

User Guide

Avigilon Network Video Recorder Series 4

NVR4-VAL-6TB

NVR4-VAL-12TB

NVR4-VAL-16TB

NVR4-VAL-24TB

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Introduction

The Avigilon Network Video Recorder is preloaded with the Avigilon Control Center software and is configured for maximum performance and reliability. The Network Video Recorder can be easily integrated into any existing Avigilon security system, or act as the base of a new site.

Before You Start

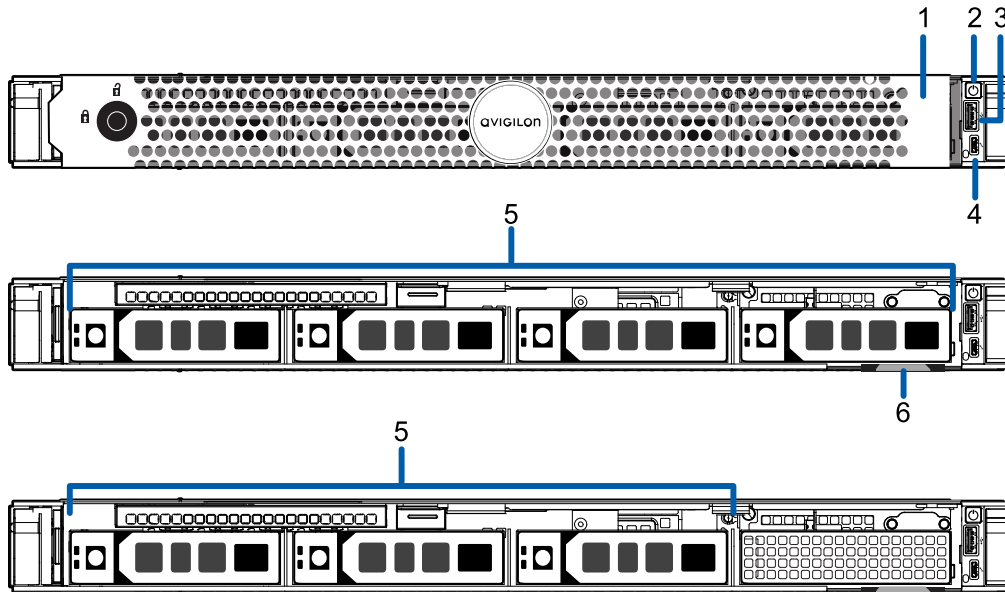
Avigilon recommends the use of an uninterruptible power supply (UPS) system to protect your video surveillance system hardware. A UPS system is used to protect critical equipment from mains supply problems, including spikes, voltage dips, fluctuations and complete power failures using a dedicated battery. 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.

Overview

Front View



1. **Bezel**

Protects against unauthorized physical access to the hard drives. The bezel must be removed to access the front of the recorder.

2. **Power button**

Controls the power supply to the recorder.

3. **USB connectors**

Accepts USB connections to external devices.

4. **Micro USB port**

Provides access to the Out-of-band (OOB) Management Network interface.

5. **Hard drives**

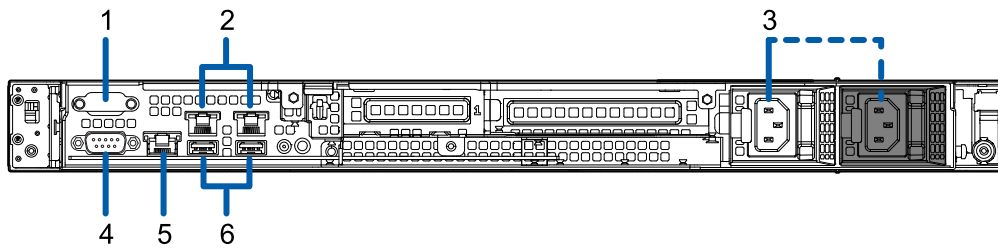
Provides access to hot-swappable hard drives. There are LED indicators on each hard drive.

The NVR4-VAL-6TB, NVR4-VAL-12TB, and NVR4-VAL-24TB recorders are equipped with four hard drives. The NVR4-VAL-16TB recorder is equipped with three hard drives.

6. **Information tag**

Provides the product service details, MAC addresses and a copy of the Windows license key.

Back View



1. **Serial connector**

Accepts connections to serial devices.

2. **1 Gigabit Ethernet ports**

Accepts an Ethernet connection to multiple networks.

3. **Power supply**

Primary power supply. An optional secondary power supply is available (NVR4-VAL-2NDPS-NPC).

4. **Video connector**

Accepts a VGA monitor connection.

5. **Out-of-band management network interface**

Accepts an Ethernet connection to the management network.

6. **USB connectors**

Accepts USB connections to external devices.

Installation

Package Contents

Ensure the package contains the following:

- Avigilon Network Video Recorder
- Rack sliding rail assembly kit
- Cable management arm assembly kit
- Bezel and key
- Power cables (may be provided in a separate box)

Installing the Sliding Rack Rails and Cable Management Arm

If the recorder will be kept in a server rack, install the Sliding Rack Rails and the Cable Management Arm (CMA) provided in the recorder package. Follow the procedures outlined in the *Rack Installation Instructions* and the *CMA Installation Instructions* provided in the assembly kits.

Note: The supplied Sliding Rack Rails are compatible with square and round hole racks.

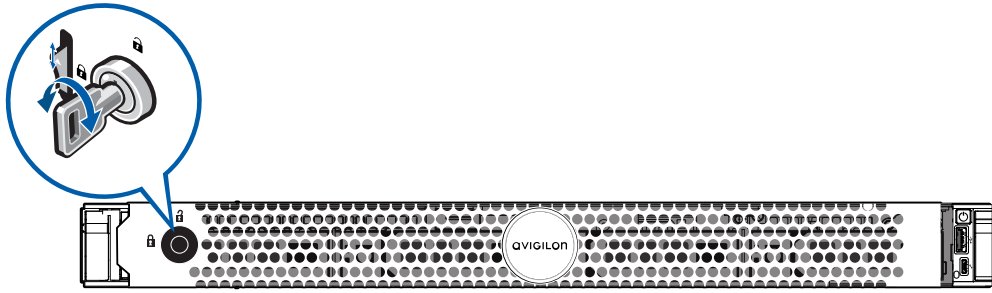
Connecting Cables

Refer to the diagrams in the Overview section for the location of the different connectors. Make the following connections as required:

1. Connect a KVM switch or separate keyboard, mouse and monitor to the recorder.
 - The keyboard and mouse can be connected to any USB port on the recorder.
 - The monitor can be connected to any video connector at the front or back of the recorder.
2. Connect the recorder to your network by plugging an Ethernet cable into one of the Ethernet ports.
3. Connect a power cable to the power supply at the back of the recorder.
4. Press the power button on the front of the recorder. Check that the recorder LED indicators display the correct status. For more information on the different LED status indicators, see *LED Indicators* on page 9.

Installing the Bezel

The bezel can be installed on the front of the recorder to help protect the power button and hard drives against unauthorized access.



1. Slide the right end of the bezel against the right hinge of the recorder.
2. Push the left end of the bezel against the recorder until it clicks into place.
3. Use the provided key to lock the bezel.

Logging into Windows 10 for the First Time

After the recorder starts, you will need to configure the Windows operating system for the first time.

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**.
5. Once logged in, the recorder will go through initial system setup, and ask to select the version of AvigilonControl Center to use:
 - **Use ACC 7.x.x (recommended)**. Select this option to use the latest version of the ACC software.
 - **Downgrade to ACC 6.x.x**. Select this option to downgrade your NVR to version 6.x.x. This older version of the ACC software would not support newer features such as facial recognition and the Focus of Attention interface.

You are logged in to the Windows environment. The Avigilon Control Center Admin Tool and the ACC client automatically start up.

Note: If you are performing operating system recovery, the ACC client does not

automatically start up. For more information about running the local ACC installer, see *Operating System Recovery By Avigilon Recovery Partition* below.

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

Connecting to ACC Software and ACS

Once you have deployed your NVR, you should activate your ACC software and connect to Avigilon Cloud Services (ACS).

Activating and Configuring ACC Software

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

Printable versions of these guides are available on the Avigilon website: [avigilon.com/support/software/](https://www.avigilon.com/support/software/).

Connecting to Avigilon Cloud Services

After activating your ACC software, you can connect your ACC site to the cloud, free of charge, and take advantage of the capabilities and features that provide centralized access across distributed systems.

To connect your site to Avigilon Cloud Services, see help.avigilon.com/cloud.

For information about the cloud services, see [Avigilon Cloud Services Support](#).

Troubleshooting

Network Configuration

By default, the Network Video Recorder acquires an IP address on the network through DHCP. If you need to set up the recorder to use a static IP address or any specific network configuration, see the *Windows Help and Support* files for more information.

Checking System Health



You can check on the health of the system components in the Site Health in the ACC Client software. See [Site Health](#) in the *ACC Client User Guide* for more information.

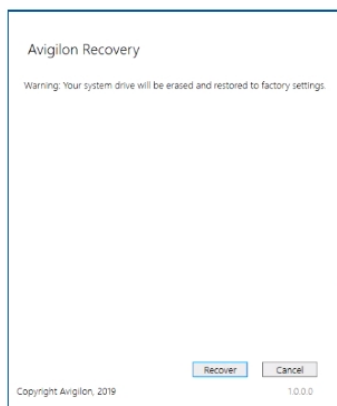
Operating System Recovery By Avigilon Recovery Partition

If you need to recover the Windows operating system, the NVR includes an onboard Avigilon recovery partition that is separate from the operating system partition. The advantage of using the Avigilon recovery partition is that you do not need an internet connection.

Important: Your operating system drive will be erased and restored to factory settings. Before you proceed with operating system recovery, complete any necessary backups of custom ACC configuration and video recordings. For more information about ACC software backups, see avigilon.com/recovery.

Note: Depending on when your NVR was shipped, it is recommended that you connect to the network when possible to install updates for Windows and ACC Client software after system recovery is completed. For more information about ACC software installations, see avigilon.com/recovery.

1. Start operating system recovery in one of the following ways:
 - On your Windows desktop, select  and then hold down the Shift key and select **Restart**.
 - On your locked Windows screen, select  and then hold down the Shift key and select **Restart**.
 - During direct boot of the operating system, repeatedly press the down-arrow key and select the partition.
2. On the **Choose an option** screen, select **Use another operating system**.
3. Select the **OS Recovery** partition.
4. On the **Avigilon Recovery** window, select **Recover**.



Allow up to half an hour for the recovery to complete.

5. After system reboot, complete the Windows setup process.

For more information about setting up a Windows 10 operating system, see *Logging into Windows 10 for the First Time* on page 5.

6. Navigate to `C:\Avigilon\Control Center Installation Files`, and run the ACC installer for the version of ACC software in use at your site.

Operating System Recovery By External USB

If you need to recover the Windows operating system on the Network Video Recorder and you have access to the internet, download the latest Avigilon Recovery Image from avigilon.com/recovery and refer to Support and Downloads for the following information:

- Minimum size of the USB recovery device
- Creating an external USB recovery device
- Recovering the operating system from an external USB recovery device

The general steps are:

1. Load the Avigilon Recovery Image onto a USB recovery device.
2. Plug the USB recovery device into the workstation.
3. Repeatedly press the F12 key while booting the workstation.
4. On the UEFI Boot menu, select the USB recovery device.

LED Indicators

The following tables describe what the LEDs on the recorder indicate.

Power Status Indicators

The power button on the front of the recorder lights up when power is on.

Additional information about the power supply is provided by the power status indicator on the back of the recorder. The following table describes what the LEDs indicate:

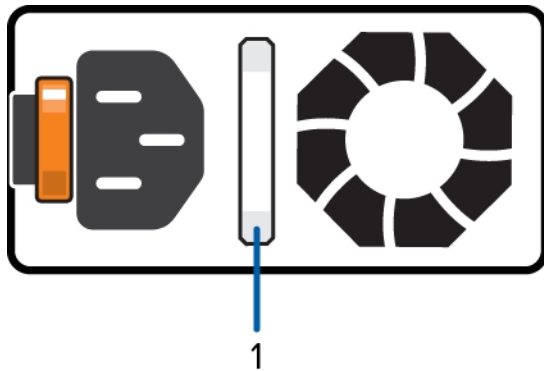


Figure 1: (1) The power status indicator.

LED Indicator	Description
Off	Power is not connected.
Green	Power is supplied to the recorder.
Flashing green	Firmware update is being applied to the power supply unit.
Flashing green then turns off	The redundant power supply is mismatched. This only occurs if you have a secondary redundant power supply installed.
Flashing orange	There is a problem with the power supply.

Network Link Status Indicators

When the recorder is connected to the network, the recorder's connection status LEDs above the Ethernet port display the recorder's connection status to the network. The following table describes what the LEDs indicate:



Figure 2: (1) Link LED. (2) Connection Status LED.

LED Indicator	Description
Off	The recorder is not connected to a network.
Link LED is green	The recorder is connected to a network at the maximum port speed (1 Gbps or 10 Gbps).
Link LED is orange	The recorder is connected to a network at less than the maximum port speed.
Connection Status LED is blinking green	The recorder is working with other parts of the Avigilon Control Center software.

Hard Drive RAID Status Indicators

Each hard drive has its own set of LED indicators to show its activity and status.

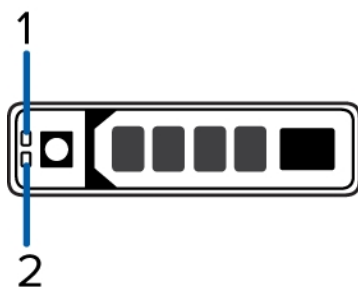


Figure 3: (1) Status LED. (2) Activity LED.

The Activity LED flashes green when the hard drives are working. The following table describes what the Status LEDs indicate:

LED Indicator	Description
Green	The hard drive is online.
Off	The hard drive is disconnected from the recorder.
Two short green flashes every second	The system is identifying a new hard drive, or preparing a hard drive for removal.
Flashes green, orange then off	The hard drive is predicted to fail.
Four short orange flashes per second	The hard drive has failed.
Flashes green slowly	The hard drive is rebuilding.

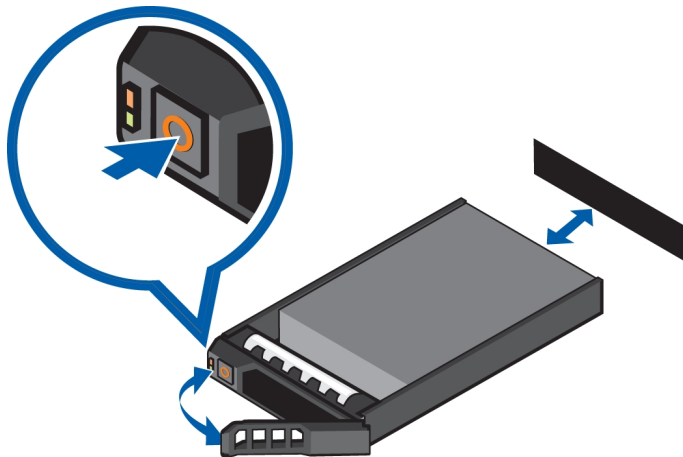
LED Indicator	Description
Blinks green for three seconds, orange for three seconds and off for six seconds	The hard drive rebuild has been aborted.

Replacing Hard Drives

The LED indicator flashes green, then orange and then off if it is about to fail. After it has failed, the status indicator flashes orange four times a second. For more information about all the LED status indicators see *Hard Drive RAID Status Indicators* on page 10.

To replace a failed hard drive:

1. Locate the failed hard drive at the front or back of the recorder.



2. Press the release button on the front left of the hard drive.
3. When the handle is released, pull the hard drive out of the recorder.
4. Remove the four screws from the side of the hard drive carrier.
5. Lift the failed hard drive out of the carrier.
6. Insert a new hard drive into the carrier then screw it into place. The hard drive connectors should face the back.
7. When the hard drive is secured in the carrier, insert the hard drive back into the recorder.
8. Once the hard drive is inserted all the way in, push the handle against the hard drive to lock it into place.

The hard drive status indicator slowly flashes green, indicating the recorder has started rebuilding the hard drive. Rebuilding the RAID hard disk array may take several hours. You can verify that the rebuilding has started and monitor progress using the Server Administrator tool. Contact Technical Support if the rebuilding process does not start.

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](https://www.avigilon.com/contact).

For More Information

For additional product documentation and software and firmware upgrades, visit [avigilon.com/support](https://www.avigilon.com/support).

Technical Support

Contact Avigilon Technical Support at [avigilon.com/contact](https://www.avigilon.com/contact).