

User Guide

Avigilon HD Video Appliance Series 2 Models:

VMA-AS2-8P, VMA-AS2-16P and VMA-AS2-24P

Important Safety Information

This manual provides installation and operation information and precautions for the use of this device. Incorrect installation could cause an unexpected fault. Before installing this equipment read this manual carefully. Please provide this manual to the owner of the equipment for future use.



The Warning symbol indicates the presence of dangerous voltage within and outside the product enclosure that may constitute a risk of electric shock, serious injury or death to persons if proper precautions are not followed.



The Caution symbol alerts the user to the presence of hazards that may cause minor or moderate injury to persons, damage to property or damage to the product itself if proper precautions are not followed.



WARNING — Failure to observe the following instructions may result in severe injury or death.

- Installation must be performed by qualified personnel only and must conform to all local codes.
- Do not open or disassemble the device. There are no user serviceable parts.
- The coin cell battery is not replaceable.
- Refer all servicing to qualified personnel. Servicing may be required when the device has been damaged, dropped, exposed to moisture, or does not operate normally.



CAUTION — Failure to observe the following instructions may result in injury or damage to the appliance.

- Do not subject cables to excessive stress, heavy loads or pinching.
- Do not operate in dusty areas.
- This device is for indoor use only.
- Do not expose this product to rain or use near water. If this product accidentally gets wet, unplug it immediately.
- Keep product surfaces clean and dry. To clean the outside case of the device, gently wipe using a lightly dampened cloth (only use water, do not use solvents).
- Do not install near any sources of vibration, such as motors.
- Do not install near any heat sources such as radiators or other sources of heat.
- Do not block ventilation openings located on the device enclosure as they are designed to keep the system cool while running. Install or place this product in an area where there is ample air circulation.
- Do not insert anything into the device ventilation openings.
- Use only accessories recommended by Avigilon.
- Keep these safety instructions.

Regulatory Notices

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This Class A digital apparatus complies with Canadian ICES-003 (A)/NMB-3(A).

WARNING — This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

CAUTION — Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

This equipment is not suitable for use in locations where children are likely to be present.

For model VMA-AS2-8P: The unit and all interconnected equipment must be installed indoors within the same building, including all POE-powered network connections as described by Environment A of the IEEE 802.3af standard.

Changes or modifications made to this equipment not expressly approved by Avigilon Corporation or parties authorized by Avigilon Corporation could void the user's authority to operate this equipment.

Disposal and Recycling Information

When this product has reached the end of its useful life, please dispose of it according to your local environmental laws and guidelines.

Risk of fire, explosion, and burns. Do not disassemble, crush, heat above 100 °C (212 °F), or incinerate.

European Union:



This symbol means that according to local laws and regulations your product should be disposed of separately from household waste. When this product reaches its end of life, take it to a collection point designated by local authorities. Some collection points accept products for free. The separate collection and recycling of your product at the time of disposal will help conserve natural resources and ensure that it is recycled in a manner that protects human health and the environment.

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PDF-VMA-AS2-B

Revision: 1 - EN

20200406

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Introduction

The AvigilonHD Video Appliance is the all-in-one solution for network video recording. The video appliance includes:

- A network switch to connect and power PoE IP cameras.
- Built-in server and storage to run the Avigilon Control Center Server and retain recorded video content.
- Video ports to display live video and allow users to operate the Avigilon Control Center Client software directly from the appliance.

This guide describes how to configure the system after the appliance has been powered and is connected to a keyboard, mouse and monitor.

Before You Start

Avigilon recommends the use of an uninterruptible power supply (UPS) system to protect your video surveillance system hardware. A UPS system is used to protect critical equipment from mains supply problems, including spikes, voltage dips, fluctuations and complete power failures using a dedicated battery. It can also be used to power equipment during the time it takes for a standby generator to be started and synchronized.

Any UPS connection must include configuration to shut down the operating system on the appliance when battery power is low or there is 15 minutes of power remaining.

It is recommended that cameras not be connected to the appliance until after the appropriate network configuration has been set up.

Configuring Windows 10

When you start the HD Video Appliance for the first time, you will need to configure the Windows operating system that is installed on the appliance.

1. On the first screen, the MICROSOFT SOFTWARE LICENSE TERMS and AVIGILON CONTROL CENTER™ SOFTWARE END USER LICENSE AGREEMENT are displayed. Review the terms and click **Accept**.
2. Select **Join a local Active Directory domain**.

Note: This prompt appears only if an Active Directory is present on the network. See the *Windows Help and Support* files for more information.

3. Enter a user name for accessing the Windows software.
4. Enter a password and password hint for the user name and click **Next**.

Proceed to activate the license for the Avigilon Control Center software on your HD Video Appliance.

Proceed to activate the license for the Avigilon Control Center software on your Video Appliance.

Proceed to activate the license for the AvigilonControl Center software on your Network Video Recorder.

HD Video Appliance Networking

The HD Video Appliance is a combination of a built-in computer with storage for recorded video content and a network switch that supports IP camera connections.

The HD Video Appliance supports five network interface connections (NICs), which appear in the Network Connections window of the operating system, shown in the figure below. These consist of:

- Two NICs for the external corporate LAN ports (see connections labeled "Ethernet" and "Ethernet 3" in Figure 1 below).
- Two internal NICs that connect the built-in computer to the internal switch (see connections labeled "Ethernet 2" and "Ethernet 4" in Figure 1 below).

CAUTION — DO NOT make any changes to the two internal NICs (labeled "TEAM: Internal Bridge- Intel(R) 1211 Gigabit Network Connection"). Never remove teamed NIC from the Network Connections panel in Windows. If the teamed NIC is removed, the built-in computer cannot connect to the internal switch to receive video traffic. If there is no teamed NIC, or the teamed NIC is not set to Internal Bridge, contact Technical Support.

- A teamed (or virtual) NIC that logically represents the two internal NICs (see connection labeled "Ethernet 5" in Figure 1 below). The teamed NIC, labeled "TEAM: Internal Bridge", is dedicated to handling the traffic between the internal switch and the built-in computer to maintain the highest possible network throughput of recorded video to storage.

Note: The NIC label numbering may vary. However, the two internal NICs can be identified by the labels "TEAM: Internal Bridge- Intel(R) 1211 Gigabit Network Connection", and the teamed (or virtual) NIC by the label "TEAM: Internal Bridge". The other two NICs labeled " Intel(R) 1211 Gigabit Network Connection", or "Intel(R) Ethernet Connection I219-LM", are the external corporate network connections.

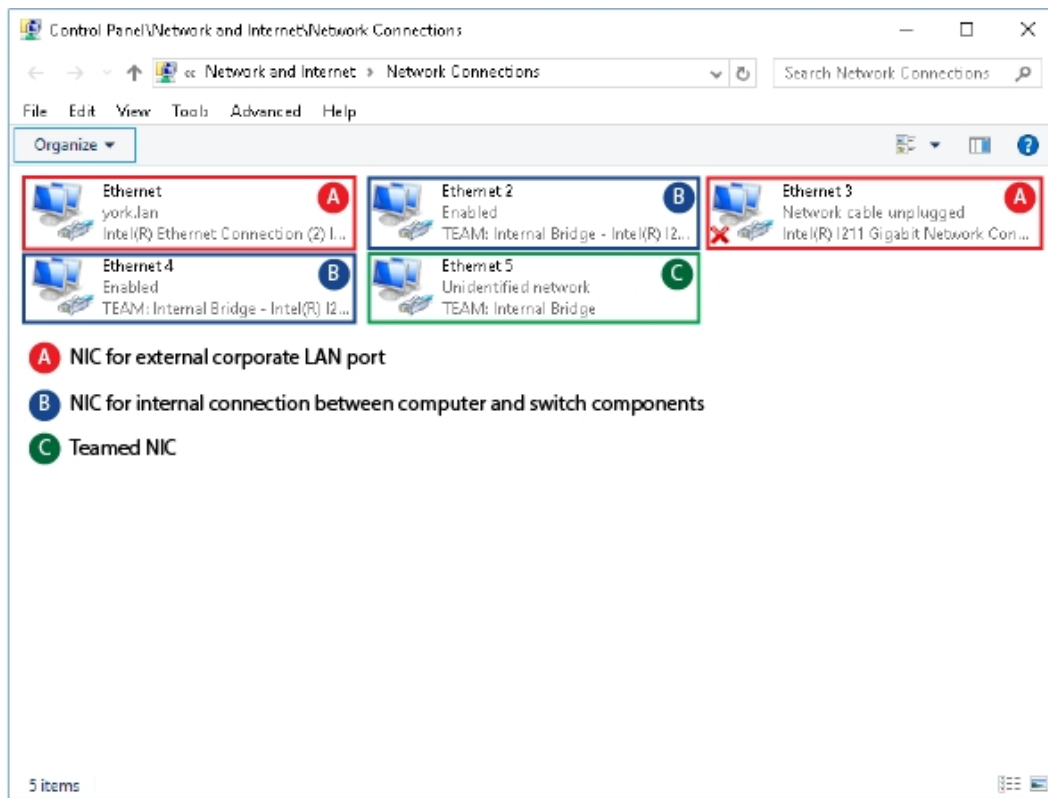


Figure 1: The Network Connections Control Panel showing Ethernet 5 as the teamed NIC. (Used with permission from Microsoft.)

The internal network switch supports all of the external PoE ports and two camera network uplink ports, and two internal NICs that connect the switch to the built-in computer. The switch manages the traffic from all of the external connections and directs the video data through the teamed NICs to the built-in computer.

Connecting Devices to the HD Video Appliance

Depending on how you intend to use the HD Video Appliance, you may choose to configure the network switch component of the appliance differently.

1. A ZeroConf device network— the appliance and the connected cameras will run as a self contained system without a DHCP server.

This configuration is most likely used by a small business that may not have a network infrastructure, and prefers to use the appliance like a traditional closed circuit surveillance system.

2. A network with an external DHCP server — the appliance and the connected cameras will work with an existing DHCP server on the network.

This configuration is most likely used by a small office that already has some network infrastructure that will be used with the appliance, like a router that gives the office computers internet access.

3. A network of connected cameras with previously assigned static IP addresses within a different subnet.

The appliance must be reconfigured so that the Ethernet 5 NIC (labeled "TEAM A") has an IP address in the same subnet as the cameras.

This configuration is most likely used by a business that has existing third-party or Avigilon cameras with static IP address that were previously assigned, or if static IP addresses are desired for cameras.

4. An internal DHCP server — the appliance will act as the local DHCP server for the connected cameras and any other devices that may also be connected to the appliance.

Note: The appliance is intended to be used for connecting and powering IP cameras, not for general computer networking. However, if you prefer, the appliance can be configured to do so.

This configuration is most likely used by a small business that prefers to use the appliance switch component instead of a router for connecting all network devices together. Other network devices can include voice over IP (VoIP) phones or external network drives.

Complete the procedure that will configure your preferred network:

Configuring a ZeroConf Device Network

If you plan to connect cameras directly to the HD Video Appliance and run a self contained system, all you need to do is connect cameras directly to the numbered ports.

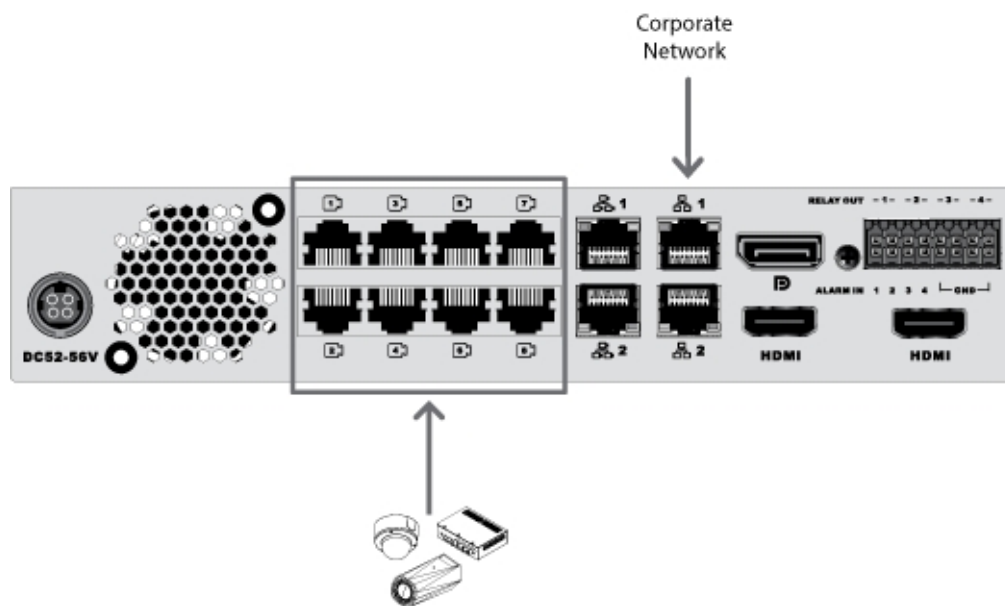


Figure 2: Example of no DHCP network connections on an 8 port HD Video Appliance.

Avigilon cameras are able to assign IP addresses to themselves through Zero Configuration Networking (Zeroconf) when a DHCP server is not available. The Avigilon Control Center software should automatically detect all connected cameras through the 169.254.0.0/16 subnet.

If you would like to access the Internet through the HD Video Appliance, you can add an Internet connection to one of the corporate network ports. The corporate network ports are separate from the numbered camera ports, so they will not interfere with video recording.

After you connect cameras to the numbered ports, you can configure the Avigilon Control Center system. See *For information about cloud-connecting your ACC server, see Avigilon Cloud Services Support.* on page 15.

Configuring a Network with an External DHCP Server

If you already have a router, or switch, to connect your other network devices, you can connect the HD Video Appliance directly to the router so that cameras can be addressed using the router's built-in DHCP service.

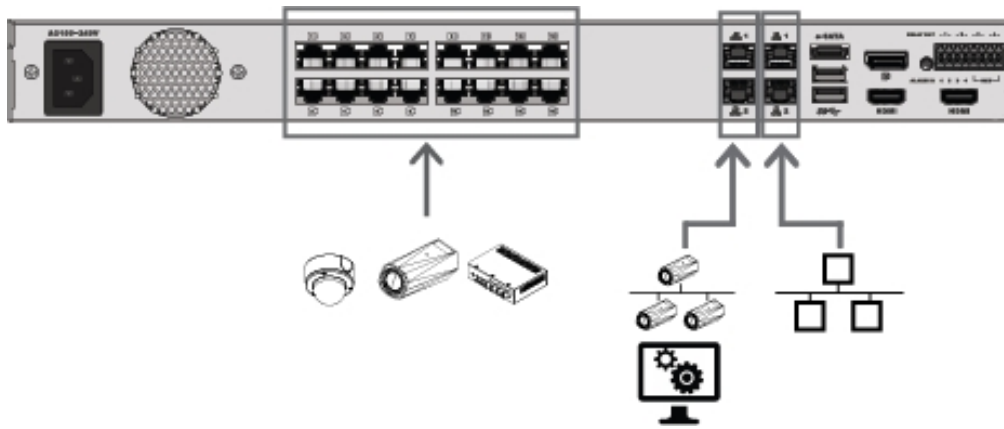



Figure 3: Example of external DHCP network connections on a 16 port HD Video Appliance.

1. Connect a network cable from the router or switch to one of the camera network uplink ports on the back of the appliance, identified by the  icon.
2. Connect Avigilon cameras to the numbered ports.
3. If you would like to access the corporate network through the HD Video Appliance, you can add an Internet connection to one of the corporate network ports. The corporate network ports are separate from the numbered camera ports, so they will not interfere with video recording.

After you've made the required network and camera connections, you can configure the Avigilon Control Center software. See *For information about cloud-connecting your ACC server, see Avigilon Cloud Services Support.* on page 15.

Connecting to Cameras with Static IP Addresses

If you plan to connect cameras with assigned static IP addresses to the HD Video Appliance, you must change the IP address of the teamed NIC to an IP address in the same subnet as the cameras. For information about identifying the teamed NIC, see *HD Video Appliance Networking* on page 4.

Before you start this procedure, obtain an available IP address from the same subnet as the cameras to assign to the appliance.

1. Connect a monitor, keyboard and mouse to the appliance. Alternatively, you can start a remote session to the appliance if you have network access to the appliance.
2. From the appliance, access the Windows Network Connections window, using one of the following methods:
 - Select **Start > Settings > Network & Internet > Change adapter options**
 - Or
 - From the taskbar, search for `ncpa.cpl`

3. In the Network Connections window, right-click the Ethernet 5 network connection, and select **Properties**.

Note: Do not change or disable any of the other network connections.

Important: If Ethernet 5 is not set to TEAM: A or does not appear, contact Technical Support.

4. In the Properties dialog box for the teamed NIC (Ethernet 5), double-click **Internet Protocol Version 4 (TCP/IPv4)**.

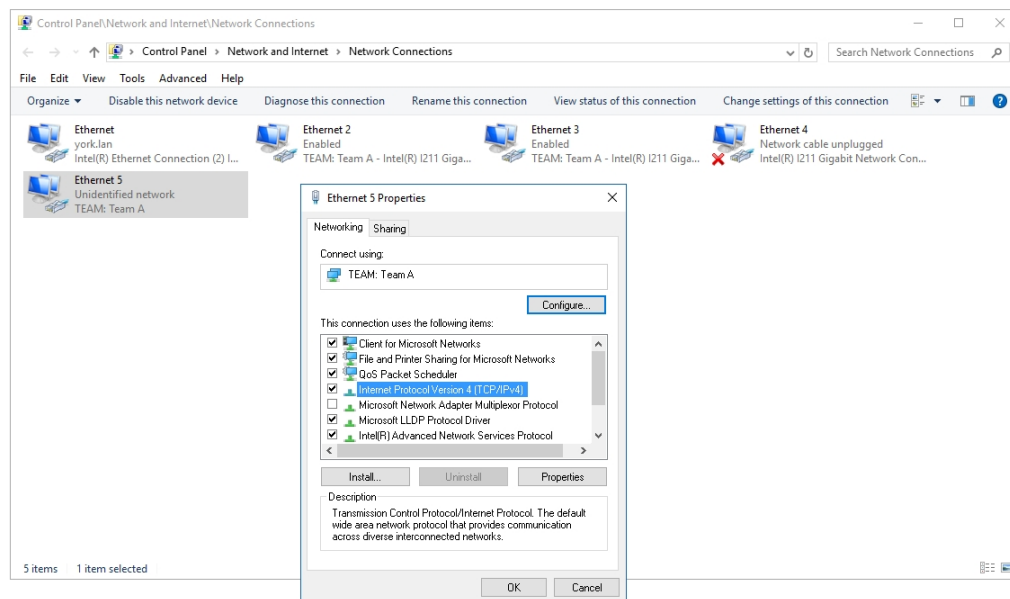


Figure 4: The Network Connections window showing the Properties dialog box for the teamed NIC. (Used with permission from Microsoft.)

5. In the dialog box that appears, select the **Use the following IP address:** option and assign the static IP address in the same subnet as the cameras that you obtained.
6. If you would like to access the Internet through the HD Video Appliance, you can add an Internet connection to one of the corporate network ports. The corporate network ports are separate from the numbered camera ports, so they will not interfere with video recording.

Configuring the Internal DHCP Server

If you plan to connect other network devices to the HD Video Appliance, you may need to set up the appliance to be a DHCP server. Some network devices rely on a DHCP server to receive an IP address before they can work.

Note: After you setup the internal DHCP server, do not connect any external DHCP servers to the appliance or there may be address conflicts and cause connection issues.

Tip: If you are only going to connect Avigilon cameras to the appliance, you do not need to set up a DHCP server. For more information, see *Configuring a ZeroConf Device Network* on page 6.

1. Connect a monitor, keyboard and mouse to the appliance. Alternatively, you can start a remote session to the appliance if you have network access to the appliance.
2. From the appliance, access the Windows Network Connections window, using one of the following methods:
 - Select **Start > Settings > Network & Internet > Change adapter options**
 - Or
 - From the taskbar, search for `ncpa.cpl`
3. In the Network Connections window, right-click the Ethernet 5 network connection and select **Properties**.

Note: Do not change or disable any of the other network connections.

Important: If Ethernet 5 is not set to TEAM: A or does not appear, contact Technical Support.

4. In the Ethernet 5 Properties dialog box, double-click **Internet Protocol Version 4 (TCP/IPv4)**.

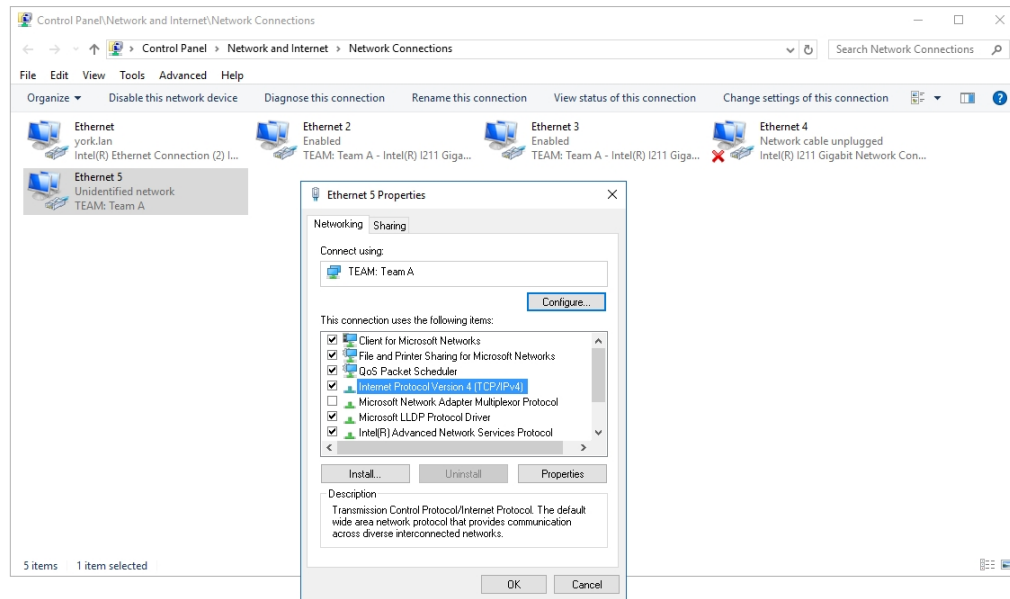


Figure 5: The Control Panel Network and Internet Network Connections window showing the Ethernet 5 Properties dialog box. (Used with permission from Microsoft.)

5. In the dialog box that appears select the **Use the following IP address:** option and assign a static IP address for the appliance so that it can connect to the switch component.

By default, the appliance is not connected to the switch component. The appliance must be connected to the switch component before you can configure the system to be a DHCP server.

The default IP address of the switch component is 192.168.2.1. *Do not* assign this address for the appliance. You can use 192.168.2.2 or higher. It is recommended that you only change the last digit.

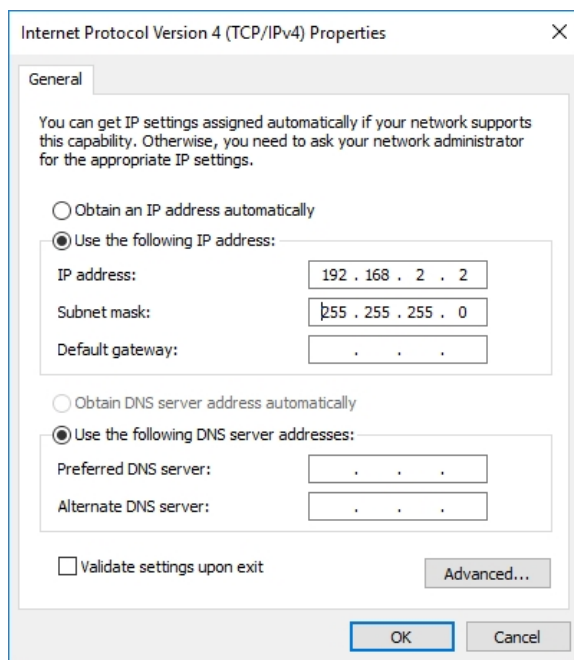


Figure 6: The Internet Protocol Properties dialog box. (Used with permission from Microsoft.)

- In the **Use the following IP address** field, enter 192 . 168 . 2 . 2 or the IP address you prefer.
- In the **Subnet mask** field, enter 255 . 255 . 255 . 0 if it is not automatically entered.
- Click **OK** to save your changes.

6. Open the Switch Management WebUI.

- a. In a web browser, enter 192.168.2.1 into the address bar.

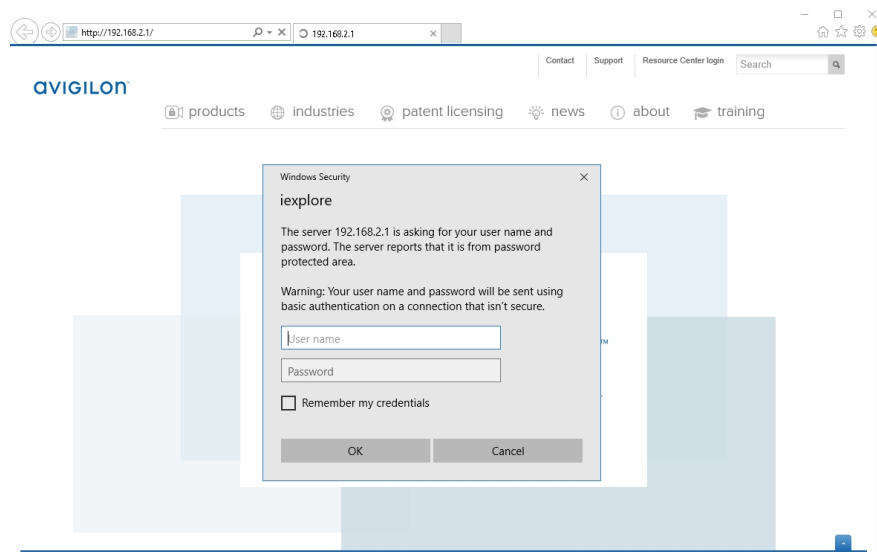


Figure 7: The Switch Management WebUI Log In screen. (Used with permission from Microsoft.)

- b. When the log in screen appears, enter the default ID and password:
- **ID:** user
 - **Password:** Avigilon
- c. Click **OK**.
7. Once you are logged in, expand **Advanced Features** and click **DHCP Server Settings** from the left menu pane.

8. In the Server State setting area, select **Enable**, click **Apply**, then **Save Running Configuration**.

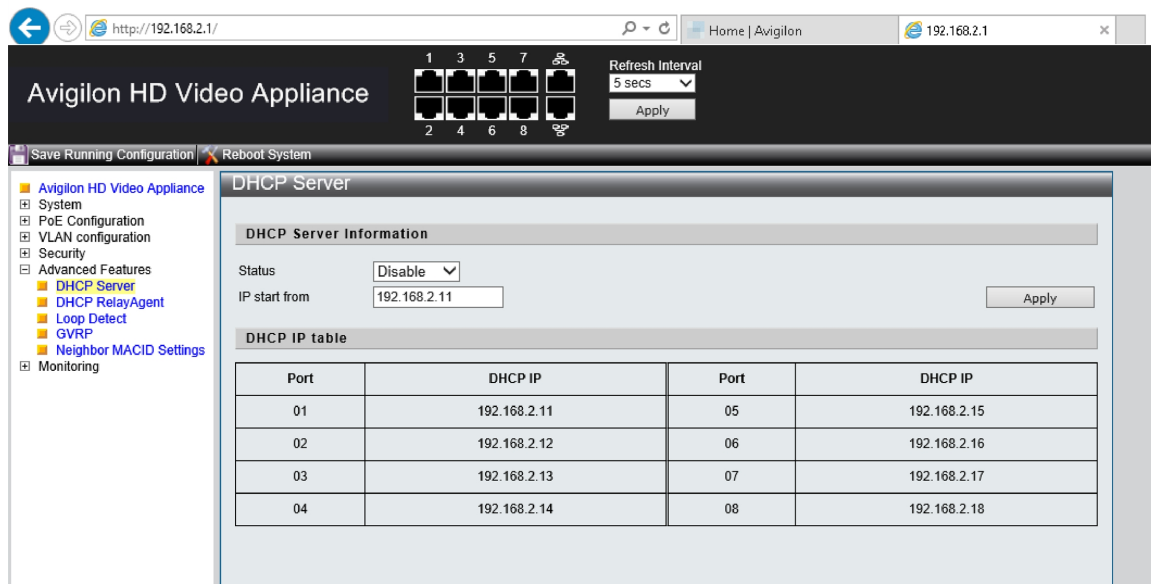


Figure 8: The DHCP Server Settings page.

The appliance is now set to act as a DHCP server.

As you add cameras and network devices, the IP address for each item will be listed beside the connected port number.

Note: The corporate network ports on the HD Video Appliance are not part of this DHCP setting. Only the camera network ports broadcast DHCP.

9. Connect Avigilon cameras and other network devices to the numbered ports.

Each connected device is automatically assigned an IP address by the appliance.

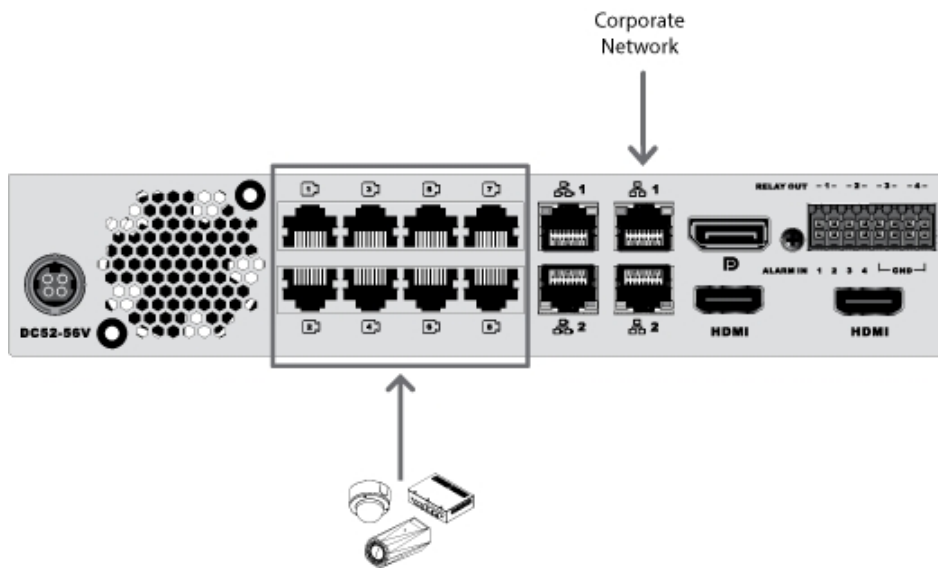


Figure 9: Example cable connections on an 8 port HD Video Appliance.

10. If you would like to access the Internet through the HD Video Appliance, you can add an Internet connection to one of the corporate network ports. The corporate network ports are separate from the numbered camera ports, so they will not interfere with video recording.

After you've made the required network and camera connections, you can configure the Avigilon Control Center system. See *For information about cloud-connecting your ACC server, see Avigilon Cloud Services Support.* below.

- [Initial ACC™ System Setup and Workflow Guide](#)
- [ACC 7 Help Center](#)

For information about cloud-connecting your ACC server, see [Avigilon Cloud Services Support](#).






Printable versions of these guides are available on the Avigilon website:

<https://www.avigilon.com/support/software/>.


LED Indicators

The following lists describe what the LEDs on the front and back of each HD Video Appliance indicate.

Front Panel LEDs

Icons	LED Status	Description
	Green	Device is powered and running.
	Orange	Device is restarting.
	Green	Hard disk drive is connected.
	Red	Hard disk drive connection has an error (for RAID only).
	Green	Camera is using the switch for a network connection and Power over Ethernet (PoE) power.
	Orange	Camera is only using the switch for a network connection.
	Orange - slow blinking	Port off due to failure.
	Alternating Green - Orange	Port off due to system over power budget.
	Orange	GigE network link is present.
	Green	10/100 network link is present.
	Orange	Switch component has reached its PoE output capability.

Back Panel LEDs

Icons	LED Status	Description
	Green	Network activity is present.
	Orange	On for GigE speed. Off for 10/100 Mbps speed.
	Green	Network activity is present.
	Orange	On for 100 Mbps speed. Off for 10 Mbps speed.

Connecting to External Devices

Connections to external devices is only possible with the VMA-BLU-8P and VMA-BLU-16C devices.

External devices are connected to the appliance through the I/O terminal. The pinout for the I/O terminal is shown in the following diagram:



Pin	Function	Description
1	IN1	Alarm Inputs — Active-Low inputs. To activate, connect the Input to the Ground pin (GND). To deactivate, leave disconnected.
2	IN2	
3	IN3	
4	IN4	
5	GND	
6		
7		
8		
9	OUT1	Relay Outputs — Form-A dry contact outputs. When active, terminals are connected. When inactive, terminals are disconnected.
10		
11	OUT2	
12		
13	OUT3	
14		
15	OUT4	
16		

Restarting the Operating System

If the operating system ever freezes or displays a fatal system error, you can restart the operating system by using the reset switch on the front of the appliance.

Note: When you use the reset switch, the appliance must be powered.

The operating system reset will not affect the switch component or the connected cameras.


- On the 8 port model, the reset switch is located at the front of the appliance and is the small unlabeled hole between the USB ports and the status LEDs.
- On the 16 and 24 port models, the reset switch is located at the front of the appliance and is the small unlabeled hole between the  jack and the  status LED.

After you've found the reset switch on the appliance, complete the following steps:

1. Using a straightened paperclip or similar tool, gently press and hold the reset switch.



CAUTION — Do not apply excessive force. Inserting the tool too far will damage the appliance.

2. Do not release the reset switch until the monitor connected to the appliance turns off, or the  **Hard Drive Status** LED stops blinking.

After you release the reset switch, the operating system should automatically restart.

Limited Warranty and Technical Support

Avigilon warranty terms for this product are provided at [avigilon.com/warranty](https://www.avigilon.com/warranty).

Warranty service and technical support can be obtained by contacting Avigilon Technical Support: [avigilon.com/contact-us/](https://www.avigilon.com/contact-us/).