 80 for web access. The application will ONLY work with Internet Explorer 11 and on Chrome using the Valerus Chrome extension that can be found at the Google Chrome store; attempting to use a different web browser will not allow video to be displayed. If the default browser is not IE 11, a message will notify the user.

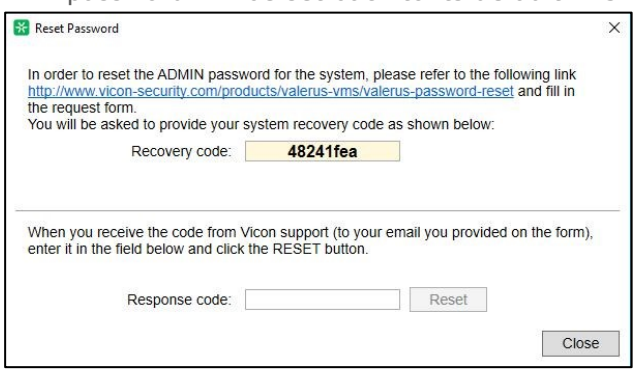
The login screen will open. The first time the system is accessed, the default settings will be in place. The default login is user name ADMIN (not case sensitive) and the password is 1234; the password can be changed in the configuration screens for increased security. Click Sign in. For convenience, it is recommended to create a shortcut on your desktop to make subsequent logins easier.

Note: In the rare occasion that the system locks up with an administrator password and that password has been lost, there is an option that will allow creating a request to Vicon Technical Support for a password reset.

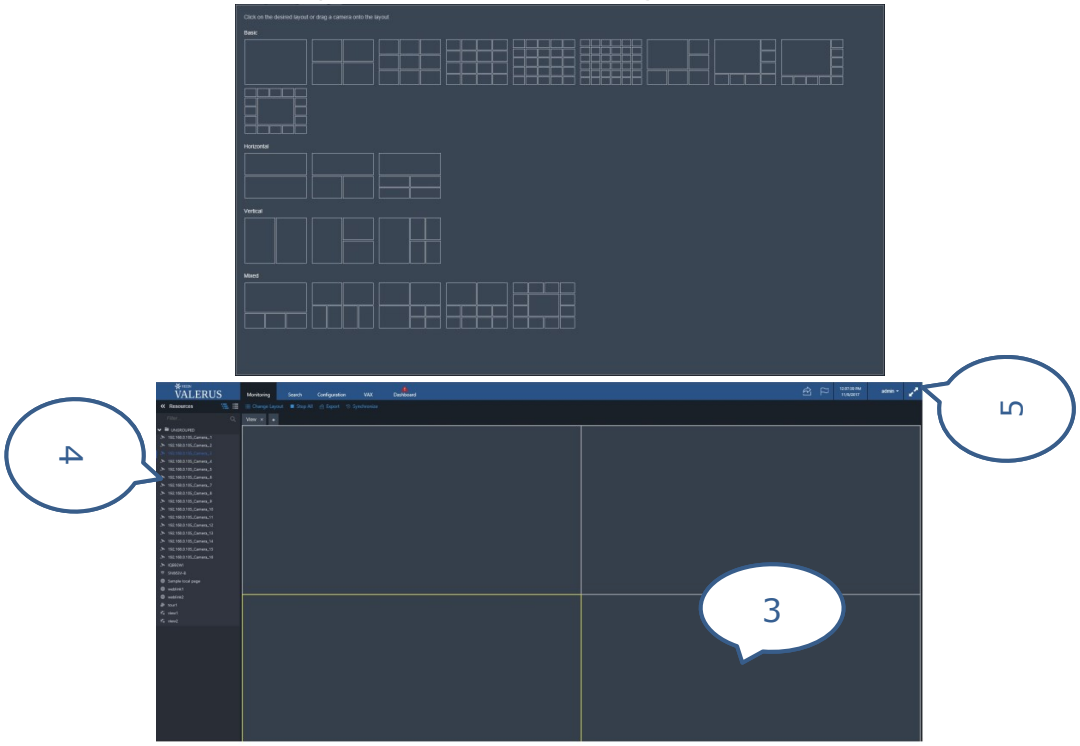
- Double or right click the Valerus icon . The following popup displays.



- Select Reset Password.
  - Selecting this option will open a window with a link to the password request page on the Vicon web site (click on the link for online access or copy and browse from any computer) and a recovery code to submit with the request (caps sensitive)
  - Vicon support will review the request and may contact you for further details to ensure resetting the password is indeed legitimate
  - When provided a response code (caps sensitive), you will need to enter it and click "reset"
  - After resetting, ADMIN password will be set back to its default 1234. Make sure to change it once logged back in.



The system opens up to the Monitoring screen and by default will open in 2x2 (quad) layout. Opening a new tab (+ symbol) will create a new tab called View and open a screen showing all the screen layouts to choose from. Click on the desired layout to switch to it or drag and drop cameras directly on the desired layout to switch and open. Additional information will be provided in the monitoring section of this manual.



1. Monitoring, Search, Configuration, VAX and Dashboard tabs
2. About/User Settings/Logout
3. Video Display Area
4. Resources List
5. Full Screen

The Monitoring screen is where live and recorded video are displayed and is the main operators screen. On the left side is a list of available Resources [cameras, microphones, URLs (web pages), digital inputs, relay outputs, views, tours and any defined groups]; this list can be presented in either a hierarchal view or a flat list of devices. There are some icons at the top that indicate Export, Notifications or if the Application Server is not available 

Most of the screen is dedicated to the display area. When entering the application for the first time or before a layout has been defined, a choice of layouts is provided; the operator can click on a selected layout to switch to it or drag a device from the list onto the desired layout icon.

At the top of the screen there are tabs representing the different system applications: Monitoring, Search, Configuration, VAX and Dashboard. The Search function provides a number of methods to look for specific video from a specific time and date: Thumbnail, Museum, Events Framework and Analytics searches. The Configuration tab will open the configuration screens, which provide everything needed to setup the system. The configuration screens are typically used by the system administrator. On a new system, the initial configuration must be done first so that the monitoring and other screens will become usable. The Dashboard screen provides an overview of the system components and their health. It shows a count of the healthy devices and if there are any warnings (non-critical issues) or errors (critical issues). Each of these tabs will be explained in detail in this guide. Each tab has an icon in the top right corner when the mouse is hovered over it;

clicking this icon detaches the tab and opens in a new window. 

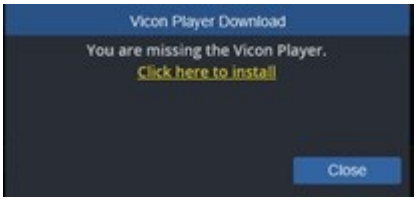
An in-depth Help system is available in certain sections. There are question mark symbols  throughout the interface; hover your mouse to view text to explain your choices.

Video Player Status

The video player module needs to be installed in the browser upon first startup or when it has been updated; a warning icon will display to install the player on the top bar and in a video tile if the user tries to start the video. The player must be installed on every computer in the system connecting to Valerus.

To install the player:

1. When the  icon displays, this may indicate that the player needs to be installed or updated.
2. Click the icon; a popup similar to that below displays. Click to install the player; a standard browser download message will display to install.



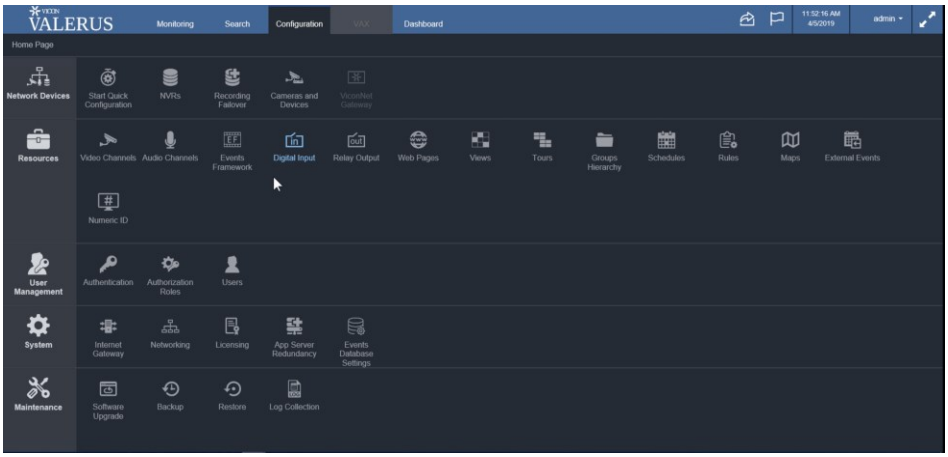
3. Below is an example of IE11 download message. Click Run to install.

4. Follow the installation instructions, close the browser and launch it again after the installation is complete. The player should now be installed and will work to display video. The system is ready to be configured.

Configuration

The Configuration application is used mostly by administrators to setup the system. Click on the ***Configuration*** tab to enter the setup screens. It is recommended that the configuration process be done in a specific order to ensure all the system components are added; if the Options list is followed from top to bottom, configuration will be accomplished properly. As an alternative, and for a very fast and easy deployment, a Quick Configuration process is available under Network devices. All of these options are described in detail below.

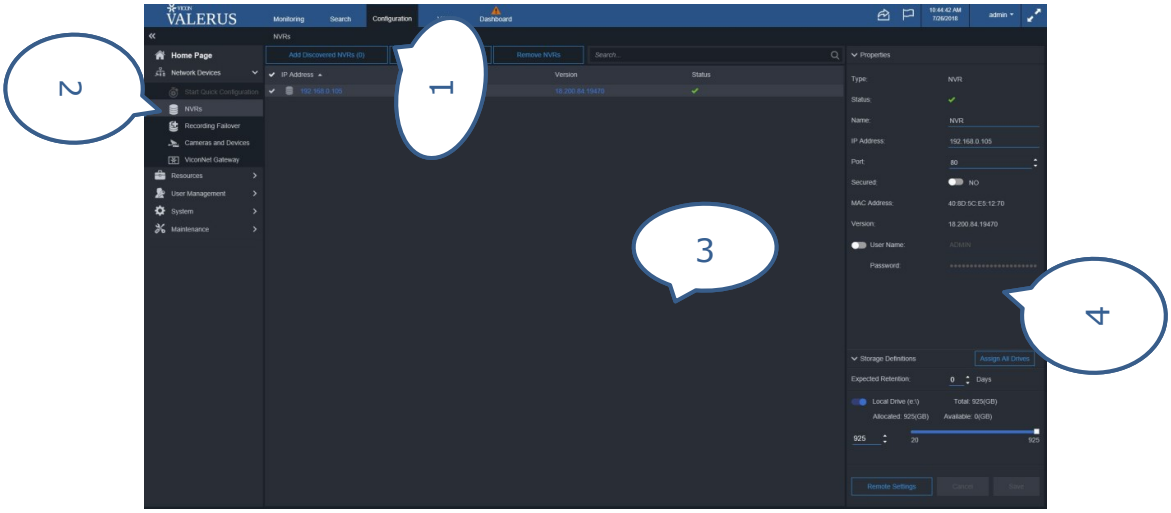
The first time Configuration is opened, a Home page displays. This page presents an overview of all the Configuration options and provides links to those specific setup screens. From here select what you want to configure. Entering Configuration later opens the last screen used; return to the Home page by clicking the Home Page at the top.



Note: Most screens provide a search field 

that allows a search of the list on that screen; this is particularly useful in large systems with many devices or resources. A required field is indicated by red. A blue button indicates the button is active; a gray button is inactive.

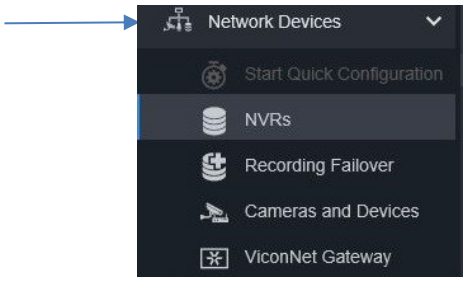
On the left side of the screen is the list of Configuration options. The middle section of the screen provides information about the devices being configured and the right side of the screen offers detailed information or ***Properties*** about each device in the system. Depending on the characteristics of the different devices, different options and properties will be presented.



1. Configuration tab
2. Configuration options list
3. List of NVRs in the system
4. Properties screen

Network Devices

From the Configuration Home Page, select ***Network Devices***; it is expanded by default. An exception to this is if the license has expired. In that case, the Configuration tab will open to the Licensing screen, where you can activate a license. This process is explained in detail under System configuration later in this manual.

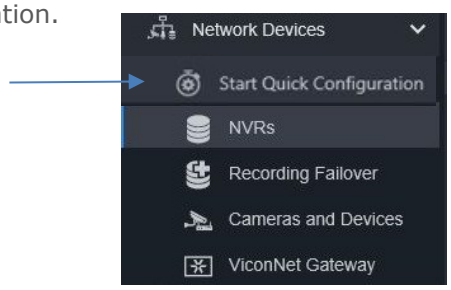


Quick Configuration

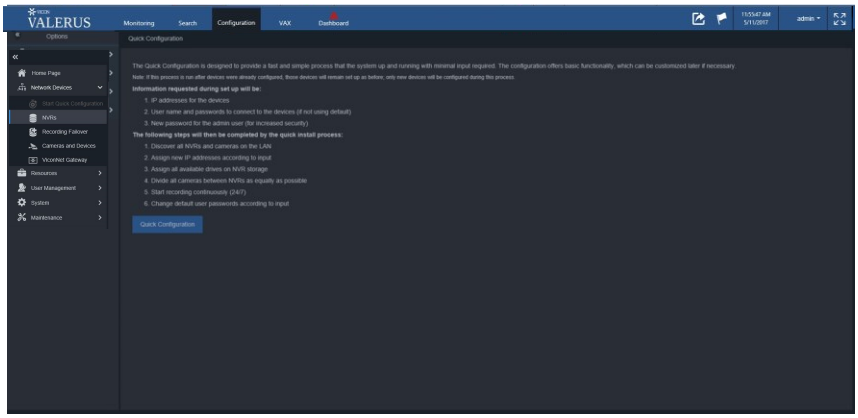
The simplest and easiest way to get the system up and running is to use the ***Quick Configuration***. This offers a streamlined process for typical and basic system setup with minimal input required. Information requested during set up will be:

- IP addresses for the devices: The process will assign IP addresses from a range of addresses that is most suitable for private networks without a specific network scheme. If the devices are already configured with an IP address (static or DHCP) you will be able to skip this step.
    - If an IP range different than the default one is required, make sure to set the range correctly (according to subnetting rules), have enough free addresses and remember the Application Server will also use an address.
- User name and passwords to connect to the devices (if not using default): The system has a list of known user name and password combinations for most camera vendors. When a camera is discovered, the system will attempt using those to connect to it. In case different user names and passwords have been set up, enter them here so they can be used as well.
- New password for the admin user: It is recommended that the administrator password be changed for increased security; if defaults are kept in place, the password is known to anyone and the system configuration screens can be easily accessed.

Click Start Quick Configuration.



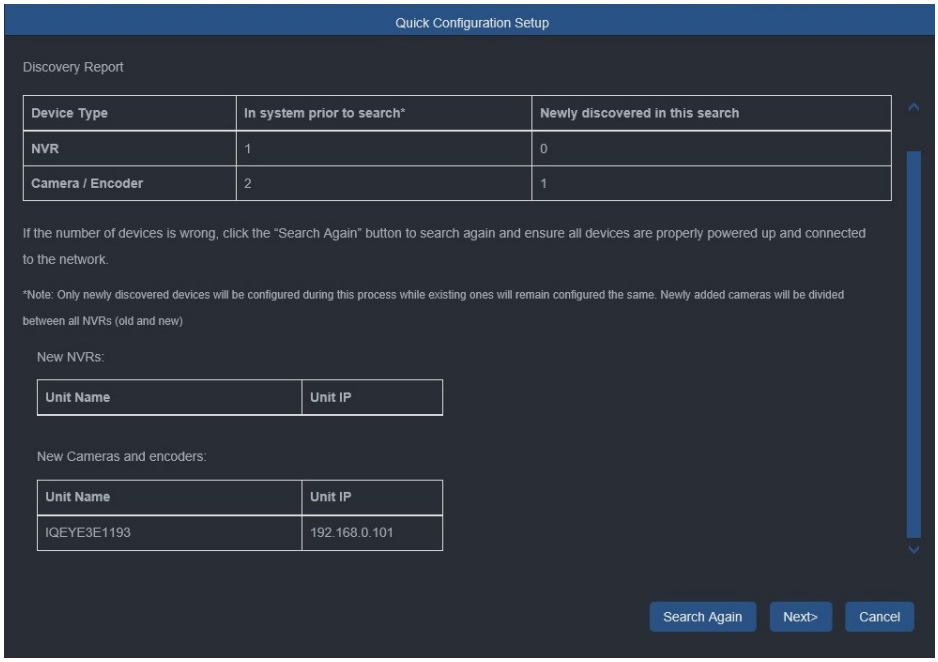
Clicking Start Quick Configuration opens an explanation page. Read the explanation. If you want to go ahead with the Quick Configuration, click the button.



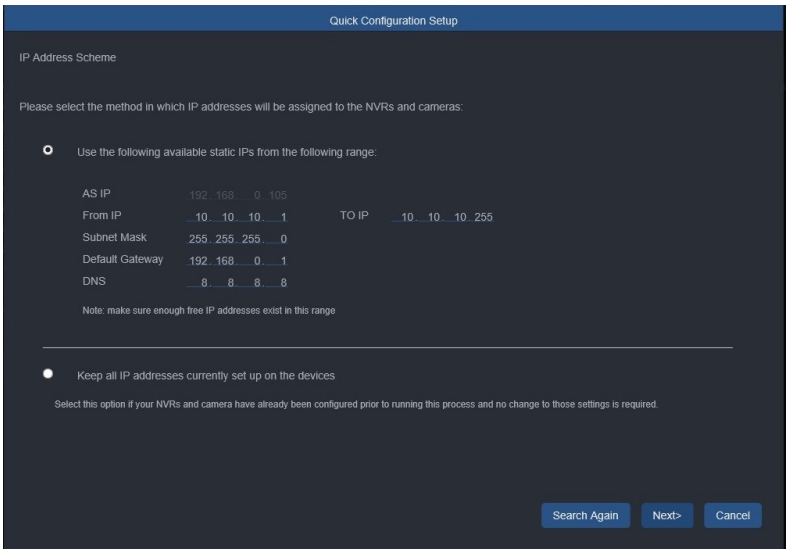
The following steps will then be completed by the quick install process:

- Discover all NVRs and cameras on the LAN: The server will search and find all devices that are on the same LAN as the server. If there are devices that you know are on the LAN and were not discovered, make sure that they are connected and powered and then click Search Again. When all devices have been discovered, click Next. Remember, the process can only discover NVRs and devices that are on the same LAN as the application server.

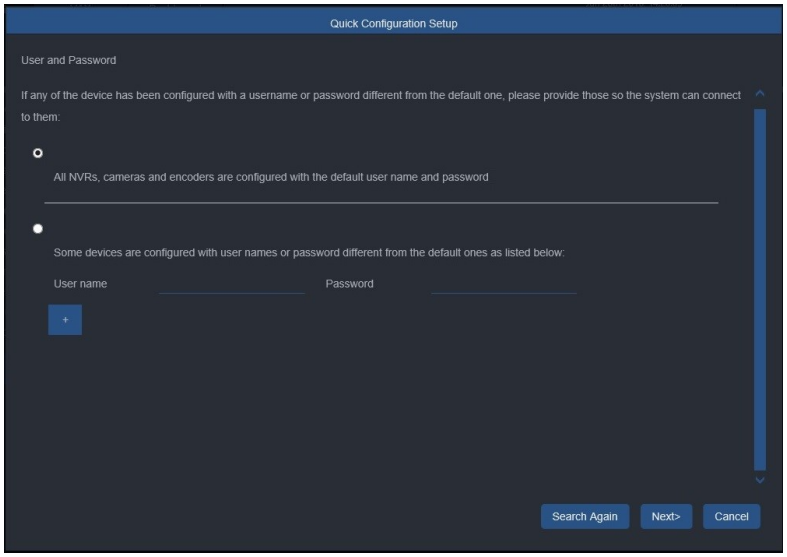
  Tip! If there are NVRs or other devices on a different VLAN or on a network not open for multicast discovery (i.e., certain WiFi, firewall), these will not be discovered automatically; these NVRs and devices can be added manually as explained later in this manual to allow discovery on those nodes.

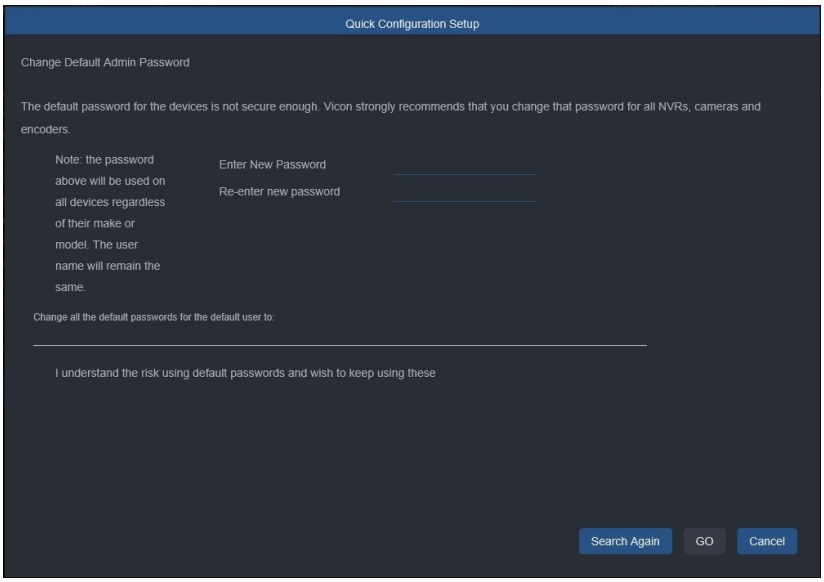


- Assign new IP addresses according to input: A screen displays with the default IP address range and allows you to change the IP addresses to an assigned valid range of your choice by clicking the radio button. Click the radio button below if all IP addresses are to remain as is and no change is required.

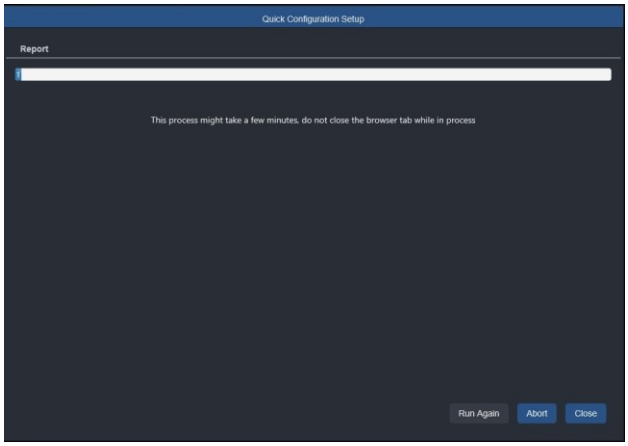


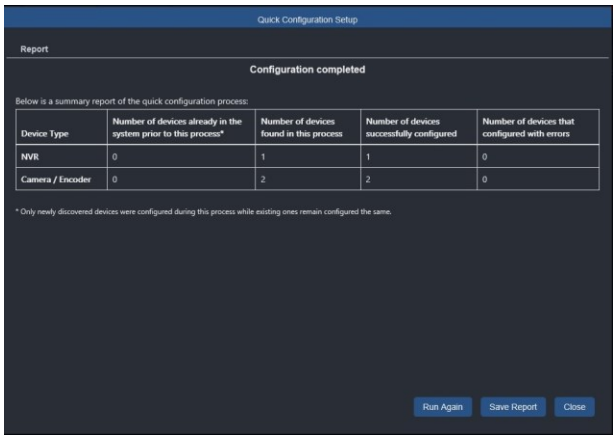
- By default the Quick Configuration will:
  - If IP assignment is needed, ping the IPs to ensure they are free and assign to the devices.
  - Assign all available drives on NVR for storage: All drives except the operating system drive (typically C:\ drive) will be assigned to the NVR and the system will allocate all available storage on the assigned drives for recording of devices.
  - Divide all cameras between NVRs as equally as possible: Cameras will be distributed among all available NVRs on the system by their model to allow equal distribution. Newly added cameras (when quick configuration is run again after some devices have already been added) will be added into both newly discovered and previously added NVRs.
  - Start recording video continuously (24/7): All cameras will be configured to record 24/7 by default.
- Setup user and password credentials. Change default user passwords according to input: For increased security, passwords will be set according to those selected by you; although it is not recommended, you can leave default passwords after reading Vicon's warning.





- After the Quick Configuration screens are completed, click Go. The configuration process will begin and may take a few minutes to complete depending on system complexity. A Configuration completed message will display showing a summary of the NVRs and Cameras/Devices that were successfully configured as well as a list of failures if such exist.





- If you now go into the main Configuration area, you will see that NVRs and devices were added and display on their respective screens, NVR storage allocation was done and devices were split evenly between NVRs. Any modifications and customization required can now be done, as explained in the detailed configuration steps below.

Note: If this quick configuration process is run after devices were already configured, those devices will remain setup as before; only new devices will be configured during this process.

Step by Step Configuration

Quick Configuration, although very efficient and time saving, may sometimes not allow the flexibility required. For example, there are cases when NVRs cannot be discovered automatically and need to be added manually or when the even distribution of cameras is not sufficient and manual allocation is needed or simply when a step-by-step setup makes more sense. Configuration must be done in the correct order. Follow the steps below to complete setup.

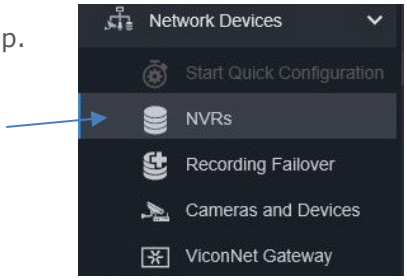
Tip: The order in which the options list is shown represents the logical order of laying down the system "building blocks": Application server on top, NVRs added to the Application server and IP devices (cameras and devices) added to the NVRs. At this stage the physical blocks are added and their different resources can be configured and used.

Note: Because the Network Settings (IPV4/IPV6 and HTTP/HTTPS) impact on the NVR and Camera and Devices settings, if you want to restrict any devices it is important to configure the Network Settings for these BEFORE adding in the Discovered NVRS and Discovered Devices.

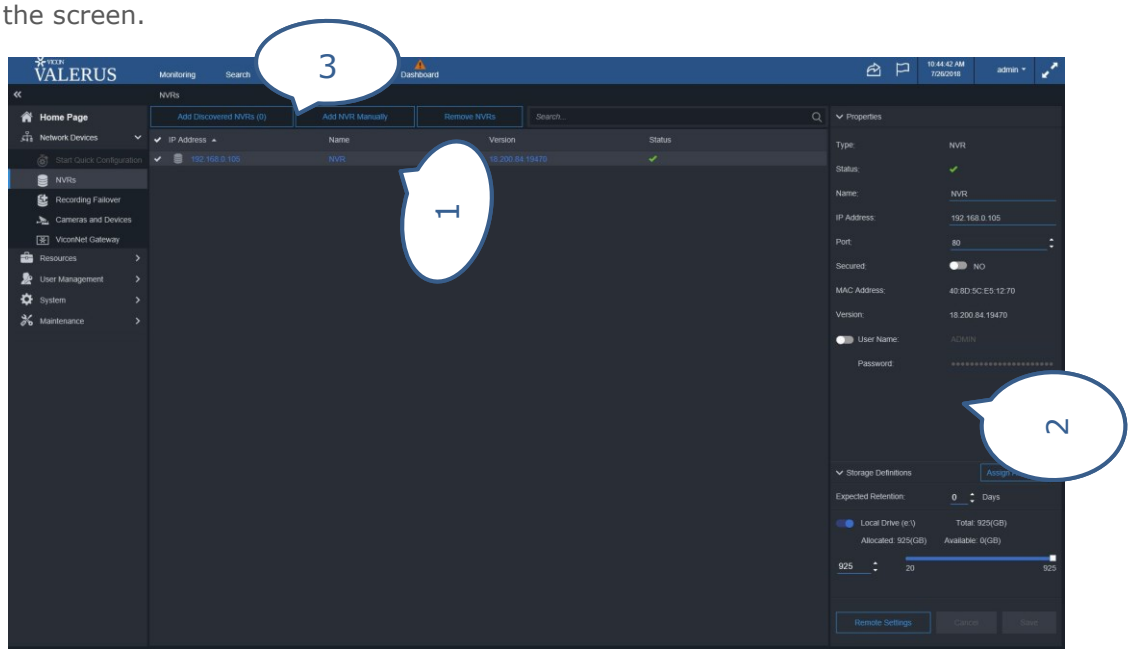
Recording Servers (NVRs)

The first step in configuration is to add the ***NVRs*** to the system. There is no limit to the number of NVRs that can be in the system.

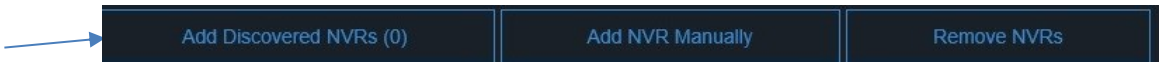
- Click on NVRs to open the NVR setup.



- If any NVRs were setup in the Quick Configuration or previously configured, they will be listed in the middle of the screen.

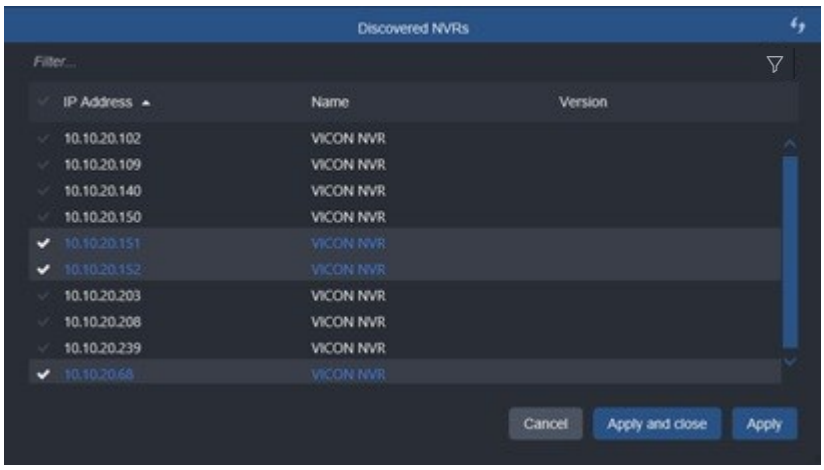


1. List of configured NVRs
2. Properties of selected NVR
3. Options to add or remove NVRs

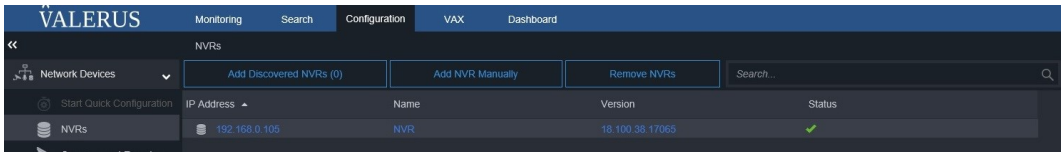


- NVRs can be added to the system in two ways, either from the list of NVRs discovered by the server or added manually The Add discovered NVRs provides a list of NVRs that were auto-discovered by the system that are not already on your list; a number in parenthesis on the button indicates how many NVRs were discovered on this LAN (once it is added to the system it is no longer in the Add discovered count). If you know that more than this number of NVRs has been installed, check their connectivity and if they are on a different network (or VLAN, etc.); they can be added manually.
- Click the ***Add Discovered NVRs*** tab at the top of the NVR screen; a popup with a list of the discovered NVRs will display; use the dropdown arrow to view the list. Note that there may be two IP addresses listed for the same device. This is because the Network Settings for IPV4/IPV6 and HTTP/HTTPS impact on what is presented here. This list can be refreshed by clicking the refresh button in the top right corner. Select the NVR(s) to be added to the system by clicking the check mark next to the NVR. Clicking the check mark on the top bar will select all the NVRs. Multiple NVRs

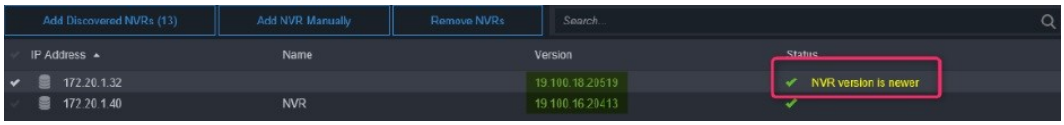
can also be selected holding the Control (Ctrl) key while clicking on the NVRs or by holding the Shift key and clicking the top and bottom NVRs in a selected range (standard Windows selection). Click Close and Apply when done or click Apply button to continue using this screen. A Cancel button is also provided allowing to close the popup menu.



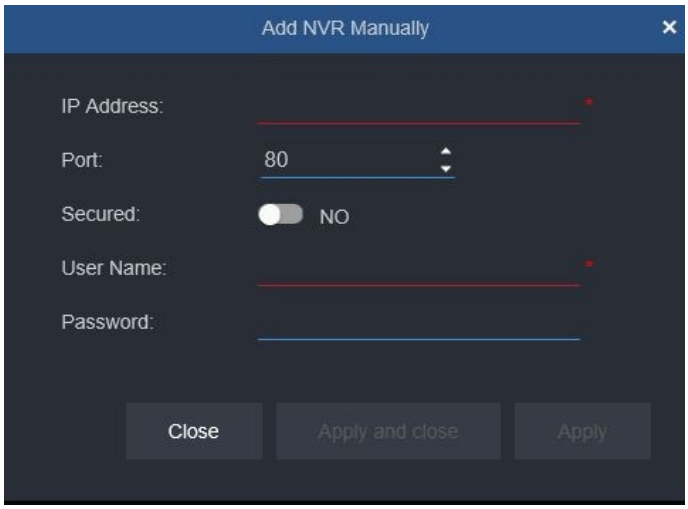
- The selected NVRs will now be listed with their IP address, version of software and the status. A green check indicates the NVR is recognized and can be further configured.



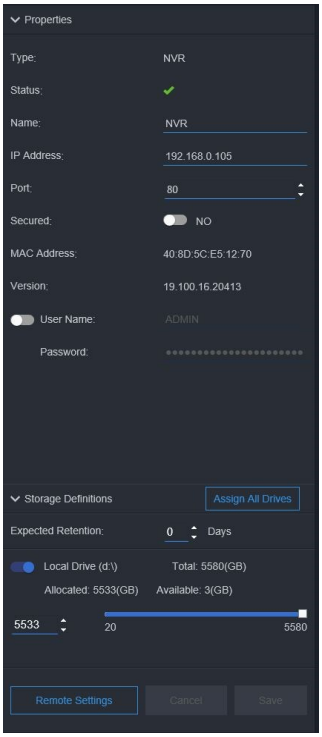
If an NVR is added whose version is newer than the Application Server, there will be a notice.



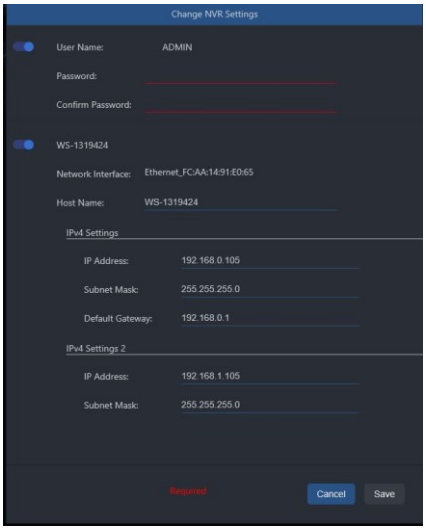
- To add an NVR that was not on the discovered list (for example on a different VLAN), click ***Add NVR Manually***. A popup displays to enter the IP address of the NVR, its port and a user name and password. Also select whether this NVR is using secured communication (Yes/No; using a secured HTTPS connection). Click Apply. A Close and Apply and Close button are provided to close the popup. This NVR is added to the list with all of its pertinent information and can now be configured.



- The ***NVR Properties*** screen displays to the right, providing information on the currently selected NVR. Clicking on the arrow head next to the word properties collapses the screen to display just the storage definitions.



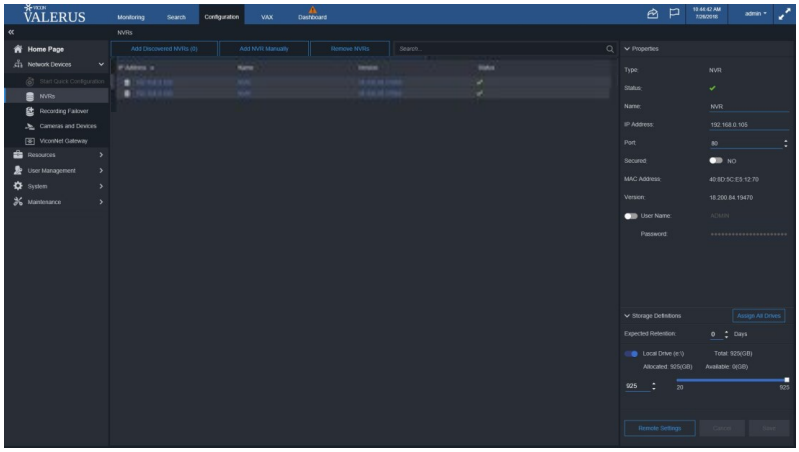
- By default, the NVR is added without a name and will be listed by its IP address. If a name is added in the field, that will also display in the NVR list.
- The IP address and port of the NVR is shown and can be changed. The address and port are what the Application server will use in order to connect to the NVR and needs to be updated in any case where the NVR has changed its IP address and/or port.
- The Valerus version is provided here for easy reference.
- The user name and password shown are what the Application server will use in order to connect to the NVR and will need to be updated if changed. Click the switch next to it to allow editing.
- A Remote Settings button is provided and can be used to change some of the credentials for the NVR itself. Different from the connection details described before, these will make changes to the NVR itself. Clicking Remote Settings opens a dialog box.



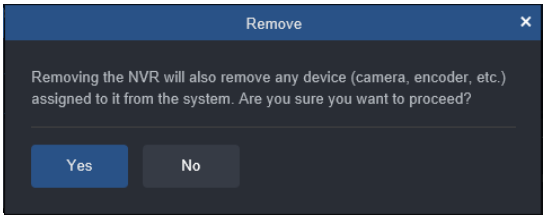
- Click the button to activate the fields you want to modify, password and/or your device credentials. The ADMIN password for the NVR can be changed (the ADMIN name cannot be modified). Required

fields are noted in red. After your changes are made, click Save or Cancel to close without saving the new settings.

- If the IP details of the NVR need to be changed, it can be done in the lower section of this pop-up. Note that depending on how the Network Mode is configured in the System, Network screen, there may be both IPv4 and IPv6 settings here.
- If multiple NVRs are selected (done using the check box or the Ctrl key), they can be configured together, but only for their common attributes. For example, all NVRs can be given the same password, but an IP address cannot be configured as it's unique per NVR. Check the NVRs you want to configure; the Properties box will change to display the common properties to allow those changes. Click Save or Cancel to close without saving changes.



- NVRs can be deleted from the list. Check it in the list and click Remove NVR or click on the garbage pail icon in the row after Status. The following message displays.



- Storage definitions must be set to allow devices to record to this NVR. The drive that contains the Operating System (typically the C:\) should not be used for recording unless it is the only choice.
- The Expected Retention of data (in days) can be set. This setting is based on what is expected from the system according to how it is configured (using the storage calculator); it does not influence the recording done by the system. Note that if 0 days is selected, expected number of days will be 0. From the Dashboard statistics, you can see if the retention expectations set here are being met or fall short. It is important to understand this is a user setting, not an actual limit. Refer to that section for details.

For convenience, there is an Assign all drives button; when selected, the system will set all available drives to use their maximum storage capacity. Any physical drive can be used for storage except a USB stick. For a more controlled allocation of drives follow the steps below:

- If only the C:\ drive is available, check the Local Drive box. Allocate space for recording storage using the slide bar or the number field up/down arrows. A 75 GB minimum storage space required; if a drive does not have that available it will not display. If other drives are available for storage, select the drives to store video and allocate space on these drives.

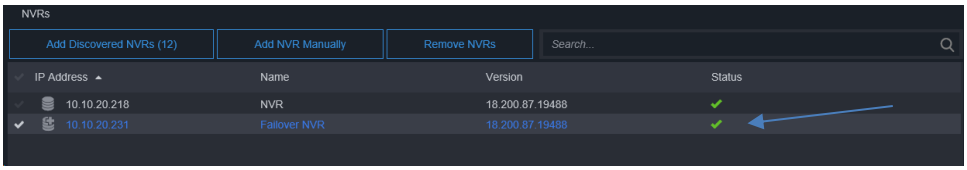
- Click the Save button to retain these settings. A Cancel button is provided to negate any settings made. If the page is closed without saving, a warning dialog box will display.

Tip: Avoid using the OS drive as a recording drive. It is strongly recommended to use a different physical drive if available or at least partition the drive and use a different partition. Using the OS drive for recording may have an impact on overall NVR performance

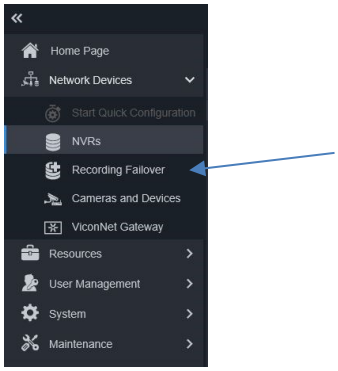
Recording Failover

Valerus allows an NVR to be configured as a failover NVR to act as a backup in the case of an NVR failure. The failover NVR is a dedicated PC and is *not* one of the system's NVRs.

Note: The Recording Failover capability requires an ENTERPRISE license. Additionally, the NVR must be defined as a failover NVR in the Valerus Launcher and then added to Valerus in the same way a standard NVR is added. Refer to the previous section to add the failover NVR. In the NVR list, the failover NVR will show with the different icon and failover type.



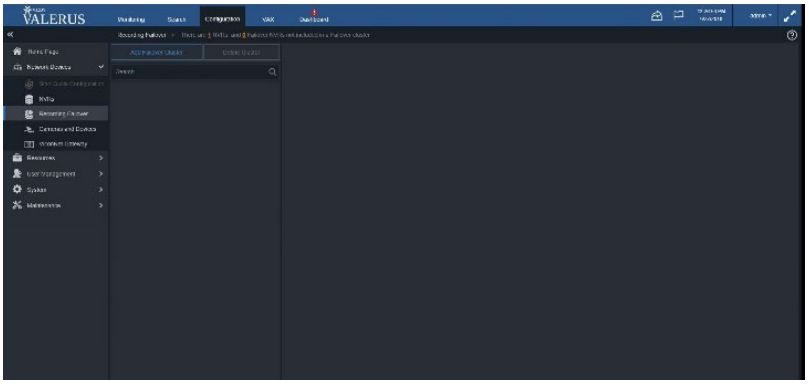
Proceed to the Recording Failover tab. The following screen displays.



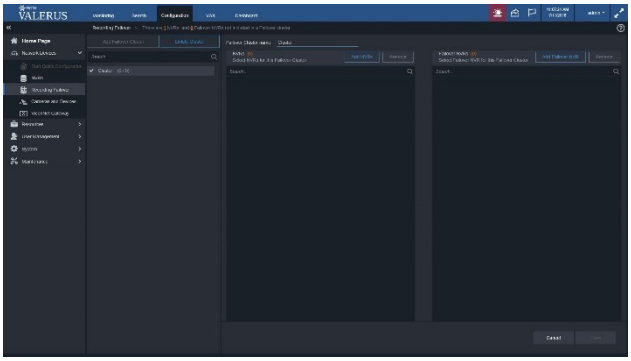
From this screen, define ***Clusters*** of NVRs and the association of failover NVRs that will be the backup.

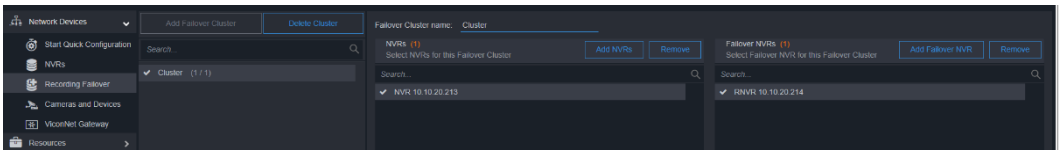
- A single failover NVR can serve as a failover for multiple NVRs; once the failover NVR is in use (actively backing up a failed NVR), it is not available for failures of other NVRs in that cluster. Each device can be in only one cluster. At least one NVR and one Failover NVR must be in the system to form a cluster.

- You can also decide to have several failover NVRs in the same cluster and then, if one is actively backing up a failed NVR, the next one will be standing by for another failure.



- Click ***Recording Failover*** to open the setup screen.
- Click ***Add Failover Cluster***. The following screen displays. A summary of the system NVRs and Failover NVRs is at the top; this list is based on the NVRs and failover NVRs already added to the system. Click ***Add NVRs*** to select which NVRs will be in this cluster. Then click Add Failover NVR to designate which failover NVR will back up this cluster of NVRs.
  - The summary will always show if certain NVRs are still not members of a cluster.





- Click Save to complete configuration of the cluster. A cluster can be removed by selecting the cluster and then clicking the ***Delete Cluster*** button.

Once Recording Failover is configured, if an NVR fails, the system will automatically find the defined Failover NVR; failover will occur within 30 seconds. There will be a Dashboard message that an NVR failed and which failover has taken over.

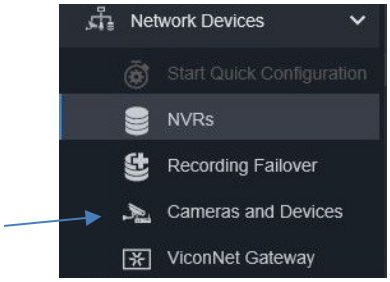
Note that except for the expected short gap in recording until the failover starts, the system behavior is transparent and user experience is not changed. Valerus will automatically switch playback to and from the failover NVRs without having to know when an event occurred.

The failover NVR has its own recording database and its own FIFO schedule.

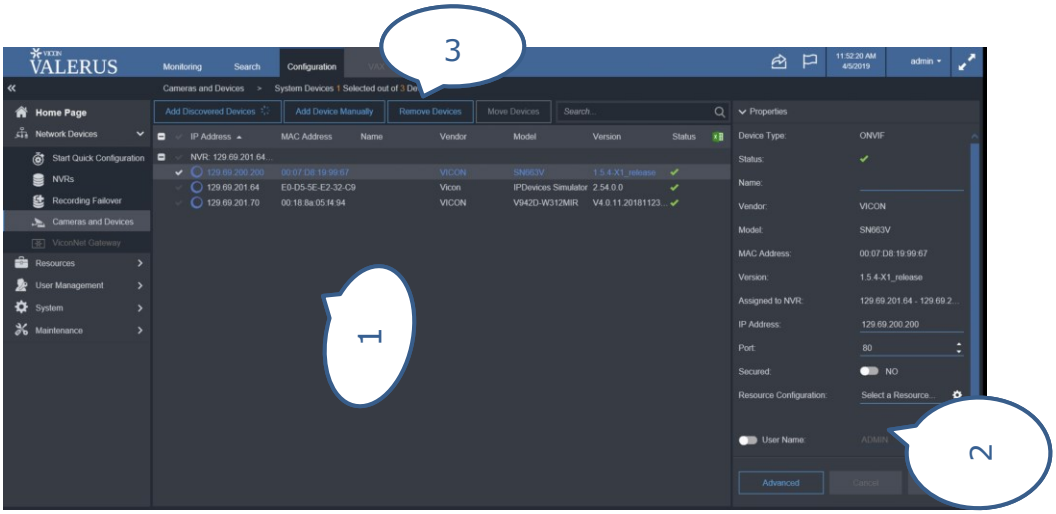
Cameras and Devices

Once the NVRs are configured (at least one NVR must be added to the system for this step; a message will display if no NVR has been added), cameras and devices can be added to the system and configured, requiring that they be assigned to an NVR; a device cannot be on multiple NVRs. Any ONVIF device is supported by the system. An ONVIF device supports at least standard ONVIF-S protocol and uses standard ONVIF protocol; RTSP devices are cameras and devices that support Real Time Streaming Protocol; although they may not support ONVIF, their streams may be added. Devices are listed under the NVR they are associated with; the number in parenthesis next to the NVR name indicates how many devices are currently associated with it.

- Click ***Cameras and Devices*** to open the setup screen.

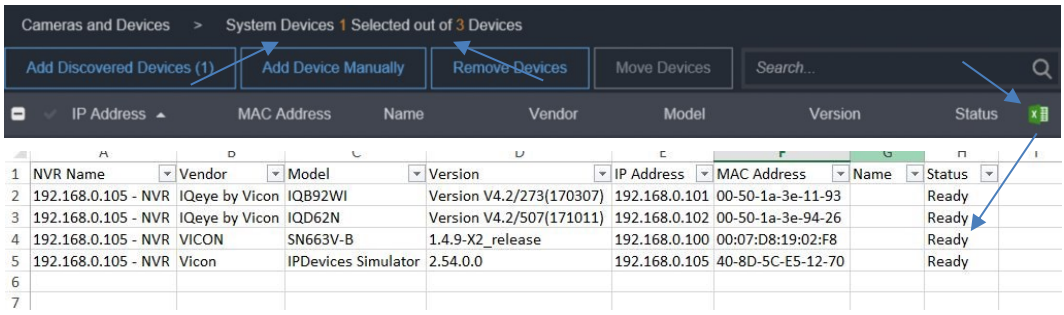


- Any cameras and devices added through Quick Configuration or added previously will display in the list.



1. List of configured cameras and devices per NVR, including MAC address
2. Properties of selected camera or device
3. Options to add, remove or move devices

- The number of devices selected in the list displays next to System Devices; Selected out of indicates how many devices are on the system. There is an Excel icon in the right corner. Clicking it allows you to save a report for all NVRs and devices in an Excel format, including MAC address and Numeric ID, if assigned.



	A	B	C	D	E	F	G	H
1	NVR Name	Vendor	Model	Version	IP Address	MAC Address	Name	Status
2	192.168.0.105 - NVR	IQeye by Vicon	IQB92WI	Version V4.2/273(170307)	192.168.0.101	00-50-1a-3e-11-93		Ready
3	192.168.0.105 - NVR	IQeye by Vicon	IQD62N	Version V4.2/507(171011)	192.168.0.102	00-50-1a-3e-94-26		Ready
4	192.168.0.105 - NVR	VICON	SN663V-B	1.4.9-X2_release	192.168.0.100	00:07:D8:19:02:F8		Ready
5	192.168.0.105 - NVR	Vicon	IPDevices Simulator	2.54.0.0	192.168.0.105	40-8D-5C-E5-12-70		Ready
6								
7								

- Similar to NVRs, devices are added to the system in two ways, either from a list of devices discovered by the application server and NVRs or added manually. The Add Discovered Devices option provides a list of devices that were auto-discovered by the system and are not already on your list; the number in parenthesis indicates how many such devices were found on this network

(once a device is added to an NVR it is no longer in the Add Discovered count). If you know that more than this number of devices has been installed, check their connectivity and if they are on a different network (or VLAN, etc.) they can be added manually.

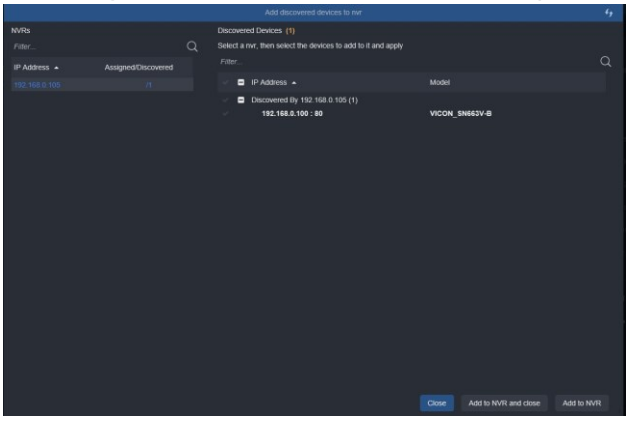
- Click on the ***Add Discovered Devices*** tab at the top of the Cameras and Devices screen. A popup displays with a list of NVRs in the system on the left, along with the number of devices that specific NVR discovered and the number of devices already assigned to it; use the dropdown arrow to view the entire list. The first time this is done, a message will display asking to provide credentials for those devices that do not have any (user name and password); if the device has credentials, they will not be affected. Additionally, the first time a camera is being added, the VMS will ask and store a user name and password in case an ONVIF profile Q camera, which requires a known user and password in the VMS, is added to the system. Note that there may be two IP addresses listed for the same device. This is because the Network Settings for IPV4/IPV6 and HTTP/HTTPS impact on what is presented here. This list can be refreshed by clicking the refresh button  in the top right corner. When an NVR is selected by clicking on it, two lists are displayed on the right side of the popup:

  - List of all devices this specific NVR did not discover but were discovered by other NVRs (if such devices exist)
  - List of devices discovered by this NVR but not yet assigned to it.

- In networks where there are NVRs on different nodes of the network, having two lists offers the ability to distinguish which NVRs and devices are on the same network node.

  When all NVRs and devices are on the same network, it is expected that all NVRs will be able to discover all devices and that there are no network constraints that might restrict certain NVRs to record certain devices. On the other hand, if there are NVRs and devices on different nodes, for example in a campus where different buildings are on a different VLANs, it might make more sense to assign the devices in a certain building to the NVR in that same building and not to stream back to another NVR. Knowing which NVR can discover those devices helps in making that decision.

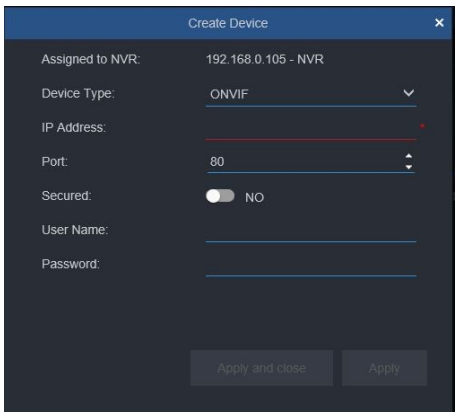
- Select the devices to be added to the selected NVR. A device can be selected by clicking the check mark next to the device. Clicking the check mark on the top bar will select all the devices in the list. Multiple devices can also be selected holding the Control (Ctrl) key while clicking on the devices or by holding the Shift key and clicking the top and bottom devices in a selected range (standard Windows selection). Click Add to NVR and close when done or click Add to NVR button to continue using this screen. A Close button is provided to close the popup. The selected devices will now be listed with the IP address, vendor, model, version of software and the status. A green check indicates the device is recognized, meets the defined ONVIF profile and can be configured.

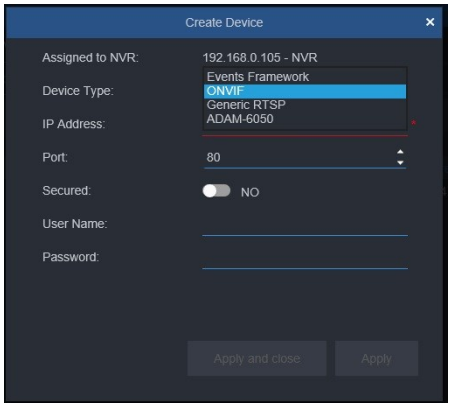


Note: On rare occasions, there may be the message "NVR Device Database Mismatch" instead of the green check; this message will also appear in the Dashboard. This means that the NVR is not receiving the expected settings for the device as defined in Configuration/Resources; the defined settings do not match the settings coming from the camera itself. This may happen, for example, if the camera settings

are changed directly from the camera's web interface instead of from the VMS Configuration page (all camera settings should be done directly from the VMS). The NVR will keep trying every 30 minutes to match the defined settings. The camera will display video, but the display may not be as intended, i.e., different resolution or fps.

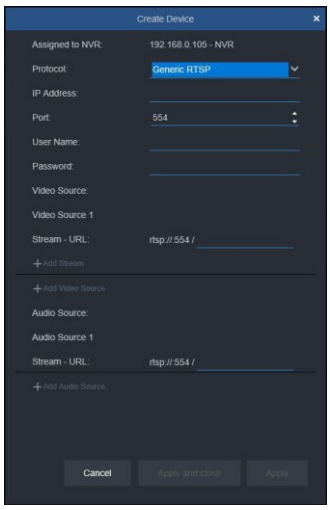
- To add a device that was not on the discovered list for any reason, click the ***Add Device Manually***. A popup displays to enter the device protocol (ONVIF, Events Framework, ADAM-6050 or Generic RTSP), the NVR it will be assigned to, port, whether it should be secured (Yes/No; using a secured HTTPS connection) and user name and password for the device. Click Apply to continue using the screen. Click Apply and Close when finished. A Cancel button is also provided to close the popup. The device will be added to the list with all of its pertinent information.
- Adding a device using its Generic RTSP address takes advantage of a capability most devices offer - to stream video and audio using an RTSP protocol. This will allow getting the streams from devices that are not ONVIF compatible and view and record them in Valerus. Adding a device in this way will allow you to define each stream by its RTSP address (these may vary between manufacturers and should be documented by them). A choice of resolutions is provided, up to 12 MP. An example of this follows:





This example uses the Vicon Express DVR as an encoder and shows how all channels can be added:

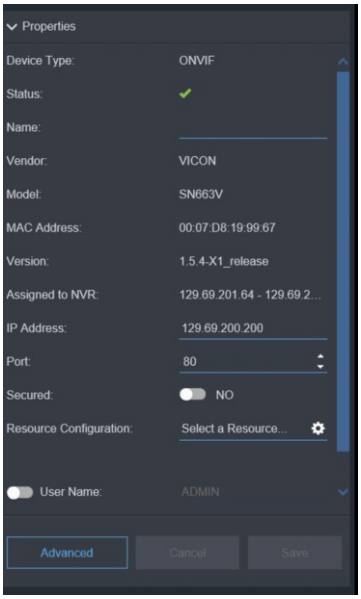
- This unit has 8 video inputs and supports 2 streams for each input.
- Referring to this specific unit's manual (other units will be different), it is learned that the RTSP address is defined as follows:
  - Channels are numbered from "0" being the first channel to "7" being the 8th channel.
  - RTSP port used by this unit is 5554.
  - For every channel, the **first** stream address is RTSP://xxx.xxx.xxx.xxx/live/mainN (where xxx.xxx.xxx.xxx is the unit IP, N is the channel number 0-7).
  - For every channel, the **second** stream address is RTSP://xxx.xxx.xxx.xxx/n/live/secondN (where xxx.xxx.xxx.xxx is the unit IP, N is the channel number 0-7).
- Each channel with the two streams is setup as shown in the setup screen below. Note the option to add more sources (when multiple inputs exist) and more streams.



Note that at this time there is no way to edit the unit once added, so please make sure to add all channels at the same time.

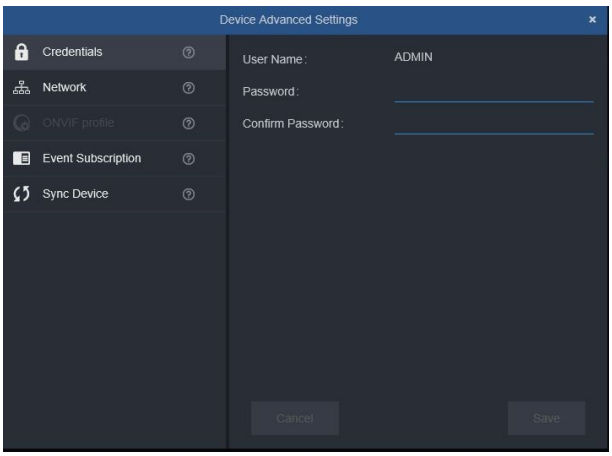
Once added every source will show as a video resource exactly as other cameras and allow setting its properties. See the note regarding these channels under the video channel settings.

- The ***Properties*** screen displays to the right, providing credentials on the currently selected device. If a name is added in the field, that will also display in the list. Click the User Name button to allow the user name and password to be modified. Clicking the arrow head next to Properties collapses the Properties screen.

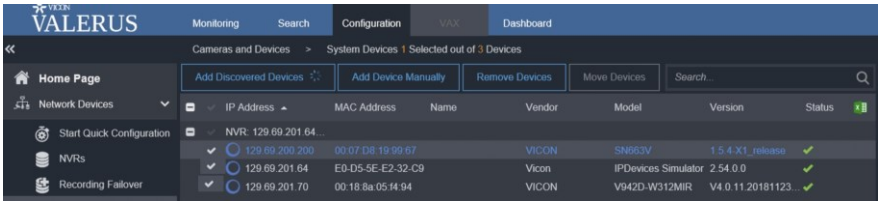


- By default, the device is added without a name and is listed by its IP address. If a name is added in the field, that will also display in the list.
- The IP address and port of the device is shown and can be changed. The address and port are what the Application server will use to connect to the device and needs to be updated in any case where the device has change its IP address and/or port. Enable the Secured button by clicking the button to YES (turns blue). This is used when you are using a secured HTTPS connection.
- The user name and password shown are what the Application Server will use in order to connect to the device. This will need to be updated if changed. Click the switch next to these fields to allow editing.

- An Advanced button is provided and can be used to change some of the credentials for the device itself. Clicking Advanced button opens a dialog box.

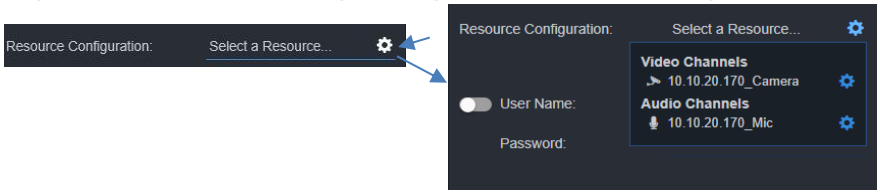


- From the Device Advanced Settings, several settings can be modified. From Credentials, the password for the device can be changed (the ADMIN name cannot be modified). Required fields are noted in red. After your changes are made, click Save or Cancel to close without saving the new settings.
- From Network, if the IP details of the device need to be changed, it can be done directly from the Properties screen. Note that depending on how the Network Mode is configured in the System, Network screen, there may be both IPv4 and IPv6 settings here.
- The ONVIF profile allows setting between profile S and profile T (default) for cameras that support both and may require a change.
- Event Subscription allows setting the way Valerus receives events from the cameras. By default Valerus will do this automatically, but some cameras may not work well and it is possible to manually select a method or disable this completely (to prevent event subscription failures).
- Sync Device will initiate a database sync with a device instead of waiting for it automatically, which may be required after certain changes occur.
- If multiple devices of the same model are selected (can be done using the check box or Control (Ctrl) key, they can be configured together, but only for similar properties. Check the devices you want to configure. The properties box will display with the common fields. Set the properties for all these cameras. Click Save.

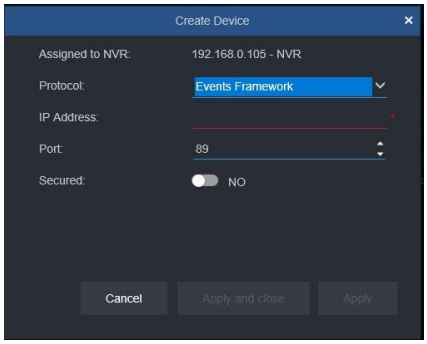


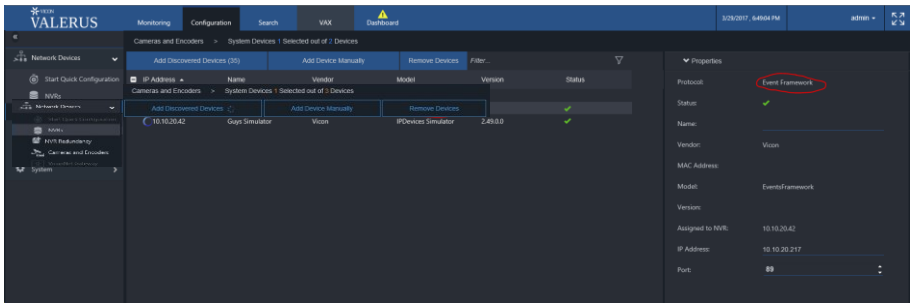
- Devices can be deleted from the list. Check it in the list and click Remove Devices or click on the garbage pail icon next to the Status indicator.
- Devices can be moved to another NVR, done for example to balance resources on the system. Click the Move Devices button and select another NVR to move this device to.
- A camera already in the system can be replaced with a new one (MAC address change); the existing settings will remain. When Valerus detects that a device IP address has a new MAC, the Admin will be prompted to approve the change. Upon approval, the new MAC address will be updated.

- From the Properties section, a settings icon provides a link directly to the Resource configuration screen.



- The VEF Streaming Engine is added manually in the Cameras and Devices Configuration screen.
- Once added, the VEF device will be listed as any other device and configured in Resources.





Valerus-ViconNet Gateway

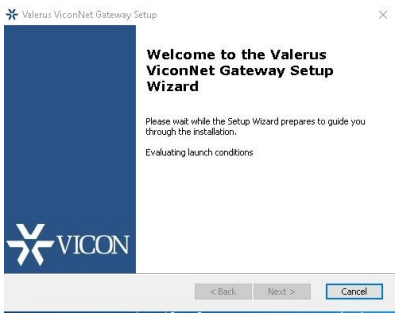
The Valerus-ViconNet Gateway is a module designed to provide a simple migration path to allow bridging existing ViconNet systems to a Valerus VMS. Refer to Valerus-ViconNet Gateway manual for details about this configuration.

Configuration in the ViconNet System

- The ViconNet Gateway uses the device groups set in the Nucleus to connect to existing ViconNet systems and select which cameras to bridge to Valerus.
- A group must be created that contains all the selected cameras that are to be connected. If multiple Gateways are used, multiple groups can be created (all under the same working group set), each consisting of the cameras for a specific server. If groups already exist, they can be used as long as they list all the cameras needed. Go to your ViconNet Nucleus and enter *System Setting*, *Device Group Sets*, *Working Set* to create the group.

Configuring the Gateway

- Download the Valerus-ViconNet Gateway software from the Vicon website on the Software Download page. Note that this download contains two installation files in one zip file, Gateway software and ViconNet version 8.3. Unzip the file and save the two installations.
- Install the Valerus-ViconNet Gateway the assigned server; follow the installation steps in the setup wizard. If there are multiple Gateway servers in your system, install this on each of them.

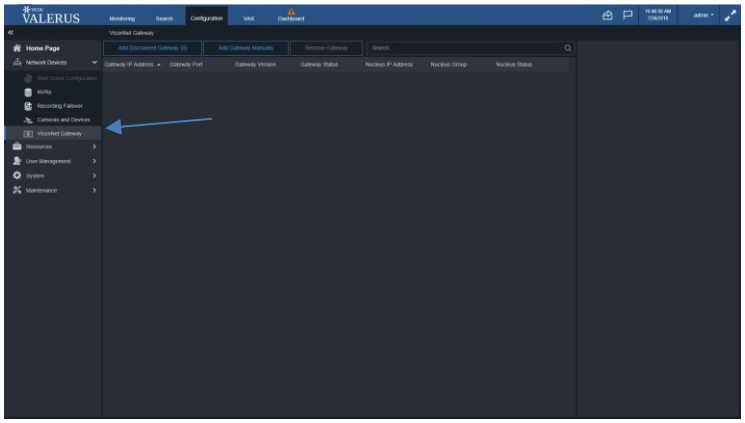


- Install ViconNet 8.3 on the same server on which the Gateway software was installed; there is no need to upgrade other ViconNet devices, as only the Gateway has to run this version. At the end of the installation choose not to run ViconNet on system startup. Run the ViconNet software once and then exit ViconNet. If the Gateway will be running on the Application Server in a new Valerus installation, be sure to choose *Application Server only* at the end of the install.

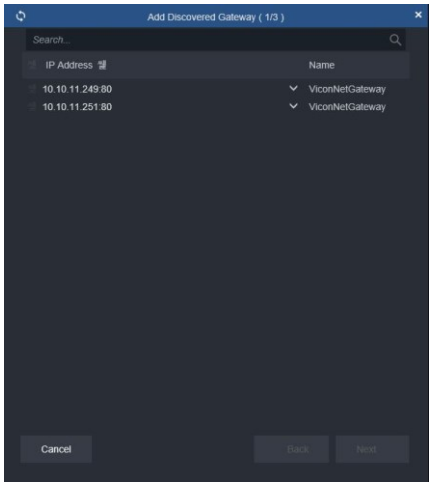
Valerus System

- Make sure the Valerus Application Server and all NVRs in the system are running a minimum of Valerus version 18.
- The Valerus license must be updated with the Gateway license. In a new installation, if the Gateway was part of the license, it should be in place; if this is an upgrade, the activation key needs to be updated. Each Gateway in the system requires a license.

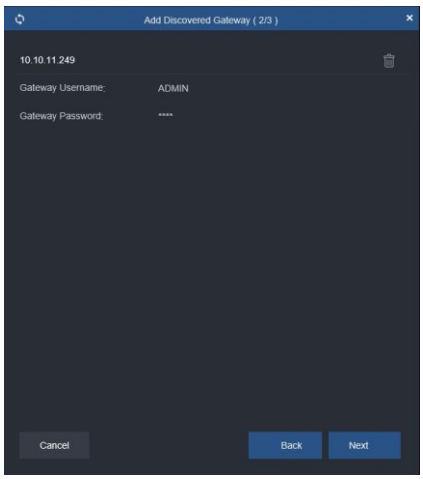
- Go to the Configuration tab. Click Network Devices and select the ViconNet Gateway option.



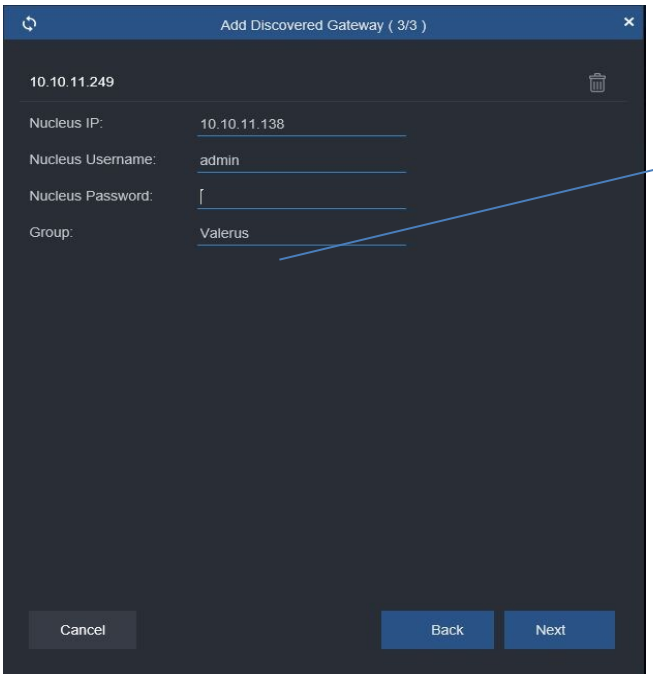
- Click on the Add Discovered Gateway to show the list of Gateways found on the network.

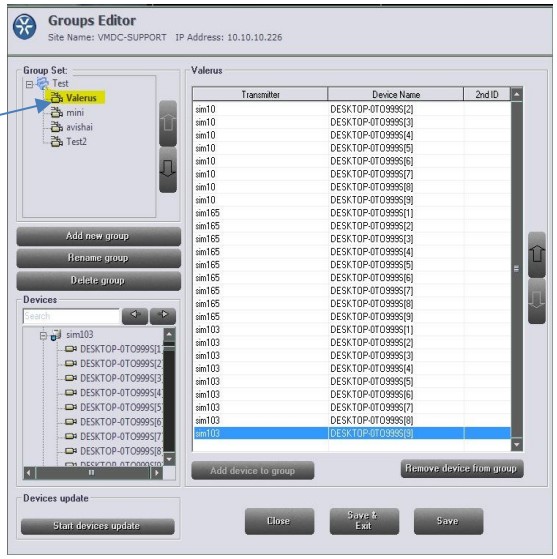


- Select the Valerus-ViconNet Gateway to be added from the list. Click Next.
- The Gateway User name and Password defaults are ADMIN, 1234. Click Next.

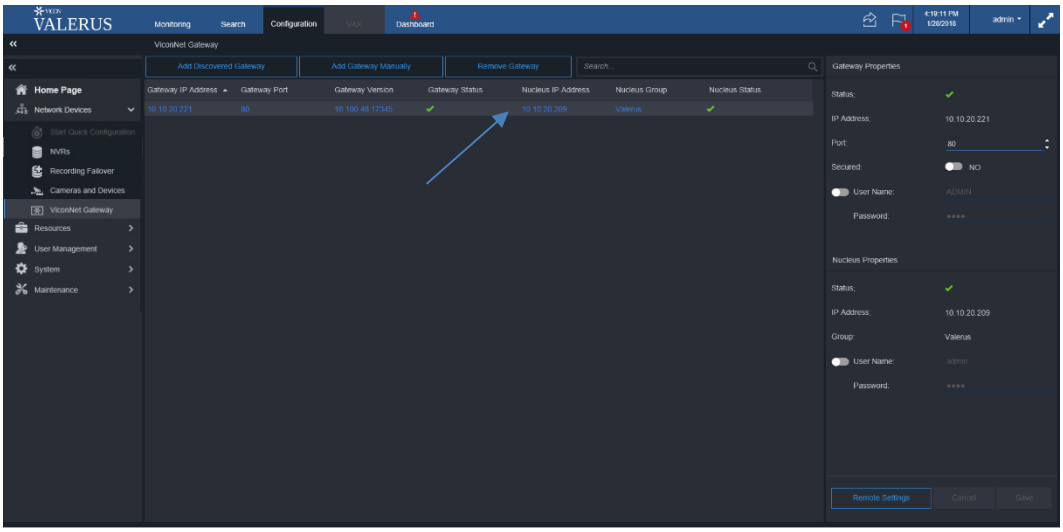


- A green check mark indicates that the Gateway has been connected. If the credentials have changed, update them here. Click Next.
- You will be asked for the Nucleus information allowing the Gateway to connect and communicate with the pre-assigned camera group. Fill in all the details as shown in the example below: Nucleus IP, the IP address of the ViconNet Nucleus; Nucleus Username and Nucleus Password have the same login credentials as the ViconNet administrator login credentials. Group is the Group name inside the ViconNet Working Group Set that contains the cameras from ViconNet to be added to the Gateway. Click Next.



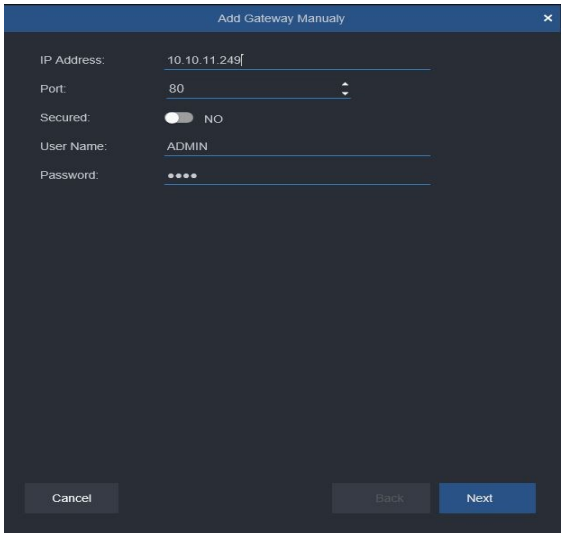


- If all the information entered is correct, the following screen should display; Gateway Status should show Online and Nucleus Status should show green check mark.



- If the Gateway Status shows Offline, make sure that the Gateway Service is running on the computer that it is installed on, or that the computer itself did not go offline; if the Nucleus status does not have a green check mark, make sure that the Nucleus is online and can be reached on the network by the Gateway computer.
- If the Gateway is located on another network or another VLAN and the Gateway computer can be pinged, it may not be discovered automatically by Valerus. In this case, use the Add Gateway Manually.

  Enter the Gateway IP address and port of the Gateway computer to be added. The remainder of the steps are identical to the Add Discovered Gateway procedure. See the image below.

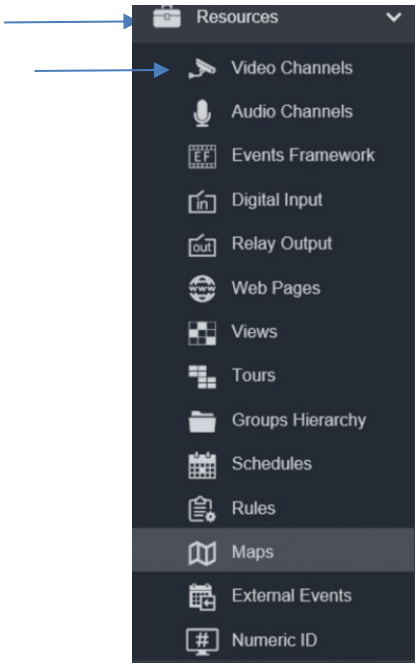


- Once the Gateway installation and configuration are completed, it will show in the Valerus system as if all the cameras are on one virtual encoder and all the Resources coming through the Gateway will be populated. All Resources coming through the Gateway in the Resources list and relevant parameters can be set.
- Remember that when using the Gateway, all the recording still takes place on the ViconNet system, so in Valerus these channels will not be configurable for streams and recording. Masking, if needed, will need to be defined in Valerus for the channels even if they have masking in ViconNet.

Resources

After the system has been built with all the physical devices connected in the Network Devices area, the resources can now be configured. All the system resources are organized by type under the ***Resources*** section.

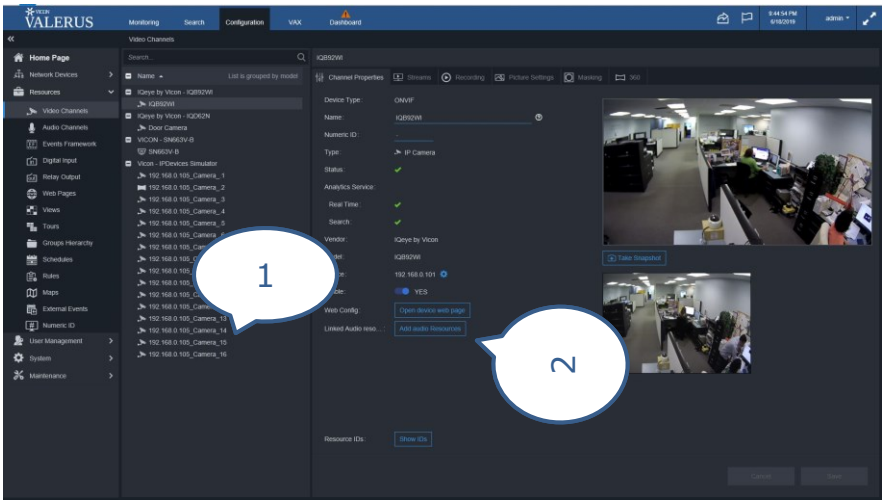
This includes Video Channels, Audio Channels, Events Framework, Digital Input, Relay Output, Web Pages, Views, Tours, Groups Hierarchy, Schedules, Rules, Maps, External Events and Numeric ID. These are all described in detail below.



Video Channels

This category refers to the video ability of the cameras and devices previously added to the system. These channels are grouped by their model, which allows groups of video channels to be configured for common settings in one action. The settings available depend upon the specific camera/device model being configured.

Note: All configuration of cameras should be done through the Valerus VMS.



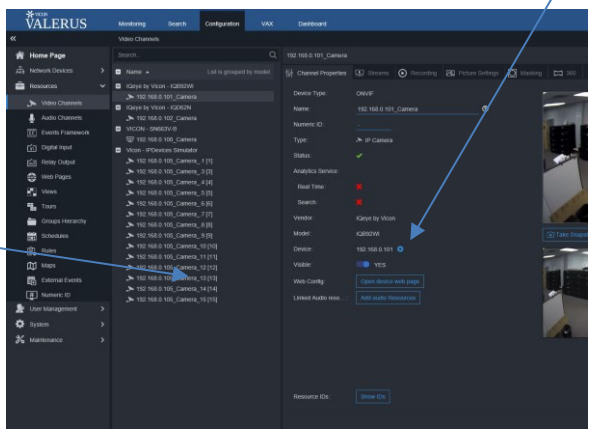
1. List of video channels grouped by model
2. Camera settings; choices vary by specific model

Channel Properties

- Select a channel from the list. The Channel Properties displays, including the protocol, name of the camera/device and the type of camera/device it is. You will also see the vendor and exact

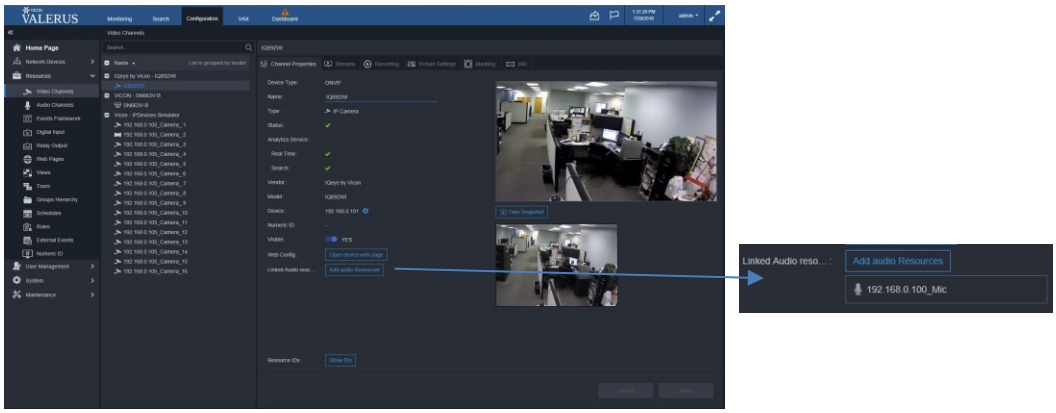
model name and the camera/device's IP address. Analytics Service will also be indicated with a green check (enabled) or red x (not available). A Numeric ID can be added in the field here.

- If the Show Player button is activated (Yes), the live video will display in place of the camera icon. Additionally, there is a Snapshot view. This can serve as a visual identification of the camera as a reference. Clicking Take Snapshot will show a snapshot of the current live video; this can then that can be compared to Live view to confirm any camera setting changes.
- The video channel name field will show by default its IP address and type. The name can be edited here and will be used on all lists. In the case of using a multiple channel device, such as an encoder, a number in square brackets is automatically added to the name so the physical input number will still be identified; be sure not to use square brackets at the end when naming devices, as they will be automatically removed. Next to Device there is a settings icon; clicking the icon will link to the NVR screen.

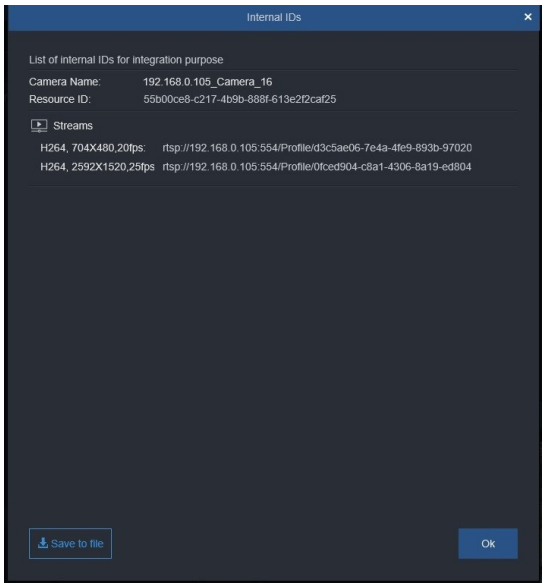


- By default the video channel is set to appear in the Resource list on the monitoring screen. If you would prefer that it not appear in the list, for example if it is viewing a covert location and the channel should not be seen, make sure Visible is set to No by clicking the button.
- A link to "Open device web page" is provided to the device web interface to review the specific features of the camera or if certain features need to be configured and are not configurable by the VMS. Otherwise, all configuration should be done through the VMS.
- The video of this camera/device can be linked to audio resources (up to 2 audio channels per video channel) so that they will be grouped for use. Click the Add audio Resources; select the microphone to be linked from the popup list. When this is done, the cameras icon on the Resource list will show it has linked audio. Live and playback will automatically include video and audio; this is convenient in certain types of situations, for example in an interrogation room so the interview can be both seen and heard together without having to start the video and audio separately.

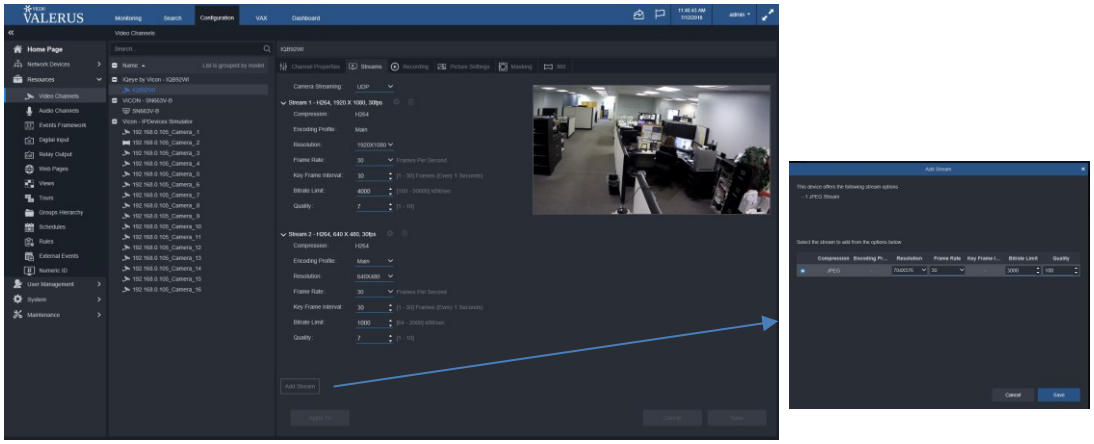
- Click Apply. Click Cancel to close without saving these settings. A list of the linked audio devices will display below the Add audio resources button.



- For Resource IDs, selecting Show ID allows you to save a text file with information about that camera that can be useful when working with integrated parties that need this information.



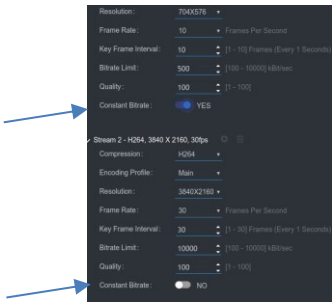
Streams



- Many cameras/devices offer multiple video streams. The stream tab allows configuration of up to two streams per camera, with an option to add a stream if the camera has that capability; click the Add Stream button. These streams will be used to set up recording and used by the Monitoring screen.
- Protocol, Compression, BitRate, Frame Rates, etc. are all defined here. The VMS default settings, enforced by default once the device is added to the system, are:

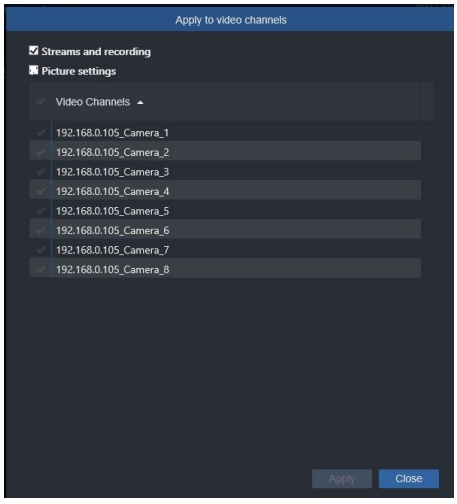
- One Stream – top resolution supported by the camera/device and maximum frame rate; Second Stream – VGA (D1) resolution and maximum fps available. Clicking on the stream collapses the fields.

Each of these settings can be changed; the list of available option is based on the specific device capabilities (the camera tells the VMS what it can support). Some cameras have the option to select Constant Bitrate on or off. Click to enable.



Note: If Generic RTSP has been chosen as the protocol for the device, these stream parameters are set in the unit. However, it is still important to select the same parameters on this screen as those set in the device, as Valerus uses these settings when it determines which stream to display (Monitoring).

- Saving the need to make the same settings to multiple cameras/device s of the same type, these settings can be applied to a group of cameras/device s of the same model. At the bottom of the screen there is an Apply To button. Clicking it opens a popup that will allow you to assign these same settings to other cameras/devices of the same model in the system. Select the camera/device(s) from the list. Multiple selection is supported by checking the box next to the camera or by using the Ctrl and Shift keys and clicking the channels; all cameras/devices can be selected by clicking the check box in the gray title bar. Click Apply and then Close.

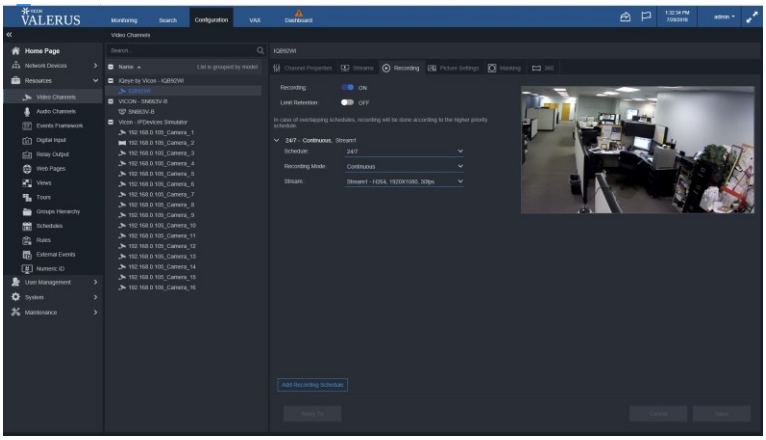


- Click Save or Cancel to close without saving these settings.

Tip: Typically, there is a certain similarity between camera type (indoor, outdoor, PTZ, etc.), which allows sharing the same settings with the cameras of the same type. For a quick configuration, select one channel representing the group, configure it and then apply these settings to all similar devices.

Recording

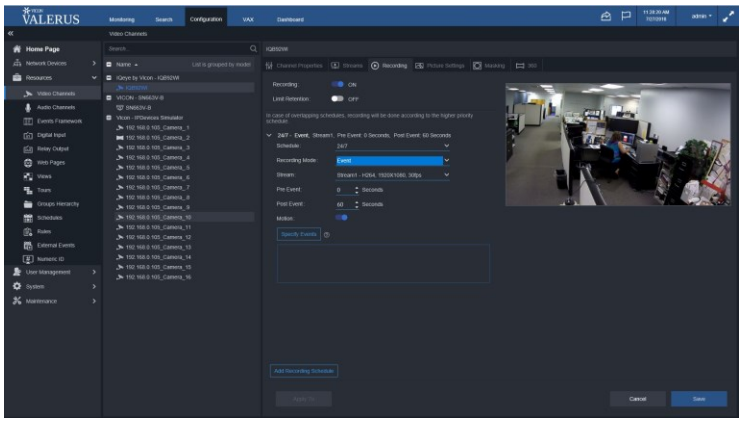
- Each device can be set to record video. Recording of video is turned On by default when the device is added to a recording server; click the button to toggle recording On/Off.



- Click the Limit Retention button to On to select the maximum number of days to hold recorded video in storage before it will be overwritten, even if there is still free space on the drive. If this is turned Off (default), recording will continue until the storage is filled and then be overwritten according to FIFO.
- Select a schedule for recording from the drop down list. The default setting is 24/7. Any schedules that have been previously configured will be listed here as well. As a convenience, selecting new schedule opens the Schedule settings screen and another schedule can be created directly from here.
- If additional recording schedules are required, for example one for weekdays and one for weekends, click the plus symbol to open another schedule. Note that if 24/7 is selected as the first schedule, no other schedule is necessary, as the camera will be recording all the time. If a second events-based schedule is created (i.e., weekends) that overlaps with a 24/7 schedule, the event schedule has priority; an event is considered to have priority over ongoing recording. Therefore, in the example, there will only be recording on the weekend if the event occurs, even though 24/7 was selected for the first schedule.

Tip: When designing the system, understand the expected recording at different times and create your schedule accordingly.

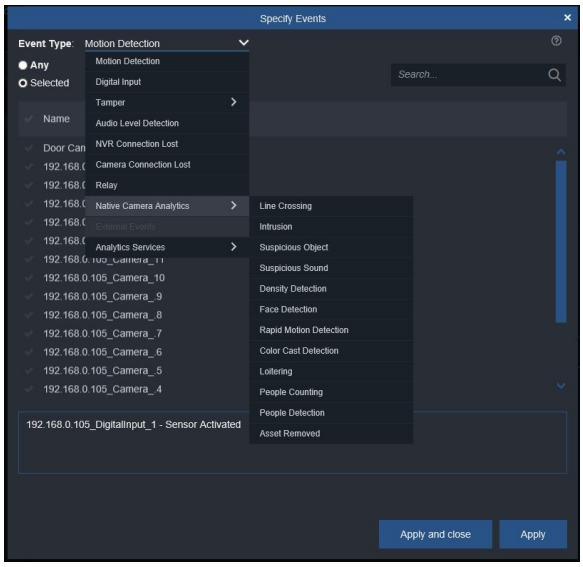
- Select a recording mode from the drop down list, Continuous, Event or Continuous & Event (if the camera has more than one stream). The sub-menu will change according to the selection.
- If Event is selected, both pre and post event recording can be set for a specific number of seconds. When the event occurs, video will be recorded for a preset time of up to 30 seconds per channel before (pre; event saved in memory until it needs to be saved on the drive) and after (post) the event, resulting in a video segment that shows exactly what happened just before and after the event.
- If Continuous & Event is selected, there is no need for pre-event recording, as the event is already recording continuously; the event will be recorded from a secondary stream, which is specified here.



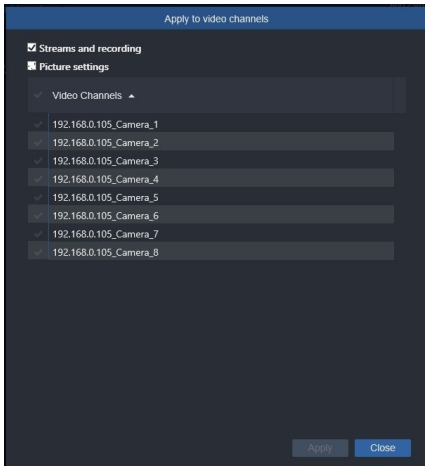
- Event Recording is enabled for motion on the specific camera being configured by default, as this is the most common event; it can be disabled by clicking the button. Recording upon other events can also be configured.
- Click Specify events to determine what events across the system will be included in this channel's event for recording. Select the event type from the drop down list on top: Motion Detection, Digital Input, Tamper, Audio Level Detection, Camera Connection Lost, Relay, Native Camera Analytics, External Events and Analytics Services are options included currently and will be relevant depending on the system and its capabilities (for example, native camera analytics is not available on all cameras). With the Selected radio button checked, select the cameras from the list to associate with this event. Selecting the Any radio button on the Specify event screen means that if this event type occurs on any device in the list, it will trigger event recording on the video channel being configured. Multiple event types can be selected and will display in the box at the bottom. When all the events have been selected, click Apply or Apply and close; click Close to shut the popup without making any changes. All of the events will be listed under Specify events.

Important Note: There is a question mark symbol next to Specify events that will explain the logic of your choices. When specifying more than one event to trigger recording, the recording will start if an event is reported by ANY of the sources specified. Recording events is working as a logical *OR* between multiple events. The same applies if the Any event option is selected.

Tip: This method allows selecting for every video channel which events from which cameras are considered a trigger. It allows for a very specific configuration.



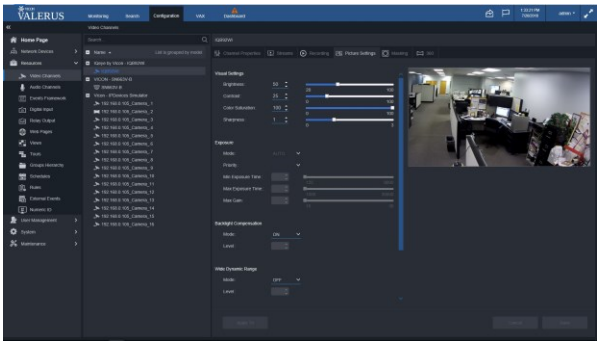
- Select which camera stream will record at which time, based on your former selection.
- To collapse the schedule display list, when there are many schedules, click the arrow head.
- Saving the need to make the same settings to multiple cameras/devices of the same type, these settings can be applied to a group of cameras/devices of the same model. At the bottom of the screen there is an Apply To button. Clicking it opens a popup that will allow you to assign these same settings to other cameras/devices of the same model in the system. Select the camera/device(s) from the list. Multiple selection is supported by checking the box next to the camera or by using the Ctrl and Shift keys and clicking the channels; all cameras/devices can be selected by clicking the check box in the gray title bar. Click Apply and then Close.



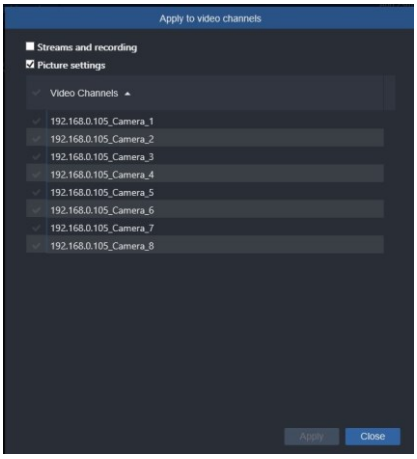
- Click Save or Cancel to close without saving these settings.

Picture Settings

- The Picture Settings screen provides adjustments for Visual Settings (brightness, contrast, saturation, etc.), Focus, Exposure and other camera features. The settings offered are camera dependent and will vary between models and cameras with different settings.



- Saving the need to make the same settings to multiple cameras/devices of the same type, these settings can be applied to a group of cameras/devices of the same model. At the bottom of the screen there is an Apply To button. Clicking it opens a popup that will allow you to assign these same settings to other cameras/devices of the same model in the system. Select the camera/device(s) from the list. Multiple selection is supported by checking the box next to the camera or by using the Ctrl and Shift keys and clicking the channels; all cameras/devices can be selected by clicking the check box in the gray title bar. Click Apply and then Close.

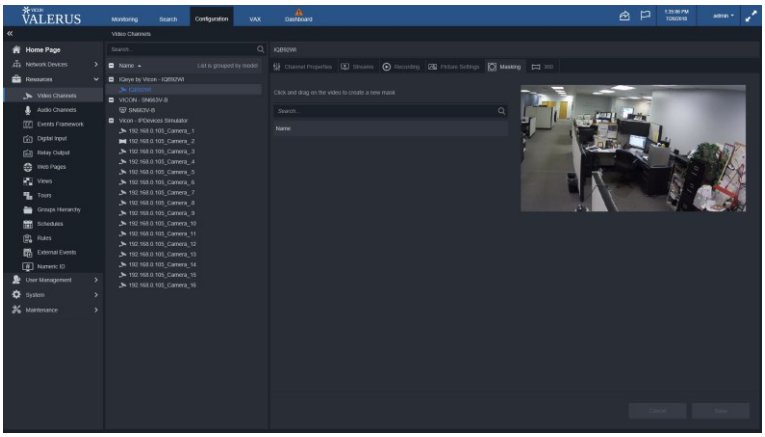


- Click Save or Cancel to close without saving these settings.

Privacy Masks

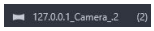
In cases where it is necessary to protect sensitive areas of the video from being seen, they can be pixelated so that only a vague outline is visible without any detail. This mask is created in the VMS, which is different from doing it in the camera, and allows unmasking of video if needed.

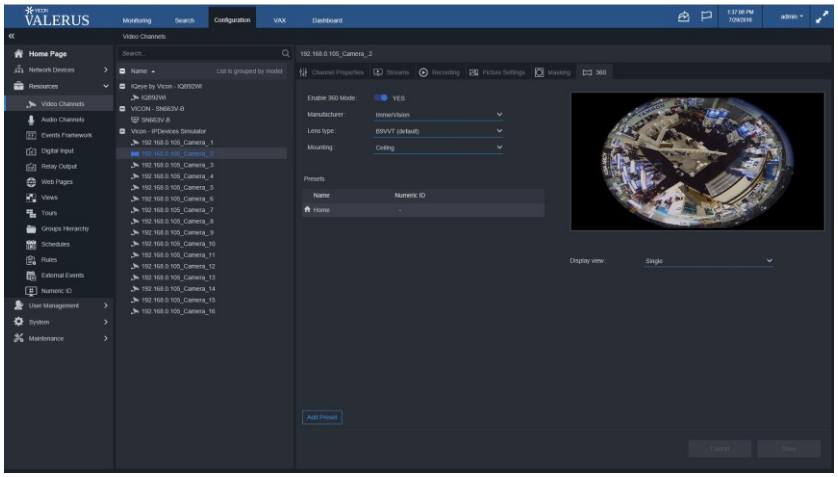
- Click on the Masking tab to create privacy masks on the video. The number of masks created appears in parenthesis.



- Using the mouse cursor, draw the mask in the location it is needed. The mask location and size can be modified; place the cursor inside the mask and move it or place the cursor on the borders or corners to change the size (cursor changes to arrows).
- Once the mask is configured, a default name of mask populates the field; a custom name can be entered in its place if needed.
- To create another mask, click the plus sign.
- If more than one mask is created, the active mask is outlined in red. A mask can be removed by clicking the x in the right corner.

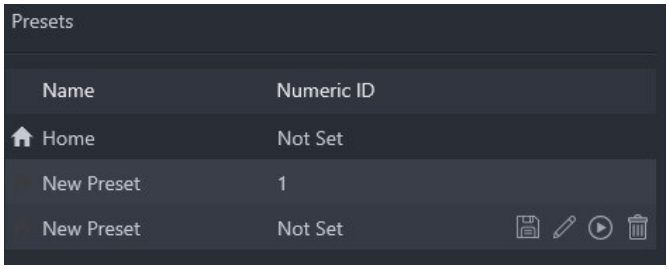
360

Valerus supports setting up hemispheric (panoramic) cameras with a fisheye lens. This 360 feature will display for all cameras; since this feature is based on the lens type, not the camera, the VMS cannot know the lens on the camera. However, it will only allow configuration to an appropriate camera/lens. Note that a 360 camera has a distinctive icon in the Resources list  .

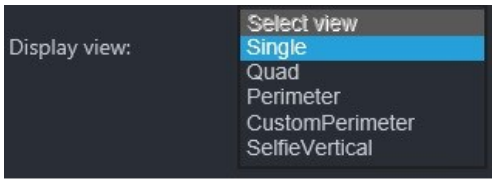


- Cameras with fisheye (360°) can be configured from the 360 tab.
- Click the Enable 360 Mode button to configure the camera.

- Select the manufacturer of the lens from the dropdown list. By default it is compatible with Vicon (B9VVT)
- Select the lens type from the dropdown list. Currently Immervision lens type is supported. Note that selecting the wrong lens may result in video not displaying at all.
- Select the mounting method of the camera. This setting does impact on some of the views available. Refer to the camera manual for details.
- Preset positions enable users to pre-define and save camera information to create specific views that can be called up for display, similar to a PTZ camera. These are often used when it is necessary for an operator to go from one frequently viewed position to the next very quickly.



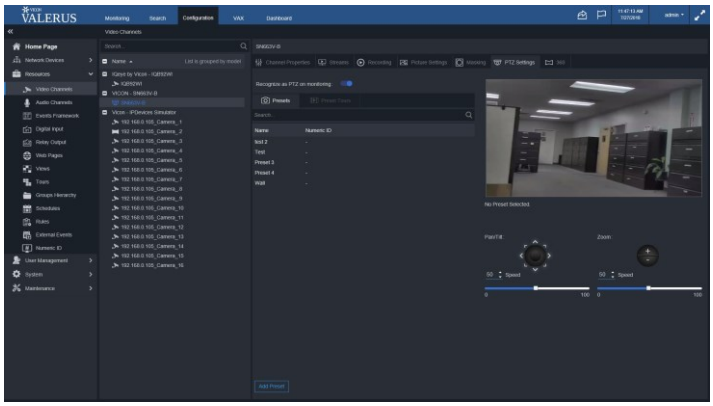
- Presets can set for the panoramic camera/lens. Click the plus symbol to add a preset. Move the camera to the position you want to save as a preset. Icons will display to Save the preset, Edit the preset name, Go to the preset and Delete the preset. These presets will then be available from the Live view in the Monitoring screen. If using a keypad/PLC, be sure to set a Numeric ID here.
- The camera offers a number of built-in preset display views. Select the Display view from the dropdown list, Single, Quad, Perimeter, CustomPerimeter or SelfieVertical. The selection will be reflected in the video displaying on the page.



PTZ Settings

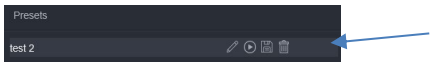
When a PTZ camera is added to the system, the PTZ tab is enabled automatically.

- The Recognize as PTZ on monitoring is enabled by default. This can be disabled as needed.
- Presets can be configured from the PTZ Settings tab. This is only available for PTZ cameras.

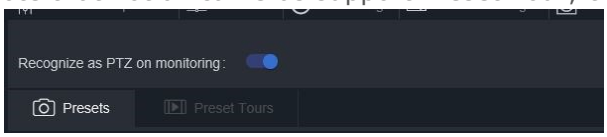


- Preset positions enable users to pre-define and save camera information to create specific views that can be called up for display. These are often used when it is necessary for an operator to go from one frequently viewed position to the next very quickly.
- To store a preset, click the + button. A default preset name will be added to the Presets list. Using the Pan/Tilt and Zoom controls (buttons in Configuration or on the video in Monitoring), move the camera to the position and zoom you want to save as a preset position. Click the save

icon (floppy disk icon). Use the arrow button to move the camera to the preset and the pencil icon to edit the preset parameters. A garbage pail is provided to delete this preset.

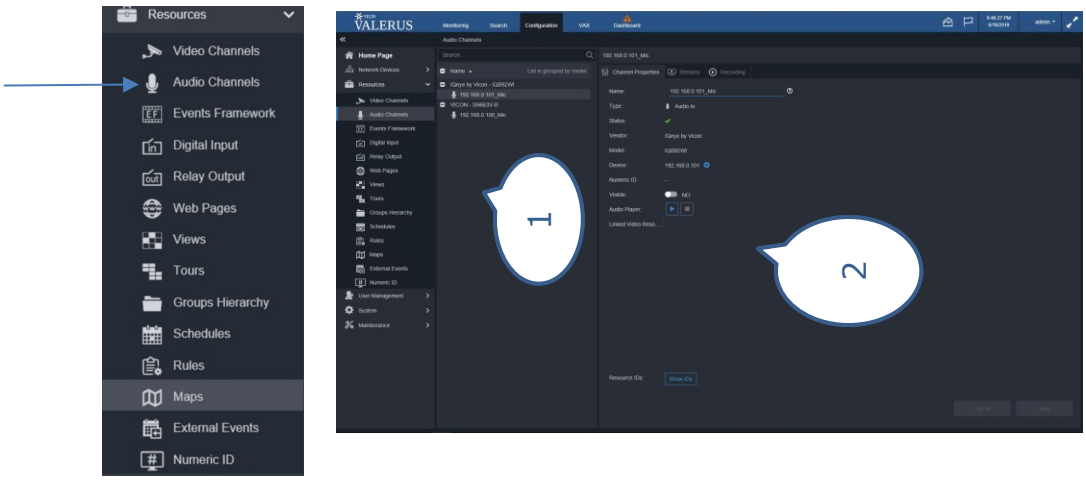


- Preset Tours can be created from previously created presets. A series of presets can be combined into one tour. This tour can then be selected and viewed from the Live video in Monitoring. Note that not all cameras support Preset Tour; the tab will remain grayed out.



Audio Channels

This category includes the microphones in the system connected through IP cameras and devices. Similar to video channels, the microphones are sorted by model type, which allows groups of microphones to be configured for common settings. The microphone should be configured through the VMS, but in some cameras and devices, these have to be enabled in the device web interface first.



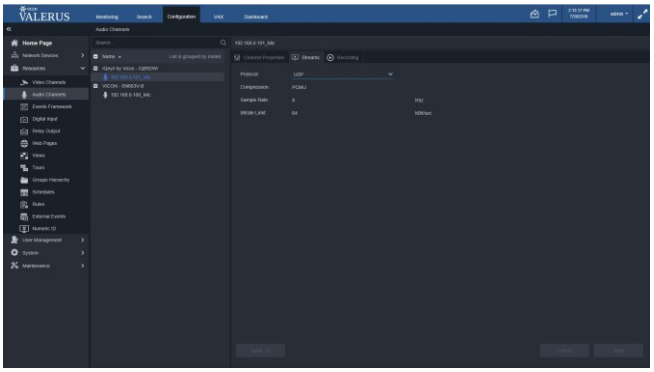
1. List of microphones grouped by microphone type
2. Microphone settings; choices vary by specific microphone

Channel Properties

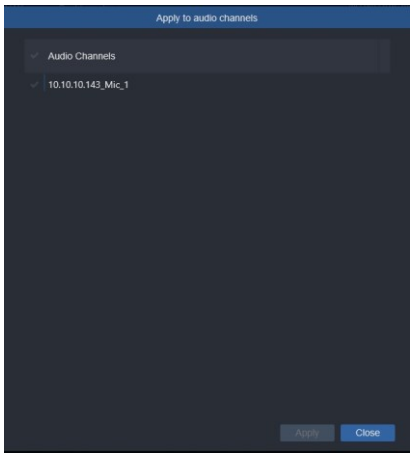
- Select a microphone from the list. The Channel Properties displays, including the type of microphone and its vendor and exact model. The IP address of the device handling this microphone is displayed and a green check appears in status if the system recognizes it. A Numeric ID can be added in the field here.
- Click the Visible button to Yes for this microphone to appear in the Resources list on the Monitoring screen. By default audio channels are set to be not visible.
- To preview the audio, press the play icon on Audio Player.
- If the audio from this camera has been linked to video from the Video Channel screen, it will display here; refer to video channel audio linking for details.
- Save changes or click Cancel to close without saving.
- For Resource IDs, selecting Show ID allows you to save a text file with information about that camera that can be useful when working with integrated parties that need this information.

Stream Settings

- Protocol, Compression, Sample Rate and Bitrate Limit are all defined here.
- The parameters that can be configured are determined by the specific microphone. In certain cases, the parameters are set and cannot be changed. If a parameter can be changed, a field box with a drop down displays.



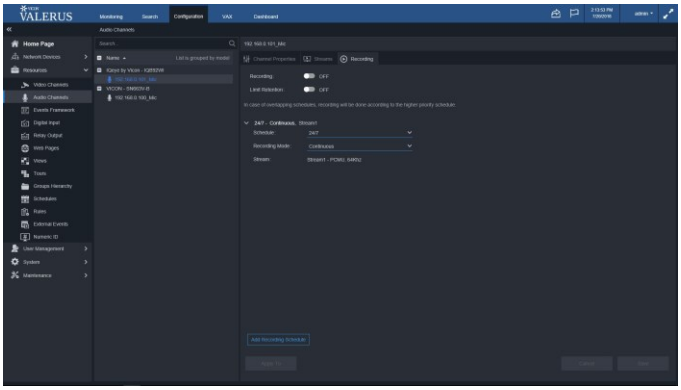
- To avoid having to make the same settings to multiple microphones of the same type, these settings can be applied to a group of microphones. At the bottom of the screen is an Apply To button. Clicking it opens a popup that will allow you to assign these same settings to other microphones in the system; the system recognizes which settings can be adjusted for multiple microphones and will only list those cameras. Select the microphone(s) from the list; all microphones can be selected by clicking the arrow in the gray title bar. Click Apply and then Close.



- Click Save or Cancel to close without saving these settings.

Recording

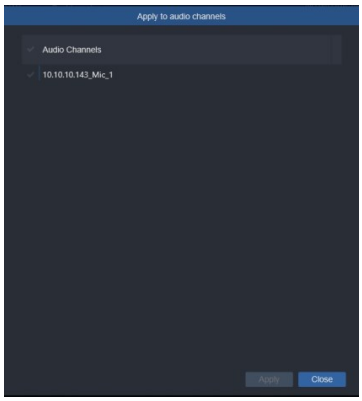
- Each device can be set to record audio. Unlike video, audio recording is turned Off by default. To record audio use the button to toggle recording to On.



- Click the Limit Retention button to On to select the maximum number of days to hold recorded audio in storage before it will be overwritten (even if there is still free space on the drive). If this is turned Off (default), recording will continue until the storage is filled and then be overwritten according to FIFO.
- To create a schedule for recording, click the plus symbol and select a schedule from the drop down list. Recording 24/7 and any schedules that have been previously configured will be listed here. Additionally, selecting new schedule opens the Schedule settings screen and another schedule can be created directly from here.
- If additional recording schedules are required, for example one for weekdays and one for weekends, click the plus symbol to open another schedule. Note that if 24/7 is selected as the first schedule, no other schedule is necessary, as the camera will be recording all the time. If a second event based schedule is created (i.e., weekends) that overlaps with a 24/7 schedule, the event schedule has priority; an event is considered to have priority over ongoing recording. Therefore, in the example, there will be no recording on the weekend except if the event occurs, even though 24/7 was selected for the first schedule.

Tip: When designing the system, understand the expected recording at different times and create your schedule accordingly.

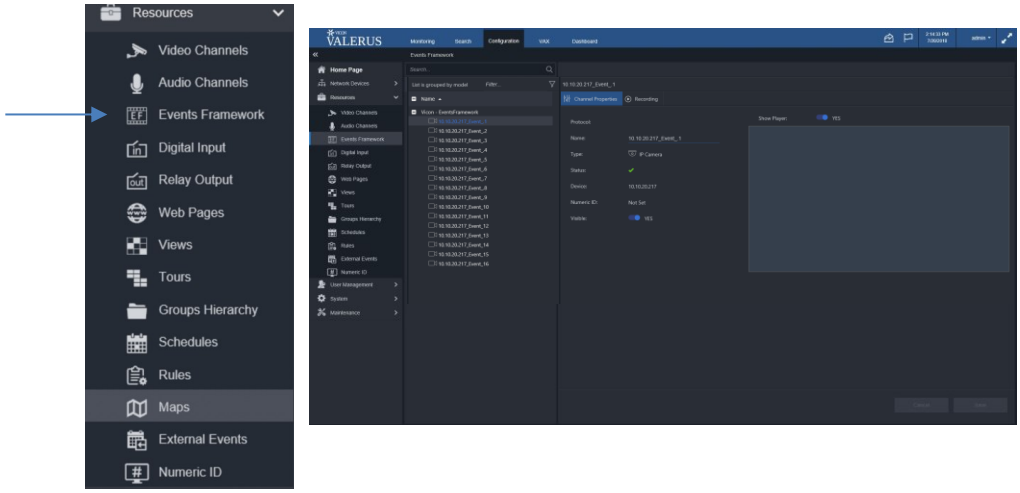
- Select a recording mode from the drop down list, Event or Continuous. The sub-menu will change according to the selection.
- If Event is selected, both pre and post event recording can be set for a specific number of seconds. When the event occurs, audio will be recorded for a preset time of up to 30 seconds per channel before (pre; event saved in memory until it needs to be saved on the drive) and after (post) the event, resulting in an audio segment that shows exactly what happened just before and after the event.
- To avoid having to make the same settings to multiple microphones of the same type, these settings can be applied to a group of microphones. At the bottom of the screen is an Apply To button. Clicking it opens a popup that will allow you to assign these same settings to other microphones in the system; the system recognizes which settings can be adjusted for multiple microphones and will only list those cameras. Select the microphone(s) from the list; all microphones can be selected by clicking the arrow in the gray title bar. Click Apply and then Close.



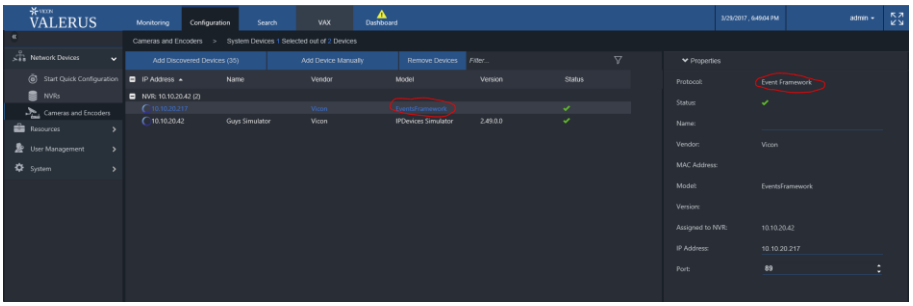
- Save changes or click Cancel to close without saving.

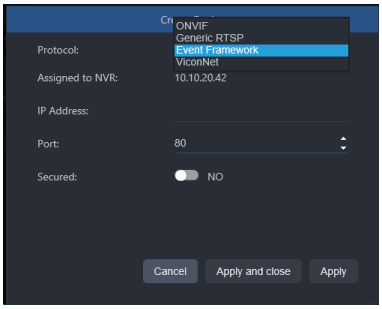
Events Framework

The Valerus Events Framework is an add-on to Valerus that allows it to integrate with external partners' systems. After the VEF device has been added in the Cameras and Devices, it will be listed in the Resources section of Configuration and available for view in the Monitoring screen.



- The VEF Streaming Engine is added manually in the Cameras and Devices Configuration screen. Click Add Device Manually and select Events Framework.

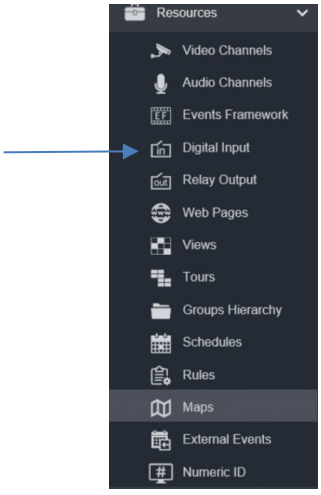


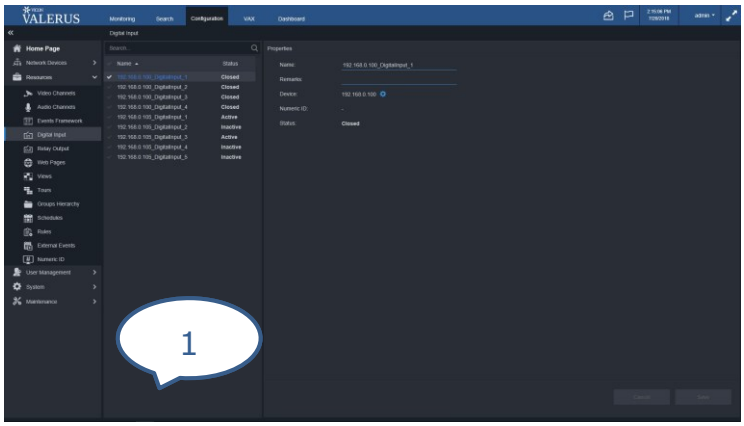


- Once added, the VEF device will be listed as any other device and will show in the Resources section of Configuration; it is not enabled or recorded by default but can be made visible and available for view in the Monitoring screen by clicking Visible to yes.

Digital Input

This category includes the alarms inputs (sensors) for devices on the system. The status column is dynamic, as the inputs may change from Closed to Open. These can be used in Rules setup.





1. List of digital inputs available
2. Input properties

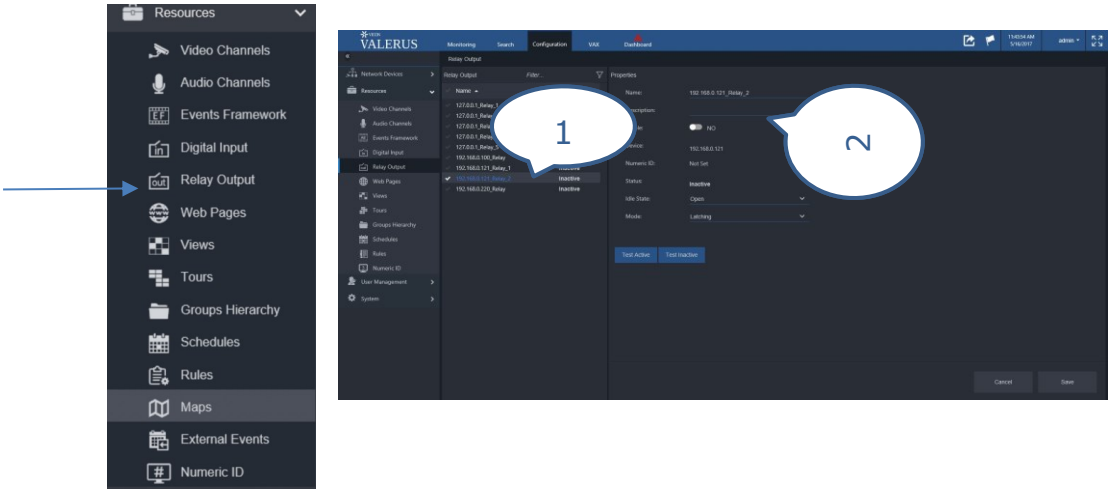
Properties

- Click on Digital Inputs to open the Properties screen for a list of available digital inputs. Select the input you want to configure.
- Give the input a name if needed and add any description to help identify it. A Numeric ID can be added in the field here.
- Enable the input to allow communication with it as well as appear in the Resources list on the Monitoring screen. By default the digital input (DI) is not visible on the Monitoring screen in the Resources list.
- The Device field is the IP address of the device handling this DI. There is a Device Configuration link next to this that will take you back to the Device screen. 

- The current status of the input is displayed, open or closed.
- Save changes or click Cancel to close without saving.

Relay Output

Relay outputs can be configured. The status column is dynamic, as the outputs change from Inactive to Active (green). These can be used in Rules setup and can be controlled manually from the Resources list on the Monitoring screen.



1. List of relay outputs available
2. Output properties

Tip: Although the term relay is being used, the actual output may be a TTL or a digital output. Be sure to check the specification for the device to use it correctly.

Properties

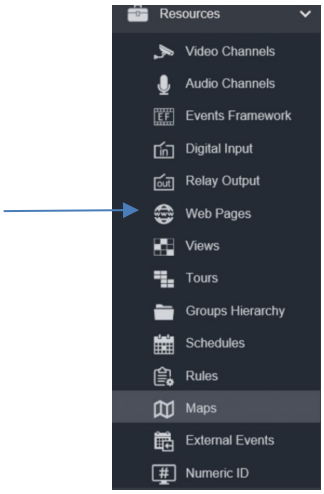
- Click on Relay Outputs to open the Properties screen for a list of available relay outputs. Select the relay output you want to configure
- The output can be given a specific name and helpful identification details can be added in the Description field. A Numeric ID can be added in the field here.

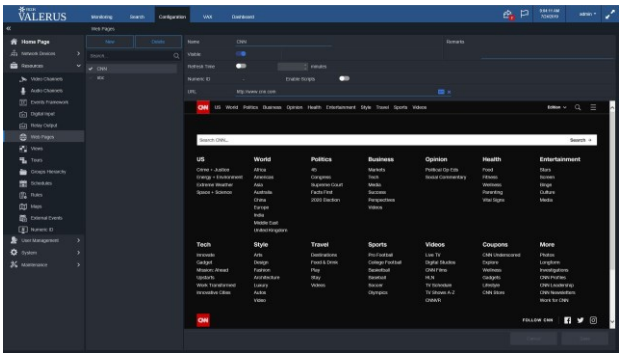
- Click the Visible button to Yes for this output to appear in the Resources list on the Monitoring screen.
- The Device field is the IP address of the device handling this relay. There is a Device Configuration link next to this that will take you back to the Device screen. 

- Select the Idle State (when contact is inactive) as Closed or Open and the Mode as Bistable (Momentary; maintains contact position as long as it is held) or Monostable (Latching; maintains contact position indefinitely).
- Save changes or click Cancel to close without saving.

Web Pages

If there are web pages that are used regularly, web links of their URLs can be saved for easy access. An example would be a news website the operator would like displayed or operating procedures that are saved in a web page format for easy access and display upon an event. Note that websites that do not allow opening in an I-Frame cannot be used in Valerus.





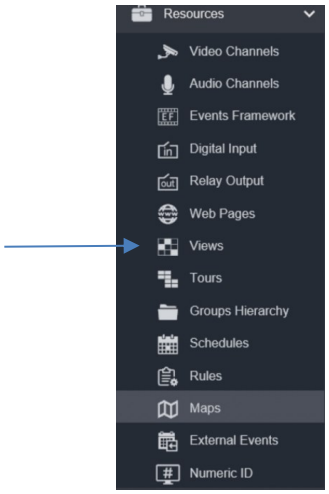
- From the Web Pages screen, click the Add Web Site button.
- Enter the name of web page if needed, add any pertinent remarks and its URL in the appropriate fields. Once the URL is entered, click on the arrow on the right to browse to the exact page or click the Enter key. A Numeric ID can be added in the field here.
- The web page is Visible by default and will show on the Resources list on the Monitoring page; click the Visible button to remove it from the Resources list. It can be accessed directly from the Resources list and display in a tile in the same way as a device, instead of having to open a browser.
- Clicking the Refresh Time button allows setting the duration of time in minutes for the web site to be refreshed. This is meant to allow web pages that have changing content but do not refresh automatically to remain current.

A user can create their own webpage to use in the system. This would be convenient for creating a procedure to follow in specific situations. The page would be readily available to access the procedure.

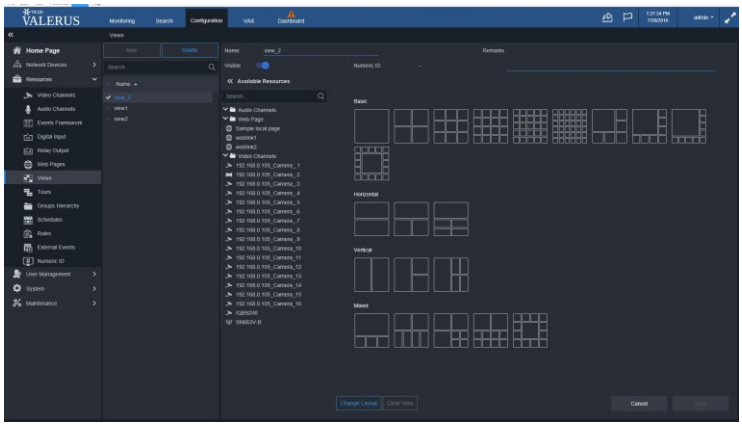
- Create the page in an html format, either using HTML tools or saving a Word document as HTML.
- Copy the page or folder with pages to the Application Server under C:\VII.HTMLDocs.
- When creating the web page, the URL to use will be http://xxx.xxx.xxx.xxx/htmldocs/PageName
  - xxx.xxx.xxx.xxx is the IP address of the application server computer.
  - PageName is the name of the web page created.

Views

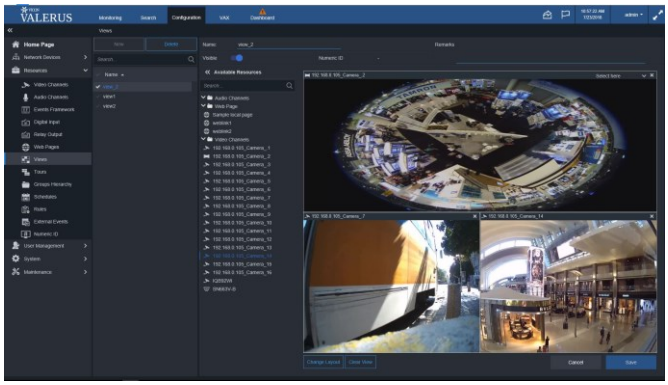
A specific layout and the data content within the view (i.e., video, audio and web pages) displayed on the Monitoring screen is called a view. Individual display layouts of specific resources can be created and saved as views. These can be visible in the Resources list. Dragging a View from the Resources list opens that view up in a new display tab, saving the need to open resources individually. A View can also be called on event (see Rules).



- Click Views to open the screen to configure new views. Click Add New View.
- The list of Available resources and layouts displays. Select a layout from the wide variety of choices are provided, including up to a 36 device display and horizontal, vertical and mixed views.



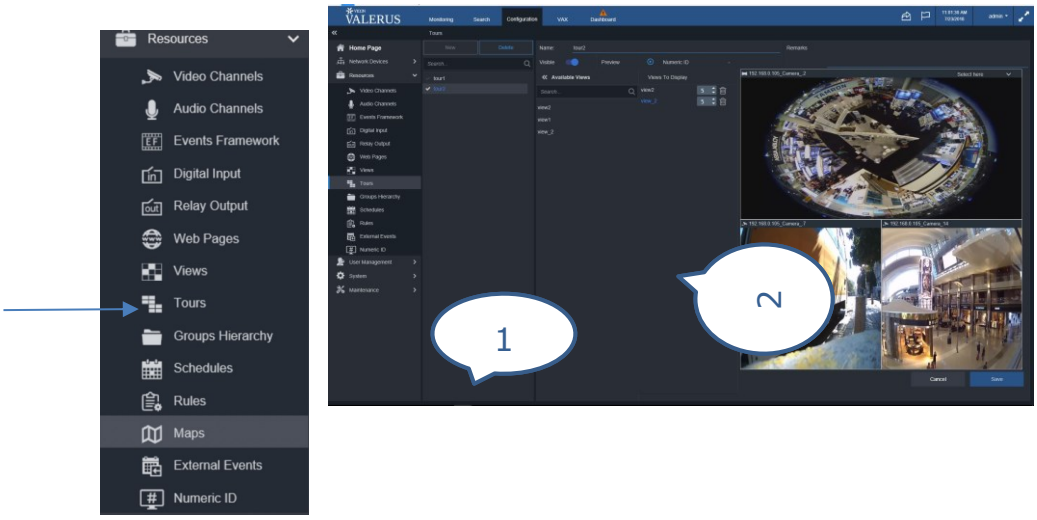
- From the Available Resources list, drag the device to display into each tile of the layout in the same way as on the Monitoring screen. Note that in the Configuration screen, a snapshot of the resource displays, not live video, so that if a webpage is in the view only the IP address will show here; this improves performance.



- Enter a name if needed for this specific view. A Numeric ID can be added in the field here.
- Views are visible by default. Clicking the Visible button determines if this view is on the Resources list on the Monitoring page. A Remarks field provides space for any notes or information on this view.
- A view can be deleted by clicking the garbage pail icon on the right.
- Click Change layout to see a choice of other layout displays for these same cameras. The viewing areas can be deleted using the Clear view button.
- Save changes or click Cancel to close without saving.

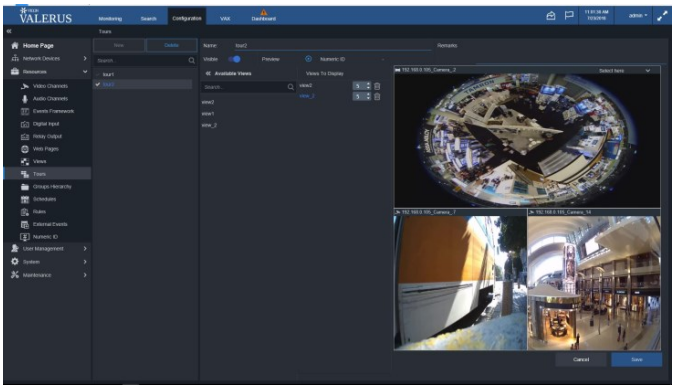
Tours

A tour is a series of previously created views, each shown for a designated amount of time, as steps in the tour.



1. List of tours
2. Tour setup

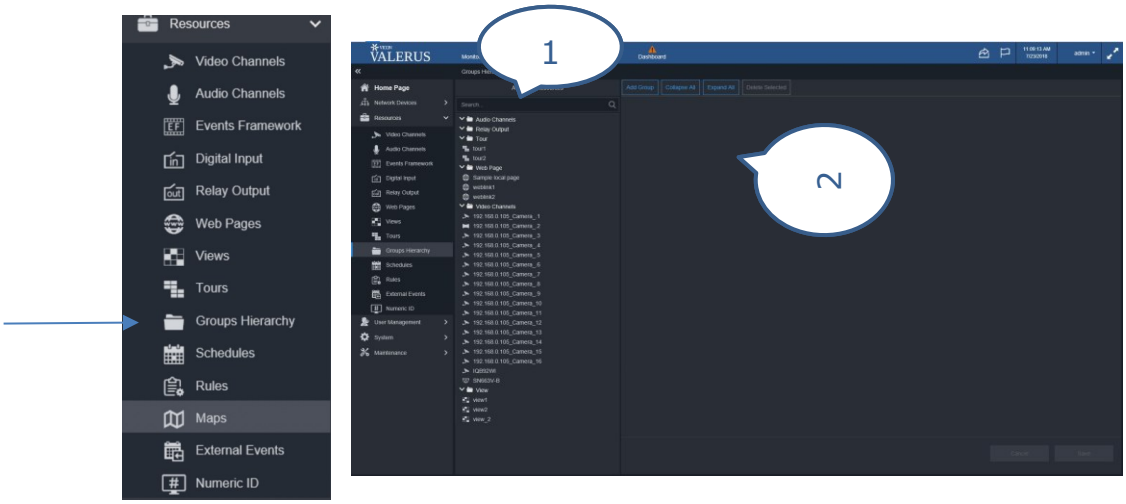
- Click Tour to display to Tour screen. Click Add New Tour.
- Enter a name for the tour if needed. A Numeric ID can be added in the field here.
- Tours are visible by default. Clicking the Visible button determines if this tour is on the Resources list on the Monitoring page. A Remarks field provides space for any notes or information on this tour.
- Views must be created from the Views configuration before a tour can be setup. From the Available views list, select the views that will be the steps in the tour and drag them into the next column in the desired order to be shown; a preview of the selected view displays. Select the duration of how long each view will display; make sure to configure this per view. The Available views list can be expanded or collapsed by clicking on the arrow heads above the list in case a larger viewing area is desired. Note that in the Configuration screen, a snapshot of the resource displays, not live video, so that if a webpage is in the view only the IP address will show here; this improves performance.
- The View can be given a numeric ID from that configuration screen, so it can then be called up from the keypad.



- A view in the tour or a tour itself can be deleted by clicking it to the garbage pail icon on the right.
- Click Save or Cancel this configuration.

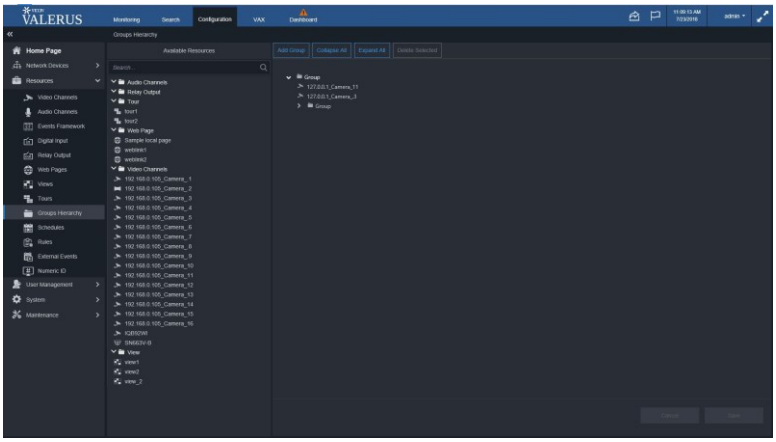
Groups Hierarchy

The Groups Hierarchy is meant to create a geographical view of the system. From here, you can build a system "tree" to determine which resources should be logically grouped and determine their relation to other groups. This also helps in streamlining the authorization and operation settings for the user roles from the System and Resource Authorization screens. For example, on a Campus, there would be a number of buildings, and each building could be divided into zones and each of these zones would have a number of floors. These areas can be divided into groups and sub-groups and specific resources can be associated with each group and easily found in the Resources list on the Monitoring screen.



1. List of available resources (any resource that has been added previously)
2. List of groups

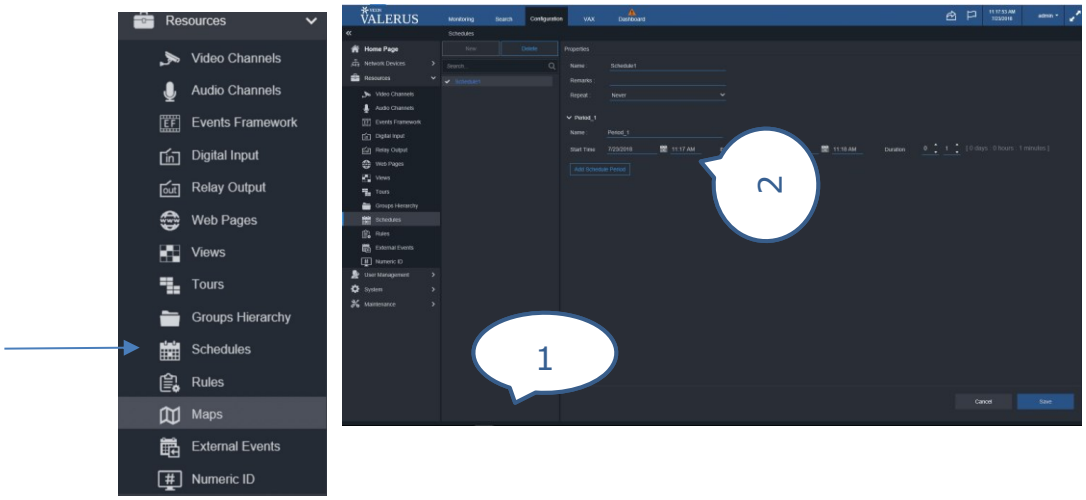
- Click Groups Hierarchy to open the page that lists all available resources that can be assigned to a group. The list on the right will be empty the first time this is done.
- Start by clicking Add Group to create a new main group. Multiple groups can be created or the entire list can be built under a single group.



- The new group appears in the area to the right. Hovering over the group name displays buttons that allow you to edit the name (pencil), delete (garbage pail), add a sub-group (plus) or copy this group. The group name can be changed by selecting the pencil. The default group name becomes active and you can change the name; press Enter when done. Devices can be added to any group by dragging them from the Available Resources list to the group name; all the devices added to a group will list under the group name.
- Additional groups can be added by clicking Add Group again. Sub Groups of a group are created by clicking the plus symbol from the tools next to the group.
- Groups can be copied and pasted into another group in the hierarchy using the appropriate buttons.
- Groups and devices are deleted by clicking the garbage pail icon on the right.
- Multiple selection of groups and devices can be done using the Ctrl and Shift keys. When multiple items are selected, using the Delete Selected button deletes them all.
- Click Save or Cancel this configuration.

Schedules

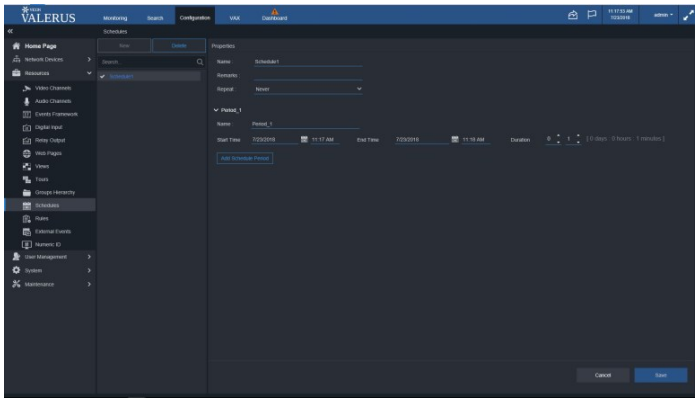
Schedules can be created and then used in the recording configuration as well as for rules. Using specific schedules instead of the default 24/7 allows fine tuning the system behavior; for example, create a schedule for weekdays and the weekend in a school. It is important to remember when configuring multiple schedules that there may be an overlap in time, and the system will prioritize one schedule (explained in detail below).



1. List of available Schedules

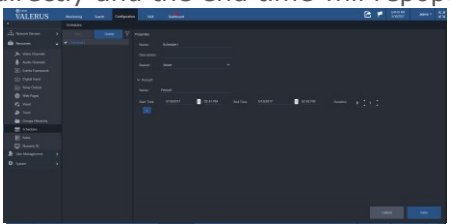
- Schedule properties

- From the Schedules screen, click New to start creating a new schedule.

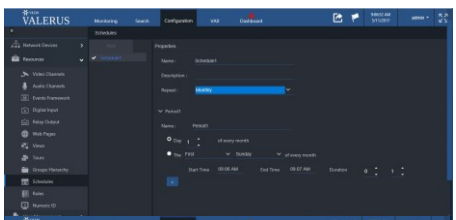


- Give the schedule a name in the Name field. Enter informative text in the Description field as needed.
- From the drop down list, select how often this schedule should repeat, Weekly, Monthly, Yearly or Never. How often a schedule is set to repeat will set its priority level when schedules overlap; for example a yearly schedule has priority over a monthly schedule which has priority over a weekly schedule which has priority over a daily one.
- In the Period area, the specific times this schedule will activate are set. The fields that display in the Period section depend on the repeat selection and dynamically change accordingly.
    - A Never repeat schedule is a one time schedule that has a start and end time on a specific day selected from the calendar. Name the period in the Title field if needed. From the calendar icons, select the start and end days for this period. Then set the start and end times (hours:minutes in 24 hour mode). The Duration fields calculate how long the period lasts from the start and end times; the duration can also be modified here and the end time will repopulate to match it.
    - A Weekly schedule sets the days and times this schedule will activate. Name the period in the Title field. Select the days of the week this schedule should run and then set the start and end times (hours:minutes in 24 hour mode). The Duration fields calculate how long the period lasts from the start and end times; the duration can also be modified directly and the end time will repopulate to match it.
    - For Monthly, select the day and month this schedule should activate and then the start and end times (hours:minutes in 24 hour mode). The Duration fields calculate how long the period lasts from the start and end times; the duration can also be modified directly and the end time will repopulate to match it.
    - For Yearly, select the day and month of each year this schedule should activate and then the start and end times (hours:minutes in 24 hour mode). The Duration fields calculate how long the period lasts from the start and end times; the duration can also be modified directly and the end time will repopulate to match it.

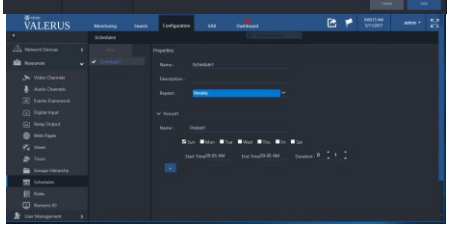
Never (Once)



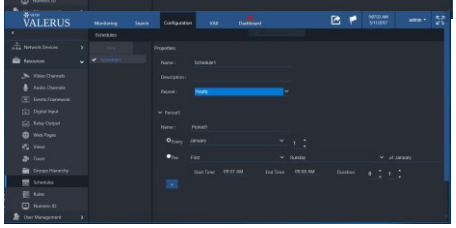
Monthly



Weekly



Yearly

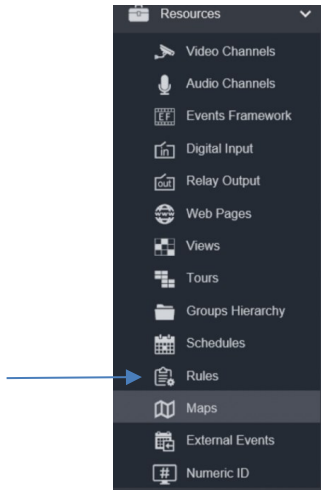


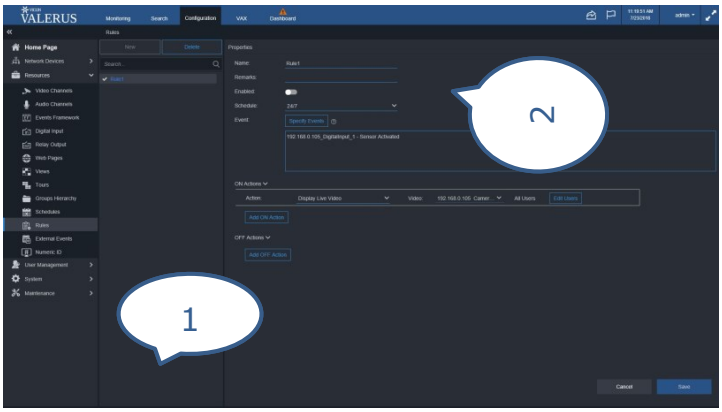
- Another period can be added to an existing schedule by clicking the Plus sign button. This allows, for example, the creation in one schedule a period for working hours, another for night time and another for weekends.
- A schedule can be deleted by clicking the garbage pail icon.
- Click Save or Cancel this configuration.

Tip: Once a schedule is created, it can be used for recording and rules, which saves the need to create multiple schedules. Be sure to name schedules and their internal periods with precise names so it is easy to identify and use them.

Rules

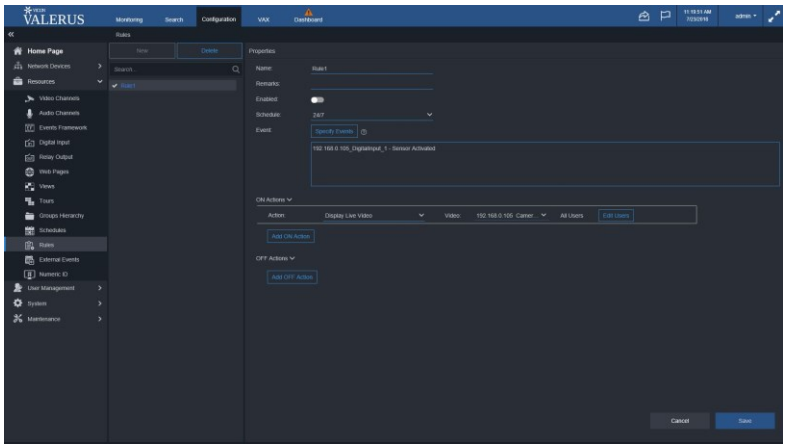
Rules are created to determine what happens when an event is triggered, defining a cause and an action.



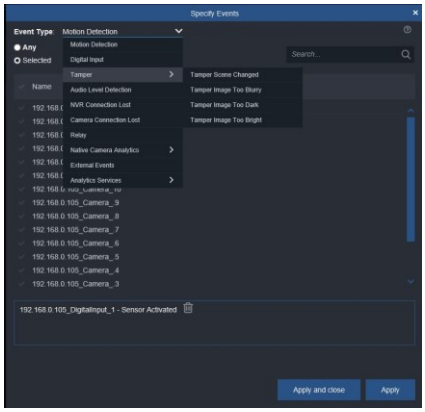


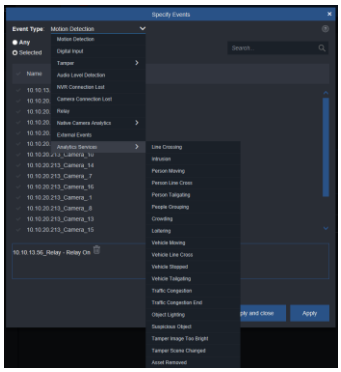
1. List of rules
2. Rule properties

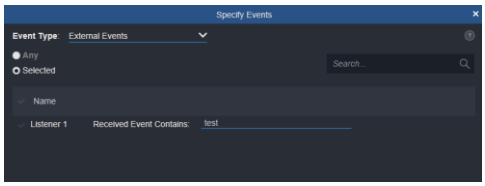
- Click on Rules. From the Rules screen, click New to create a rule. The Properties screen will display.



- The rule can be given a name in the Name field.
- Configure the trigger for the rule by selecting an event. Click Specify Events. From the popup screen, select the event type from Motion detection, Digital Input, Tamper, Audio level detection, NVR connection lost, Camera connection lost, Relay, Native Camera Analytics, External Events and Analytics Services.





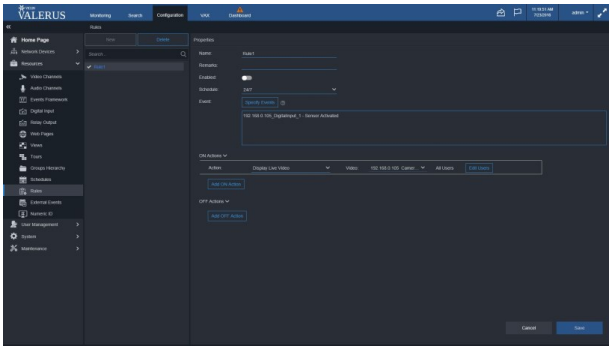


External Event

- With the Selected radio button checked, choose the devices to associate with this event; multiple devices can be selected by holding the Control button and selecting the devices. If the Any radio button is selected, when this event type occurs on any device in the list, it will trigger the rule. Multiple event types can be selected and assigned to devices. Each event will display in the area at the bottom of the popup screen and can be deleted by clicking the garbage pail icon next to it. When events are configured, Click Apply or if you are finished, click Apply and close. Click Close if no more events are to be configured.

Important Note: There is a question mark symbol next to Specify events that opens a popup that explains your choices. When specifying more than one event to trigger a rule, the actions will occur when an event is reported by ALL the sources specified at the same time. Rules work as a logical *AND* between multiple events. If the Any event option is selected, it will work as a logical *OR* between events.

- The events now display in the event box on the page. More events can be added in the same way. Triggers can be deleted here using the garbage pail icon next to them.
- From the schedule drop down, select the schedule for this trigger. Available schedules include 24/7 (default) and any schedule previously created. A new schedule can be created from here, if necessary. Clicking New schedule from the list opens the Create New Schedule screen. Follow instructions under Schedules.
- The actions taken when the event occurs are defined under the ON Actions. Select an action from Display Live Video, Display View, Go to Preset, Operate Relay, Run Camera PTZ Tour, Run Tour of Views, Open Web page, Send An Email (note that an email is text, not video), Delay or Aux. The actions in the drop down list are camera and event dependent. Depending on this selection, select the camera, tour, view, etc. to respond. Specific users that an action will apply to can be selected; click Edit Users.



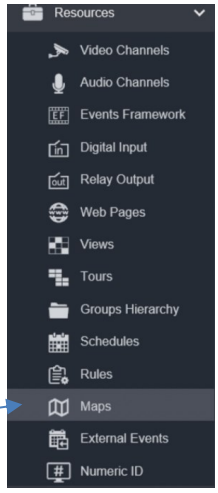
- In the same way, the action taken when the event is over can be configured by OFF Actions.
- Note that it is not necessary to configure both an ON and OFF Action for every event. Some events make sense to use only ON action, for example, when a door opens (sensor ON), display a camera. Some events make sense to use only an OFF actions, for example, when there is no

motion, turn the light OFF. An example for both ON and OFF actions is when the door opens (sensor ON), sound a buzzer and when it closes (sensor OFF), stop the buzzer.

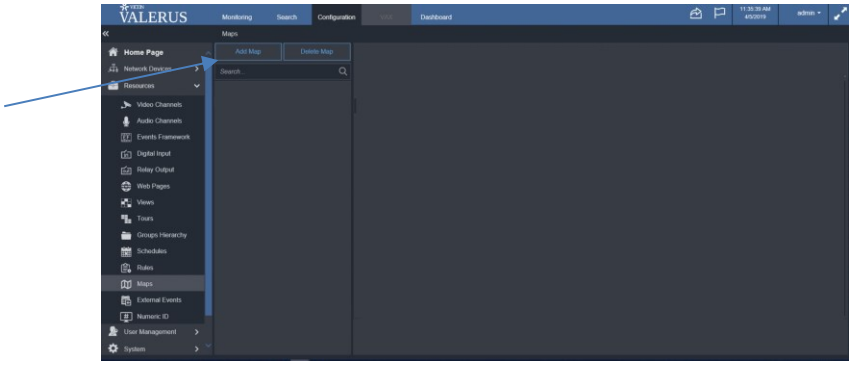
- Click Save or Cancel this configuration.

Maps

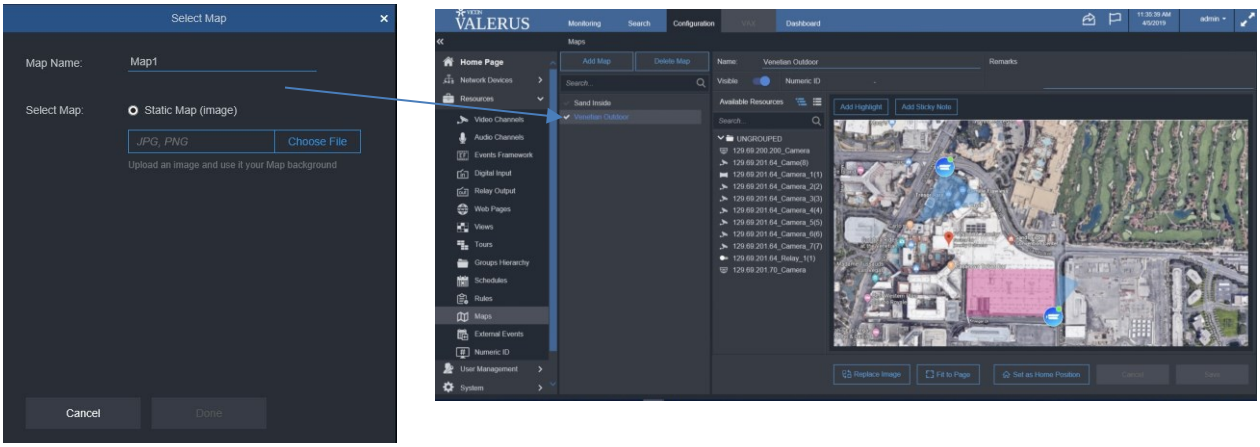
Valerus offers a mapping function (PRO tier and higher). The map is a static picture (jpg or png) that allows an overlay of camera/device/resource icons placed directly on it. The video from the cameras can then be viewed live or in playback. After a map is created it is then listed in the Resources list on the Monitoring screen to be viewed. Note that maps are pictures that have been previously saved to your unit; it is recommended to load all maps onto your system first, before starting the configuration process.



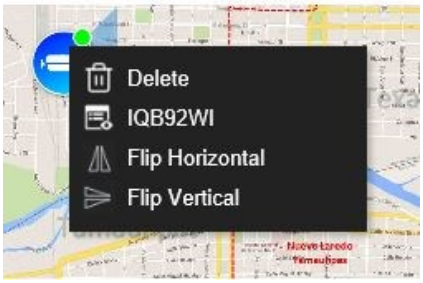
- Select Maps from the Resources list. The Maps screen displays, from which a map can be added, modified or deleted.



- Click the Add Map button. The following popup screen displays. Select the map by clicking Choose File. Enter a name for the map and click Save; the map is now listed on the Maps page and can be configured. Enter any pertinent Remarks to identify or define the map. Click the slider button to make this map visible on the **Resources** list on the **Monitoring** screen. The map can be given a Numeric ID as needed, just like any other resource.



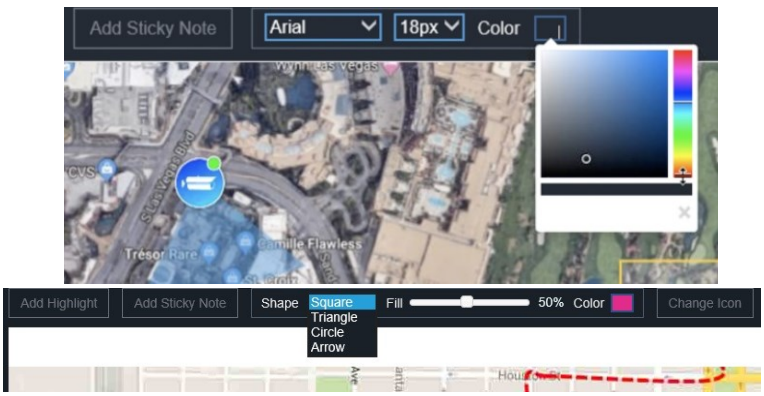
- A list of Available Resources displays, including video, audio, relay, digital input, views and tours; any of these resources can be placed on the map in the desired location to be viewed.
- To place a resource on the map, drag the resource to a location on the map. The resource will be identified by an icon for the type of camera or other resource. Click Change Icon to display a selection of icons to change it to, as needed. Additionally, the icon is different for when it is idle, active or in alarm state, and what these states mean varies per resource; for example, an idle camera/microphone means not recording whereas for alarm input/output it means no alarm state, while active for a camera/microphone means recording and for input/output indicates an alarm state.
- A funnel from the camera illustrates the direction and coverage of that camera. The funnel area can be changed by double clicking it and grabbing the small circles at the corners to change it; note that for a 360 camera the funnel is a circle, not a triangle, but can still be sized by grabbing the small circle at the edge. The camera/mic/tour/view direction can be adjusted by clicking the icon; a symbol displays to rotate the icon as needed. Right click the icon to view a dropdown to identify the resource or delete it; additionally, for a camera, you can reposition it by flipping it horizontally or vertically. You can zoom in and out of the map using the mouse wheel.

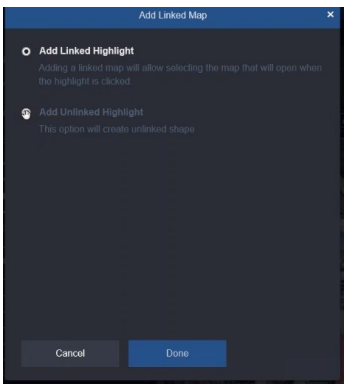


Change camera icons

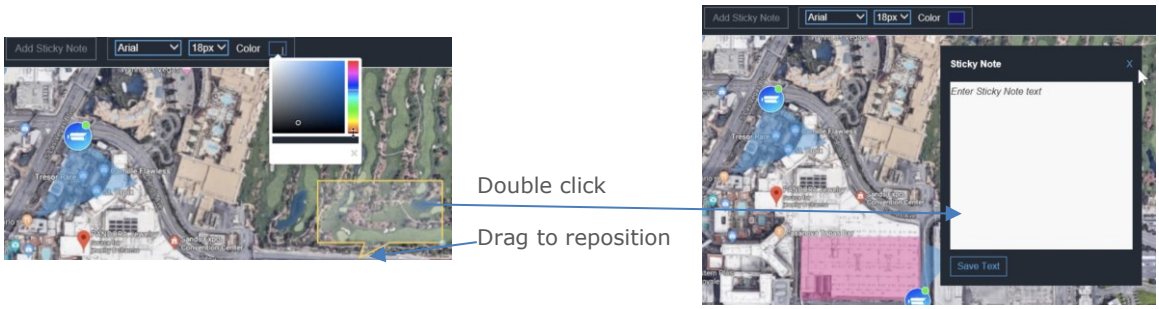
Adjust camera view and position

- Click on Add Highlight to highlight an area on a map in a variety of shapes (square, triangle, circle or arrow) and colors by using the Shape and Color tabs; the color tab provides a slider to set the transparency fill of the shape. The default shape is square and the default color is pink. This feature can be used to either simply highlight an area or used to link to another map.
- When Add Highlight is clicked, a screen displays to add a linked or unlinked highlight (see below). If Add Linked Highlight (default) is selected, click Done and another screen displays with a list of existing maps to link to. Select the map and click Done; when the highlight is clicked in the Monitoring screen, the linked map will display.
- Text can be added to the highlight by double clicking it; a dialog box opens to add any descriptive text, for example what map it is linking to. Using the arrow shape is often helpful to link portions of a large map. If the map of a large area is broken down into smaller sections for a better view, the arrow shape can be linked to another part of that map, to the right, left, up or down. Right click to delete the highlight





- Click on Add Sticky Note to insert a "sticky note" on a map; double click to add text with any information needed. Font and size can be selected. Be aware that the sticky note may not display at certain zoom levels. Zoom out if the sticky note text is not displaying. The sticky note can be used to point to a specific place on the map by grabbing its "tail" and dragging it to point to that place; the sticky note can be resized by a circle at its point and dragging.

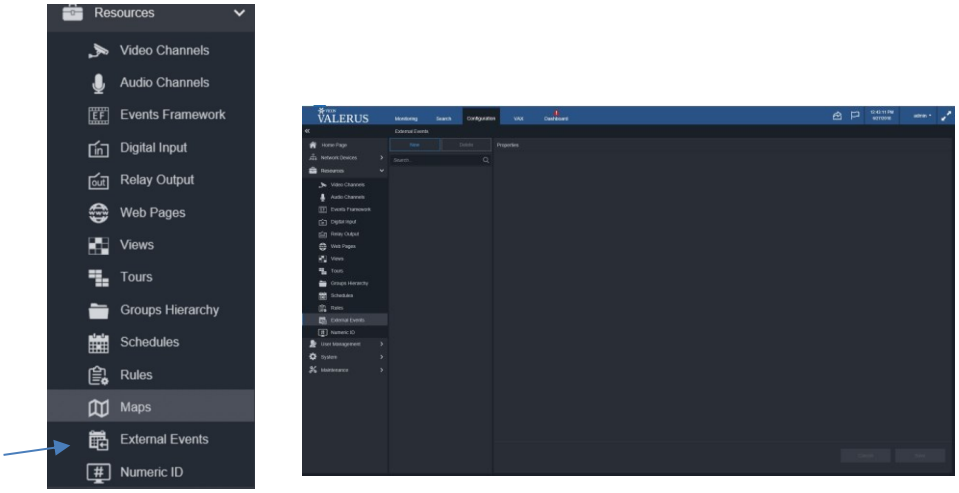


- There is a button at the bottom that toggles between Actual Size and Fit to page. Clicking this will resize the map as needed. Clicking Replace Image will allow changing out the map, for example if the building has added a wing, but the icons from the original map will remain in place. You may have to move the icons around, as needed, but you will not have to recreate any of the resources already in place. The map can be set to a Home position which will determine how the map opens on the **Monitoring** screen.

External Events

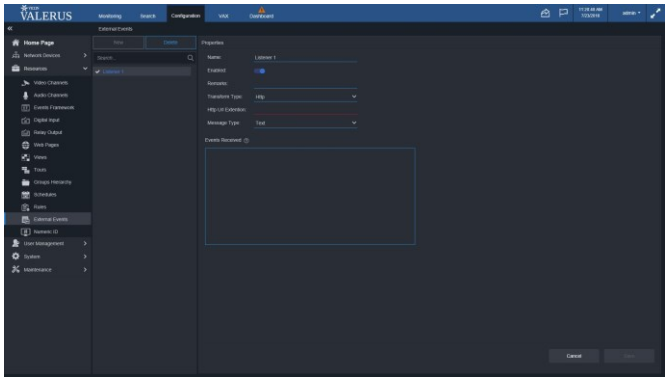
External Events occur from outside the Valerus system and generate from 3rd party systems such as LPRs, Access Control systems, etc. Valerus allows defining a "Listener" to listen on a specific port for external text events sent from those systems and then allows to create rules based on these external events. This is meant to enhance the integrations with such 3rd party systems as well as Valerus VEF, allowing specific events to be set to trigger actions in Valerus.

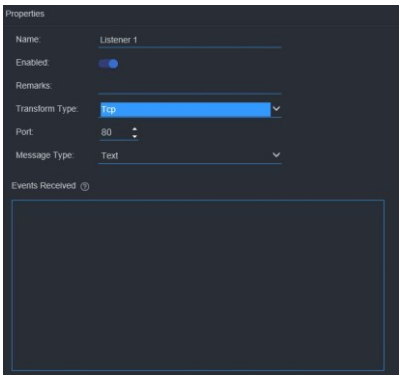
Once a Listener has been set up in Valerus, rules can be configured to read the events and act upon their content. The Listener is defined from this screen.



- Select External Events from the Resources list. The following screen displays.
- Select New to create the Listener.
- Fill in all the fields and click to Enable or Disable the Listener. For the Transform Type, select Http or TCP; for Http, enter the URL and for TCP enter the Port. Message Type can be Json, Text or Xml.

  The exact protocol and format of the event messages varies between manufacturers and requires understanding of the other system's behavior.

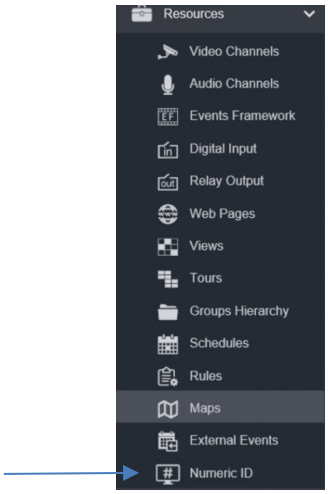


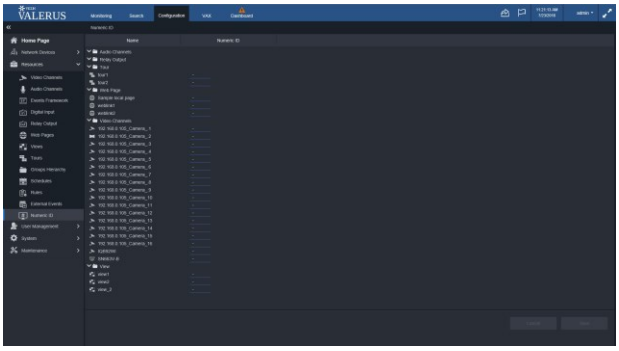


- At the bottom of the screen there is a window that serves as a console and will show the events that the selected Listener has received. This allows easy confirmation of the communication between the two systems.

Numeric ID

If you are using a keypad or controller (PLC) with your system, a device must be assigned a numeric ID that allows the keypad to identify the device.

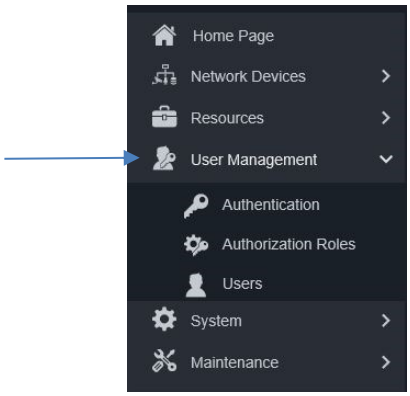




- Click on Numeric ID. A list of devices will display. A column next to the device is for Numeric ID. This will either display a number or have a dash in the field, indicating no ID is set.
- To give a device a numeric ID, click on the device. The Numeric ID field will become active. Enter the ID number into the field.
- If a number is repeated, it will display in red. Change the number; each device must have a unique number to identify it for the keypad/controller.
- Note that a monitor is not a resource and cannot be given an ID from here. This can be enabled through User Settings.

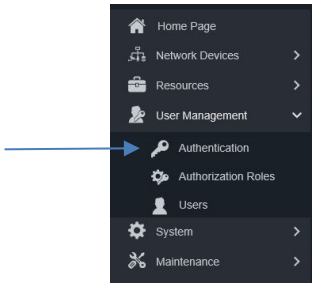
User Management

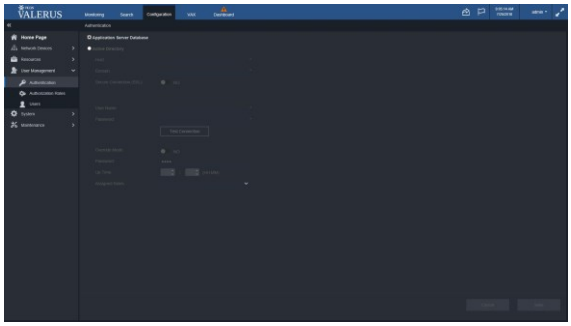
User Management sets up the privileges and authorizations for users of the system. Authentication determines if the users are managed by the local application server database or an active directory server. From here, users can be added to the system, authentication roles can be created and users can then be added with specific authorizations. The privileges for each user in the system is defined in the System and Resource Authorization screens tabs at the top.



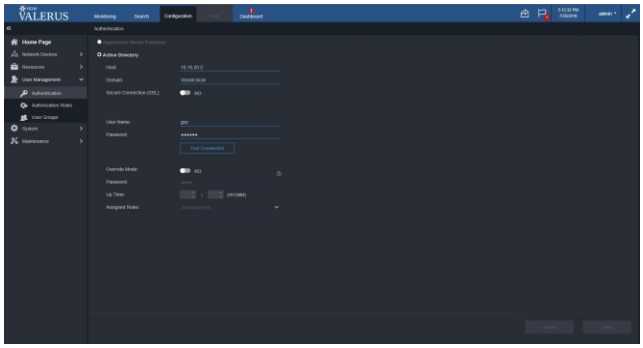
Authentication

From Authentication, the user database source is configured. Choose from the local application server database or an active directory server used on the network.





- When the local database is to be used (default state) for the user list, check the Application Server Database radio button.
- If connecting to an active directory server (existing on the network) is desired, check the Active Directory radio button. The IP address of the Active Directory server and the credentials to connect are defined here. When connected to an active directory server, the users and their groups are managed by the active directory.



- Enter the host IP or name and domain details for the active directory server. Only an authorized domain user can access it and retrieve information. Use the Test Connection button to verify that the credentials are correct and connection can be established. Once connected to the active directory, it will allow importing user groups; see details in the User Groups and Users sections below.
- It is required to know if this connection needs to be secure (SSL; ensures that all data passed between the web server and browsers remain secured and integral). Check with your IT staff to confirm whether the system demands this secure connection and turn it on if needed.
- The Override button can be enabled if needed. This is used in the rare event that the active directory server is down and access to it is impossible, which will prevent users from logging in to the system (systems running and users already logged in are not affected by such an issue). The VMS, even when set to active directory mode, still maintains a local account for the user

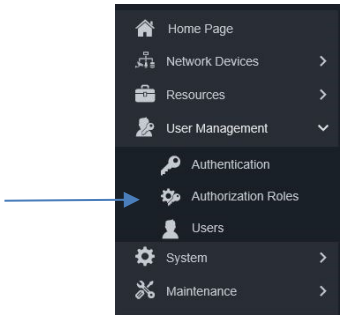
ADMIN (see more details under Users) and this user can set up a temporary password to allow login for any user without a connection to the active directory. The emergency mode and special password have an expiration time and remains valid for the time period designated, up to 24 hours, so that if the administrator does not shut this off mode it will shut off automatically.

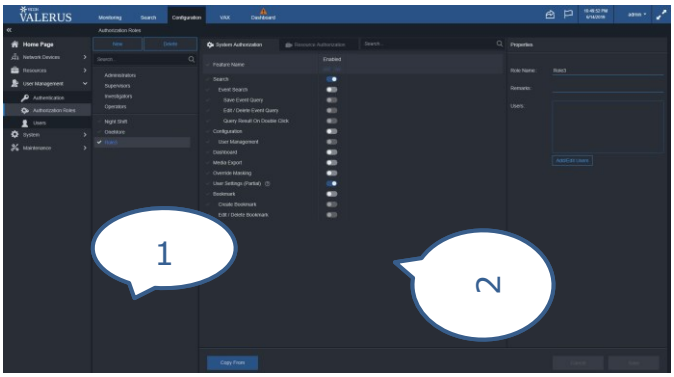
- Click Save or Cancel this configuration.

Authorization Roles

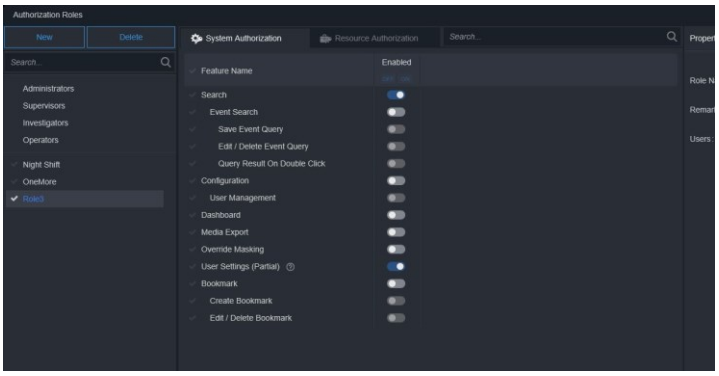
The Valerus VMS, similar to other IT centric systems, manages user privileges by grouping users under authorization roles. This allows setting privileges to these roles (for example the security guards), so any user with that role inherits those privileges without having to make individual settings for each user.

When working in the default mode, where the users are managed by the Application Server itself (different than the active directory, which is discussed later) there are four levels of predefined Authorization Roles, Administrators, Supervisors, Investigators and Operators. Each of these levels has set different privileges to work within the system. These Authorization Roles cannot be modified or deleted, but users can be added to them. However, new Authorization Roles can be added to the system and be given any specific privileges.

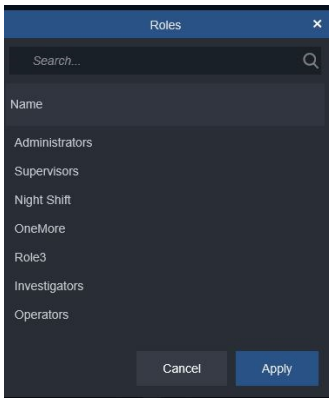




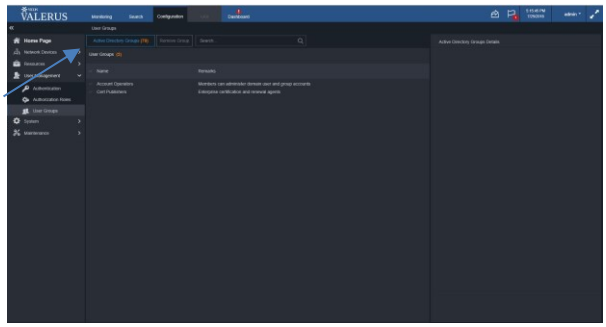
1. List of existing Authorization Roles
2. Authorization Roles details
   - A new Authorization Role is created by clicking New.
   - A new Role is added to the list.

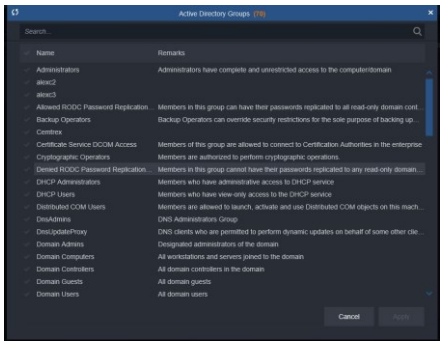


   - The Role can be named and users added to it. Each role has System Authorization and Resource Authorization tabs at the top. These will be explained below.
   - For customer-defined roles, all the privileges can be set enabled ON/OFF.
   - If you want to create another role that is similar to an existing role to save the need to configure all privileges, you can duplicate a role. Create a new Role and click Copy From. A popup will display. Select the Role you want to copy from and click Apply. The properties will remain the same as the original role but can be modified as needed.

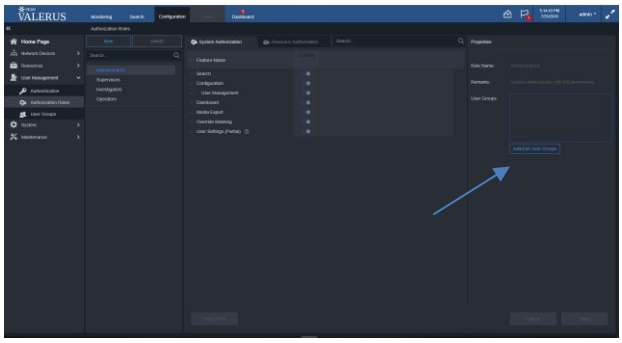


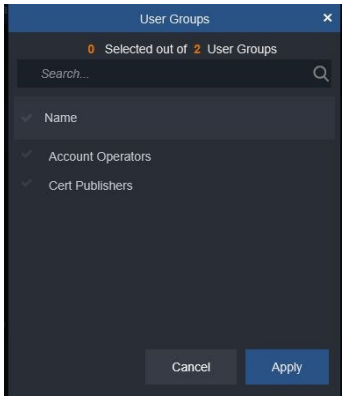
- If under Authentication, an Active Directory server, and not the local Application Server, was chosen to manage the user groups and roles, the screen will initially list only the override role (only including the ADMIN user and meant to put the system into override mode) allowing you to pick the desired user groups out of those in Active Directory.
- From User Groups screen, click the Active Directory Groups button to open the list of available user groups (number of groups shown in parentheses).





- Select the user groups you want to import holding the relevant users. It is recommended to have IT create groups dedicated to the VMS different roles to make this easier to manage.
- Multiple groups can be imported using the Ctrl and Shift keys to select a range of groups.
- Click Apply and close the pop-up screen.
- These User Groups can then be added to Authorization Roles by selecting the role and then clicking Add/Edit User Groups.



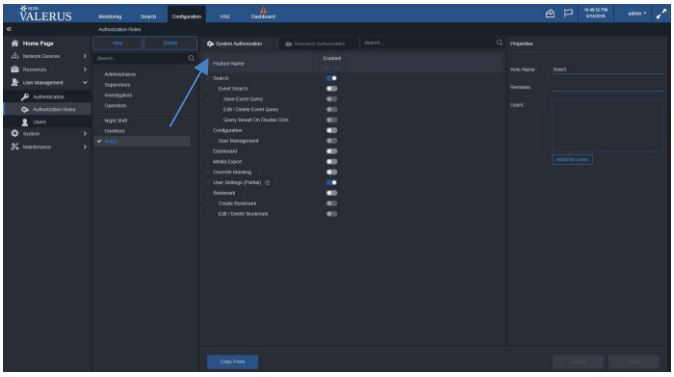


Note: When using an active directory server for user management, the users screen is not shown and all user credentials, as well as assignment to user groups, is done solely in the active directory server.

- A user group (except the override group) can be deleted by selecting it and clicking Remove group or clicking the garbage pail.
- Click Save or Cancel this configuration.

System Authorization

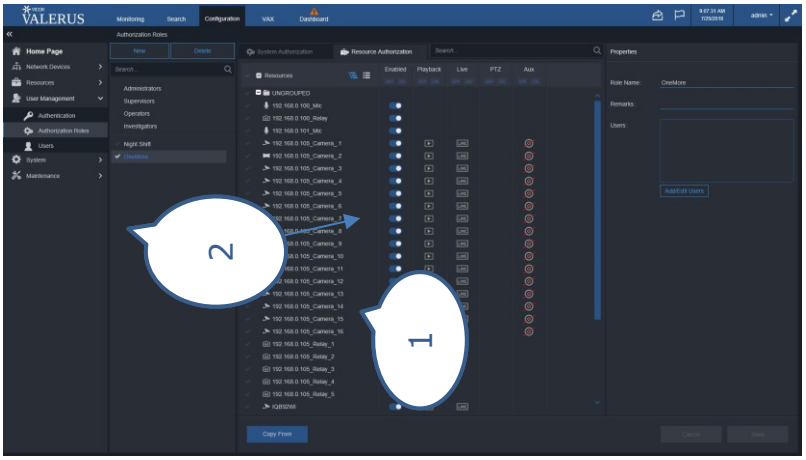
This screen summarizes which users can access what areas of Configuration. Each Authorization Role has specific permissions defining what functions that role is allowed to perform in the system.



- The main functions are Search, Configuration (including User Management subcategory), Dashboard, Media Export, Override Masking, User Settings (Partial) and Bookmark.
- Select the Authorization Role from the list.
- Click a feature; the feature will be checked. Each feature has an Enabled ON/OFF button indicating what that role can do.
- Administrators, Supervisors, Operators and Investigators who have predefined permissions, as explained previously, cannot be changed.
- Click Save or Cancel these setting.

Resource Authorization

Similar to System Authorization, each authorization role can be set to have different permissions to use the resources defined in the system. The Resources are listed by their group hierarchy if this was created.



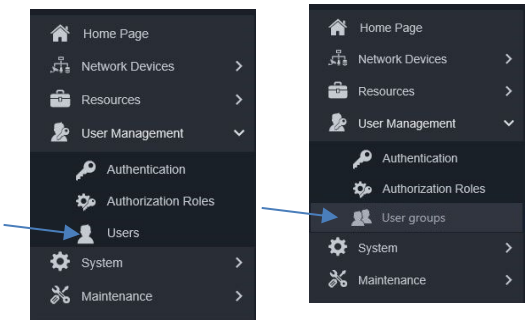
1. List of Resources and associated functions for each Authorization Role
2. List of Authorization Roles

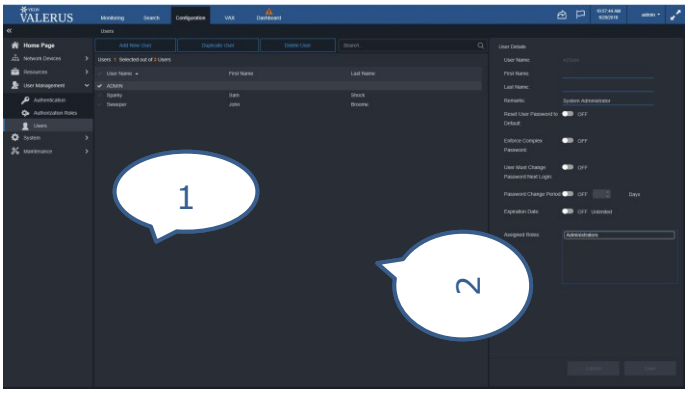
- A table of all resources in the system is listed.
- For each resource, depending on its properties, there will be ON/OFF setup options to enable or disable Playback, Live, PTZ (if applicable) or Aux for any custom created Authorization Role. Note that this cannot be changed for the fixed Administrators, Supervisors, Investigators and Operators.
- When the resources are grouped in a certain hierarchy, a change to the role will apply to all the resources under it; for example, disabling playback for role ABC will disable it for all the resources in authorization role ABC, saving the need to configure each one separately.
- If the settings for a certain resource within an authorization role are changed, it will NOT change the other resources nor the authorization role. For example, if you enable playback to a certain camera under an authorization role that has playback disabled, only that resource will get enabled and all the rest stay disabled.
- Click Save or Cancel these setting.

Users

By default, the only user in the system is the ADMIN user; any number of Users can be added to the system.

Note: When the VMS is configured to work with an Active Directory server for user management, the Users option will change to User Groups.

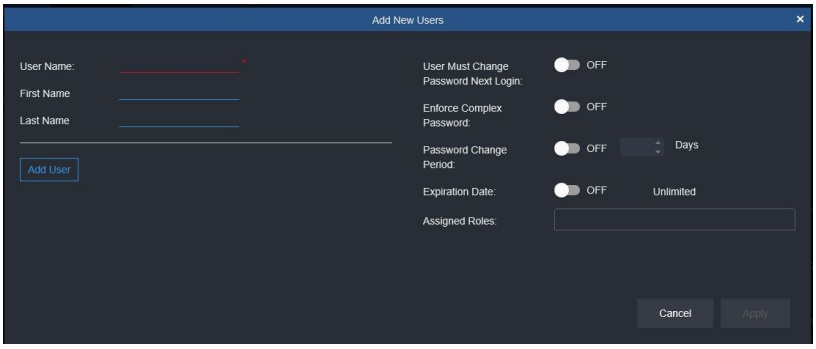




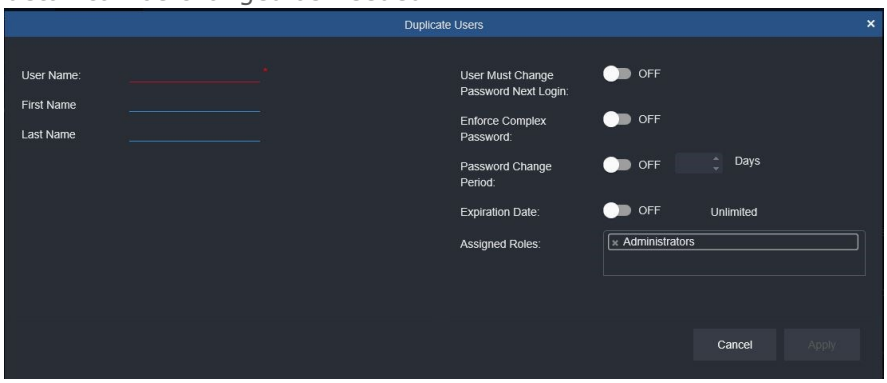
1. List of existing users
2. User details

- Click Users to open the User screen. A list of current users displays. Highlight the user to review the details to the right.
- If a User's password needs to be reset (typically if the user forgets it), that can be done here.
- You can Enforce Complex Password by sliding it to ON. This should be done as an added level of security. The requirements for the password are shown by hovering over the question mark: minimum of 8 and maximum of 20 characters, 1 capital letter, 1 lower case letter, 1 number, 1 symbol and cannot contain the user name.

- To add a new user, click Add New User; a dialog box displays to enter user name, which will be used for log in, and the user's details.



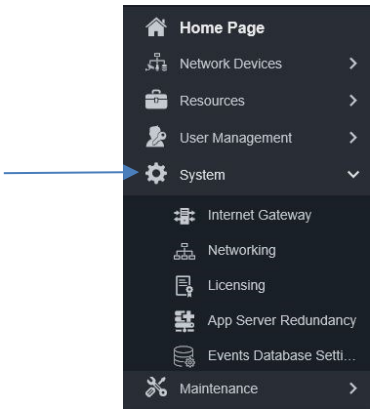
- Any new user created has a password of 1234 by default; it is highly recommended to force a change of passwords from the default. Click the button if this user should change the password from default after first login. Depending on your system policy, you can activate the change period and specify the number of days any password stays valid before the user has to change it (for example setting this to 90 days will make the system request a password change every 90 days). The specific user can be set so this account will expire after a certain date, for example for temporary staff, or it can remain Unlimited. If an expiration has been set, the user will no longer be able to log in past that date. An option to Enforce Complex Password is provided (see above).
- Assign this user to a role. The user will then have the privileges as those assigned to that role. A user can be a member of more than one role if needed.
- To add another user similar to the one just added (the same role), click the plus sign and repeat the process. This is meant to allow quickly adding all users that are members of a certain role together. If a new user for another role needs to be added, these additions must first be saved (Apply) and the add process repeated.
- Users can be deleted by clicking the garbage pail icon on the right or highlighting the user and clicking Remove User.
- When all new users in this role have been added, click Apply.
- As a shortcut to create new users, a new user with the same or similar details as an existing user can be created. Click on the existing user and then click Duplicate User. A popup box will display. Create a user name and fill in the name details if necessary. Click Apply and this user will appear in the list. Any detail can be changed as needed.



- If any user is selected and the details are changed directly from the User screen, press Save or Cancel these setting.

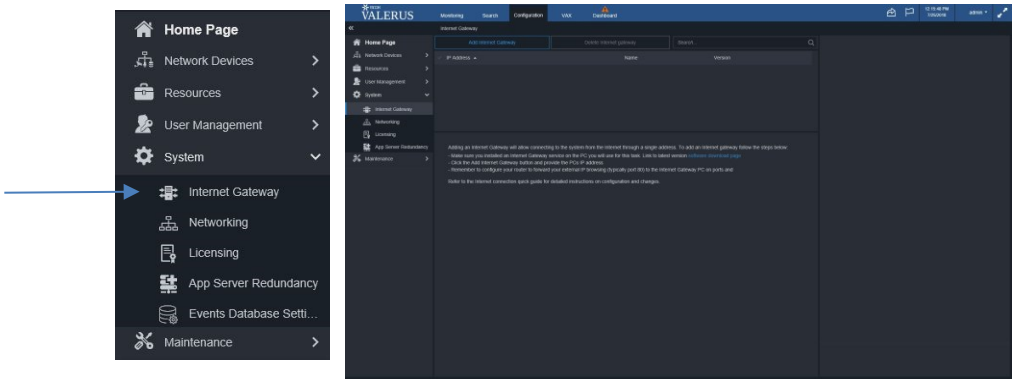
System

The System menus include general system settings and allow modifications to the workings of the system, including setting up an Internet Gateway, Networking, Licensing, App Server Redundancy and Events Database Settings menus.



Internet Gateway

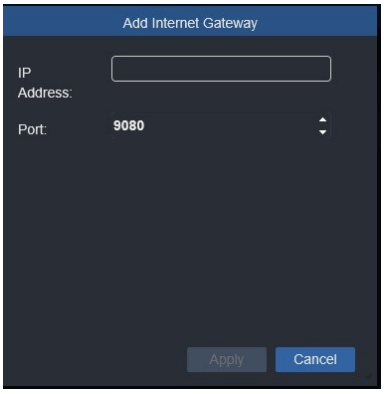
An internet gateway is a module that can be enabled in order to allow internet connectivity to the VMS. It controls traffic and acts as a single point of communication to all cameras in the system via the Internet network, instead of needing to configure access to each NVR and camera separately. The Internet Gateway needs to be connected to the application server and NVRs on one side and to the internet on the other side. Every connection to the Internet Gateway from the internet will be automatically redirected to the VMS system and returning responses and video is sent through the gateway to the requestor.



- Prior to configuring an Internet Gateway to allow such connectivity, the Internet Gateway module needs to be installed on the appropriate server. There is a link on the page to download the latest version if necessary. There are two typical configurations:
    - Internet Gateway on a dedicated PC (recommended) – The Internet Gateway runs on its own computer. This allows full utilization of the computer resources and also ensures that problems with the Internet Gateway do not affect other modules in the system.
    - Internet Gateway on the Application Server – If it is not desirable or possible to dedicate a computer for the Internet Gateway, it can be installed on the same server running the Application Server.

Note: See Internet connectivity best practices guide for further details on installation and configuration.

- Select Add Internet Gateway. A popup displays. Enter the IP address for the server that you installed the Internet Gateway on and the port number (default port is 9080).

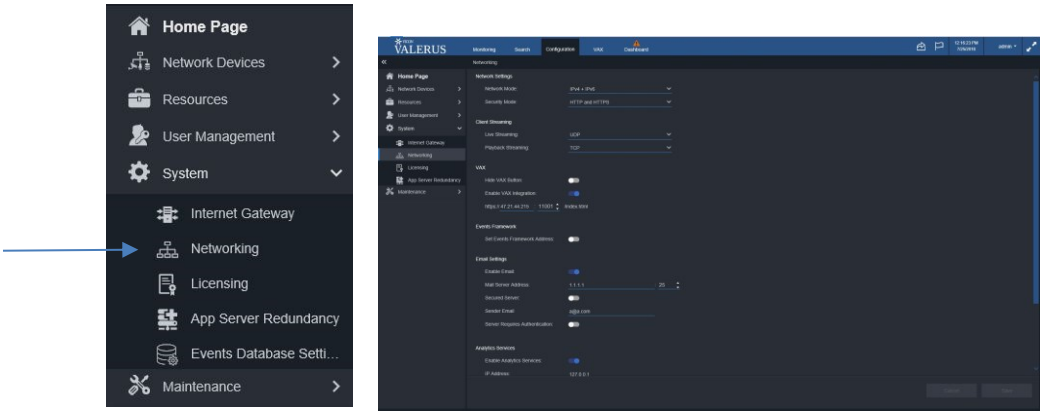


- Click Apply or Cancel these settings.

Note: See Internet connectivity best practices guide for further details on installation and configuration.

Networking

From this screen the system wide network behavior is set and these are the default settings for the entire system. It will determine what protocols are used to stream live and playback video to and from the NVRs. TCP, UDP and HTTP are protocols used for sending data over the internet. This page is also used to configure connectivity to a VAX access control system and Email Settings.

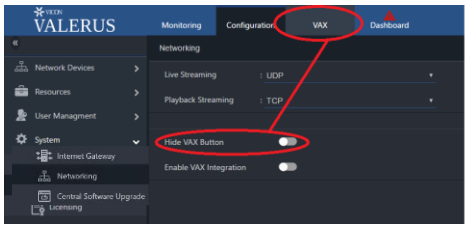


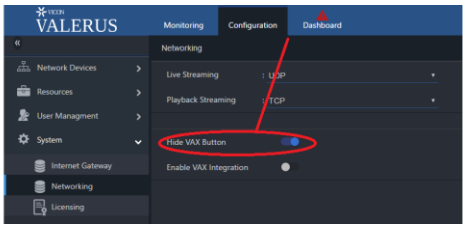
Note that the Network Settings for Network and Security Mode must be set *before* setting the cameras, as they influence the NVR/camera display.

- Valerus supports both IPv4 and IPv6 address protocols. The selection here tells the Application Server which network will be supported, particularly if an NVR has more than one NIC; the unit will filter the addresses to pick from. Select the Network Mode, IPv4 only, IPv6 only or IPv4 + IPv6; the default is IPv4. Note that this affects what can be picked for the Cameras and Devices in Network Devices.
- Valerus supports encrypted communication over HTTPS for added security. Select HTTPS only or HTTP and HTTPS; the default is HTTP and signed. Make sure your device is configured accordingly.
- Select the protocols to be used for Client Streaming, Live (UDP/TCP/HTTP) and Playback (TCP/HTTP). The default settings are UDP for live streaming and TCP for playback.
- If your system includes a VAX system connected to this Valerus VMS, do the following
    - The VAX button (tab) on the Valerus interface can be hidden by selecting the Hide VAX button. This is helpful if your system will not integrate with VAX access control.
    - Click the Enable VAX Integration button to show the URL field.

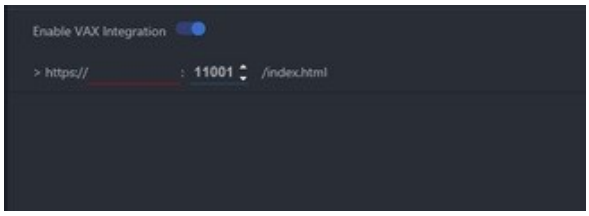
- Enter the IP address of the VAX server and change the port as needed.
- Once configured, the VAX application tab on the top bar will be enabled (turn blue)

VAX Visible

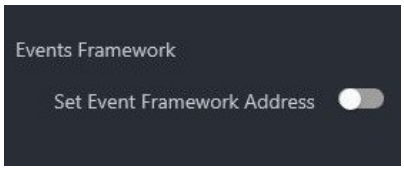




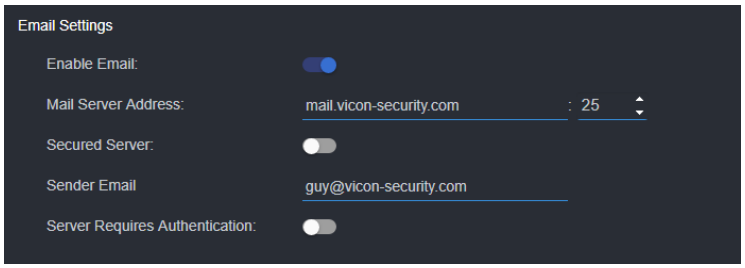
VAX Hidden



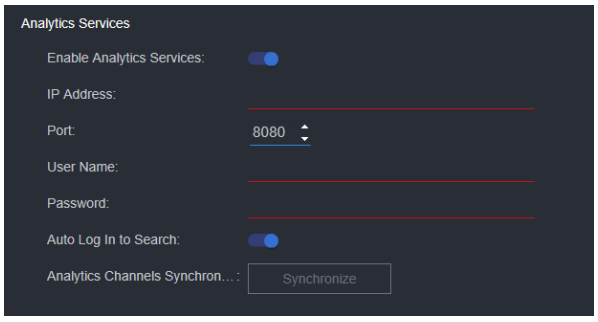
- If your system supports the Events Framework add-on, enable the settings by clicking the button and set the IP address and port.



- Click Save or Cancel these settings.
- Under Email Settings, Enable Email to connect to an email server, which will allow sending mail alerts as an action in Rules. Enter the Mail Server Address and Sender Email. Enable Secured Server and Server Requires Authentication as needed for your specific system.

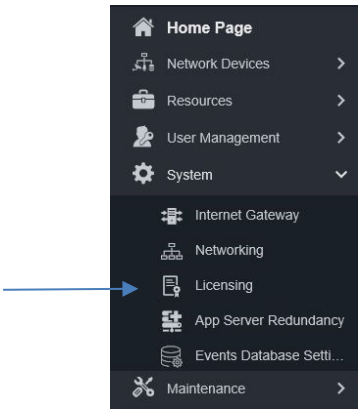


- Valerus SmartAnalytics requires a separate license. Analytics Services are enabled and configured from this screen. If your system has the SmartAnalytics add-on it is configured here.



Licensing

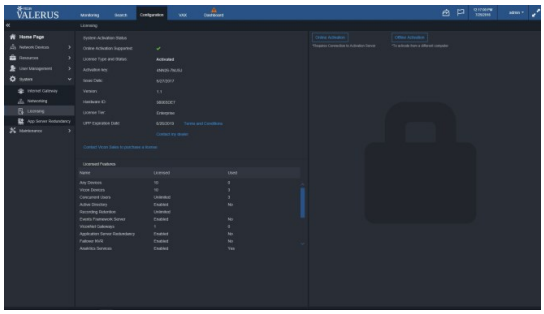
The Licensing screen shows the status of the current system. Online Activation requires access to the Vicon license server on the Internet; if you do not have access to the Internet, Offline Activation is also available.



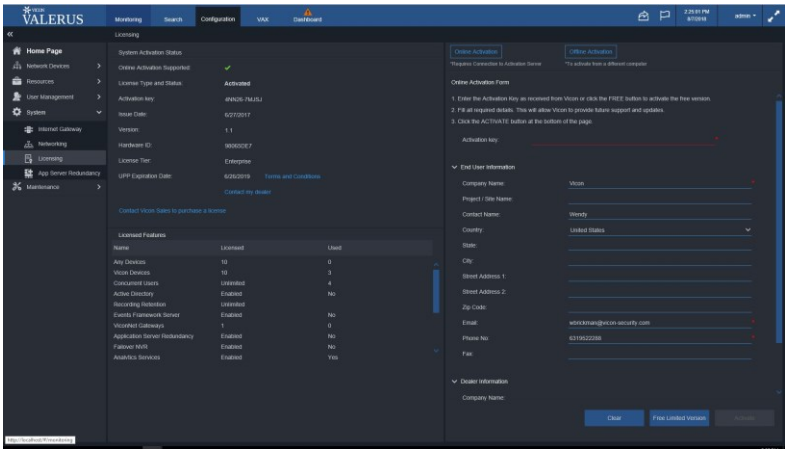
- A summary of the licensing status is outlined, including the license type and UPP if relevant.
- Activation can be done online or offline using the forms on the right.

Note: When initially installed, the Valerus system provides a 30-day evaluation period that is fully open. Within this time, the system must be activated with either the free (TRY) license or with a valid license purchased from Vicon (CORE, PRO or ENTERPRISE).

- If your system is not already activated, select the activation type, online or offline depending on the connection to the Internet server indicated on the left. A link is provided to see Vicon's Terms and Conditions. Additionally, there is a link to request a license.

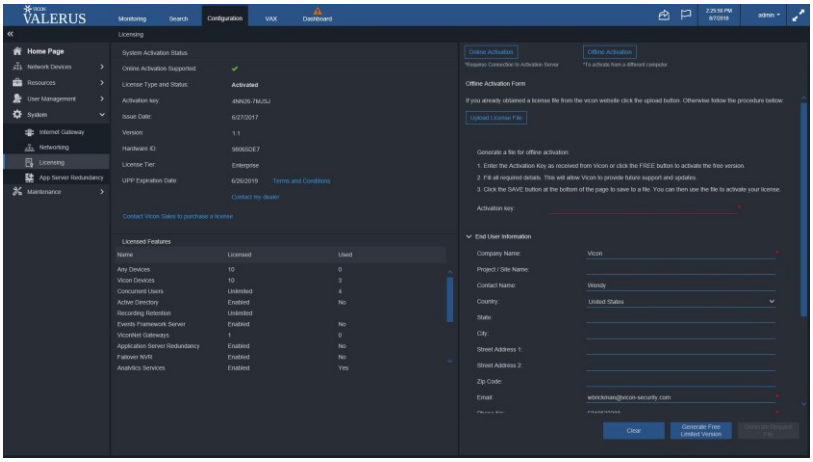


- For the Online activation process, enter the Activation key you received upon purchase; this is the license for your system and will be used going forward. If you do not have an activation key, and want to activate the free limited version (TRY), it will be available as an option at the end of the process. Complete the form and click Activate if a license has been purchased or Free Limited Version if this is how you want to activate; a Clear button is provided to erase the information entered on the form. Note that the phone number should be entered without any dashes.



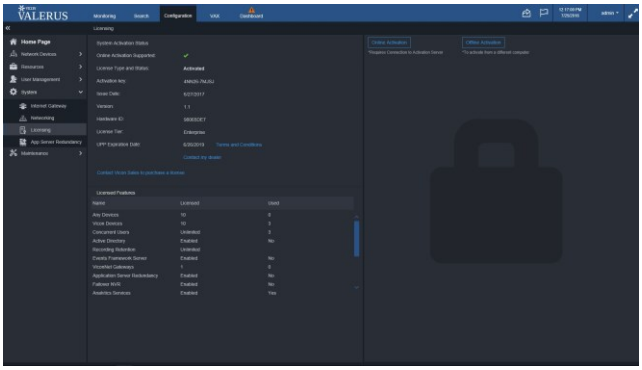
- For the Offline activation process, follow the procedure to generate a file that can be taken to another computer with Internet connectivity and activated through the Vicon website. Enter the Activation key received with your purchase or, if you do not have an activation key and want to activate, the free limited version will be available to you. To activate the free version, fill in the activation key Valerus.Free.1.1. Complete the form and click Generate Request File (the Free

Limited Version button is for future use). A license request file will be generated that can be saved to a thumb drive and used later on a computer connected to the Internet. On the Vicon website, browse to the Valerus offline activation page and follow the instructions to upload the Request file and receive your License file. When the license file is received, save it to the thumb drive. Then go back to the Application Server and on the Offline Activation form, click Upload License File on the top of the page; select the file to activate.

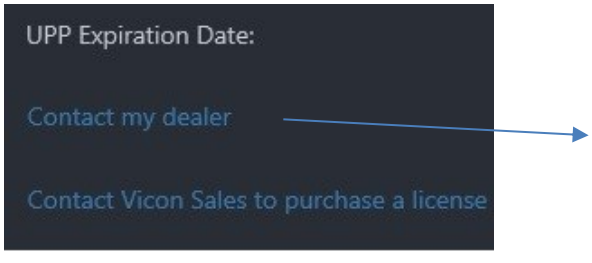


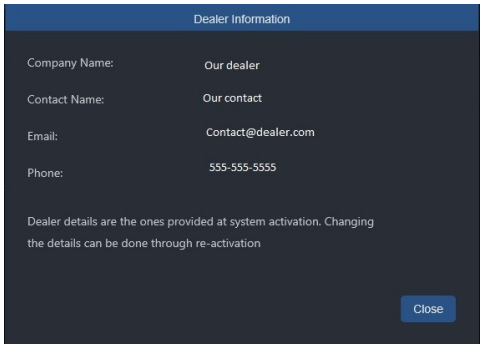
When a license expires, there is a notification on the Dashboard. Additionally, the Monitoring tab is no longer visible and the only Configuration page available is the Licensing page.

When a valid license is activated, the page will repopulate with all the correct information. A system Refresh may be required before the system is updated.



This page also provides a link to access your dealer information. This is a quick way to access dealer details directly from the system.



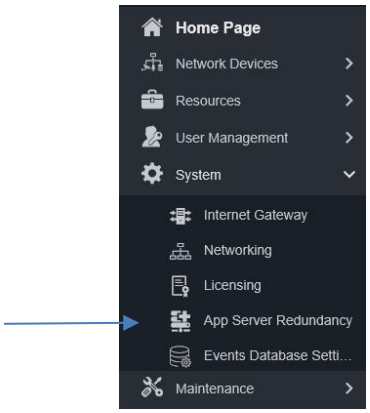


A list of Licensed Features provides an overview of the system capabilities and what is being used.

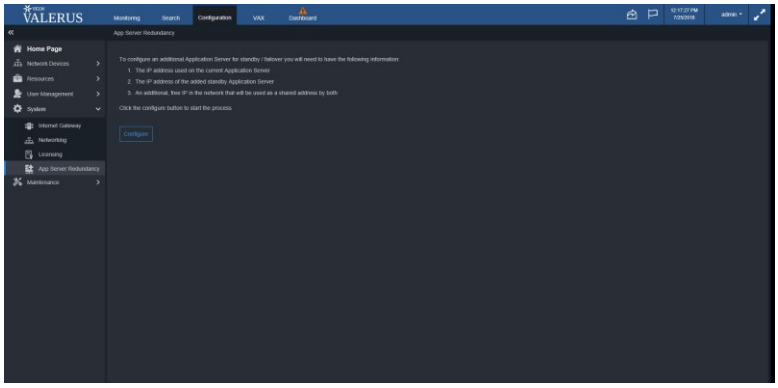
App Server Redundancy

The Valerus Application Server, which also functions as the web server, has a critical role in the system. Therefore, it is possible to add and define a redundant, backup server in the Valerus system in the event it experiences a failure. Once this backup server is defined, Valerus constantly replicates the system settings to this server. Note that this feature requires Valerus version 18. This backup server remains idle until it is needed. Refer to the Application Server Redundancy Function section in this manual for how to activate the Redundant Application Server if needed.

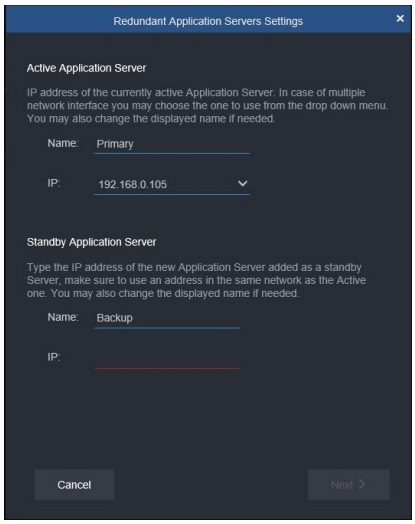
Note: In order to have a redundant Application Server, the system must be in the PRO or ENTERPRISE tier. A redundant Application Server license must be ordered. Two activation keys will be provided, one for primary and one for the secondary Application Server; these keys will have the same number, but the secondary will end with RED and cannot be used on its own.

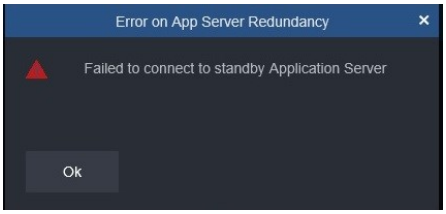


- Be sure to have the IP address of the current Application Server, the IP address of the secondary redundant server and a free IP address in the same network range at hand to setup redundancy.
- Click Configure from the opening Redundant Application screen. A Settings form will pop up.

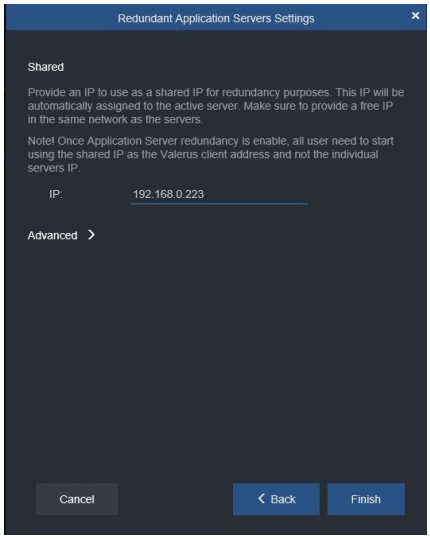


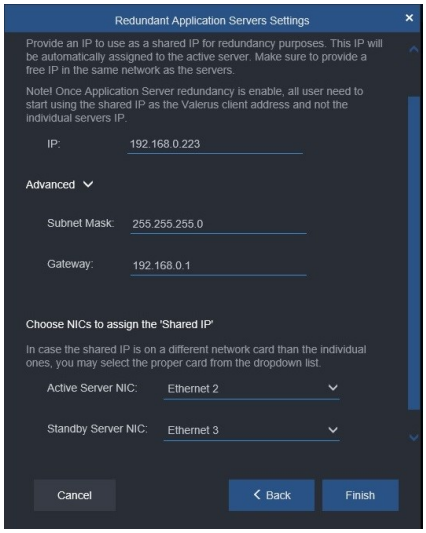
- The information on the active Application Server is filled in by default. You can enter a name for the redundant server (Backup displays by default but can be changed) and its IP address. Select Next. Valerus will attempt to connect to both servers and will send a notification if a problem is detected.



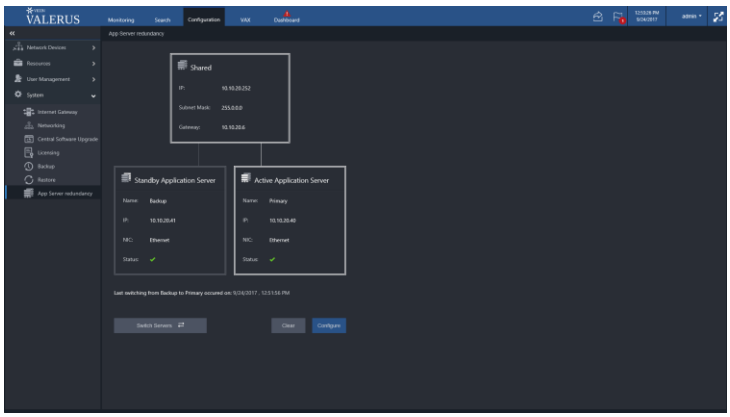


- Enter a Shared IP address; this IP will be used by the active server, whichever one it is, allowing Valerus users to always browse to the same address instead of having to know which server is active at any given time. This IP address must be a free IP on the same network as the servers. When entered, Valerus will connect to this IP. If the address entered is not valid, Valerus will prevent using this IP, so there will be no confusion. There is an Advanced tab provided in case the default settings need to be edited. Clicking it will allow you to modify the Subnet and Gateway addresses if needed as well as select the network if there are multiple network connections for the PCs.

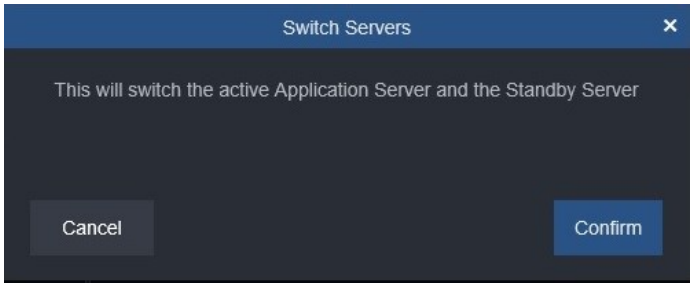




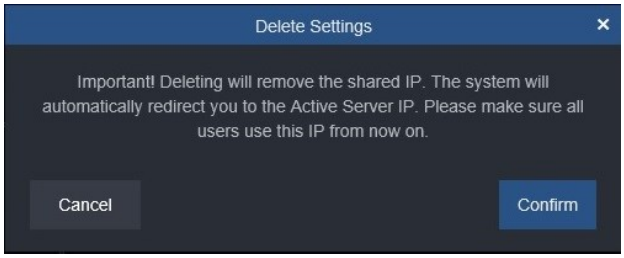
- Click Finish. Two servers, an active Application Server and a Standby Application Server, are now configured (both should have a green check mark indicating they are online and ready).



- You can switch between Application Server and Standby Server from this screen by clicking the Switch Servers button. If you want to switch, click Confirm on the notification. This option requires both servers to be online and cannot be used if one has failed.
- At this time, make sure to instruct all users to browse to the shared IP, and not to the server's assigned IP; this will ensure that on failure they keep their connection.



- If you need to delete the Application Server Redundancy, the shared IP will be deleted as well. The following message will display. Confirm to delete.

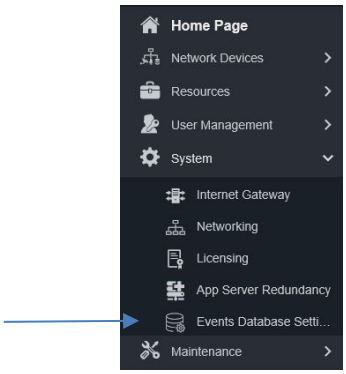


In case the primary Application Server fails, you will need to switch to the standby server from the actual server desktop. See Application Server Redundancy operation section.

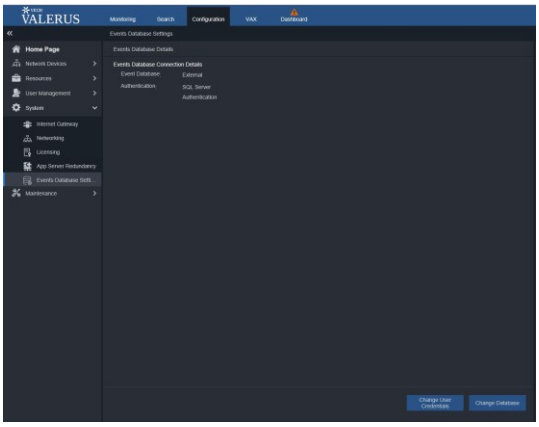
Note: Starting at Valerus version 20, an Events Database (Microsoft® SQL™) is included and installed on the Application Server by default. Valerus also provides the ability to connect to and use a different Microsoft SQL server for those who have their own server or want the database to run on a different PC than the one on the Application Server. To avoid the situation where, if the Application Server PC fails (and the Events Database along with it), the redundant server takes over and will not be able to access and save events, the Events Database **MUST** be configured to run on a separate unit that is accessible to both the Application Server and the redundant Application Server (the events will continue to be saved to that database). To change the location of the Events Database go to the configuration page; refer to the User Guide for details on how to do this.

Events Database Settings

Valerus includes the installation of a SQL Events Database onto the Application Server (version 20 minimum). This is a dedicated database for the storage of all events that occur in the system, both internal and external, including bookmarks. This is a Microsoft SQL server that includes a VII Operational instance. Only one database is required per system. If you want to change the database or change the user credentials, that is done from this page. If you want to use the preinstalled Events Database, nothing is required on this screen.

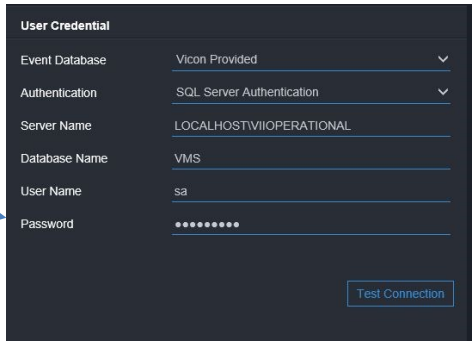


- Select Events Database Settings from the System dropdown. The following screen displays.

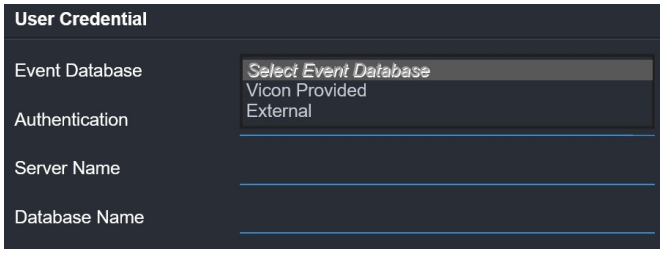


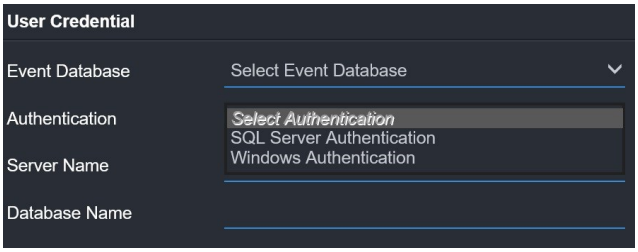
- For a typical system where the database is on the Application Server, if the user needs to define the database, the default settings are shown below.

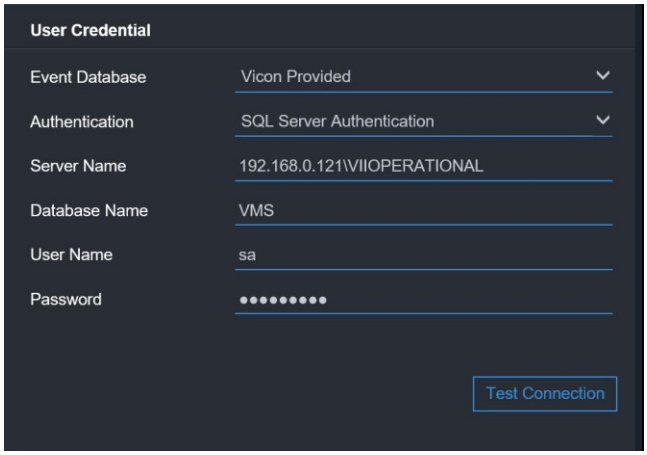
Default Events Database Settings:
Events Database: Vicon Provided;
Authentication: SQL Server Authentication;
Server Name: LOCALHOST\VIIOPERATIONAL;
Database Name: VMS;
User Name: sa

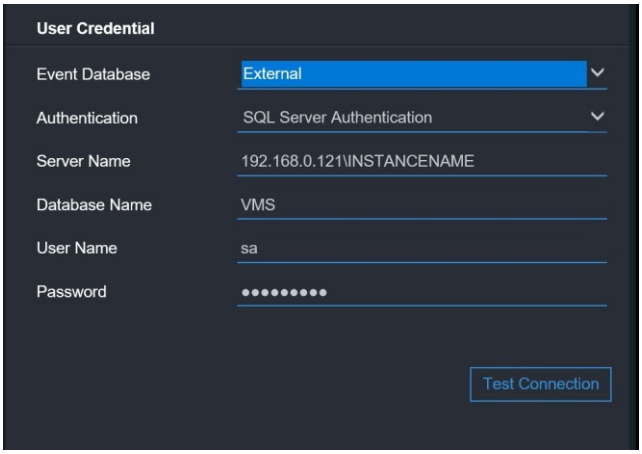


- Valerus provides the ability to connect to and use a different Microsoft SQL server for those who have their own server or want the database to run on a different server other than on the Application Server.
- Click Change Database if it is required to use a different database. The following displays. Select the Event Database type from the dropdown, Vicon Provided for a Vicon database installed on another PC or External for a customer-provided SQL server, and the Authentication, SQL Server or Windows. Enter a Server Name\Instance name and the Database Name: VMS. Refer to the manual on Creating Events Database for details.



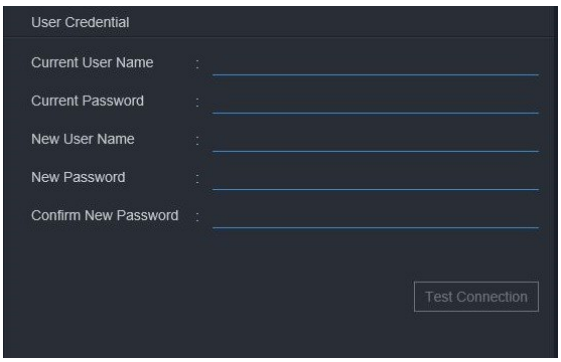






Vicon Events Database on Separate Server Events Database on Customer-Provided SQL Server

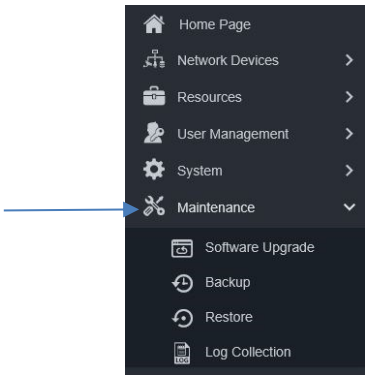
- A test connection button is provided to assure that the connection can be made using the details provided. Click Save when complete or Cancel to abort the change.
- Click Change User Credentials. The following displays. Enter the current user name and password and the new user name and password and confirm.



- A test connection button is provided to assure the connection to the database. Click Save when complete or Cancel to abort the change.

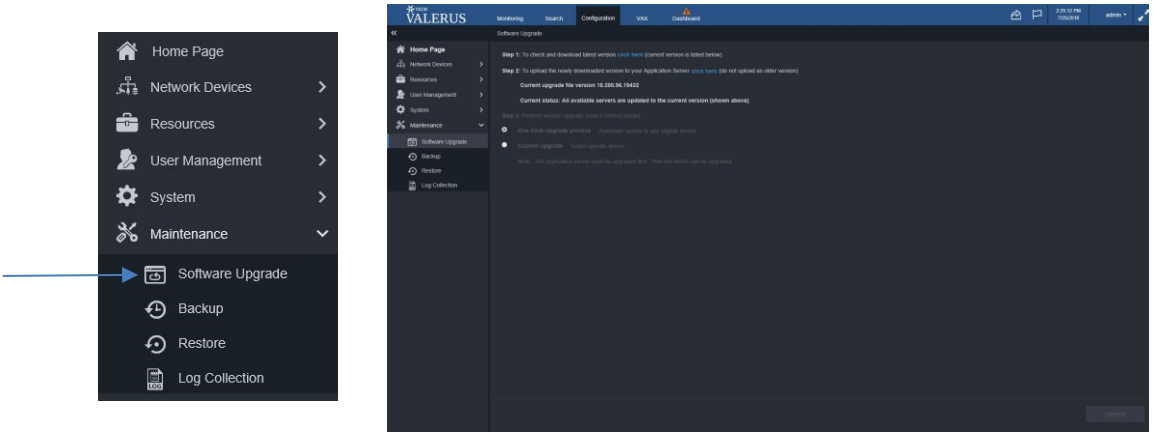
Maintenance

The Maintenance section provides menus that allow the user to keep their system updated, configure backup schedules and locations, restore or replace a server and collect system logs that are useful when troubleshooting.



Software Upgrade

The Software Upgrade screen provides a simple three step process to upgrade the system to the most current version. This download can be done from any client and then uploaded and pushed to all servers on the system. Note that this is only available for Valerus version 1.2 and higher.



- Step 1 is to check for the latest version; a link to is provided to Vicon's website to review and download it as necessary.

  Note: There is a Current status notification on the screen that lets you know if all servers on the system are up to date; in this case, up to date means that all servers in the system are at the latest version of software that is ***on*** your system. There still may be a more current version posted on the Vicon website. There is also a message indicating that an NVR is running a newer version than the system; this alerts the availability of a newer version. Also remember that you cannot downgrade your system to a lower version of software.

- Step 2 provides a link to upload the most current version downloaded in step 1 to the Application Server.

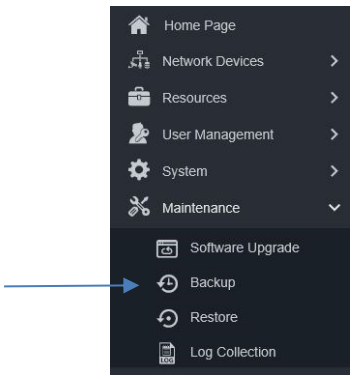
- Step 3 offers two methods of upgrade, a simple One Click Upgrade process that will upgrade all appropriate servers or a Custom Upgrade that allows the selection of specific servers to upgrade. It is important to remember that the Application Server must be upgraded before any NVR in the system is upgraded. Once uploaded, the new current version will display. Select the method that suits your needs.

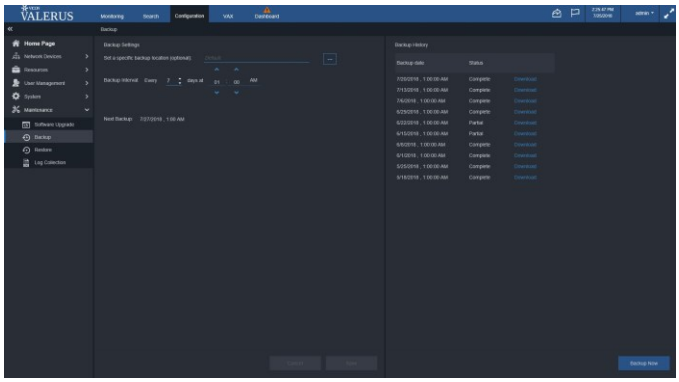
- Click Upgrade. The system will go through the upgrade process. At the end of the process, servers will restart (reboot). You can go to the NVR screen to confirm that the new version in on your system.

  Note that in systems that include remote NVRs over a slower connection (Internet or similar), performing a remote upgrade on those may fail and upgrading on them should be done locally.

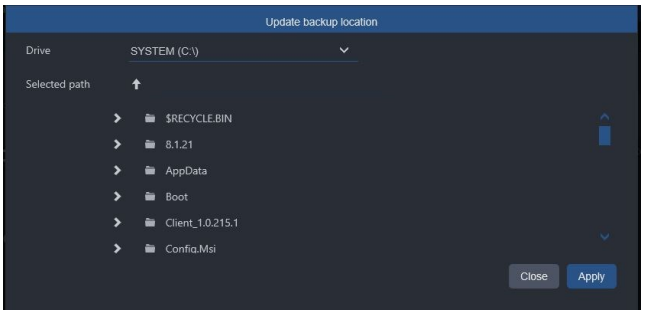
Backup

The system Configuration settings can be backed up in the case that a server fails or a new server replacement is being added to the system that will use the same settings. By default, the system is set up to backup settings every 7 days to the Application Server, but this can be customized. It is important to remember that it is the system settings that is being backed up, *not* recorded video, and this is for the full system, not just the unit you are working from.





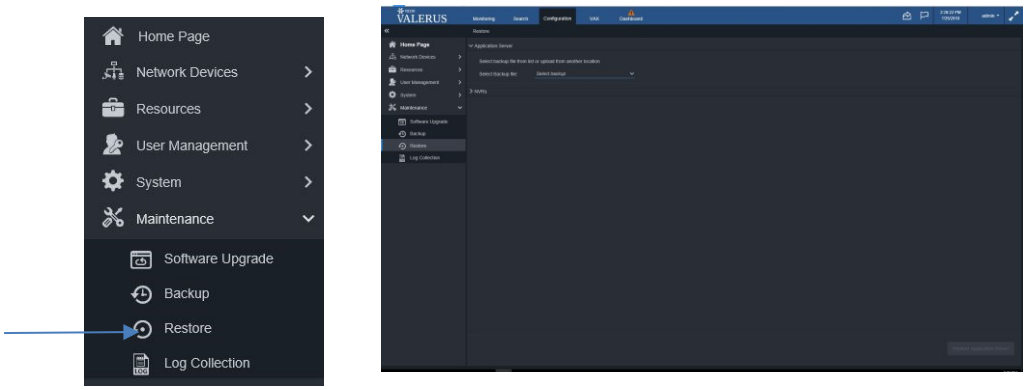
- If you want to select a location for the backup file other than the default, click the three dots next to the field. There is a default location on the Application Server or select any location desired, including a USB drive.



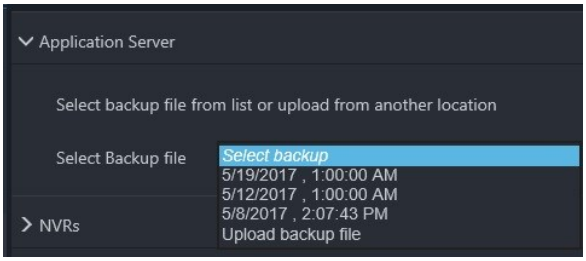
- Set the Backup Interval, in days, and a convenient time for the backup. There will be a display of when the next backup will occur.
- Click Save to save these settings or Cancel the settings.
- Additionally, the screen provides a list of Backup history, and these can be downloaded as needed. Click the download link. A total of 10 backups will remain in history and be replaced FIFO.
- If it is required to backup immediately, for example if you recently made important changes to your system, there is a button provided to Backup Now.

Restore

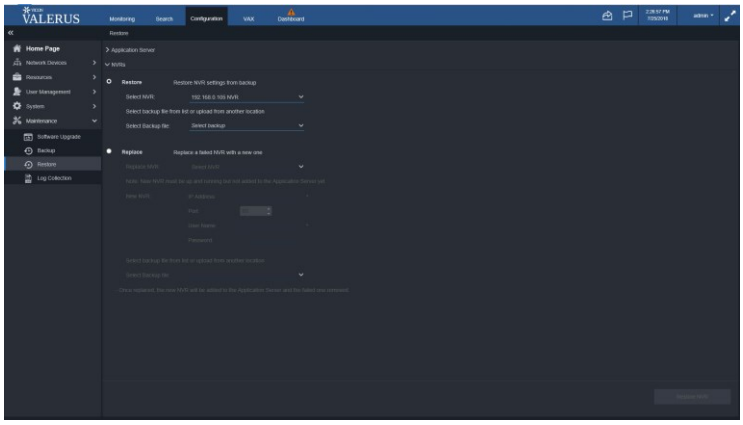
If a server fails, it can be restored or replaced. An Application Server can only be restored; an NVR can be restored or replaced. Using Restore will go back to the last known working (good) settings. Replace is used if a unit needs to be physically replaced because it has stopped functioning properly; the new NVR will have all the same settings as the unit being replaced.



- To restore an Application Server to previous settings, select the backup file from the list provided or from the location the file resides; you can use a file that is stored elsewhere that is not on the list (i.e., USB). Click Restore Application Server.



- To restore an NVR to previous settings, select the NVR from the list and then select the backup file from the list provided or from the location the file resides. Click Restore NVR.

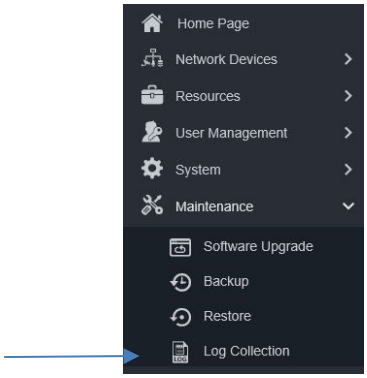


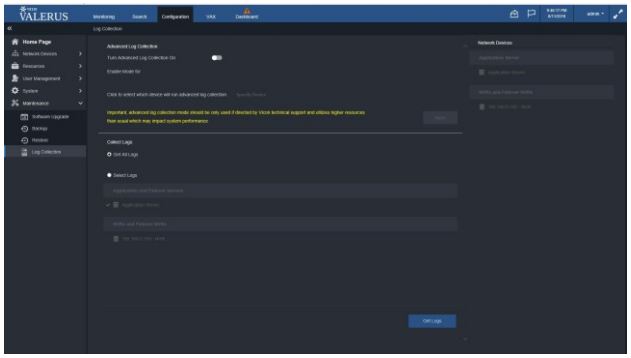
- To replace a failed NVR with a new NVR, connect the new NVR to the network (providing an IP address) but do NOT add it to the Valerus VMS; the new NVR will take on the identity of the failed NVR.
- Select the NVR to be replaced (unhealthy NVR); the list will only show NVRs that are currently offline (broken). Enter the IP address, port information, user name and password for the new NVR. If you accidentally enter an IP address that is already on the system, it will be blocked, preventing replacing a healthy NVR. Then select the backup file from the list provided or from the location the file resides.

- Click Replace NVR. The new NVR will be added to the Application Server and the failed NVR will be removed. The NVR will now have the exact settings as the unit replaced.

Log Collection

The Log Collection option allows the retrieval of system logs from all Valerus PCs without any special tool. An advanced logging tool helps in troubleshooting.



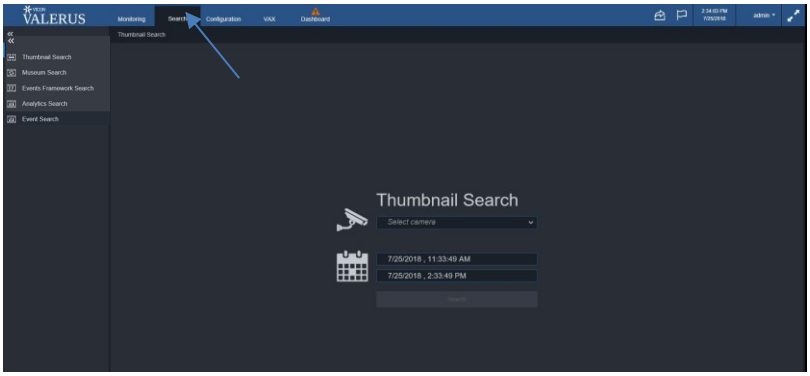


- The Advanced Log Collection can be turned on by clicking the button to enable it (turns blue). This function should ***only*** be used if directed to do so by Vicon Technical Support and should only be enabled for a limited amount of time that is set using the Enable Mode for button, as it uses an increased amount of resources utilization on your system. Select which device will run the advanced log collection by clicking Specify Device. Click Apply.
- From the Log Collection screen, select either Get All Logs or Select Logs.
- If Select Logs is chosen, choose the unit(s) that logs are needed from the Application and Failover servers or NVRs and Failovers NVRS.
- Click the Get Logs button at the bottom of the screen.

Search

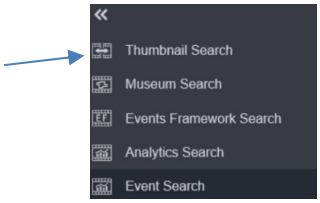
Valerus provides five efficient search tools to find recorded video, Thumbnail Search, Museum Search, Events Framework Search, Analytics Search and Event Search. The video from these searches can then be easily exported from the Search interface. You can also get to the Search menu by right clicking on the device in the Resource list from the Monitoring screen.

Note that Thumbnail Search is included with all versions of Valerus; Museum Search, Events Framework Search, Analytics Search and Event Search are Valerus PRO/ENTERPRISE features. Also note that Events Framework and Analytics are add-ons that require an additional license.

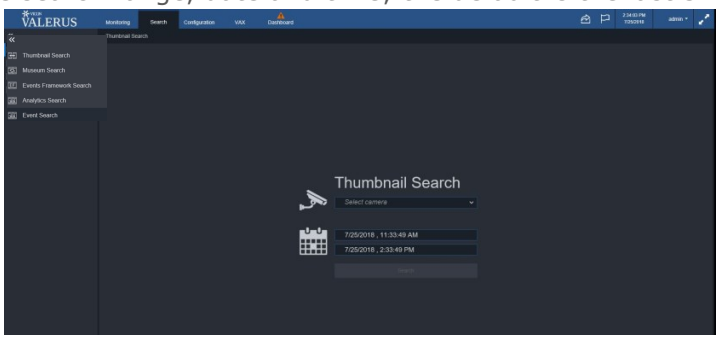


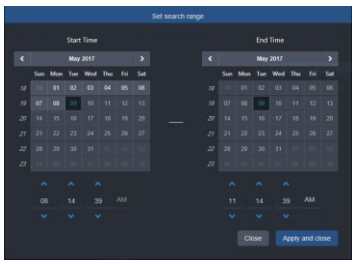
Thumbnail Search

The Thumbnail Search provides the ability to search a selected video segment from a specified interval of time for an exact clip of video. It provides a visual comparison between images along a timeline.

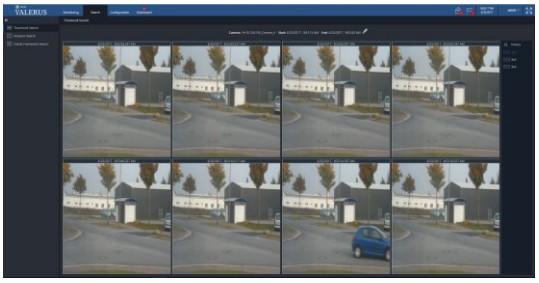


- From the Search screen, select Thumbnail Search.
- From the dropdown, select the camera you want to search for video on. From the calendar, select the search range, date and time; the default is the last 3 hours. Click Search.

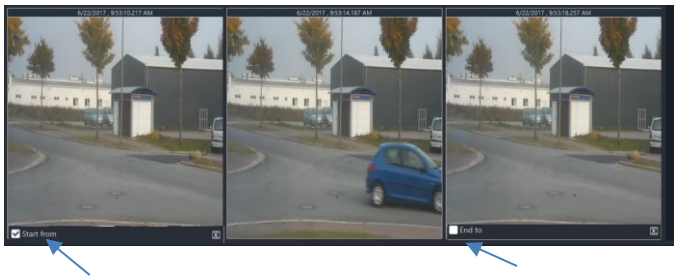




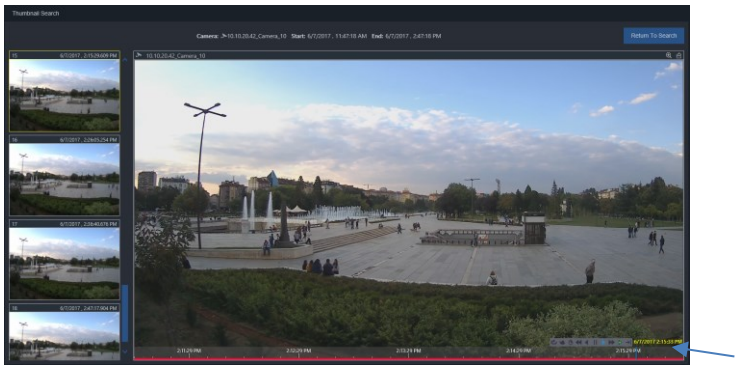
- A selection of video will display evenly distributed over the selected search time frame. The screen display format can be selected from 4x2, 6x3 (default) or 8x4.



- The search range can be narrowed by checking Start from and then End to on selected thumbnails. If you want to search between two adjacent thumbnails, click the Quick Cursor arrows symbol between the thumbnails. The thumbnail search will redistribute the same number of thumbnails over the smaller time range.



- Once the search is narrowed down, and the video you are looking for is found, double click on its thumbnail view or click playback to see it in a larger display. The remaining thumbnails will display in a list on the left side of the screen. Click on the playback symbol or double click in the list to display the video. This video opens up in playback at that time and can then be viewed and controlled as any other playback, including digital zoom and export of video using the icons in the right corner.

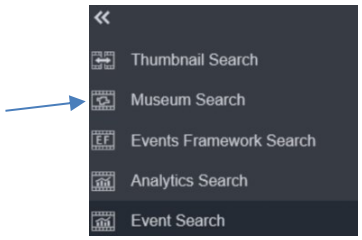


- Click Return to Search to go back to thumbnail view.
- To view a record of your searches click on History on the right side of the screen to review previous searches on this camera. Click again to collapse the list.

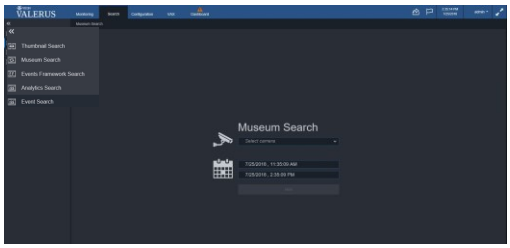
- Any time the search parameters need to change, click the pencil symbol next to the current camera search at the top of the screen. 

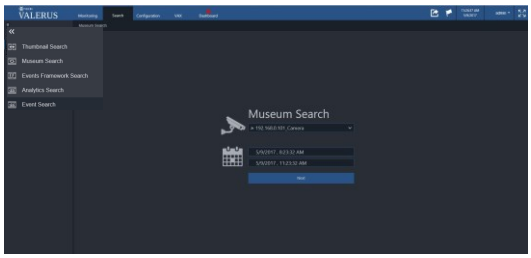
Museum Search

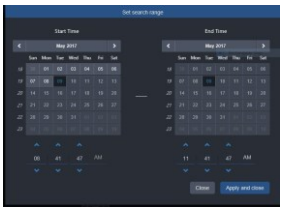
The Museum Search provides an accurate search for changes in a defined region of interest (ROI), such as a door opening or an object disappearing, reducing the time it would take to look through the entire database for the specific video needed. This is a special feature in Vicon cameras equipped with a unique algorithm to allow the search.



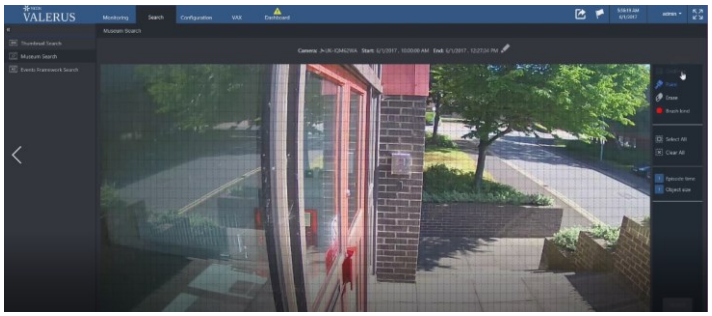
- From the Search screen, select Museum Search.
- From the dropdown, select the camera on which you want to search for video; note that the camera list will only display cameras that have the museum search capability. From the calendar, select the search range, date and time; the default is the last 3 hours. Click Next.



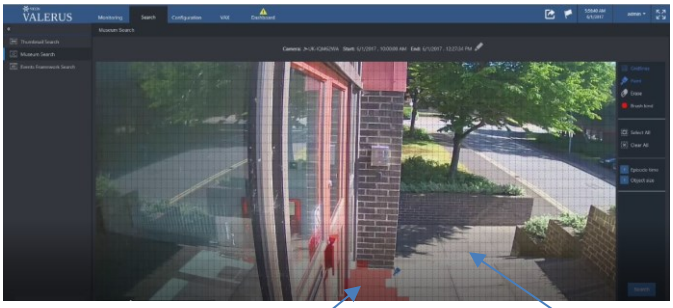




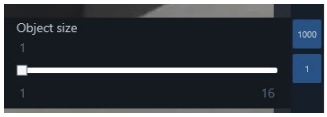
- A view from the camera will display. A list of tools will display on the right side of the screen for grids, paint, erase and brush options. Additionally there is an option to select the entire image or clear the image of all selections and select the episode time and object size.



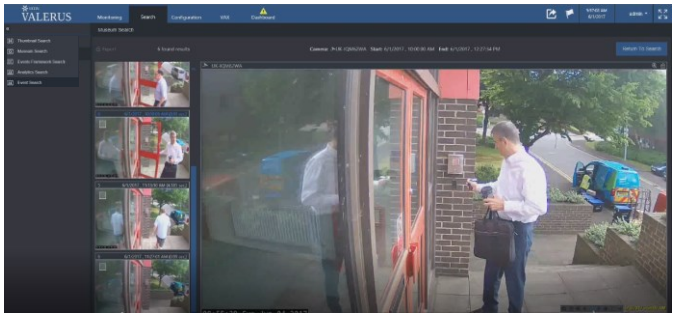
- Click Grids to toggle between viewing gridlines on the image and turning them off. Select a brush kind (color, size and shape) and then select the region of interest using the paint tool. Different colors can be used to highlight specific regions. Use the eraser tool to remove an area from the region of interest.

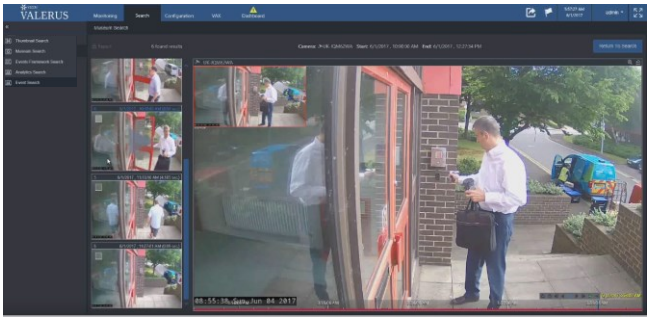


- The parameters of the search can be fine-tuned using Episode time and Object size sliders. The Episode time defines how long changes in the ROI have to occur to be considered an episode. Define the object size to define the sensitivity of the detection, how many blocks have to be involved before detected. The smaller these numbers, the more episodes will be detected.



- Click Search. Video from the selected time will display in a list 25 images at a time. Click the specific video to display and playback will start in the large display area. This can be controlled as any other playback video, including digital zoom and export of video using the icons in the right corner.





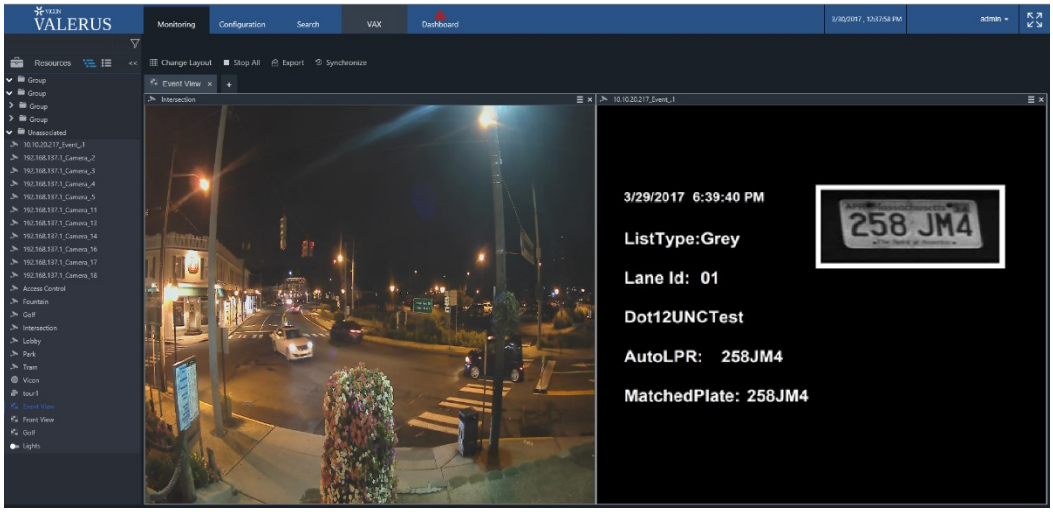
- Click Return to Search to clear the list of images and return to the original video.
- The search can be changed by clicking the pencil symbol next to the current camera search at the top of the screen.

Events Framework Search

The Valerus Events Framework is an add-on to the Valerus system that allows it to integrate external partners' systems and brings their event data to the VMS as a video feed that will be presented in a tile like any other resource. Using the Valerus Events Framework, Vicon offers a way to receive the different events (possibly from different systems), feed them into a common database so they can be searched later, and instead of having the VMS process the text and pictures, cope with overlaying it on video, etc., the framework wraps the event data as a video stream that the VMS can display like any camera in different tiles and views. By wrapping the event data as a video stream, the event becomes a resource in the Valerus VMS, just like video, audio, web and other channels and can be viewed live if needed, recorded and playback, and most commonly, used to call up as a result for an event query

The Valerus Events Framework consists of three components: the VEF Server (module, usually running on the Application Server; it also holds the VEF license); the VEF Streaming Engine, a dedicated PC(s) that can handle up to 16 integration points; and the VEF vendor driver, a specific driver for the integrated vendor that runs on the VEF streaming engine; multiple vendor drivers can run on the VEF streaming engine. The VEF Streaming Engine is added manually in the Cameras and Devices Configuration screen. Refer to Configuration, Resources. Refer to the specific manual on the Valerus Events Framework for details on how it works.

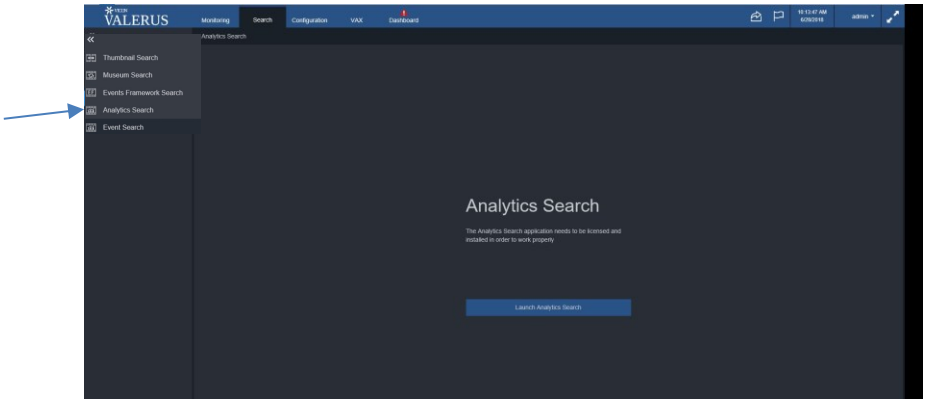
The Events Framework Search allows you to search for video clips and associated data that's been captured through a Valerus/third-party integration, for example License Plate Recognition.



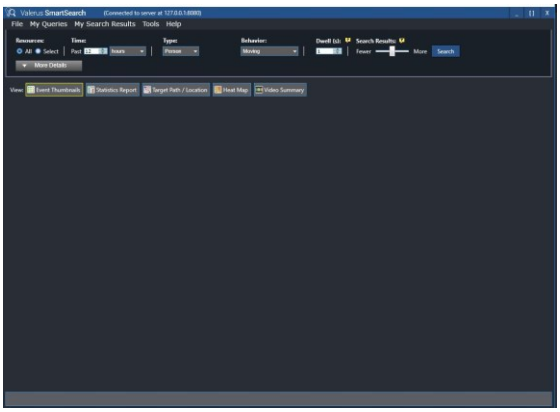
Analytics Search

Valerus SmartAnalytics is an add-on solution that integrates with the Valerus system to provide video analytics; SmartAnalytics requires additional licenses, as needed. It offers a selection of real-time analytics rules for people, vehicles and object detection. Rules are set in the analytics server and when an event occurs it shows in Valerus. Additionally, if Valerus SmartSearch is licensed and installed an analytics search is available. Note that Analytics Services must be enabled from the Configuration, Networking screen. Then it is available as an Event Type when creating Rules. Additionally, the SmartAnalytics Client *must* be installed on *each* Valerus client (enabled by a VAP) on which you want to launch the Valerus SmartSearch application.

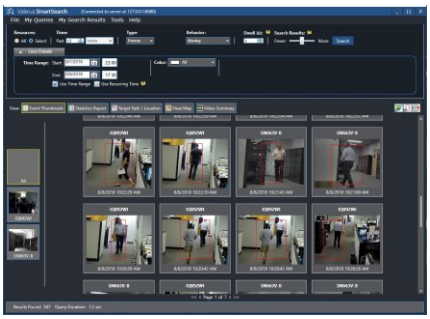
- From the Search screen, select Analytics Search.

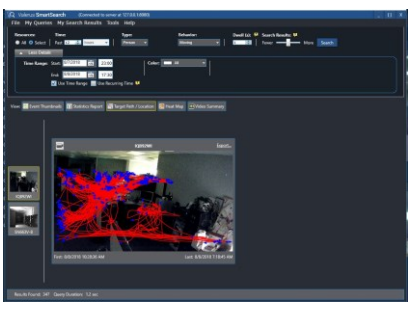


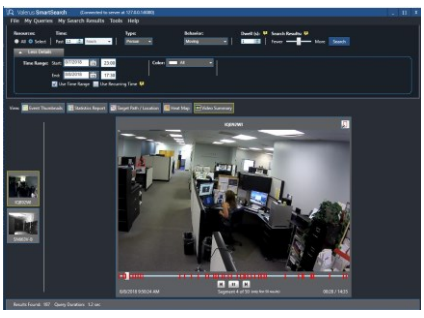
- Click the Launch Analytics Search. The Valerus SmartSearch screen displays.



- From the Resources, click Select for a list a cameras to search; click All to search all cameras. Click More Details to choose the time range for the search. Under Type, select what is being searched for, a person, vehicle or object. Behaviors can be Moving, Crossing Line, Occupancy, or Crowding. Select a Dwell time, the length of time the type selected displayed the selected behavior. Search Results sets the tolerance for the detection: More increases the probability of true/false detections and Fewer decreases that probability. After these are all set, click Search.
- From the View bar, there are buttons to view Event Thumbnails, Statistics Report, Target Path, Heat Map and Video Summary.



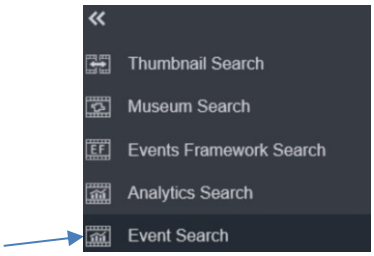




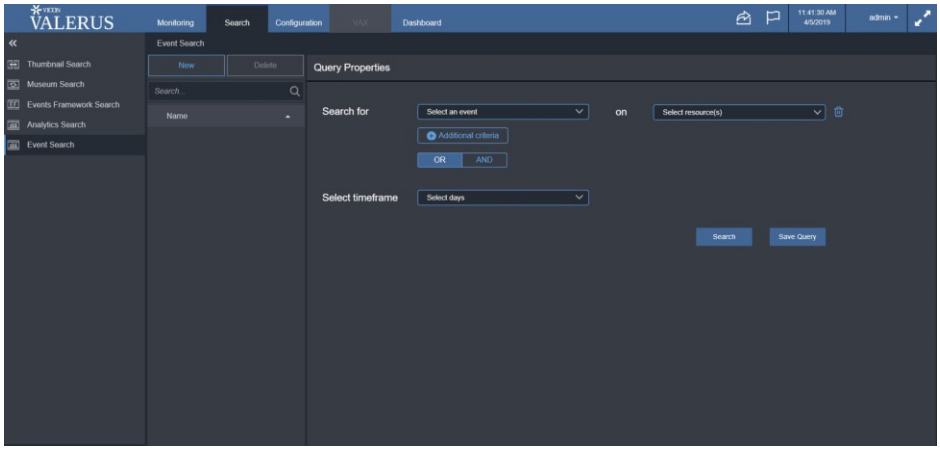
Event Search

The Event Search allows you to find any event that has occurred in the system, including bookmarks. These events are stored in the Events database in Valerus. Queries are defined to search for specific events in the storage database.

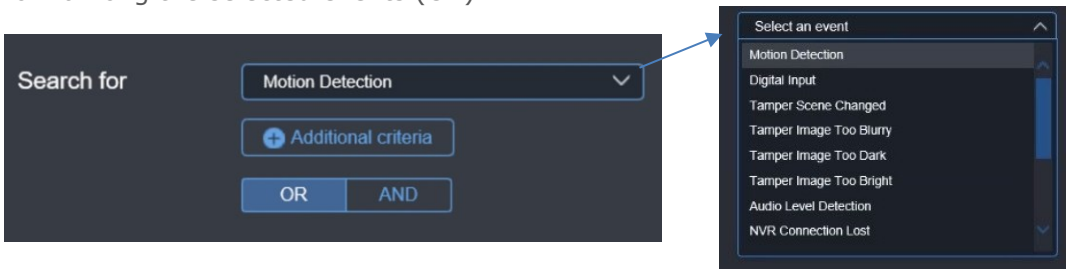
- From the Search screen, select Events Search.



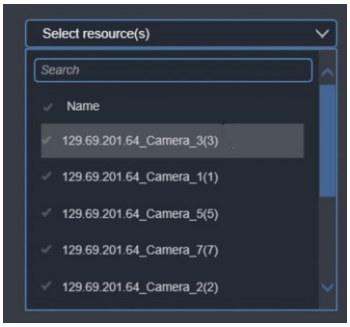
- The Query screen displays. From here a new query can be created or an existing query can be used to initiate a search. The query selects an event type on selected resource(s) at a defined time.



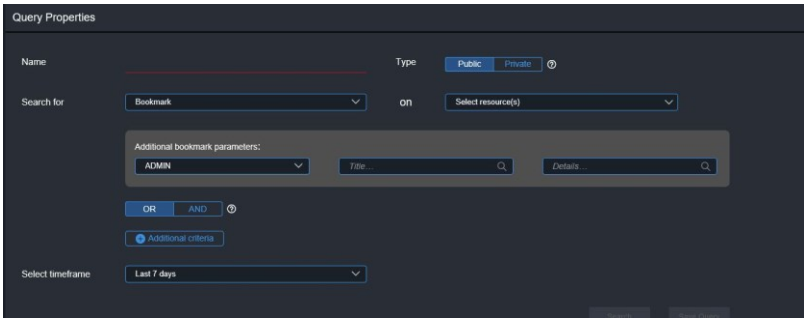
- Click the New button. From the *Search for* dropdown, select the type of event; multiple events types can be added by clicking the Additional criteria button. For multiple events, the query must be made even more specific by using the AND/OR function to include a combination of events (AND) or any from among the selected events (OR).



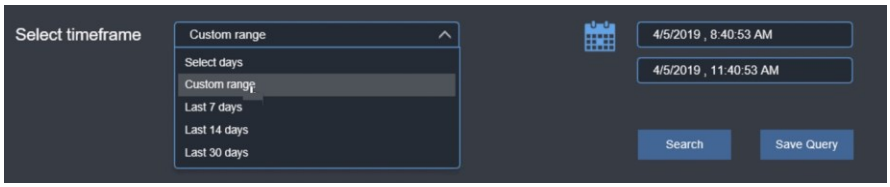
- From the *Select resource(s)* dropdown select the device(s) to search when the event(s) occurs. Multiple resources can be selected; click Name to select all for convenience if every device on the system is to be included in the search.



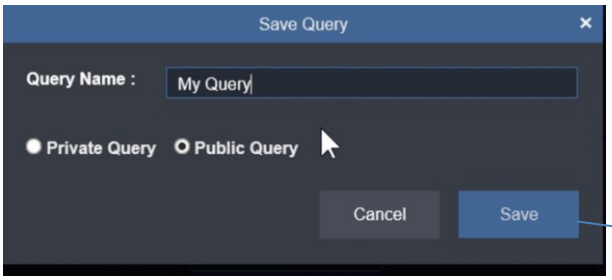
- When the event is a bookmark, you will also add in the parameters of who created it (a list of users is provided) and their title and details of the bookmark.

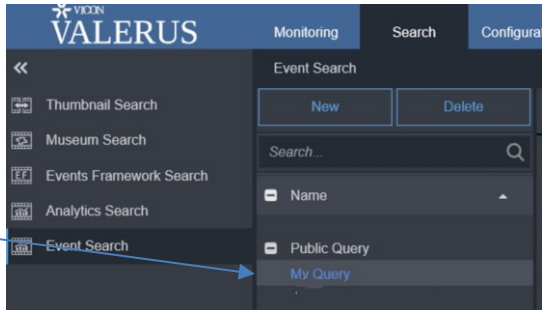


- From the *Select timeframe* dropdown list, select the number of days in the past you want to search. If a custom range is selected, a calendar will display to select the specific day and time for the search.

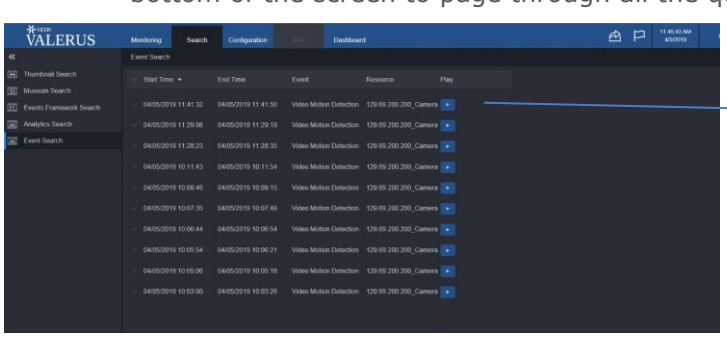


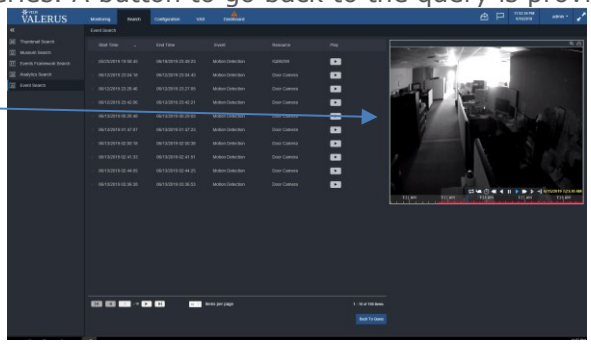
- After all the details are completed, click Save. The Query can be given a name and be made Private, for use by only this user, or Public for anyone on the system to use. Click Save or Cancel if you do not want to save this query. Once it is saved, it will be listed on the Event Search page.

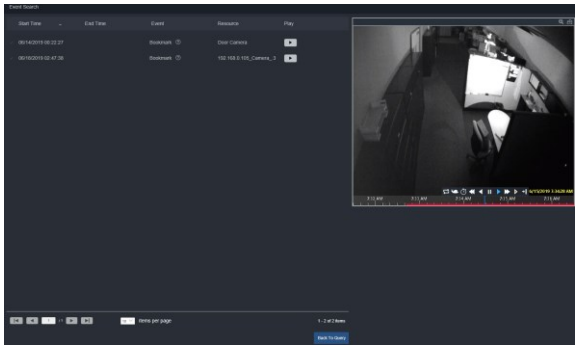




- Any query in the list can be selected and searched for. After the search is performed, a list of events displays. Each event can be selected and the video/audio played back for cameras and microphones; up to six (6) playback windows can display where AND queries were used. There are arrows at the bottom of the screen to page through all the queries. A button to go back to the query is provided.





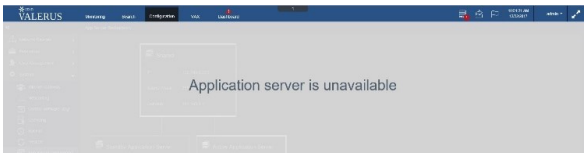


Playback of Bookmark

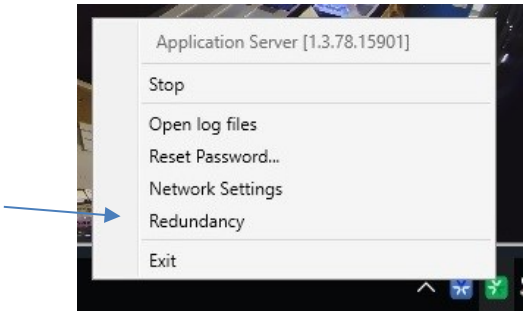
Using the Application Server Redundancy Function

If the Application Server fails, it will be indicated on the interface with a red X on the Application Server icon at the top of the interface.  After the switch is made to the redundant server, an icon will display to indicate that the system is working on the secondary server.

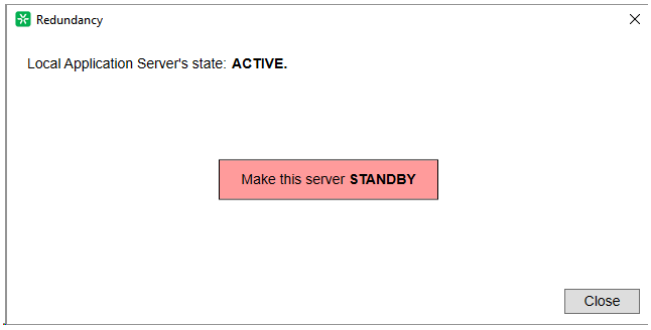
Any user already logged in while the server failed (and the redundant has not been activated) will remain logged in to the functioning Valerus system, but a user attempting to login will not be able to do so and will get a message that the Application server is unavailable. Additionally there will be no access to Configuration available.

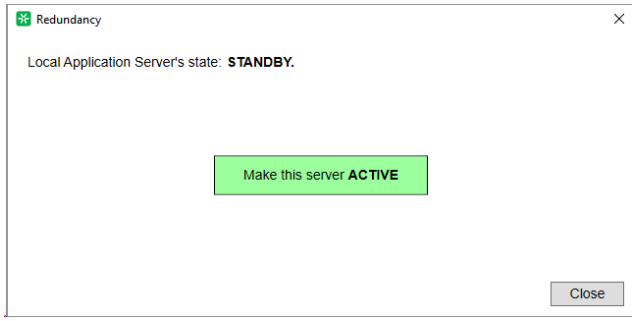


Controlling either Application Server's state (active or standby) is done with the click of a button (cold swap). If the primary server fails, you will need to access the backup server desktop (directly on the PC or using remote desktop or similar). Go to your system tray and right click the Application Server icon (green); if the icon is not in the system tray, you can run it by clicking on the Windows key, type application server and click on the Application Server utilities icon that displays. From the list that displays, select Redundancy to open the Redundancy panel.



From here, you will be able to click to make the Local Application Server Active, as it was in standby mode before (being the redundant server). The secondary redundant server will now take over. When the primary Application Server is repaired or replaced and brought back online, you will be able to click Redundancy again and make it Standby while the primary will be made Active.



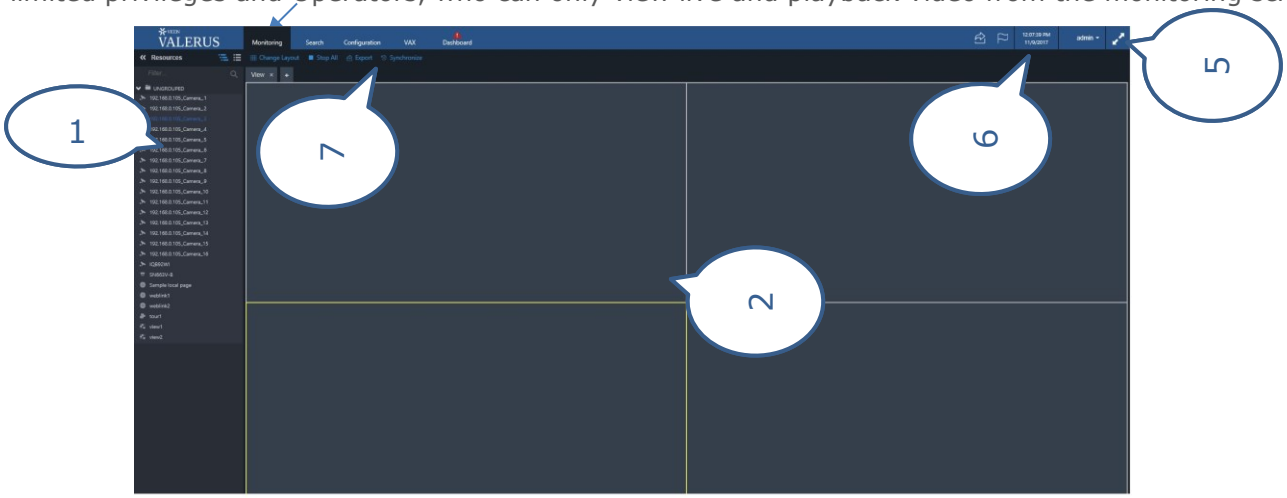


It is important to remember that only one of this pair should be Active at any given time and that normally the primary should be the Active one.

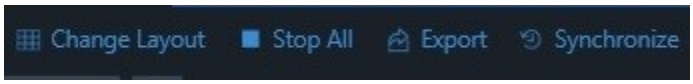
Monitoring

The VMS is operated from the Monitoring screen. This is where all devices on the system are listed and both live and recorded video is viewed. Click on the Monitoring tab at the top of the screen. The default display screen (2x2 quad) displays.

There are 4 levels of users, Administrators, who have all privileges, Supervisors and Investigators, who have limited privileges and Operators, who can only view live and playback video from the monitoring screen.



General controls (7) for the Monitoring screen are located at the top of the screen. These are for Change Layout, Stop All, Export and Synchronize. Each of these is explained in detail following.

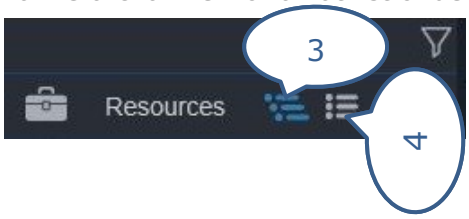


Resources (1)

A list of available resources on the system is provided. The Resources list includes cameras, microphones, URLs (web pages), digital inputs, relay outputs, views, tours and any defined groups. Each of these are represented by an icon as well as its name. If any device has been deleted from the system, there will be a folder of deleted channels in the Resources list, so that existing recorded data can be played back. These devices will be removed when the storage is filled and the data is overwritten based on retention days set before their removal.

A – Group
B – Fixed Camera
C – PTZ Camera
D – Web page
E – Tour
F – View
G – Microphone
H – Removed Device

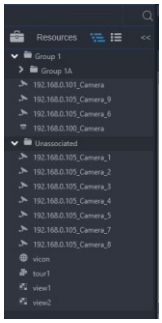
This list can be presented in either a hierarchal view or a flat list of devices.



Hierarchy View (3)

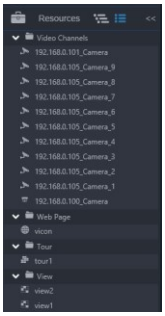
In Hierarchy view, each device is listed under the group it is associated with. These are the groups configured in Groups Hierarchy. In systems with a large number of cameras, this can make locating the

camera to view simpler, as it is identified with a specific group. If a device is not in a group, it will display as unassociated.

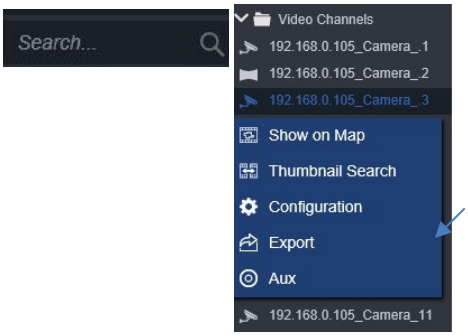


List View (4)

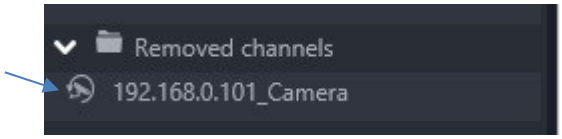
In the flat list view, devices are defined by resource type (video source, audio source, tour, etc.) and no groups are listed.



The Resources list can be collapsed by clicking the double arrows to provide a larger display area. Additionally, the Group lists can be collapsed by clicking the down arrow head. In large systems, it is sometimes difficult to find the exact device and group of devices in the list. You can right click any resource to get to a shortcut to the Search functions, Configuration, Show on Map and Export video, depending on what is available for that resource. A search function is provided to do a search of the list on that screen, for example find all views.



If a device is removed from the system, it will still display in the Resource list noted with an icon that will allows playback from the device. Additionally, removed devices will be listed in a dedicated group. The display of these devices can be turned off in the Users Settings screen.

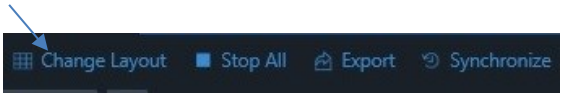


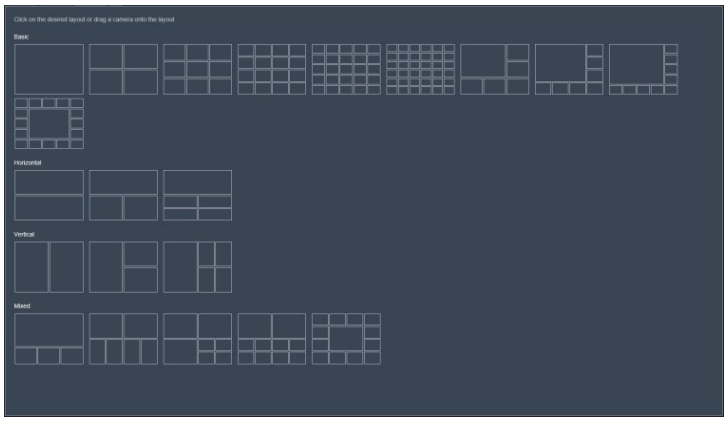
Display (2)

The default video display is quad (2x2) view; the default view can be changed and additional views can be created. Valerus supports multi-monitors.

View

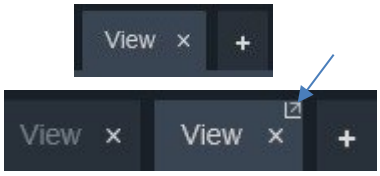
- To change the default view, click Change Layout to reveal a list of basic, horizontal, vertical and mixed layouts. Select the desired layout and it will display on the Monitoring screen.

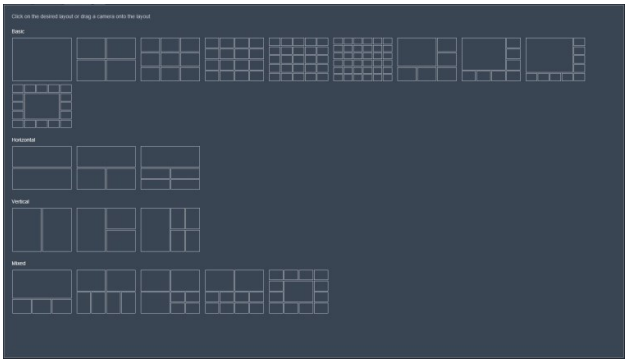




New View

- It is often convenient to have several displays available for viewing, without having to change the main default view.
- Additional views are created by clicking the plus sign next to the View tab; a visual display of layout types opens. Click on the layout desired; a new view tab is created next to the View tab.





- As an alternative, any View created in Configuration and is in the Resources list can be dragged to the display area and a new tab will open up.
- Any View tab can be closed by clicking the "x" on the tab.
- Valerus supports multiple monitors, so any view or edge device can be displayed on another monitor. Click the view tab and drag it up a by the little arrow in the corner; a new window will open with that view. This can then be dragged to the other monitor. Note that popup blocking must be turned off in the browser to allow display on the second monitor.

Live View

- To view video or audio, simply drag the camera or microphone into the tile. Video/audio will start to display live. Audio does not take up a tile in the display area, but displays in a small area under the video display area.

  If a video stream is lost because an NVR goes down, the Valerus failover will attempt to get the video directly from the camera. To indicate this, the word Alternate will display in the title bar.

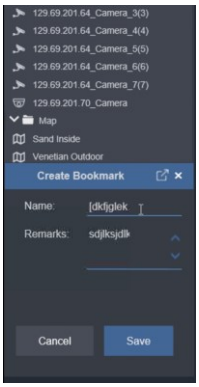
- Double clicking the camera icon changes the view to single view; double click again to return to previous screen layout.
- To view a different camera/microphone in a tile already displaying video, drag it from the Resources list to the title bar above the video with the camera name to replace the video. Displays can be moved from tile to tile on the interface and the displays simply rearrange to accommodate the change.

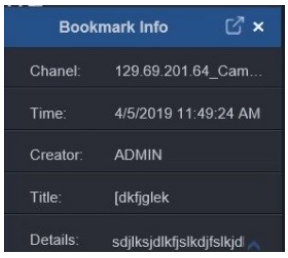
- To stop displaying video/audio, click the x in the right corner of the title bar above the video. If a previously created view is dragged, it will open in a new tab.
- To display configured a view or tour, drag it from the Resources list onto the display area. A new tab is added next to the View tab or any other View tabs that are currently available. These views and tours can be selected, viewed and operated as any other device in the list.
- Web pages that are visible in the Resources list can be dragged to the display area just as any other device. The web page displays in the tile and can be navigated as any website. Double clicking on the display will change the view to single view; double clicking again returns to the previous screen layout.
- Placing the cursor on the title bar above the video/audio that displays the device name reveals a series of icons for video/audio functions, including Bookmark, Search, PTZ (on PTZ cameras only), 360 (on 360 cameras), Play (for playback), Digital Zoom, Unmask, Configure and Export; audio icons include Volume, Configure and Export. Additionally, there are icons for Thumbnail, Museum and Analytics that will take you directly to the Search function if clicked; refer to that section for details on how to use those screens. These icons will display for a set amount of time and then disappear. If it is convenient to have these display continually, click the three line icon so it turns and the lines are vertical; click the icon to have the lines be horizontal and the icon bar will time out. When the icon is blue, it is selected.

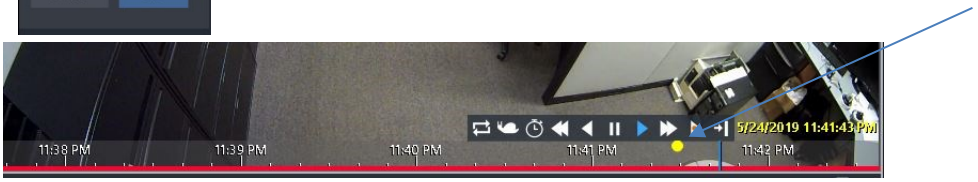
Video Controls

Audio Controls

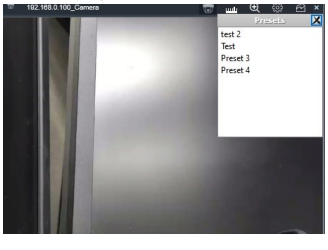
- Bookmark – The operator, if authorized in User settings, can create a bookmark related to a specific video feed, live or playback, by clicking the bookmark icon (star) on the toolbar; this will open a bookmark dialog box with time it was clicked. When a bookmark is created its information is docked under the Resources area so it does not block any video, but it can be undocked and placed where convenient. The bookmark is accessible from the Playback screen timeline as well as searchable in the query form. This bookmark can be searched for using the Query feature. When in playback mode, the bookmark is noted by a large yellow dot. Hovering over the dot will display the title of the bookmark; clicking it opens the full playback functionality.



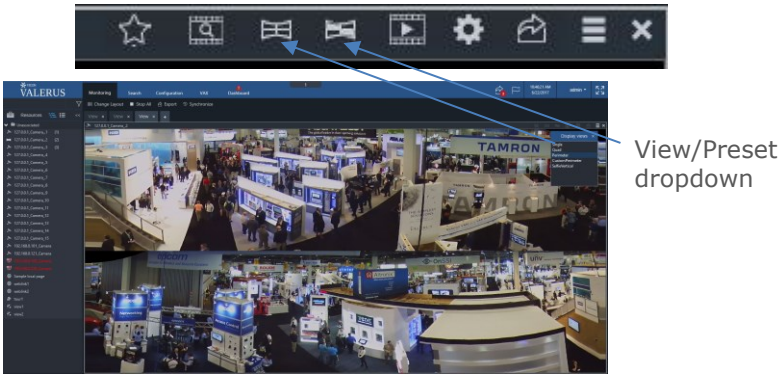




- When a PTZ camera is displaying, the cursor turns into a large arrow head that allows movement of the camera position. Additionally, zooming can be done using the mouse wheel or the +/- sign next to the PTZ symbol. Click the PTZ icon to select the preset or the tour you would like to view (for PTZ cameras only). The camera will immediately move to that position or tour.

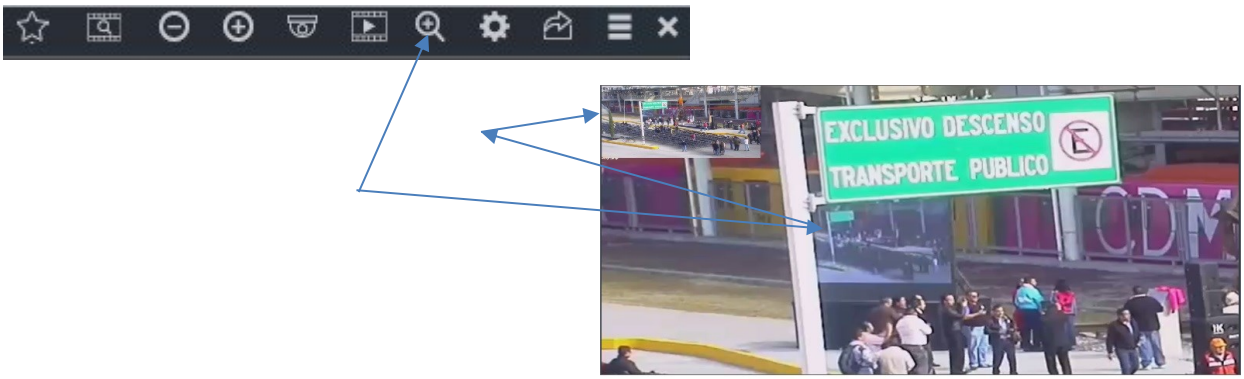


- When a hemispheric (360) camera is displaying, there are icons that open a view dropdown and a preset dropdown. There is no digital zoom, but you can zoom in using the mouse wheel or right click and move the mouse into the area you want to zoom in to. After zooming, you can navigate the picture with a left mouse click and moving the mouse.



- Playback – This is used for playback and is explained below.
- Digital Zoom – Use the digital zoom tool to zoom in to a specific area of the video display. A picture-in-picture of the entire screen will display in the left corner of the tile. Use the mouse wheel to fine tune the zoom amount or use the cursor to select a specific area to zoom in to.

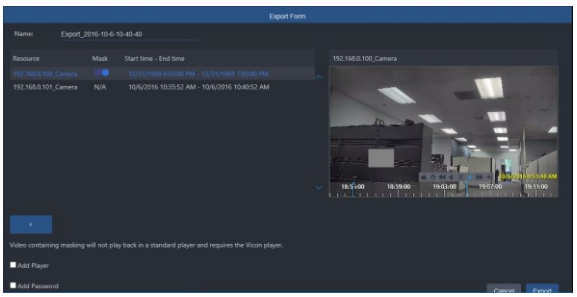
  Clicking the mouse wheel in the picture-in-picture returns the display to 100%. Note that digital zoom is not available for hemispheric (panoramic 360°) cameras. Refer to that section for details on zooming.



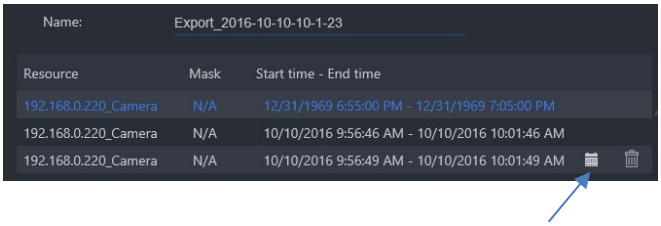
- Unmask – Select the Unmask icon to temporarily remove any mask on the video that was created in Configuration. Clicking Unmask again restores the mask.

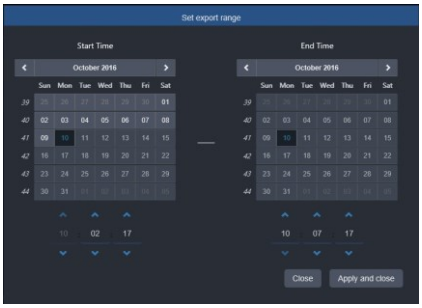
- Configure – Clicking the Configuration icon opens the Configuration screen for that device. This is a shortcut to make changes to that device's setup.

- Export – The Export icon is used to save a video clip from this camera. To save a clip, click the Export icon. A popup will display.



- Select the Start and End time for the video clip by clicking on the calendar icon; a popup screen will display. Select the exact start and end times for the video clip; when finished click Apply and close. If there is a mask on the video, it can be removed on the exported clip by clicking the Mask button; the mask remains on the live video display. The video loop function is supported and that loop can be exported.

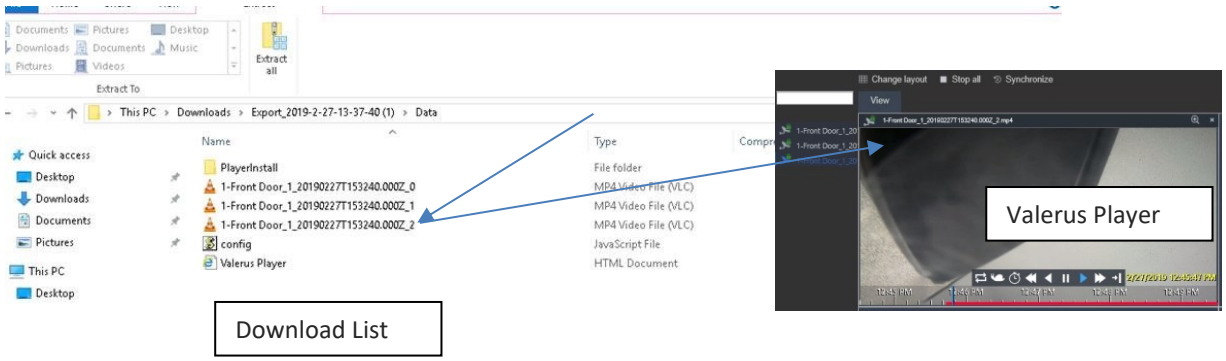




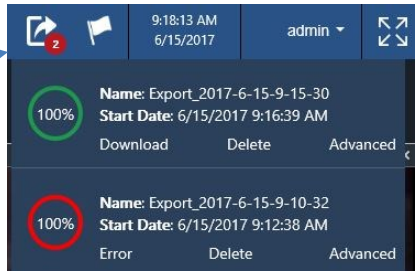
- Add another resource not in the list by clicking the plus sign; a list of resources will display. Select desired resource and click Add; if you have selected all the resources click Add and Close; click Close to close the popup without adding any resource. You can include the Player and a Password to the clip by checking those boxes; this way video can be viewed as in the VMS and is protected. Click Export to save the video on the application server (because the VMS is browser-based, video cannot be saved directly to a local device). The Export symbol will display a number that indicates that the export is in progress; click on the Export symbol for details on the progress of the export. A spinning circle indicates how the export is progressing. You can also click Abort to stop the export or Advanced for additional details. When the export reaches 100%, click download; a message (Windows standard) to save the video clip zip file to a local device of your choice will display. Video is exported in MP4 format.

  Note: If the exported file size is larger than 2GB, the video will be split into 2GB size files and will show as multiple consecutive files using the camera name and a suffix number showing their order. This is done to support clients running on a 32-bit operating system that cannot handle file sizes larger than 2GB.

  In the example below, an actual export file was split by Valerus into three (3) files. The camera name (1-Front Door) is the same for all three files and a numeric ID showing the order is added at the end (0-2). On the right-hand side you can see how these will show in the Valerus player, allowing the user to access the entire exported scene.



- When extracted (if a password was added in the Export form, you will need to provide it now), the exported video is in a folder. If the player was added in the Export form, it will be in the folder as Valerus_player.html. The file will now be Valerus Player.exe. If no player was exported, there will only be the MP4 files. When clicked, the Export Player automatically opens in Internet Explorer; if it is opened in a different browser a message will display to notify the user to change browsers.



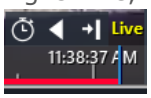
Note: Once the file is exported and downloaded to the client, it is recommended to delete it.

- Volume – The volume icon for audio displays a slide scale that allows you to lower and raise the loudness of the audio that is playing.

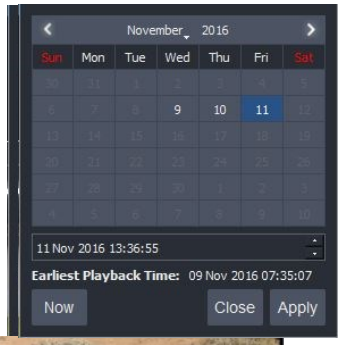
Playback

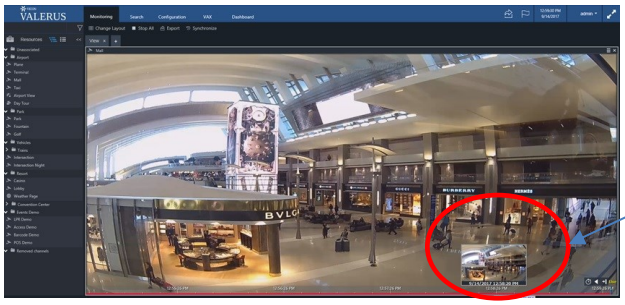
Video

- To view recorded video, click on the Playback mode icon to display a time line at the bottom of the video display (the Playback icon turns blue); icons for Play From Time, Backward (rewind) and Go to Current Time also display. There is also a clear indication that the video displaying is Live, even when the timeline is displayed.



- Playback can be started by clicking directly on the timeline. To playback from a specific date and time, click on the Play From Time clock icon; a calendar displays. Select the specific date and then enter the time, hour, minute and second. Click Apply. The video from that specific date and time displays on the screen. The playback icons change with more options. There is a blue playback cursor in the time line that indicates the exact time the playback is displaying; this cursor can be moved to any time. The earliest playback time available is noted on the calendar. Hovering the mouse over an area in the timeline will display a thumbnail of the video at that time; this can be turned off in User Settings, Visual.

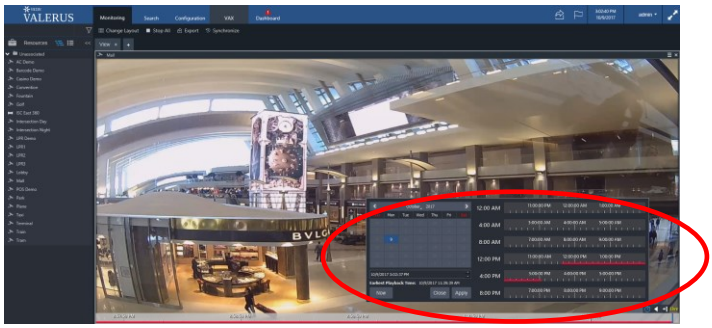


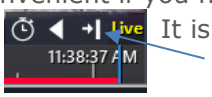


Thumbnail view from timeline

- If a bookmark has been created, clicking the yellow dot will put you directly into playback mode, with all the same functionality of standard playback.
- Use the icons to view video in: Loop mode, Slow mode, Play from Time, Fast rewind, Rewind, Pause, Forward, Fast Forward, Live view and Go to Current. Clicking the Loop mode icon will activate brackets around a time span that can be moved to the exact time desired for playback; this same time section of video will display repeatedly. Be sure that the blue playback curser is in the looped time brackets.

- When Playback from Time is called up, Valerus will show a 24-hour map of recording for the selected day. Right clicking on the red line brings up thumbnail of the video at that time.



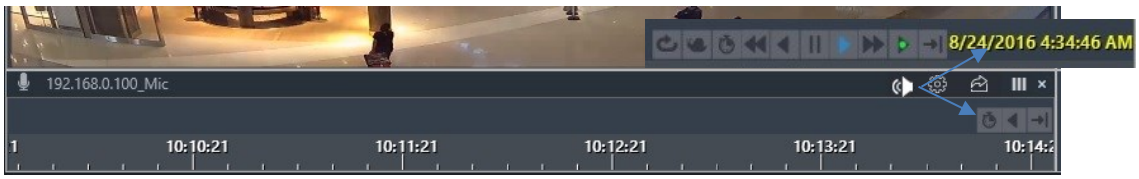
- Clicking the Go to Current icon takes the video to the time where the blue cursor is in playback. This is convenient if you have been scrolling in the time line and lost track of where the current playback time is. 

It is important to remember that this does NOT go back to current Live video.

- The video will remain in playback mode until the video is returned to Live or shut off. When it is in playback mode, a red x will display on the playback mode icon and the icon will read "To close, switch back to live;" click the icon, click the Live icon and then close playback if desired. 
- To remove the time line bar, click the Playback icon (that is currently blue) and the timeline will disappear.
- When a device is deleted from the system, existing recorded data is kept in a folder of Deleted Channels in the Resources list. These recordings from deleted devices can be played back in the same way as recordings of currently connected devices. This data will be available until the storage is filled and it is overwritten due to FIFO.

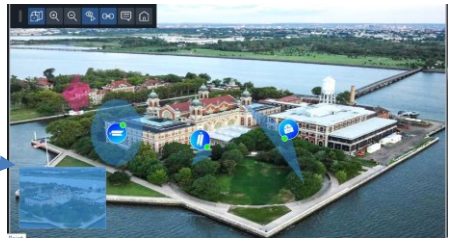
Audio

- Audio displays in a small area under the video display area, so that a tile area is not allocated.
- A time line displays for the audio to allow playback. Playback from a time can be selected by clicking directly on the timeline. To playback from a specific date and time, click on the Play From Time clock icon; a calendar displays. Select the specific date and then enter the time, hour, minute and second. Click Apply. The audio from that specific date and time displays on the screen. The playback icons change with more options.



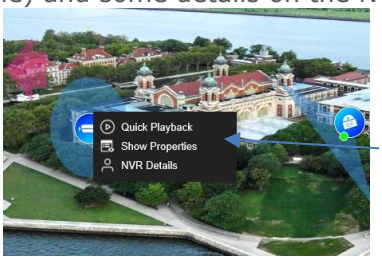
Maps

- Maps are included in the Resources list. Any map can be dragged into a tile for display. The map will display as it was set for the Home position in Configuration and includes all the resources, highlights and sticky notes created there.
- The tool bar below displays for a map; this toolbar can be dragged to a different location if it is interfering with viewing the map. Using these tools, you can get the relative location after zoom, zoom in and zoom out, remove the funnel, hide linked maps, hide text on linked maps, hide sticky notes and go to Home position (if setup in Map Configuration). Note that this toolbar will not be seen when using a screen split higher than a 4x4, due to the small size of the panes.



Relative location

- When viewing a map, hover over the camera icon to get a snapshot. Double clicking the icon opens the player for a complete Live view of video with all controls and information on the device available. Note that there is no PTZ control from the icon itself; open to Live view for full PTZ control. The Live view can be resized by grabbing the double arrow tool in the bottom right corner; it can be repositioned by grabbing the four-arrow icon in the top left corner. See below.
- The mouse scroll wheel can be used to zoom in and out of the map as needed and works in the same way as the plus and minus buttons on the toolbar.
- Right clicking the camera icon opens a box that offers quick playback, shows properties (camera name) and some details on the NVR the resource is on; right clicking a relay can turn it on/off.



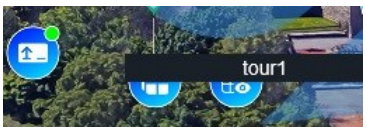
Right click camera icon

Move tool

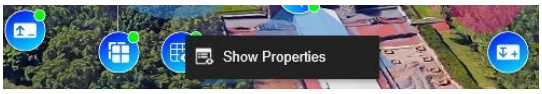
Size tool

- When resources other than a camera are on the map, including microphone, tour, view, relay output or digital input, hovering over the icon displays the name of the resource; right clicking allows to show the properties of the resource. To display a view or start a tour from the map, drag the icon to an open pane on a display grid; the view or tour will display in that area. Double clicking the mic icon will open the player and allow to play audio in the same way it is done from the display area.

Relay, Tour, View, Digital Input icons



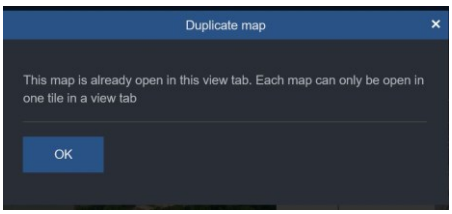
Hover for icon name

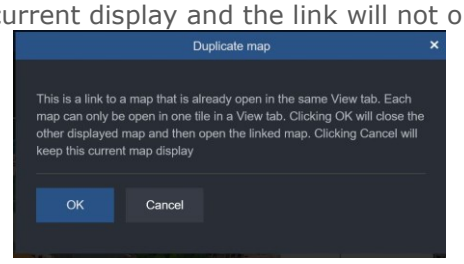


Right click icon

- If a highlight shape that was created with a link to another map is shown on the map, clicking the shape will navigate to that linked map and display it. Use the back arrow to return to the original map.

Important Note: There is a limitation to displaying maps. Each map can only display once in a View tab. A message will display if you try to open a map that is already open in that display. If a linked highlight is clicked that is a link to a map that is currently displaying in this same View, a message will display. Selecting OK in the message will close the map that is already displaying and then open the linked map. Clicking Cancel will maintain the current display and the link will not open.

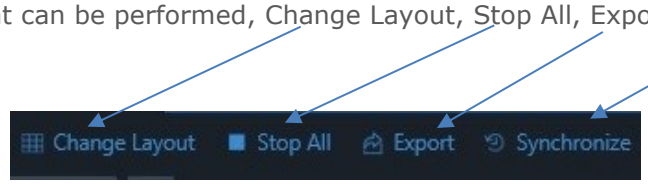




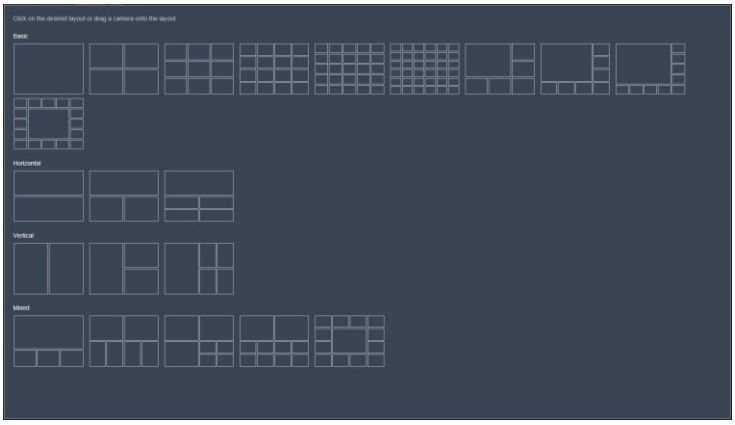
- If a highlight shape that was created without a link is shown on the map, the mouse will not change when it hovers over it and clicking will not change anything.

On Screen Controls (7)

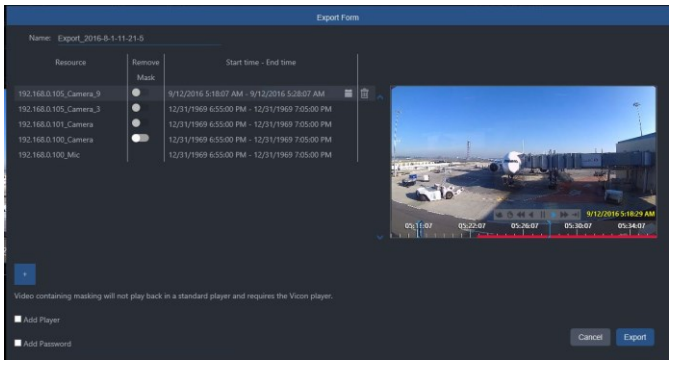
A group of icons for functions that can be performed, Change Layout, Stop All, Export and Synchronize are at the top of the Monitoring screen.

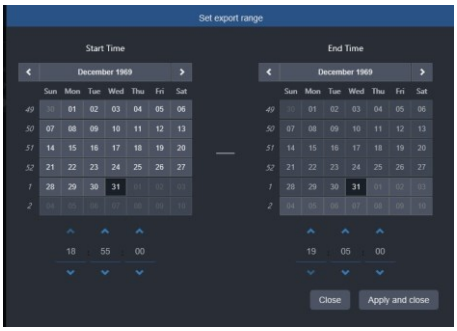


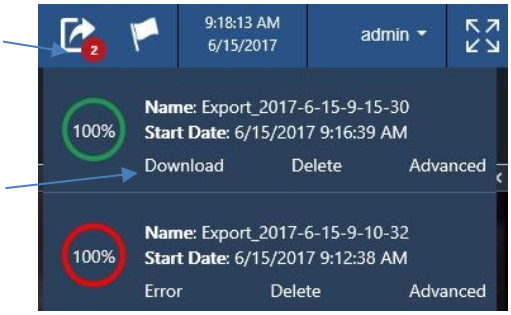
- Change Layout provides a number of video display layout options and is explained previously under Display.



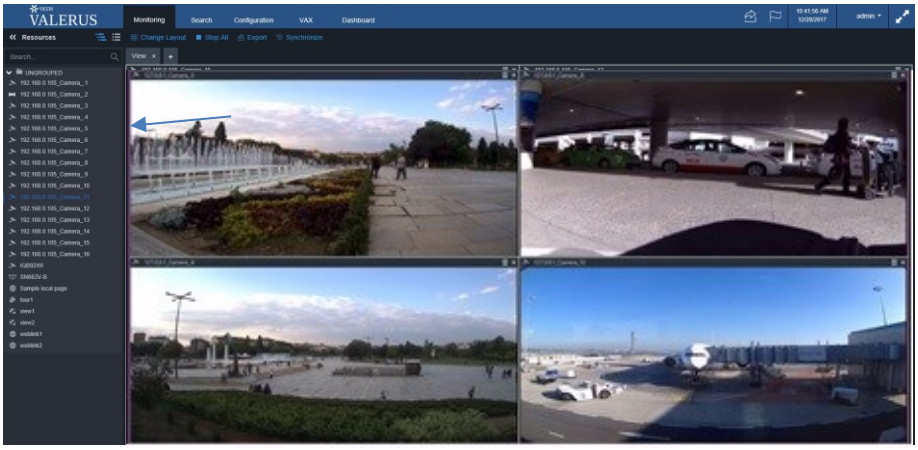
- To turn off all video display, click Stop All.
- To save a clip, select Export. A popup will display listing the Resources available to save. Select the Start and End time for the video clip by clicking on the clock icon; a popup with a calendar displays. Select the exact time and date to you want to export for each resource; when finished click Apply and close. Add another resource not in the list by clicking the plus sign; a list of resources will display. Select desired resource and click Add; if you have selected all the resources click Add and Close; click Close to close the popup without adding any resource. You can include the Player and a Password to the clip by checking those boxes; this way video can be viewed as in the VMS and is protected. Click Export to save the video on the application server (because the VMS is browser-based, video cannot be saved locally directly). The Export symbol will display a number that indicates that the export is in progress; click on the Export symbol for details on the progress of the export. A spinning circle indicates how the export is progressing. You can also click Abort to stop the export or Advanced for additional details. When the export reaches 100%, click download. This file can then be downloaded to a local device.





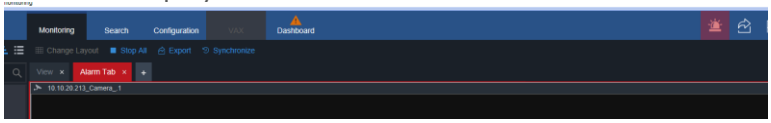


- When Synchronize is selected, the video on the display is bounded by a pink border and the playback video from all these resources are time synchronized.

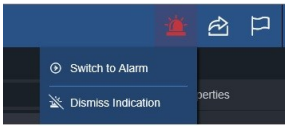


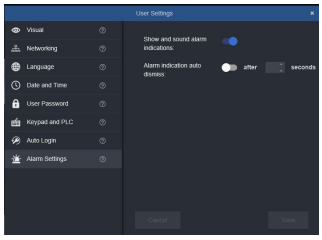
Alarms

If Events have been defined in Configuration, and an alarm event occurs, an alarm event tab, highlighted in red, will open in the tab area. No video will be overwritten, but the system will jump to open that tab. It may be convenient to dedicate the display of this tab on another monitor. All alarms will open in this tab.



In addition, an alarm icon will flash in the top toolbar and an audible alarm will sound. These alarm indications can be set on/off per user (User Settings) and can be configured to time out or require a manual shut off.



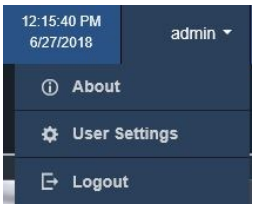


Full Screen (5)

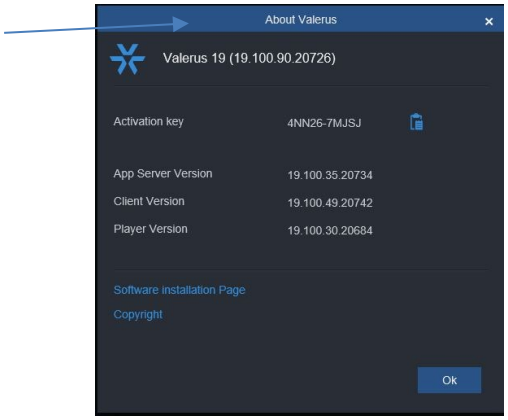
- There is a two arrow icon in the top right of the screen. This is a triple click button. When it is desirable to view the interface full screen, click on the two arrow icon. The interface will expand to fill the entire browser (similar to the F11 function). If you click it again, it will fill the entire screen with no UI. To return to standard view, press the Esc key.

Admin (6)

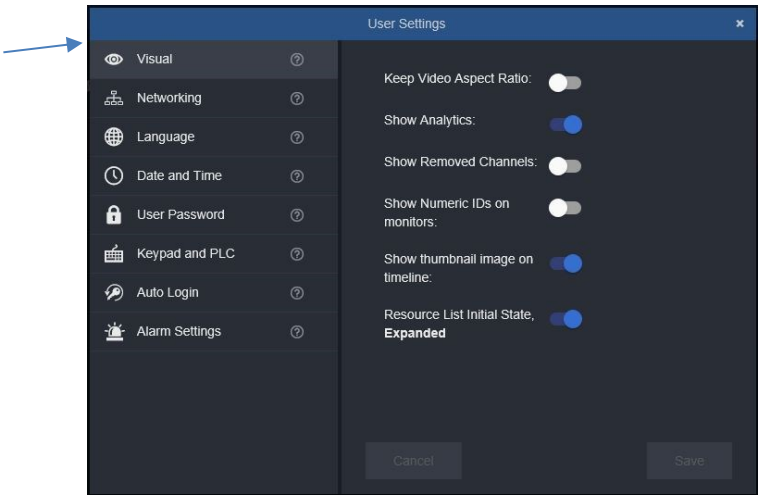
From the admin dropdown, select About, User Settings or Logout.



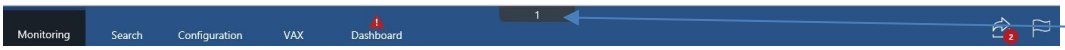
- Click About to find important details about the system. This screen provides the Activation key without having access to the Configuration screens. It also includes a link for software installation and copyright information on open source software used in Valerus.



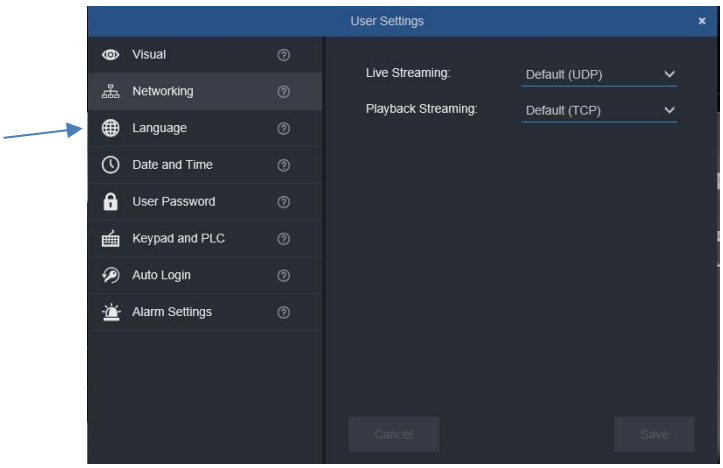
- User Settings presents an overview of the local settings of the system. These settings can be modified and saved directly from this screen. Included here are categories for Visual, Networking, Language, Date and Time, User Password, Keypad and PLC, Auto Login and Alarm Settings. Clicking each of these categories opens a list of settings.



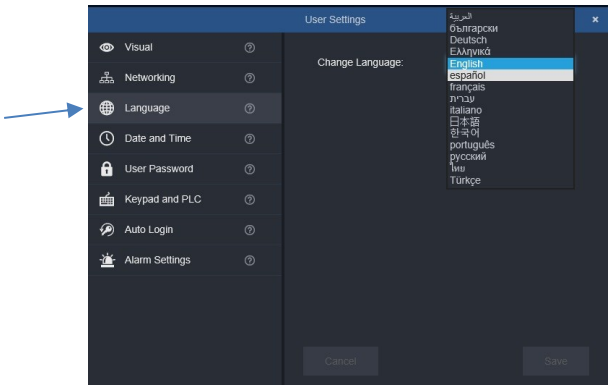
- The Visual category allows you to enable Keep Video Aspect ratio, Show Analytics. Show Removed Channels, Show Numeric IDs on Monitors (monitor number will display on a gray tab at the top of the monitor display; for use with a keypad), Show thumbnail image on timeline and determine the initial state of the Resources list, expanded or collapsed (expanded is default). Click the button to enable (blue)/disable the function.



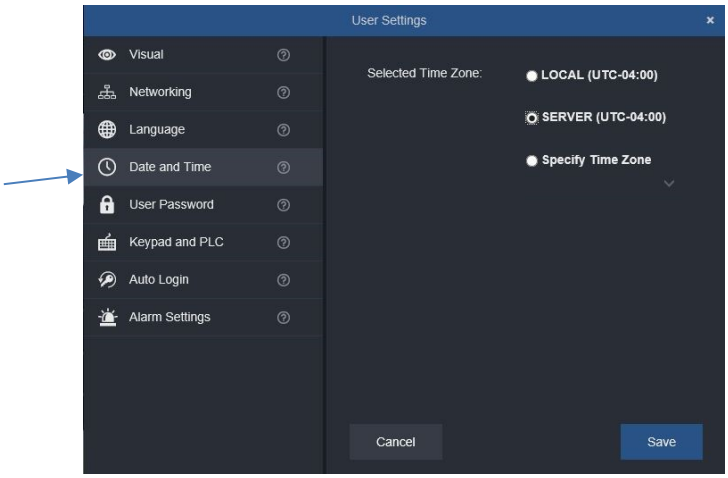
- The Networking category Internet Protocol you are using for Live and Playback Streaming. These are set in Configuration, Network but can be conveniently changed from this screen.



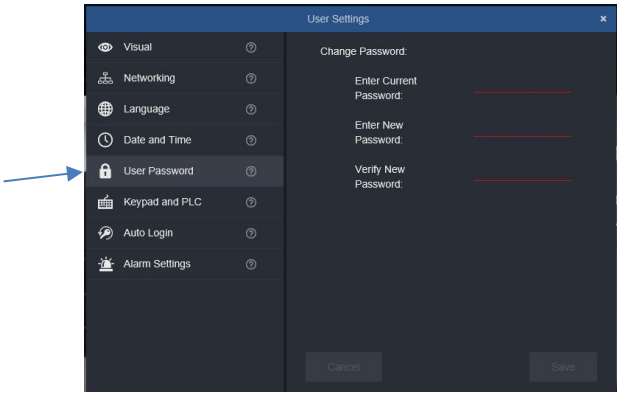
- The Language screen provides a choice of languages that the interface supports and can display in. Select the language from the dropdown list. Note that some languages appear in the list but may still display in English until the translation is complete.



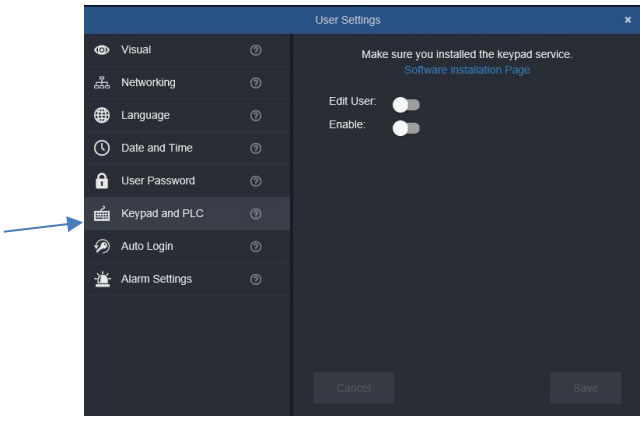
- Date and Time provides a screen to select the time zone for your system. Click the radio button for Local, Server or Specify Time Zone from the dropdown list.



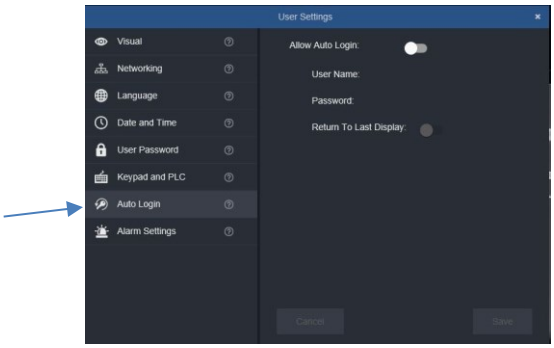
- User Password provides a screen to edit your user password without going into the Configuration screen.

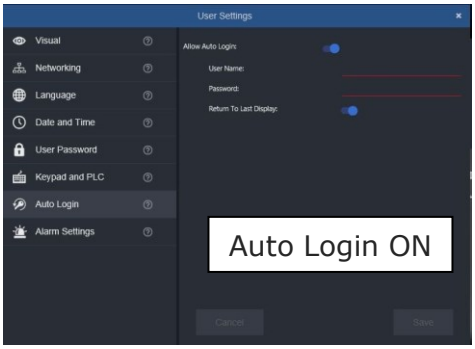


- The Keypad screen allows you to enable your keypad/controller to this local client by clicking the button and then selecting the keypad/controller. When the user is enabled, a password can be entered for added security. The list will display the currently available devices; you must connect any serial device first to have it show up in the list. You must have the current software for the Vicon keypad; there is a link provided to the Valerus Software Installation page. Make sure that the current software for the keypad/controller is downloaded; if it is not, it can be downloaded directly from this screen. Remember that you must assign numeric IDs to cameras and monitors to use the keypad.

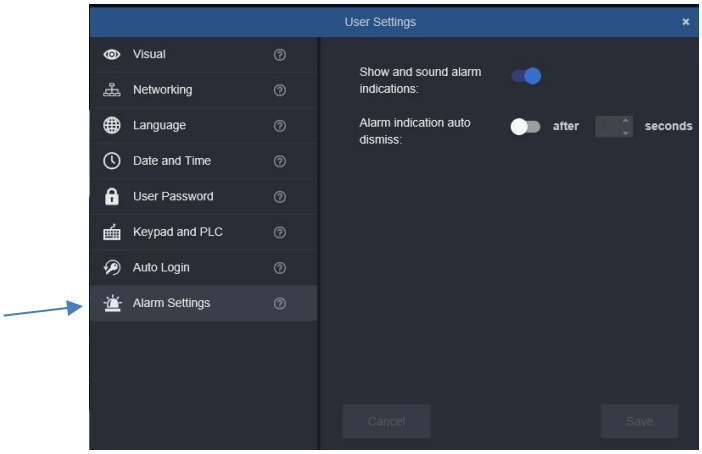


- The Auto Login supports the typical PLC operation. Enable the Auto Login function by clicking the button so user can conveniently return to the last display.

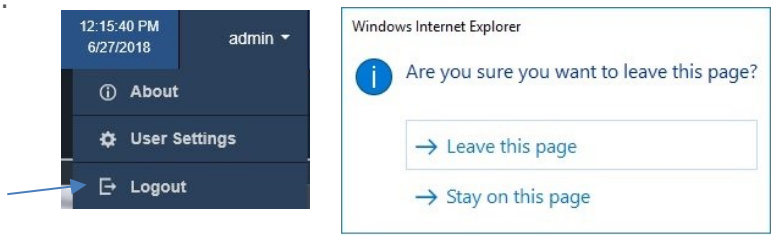




- The Alarm Settings can be configured for alarm indications per user to show an alarm icon and sound an alarm. The alarm indication can be set to be turned off (dismiss) after a set amount of time.



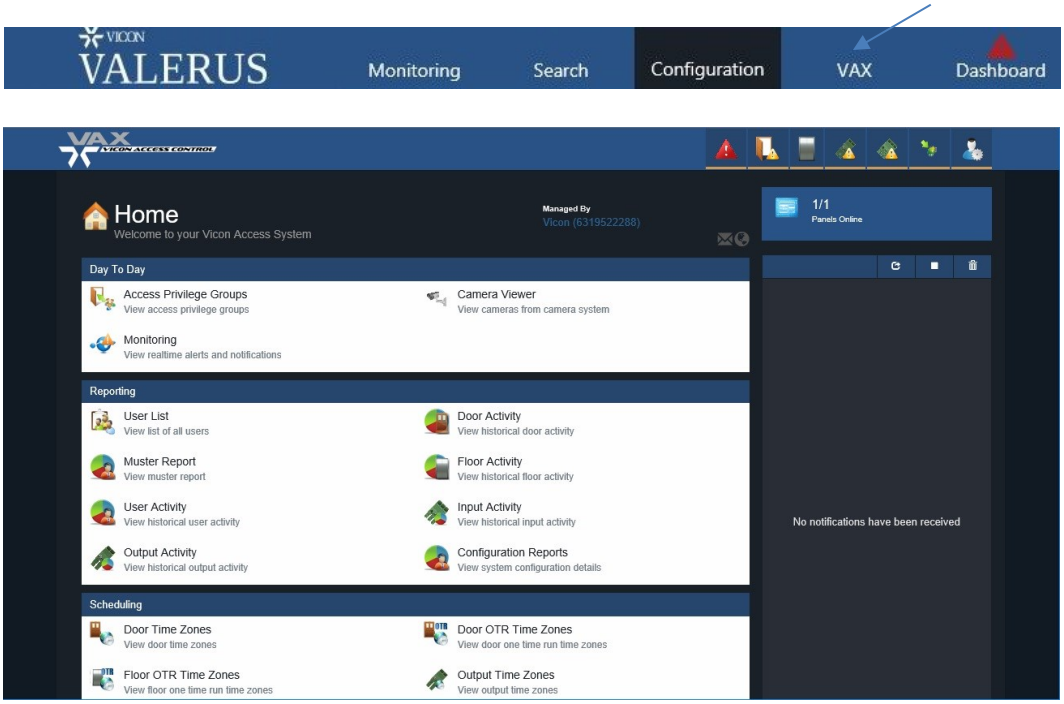
- To exit the application, click Logout and Leave this page. Click Stay on this page to keep the program open.



- The VMS closes all video display and returns to the Login screen. From this Login, there is an option to return to the last display page. This can be turned on or off by clicking it. The option is on (blue) by default.

VAX

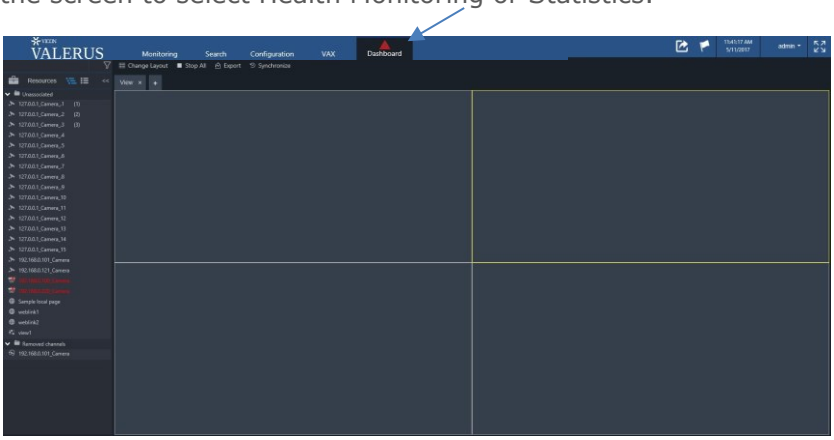
The VMS easily integrates the VAX access control system and offers the ability to control VAX directly from Valerus. Before VAX can be accessed from the tab, it must be enabled Configuration, System, Networking screen. Refer to that section in the manual for details. Click on the VAX tab; a popup screen will open the integrated VAX system. This screen can then be moved to any monitor in the system, so Valerus and VAX can be viewed simultaneously. Refer to the VAX documentation to operate the access control system.



It may occasionally be required to refresh VAX. When working with VAX in IE11, use the F5 button to refresh the page.

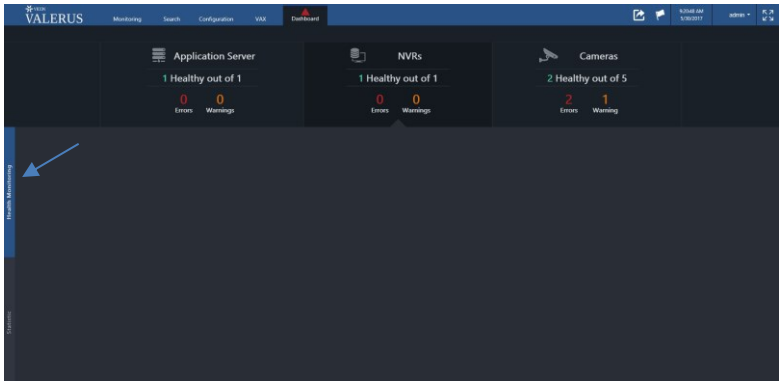
Dashboard

The VMS provides a Dashboard that presents the system's health status. If there are any errors or warnings, this is indicated on the Dashboard tab with either an orange or red triangle; a table of error messages is at the end of this chapter. Click on the Dashboard tab to open the system Dashboard. It is expected that in an average system all indications will be green and healthy. You can also access Statistics about your devices (Application Server, Recording Servers/NVRs and Cameras/Devices) from this screen to view; pie charts and graphs present information about camera distribution, storage, bandwidth, etc. There are tabs along the left side of the screen to select Health Monitoring or Statistics.

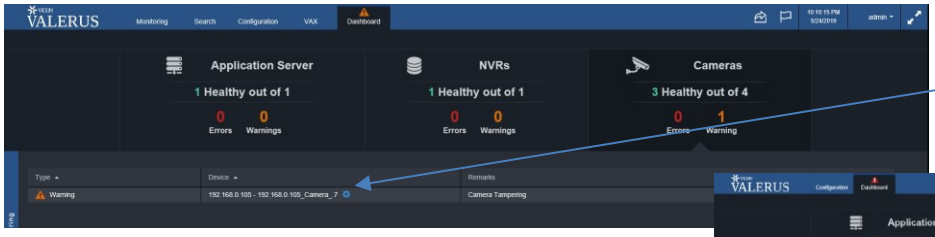


Health Monitoring

The total number of devices is indicated for Application Server, NVRs, Cameras, etc. Below the device categories are the indications for the health of the devices. The screen below shows a system of 1 application server, 1 NVR and 5 cameras. Click on Application Server, NVR or Camera section to display a list of any errors.

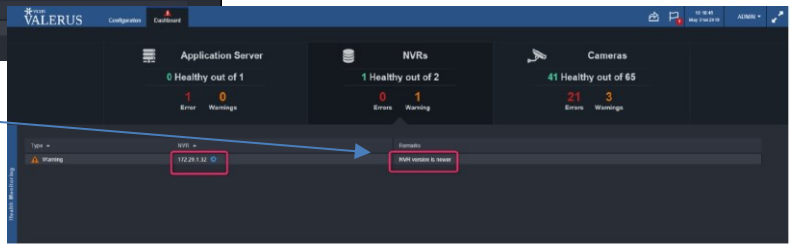


A Warning (orange) indicates that the device is not working properly. An Error (red) indicates a more serious problem, like a camera is completely not working. There can be multiple warnings or errors per device. Clicking a dashboard error is a direct link to that device's configuration page, as long as user has permission. Below, 5 cameras have 1 warnings and 2 errors and the NVR and App Server are both healthy. Clicking on the errors or warnings will display the problem in a table under the dashboard, indicating the IP of the device and the problem. A Warning will also be sent when the license is due to expire in less than 14 days.



Direct link to device Configuration page

A newer version available alert will be sent as needed.



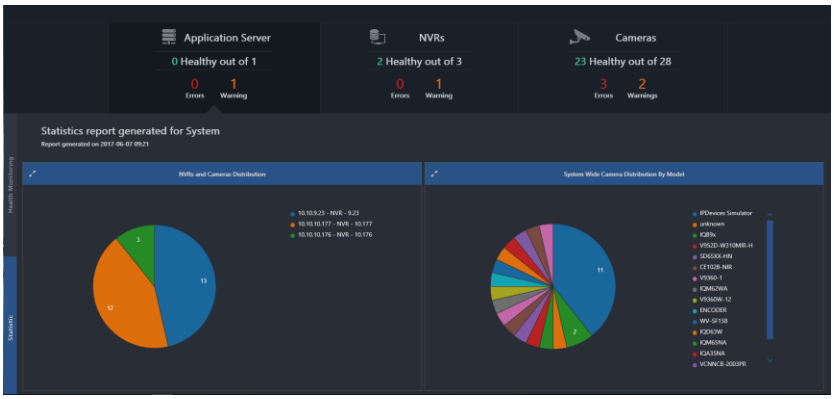
A table of error notifications, what they mean and a troubleshooting method to fix it is at the end of this chapter.

Statistics

After selecting the Application Server, NVR or Cameras, you can click the Statistics tab on the left border to view valuable statistics about your system. This information is very useful in analyzing system performance or to troubleshoot any problems you may be encountering.

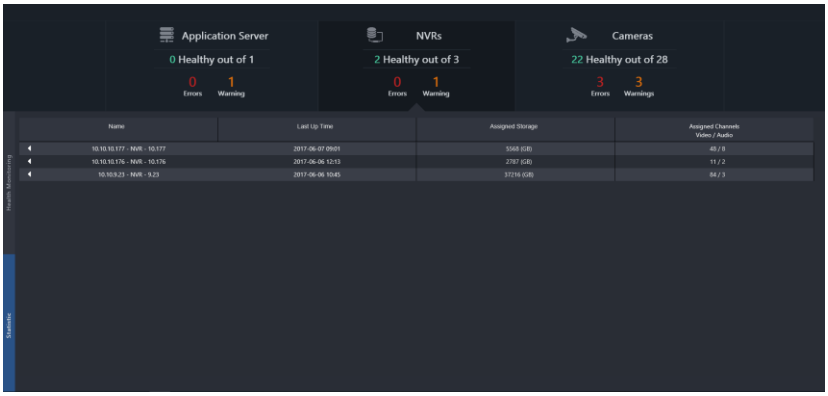
Application Server Statistics

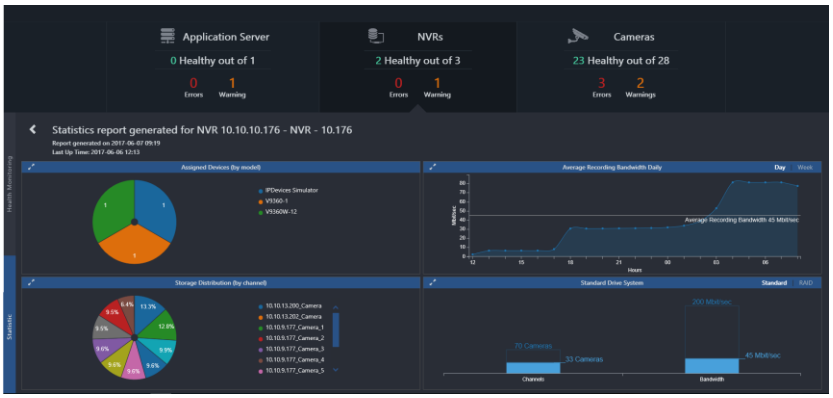
The pie charts will present the system NVRs and how many cameras are being recorded on each. Additionally, see how many cameras from each model are connected to the system.



Recording Servers (NVRs) Statistics

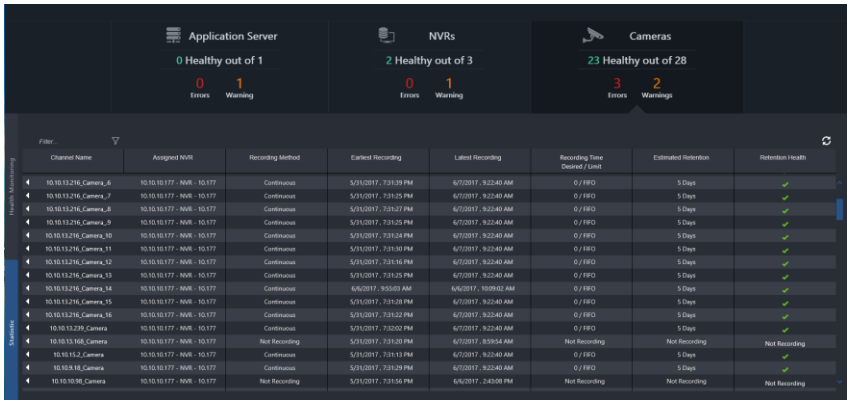
A table will display showing a summary for all NVRs in the system. Pie charts will show cameras connected to the NVR by their model and how much storage is used by the different channels. Also see the average recording bandwidth, daily and weekly, and standard/RAID system bandwidth utilization.





Device/Camera Statistics

A table will display showing a summary for all devices in the system. A graph displays showing the expected recording days versus the projected recording at the current time. There is also a graph showing the bandwidth pulled from a camera to an NVR and the recorded bandwidth. Note that incoming can be both camera streams while recorded is a single stream at a time.



Error Type	Error Message	Message Means	Error Fix
Error	Communication Failure: shown with client IP/Name	Connection between client and application server is down	Make sure the Application Server is running and check network connection between the client PC and the application server.
Warning	NTP Failure: shown with application server IP/Name)	Network Time Protocol Service is not running on the Application Server	On the Application Server go to Windows services and verify the "Network Time Protocol" service is running.
Warning	SNMP Service Failure	SNMP service is not running on the application server	On the Application Server go to Windows services and verify the "VII SNMP" service is running.
Error	License has expired	License evaluation period has ended (30 days from installation)	Under settings – System – Licensing, activate the system using a valid license key purchased from Vicon or as a free TRY system.
Warning	License will expire in ***#*** days	License evaluation period is going to end in the indicated number of days	This is a pre-expiration message, allowing time to obtain and activate a permanent system license.
Warning	UPP has expired. Contact your sales representative to renew	UPP (Upgrade Protection Plan) for your system has expired	Contact your Vicon representative to renew the UPP. You will need your system activation key to order.
Warning	UPP is about to expire on ***Date*** in ***#*** days. Contact your sales representative to renew.	UPP (Upgrade Protection Plan) for your system will expire in the indicated number of days	This is a pre-expiration message allowing time to renew you UPP and re-activate your license.
Warning	Last backup completed over 10 days ago	Last system backup was done over 10 days ago	This message is for informational purpose only. Vicon recommends setting the system to automatically backup every week.
Warning	Application server drive ***#:/*** has only ***#*** GB of free space available. Download and clear all exports from the server.	The application server O.S drive (typically C:/) is low on disk space and needs attention	This issue might be a result of multiple video exports that have not been removed from the application server. Make sure you download all exports to your PC and delete those exports (see exporting video for details). If this issue persists there maybe files, not related to Valerus, using too much space

Warning	Recording stream failure	NVR failed to record the stream it was set for	Check the stream settings for your camera and recording setting.
Warning	Camera tampering	Camera sent "Tamper" event	This event is generated by cameras that are covered or moved. Check the camera view for obstructions.
Warning	PTZ low pressure	A pressurized dome sent "Low Pressure" event	Check the PTZ camera internal pressure.
Warning	Device is not recording	Failed to record the device to the NVR	In configuration – Devices – Cameras and Devices tab, check the device status; if the status is OK, make sure the NVR is online (green check mark). This will also appear if a device recording is set to OFF.
Error	Storage failure	Storage failure - cannot record at all	Make sure that the NVR is online (green check mark) and the drives allocated for recording are accessible for writing and not blocked by a Windows permission issue.
Error	Could not connect to Local Drives	Problem connecting to a recording drive when the system is being initialized	Allow the drives some time to connect (for example, in an attached RAID this may take longer than the NVR to boot up) and if the problem persists, check the drives' connectivity.
Warning	No storage settings	Storage has not been set for this NVR	In configuration – Devices – NVRs, select the specific NVR and in storage definitions add drives for recording.
Warning	NTP Service failure: shown with NVR IP/Name	Network Time Protocol Service is not running on the NVR	On the NVR go to Windows services and verify the "Network Time Protocol" service is running.
Warning	SNMP service failure: shown with NVR IP/Name	SNMP Service is not running on the NVR	On the application server go to Windows services and verify the "VII SNMP" service is running
Error	Communication failure: shown with NVR IP/Name	Communication failure between the NVR and application server	Verify the Application Server is running. Verify the NVR is running. Check network communication between NVR and application server.

Error	Communication Failure: shown with Internet gateway IP/Name	Communication failure between the Internet gateway and application server	Verify the Internet Gateway is installed and properly configured.
Error	Server ID was not found	A device recorded in the database is pointing to a different application server than the current one	Delete the device from the NVR and then add it again.
Warning	Event subscription failure	Failed to register to receive events from the device (either pull point or base notification)	The NVR will continue to try and register for the events.
Error	Device not connected	Device that was previously connected is now showing status “offline”	Check device connectivity and IP address until it shows online (green check mark).
Error	Device error	There is a communication problem between NVR and camera/device	Check that the device status if online (green check mark) and that it can communicate (ping); try restarting the device
Error	Device not authorized	Device cannot communicate with the NVR due to a credentials issue	Verify that the credentials for the device (user and password) are set correctly.
Warning	MAC address changed	The device MAC address has been changed (different than the one the device was added with)	Delete the device from the NVR and then add it again.
Warning	NVR device database mismatch	One of the parameters set in the camera does not match the settings in Valerus	This is a situation where a certain setting in Valerus (example, resolution) does not match what the camera reports as set. Valerus will attempt to correct this issue, but if it persists contact Vicon Technical Support.
Error	NVR mismatch	NVR internal ID does not match its ID on the application server	Make sure NVR was not replaced with a new one and that the NVR database was not copied from another NVR. If the problem persists contact Vicon Technical Support.
Error	Server unauthorized	Credential error between application server and the NVR	Verify the NVR credentials are correct.

Shipping Instructions

Use the following procedure when returning a unit to the factory:

1. Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

Vicon Industries Inc.
135 Fell Court
Hauppauge, NY 11788
Phone: 631-952-2288; Toll-Free: 1-800-645-9116; Fax: 631-951-2288

For service or returns from countries in Europe, contact:

Vicon Industries Ltd
Unit 4, Nelson Industrial Park,
Hedge End, Southampton
SO30 2JH, United Kingdom
Phone: +44 (0)1489/566300; Fax: +44 (0)1489/566322

2. Attach a sheet of paper to the unit with the following information:

a. Name and address of the company returning the unit
b. Name of the Vicon employee who issued the R.A.
c. R. A. number
d. Brief description of the installation
e. Complete description of the problem and circumstances under which it occurs
f. Unit's original date of purchase, if still under warranty

3. Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.
4. Mark the R.A. number on the outside of the carton on the shipping label.

Vicon Standard Equipment Warranty

Vicon Industries Inc. (the "Company") warrants your equipment to be free from defects in material and workmanship under Normal Use from the date of original retail purchase for a period of three years, with the following exceptions:

1. Access Control System Components: Two year from date of original retail purchase.
2. Uninterruptible Power Supplies: Two years from date of original retail purchase.
3. For PTZ cameras, "Normal Use" excludes prolonged use of lens and pan-and-tilt motors, gear heads, and gears due to continuous use of "autopan" or "tour" modes of operation. Such continuous operation is outside the scope of this warranty.
4. Any product sold as "special" or not listed in Vicon's commercial price list: One year from date of original retail purchase.

NOTE:

- If the product is to be used outdoors or in dusty, humid, or other hostile environments, it must be suitably protected.
- Camera products must be protected, whether in use or not, from exposure to direct sunlight or halogen light as the light may damage the camera image sensor. This applies to both indoor and outdoor use of the cameras.
- Failure to comply with any of the aforementioned requirements will invalidate this Limited Hardware Warranty.

Date of retail purchase is the date original end-user takes possession of the equipment, or, at the sole discretion of the Company, the date the equipment first becomes operational by the original end-user.

The sole remedy under this Warranty is that defective equipment be repaired or (at the Company's option) replaced, at Company repair centers, provided the equipment has been authorized for return by the Company, and the return shipment is prepaid in accordance with policy. Repaired or replacement hardware will be warranted for the remainder of the original Warranty Period or ninety (90) days, whichever is longer. When a product or part is exchanged the replacement hardware becomes the property of the original purchaser and all hardware or part thereof that is replaced shall become the property of Vicon.

The warranty does not apply (a) to faulty and improper installation, maintenance, service, repair and/or alteration in any way that is not contemplated in the documentation for the product or carried out with Vicon consent in writing, operation adjustments covered in the operating manual for the product or normal maintenance, (b) to cosmetic damages, (c) if the product is modified or tampered with, (d) if the product is damaged by acts of God, misuse, abuse, negligence, accident, normal wear and tear and deterioration, improper environmental conditions (including, but not limited to, electrical surges, water damage, chemical exposure, an/or heat/cold exposure) or lack of responsible care, (e) if the product has had the model or serial number altered, defaced or removed, (f) to consumables (such as storage media or batteries) (g) to products that have been purchased "as is" and Vicon the seller or the liquidator expressly disclaim their warranty obligation pertaining to the product, (h) to any non-Vicon hardware product or any software (irrespective of packaged or sold with Vicon hardware product) and Vicon products purchased from an unauthorized distributor/reseller, (i) to damage that occurs in shipment or (j) to damages by any other causes not related to defective design, workmanship and/or materials.

The warranty for the products shall run from Vicon to End User customers only (including product purchased through authorized partners and resellers). Vicon is not obligated under any circumstances to honor warranties on product(s) purchases from internet auction sites including eBay, uBid or from any other unauthorized resellers. Except as explicitly provided herein, Vicon disclaims all other warranties, including the implied warranties of fitness for a particular purpose and merchantability.

Software supplied either separately or in hardware is furnished on an "As Is" basis. Vicon does not warrant that such software shall be error (bug) free. Software support via telephone, if provided at no cost, may be discontinued at any time without notice at Vicon's sole discretion. Vicon reserves the right to make changes to its software in any of its products at any time and without notice.

The Warranty and remedies provided above are exclusive and in lieu of all other express or implied warranties including, but not limited to, the implied warranties of merchantability or fitness for a particular purpose. Certain jurisdictions do not allow the exclusion of implied warranties. If laws under such jurisdictions apply, then all express and implied warranties are limited to the warranty period identified above. Unless provided herein, any statements or representations made by any other person or firm are void. Except as provided in this written warranty and to the extent permitted by law, neither Vicon nor any affiliated shall be liable for any loss, (including loss of data and information), inconvenience, or damage, including, but not limited to, direct, special, incidental or consequential damages, resulting from the use or inability to use the Vicon product, whether resulting from breach of warranty or any other legal theory. Notwithstanding the foregoing, Vicon total liability for all claims under this warranty shall not exceed the price paid for the product. These limitations on potential liabilities have been an essential condition in setting the product.

No one is authorized to assume any liability on behalf of the Company, or impose any obligations on it in connection with the sale of any Goods, other than that which is specified above. In no event will the Company be liable for indirect, special, incidental, consequential, or other damages, whether arising from interrupted equipment operation, loss of data, replacement of equipment or software, costs or repairs undertaken by the Purchaser, or other causes.

This warranty applies to all sales made by the Company or its dealers and shall be governed by the laws of New York State without regard to its conflict of laws principles. This Warranty shall be enforceable against the Company only in the courts located in the State of New York.

The form of this Warranty is effective March 22, 2019.

THE TERMS OF THIS WARRANTY APPLY ONLY TO SALES MADE WHILE THIS WARRANTY IS IN EFFECT. THIS WARRANTY SHALL BE OF NO EFFECT IF AT THE TIME OF SALE A DIFFERENT WARRANTY IS POSTED ON THE COMPANY'S WEBSITE, *WWW.VICON-SECURITY.COM*. IN THAT EVENT, THE TERMS OF THE POSTED WARRANTY SHALL APPLY EXCLUSIVELY.

VICON INDUSTRIES INC.

For office locations, visit the website: www.vicon-security.com