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User Guide

Avigilon™ Network Video Recorder Series 3

HD-NVR3-PRM-48TB, HD-NVR3-PRM-84TB and HD-NVR3-PRM-137TB

Avigilon Corporation
avigilon.com

PDF-NVR3-PRM-A

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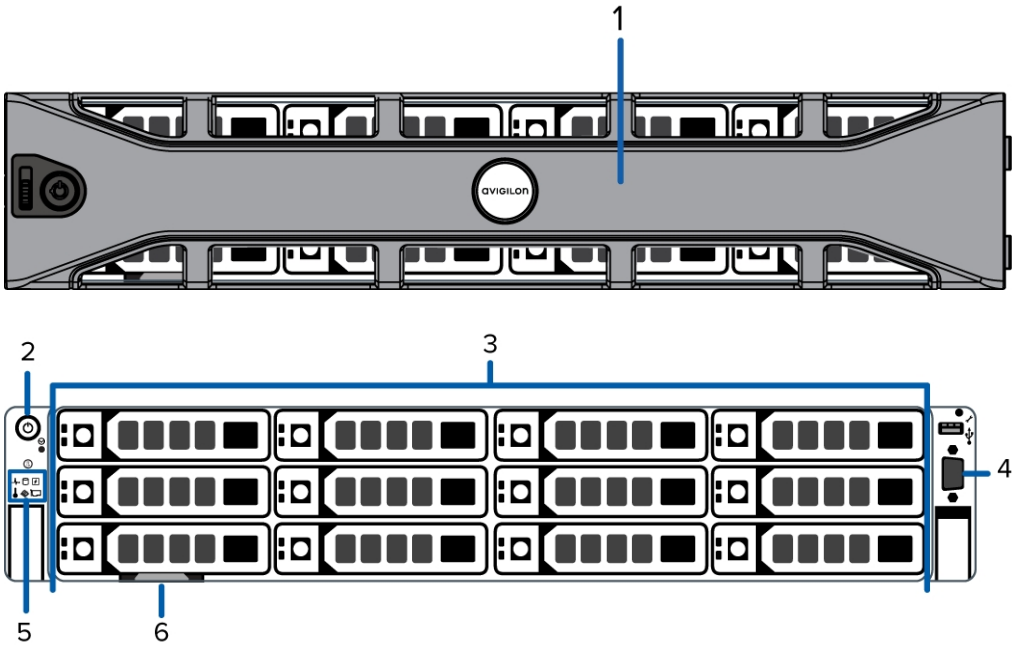
Introduction

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.

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. **Hard drives**

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

   Some drives may contain an empty hard drive tray.

4. **Video connector**

   Accepts a VGA monitor connection.

5. **Diagnostic indicators**

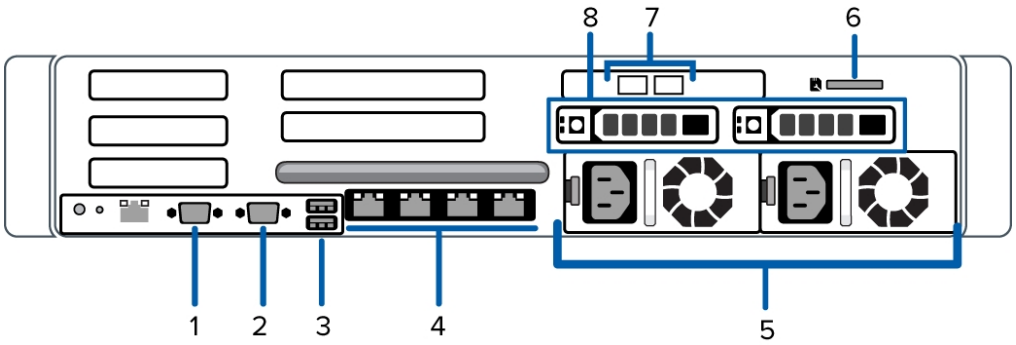
Provides information about system operations.

For more information, see *LED Indicators* on page 15.

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. **Video connector**

   Accepts a VGA monitor connection.

3. **USB connectors**

   Accepts USB connections to external devices.

4. **1 Gigabit Ethernet ports**

   Accepts an Ethernet connection to multiple networks.

5. **Power supply**

   Two hot swappable redundant power supply.

6. **SD card slot**

   Accepts an SD card.

7. **10 Gigabit Ethernet ports**

   Accepts an Ethernet connection to multiple networks.

8. **Operating system hard drives**

   Two hot-swappable 2.5 inch hard drives that are loaded with the operating system.

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

Installing the Rack Rails and Cable Management Arm

If the recorder will be kept in a server rack, install the Rack Sliding Rails and the Cable Management Arm 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 Rack Sliding Rails are compatible with square and round hole racks.

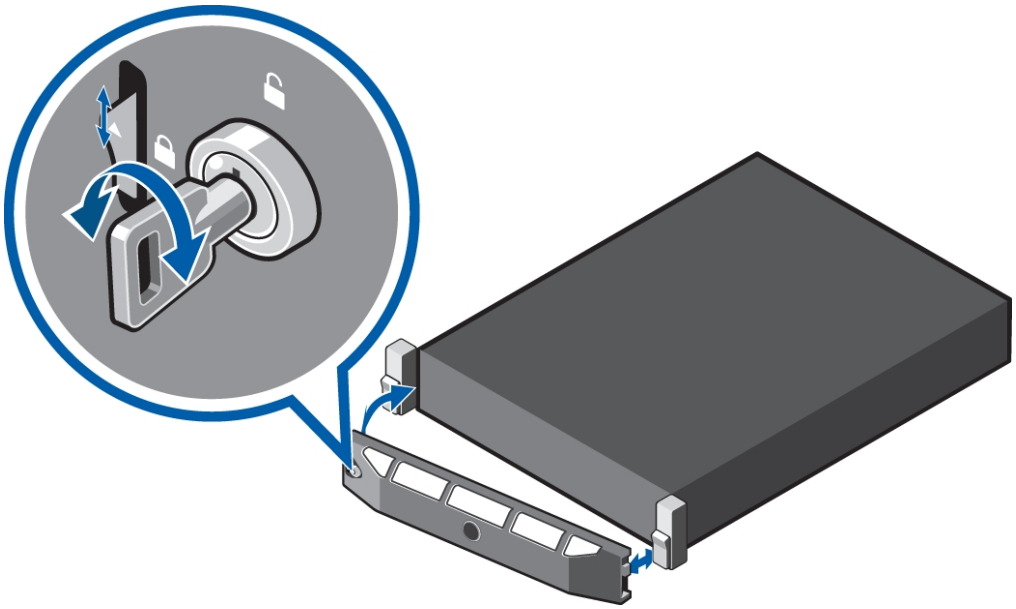
Connecting Cables

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 using an Ethernet cable.
3. Connect a power cable to each 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.

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.

Activating and Configuring ACC Software

- **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/**.

Activating the Avigilon Control Center™ License

Before you can configure cameras and monitor live or recorded video, you will need to activate the ACC software license. If you don't have a license, you will need to purchase one.

Other parts of the ACC system may start while you perform this procedure, but you will not be able to use any of the features until after license activation is complete.

The first time you connect to the new appliance with the ACC Client, you must activate a license for the new ACC software. After the license is activated, you can immediately use the licensed features.

1. Double-click the new recorder name to log in. There is no user name or password set on the recorder.
2. In the top-left corner, click  to open the New Task menu, then click  .
3. In the site Setup tab, click  .
4. In the License Management dialog box, click **Add License...**.
5. In the following dialog box, select one of the following tabs:
   - If you have Internet access, select the **Automatic** tab. Go to *Automatic License Activation* below.
   - If you do not have Internet access, or you plan to keep the system on a private intranet, select the **Manual** tab. Go to *Manual License Activation* below.

Automatic License Activation

In the **Automatic** tab:

1. In the Enter Product Keys section, enter the license key.
2. In the Activate and License Site section, click **Activate now**.

Manual License Activation

In the **Manual** tab:

1. In the **Enter Product Keys** section, enter the license key.
2. In Generate Activation File section, click **Save File...**.
3. In the Save As window, select where you want to save the `.key` file that is generated by the system. You can rename the file as required.
4. Click **Save**.
5. Copy the `.key` file to a computer with Internet access.

Open a web browser and go to **http://activate.avigilon.com**.

1. Click **Choose File** and select the `.key` file, click **Upload**. The generated license file (`.lic`) will download automatically. If it does not, allow the download to occur when you are prompted.
2. Copy the downloaded `.lic` file to a location that would be accessible to the ACC Client software.
3. Complete the product registration page to receive product updates from Avigilon, then click **Register**.

Return to the ACC Client:

1. In the Apply License File section, click **Apply...**.
2. Locate the downloaded `.lic` file and click **Open**.
3. In the Confirm Licenses dialog box, click **OK**.

Modifying Licenses

You can use the the License Management dialog box to add, remove, deactivate, and reactivate licenses for the ACC 6 software. For more information, see the *Avigilon Control Center Client User Guide*.

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 the *Windows Help and Support* files for more information.

Advanced Features

Changing the System Language

By default, the recorder's operating system language is English.

1. From the bottom-left corner of the Windows desktop, click  .
2. In the Start menu, click  .
3. In the following window, click  .
4. On the next page, click  .
5. In the following window, click the first option in the light blue bar. The option is labeled *Add a language*.
6. On the next page, scroll down the language list then double-click your preferred language.

   Note: Only the languages supported by the Avigilon Control Center software are pre-installed. You can choose to download and install any extra languages supported by Windows.

   If there are multiple variants of the language available, you will be asked to double-click your preferred locale.

   The selected language is added to the system language list.
7. In the last column on the right, click the blue link. The link is labeled *Options*.
8. On the following page, click the first blue link on the page. The link is labeled *Make this the primary language*.

   Note: Do not click the link with this  icon at the front, or you may uninstall the language from the system.
9. You are prompted to log off to apply the language changes. You can choose to log off now or log off later.
   - To log off immediately, click the left button that is labeled *Log off now*.
   - To log off later, click the right button that is labeled *Log off later*.

The next time you log in to Windows, the selected system language is displayed.

You can now decide if you want the operating system to maintain one or multiple languages.

- To maintain one language, return to the Language window that contains the system language list and delete English.
- To maintain multiple languages, return to the Language window and add the other required languages. You can order the languages by importance by moving them up and down the list.

Checking System Health

The Server Administrator software is pre-installed on the recorder. The software provides information about the recorder's system operation status, and gives you remote access to the recorder for recovery operations.

If one of the LED indicators on the recorder is flashing an error warning, the Server Administrator will display details about the problem. For more information about the LED indicators, see *LED Indicators* on page 15.

1. Open the Server Administrator.
   - To open the Server Administrator locally, double-click the **Server Administrator** shortcut icon on the desktop.
   - To open the Server Administrator remotely, open a web browser and enter this address: `https://<recorder IP Address>:1311/`.

     For example: `https://192.168.1.32:1311/` or `https://localhost:1311/`.

   If you are using an intranet connection, your browser may display an error message. Allow the browser to ignore the certificate warnings.
2. If asked to log in, enter the Windows software administrator username and password that was configured for the recorder.
3. On the Server Administrator home page, the health of the system components are displayed in the workspace on the right.
   - To see the health of other system components, expand and select a different component from the System Tree on the left.
   - The table displayed in the workspace lists system components and their status:

     
     The system component is running normally.

     
     The system component has a non-critical warning.

     
     The system component has a critical failure.

     The system component status is unknown.

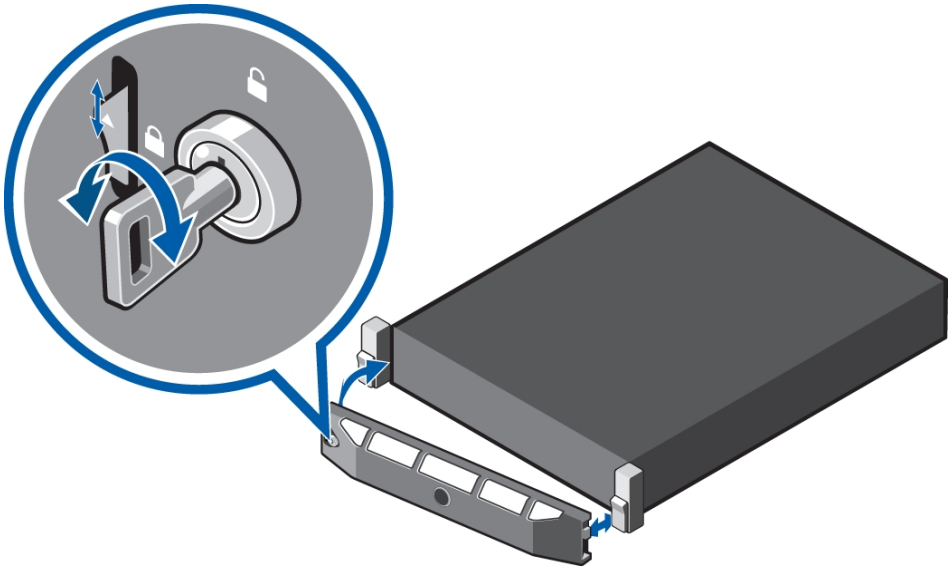
   - To see the details of a system component, select the system component from the workspace.

The Server Administrator is also used to customize the Redundant Array of Independent Disks (RAID) settings, assign a hot spare and remotely monitor the system health. For more information about the features in the Server Administrator, see the Help system provided in the software.

Replacing a Hard Drive Blank

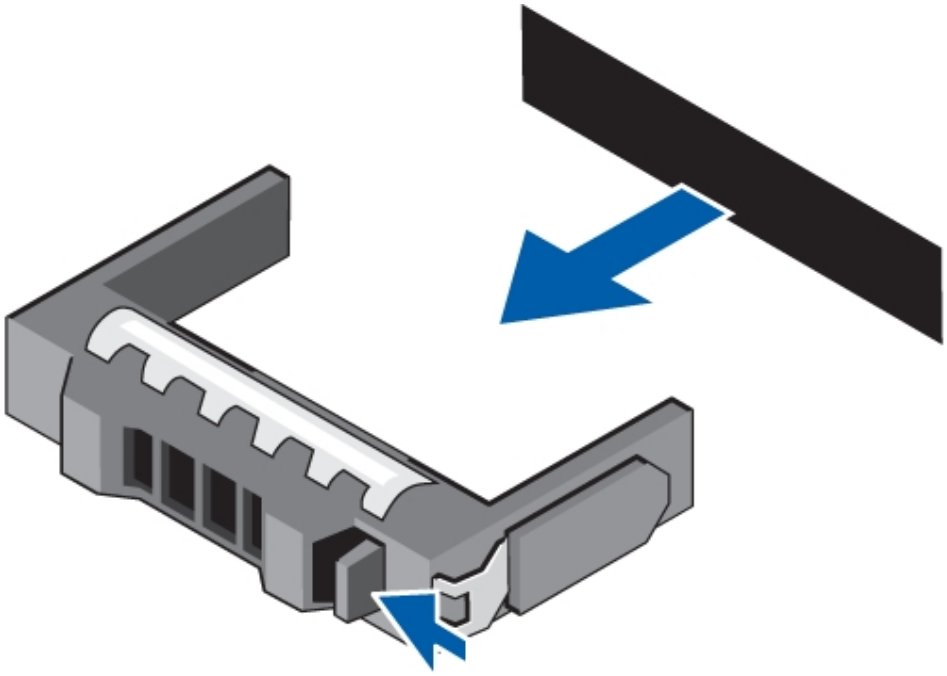
Depending on the recorder model, there may be hard drive blanks at the front of the recorder. You can replace the blanks with hard drives as required.

1. Remove the bezel.



   a. Unlock the bezel.
   b. Lift the release latch next to the lock.
   c. Pull the left end of the bezel then unhook the right end to remove the bezel.

2. Press the release button and slide the blank out of the hard drive slot.



3. Insert the hard drive all the way into the recorder then push the handle against the hard drive to lock it into place.
4. Open the Server Administrator application and expand the System Tree.

   The new hard drive should be automatically added to the Physical Disks list. The list is typically available here: **System > Storage > PERC H730 Adapter > Connector 0 > Enclosure > Physical Disks**.

5. Assign a task to the new hard drive or allow it to exist as an extra storage drive.

   It is recommended that individual new hard drives be used as hot spares. Hot spares are hard drives that are available on standby in the event of a hard drive failure in the RAID. If that occurs, you can configure the system to automatically redirect recording to the unused hard drive.

   To assign the new hard drive as a hot spare, select **Assign and Unassign Global Hot Spare** from the Task list then click **Execute**.

If the new hard drive is not displayed in the Server Administrator, try one of the following:

- Refresh the browser.
- Reboot the recorder.
- In the System Administrator, select **PERC H730 Adapter** in the System Tree then click **Information/Configuration** in the right workspace. Next, select **Rescan** from the Controller Tasks list then click **Execute**.

Replacing Hard Drives

The operating system and the Avigilon Control Center software are mirrored on two hard drives at the back of the recorder. If one of the hard drives fail, you can replace the failed drive while the recorder continues to run from the other.

If your recorder is still under warranty, contact Avigilon Technical Support to replace the failed hard drive.

If more than two hard drives fail at the same time, contact Avigilon Technical Support immediately for recovery instructions.

Only replace a hard drive if the hard drive LED indicator and the Server Administrator displays an error.

1. Open the Server Administrator.
2. Check which hard drive has failed, then disconnect the drive through the Server Administrator software.

   Hard drives are installed at the front, back and in the middle of the recorder. Be sure you can identify which hard drive needs to be replaced.
3. If you are replacing a hard drive at the center of the recorder, shut down the recorder then disconnect all cables.

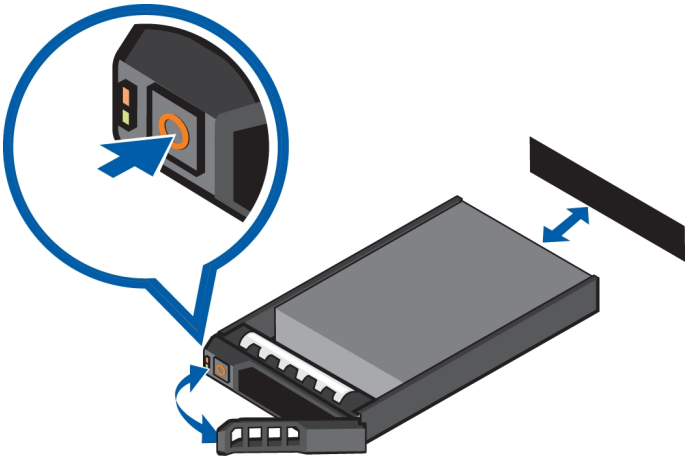
   Note: Skip this step if you plan to hot-swap a hard drive at the front or back of the recorder.
4. Remove the bezel.
5. Depending on where the hard drive is located, perform one of the following procedures:

Replacing Front or Back 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 17.

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.

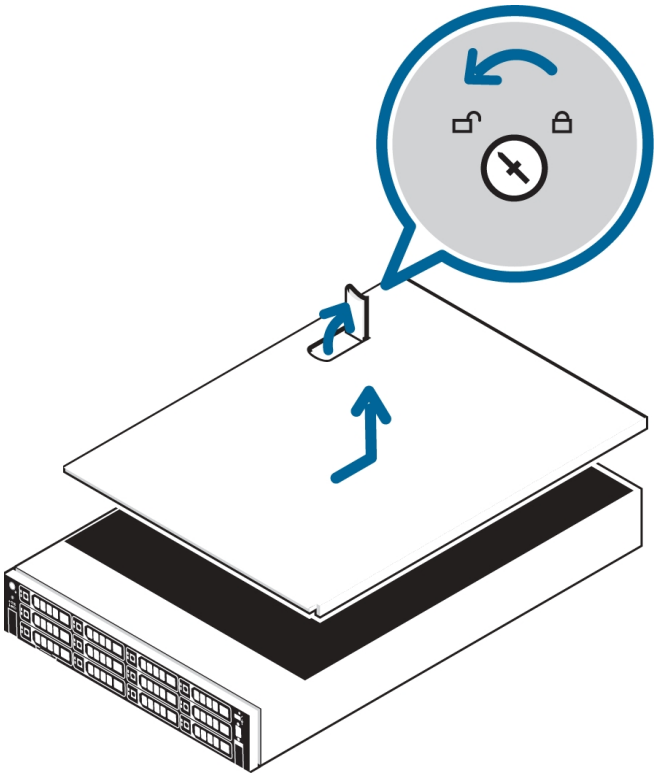
The hard drive status indicator slowly flashes green, indicating the recorder has started rebuilding the hard drive. Rebuilding the RAID hard disk array may take several hours. You can verify that the rebuilding has started and monitor progress using the Server Administrator tool. Contact Technical Support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

Replacing Center Hard Drives

To replace a hard drive stored in the middle of the recorder, complete the following steps:

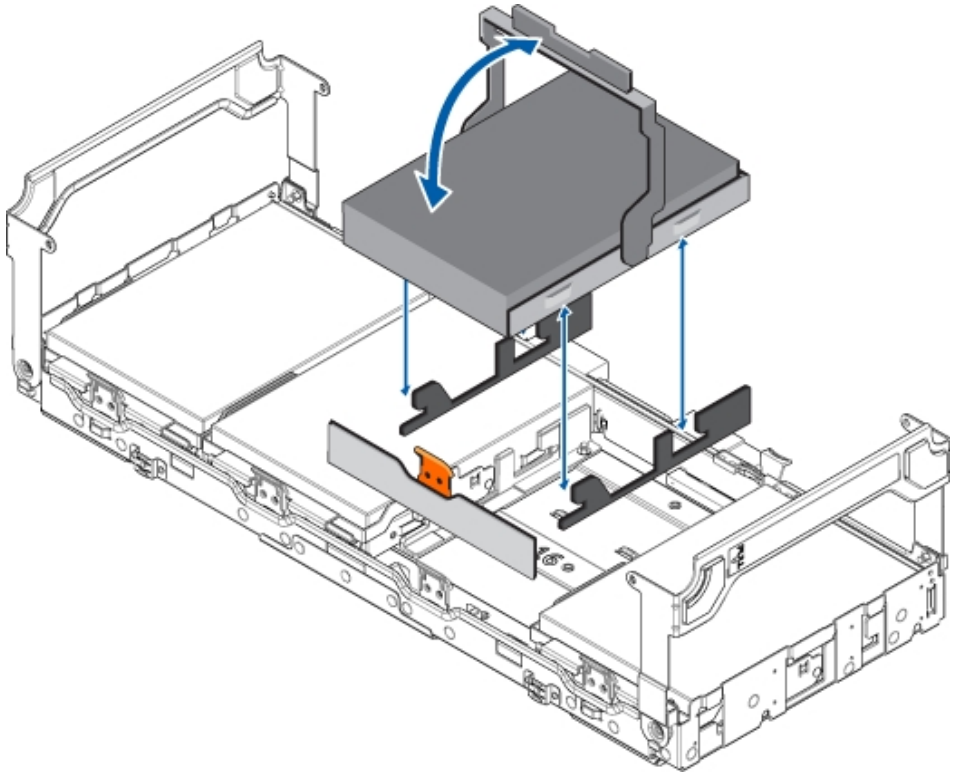
1. At the top of the recorder, unlock the latch release then lift and rotate the latch towards the back of the recorder.

   The cover slides back and is released from the recorder body.



2. Hold the cover on both sides and lift it off the recorder.
3. Locate the failed hard drive on the center hard drive tray.

4. Lift the handles on either side of the hard drive tray.



5. Press the orange release tab on the hard drive tray then lift up the hard drive carrier handle to release the hard drive.
6. Hold the handle and lift the hard drive out of the tray.
7. While holding the handle, pull the edges of the carrier away from the hard drive to remove the failed hard drive from the carrier.
8. Align the slots on the new hard drive to the tabs on the hard drive carrier.
9. Pull the edges of the carrier over the slots on the hard drive.
10. Place the new hard drive into the tray and push the handle down until the hard drive clicks into place.
11. Fold down the handles on the hard drive tray.
12. Close and lock the recorder cover.
13. Reconnect all the cables to the recorder.
14. Power the recorder.

After the operating system starts up, the recorder immediately starts rebuilding the hard drive. The progress is displayed in the Server Administrator. This may take several hours.

LED Indicators

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

Diagnostic Indicators

The diagnostic indicators on the front of the recorder highlight system issues during system startup.

> **Note:** The diagnostic indicators only light-up when the recorder is powered.

LED Indicator	Description
 **Health**	• Blue — the recorder is powered and is in good health. • Blinks orange — the recorder is powered but an error exists. Errors include: a failed fan or hard drive.
 **Hard drive**	• Blinks orange — the hard drive is experiencing an error.
 **Electrical**	• Blinks orange — the recorder experiences an electrical error. Errors include: voltage out of range, or failed power supply or voltage regulator. Check the power status indicator to confirm if it is an issue with the power supply.
Temperature	• Blinks orange — the recorder experiences a thermal error. Errors include: temperature out of range or fan failure. Check that the recorder fan is functioning correctly and the air vents are not blocked.
 **Memory**	• Blinks orange — the recorder experiences a memory error.
 **PCIe**	• Blinks orange — the recorder experiences a PCIe card error. Restart the recorder then update the drivers for the PCIe card.

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:

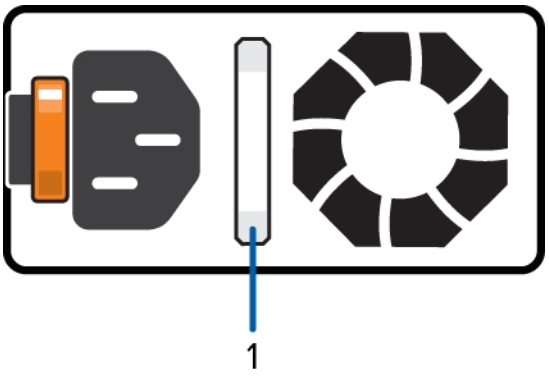


Figure 1: (1) The power status indicator.

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.

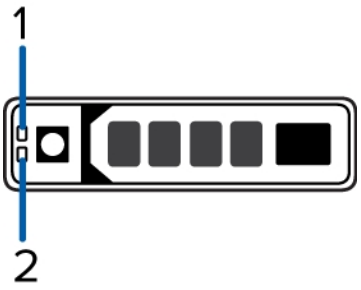


Figure 3: (1) Status LED. (2) Activity LED.

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

Limited Warranty and Technical Support

Avigilon warranty terms for this product are provided at **avigilon.com/warranty**.

Warranty service and technical support can be obtained by contacting Avigilon Technical Support: **avigilon.com/contact-us/**.