PERCEPT

Genetec™ Security Center VMS / IONODES PERCEPT Body Camera

Integration Guide

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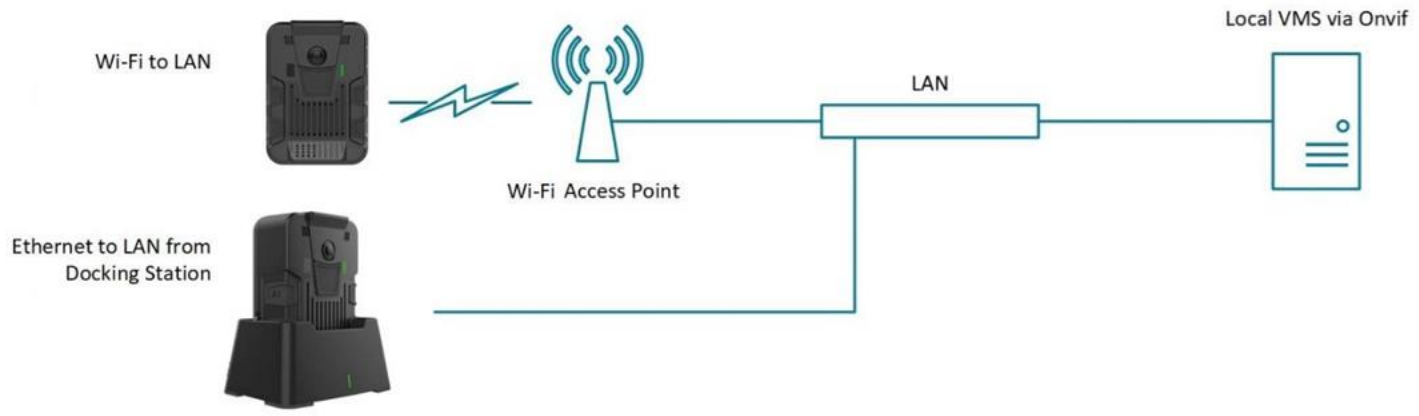
1 Introduction

One of the unique features of the IONODES PERCEPT Body Camera is that it is an open platform device, allowing for integration with industry-leading VMS solutions such as Genetec™ Security Center (GSC). It implements extensive features of ONVIF profiles G, S and T, along with flexible network configurations (LAN, Wi-Fi, 4G/LTE) for live video and edge recording retrieval.

This integration is supported as of IONODES PERCEPT firmware 10.3.0.12 and has been validated with GSC 5.8 GA and higher. This document shows steps required for a simple integration scenario. Integrators should adjust to their specific needs and system environment.

2 Typical Deployment



A typical deployment scenario includes the PERCEPT Body Camera, a Docking Station , a Wi-Fi access point, LAN infrastructure and the local VMS (GSC in this case). The PERCEPT Body Camera can record data either directly to GSC through Wi-Fi streaming, or to its internal memory and later offload recordings to GSC via Wi-Fi or the Docking Station's wired Ethernet.

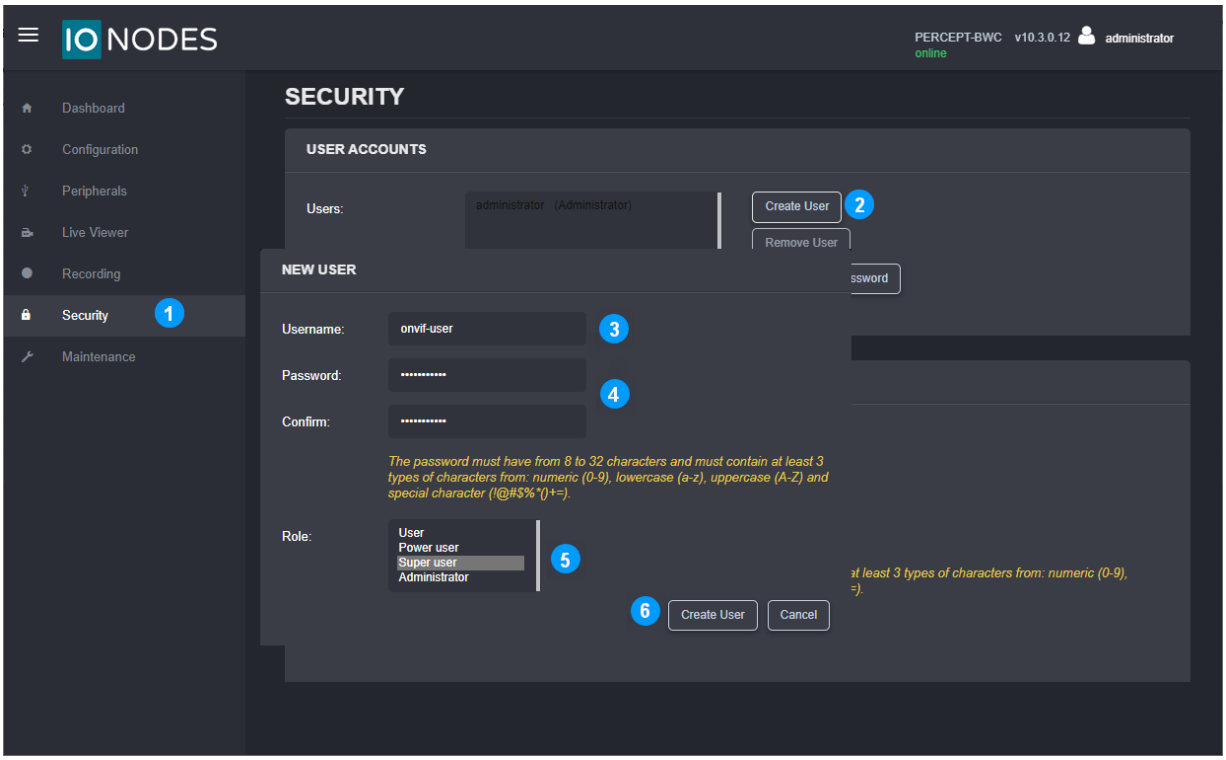
3 Configuring the PERCEPT Body Camera

To get started, you'll need to initialize the PERCEPT Body Camera's network connectivity with the Video Management System (VMS) via Wi-Fi. Refer to the PERCEPT Quick Start Guide for network initialization instructions.

Note: Instructions in this guide assume the PERCEPT Body Camera's initial state is set to factory default. If the body camera was previously used, it is recommended to reset it before integrating it with GSC.

3.1 Create a new dedicated ONVIF user (recommended)

The default administrator account can be used for integrating the body camera to the VMS. However, it is recommended to create a dedicated ONVIF user account for this purpose. The role "Superuser" gives the account permissions for almost everything (the only exception is managing other users on the device). This role is required to perform firmware upgrades from GSC.

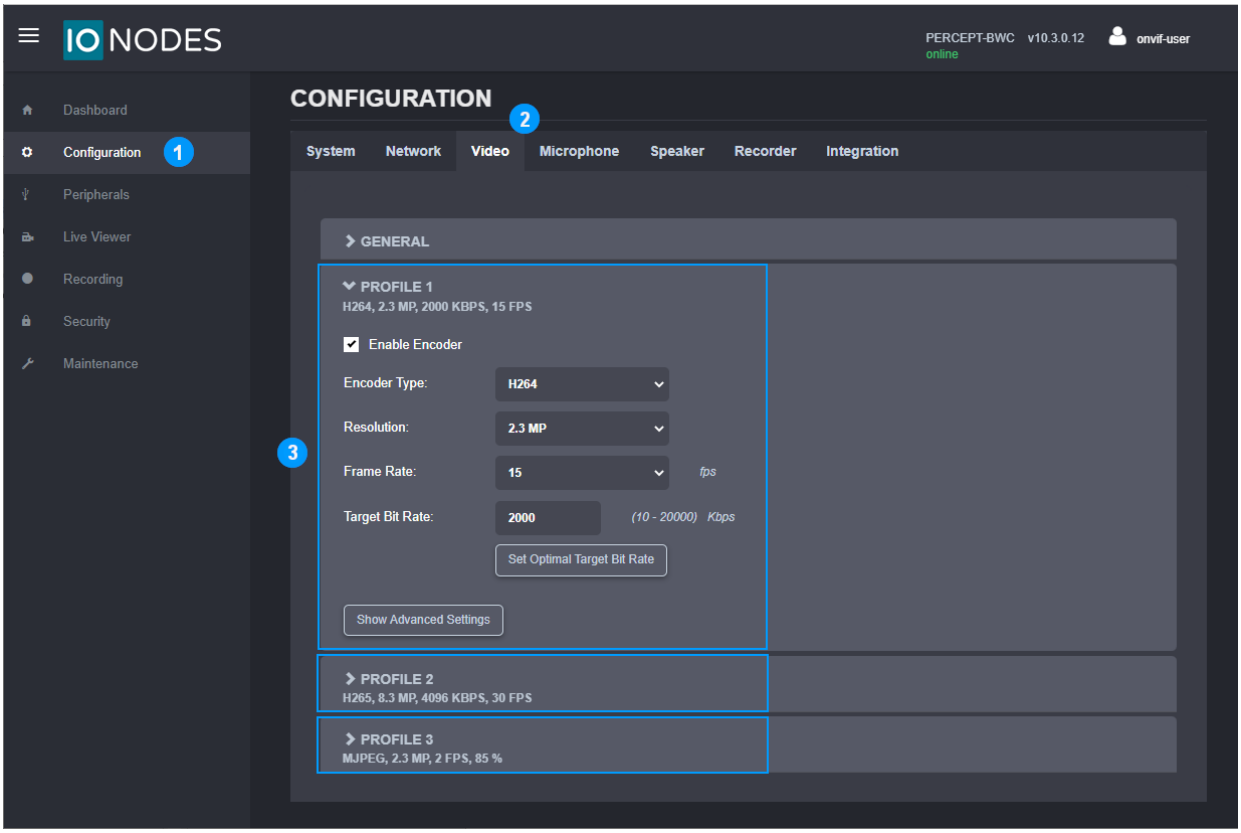


1. Once logged into the PERCEPT Body Camera's Web GUI, click on the **Security** page
2. Click on the **Create User** button

3. In the **New User** pop-up window, enter **Username**
4. Enter **Password** and repeat it to confirm
5. Select **Super user** Role
6. Click on **Create User**

3.2 Configure video profiles

The PERCEPT Body Camera supports two (2) H.264/265 video encoder profiles and one (1) MJPEG profile. Each profile enabled in the PERCEPT Body Camera will be accessible to GSC.

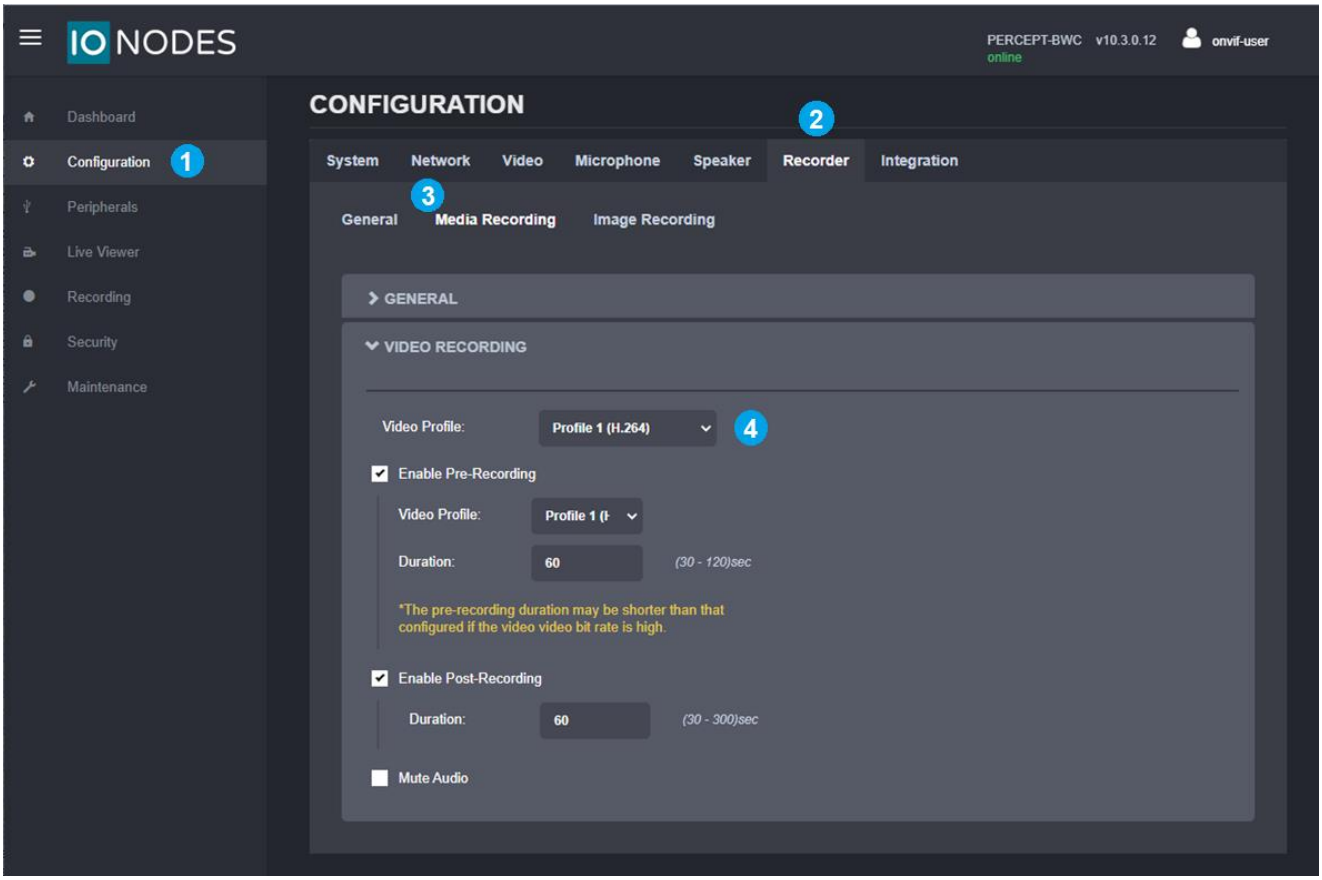


1. From the **Configuration** page
2. Select the **Video** tab
3. Enable and configure each video profile as required

Note: The *Encoder Type* (codec) and enabled profiles are detected by GSC when integrating the body camera. These settings must therefore be configured in the PERCEPT Body Camera before adding the device to GSC. Changing *Encoder Type* will reboot the device.

Note: Once added, modifications should only be done from within GSC's Config Tool and not from the device's web interface.

3.3 Setup local recording on the body camera

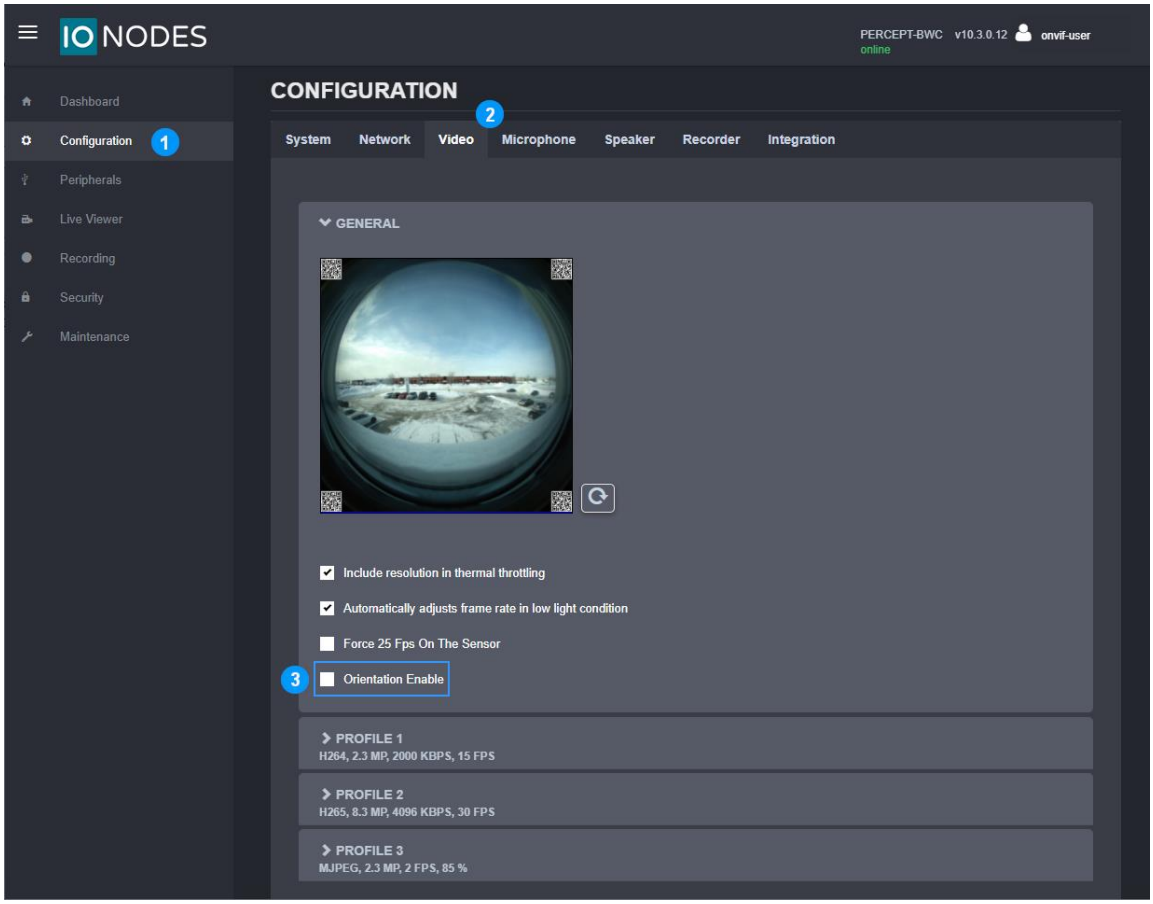


1. From the **Configuration** page
2. Select the **Recorder** tab
3. Select the **Media Recording** subtab
4. Select the Video Profile for edge/onboard storage recording.

Note: Profile 3 (MJPEG) is not supported for edge/onboard storage recording. To use local recording on the PERCEPT Body Camera, Profile #1 and/or Profile #2 must be enabled.

3.4 Disable orientation metadata

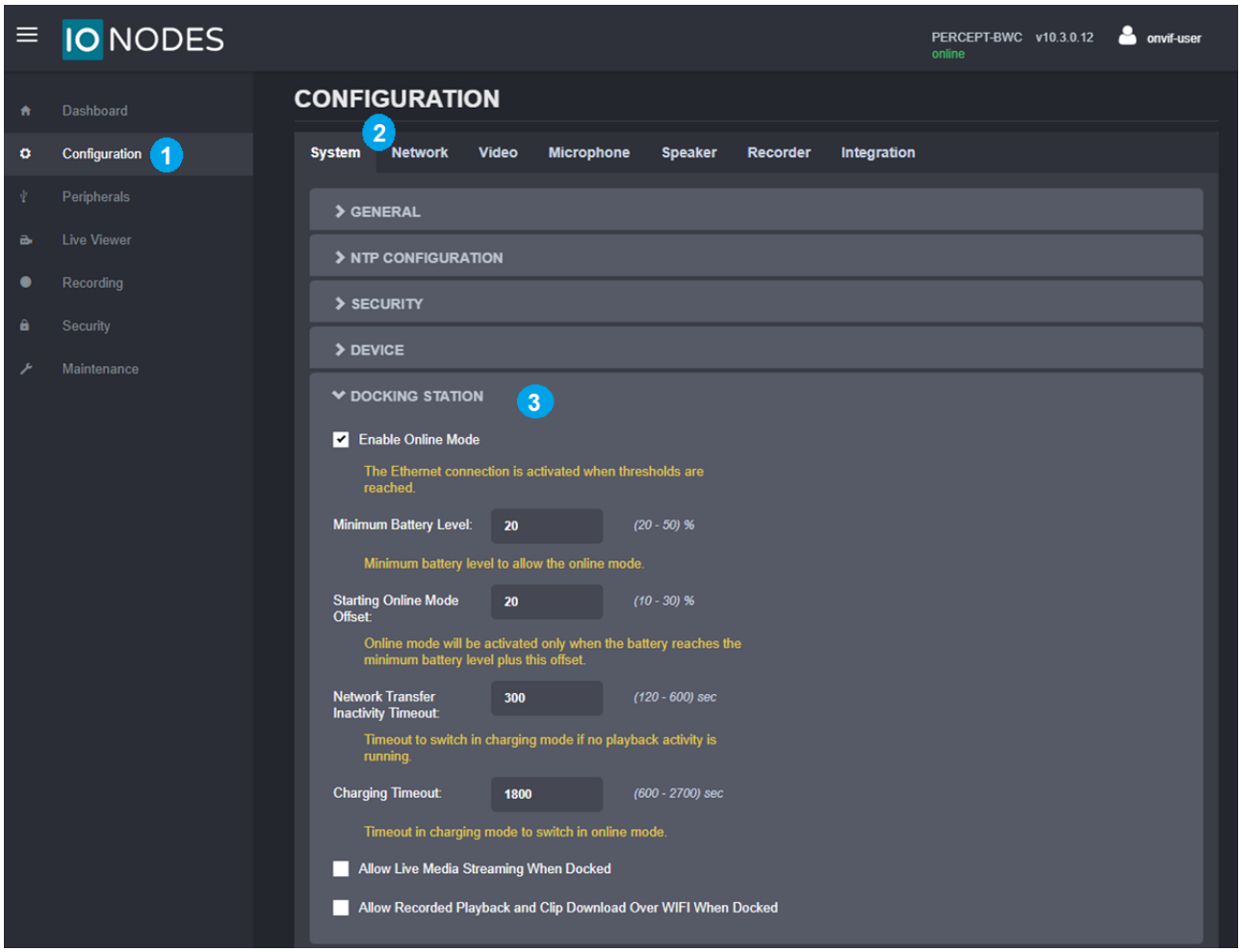
The PERCEPT Body Camera includes orientation metadata used by some video rendering software for stabilization of dewarped image. This feature is not supported by Genetec™ Security Desk and must be disabled in the body camera.



1. From the **Configuration** page
2. Select the **Video** tab
3. Uncheck the **Orientation Enable** box

3.5 Enable docking station data transfer

When using a PERCEPT-DCK docking station for offloading data to the VMS, the user needs to ensure that Online Mode (data transfer via Ethernet) is enabled.



1. From the **Configuration** page
2. Select the **System** tab
3. Select the **Docking Station** subtab and make sure that “Enable Online Mode” is checked

Note: If edge retrieval is enabled, it can create a bandwidth surge of more than 200Mbps when the body camera starts offloading data to the VMS. Please ensure that the network can handle the increased traffic.

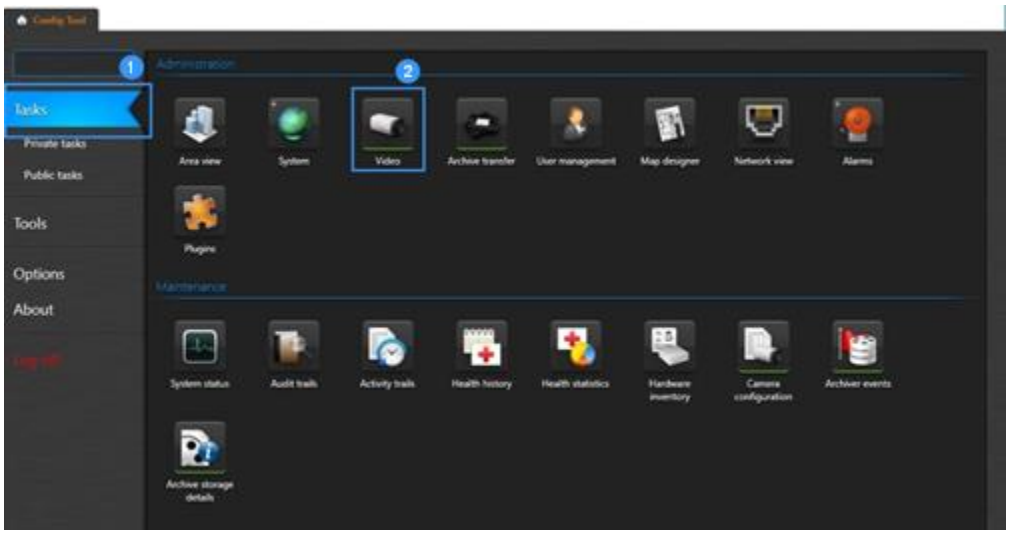
Note: For configuring advanced settings related to the behavior of the Docking Station please refer to the PERCEPT Docking Station user manual.

4 Integrating the PERCEPT Body Camera with Security Center

Now that the PERCEPT Body Camera is configured, it's time to integrate it to Genetec Security Center (GSC). This section describes the steps to enable various features of this integration using a basic setup of GSC 5.10. These instructions must be adapted to each user's specific system.

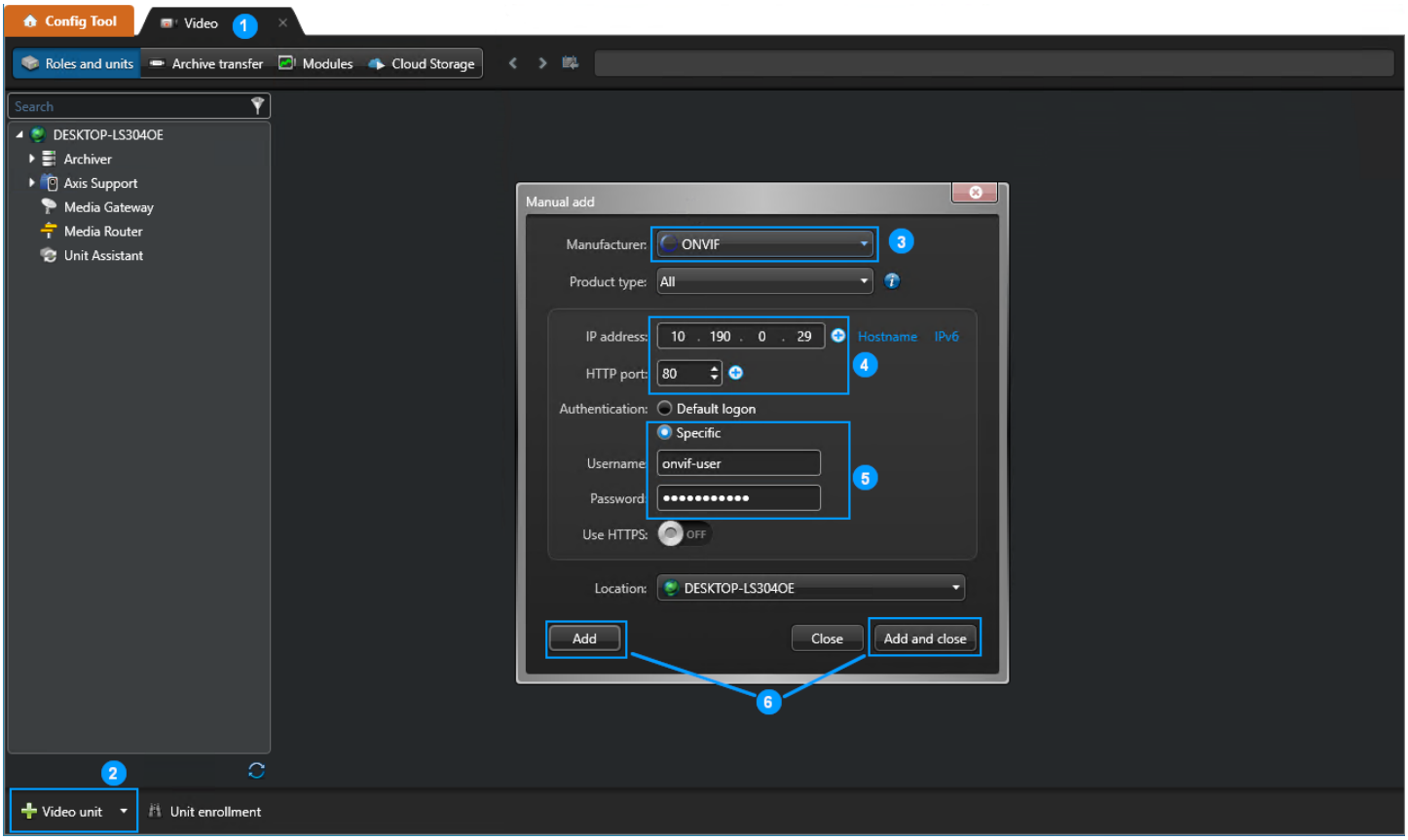
4.1 Add the PERCEPT Body Camera

Step 1 – Config Tool



1. In the GSC **Config Tool**, click on the **Tasks** page
2. Click on **Video** to add devices

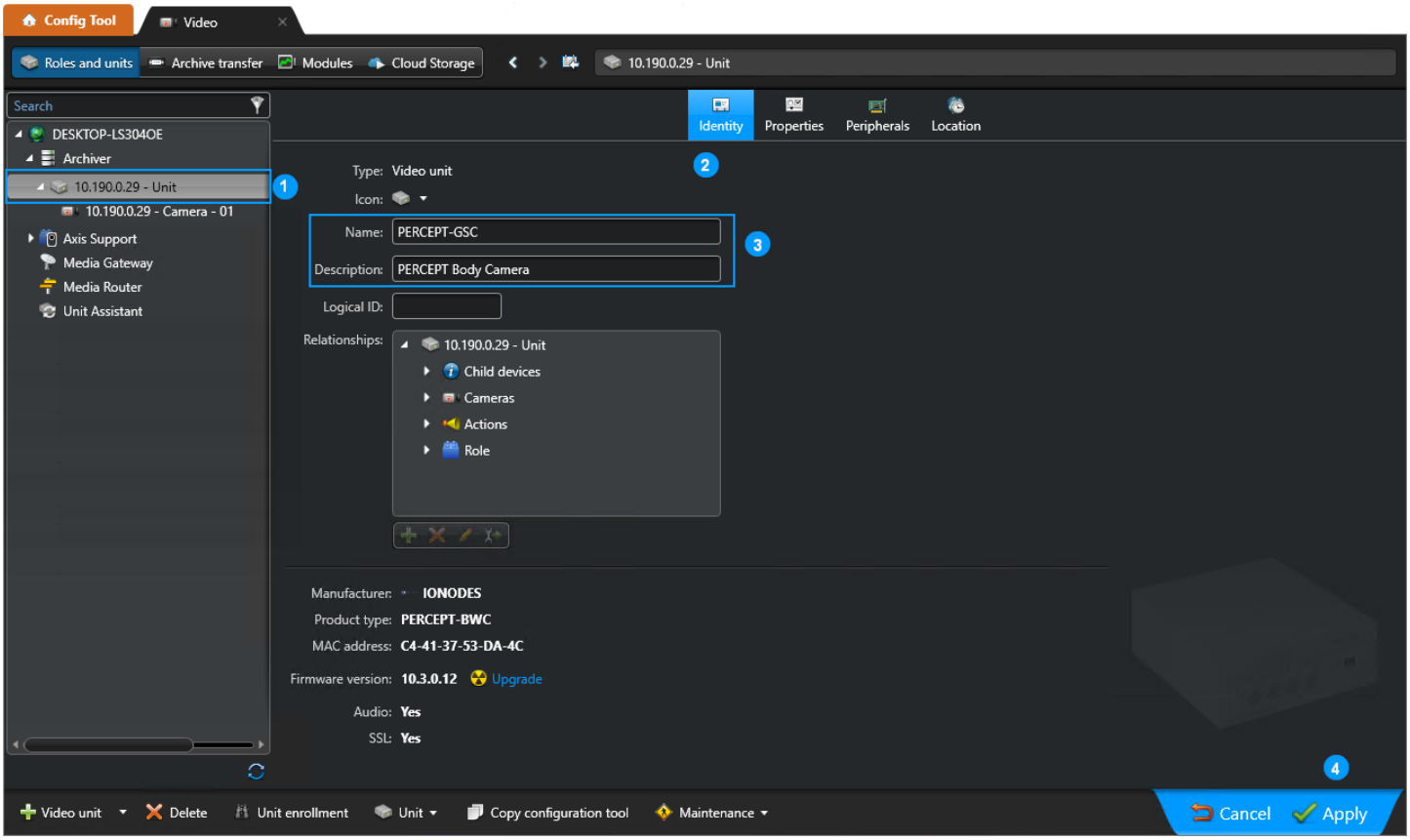
Step 2 – Add the PERCEPT Body Camera



1. From the **Video** tab, **Roles and units** subtab
2. Click on the **+ Video unit** to add a device
3. From the pop-up **Manual add** window, select **ONVIF** from the drop-down list
4. Enter the IP address of your PERCEPT Body Camera
5. If credentials were changed (as recommended), select Specific and enter them
6. Click **Add** or **Add and close** if adding only one device

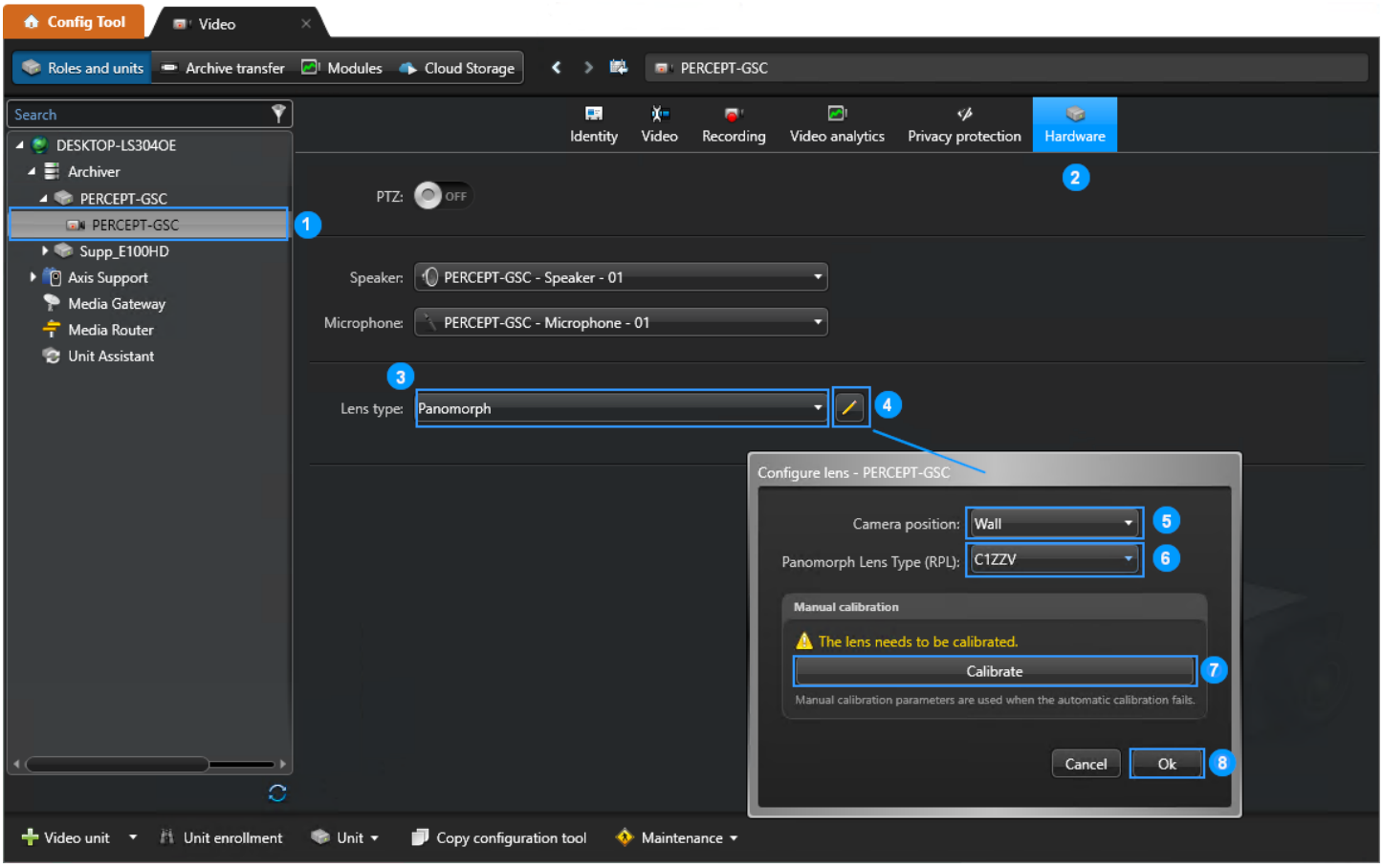
Note: The PERCEPT Body Camera can also be added through *Unit enrollment* discovery wizard, using ONVIF as the manufacturer.

Step 3 – Update its identity



1. Expand the **Archiver** and select the newly added PERCEPT Body Camera
2. Select the **Identity** tab
3. Update its **Name** and **Description**
4. **Apply** changes and confirm whether you want to rename related devices as well

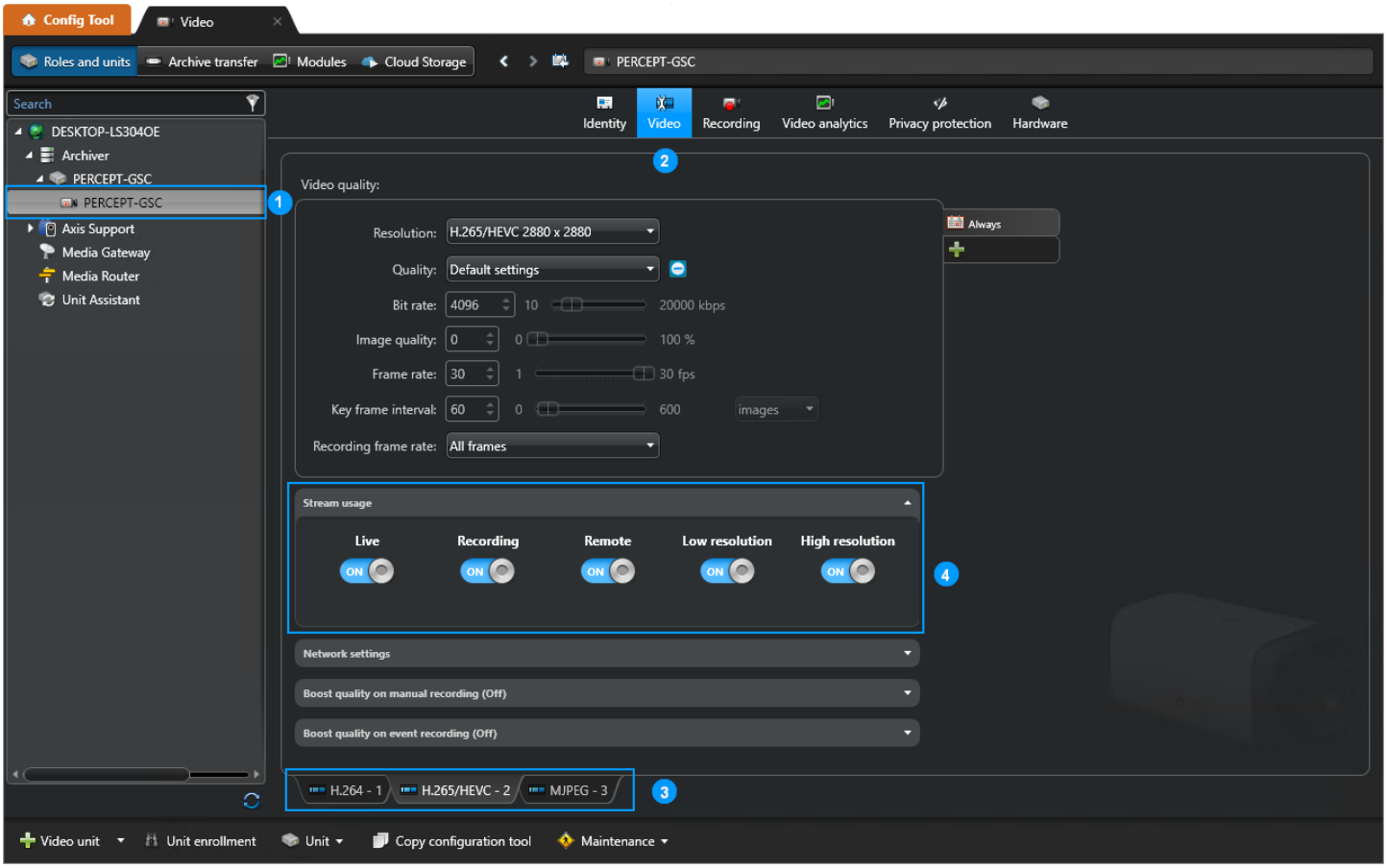
4.2 Configure Panomorph lens dewarping



1. Select the newly added PERCEPT Body Camera device
2. Select the **Hardware** tab
3. From the **Lens type** drop-down menu, select **Panomorph** and **Apply** changes
4. Click on the **Pen** icon to open the **Configure lens** pop-up window
5. In the **Configure lens** pop-up window, set **Camera position** to **Wall** (best approximation of the Body Camera usage scenario)
6. Set the **Panomorph Lens Type (RPL)** to **C1ZZV**
7. Click on the Calibrate button
8. Click **Ok** and **Apply** changes

Note: Image dewarping is not mandatory. When disabled, the full hemispheric image will be displayed. When enabled, it must be configured as per the above and orientation metadata must be disabled as per section 3.4.

4.3 Configure stream usage



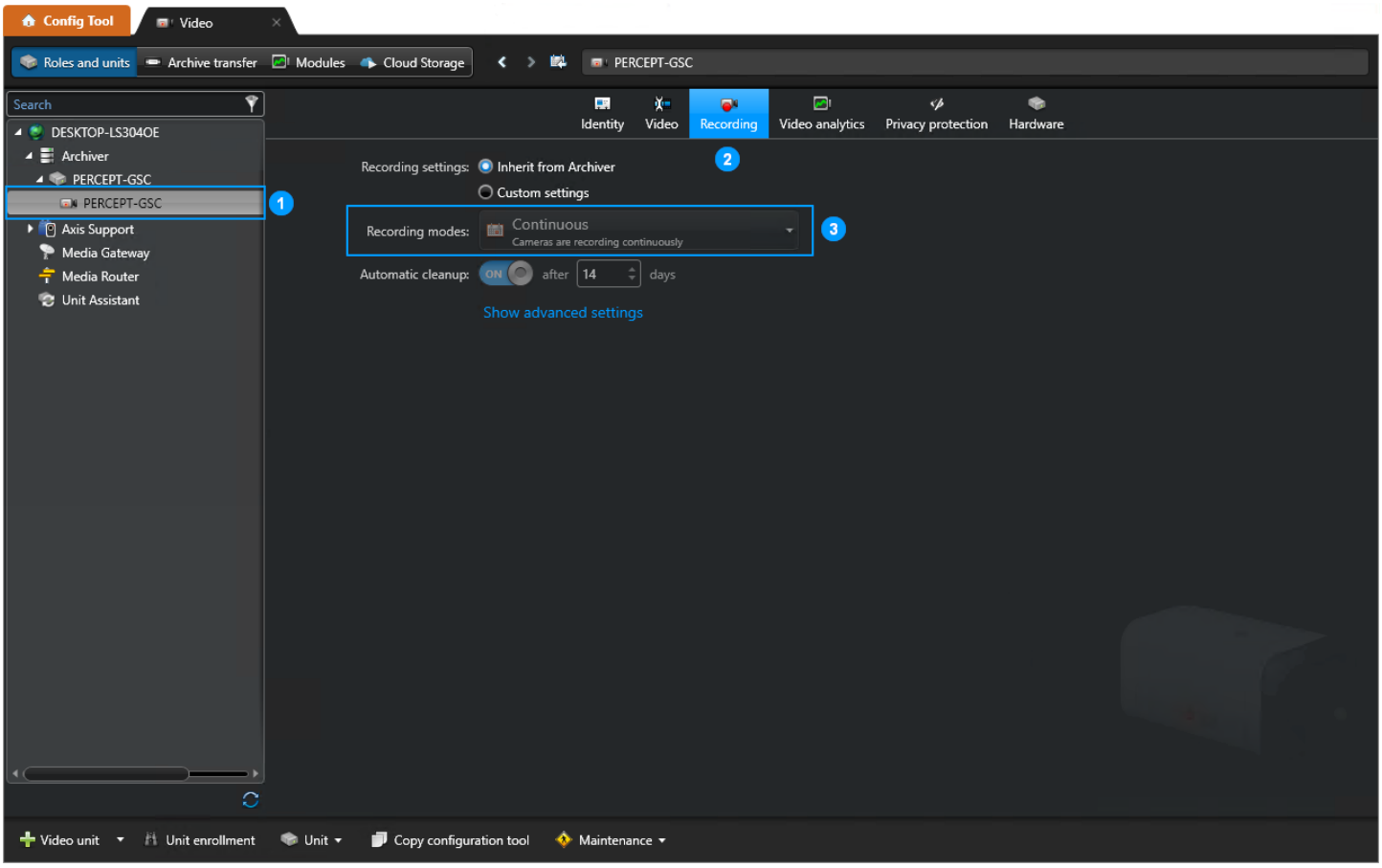
1. Select the newly added PERCEPT Body Camera device
2. Select the **Video** tab
3. Notice that all video profiles enabled within the PERCEPT Body Camera's configuration should be accessible
4. Configure **Stream usage** for each of these video profiles as required

4.4 Configure recording

Recording configuration depends on specific system deployment and requirements. This subsection describes some common scenarios.

4.4.1 Continuous recording

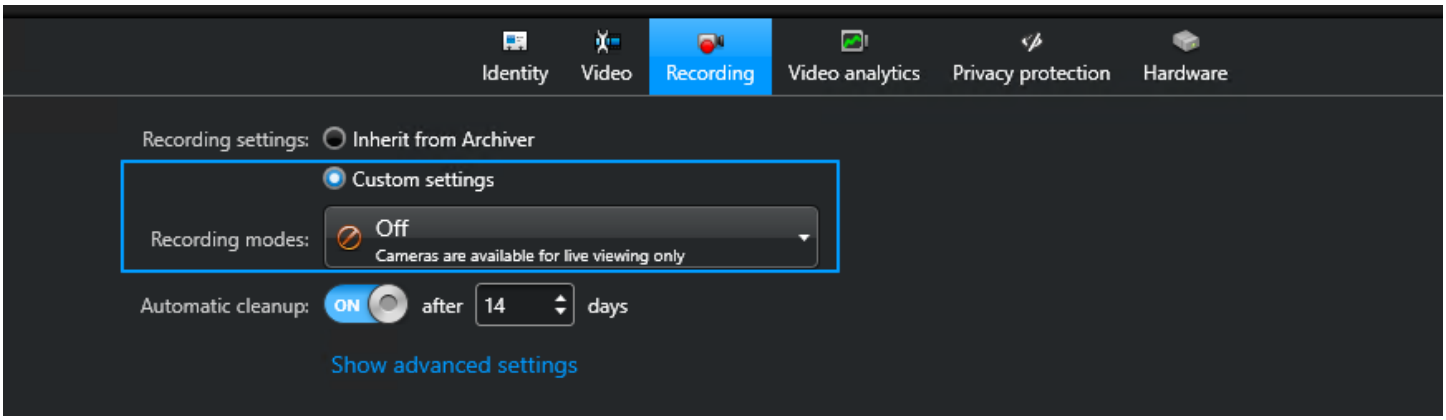
When configured for continuous recording, GSC will connect to the PERCEPT Body Camera and request the recording stream whenever the camera is within range of the Wi-Fi. This can be desirable when the body camera's intended use is within a limited area, such as a business place.



1. Select the PERCEPT Body Camera device
2. Select the **Recording** tab
3. Set the **Recording modes** as per requirements, noting you may need to check the **Custom settings** radio button above.

4.4.2 Edge storage only

Recording can also be turned off, in which case GSC will never request the recording stream from the body camera. Only the live stream can be requested on-demand by Genetec Security Desk. In this use case, the body camera can record data on its local storage then transfer it to GSC archiver upon reconnection. This configuration can be desirable if personnel is required to only record when away from the home base.

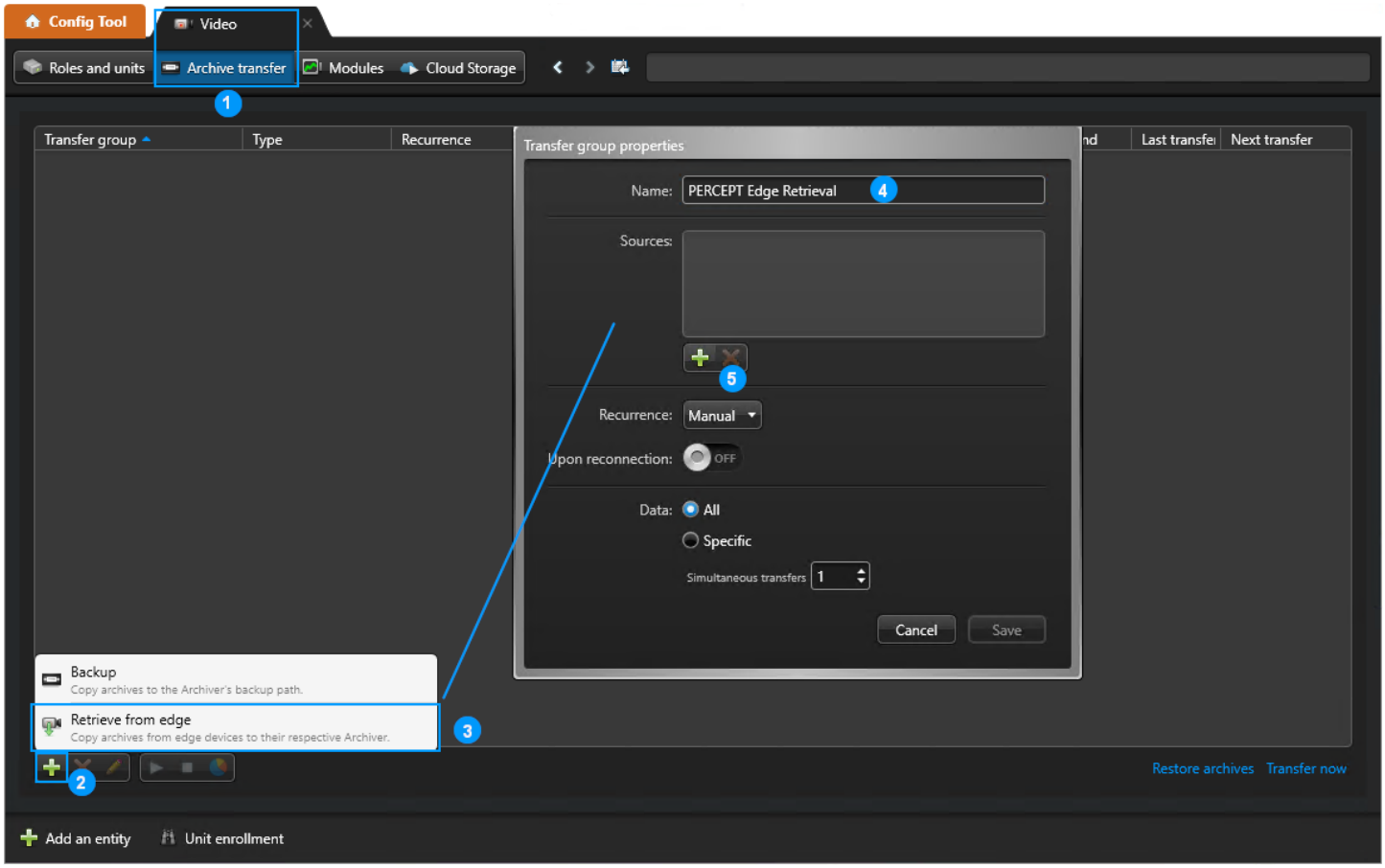


For this configuration, select **Custom settings**, then pick **Off** from the **Recording modes** drop-down list. Users will need to start/stop recording from the PERCEPT Body Camera function buttons, then transfer recordings to GSC archiver periodically. Edge storage transfers shall be configured accordingly (refer to subsection 4.5).

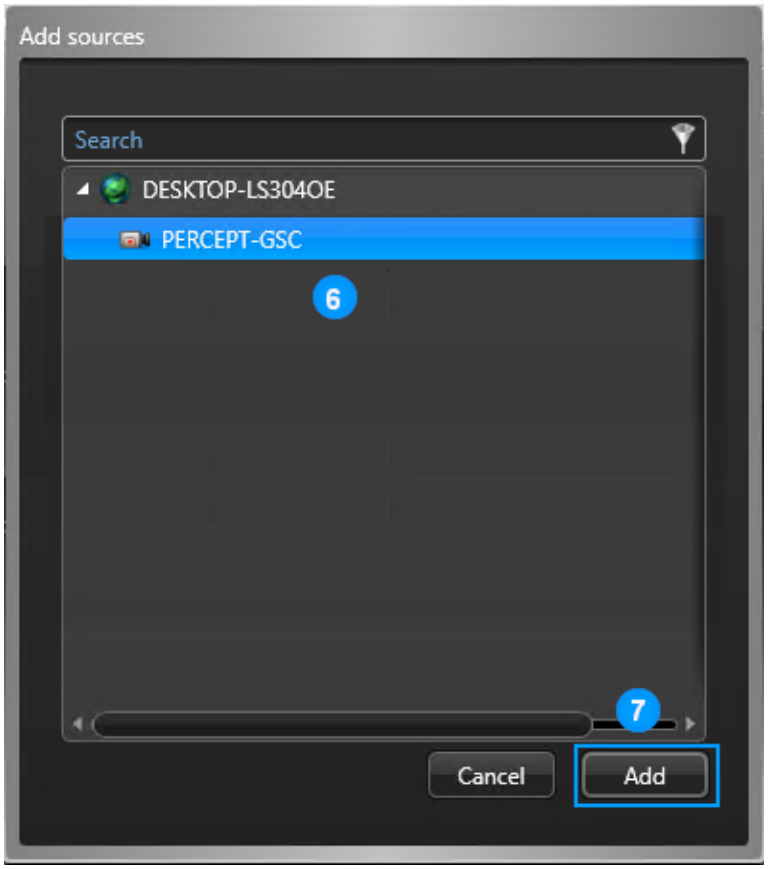
4.4.3 Other recording modes

Other recording modes are available from GSC. **On motion** should not be used with a wearable camera. **Manual** allows triggering recording from Genetec Security Desk. **Custom** allows configuring different modes at different times based on a schedule.

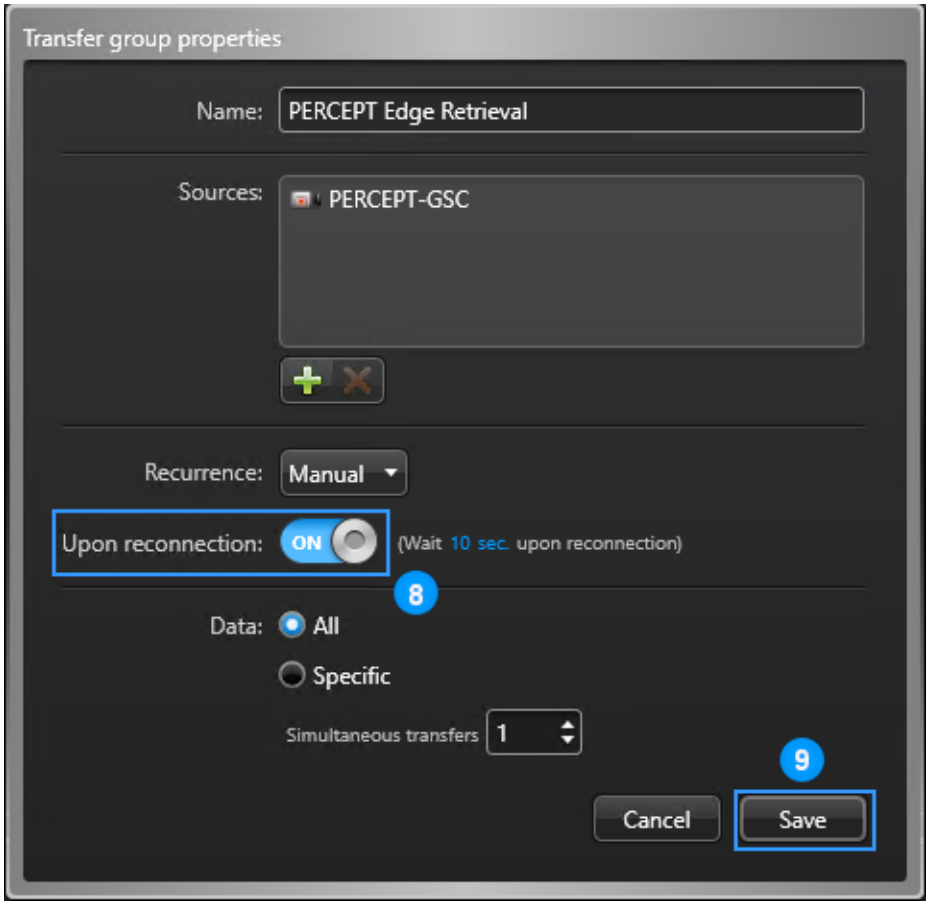
4.5 Configure edge storage transfer



1. From the **Video** Tab, **Archive transfer** subtab
2. Click **+**
3. Select **Retrieve from edge**
4. In the **Transfer group properties** pop-up window, enter a Name
5. Click **+** to add sources for edge video transfer



6. In the **Add sources** pop-up window, select the PERCEPT Body Camera(s)
7. Click **Add**



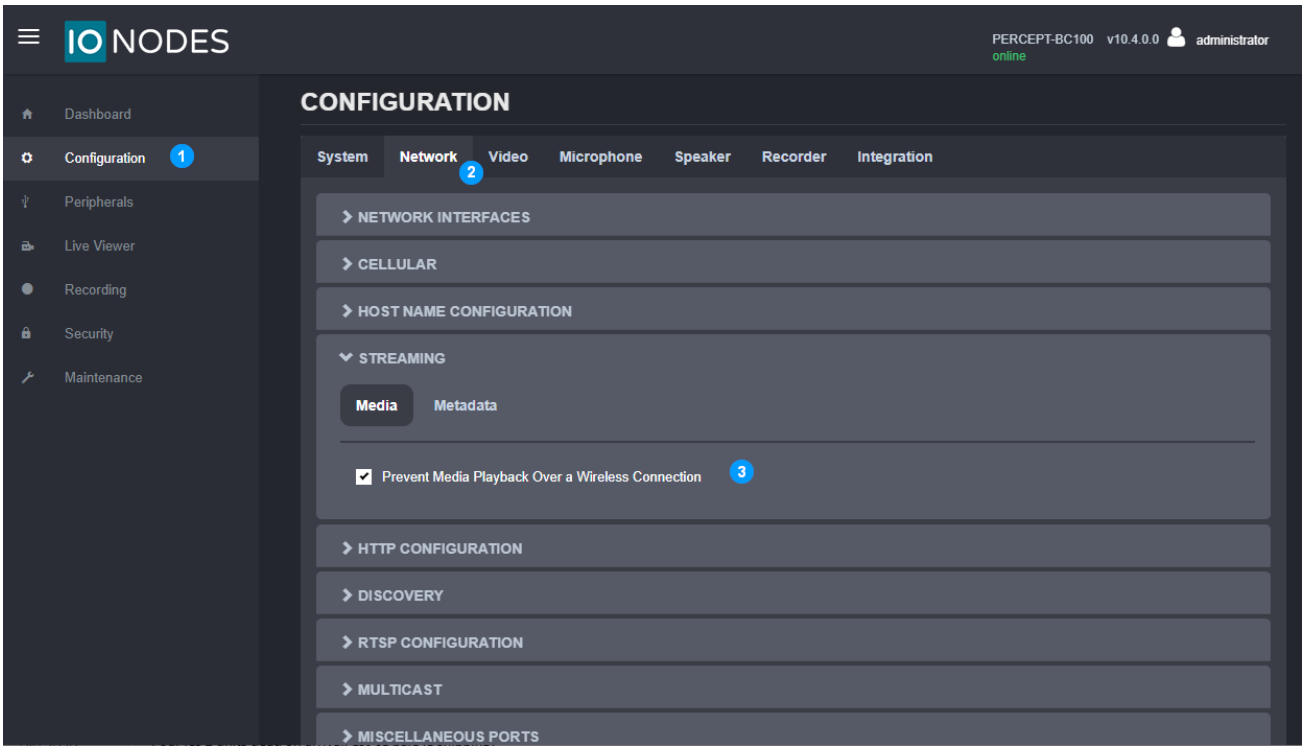
8. Back in the **Transfer group properties** pop-up window, toggle the **Upon reconnection** slider **ON**
9. Click **Save**

When a PERCEPT Body Camera connects to the network, recordings stored onboard will automatically be transferred to the GSC Archiver and become available for playback.

Note: GSC only transfers data for timestamps not already stored in the Archiver. Overall progress of transfers is only reported within GSC. Data is not deleted from the body camera during or after its transfer to GSC.

4.5.1 Considerations for docking station users

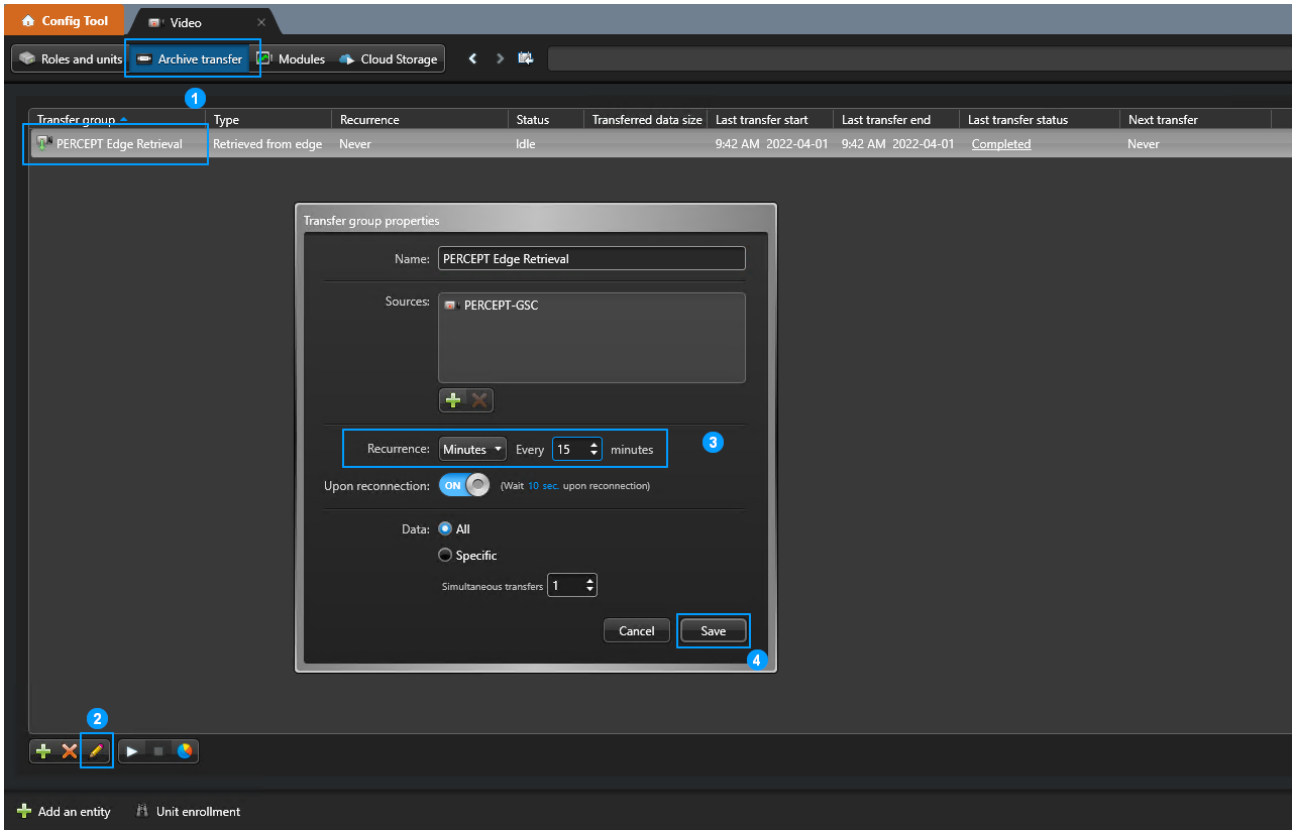
When using a PERCEPT-DCK docking station for offloading data to the VMS, there are additional settings to consider for optimal performance. By default, if the body camera has Wi-Fi connectivity to GSC, edge storage transfer over Wi-Fi is enabled. This can be disabled to prevent bandwidth strain on the Wi-Fi network.



1. From the **Configuration** page
2. Select the **Network** tab
3. In the **Streaming** section, check the **Prevent Media Playback Over a Wireless Connection** box, then save the settings

With this setting checked, the body camera ignores data transfer requests from GSC when connected over Wi-Fi. If GSC edge transfer is configured to occur only upon reconnection (as per instructions / example configuration above), this transfer will be ignored when reconnection occurs over Wi-Fi, and GSC will not reattempt to transfer data from the camera until connection is lost and restored again.

By configuring GSC data transfer recurrence, periodic attempts will be made to offload data from the body camera. When the body camera is docked for charging, a periodic attempt will be accepted, and data transfer will take place over the docking station's the wired network.

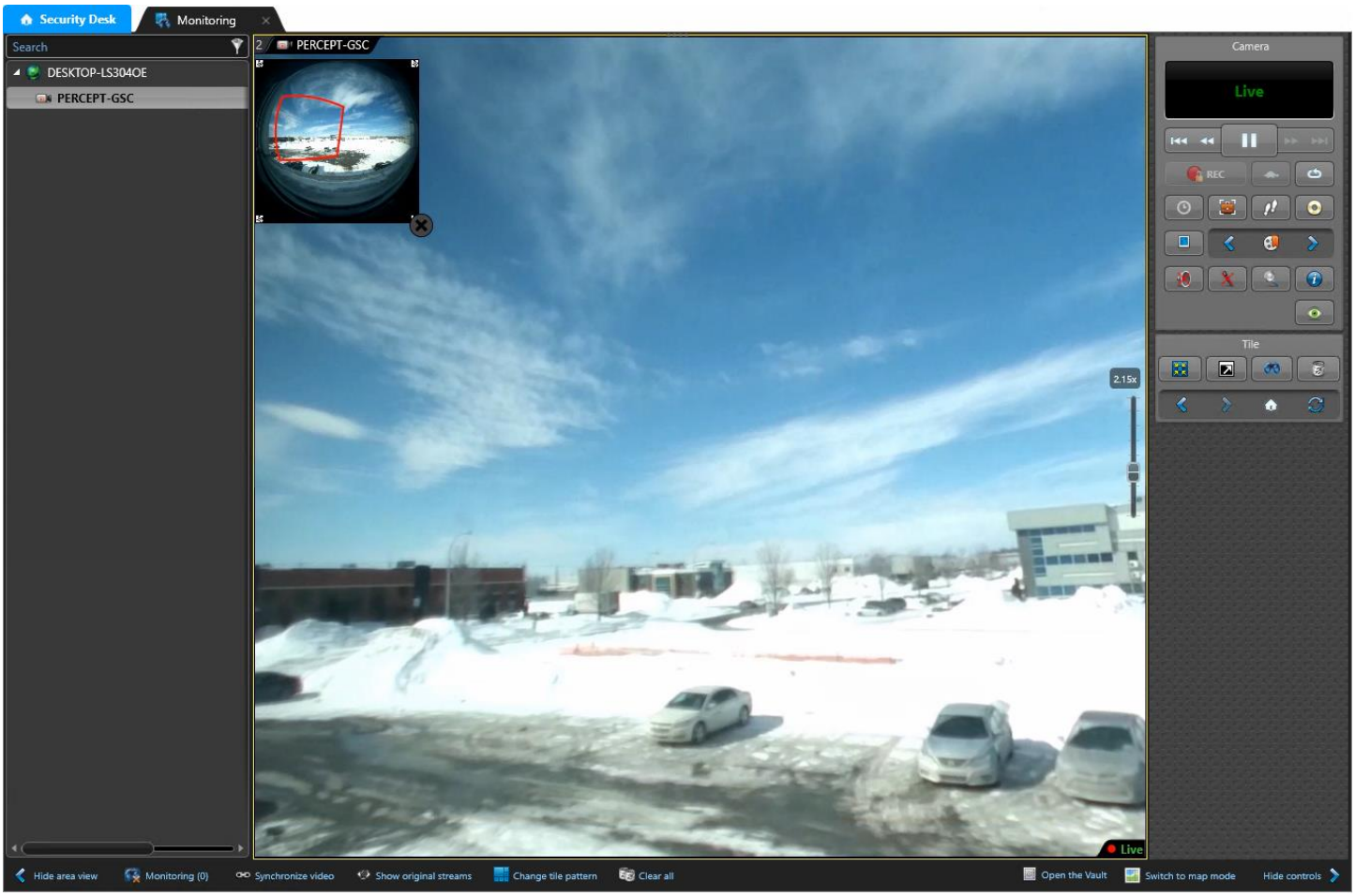


1. From GSC **Config Tool**, **Video** Tab, **Archive transfer** subtab, select the Transfer group created previously
2. Click on **Edit the item** (pencil icon)
3. Select a recurrence interval (in example shown, GSC will poll body cameras every 15 minutes for available data to transfer)
4. **Save** this change

Note: Since GSC only transfers data for timestamps not already stored in the Archiver, data will only be transferred once.

5 Viewing video from the PERCEPT Body Camera inside Security Desk

The user can view live and recorded footage from the body camera using Genetec Security Desk.



When Panomorph dewarping is enabled, the user will be able to navigate (zoom in/out and move) inside the image using virtual PTZ controls.

When Panomorph support is disabled or virtual PTZ is zoomed out completely, the user will see the full hemisphere captured by the camera (along with the QR Codes metadata in the corners).