MAKE THE
WORLD SEE

Milestone Systems

Milestone Husky™ X2 NVR

Hardware and service guide

September 2019

milestone

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All names of people and organizations used in the examples in this text are fictitious. Any resemblance to any actual organization or person, living or dead, is purely coincidental and unintended.

This product may make use of third-party software for which specific terms and conditions may apply. When that is the case, you can find more information in the file 3rd_party_software_terms_and_conditions.txt located in your Milestone system installation folder.

Safety

Warning!

This appliance does not contain any user-serviceable parts. Do not remove any covers or attempt to gain access to the inside of the product.

Risk of explosion if battery is replaced by incorrect battery type.

Dispose of used batteries according to the instructions.

Caution

Replacement of a BATTERY with an incorrect type that can defeat a SAFEGUARD (for example, in the case of some lithium BATTERY types).

Disposal of a BATTERY into fire or a hot oven, or mechanically crushing or cutting of a BATTERY, that can result in an EXPLOSION.

Leaving a BATTERY in an extremely high temperature surrounding environment that can result in an EXPLOSION or the leakage of flammable liquid or gas.

A BATTERY subjected to extremely low air pressure that may result in an EXPLOSION or the leakage of flammable liquid or gas.

Make sure to connect the power cord to a socket-outlet with earthing connection.

Suitable for installation in Information Technology Rooms in accordance with Article 645 of the National Electrical Code and NFPA 75.

About this guide

This hardware and service guide for Milestone Husky™ Network Video Recorder (NVR) is a point of reference to the Milestone Husky software and Milestone Husky hardware.

This guide describes Husky Assistant and Husky Switch Manager. These applications help you maintain and reconfigure your system.

Husky Tools Installer gives you the most recent version of Husky Assistant and Husky Switch Manager. For updates to Husky Tools Installer, check the Milestone website (https://www.milestonesys.com/downloads/).

This guide also describes how to replace data storage hard drives.

Support and information page

On the Milestone Husky support and information page (https://www.milestonesys.com/HuskyX2-support/), find the following information about your Milestone Husky unit:

- Manuals and guides
- eLearning
- Performance approved hard drives
- Husky Calculator
- Certifications
- FAQ
- Support community
- Knowledge Base articles
- Warranty information
- How to contact Milestone Support
- How to handle a faulty unit
- Other additional content

Husky Assistant

Husky Assistant is an application that helps you configure, maintain, and see the status of your Milestone Husky system. Find the Husky Assistant shortcut on the Windows desktop.

Husky Assistant properties

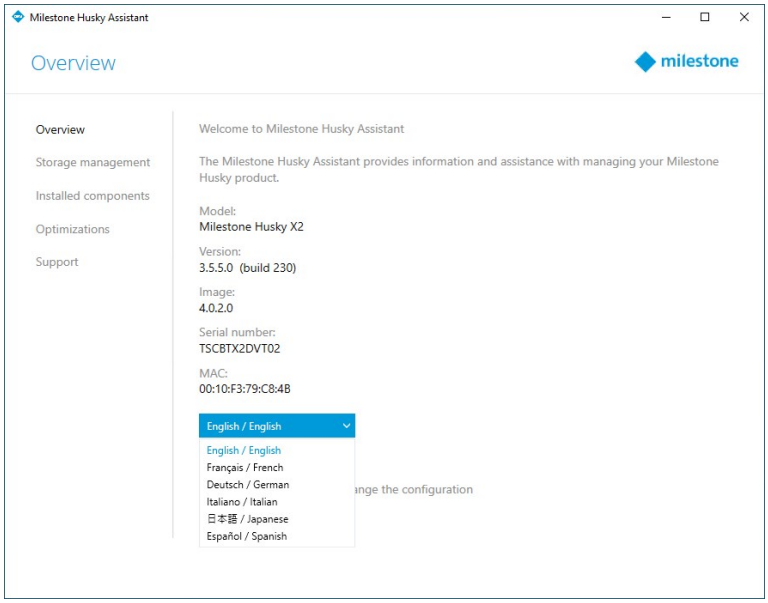
The Husky Assistant has these features available:

Navigation element	Description
Overview	A list of details about the unit: • Model: Milestone Husky model • Version: Milestone Husky Assistant version • Image: Husky firmware version • Serial number: The hardware serial number of the unit • MAC: The Husky unit physical address (MAC address) You can change the language in which Husky Assistant appears. **Reconfigure** the network and the storage. Additional device drivers will also be installed.
Storage management	Information about the available data storage hard drives. You can also see the status of the disks.
Installed components	A list of installed Milestone software components and versions.
Optimizations	A list of available optimizations you can apply.
Support	Always contact your Milestone reseller that you have bought the unit from before contacting Milestone Support. Run the Milestone Diagnostics Tool to create files that are needed for the Milestone reseller when the reseller helps you troubleshoot. Visit the Milestone Husky support and information page. Lists the information that you need to contact Milestone Support.

Choose your language

To select your preferred language:

1. Open Husky Assistant.
2. On the **Overview** tab, select your preferred language from the list of available languages.



> Husky Assistant chooses English by default. All language changes require a restart of Husky Assistant.

Storage management

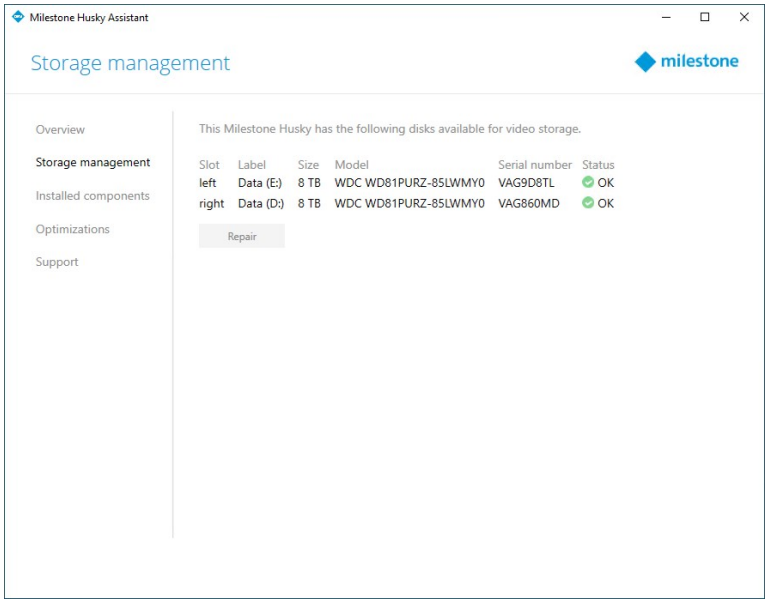
On this tab you can see information about and the status of data hard drives.

You can also identify a faulty hard drive and prepare new hard drives for use with Milestone XProtect VMS.

Check data hard drive status

To check the status of the left and right data hard drive:

1. Select the **Storage management** tab.



2. The status of the data storage hard drives is shown. The different states are:

Status	Description
OK	Normal working state.
Needs attention	The hard drive is missing a configuration that you can apply. For more information, see Prepare hard drives on page 13.
Failed	The hard drive is faulty. You need to replace it. For more information, see Replace a hard drive on page 11.
Not approved	The hard drive performance is not approved for use with the Milestone Husky products. For more information on the approved hard drives, see the Milestone Husky support and information page (https://www.milestonesys.com/HuskyX2-support/).

If the disk status is **Failed** or **Needs attention**, the data hard drive LED status indicator on the front of your unit, is **red**.

Replace a hard drive

If the data hard drive status is **Failed** or you want a higher storage capacity, this section will help you replace the hard drive.

1. Locate the correct data hard drive tray (left or right).
2. Press the spring-loaded front of the tray to remove the faulty hard drive from the bay.
3. Remove the two screws on each side and pull the hard drive out of the tray.

4. Locate the replacement hard drive and slide the hard drive into the tray. Use the four screws to fasten the hard drive to the tray.

Make sure that your hard drives performance is approved for use with the Milestone Husky products. For information on performance approved hard drives, go to the Milestone Husky support and information page (https://www.milestonesys.com/HuskyX2-support/).

5. Slide the tray as far as you can into the empty hard drive bay located on the front of your unit.

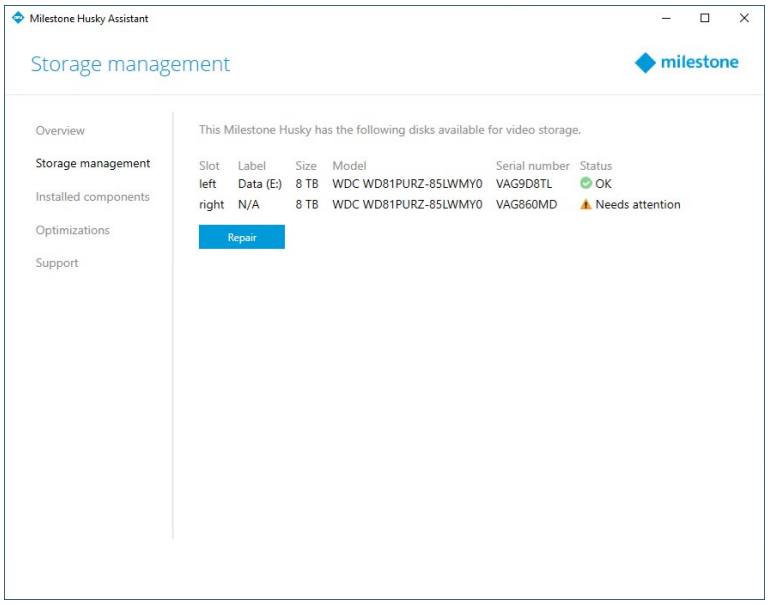
6. Press the spring-loaded front of the tray to close it.
7. To prepare the disk for use in Milestone XProtect, complete the steps in the Prepare hard drives on page 13 section.

Prepare hard drives

If the disk status is **Not approved** you cannot use Husky Assistant to prepare the hard drives.

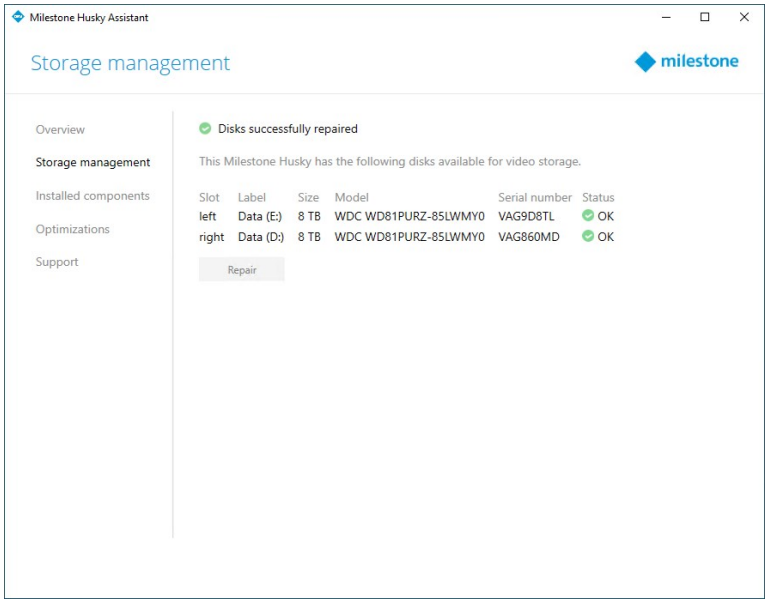
How to prepare a disk for use in Milestone XProtect VMS:

1. If there are one or more hard drives in the list with a status **Needs attention**, click **Repair**.



2. Accept any user account control warning and wait for the repair to be completed.

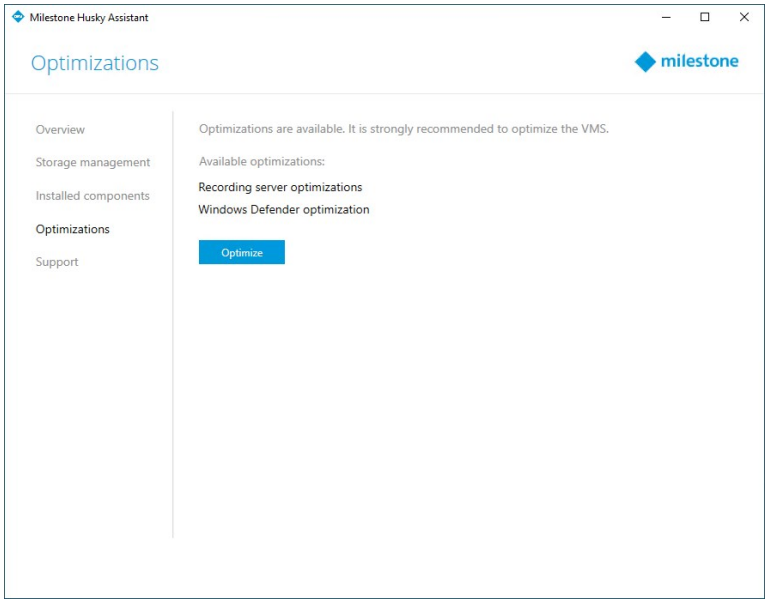
3. A summary screen appears. Check that the hard drive status is **OK**.



Apply optimizations

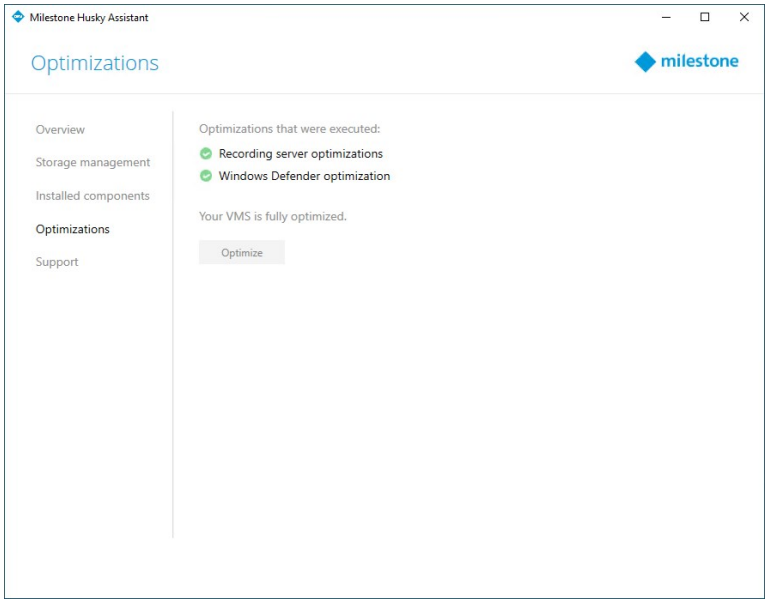
If you have installed Milestone XProtect VMS without using Husky Assistant, you need to apply the available optimizations. To check if any optimizations are available:

1. Select the **Optimizations** tab.
2. A list of the available optimizations appears.



3. If an optimization is available, click **Optimize**.

4. Accept any user account control warning and wait for the optimization to be applied.
5. Check that the optimization is applied.



Support

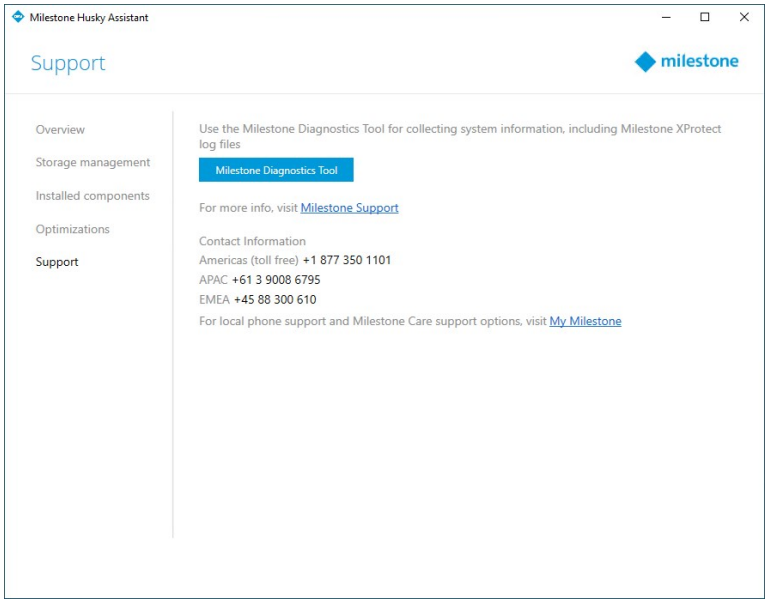
If you have a problem and need support, contact your Milestone reseller that you bought the unit from.

> This appliance does not contain any user-serviceable parts. Do not remove any covers or attempt to gain access to the inside of the product.

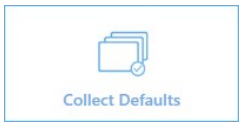
Create a diagnostics file

To help your Milestone reseller get logs and details about your system, create a Milestone diagnostics .zip file that lists the system information:

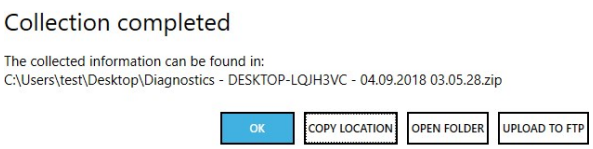
1. Select the **Support** tab.



2. Click **Milestone Diagnostics Tool**.
3. Accept any user account control warning. The **Main Page** appears.
4. Click the **Collect Defaults** icon to start creating a diagnostics .zip file.



5. When finished, the diagnostics .zip file is saved on the Windows desktop. You can now move or transfer the file to any preferred location.



6. Close Milestone Diagnostics Tool.
7. Provide your Milestone reseller with the diagnostics .zip file, when they assist you in troubleshooting a problem.

Reconfigure

You can use Husky Assistant to add or reconfigure:

- Computer name and domain
- Data drives
- Network switch DHCP IP range
- I/O Driver
- Generic events
- Install Milestone XProtect VMS (if not installed)

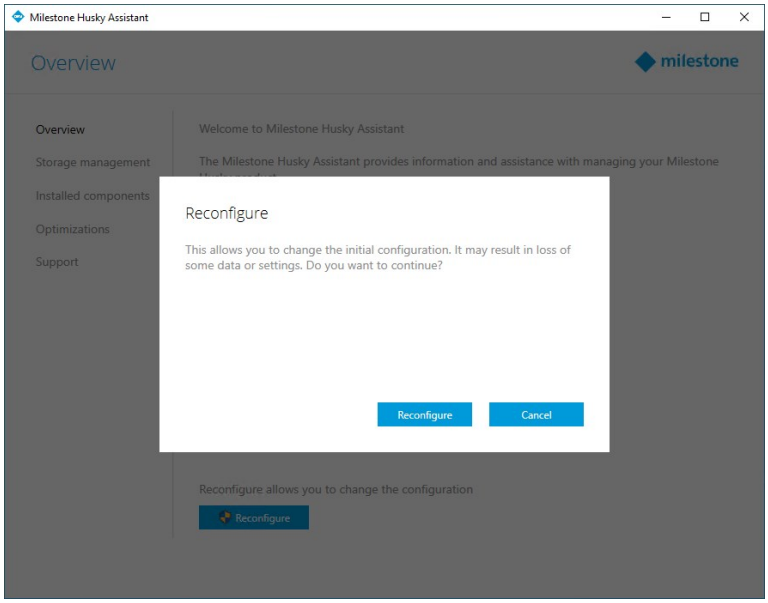
The reconfiguration may result in data loss and a temporary period with no recording or viewing of video.

Reconfigure your unit

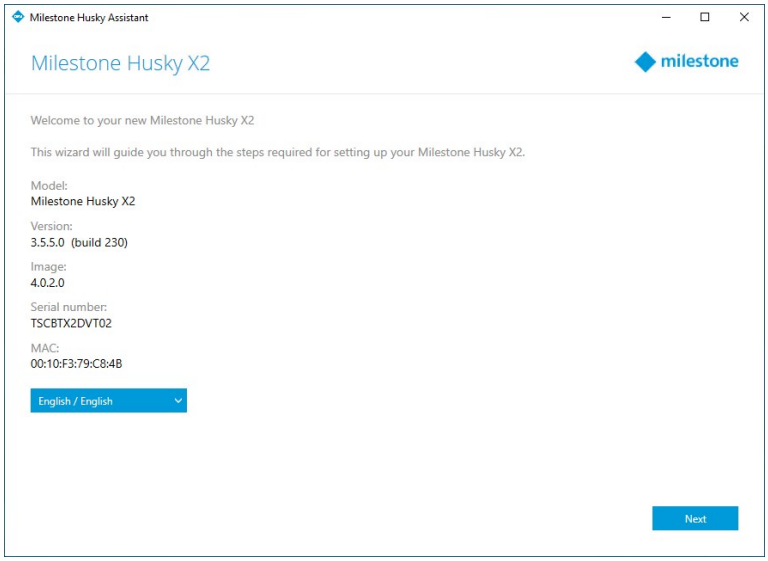
For more information about the reconfiguration process when Milestone XProtect VMS is not installed, see the Milestone Husky X2 Getting started guide (https://www.milestonesys.com/HuskyX2-support/).

To start reconfiguring your unit with Milestone XProtect VMS installed:

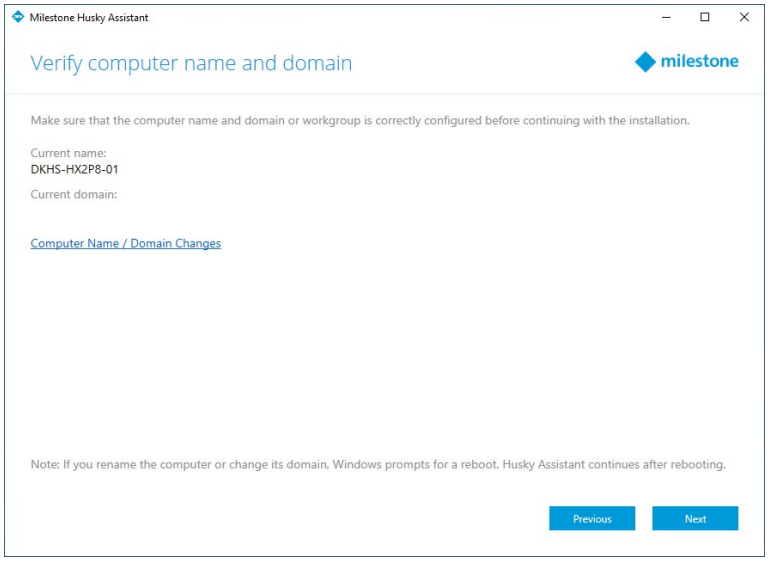
1. On the **Overview** tab, click **Reconfigure**.
2. Read the warning and click **Reconfigure**.



3. Accept any user account control warning and select your preferred language. Click **Next**.



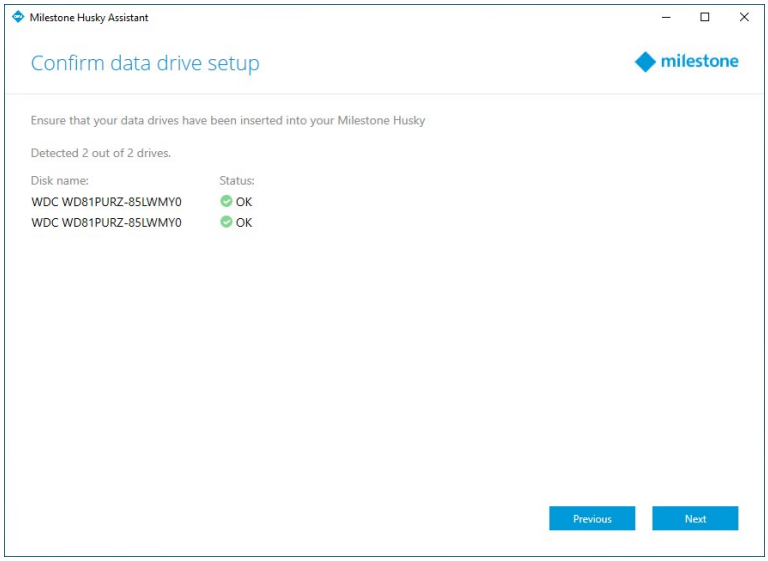
4. Click **Next** to skip the name and the domain settings or:



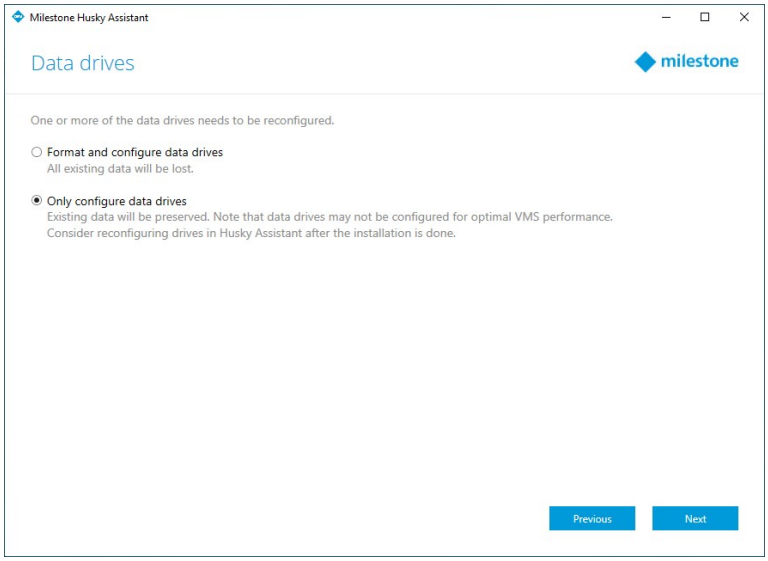
   1. Click **Computer name / Domain changes** to configure the computer name and domain, or the workgroup settings. When completed, Windows requires a restart to apply the changes.
   2. Restart Windows and wait for Windows to boot.

      Husky Assistant restarts. Select your preferred language and click **Next**.
   3. Because you have already configured the name and domain setting, click **Next**.

5. The storage detection completes. Click **Next**.



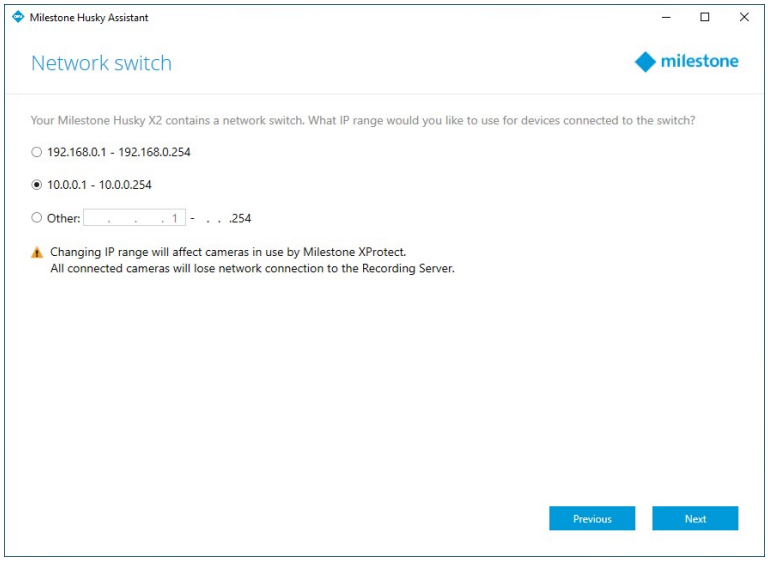
6. Select whether you want to format and to configure, or only configure the data drives, and click **Next**.



7. Define the PoE+ network switch IP address range for the devices connected to the switch (HX2P16 only). Every device configured for DHCP that you connect to the switch gets an IP address in the defined range.

   There are two predefined ranges:

   - 192.168.0.1 - 192.168.0.254
   - 10.0.0.1 - 10.0.0.254



   You can also define your own range. Select **Other**: and specify the starting point of a range. Husky Assistant automatically defines the end point of the range.

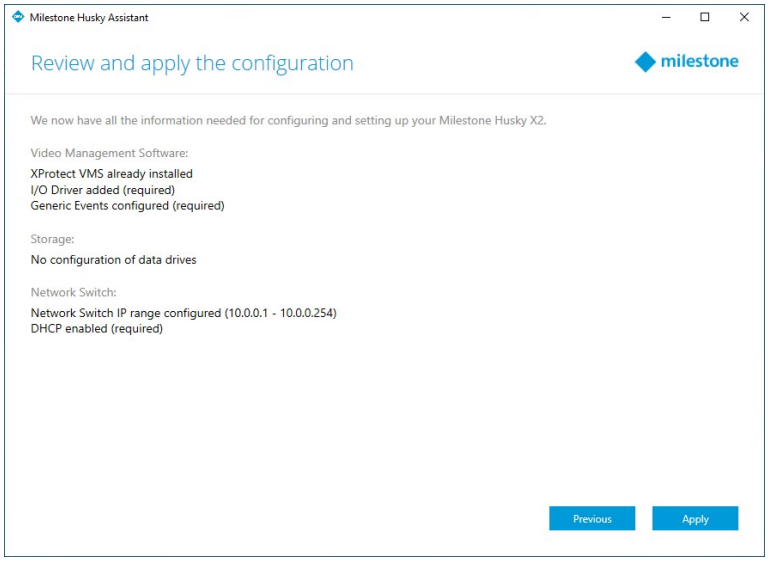
   Select an IP range that matches all the manually assigned static IP addresses of your connected cameras and devices.

   If your system uses a network switch with 16 PoE ports, the IP address range splits into two subnets, one for each 8-port module. Make sure to assign the camera or the device to the correct subnet.

   Changing the IP range of the network switch will restart the connected devices that are powered by PoE. No recordings will be made until you change the IP address of the devices in the XProtect Management Client.

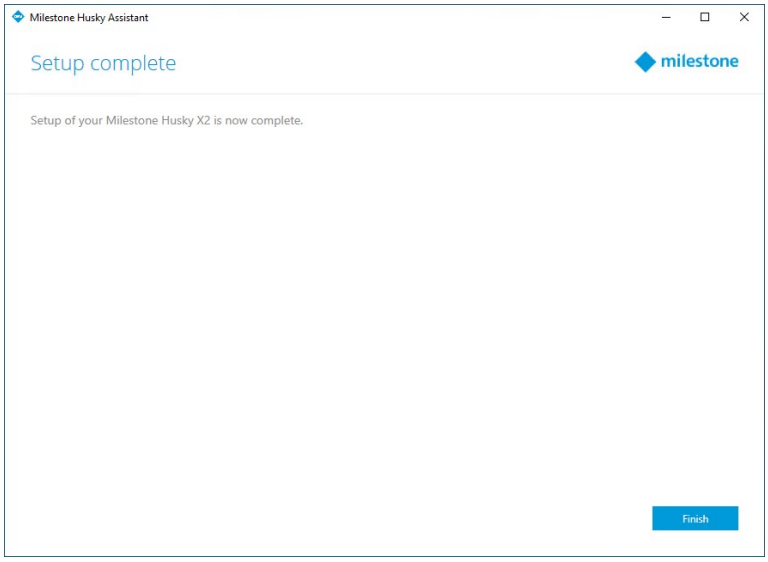
8. After you have selected an IP range, click **Next**.

9. A summary appears. Click **Apply** to start your reconfiguration. Accept any user account control warning.



If the Husky IO Module or the generic events have been deleted, the Husky Assistant will add them again.

10. The reconfiguration is completed. Click **Finish** to close Husky Assistant.



Locate the serial numbers

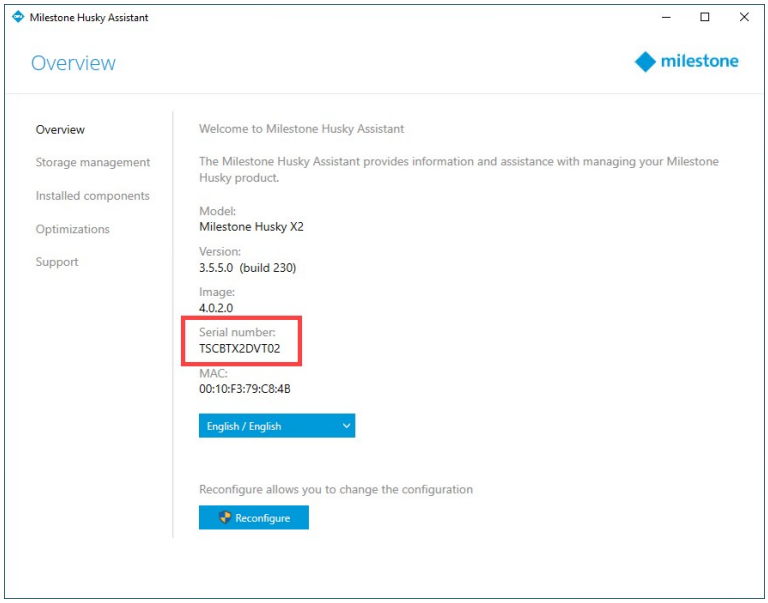
Your Milestone Husky unit and hard drives have unique identification codes called serial numbers. When you contact your Milestone reseller about your unit, always provide your reseller with the serial numbers.

Find the serial numbers in the software and on labels attached to the hardware.

Serial numbers in the software

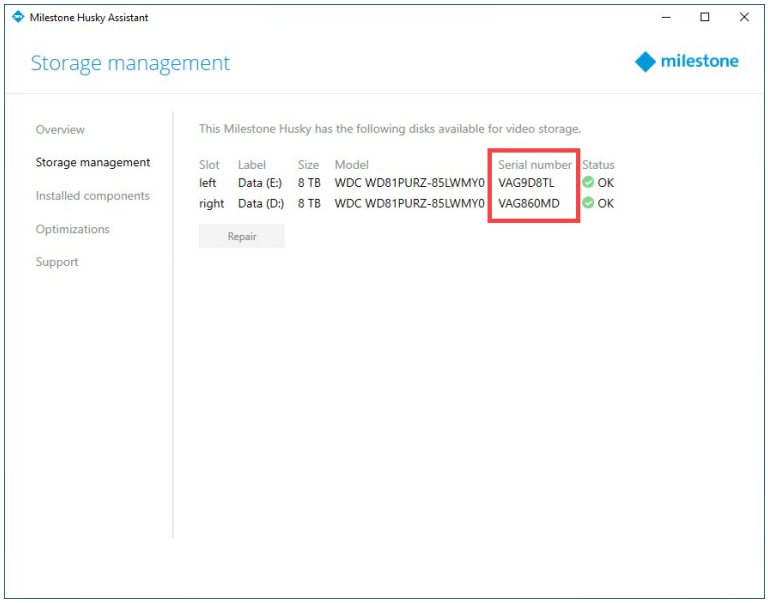
Find the Milestone Husky unit serial number in Husky Assistant:

1. Open Husky Assistant.
2. On the Overview tab, find the serial number in the center of the window.



Find the serial numbers of the hard drives:

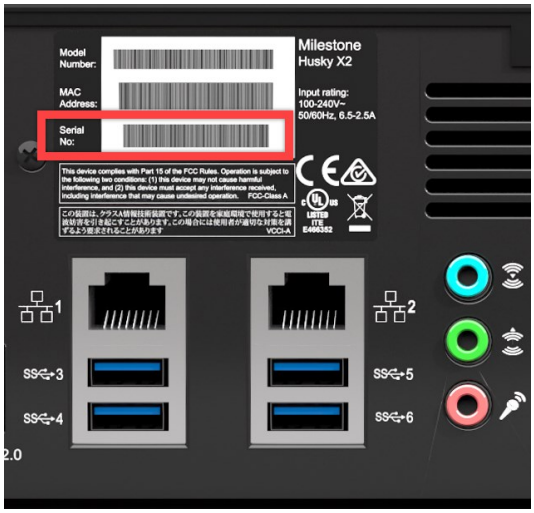
1. Select the **Storage Management** tab.
2. Locate the serial numbers in the **Serial number** column.



Serial number labels

Find the Milestone Husky unit serial number on the back of the unit.

1. Locate the barcode that has the serial number.



2. Scan the barcode to see the serial number.

> You can also scan the QR code to get to the Milestone Husky support and information page. (https://www.milestonesys.com/HuskyX2-support/).

Find the hard drive serial number on the front of the hard drive.

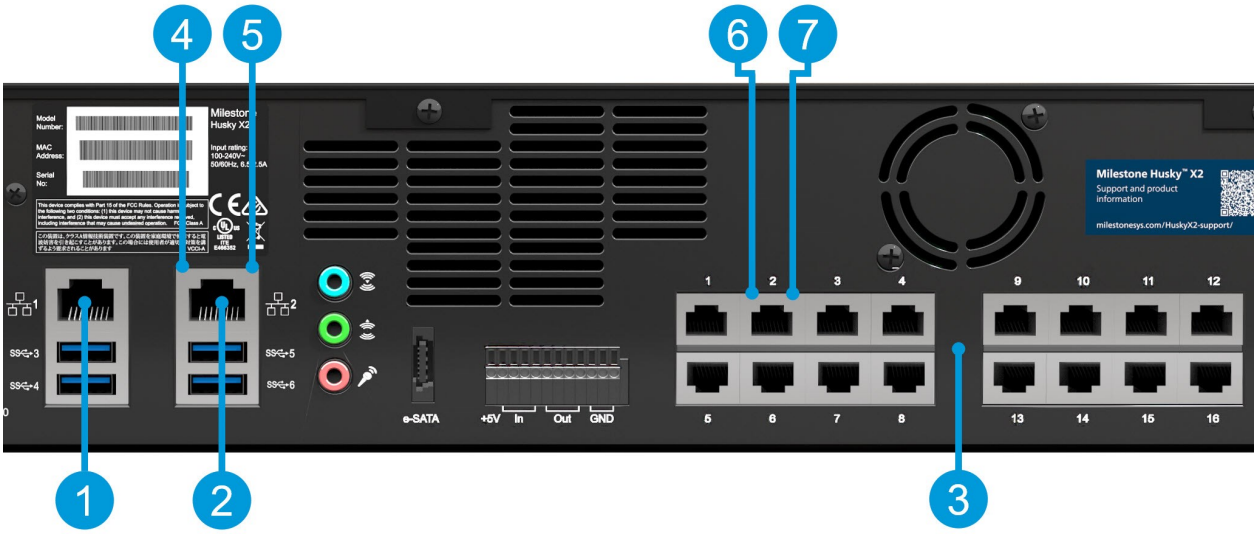
Network interfaces

This section describes the network interfaces that you connect the different types of network traffic to. The network bandwidth requirements for the different types of traffic are usually not the same. The different types of network traffic are:

- Management
- Viewing
- Camera
- Storage

Connectors

The table below helps you choose the right network interface for the different types of network traffic. The LED status indicators can help check if the wanted network link speed is established.



Connectors	Description
1. LAN port 1 (1Gb/s)	Connect your local area network with connection to the internet, if available. This network is for management and viewing.
2. LAN port 2 (1Gb/s)	Connect your camera network or Connect your network for viewing if your unit is equipped with a PoE+ network switch
3. PoE+ network switch 16 x 1Gb/s (Option)	Connect your cameras or Connect other devices powered by PoE

LED status indicators	LED colors	Description
4. LAN ports activity	Flashing yellow	Actively transmitting or receiving packets
5. LAN ports link speed	Green	1Gb/s
	Yellow	100Mb/s
	Off	10Mb/s
6. PoE switch LAN ports activity	Flashing yellow	Actively transmitting or receiving packets
7. PoE switch LAN ports power delivery	Green	Power delivery OK
	Red	Power delivery failure

Troubleshoot a network interface

1. Check the status indicators on the LAN port or the PoE switch LAN port:
   - If the link speed indicator does not light up, check all cable connections
   - If the activity indicator does not light up, the network driver files might be damaged or missing. Remove and reinstall the drivers if applicable.
   - Use another connector on the switch or hub

   Use Husky Switch Manager on page 27 to get detailed status information on a specific PoE switch LAN port.

2. In Windows 10, go to **Network status > Change adapter options** to check that the LAN ports are enabled and connected.
3. Make sure that the LAN ports and switches on the network are all set to the same data transmission speed and duplex. For more information, see the documentation for each network device.
4. Make sure that all network cables are of the proper type and that the cables do not exceed the maximum length.

   If all troubleshooting fails, contact your Milestone reseller.

Husky Switch Manager

> This section only applies to the Milestone Husky HX2P16 model with a 16 x 1Gb/s PoE+ capable network switch.

After you have connected your cameras and other devices to the built-in Power over Ethernet (PoE+) capable network switch, you can use Husky Switch Manager to get an overview of connected cameras and devices. You can monitor the current status of the ports and connected devices. Husky Switch Manager helps you find an IP address or troubleshoot a camera or another device.

Find the shortcut for Husky Switch Manager on the Windows desktop.

Husky Switch Manager gives you access to:

Switch status:

- PoE summary information
- A list overview of all the available ports
- A list overview of all the connected devices
- Port-specific information about the power consumption

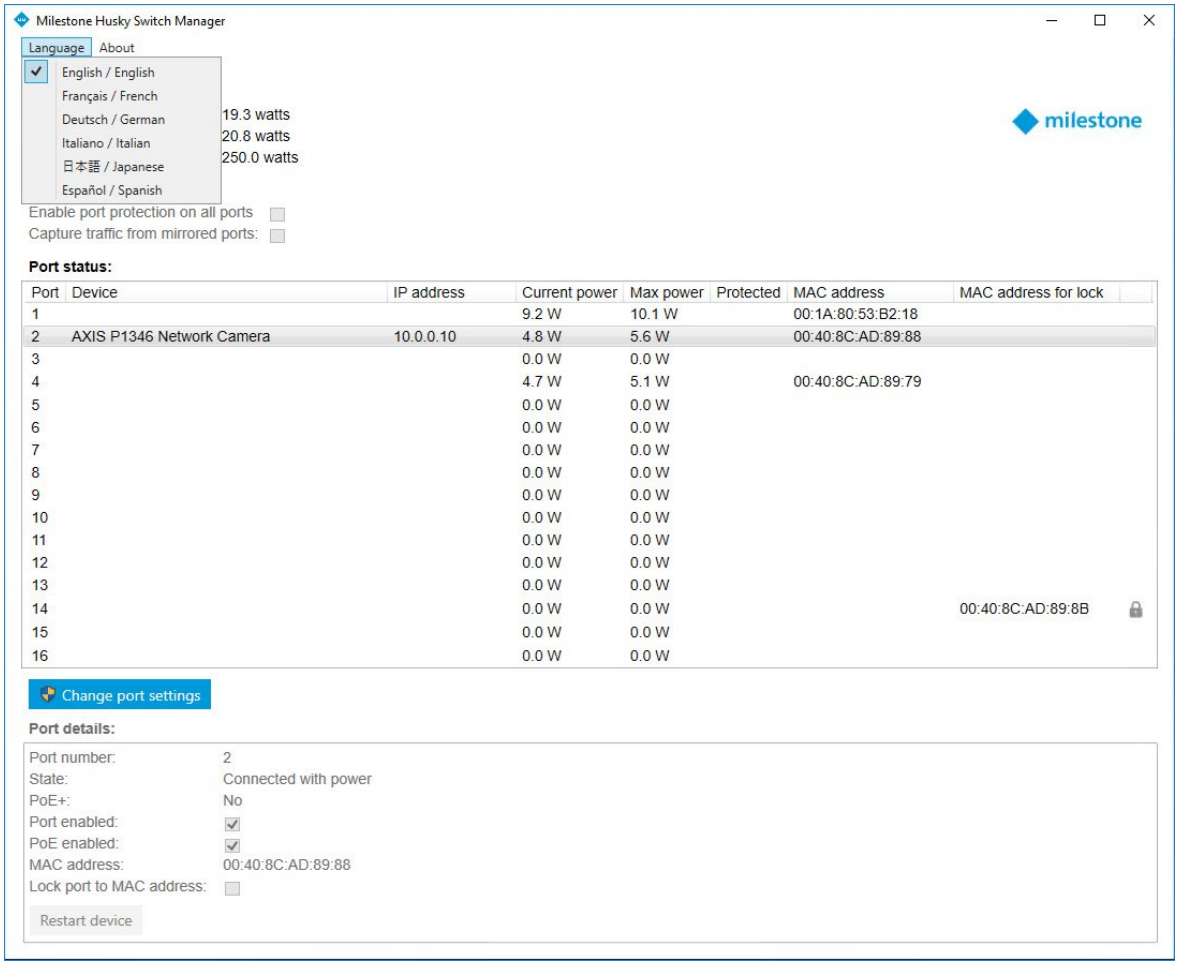
Switch management:

- Enable or disable a port
- Enable or disable PoE for a port
- Lock a port to a MAC address
- Enable port protection on all ports
- Capture traffic from mirrored ports
- Restart a device

Choose your language

To select your preferred language:

1. Navigate to the upper-left corner of the screen and click **Language**.



2. Select your preferred language from the list of available languages.

> Husky Switch Manager chooses English by default. All language changes require a restart of Husky Switch Manager.

Switch status

The **Managed switch** status on the top of the screen gives you an overview of the following information for the switch:

Status element	Description
Current power	A sum of all the power in watt used by the connected devices.
Max power	A maximum of all the power in watt used by the connected devices.
Total power available	The total amount of power in watt that the switch can deliver.

The **Global settings** are selectable features that apply to all ports:

Status element	Description
Enable port protection on all ports	Port protection is a security feature that makes it impossible for connected devices to access other ports on the switch.
Capture traffic from mirrored ports	Port mirroring can be used for troubleshooting network issues on a specific port. When selected, the **Enable port mirroring** option under **Port details** appears.

The **Port status** list in the middle of the screen gives you an overview of the following information for all ports:

Status element	Description
Port	The unique port number.
Device	The name of the device connected to the port. The device name does not appear until you add the device to the XProtect system.
IP address	The IP address of the device connected to the port. The IP Address does not appear until you add the device to the XProtect system. If a device is moved from PoE camera port 1-8 to PoE camera port 9-16 or the opposite, the device can get a new IP address. As a result, you must add the device to the XProtect system again.
Current power	Current power consumption in watt.
Max power	Maximum value of the power consumption in watt. The value is reset after a device is restarted or disconnected for one minute.
Protected	Shows if port protection is enabled.
Mirror port	Shows if port mirroring is enabled.
MAC address	Shows the physical address (MAC address) of the device connected to the port.
MAC address for lock	Shows the physical address (MAC address) of the device that is locked to the port.

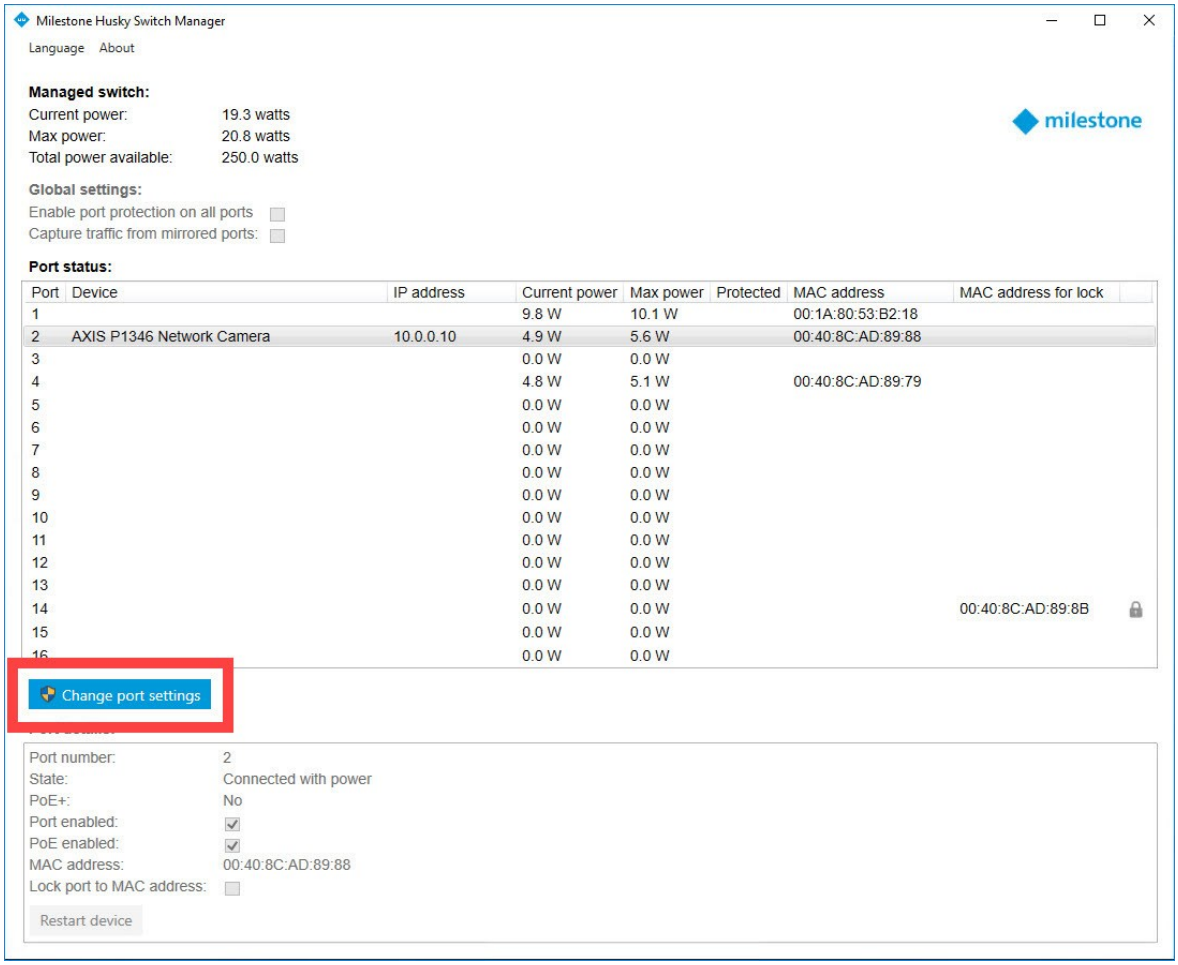
To learn more about a specific port and the connected device, select the relevant port and review the **Port details** at the bottom of the screen. The following information appears:

Status element	Description
Port number	Shows the port number of the selected row in the Port status list above.
State	Shows the current port state. States may be: • Connected with power • Connected • Disconnected
PoE+	Shows if the connected device uses the PoE+ standard.
Port enabled	Port setting: Enable or disable the port.
PoE enabled	Port setting: Enable or disable PoE.
MAC address	Shows the physical address (MAC address) of the device connected to the port.
Lock port to MAC address	Port setting: Locks the port to the connected device. Other devices will not be able to use this port.
Enable port mirroring	Port setting: Enable this feature for troubleshooting network traffic by routing the traffic from the selected port to the default gateway for further investigation. Only available if **Capture traffic from mirrored ports** in the **Global settings** is selected.
Capture mirrored traffic to	Shows the default gateway that is determined by the selected IP address range of the network switch. The IP address range splits into two subnets, one for each 8-port module.
Restart device	Sometimes you need to restart a camera to apply the settings that you have changed in the camera software. If your camera is powered by the network switch, you can disable and enable PoE to restart your device. The **Restart device** button helps you do that. Wait for the camera or other device to restart.

Switch management

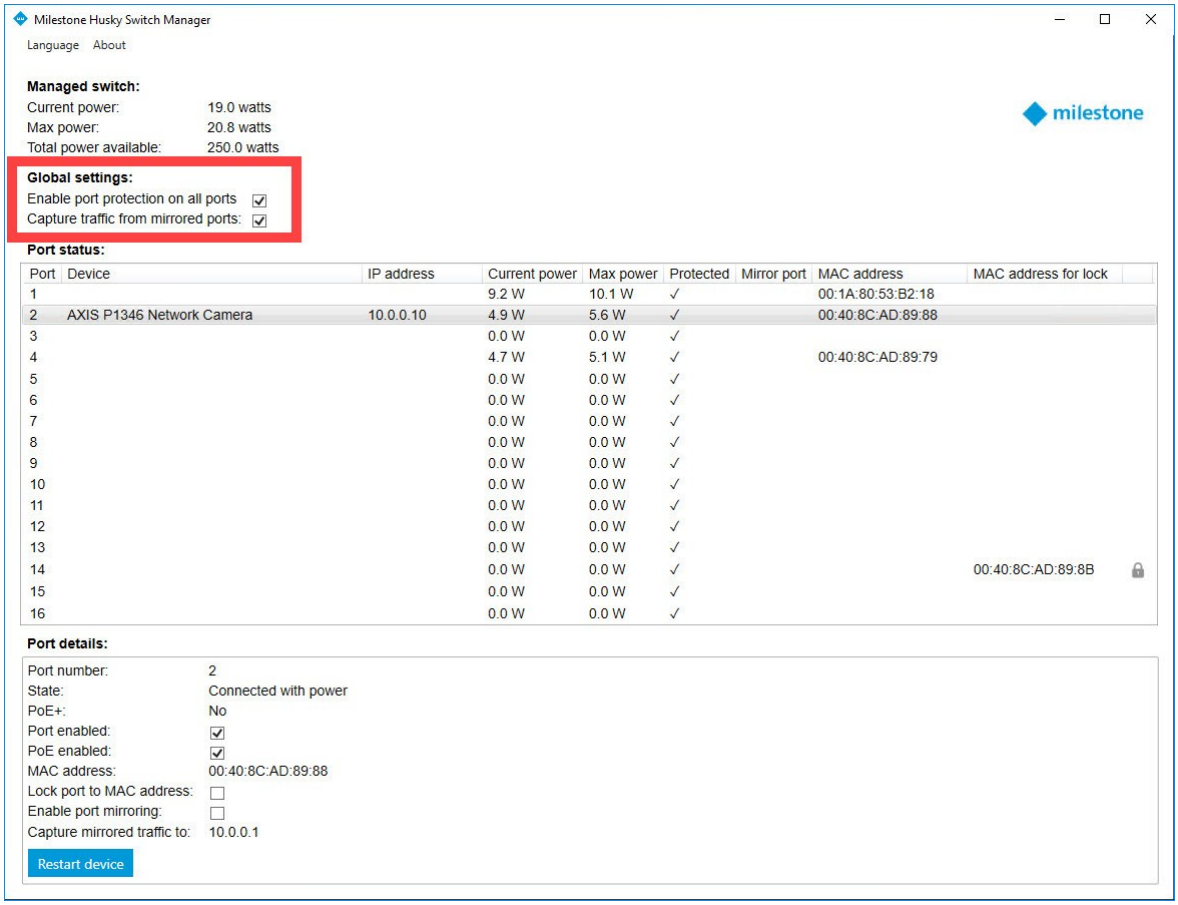
To start switch management:

1. Click **Change port settings** and accept any user account control warning.



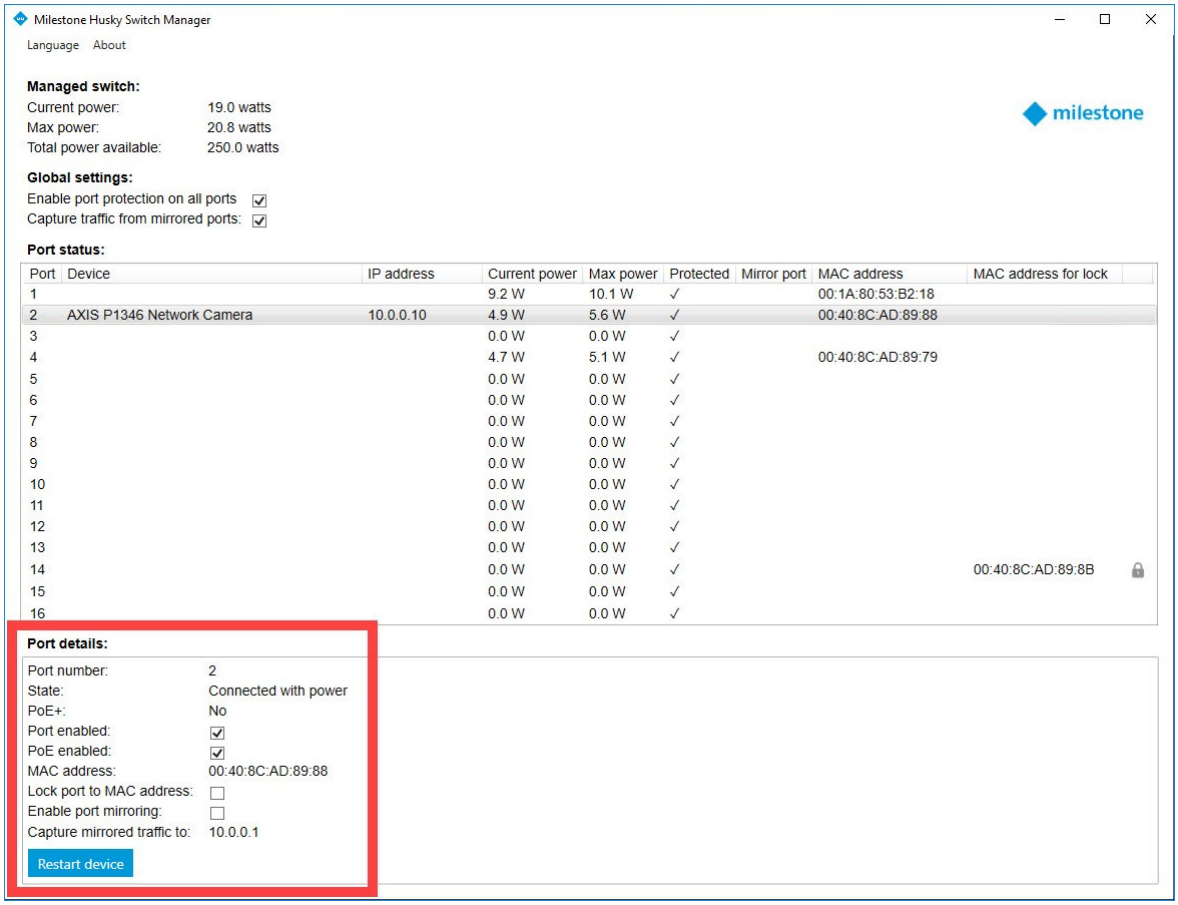
You are now able to change the port settings.

2. Choose your preferred **Global settings** by selecting or clearing the check boxes.



3. Select the individual port that you want to manage in the **Port status** list.

4. Select the desired options in the check boxes under **Port details** at the bottom of the screen.



Port	Device	IP address	Current power	Max power	Protected	Mirror port	MAC address	MAC address for lock
1			9.2 W	10.1 W	✓		00:1A:80:53:B2:18	
2	AXIS P1346 Network Camera	10.0.0.10	4.9 W	5.6 W	✓		00:40:8C:AD:89:88	
3			0.0 W	0.0 W	✓			
4			4.7 W	5.1 W	✓		00:40:8C:AD:89:79	
5			0.0 W	0.0 W	✓			
6			0.0 W	0.0 W	✓			
7			0.0 W	0.0 W	✓			
8			0.0 W	0.0 W	✓			
9			0.0 W	0.0 W	✓			
10			0.0 W	0.0 W	✓			
11			0.0 W	0.0 W	✓			
12			0.0 W	0.0 W	✓			
13			0.0 W	0.0 W	✓			
14			0.0 W	0.0 W	✓			00:40:8C:AD:89:8B
15			0.0 W	0.0 W	✓			
16			0.0 W	0.0 W	✓			

- **Enable or disable a port**
- **Enable or disable PoE for a port**
- **Lock a port to a MAC address**
- **Enable port mirroring**

> Only available if **Capture traffic from mirrored ports** in the **Global settings** is selected.

- **Restart a device**

Husky IO Module

The Husky IO Module is a part of your Milestone Husky product. It is a built-in IO module with four inputs and four outputs, and it is listed in the Management Client navigation pane under **Devices** as a camera. You can configure the IO module for use with **Rules and Events**.

For detailed feature descriptions and procedures for configuration and maintenance, download the XProtect VMS Administrator manual from the Milestone website. (https://www.milestonesys.com/support/help-yourself/manuals-and-guides/).

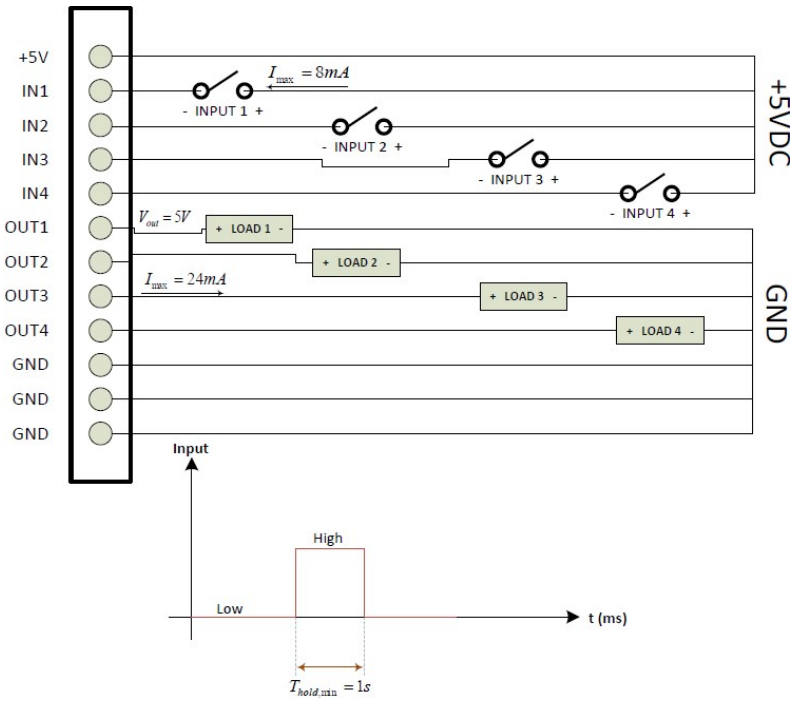
Husky IO Module setup

The module is installed and added as a hardware device with the following details:

Hardware Device Name	Husky IO Module
Address	127.0.0.1
Port	1337
Device Driver	Husky IO Module

If you have deleted the Husky IO Module in the Management Client and want to add it again, use the Reconfigure option in Husky Assistant. For more information, see Reconfigure on page 16.

Connection diagram



Recovery

Your Milestone Husky unit has a built-in recovery option, which resets your unit to the factory default state and lets you start over and reconfigure your unit from scratch.

Recovery will:

- Make a new Windows installation
- Run Husky Assistant to configure your unit
- Help you install Milestone XProtect

> All data on the Windows (C:) drive will be lost, and your XProtect system will not record any video during the recovery of your unit. You can save the Milestone XProtect VMS configuration before you start the recovery.

> Data on the Data (D:) and (E:) drives will not be deleted.

For detailed feature descriptions and procedures for configuration and maintenance, download the XProtect VMS Administrator manual from the Milestone website. (https://www.milestonesys.com/support/help-yourself/manuals-and-guides/).

To start the recovery process:

1. Restart your unit.
2. Press F11 during the boot process.
3. Your unit boots into recovery mode. Follow the instructions to complete the process.

> For more information on first time use, see the Milestone Husky X2 Getting started guide, which you can download from the Milestone Husky support and information page (https://www.milestonesys.com/HuskyX2-support/).

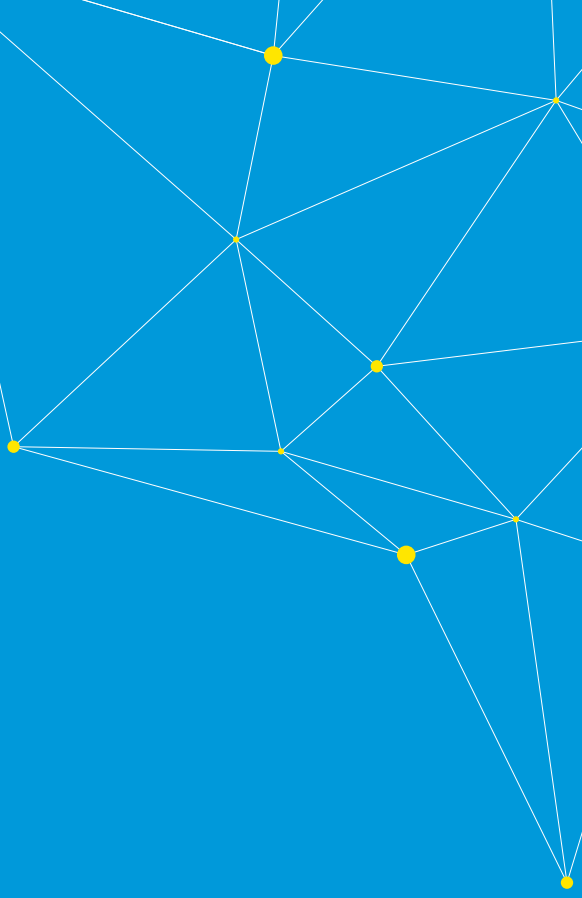
Upgrade

Your Milestone Husky unit can run with any product variant and version of Milestone XProtect VMS determined by the Software License Code (SLC). Your Milestone Husky unit has a preloaded XProtect VMS version ready to be installed, but you can always download and install a newer or older version of Milestone XProtect VMS that matches your license. Go to the Milestone Husky owners support and information page (https://www.milestonesys.com/HuskyX2-support/).

You can upgrade your entire system configuration from one product version to another, for example from XProtect 2018 R2 to XProtect 2019 R1 fairly fast and easy. Install the new product on top of the old version without removing the previous version.

For detailed feature descriptions and procedures for configuration and maintenance, download the XProtect VMS Administrator manual from the Milestone website. (https://www.milestonesys.com/support/help-yourself/manuals-and-guides/).

Remember to apply available VMS optimizations after the upgrade. For more information, see Apply optimizations on page 14.



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About Milestone

Milestone Systems is a leading provider of open platform video management software; technology that helps the world see how to ensure safety, protect assets and increase business efficiency. Milestone Systems enables an open platform community that drives collaboration and innovation in the development and use of network video technology, with reliable and scalable solutions that are proven in more than 150,000 sites worldwide. Founded in 1998, Milestone Systems is a stand-alone company in the Canon Group. For more information, visit https://www.milestonesys.com/.