Technical Training Manual

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2. Hardware Requirements

The table below details the minimum recommended hardware sets for CBC AMERICAS, Corp. software. Please note that these specific processor models are given only as examples and are not compulsory. A different CPU may be used, provided that it has the same number of threads and its performance is analogous.

Calculations are given for two major configuration examples: all video streams in D1 or Full HD resolution. Of course, intermediate and mixed cases may also exist. Please contact CBC AMERICAS, Corp. representatives if you require help with choosing hardware.

HARDWARE RECOMMENDATION TABLE

Installation specifications			Recommended hardware per usage scenario		
Video Stream	**Number of cameras**	**Motion Detector**	**Server only**	**Monitor only**	**Server + Monitor**
D1 30fps	Up to 9	None or camera side	CPU: Intel G1840 Ram 4GB	CPU: Intel G4500 Ram 4GB	CPU: Intel i3-6300 Ram 8GB
		Software HP			
		Software HA	CPU: Intel G1840 Ram 4GB		CPU: Intel i5-6600 Ram 8GB
	Up to 16	None or camera side		CPU: Intel i3-6300 Ram 4GB	
		Software HP			
		Software HA	CPU: Intel i3-6300 Ram 8GB		
Full HD 30fps	Up to 9	None or camera side	CPU: Intel G1840 Ram 4GB	CPU: Intel i5-6600 Ram 8GB	
		Software HP	CPU: Intel G4500 Ram 4GB		
		Software HA	CPU: Intel i5-6600 Ram 8GB		CPU: Intel i7-6700 Ram 8GB
	Up to 16	None or camera side	CPU: Intel G4500 Ram 4GB	CPU: Intel i7-6700 Ram 8GB	
		Software HP	CPU: Intel i3-6300 Ram 8GB		CPU: Intel i7-6700 Ram 16GB
		Software HA	CPU: Intel i7-6700 Ram 8GB		CPU: Intel i7-5930K Ram 16GB

Notes:

- DDR4 RAM is strongly recommended
- *Please refer to the list of Ganz CORTROL supported cameras for camera-side motion detector support
- **High Performance/High Accuracy mode
- ***System must provide:
- DirectX 10 support
- Graphics card with at least 256MB memory
- Latest graphics driver version

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3. Prerequisites

There are a number of requirements for the Ganz CORTROL host system:

- Microsoft Windows operating system (7 SP1, 8, 8.1, 10, Server 2008 R2, Server 2012 R2)
- Both .NET Framework 3.5 SP1 and 4.5 installed
- Defragmentation should be turned OFF for storage locations
- Ports for remote connections should be enabled through the firewalls (default ports are 60554 for Ganz CORTROL Client and 8080 for streaming server)
- Installation and recording directories should be added to antivirus exception list so that they are not scanned or interfered with in any other manner
- For software analytics requirements, see the corresponding section of the VCA manual
- For Ganz CORTROL Client application, DirectX 10+ is required along with the latest stable graphics card drivers

Note 1: Virtualized environment is not supported for Ganz CORTROL Prime and Premier, as they require license activation, which can be obstructed within the virtual environment. However, virtual machines can be used as host systems for Ganz CORTROL Global based recording servers.

Note 2: Antivirus scanning being enabled for Ganz CORTROL recording files may result in dramatically decreased write speed, recording disturbances, and on occasion, database corruption.

CBC AMERICAS, Corp. is not responsible for software failures and/or footage loss caused by underlying OS and/or hardware issues on non-Ganz supplied servers. It is the responsibility of the systems administrator to configure the server and provide maintenance, unless otherwise agreed (e.g., if server hardware has been shipped by CBC AMERICAS, Corp.).

4. Operating System Setup

The Ganz ZNR / CORTROL system is configured with windows default settings, except for "Windows Updates" and Power Management."

- Windows Updates should be configured for "Notify to download" or "Manual download." The reasoning is that if an update creates an issue, the administrator is made aware of it immediately after the update. If "Updates" are set to automatic, there can be a delay in administrator notification and/or system troubleshooting. A delay can result in the loss of critical data.

- Windows Power Management should be configured for maximum performance, with sleep mode disabled. If sleep mode is left running, then the ZNR Server could be put into sleep mode, thus losing its recordings during that time.

- It is highly recommended that the default user ID and password configuration be changed for security reasons. The default password should be changed by the CORTROL Server administrator, written down, and stored in a secure fashion to prevent unauthorized access or modifications to the system. The following steps can be used to change the password for the Windows operating system account:

    - Access the Start Menu > Settings > Control Panel > User Accounts
    - Pick the account to be changed, or create a new account
    - Select Change Password

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1. User Account

Default Operating System Settings	New Operating System Settings
Username: admin Password: "No password" Privileges: Administrator	Username: admin Password: _____ Privileges: Administrator

New Operator/User Settings	New Operator/User Settings
Username: _____ Password: _____ Privileges: Manager or User	Username: _____ Password: _____ Privileges: Manager or User

2. Windows Service vs Process

What is a service?

A service is a special type of application that is available on Windows XP/7/8/10 and runs in the "background." Services can have special privileges that regular applications do not. For instance, on a limited user account a service could access certain parts of the Windows Registry that a regular application could not access. Most Windows Services do not have a user interface and are loaded when Windows starts.

What is a process?

A process is normally some kind of application program running on a system. Processes can execute on start up, and many can also be found running in the background. Some processes are even executed more than once. For instance, opening Windows Task Manager will most likely show multiple instances of "svchost.exe" processes running simultaneously. If Internet Explorer is executed more than once, multiple instances of "iexplorer.exe" processes will be seen in Task Manager in this same way.

CORTROL as a service

The CORTROL Recording Server installs as a service, while the Management Console and Client install as processes.
Once the Ganz CORTROL Recording Server begins recording video, it will continue to do so, even if no user is logged in and/or no CORTROL Client is running. CORTROL will stop recording only if the following conditions are met:

- The ZNR / CORTROL Server is powered off
- The CORTROL Server service is stopped (Windows Services)
- The CORTROL Server executable process is stopped (Windows Task Manager)

To prevent this from happening inadvertently or maliciously, the ability to shut down the computer or access the operating controls should be restricted by use of a restricted user account if the server is administered by anyone other than an administrator.

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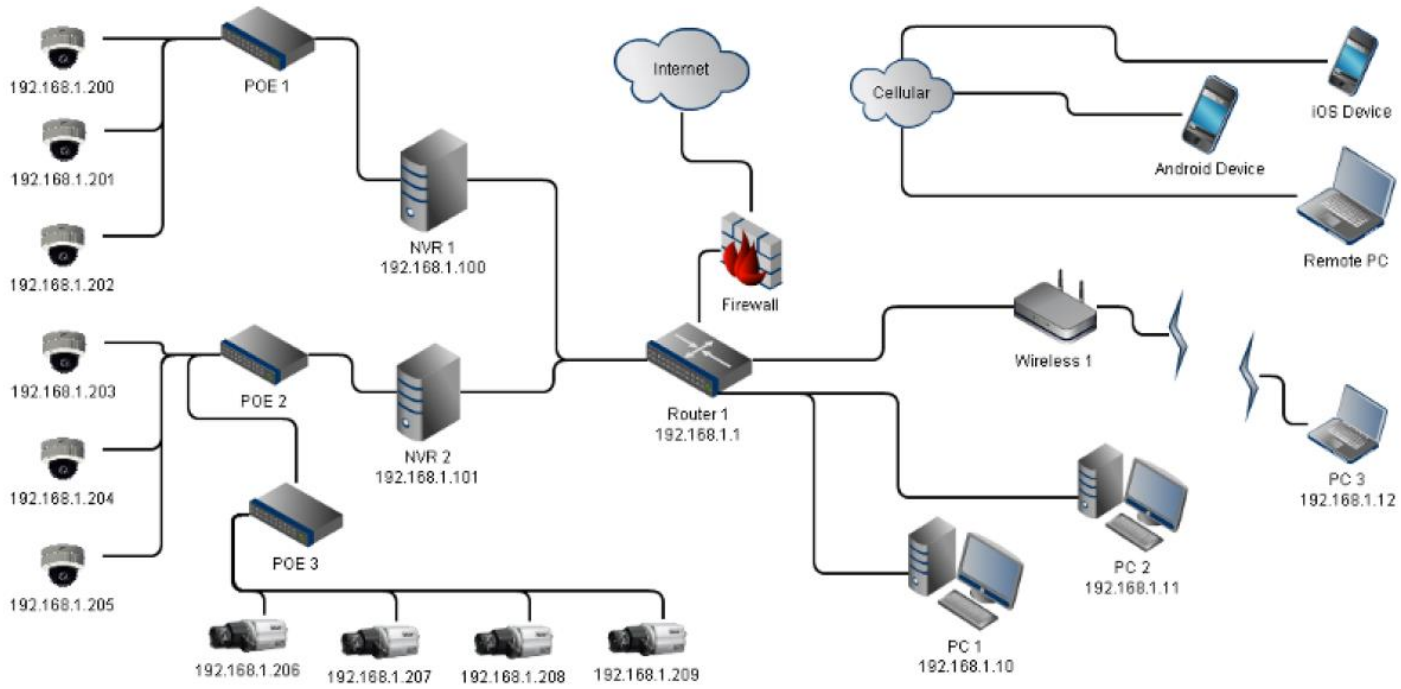
5. Connections

The ZNR 2U/4U, Raid Lite, and Full Raid based servers have a minimum of two 1Gbps network cards.

The ZNR-Mini based servers come with a single 1Gbps network card, with the option of a second 1Gbps network card.

It is recommended for optimal network performance to use LAN 1 for all corporate or local data, while a separate physical network for use by the IP cameras is connected to LAN 2.

Example of a dual server CORTROL Premier with multi-client configuration



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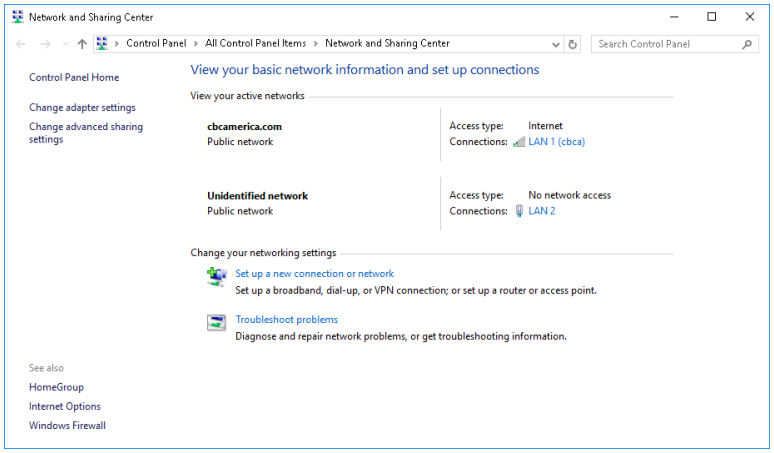
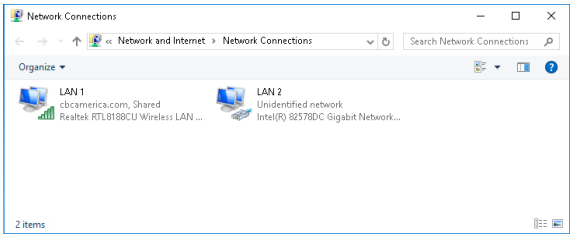
1. Server LAN Setup

By default, the LAN(s) of the server may require configuration. In order to configure a LAN, go to Windows Control Panel, and select *Network and Sharing Center.*

From the *Network and Sharing Center,* select *Change adapter settings* located toward the left, and near the top of the window. Once *Change adapter settings* is selected, the available LANs of the server will appear.

Right click on the LAN requiring configuration, which may be LAN 1 (meant for the internal or corporate network), or LAN 2 (meant for the camera network), and select *Properties.*

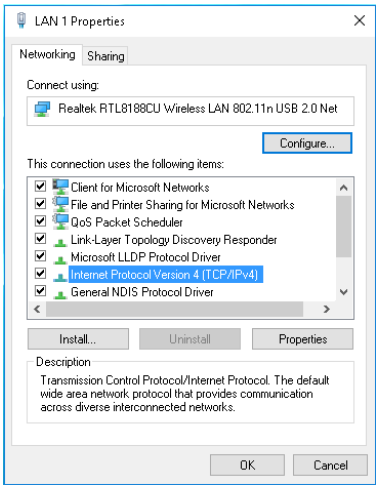


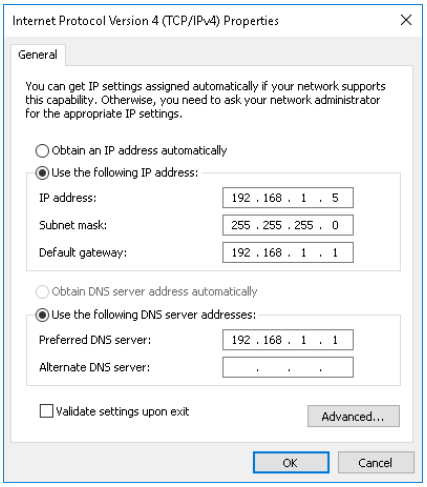


From the LAN Properties window, locate and select *Internet Protocol Version 4(TCP/IPv4),* then click on *Properties.*

If the option is not already selected, select *Use the following IP address* in order to configure the LAN properties for CORTROL.

The goal in configuring the LAN properties is to set the IP address for the corporate side, and/or the LAN properties for the camera side, in order to establish network communications. Enter the IP, Subnet, Gateway, and DNS as required by the specific LAN (repeat for each LAN as required). Select *OK* when completed, then close all windows to return to the windows desktop.





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2. IP Camera Configuration

The IP Camera Configuration section describes the utilization of camera configuration software provided by Ganz. The camera configuration software is for Ganz IP camera configuration, used prior to configuring the Ganz CORTROL Recording Server.

The Ganz provided camera configuration software covers the PixelPro, PixelPro GXi, and GENSTAR IP camera lines.

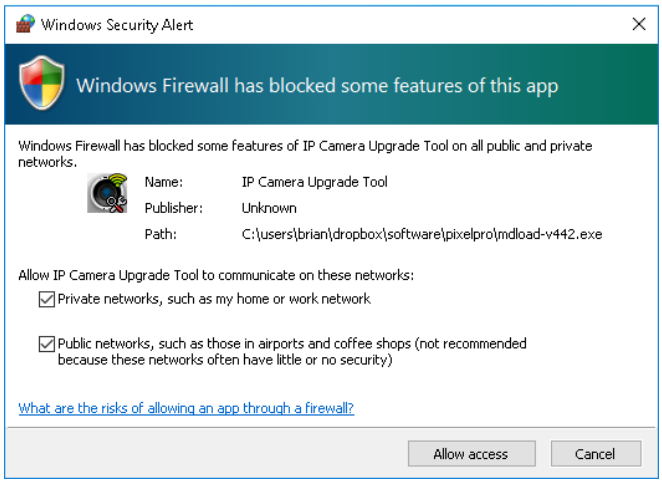
Most cameras can be installed with the following steps:

- Confirm the camera has the latest firmware version by checking www.ganzsecurity.com.
- Configure the cameras with a fixed IP address as shown in this document.
- Test camera-to-server communications by navigating to the camera from the browser.
- Consult with Ganz support for additional information as required.

Each Ganz IP camera comes with a utility to find the camera on the local network and set its IP address. This utility is typically available on the software CD shipped with the camera, or from the Ganz web site. Please refer to the documentation provided with your camera if you have questions after reading this guide.

3. Windows Firewall

If Windows Firewall is enabled on the computer, the following dialog box will be seen when any of the camera manufacturer's utilities are run. Click Unblock to allow access, and for the utility to work properly.



4. DHCP

Although some IP camera manufacturers support DHCP addressing, it is highly recommended to assign a static IP address to the installed IP cameras to keep unexpected network events from changing the IP address of the camera. If the camera's IP address changes, the Ganz CORTROL Recording Server cannot receive or record video from that camera until a user manually reassigns the camera's IP address or changes the address setting on the CORTROL server to match the camera's new address.

Ganz IP cameras ship by default with DHCP addressing enabled, but are discovered by their MAC address through their discovery tool.

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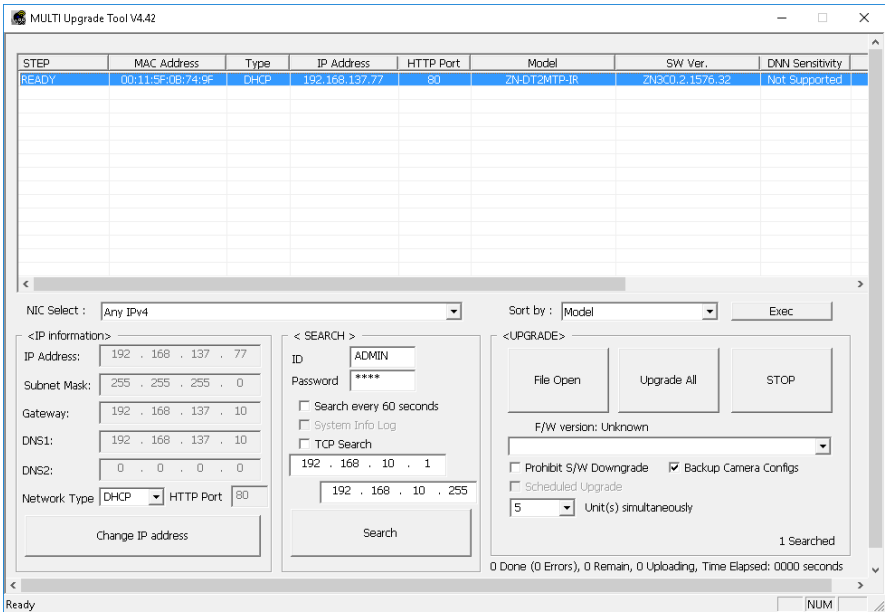
5. PixelPro Multi Upgrade Tool

Ganz provides the installation Multi Upgrade Tool to find PixelPro IP cameras.

The utility is provided on the CD included with the cameras, and/or as a direct download from GanzSecurity.com.

Run the Multi Upgrade Tool to display the following window:



Click Search to search for Ganz PixelPro IP cameras on the local network. If the program does not detect any cameras, select TCP Search, and enter an IP range. If no cameras are found, please verify that the cameras are connected to the local network, and powered on.

Once all of the Ganz PixelPro IP cameras on the local subnet are listed, highlight a camera to display its IP Information.

To change the IP address of the selected camera, select Static in the Network Type area. Enter the IP address, Subnet Mask, Gateway, and DNS1 (if known), DNS 2, then click *Change IP address.*

NOTE: The factory default login for Ganz PixelPro cameras is:

- Username: ADMIN
- Password: 1234

The username and password will be needed when adding these cameras to the Ganz CORTROL System.

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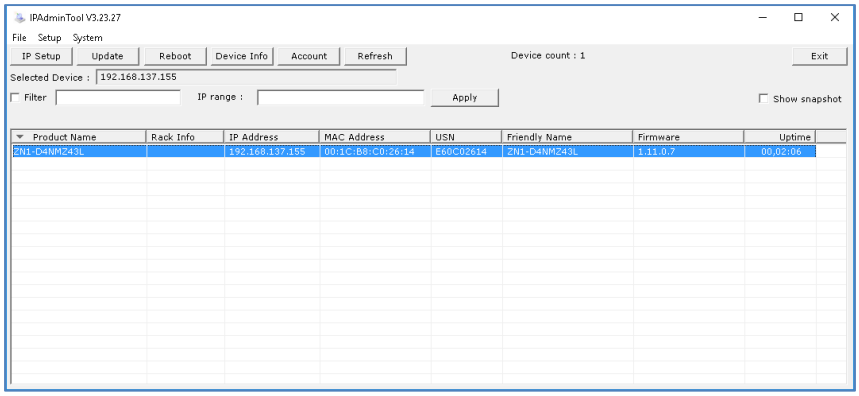
6. PixelPro GXi IPAdminTool

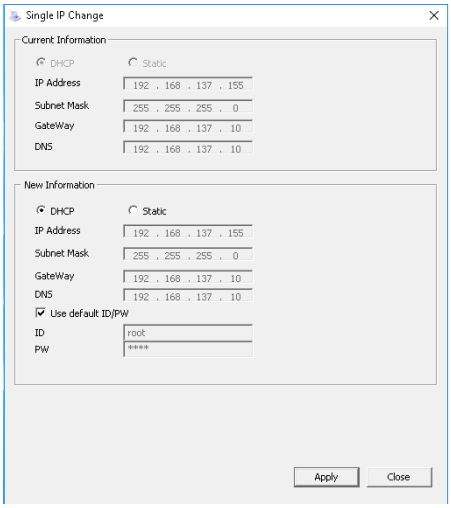
Ganz provides the installation IPAdminTool to find PixelPro GXi IP cameras.

Run the IP Admin Tool to display the following window:



Click Refresh to search for Ganz PixelPro GXi IP cameras on the local network. If the program does not detect any cameras, select Filter, input an IP range, and click Apply. If no cameras are found, please verify that the cameras are connected to the local network, and powered on.

Once all of the Ganz PixelPro GXi IP cameras on the local subnet are listed, highlight a camera to change its IP Information. Select IP Setup to change the IP information. Select Static, then enter the IP address, Subnet Mask, Gateway, DNS, and click Apply.



NOTE: The factory default login for Ganz PixelPro GXi cameras is:

- Username: root
- Password: pass

The username and password will be needed when adding these cameras to the Ganz CORTROL System.

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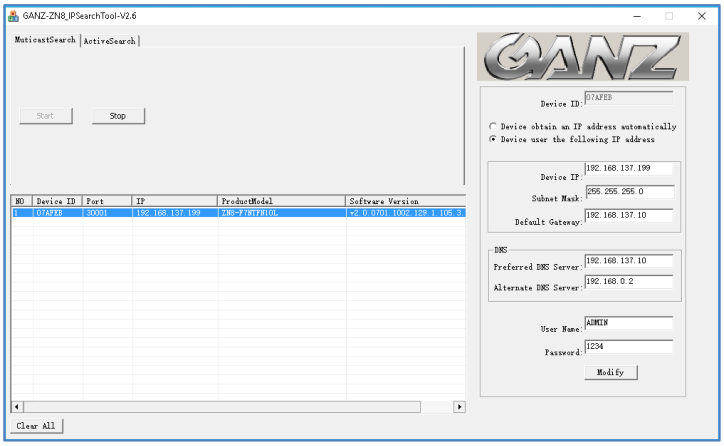
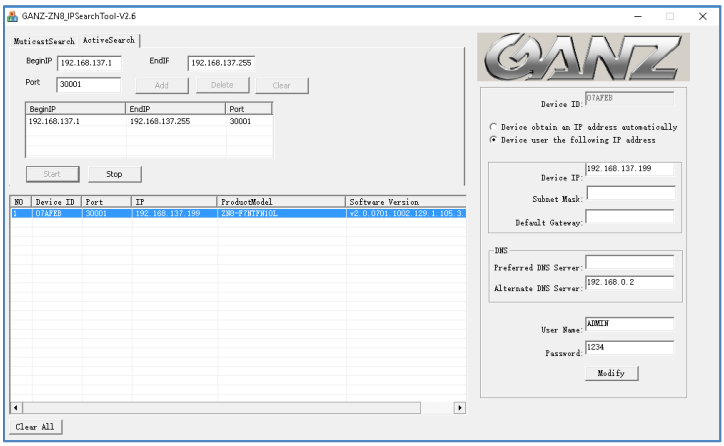
7. GENSTAR IPSearchTool

Ganz provides the installation IPSearchTool to find GENSTAR IP cameras.

Run the IP Search Tool to display the following window:



Click Start to search for Ganz GENSTAR IP cameras on the local network. If the program does not detect any cameras, select the *ActiveSearch* tab, input an IP range, click *Add,* then click *Start.* If no cameras are found, please verify that the cameras are connected to the local network, and powered on.



Once all of the Ganz GENSTAR IP cameras on the local subnet are listed, highlight a camera to change its IP Information. Modify the IP address, Subnet Mask, Gateway, and DNS to the right, then click Modify.

NOTE: The factory default login for Ganz GENSTAR IP cameras is:

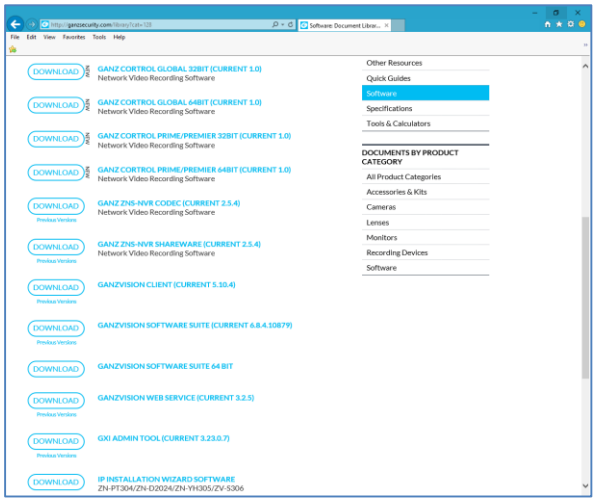
- Username: ADMIN
- Password: 1234

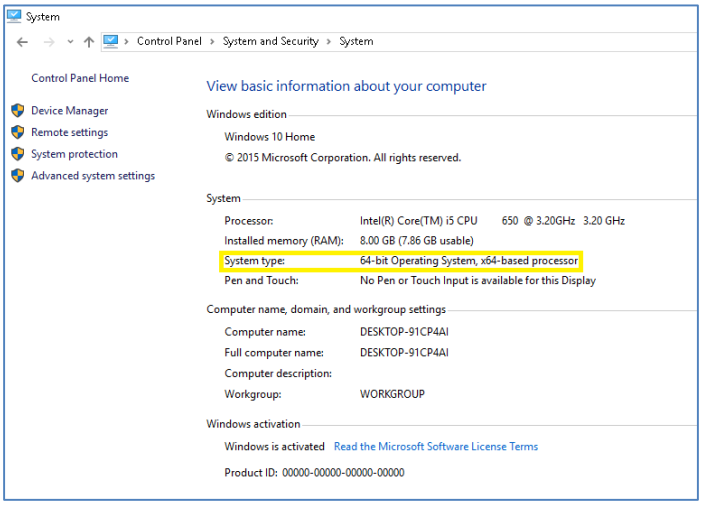
The username and password will be needed when adding these cameras to the Ganz CORTROL System.

6. CORTROL Download

Go to GanzSecurity.com > Support > Resource Center > Software.

- Prior to downloading CORTROL, confirm the bit version of Windows on your PC, 32-Bit vs. 64-Bit.
- To confirm your Windows bit version, go to Control Panel > System and confirm *System type* as 32-Bit or 64-Bit.
- Select and download either CORTROL Prime/Premier 32bit or 64bit, depending on the Windows OS bit version.
- Note: For most browsers, any downloaded files can be found in the Windows Download folder.





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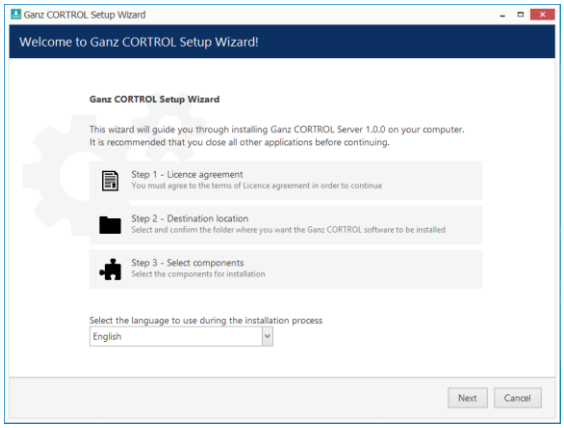
1. Install & Activation

Run the Ganz CORTROL Server installer that was recently downloaded.

- Select the needed language, and click *Next.*
- Accept the terms of agreement, and click *Next.*
- Accept default installation location, and click *Next.* (Change location destination if required.)



Specify which components to install.

- Leave all components selected for this installation.
- Select the needed language, and click *Next.*
- Once installation is complete, click *Finish.*

The Server Setup Wizard will pop up with options for the Server's title, and port.

- Server name: default is "Server" (change as required).
- Server port: default is 60554 (change as required).
- Click on *OK*, then click on *OK* again to proceed to the Activation Wizard.

CORTROL offers several ways to activate a license.

- Activate existing license key
- Offline activation via license file
- Request free CORTROL Prime license key
- Request an evaluation license key

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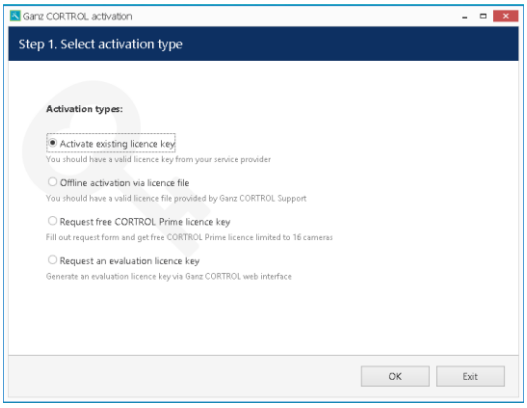
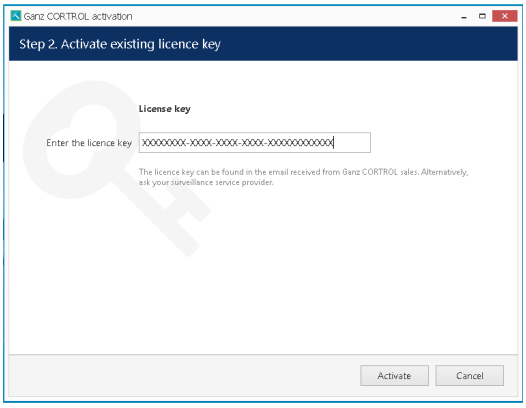
2. Activate Existing License Key

If a license key has been received by email, select *Activate existing license key,* then copy and paste the key into the dialog box.

Select *Activate* in order to register the key.





3. Offline Activation

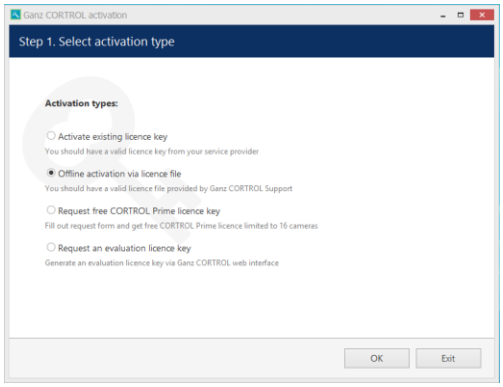
If there is no Internet connection for security reasons and/or server disposition particularities, choose *Offline Activation*. The Offline Activation selection consists of three steps:

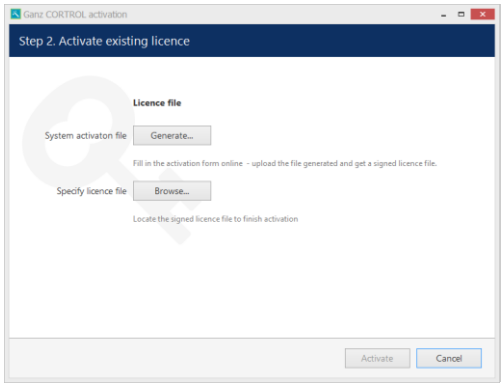
- Generate the activation file on the target server.
- Go to the online activation system at http://ganzsecurity.com/cortrol and fill in the form.
- Apply the provided license file to the system.

Select license activation type *Offline activation via license file*, and click *OK*.

Click *Generate* to create the activation file (the default file name of which is *system.bin*) and save the activation file.

Note: It is recommended not to change the file name.





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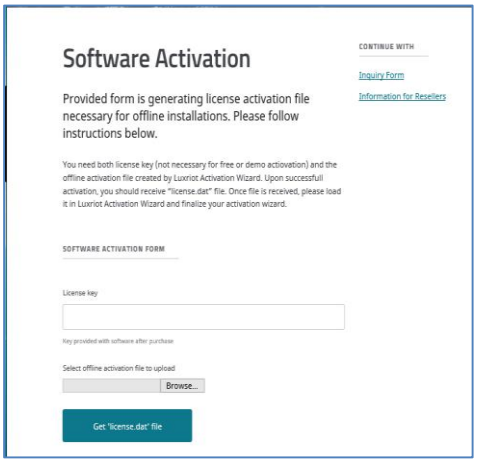
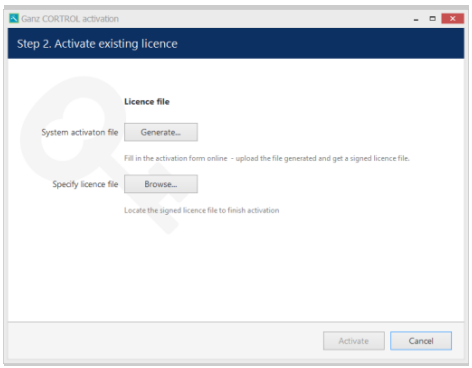
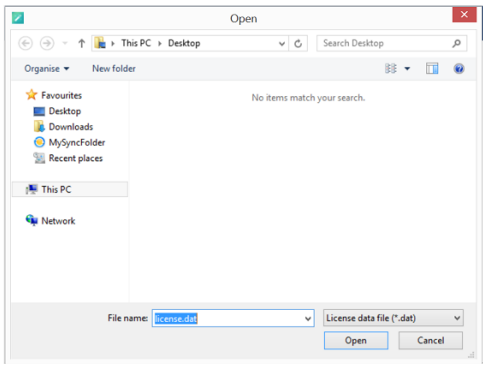
Copy the binary file to any computer that has Internet access, and go to the online form at http://ganzsecurity.com/cortrol. Fill in the required fields of the online form, and upload the file. The activation system will process the file and allow the download of the license file. This license file will be unique and will only be valid on the same machine from which the original *system.bin* file was generated on.



Next, copy the license file to the original computer, then from the activation wizard, click *Browse* to locate it and open the *license.dat* file provided by the activation system. The validated license.dat file will then be loaded, allowing the registration process to be finished.





Click *Activate* to apply the license file. If the license is valid, an activation success confirmation will be seen with the following details:

- Product type
- License key
- License key expiration date (if applicable)
- Support subscription expiration date
- Allowed channel amount

The license information will be stored on the server. A snapshot of this screen can be saved for future reference, so that this information will still be accessible in case of server OS or hardware failure.

Finally, click *Done* to exit the activation wizard, or click *Start Quick Setup Wizard* to proceed with server configuration.

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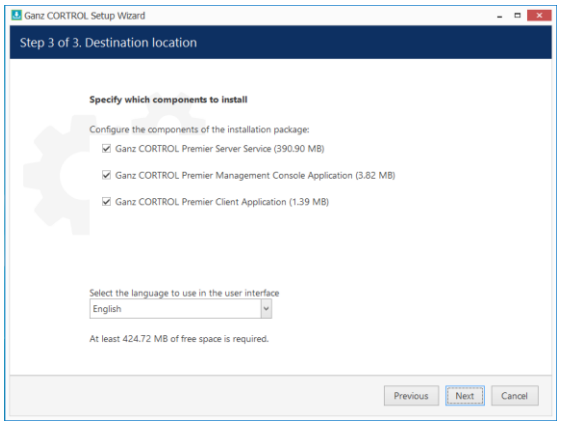
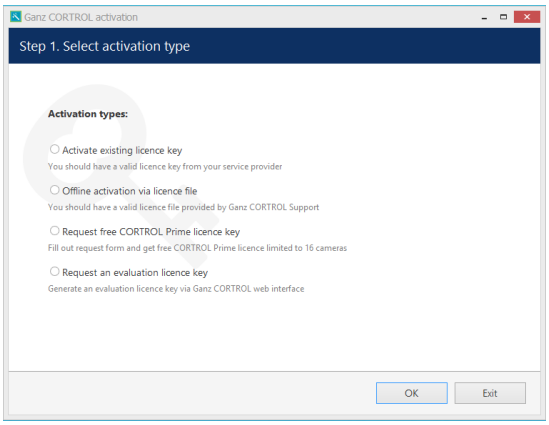
4. Request Free CORTROL Prime License Key

Use the following steps to active the CORTROL software with a free Prime license key:

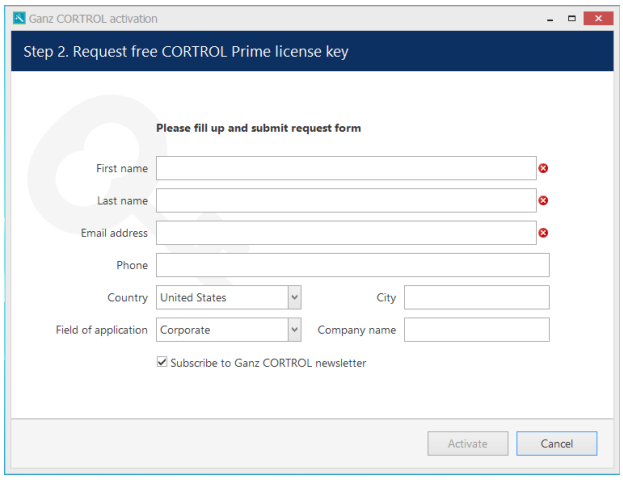
- Select *Request free CORTROL Prime license key.*
- Click on *OK* to continue.

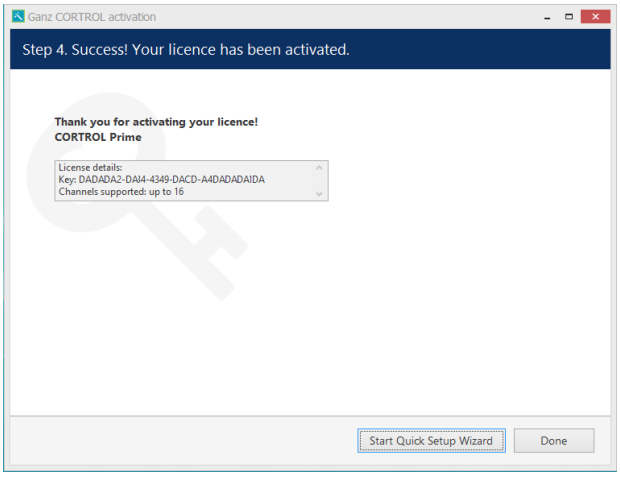




To Complete the request for a free CORTROL Prime license key:

- Fill in the required information: your first name, last name, and email address.
- Optionally, you may fill in the phone, country of origin, city, field of application, and company name fields.
- If interested, click on *Subscribe to Ganz CORTROL newsletter*.
- To finish, click *Activate.*
- Once activation is completed, click on *Start Quick Setup Wizard.*





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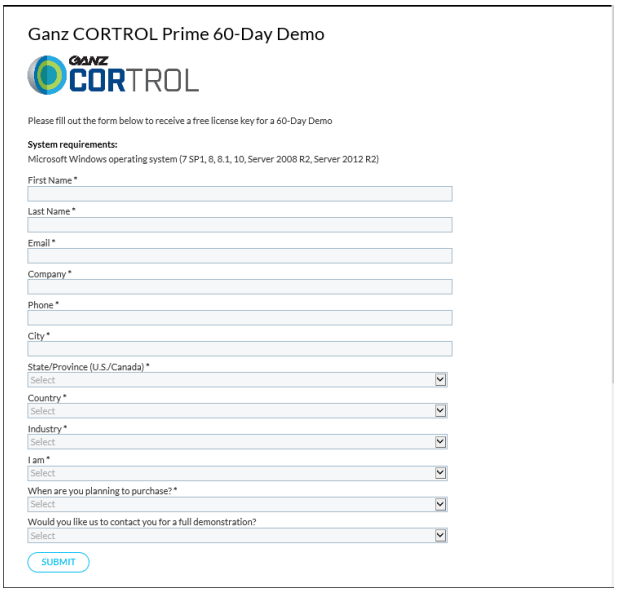
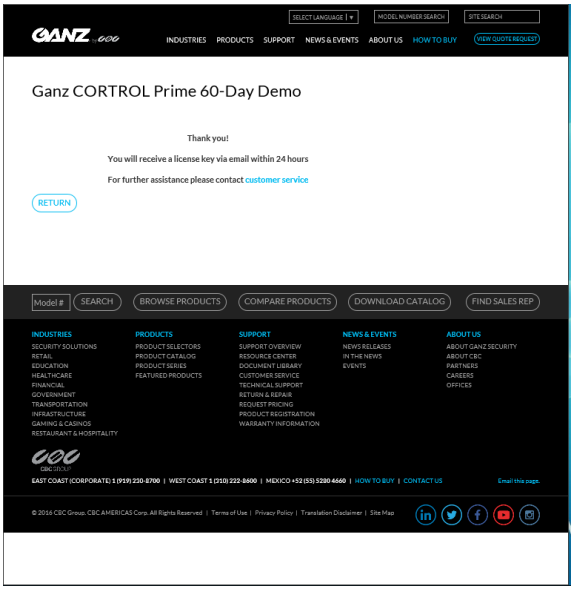
5. Evaluation License

If wishing to evaluate the Ganz CORTROL product or need to assess server performance over a specific period of time, a 60-day evaluation license key can be requested from CBC AMERICAS, Corp.

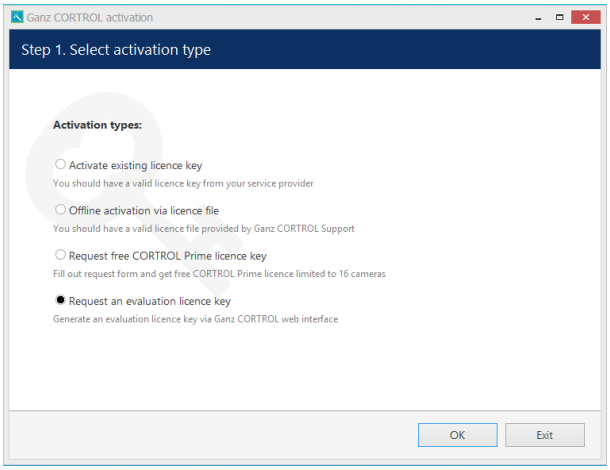
Fill out the Ganz CORTROL Prime 60-Day Demo form, and click *Submit*. Typically, within one business day or less, the 60-Day Demo license will be emailed.

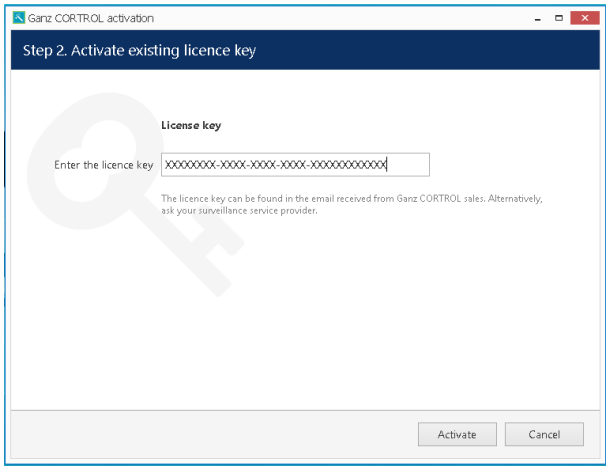




Once you have received the 60-Day Demo license key, apply it during the initial CORTROL Prime installation process.

During the initial install, select *Activate existing license key*, and copy & paste the key you were emailed into the license key field. After you have done so, activate your trial key by clicking on *Activate*, and enjoy your 60-Day Demo of Ganz CORTROL Premier.

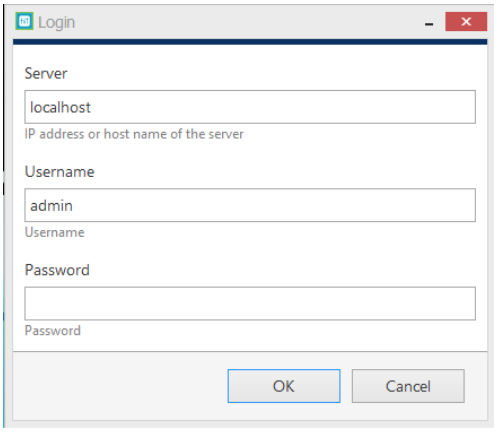


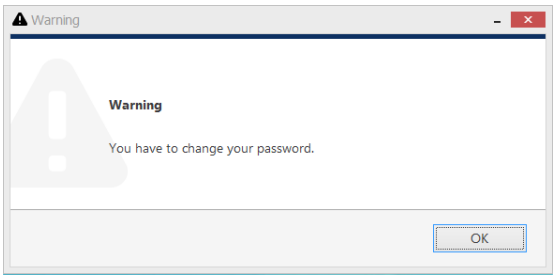


6. Quick Setup Wizard

The CORTROL Console Setup Wizard will help easily configure the Ganz CORTROL Console step by step.

- The login screen will autofill with the default server address, user name, and password.
- Select *OK* as there is no password by default.
- A warning of "You have to change your password" will appear. Select *OK* to acknowledge this.



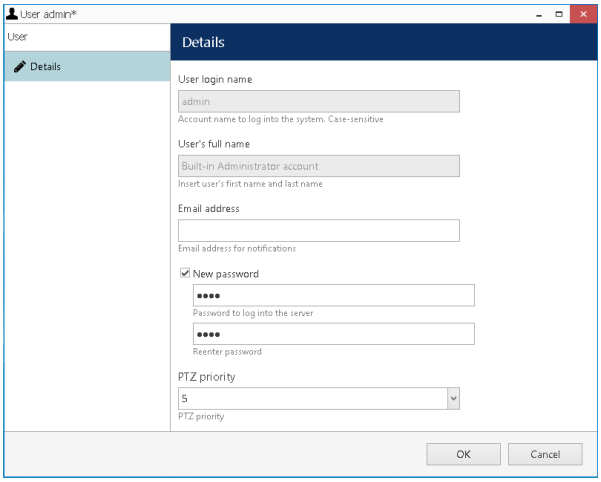


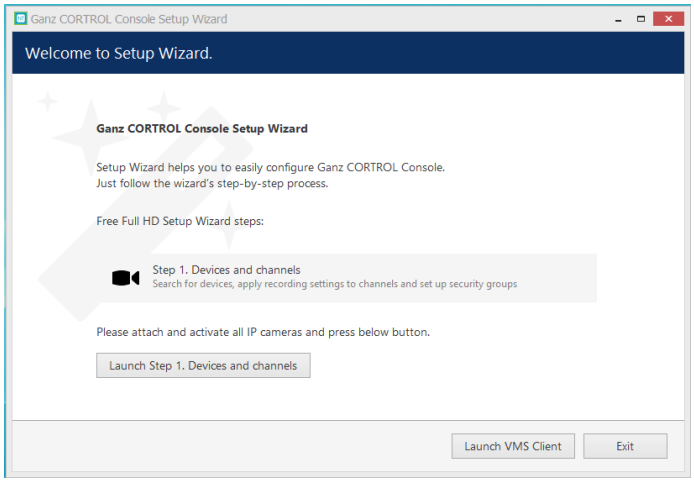
On the next screen, enter a new password.

- Check *New Password*, and enter a new password.
- Confirm the new password by retyping it in the second input.
- Select *OK,* and continue.

Launch the device and channel auto discovery wizard.

- Click on the *Launch Step 1. Devices and channels* option to auto discover any network cameras and or devices.





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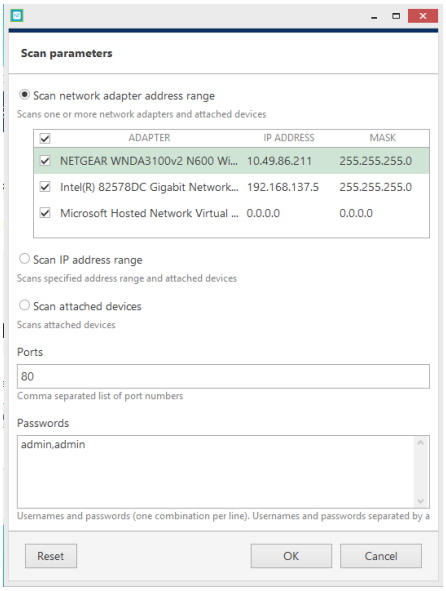
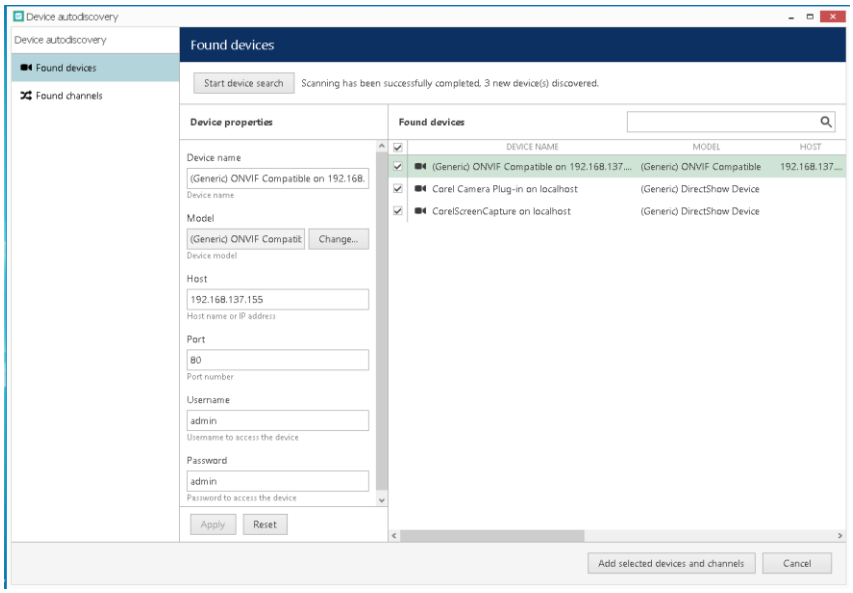
Network Scan Parameters:

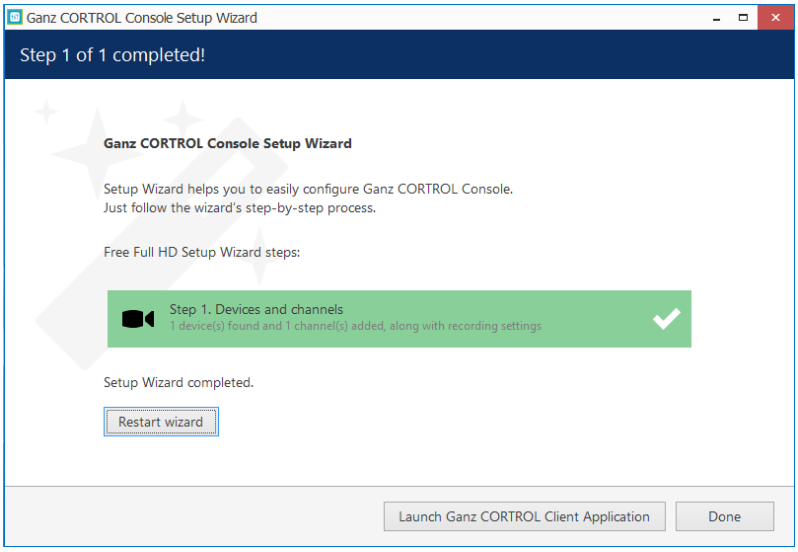
- The network scanner will list any and all network adapters available on the host pc/server.
    - Scan by adapter address range, an entered IP Range, or scanning attached devices.

- Confirm the network to scan, and select *OK.*
- The device and channels discovery wizard will launch and run.
- Confirm any found devices by selection, and modify *Device properties* as needed.
    - Device name, model, host/IP address, port, username, and password

- Select the cameras to add, by way of placing a check mark next to them.
- Select *Add selected devices and channels.*
- Confirm the choices by selecting *Yes.*
- For now, skip the launch of the Ganz CORTROL Client Application.
- Select *Done* to close out of the wizard.







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7. CORTROL Configuration

The options to configure Servers, External services, and Users will be skipped for the moment, as CORTROL resources are dependent on having its Devices and Channels configured first.

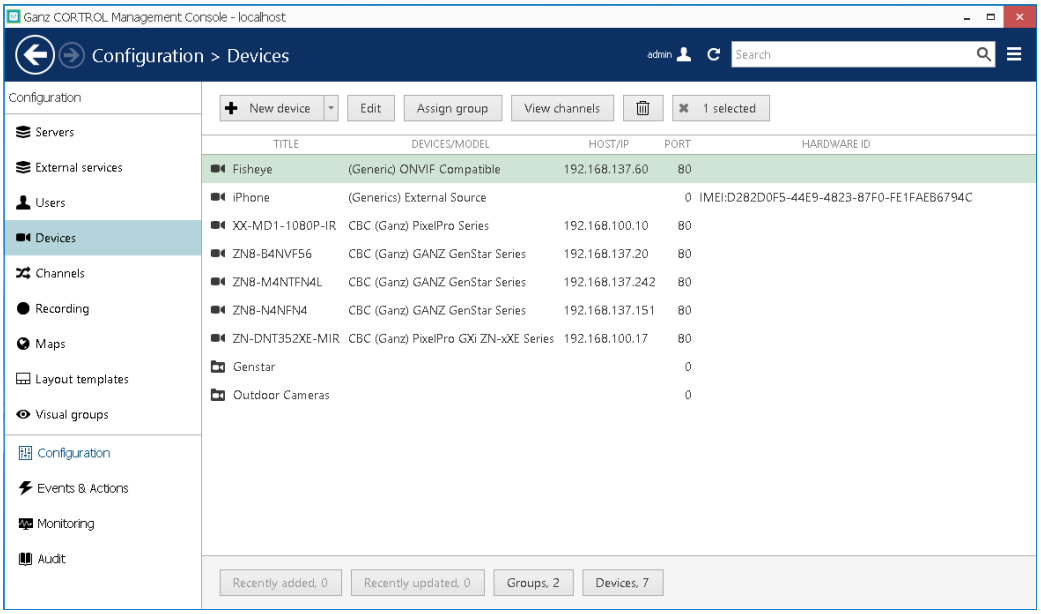
The traditional idea of cameras as surveillance software entities has been developed, resulting in the concepts of devices and channels. Essentially, it represents the separation of physical and data layers for reasons of security and easier management.

1. Devices

"Devices" refers to any piece of physical equipment that serves as a data provider. Any piece of hardware delivering video, audio and event streams to the server falls into this category. IP cameras, video encoders, capture boards, USB web cameras – these are all examples of devices that can be added to CBC AMERICAS, Corp. software. Devices do not include any data streams.

From Ganz CORTROL Management Console, select *Devices.*

Buttons on the upper panel give the option to create, edit and remove device resources.



Devices menu options

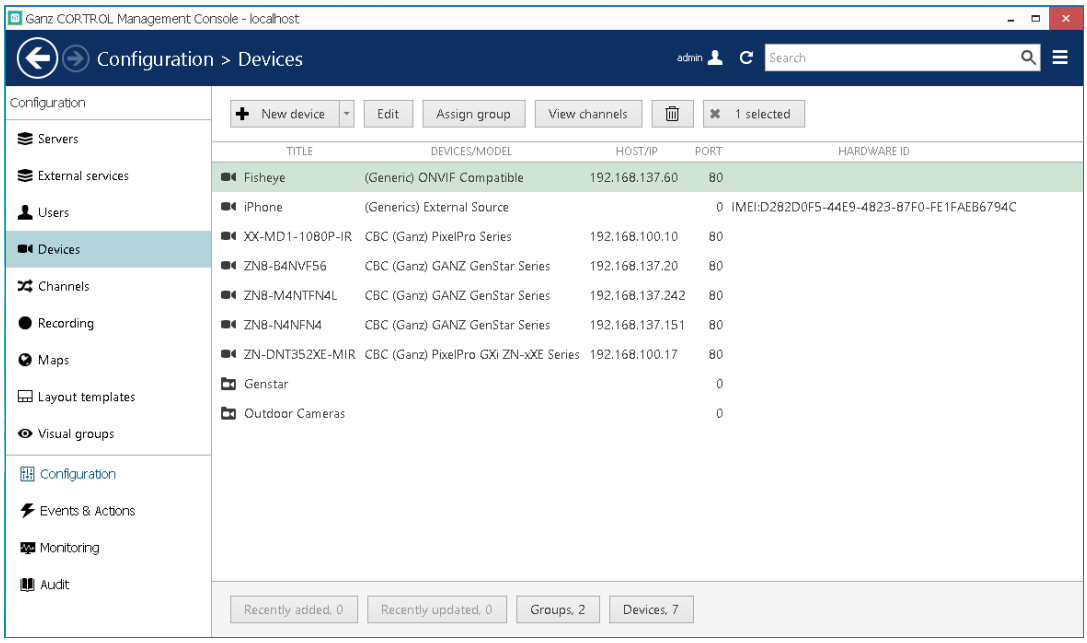
Functions		Options
New Devices	New device	Enter new device: Details, Membership, Permissions, Network, Channels
	New device group	Enter new device group: Details, Members, Membership, Permissions
	Find devices	Launches device auto discovery wizard
Edit		Edits select device: Details, Membership, Permissions, Network, Channels
Assign Group		Assignment of selected devices to an existing group
View Channels		Switches view to Channels menu
Trash Can		Deletes any selected devices
Selected		Indicates number of selected devices. Releases devices when selected

New Device

Devices offer three options for adding devices:

- New device: Manual entry on a per device basis
- New device group: A device group, where already existing devices are grouped together (e.g., "Outdoor Cameras")
- Find devices: Launches the device auto discovery wizard discussed earlier.

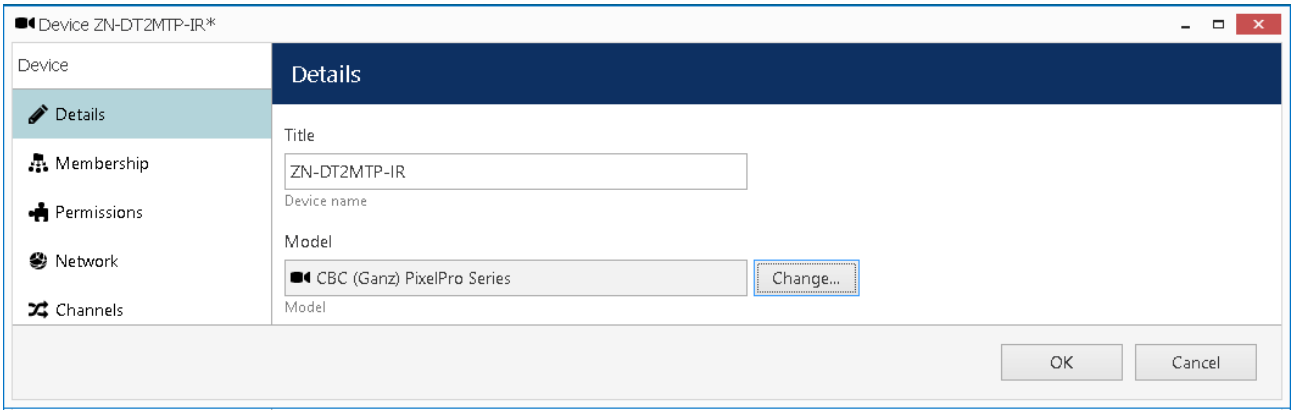
To manually add a new device, start by selecting *New device*.



Details

Details offers the option of a "Title" and "Model" selection for the device.

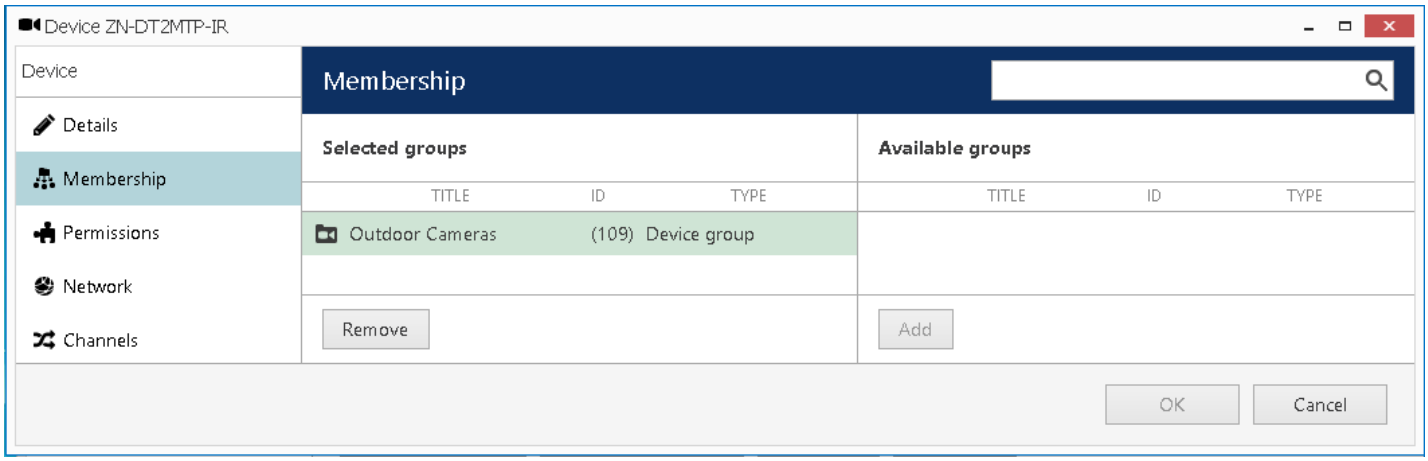
- Place the name of the device as how you would like it to appear during use in the "Title" blank. The example below shows the model of the camera "ZN-DT2MTP-IR" as the title.
- To enter the model, select *Change* and begin typing the manufacturer name.
- In this case, enter "CBC," which corresponds to the "Vendor," and select "PixelPro Series" for the camera.
- Note the appearance of *Network* and *Channels* now in the Device window.



Membership

This describes the adding of the camera to a grouping of cameras, or "Membership." The example used is "Outdoor Cameras."

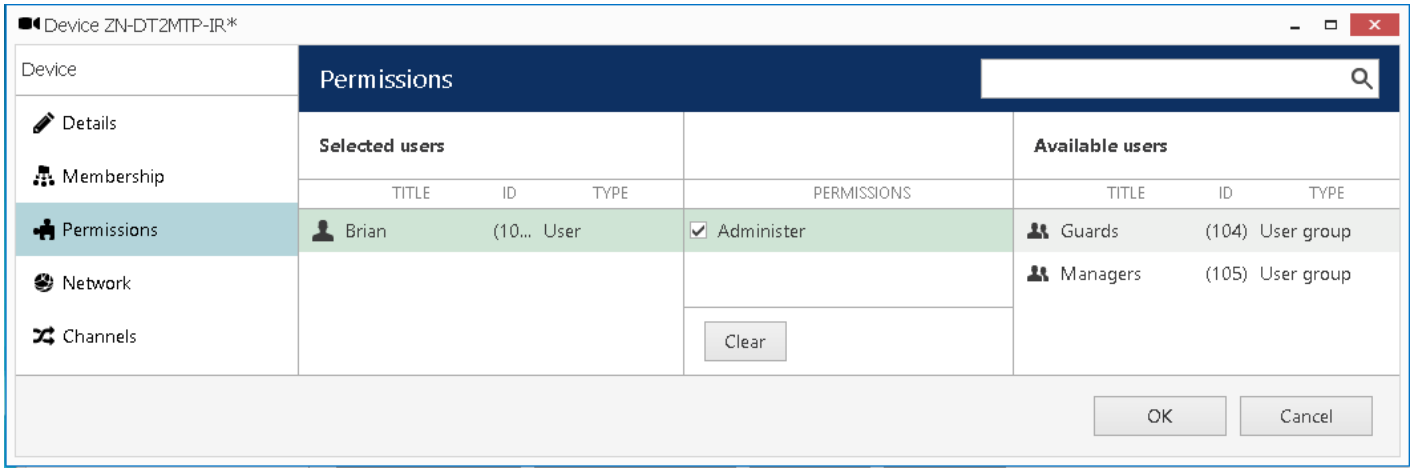
- All outdoor cameras are grouped together, forming a membership for convenience and ease of administration.
- Choose a group from the *Available groups* section, and click on *Add* to add the device to the group.
- To remove the device from the group, choose the group from *Selected groups*, and click on *Remove*.
- A device may be linked with several groups, as devices may have multiple roles in a surveillance system.



Permissions

Device permissions allow assigning the accessibility of the device to a user, users, or user groups.

- Choose a user or user group from the *Available users* section.
- Under *Permissions*, click on permissions to be assigned. (Examples: Administration, Navigation, and Search)
- To remove the permissions, select the user or user group under *Selected users,* and click on *Clear*.
- A device may belong to several groups at once, as devices may have multiple roles in a surveillance system.
- Devices with an empty permission list will not be available to anyone except for the root (global) administrator.

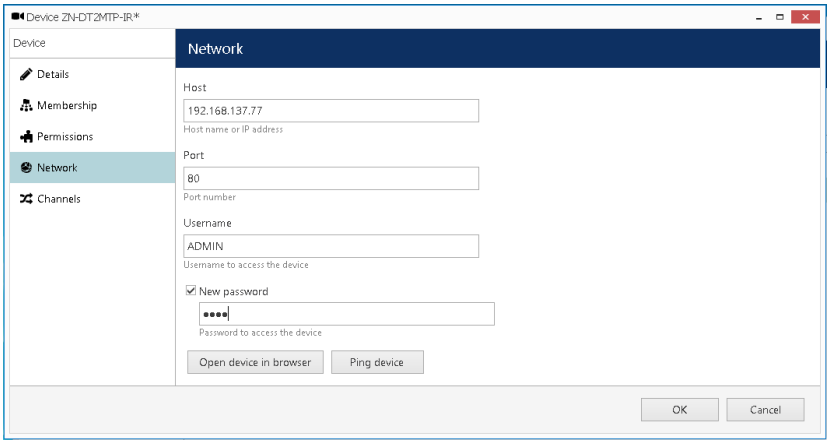


Network

In order for CORTROL to access a device, CORTROL requires the Host IP address, communications port, and login credentials for the device. Before filling in the details, make sure the settings match those on the camera. If the device has not been connected yet, ensure that the same settings are applied during camera installation.

Enter the network settings for device access;

- Host: IP or URL of the device
- Port: Communications port of the device
- Username: ID required to access the interface and settings of the camera
- Password: Password required to access the interface and settings of the camera
- Open device in browser: Opens the default OS browser to the device's browser interface
- Ping device: Confirms communications between the CORTROL Server and the IP device

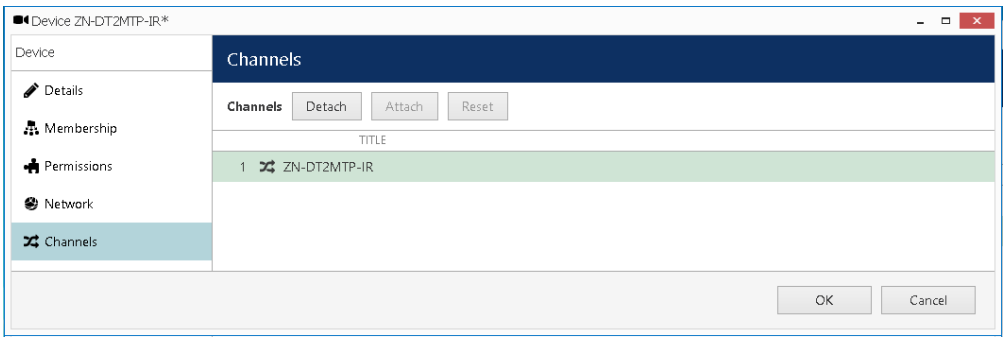


Channels

Channels refer directly to the video stream of the device in question, and are automatically attached when a device is added.

- Detach: The option allows a channel(s) assigned to a device to be detached.
- Attach: The option allows a channel(s) not assigned to a device to be attached.
- Reset: This button can be clicked to undo any changes made to the channels.

Note: Reset only works for current editing session. Reset will not be available after saving any changes and reopening the dialog box.



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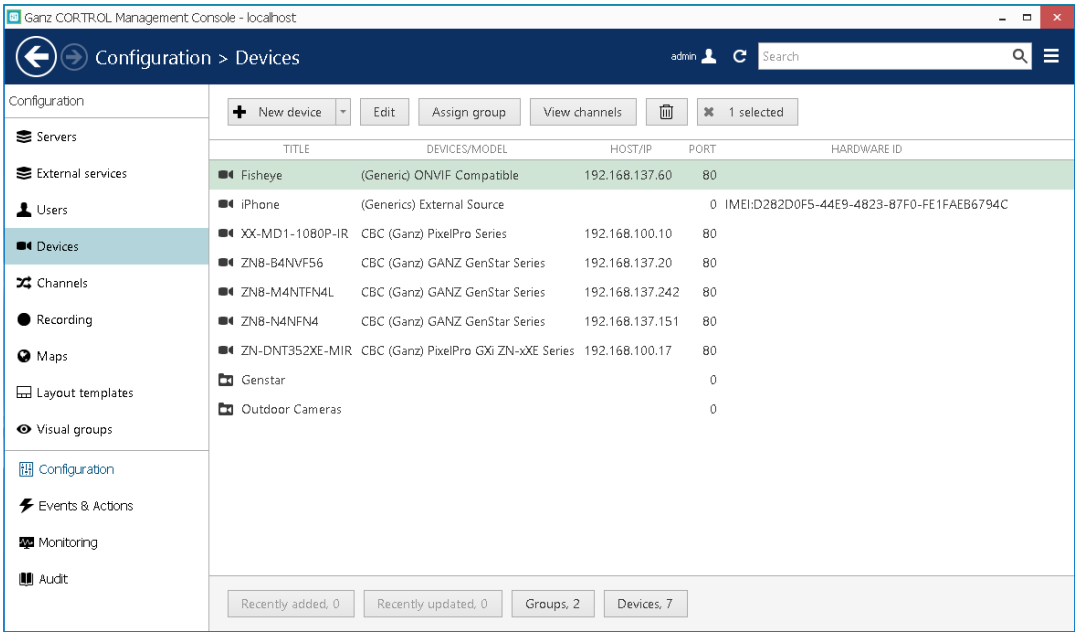
2. New Device Group

A device group represents a grouping of similar intent based devices. An example would be grouping all ~~our~~ outdoor cameras together.

Grouping together devices with similar intent or application allows for quick administration.

Manually adding a new device group:

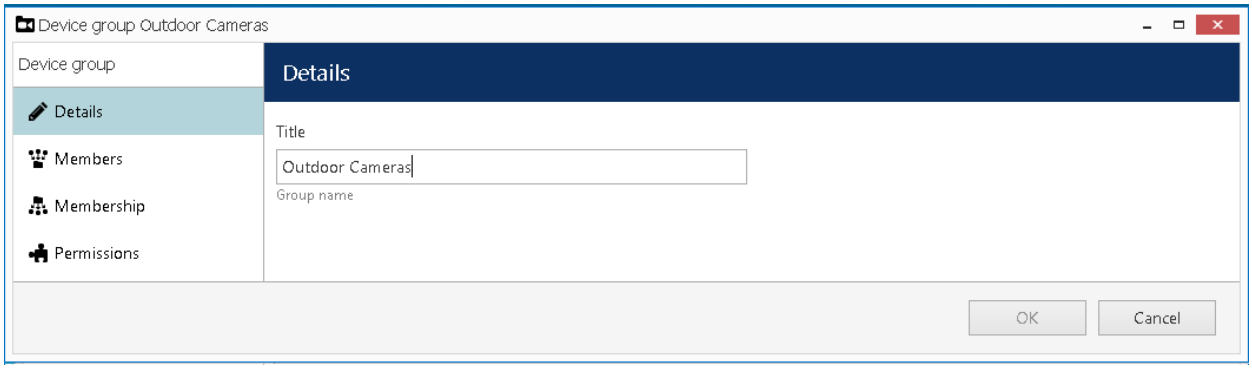
While in the *Devices* configuration window, click the down arrow to the right of the *New device* button to reveal a dropdown list, then select *New device group*.



Details

Details offers the option of a “Title” and “Model” selection for the device group.

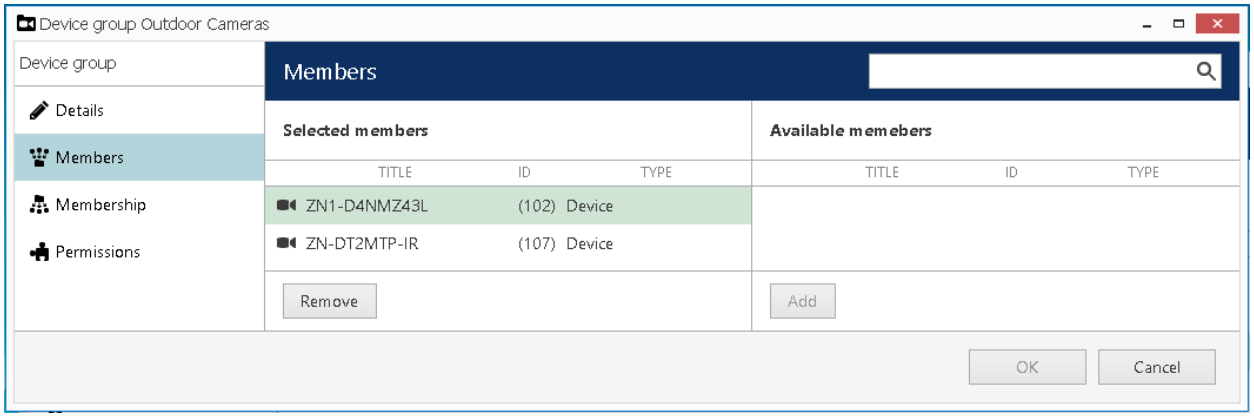
- Place the name of the device group as how you would like it to appear during use in the “Title” blank. The example below has chosen “Outdoor Cameras” for the group name.



Members

This describes the adding of a device or devices to a device grouping.

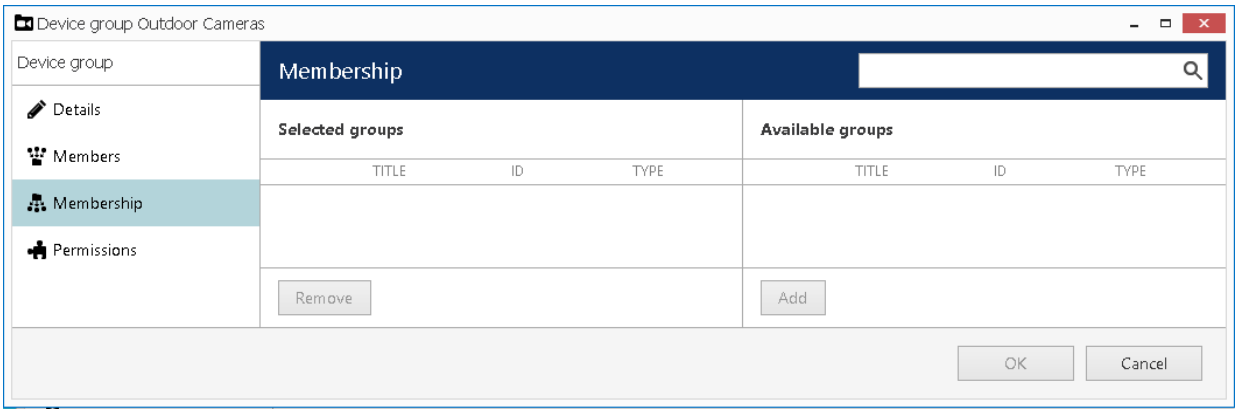
- In the example below, all outdoor cameras can be considered as potential members for the device group, "Outdoor Cameras."
- Choose a device from the *Available members* section, and click on *Add* to add the device to the members group.
- To remove member from the device group, choose the member from *Selected members* and click on *Remove*.



Membership

This describes the adding of the device group to a grouping, or "Membership," of additional groups. The example used is "Outdoor Cameras," and is related to CORTROL Global usage.

- The example device group "Outdoor Cameras" could include the additional group called "Outdoor West Parking Lot."
- Choose a group from the *Available groups* section, and click on *Add* to add the group.
- To remove the group from the *Selected groups* column, select the group, and click on *Remove*.
- A device group may be linked to several groups, as device groups may have multiple roles in a surveillance system.



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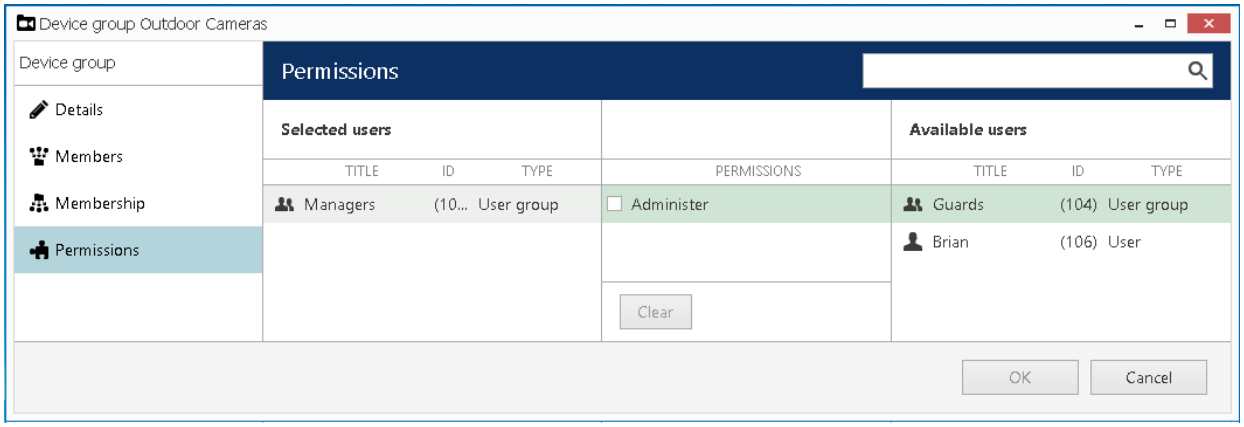
Permissions

Device group permissions allow assigning the accessibility of the device group to a user, users, or user groups.

- Choose a user or user group from the *Available users* section
- Under *Permissions*, click on permissions to be assigned. (Examples: Administration, Navigation, and Search)
- To remove the permissions, select the user or user group under *Selected users*, and click on *Clear*.
- A device may belong to several groups at once, as devices may have multiple roles in a surveillance system.
- Devices with an empty permission list will not be available to anyone except for the root (global) administrator.



3. Channel

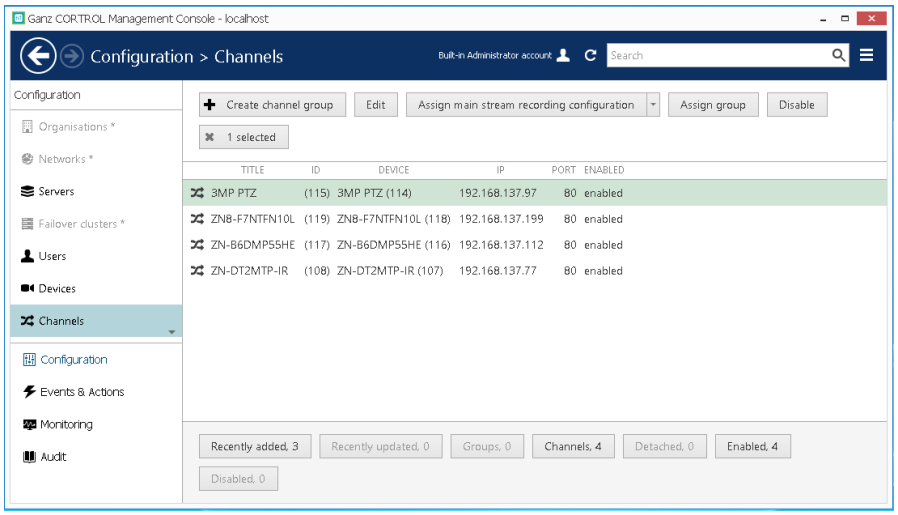
"Channel" refers to any actual video stream (with corresponding audio/event stream, if applicable) delivered to the server from any of the configured devices. The software's licensing mechanism counts channels and not devices.

In CORTROL, devices hold camera TCP/IP and user settings, as well as actual hardware model. By contrast, channels do not possess these properties; this allows them to be handled as virtual entities, detaching and re-attaching them to/from devices. Channels feature video stream configuration settings: resolution, frame rate, bit rate and others. Channels also allow for configuration of supplementary data streams, audio, motion, digital input/output events, PTZ control, and camera-side analytics information.

As there are also some multichannel devices (e.g., capture boards and video encoders), each device can have one or more channels attached to it. These can either be assigned or detected automatically; the maximum number of channels for each specific device is stipulated by the device model. Devices only appear within Ganz CORTROL Console, allowing the admin to apply all necessary configurations.

From Ganz CORTROL Management Console, select *Channels*.

Buttons on the upper panel give the option to create, edit and remove channel resources.



Channels menu options

Functions		Options
Create channel group		Create group: Details, Members, Membership, Permissions
Edit		Edit selected channel: Details, Motion Detector, Membership, Permissions, Ch Config.
Recording configuration	Assign main stream	Assignment of recording configuration to main stream of device
	Assign substream	Assignment of recording configuration to sub stream of device
Assign group		Assignment of selected channels to a channel group
Disable		Disables selected channel or channels
Selected		Indicates number of selected channels. Releases channels when selected

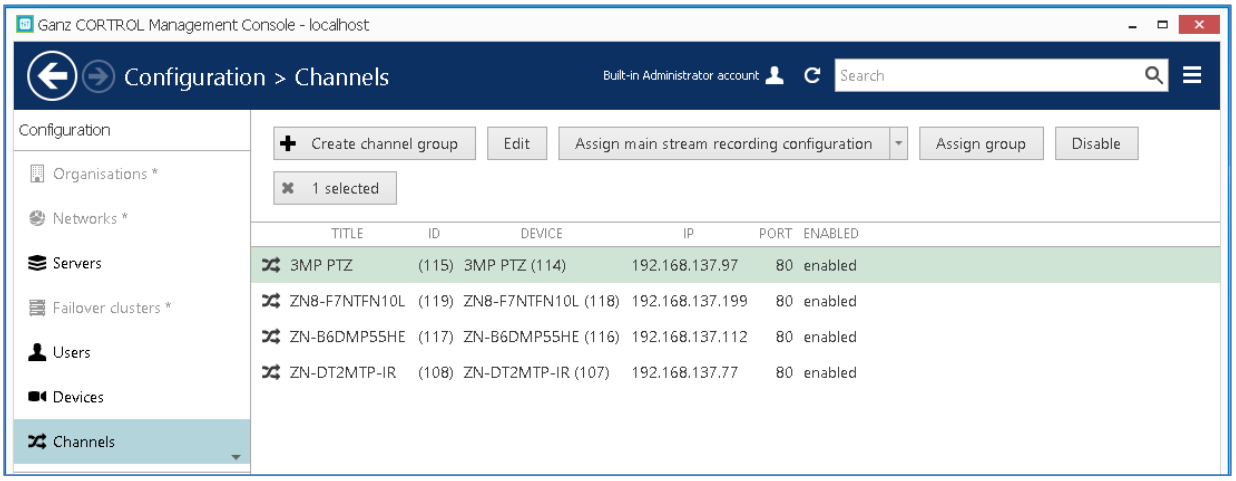
Note: A channel's resource cannot be deleted if it is currently in use, i.e., when a channel is assigned to a device.

4. Create Channel Group

A channel group represents a grouping of similar intent based channels (e.g., grouping outdoor channels together). Grouping together channels with similar intent or application, allows for quick administration.

Manually adding a channel group:

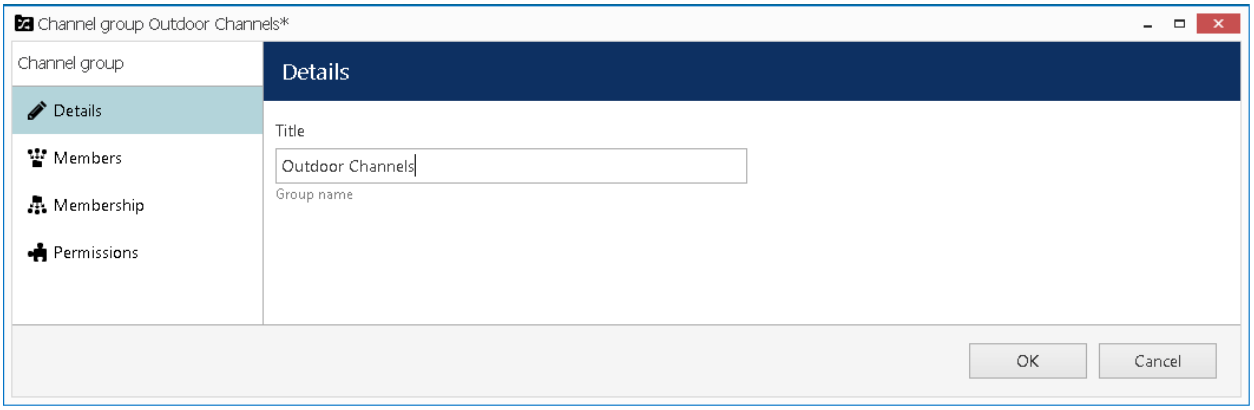
Select two or more channels to group together, then from along the top, select *Create channel group*.



Details

Details offers the option of a "Title" for the device group.

In the example, "Outdoor Channels" has been used for the device group title.



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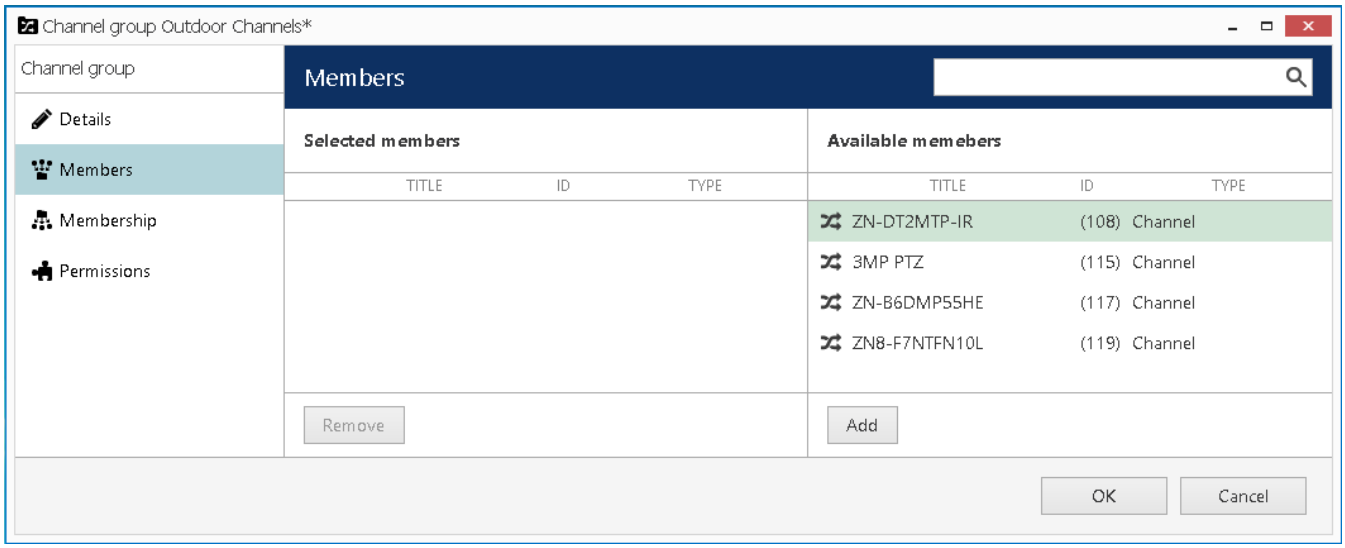
Members

This describes the adding of a channel or channels to a Channel grouping.

- In the example below, all outdoor channels can be considered potential members for the group, "Outdoor Channels."
- Choose a device from the *Available member's* section, and click on *Add* to add the device to the members group.
- To remove a member from the device group, choose the member from *Selected members* and click on *Remove*.

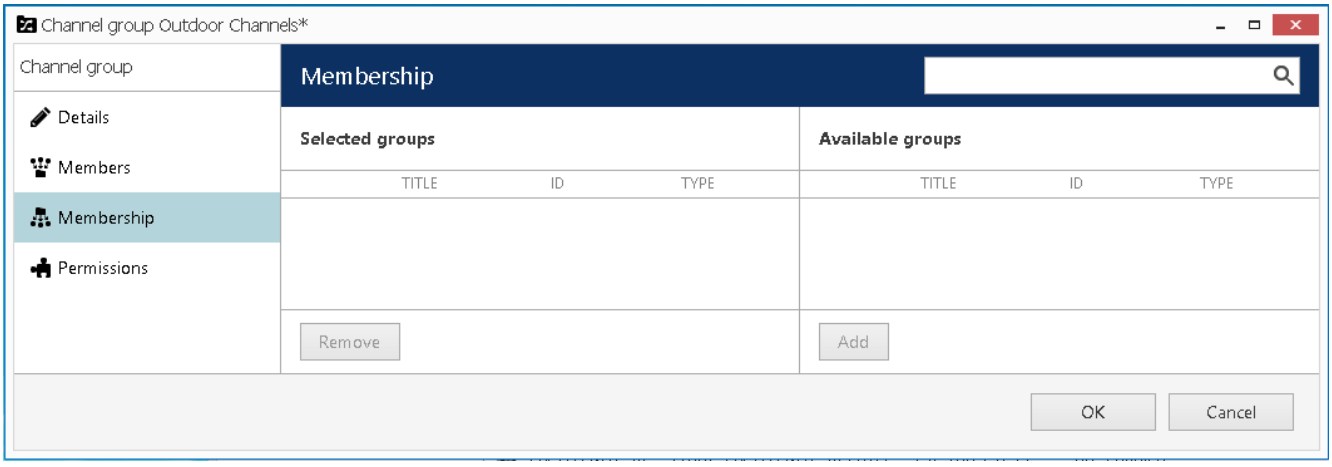
One channel may belong to several groups at once, as channels may have multiple roles in a surveillance system.



Membership

This describes the adding of the Channel group to a grouping, or "Membership," of additional groups. The example used is "Outdoor Channels," and is related to CORTROL Global usage, as related to an "Organization".

- The example Channel group "Outdoor Channels" could include a group called "Outdoor West Parking Lot channels."
- Choose a group from the *Available groups* section, and click on *Add* to add the group.
- To remove the group from the *Selected groups* column, select the group, and click on *Remove*.
- A device group may be linked to several groups, as device groups may have multiple roles in a surveillance system.



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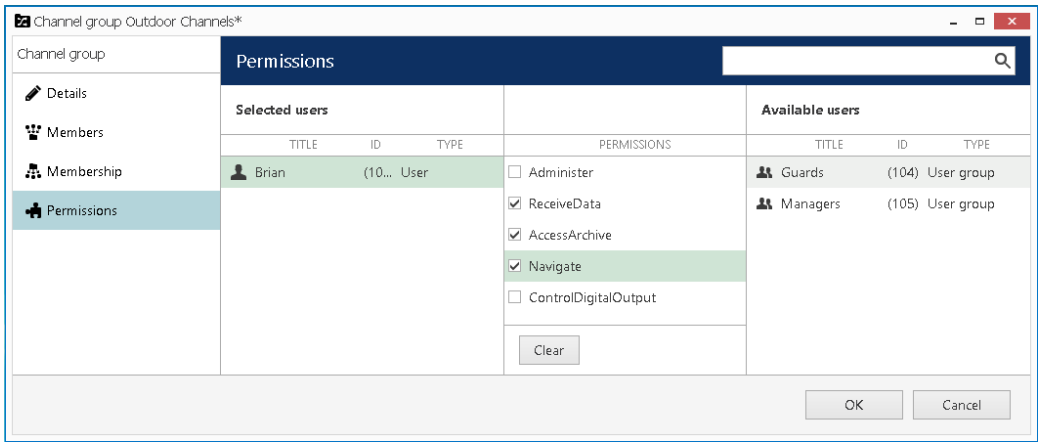
Permissions

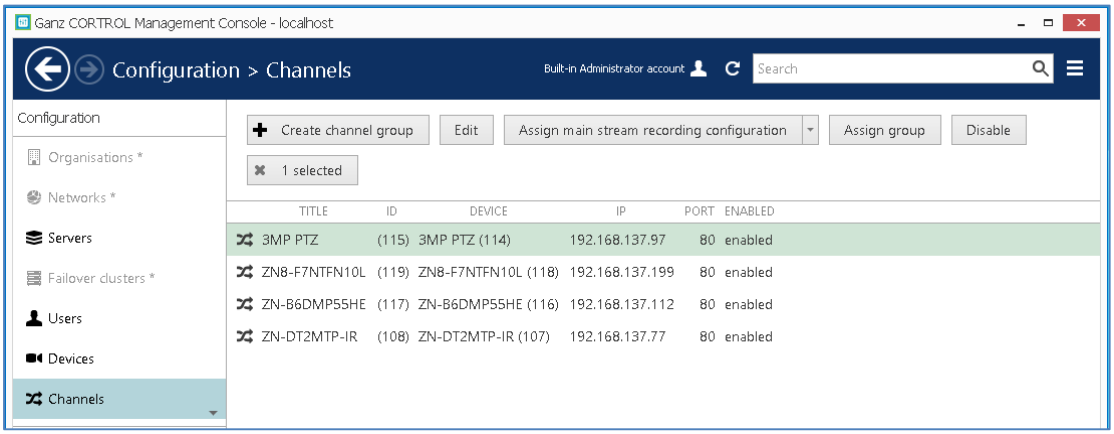
Group permissions allow assigning the accessibility to the group to a user or user group. Adding users and/or user groups is as simple as checking at least one permission for the target server. To remove, just clear the permissions by either deselecting them or by clicking the *Clear* button below the Permissions column.

Channels with an empty permission list will not be available to anyone except for the root (global) administrator.



5. Channel Properties Edit

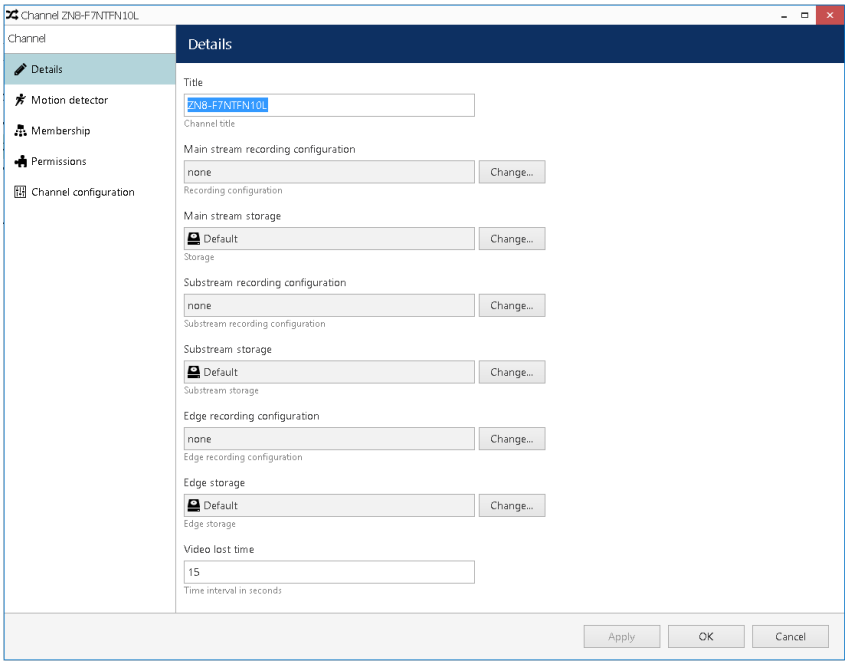
Each channel contains several properties that can be edited. To access the channel properties, select *Edit* from the Channel options buttons along the top.



Details

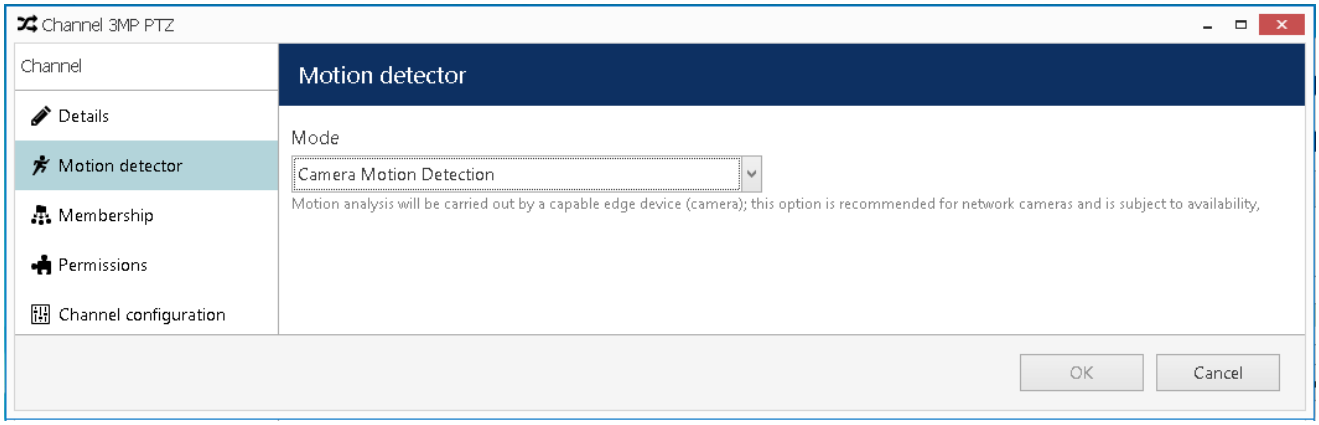
Details offers the options of a "Title" for our channel, as well as configuration options for the main and substream recording configuration, and storage configuration.

- Main stream recording configuration: Selection of available recording configurations
- Main stream storage: Selection of available storage options, default storage, DAS, NAS
- Substream recording configuration: Selection of available recording configurations
- Substream storage: Selection of available storage options, default storage, DAS, NAS
- Edge recording configuration: Selection of available recording configurations
- Edge storage: Selection of available storage options, default storage, DAS, NAS
- Video lost time: Set in seconds for duration before an event is noted



Motion detector

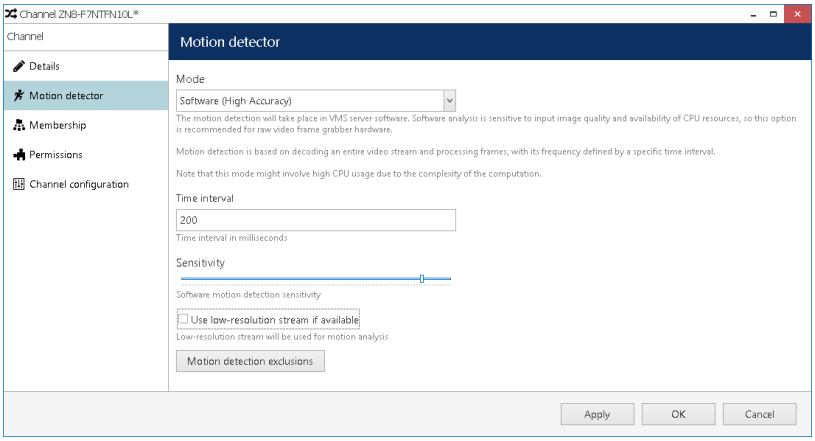
Motion detection can take place on either the camera side or the server side. Camera side detection uses less CPU resources, while server side uses more.

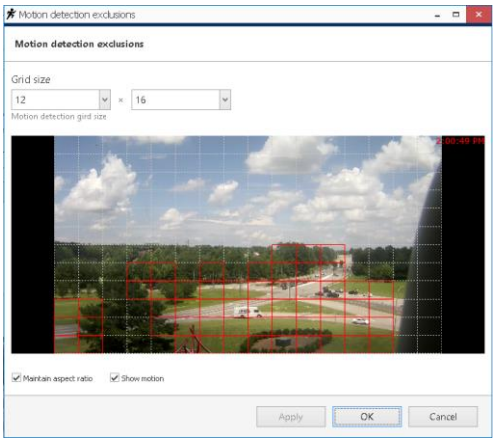


The available options from the dropdown listing are as follows:

- Disabled
- Camera Motion Detection: Motion detection is performed at the camera or edge, and passed onto the server.
- Software (High Accuracy): CPU and virtual memory usage is much greater if this mode is selected as it performs motion analysis on entire video stream for greater detection accuracy.
    - Time interval in millisecond: Default set to 200 milliseconds
    - Sensitivity: levels from 0 - 1000, default set to 500
    - Use low resolution stream if available: Checked or unchecked
    - Motion detection exclusions: Grid support for 2x2 - 64x64

- Software (High Performance): CPU consumption is significantly lower if this mode is selected as it performs motion analysis for only key frames whose frequency can vary from several frames per second to one frame every few seconds. CPU consumption can be additionally reduced by increasing time interval between two analyzed frames.
    - Time interval in millisecond: Default set to 200 milliseconds
    - Sensitivity: levels from 0 - 1000, default set to 500
    - Use low resolution stream if available: Checked or unchecked
    - Motion detection exclusions: Grid support for 2x2 - 64x64





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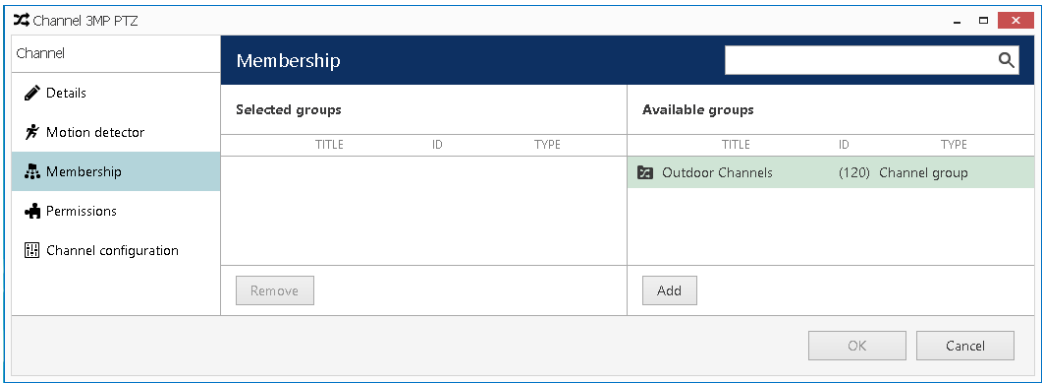
Membership

This describes the adding of a channel or channels to a Channel grouping.

- In the example below, all outdoor channels can be considered potential members for the group, "Outdoor Channels."
- Choose a device from the *Available member's* section, and click on *Add* to add the device to the members group.
- To remove a member from the device group, choose the member from *Selected members* and click on *Remove*.

One channel may belong to several groups at once, as channels may have multiple roles in a surveillance system.



Permissions

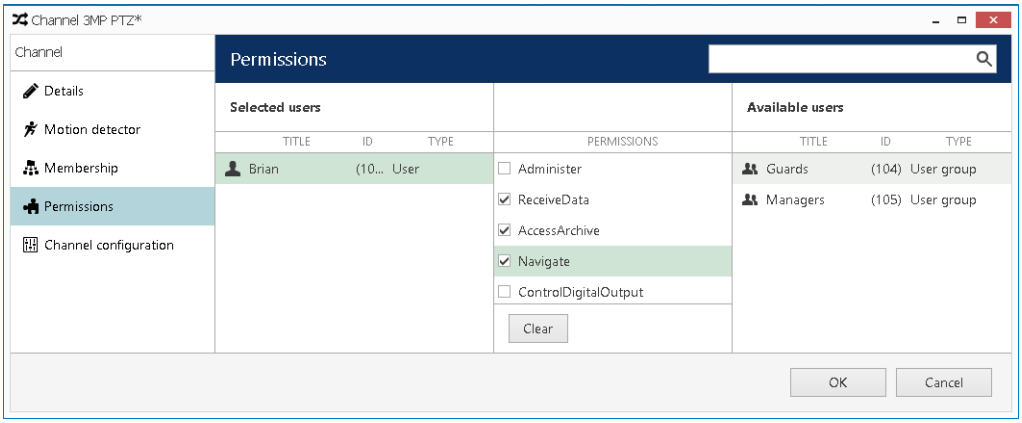
Permissions allow assigning accessibility of the channel to a user, or user group.

Adding users and/or user groups is as simple as checking at least one permission for the target server. To remove, just clear the permissions by either deselecting them or by clicking the *Clear* button below the Permissions column.

Permissions range from the following;

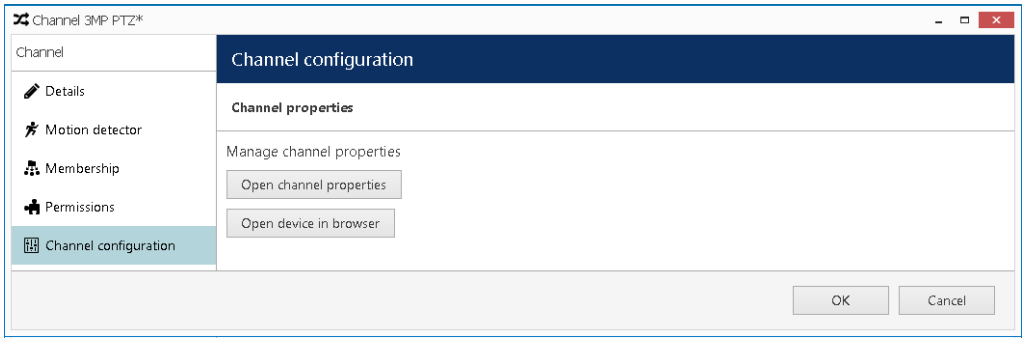
- Administer
- ReceiveData
- AccessArchive
- Navigate
- ControlDigitalOutput

A Channel with an empty permission list will not be available to anyone except for the root (global) administrator.



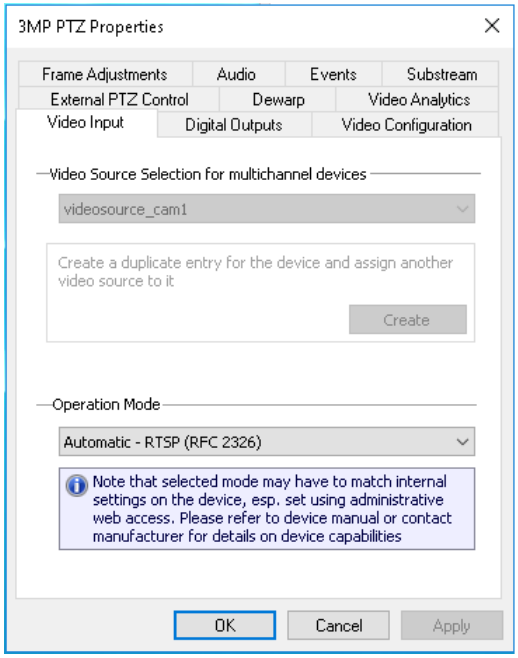
Channel configuration

Channel configuration (or Channel properties) offers the option of accessing the device's channel properties and/or the devices web browser interface. Either option offers access to the devices properties for various configuration options.



Channel properties may range from the following, but are dependent on the level of integration between CORTROL and the camera SDK:

- Frame Adjustments
- Audio
- Events
- Substream
- External PTZ Control
- Dewarp
- Video Analytics
- Video Input
- Digital Outputs
- Video Configuration



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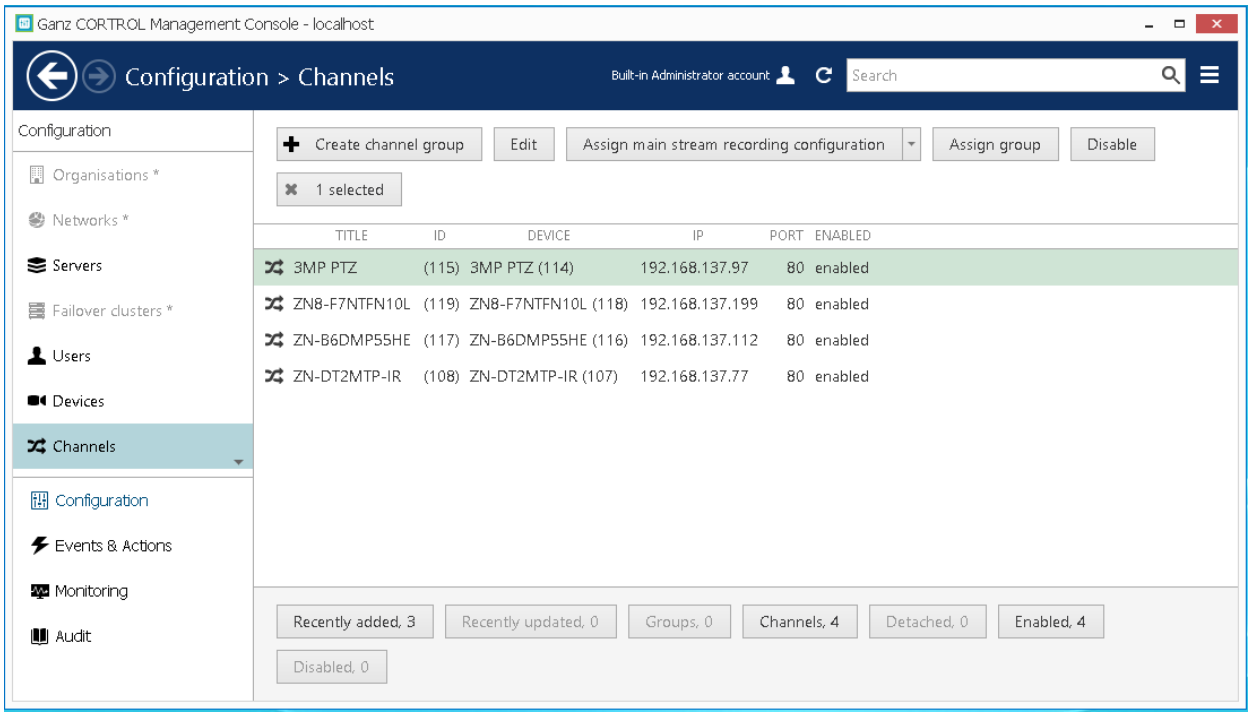
6. Assign Main Stream Recording Configuration

The Channels tab offers the option of assigning a recording configuration to either the main or secondary video stream of a device or devices.

Note: Recording configurations have the options to be assigned to a single device, or multiple devices at a time.

Select one or more channels to assign a recording configuration to, then from along the top, select *Assign main stream recording configuration.*

Note: By selecting the down arrow to the right of *Assign main stream recording configuration*, the substream can be selected and assigned a configuration as well.



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Recording configuration

The default options for recording configurations are:

- No recording
- Continuous recording
- Recording by motion

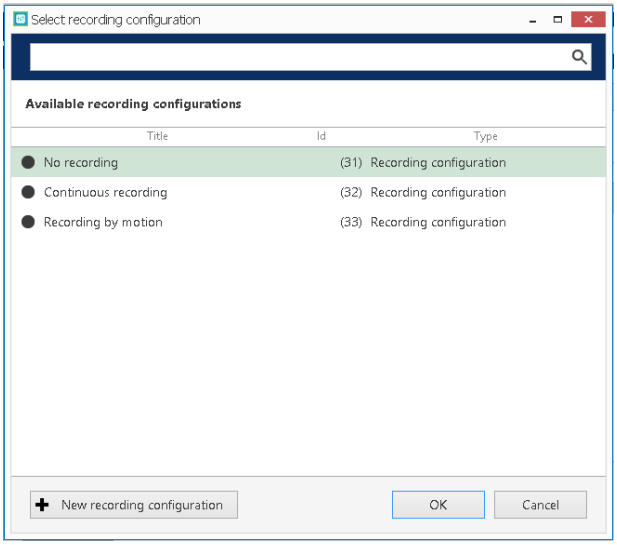
Select the configuration to assign, and then select *OK.*

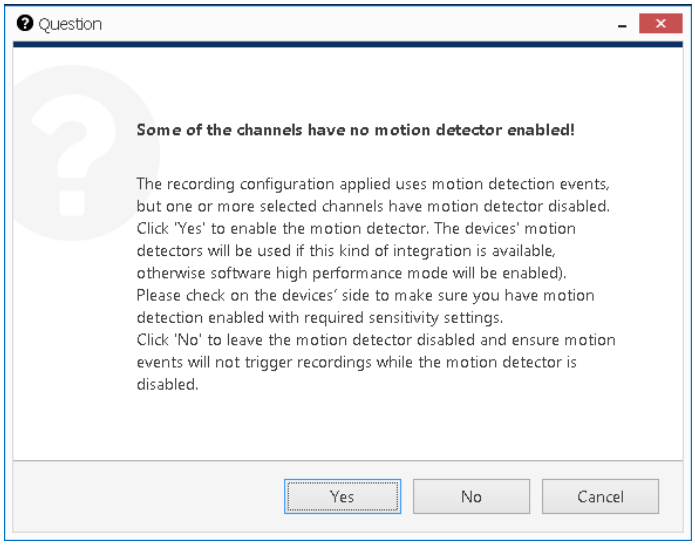
Note 1: If *Recording by motion* is selected, a warning related to camera side motion detection will appear.

- Depending on SDK integration levels, camera side motion detection may require manual configuration from the cameras browser interface.
- CORTROL motion detection configuration will be discussed under the Channel Edit: Motion detector.

Note 2: There is the option at the bottom for the creation of a new recording configuration.

- This also offers the ability for custom configuration options.
- Creation of new or custom recording configurations will be covered under “Recording Profiles.”





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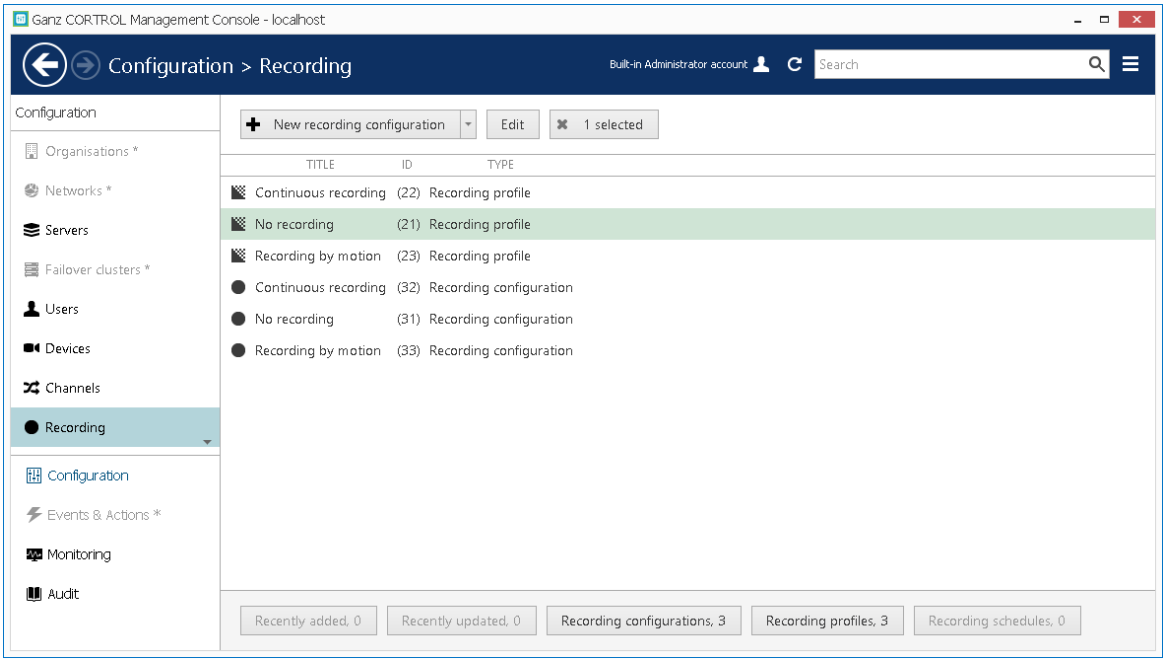
7. Recording Profiles

Recording profiles allow users to set how data streams are recorded. Profiles cannot be assigned directly to devices; rather, these are used as components for recording schedules and recording configurations. For this reason, profiles do not include some settings, such as pre-recording interval. This setting is instead defined per-channel, therefore set in the recording configuration.

From Ganz CORTROL Management Console, select *Channels*.

Buttons on the upper panel give the option to create, edit and remove recording resources.



Channels menu options

Functions		Options
New Recording	Configuration	Profile or schedule-based recording configuration to be assigned to channels
	Profile	Choose what data streams are recorded and in what mode (continuous/alert triggered)
	Schedule	Set a recording timetable based on profiles
Edit		Edit selected recording: Configuration, Profile, Schedule
Selected		Indicates number of selected recording functions. Releases functions when selected

Note: A recording resource cannot be deleted if it is currently in use, i.e., when a recording profile is assigned to a recording configuration or a schedule, or when any of the recording resources are assigned to a channel.

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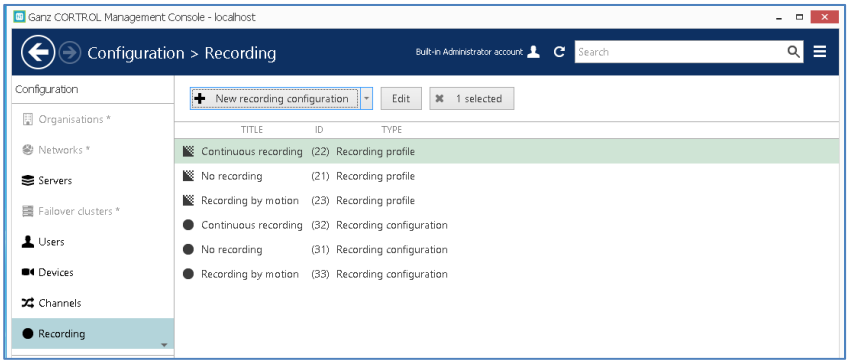
New Recording Configuration

Recording configurations are global recording arrangements that can be assigned to a per-channel recording setup. Recording configurations can be based on a single recording profile or on a pre-defined recording schedule.

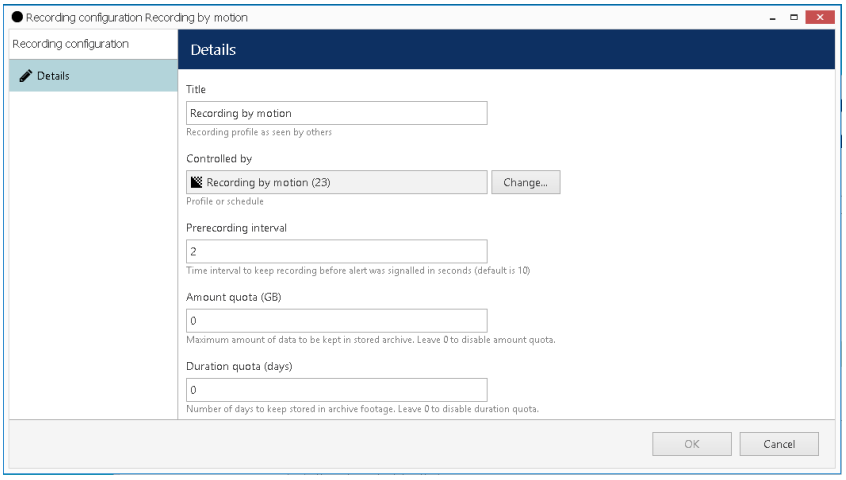
From the Recording options, select *New recording configuration* from the top row of buttons.



Details

New Recording Configuration Details offers the following options:

- Title: Name or title for the recording configuration
- Controlled by: Indicates the controlling recording profile. (*Recording profiles covered on next page*)
- Prerecording interval: Time interval to keep recording before alert is signaled. (Default 10 seconds)
- Amount quota: Maximum amount of data to be kept in stored archive. (0 to disable quota function)
- Duration quota: Number of days to keep stored in archived footage. (0 to disable quota function)



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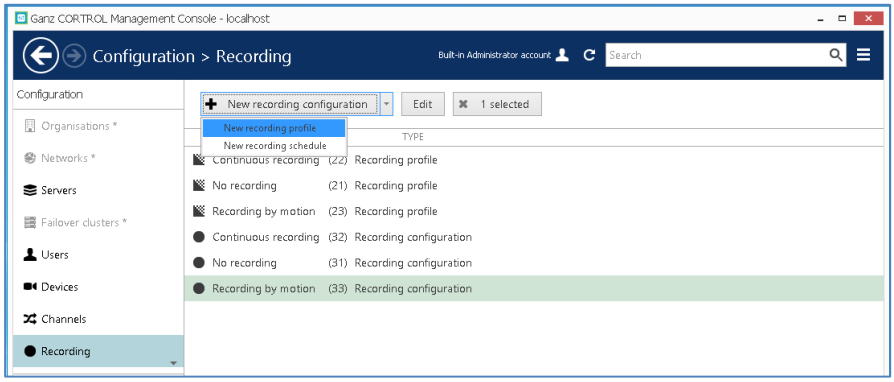
New Recording Profile

Recording profiles allow users to set which data streams are recorded and how. Profiles cannot be assigned directly to devices; rather, these are used as components for recording schedules and recording configurations. Profiles do not include some settings, such as pre-recording interval. This setting is instead defined per-channel, therefore set in the recording configuration.

From the Recording option, select the down arrow at the right of *New recording configuration* and select *New recording profile.*



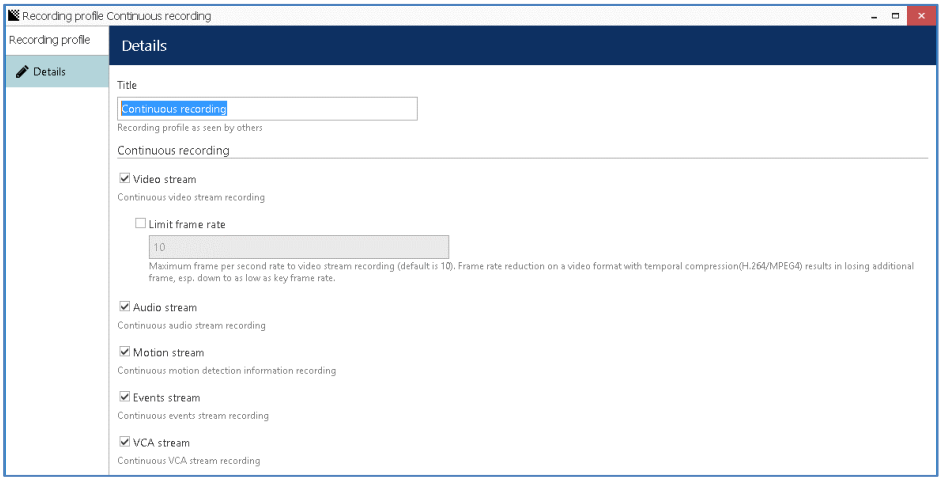
Details

Details offers two sections, continuous and event-driven recording.

Note: Only one mode may be selected at a time. If *Continuous recording* is selected, alert-based recording options will be grayed out.

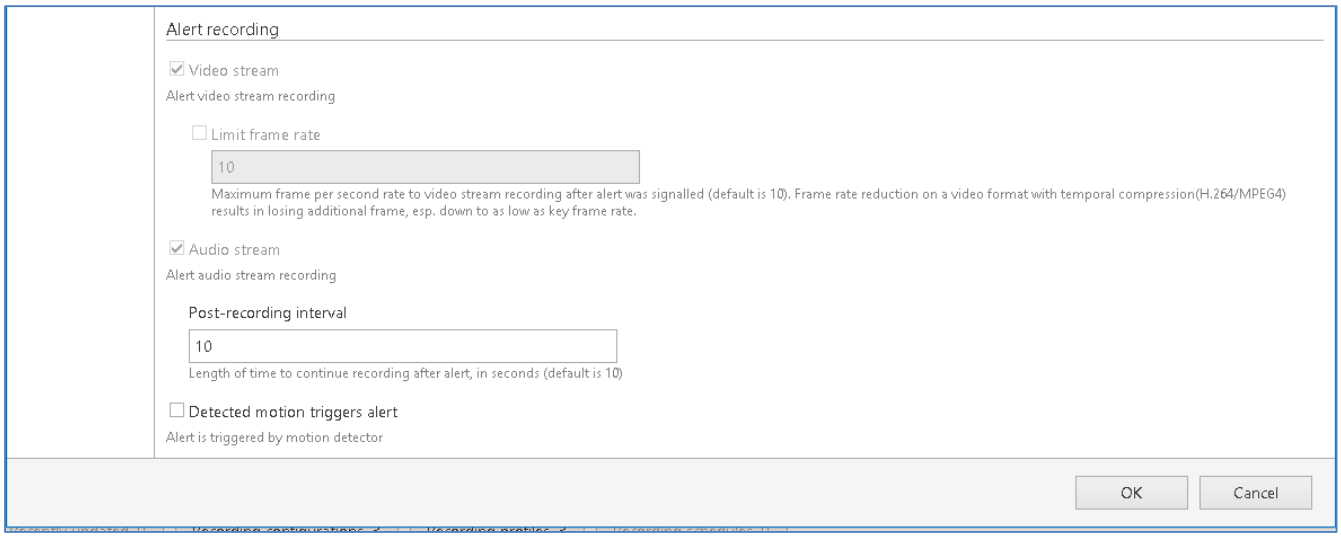
For "Continuous recording," enable *Video stream* (Continuous video stream recording) and select the relevant options:

- Limit frame rate: Server side limiting frames per second (may result in frame reduction as low as key frame rate).
- Audio stream: Selection for inclusion in continuous stream recording.
- Motion stream: Selection for inclusion in continuous stream recording.
- Event stream: Selection for inclusion in continuous stream recording.
- VCA stream: Selection for inclusion in continuous stream recording.



For **motion-based recording**, enable *Video stream* in the *Alert recording* section and enable *Detected motion triggers alert* setting. To record still frames during non-motion periods, keep the *Video stream* option in *Continuous recording* section enabled, set the desired frame rate (e.g., 1FPS), then set high FPS or no limit in the *Alert recording* section. To record while motion is present, deselect the *Video stream* option in the *Continuous recording* section.

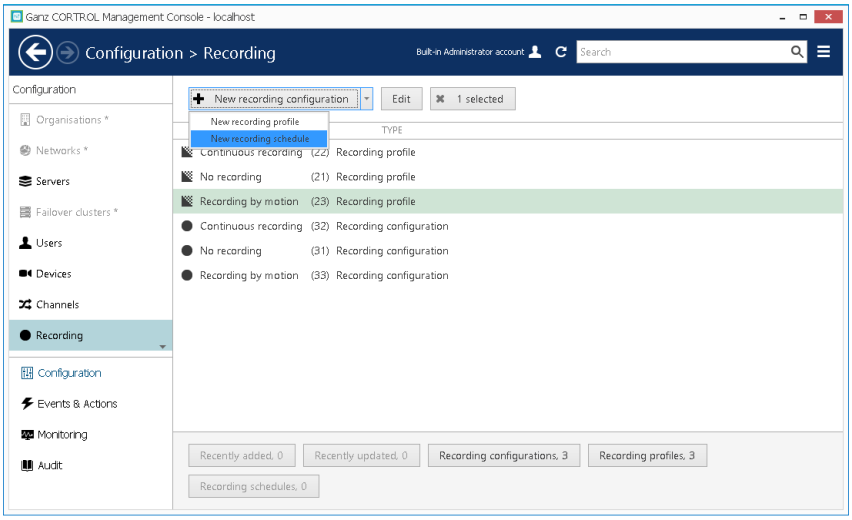
When selecting **motion-based recording configuration** with a disabled motion detector, the software will automatically suggest enabling motion detection for the target channel. The camera-side detector is given priority by default. If it is not available, the software-side detector will be enabled and set to high-performance mode. It is recommended to **review** the motion detector settings to make sure it operates as desired, especially if the camera-side detector is in use.



New Recording Schedule

Recording schedules are sets of recording profiles that define what recording profiles are used depending on the day and time of the week.

From the Recording option, select the down arrow to the right of *New recording configuration*, then select *New recording schedule.*

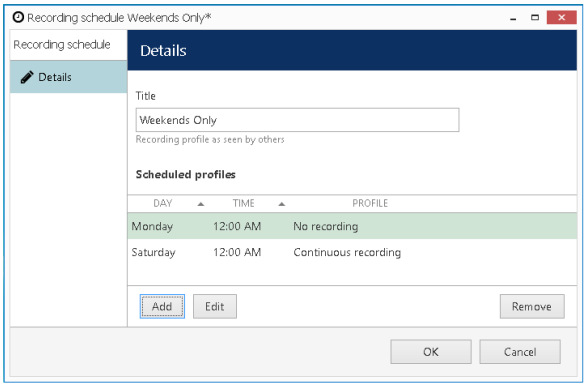


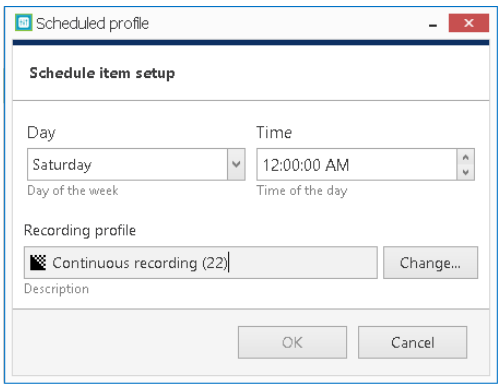
Schedule Profile

Note that only a begin time is set for each added profile. The end time is determined by the start time of the next profile. For example, if continuous recording is required during weekdays and motion-driven recording during weekends, the continuous recording profile should be scheduled to start on Monday at 12 a.m., while the motion-driven profile should start on Saturday at 12 a.m.

Click *OK* to save and add the profile to the schedule. Multiple profiles will be automatically sorted based on their start time.

Use the *Edit* and *Remove* buttons below to manage the profiles added. When finished, click *OK* to save. The newly created schedule will be added to the item list in the *Recording* section.





8. Users and Users Groups

The Ganz CORTROL Recording Server can be accessed from multiple CORTROL Clients. These clients may be running from the same recording server, from any number of remotely networked computers, and/or mobile devices running the CORTROL mobile app.

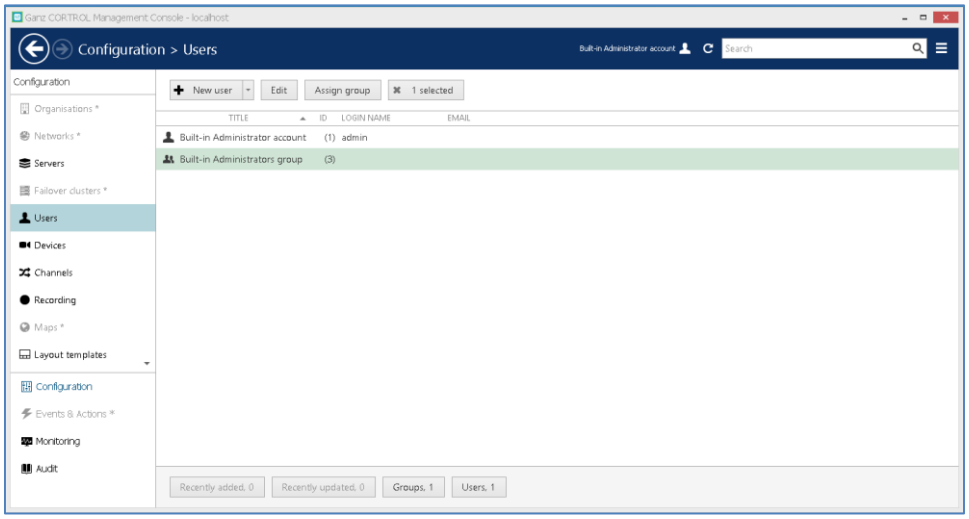
To protect the Ganz CORTROL Recording Server, Ganz recommends that as part of the initial CORTROL Recording Server configuration, the operator configure a new user group and user with restricted privileges.

User management is accessible via the Users component of the Configuration section. By default, the system already features a built-in global Administrator account and built-in Administrators group.

Note: The built-in Administrator user account and built-in Administrators group are root users with access to absolutely all available resources. As a result, the resources choice is unavailable for the Administrators group, and it is also impossible to add an Administrator user to any other group.

From Ganz CORTROL Management Console, select *Users.*

Buttons on the upper panel give the option to create, edit and remove User resources.



Users menu options

Functions		Options
New	User	Create a new user: Details, Membership, Resources
	Group Schedule	Create a new group: Details, Members, Membership, Resources
Edit		Edit selected User/Group: Details, Members, Membership, Resources
Assign group		Assigning of user/group to a group
Selected		Indicates number of selected users/groups. Releases users/groups when selected

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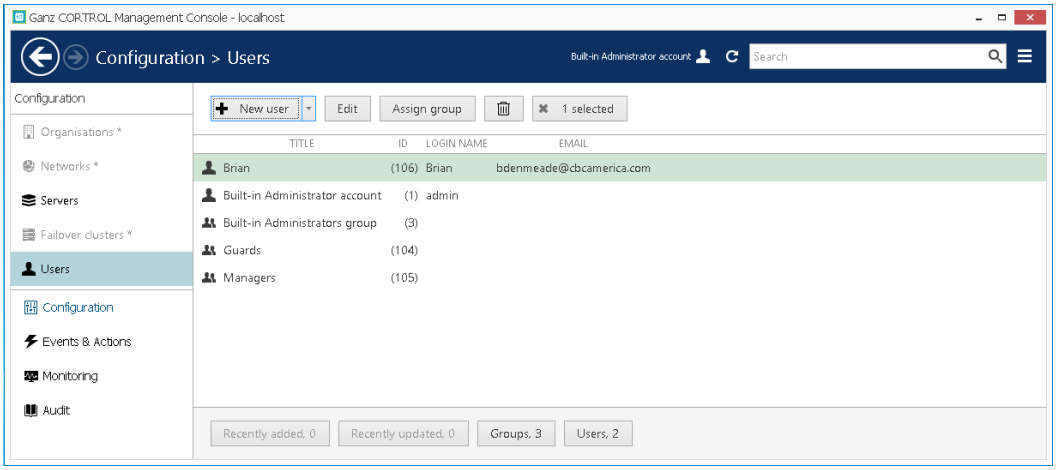
New User

New User offer the option for creating a new user for CORTROL:

Select “New User”, and configure the required Details, Membership, and Resources.

From the Users option, select *New user*.

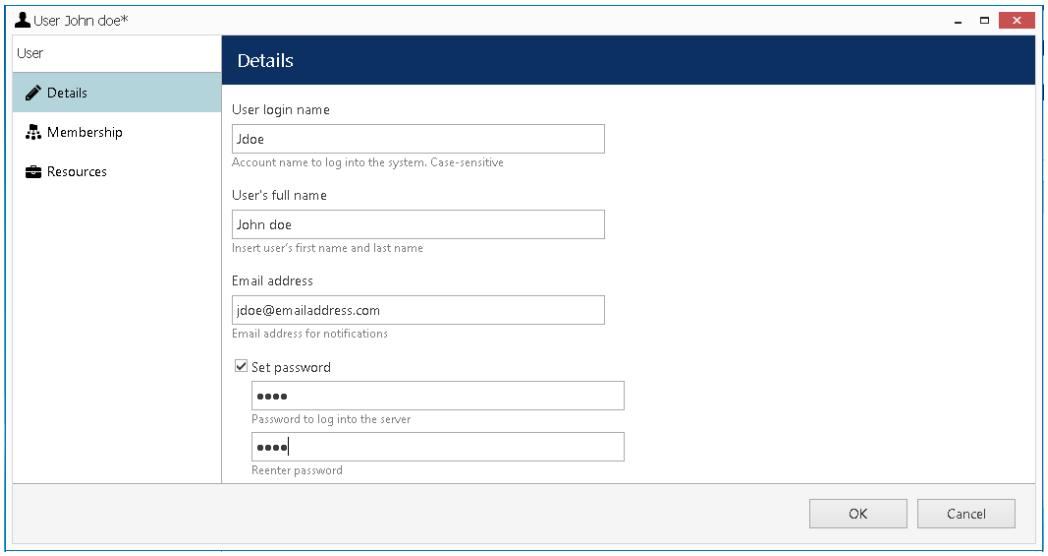


Details

Details offers the options of *User login name, User’s full name, Email address,* and *Set password.*

The Example below has entered the following entries:

- User login name: Jdoe (Typically a user login is the combination of first initial and last name.)
- User’s full name: John Doe
- Email address: jdoe@emailaddress.com
- New password: 2112 (Strong passwords are highly recommended.)



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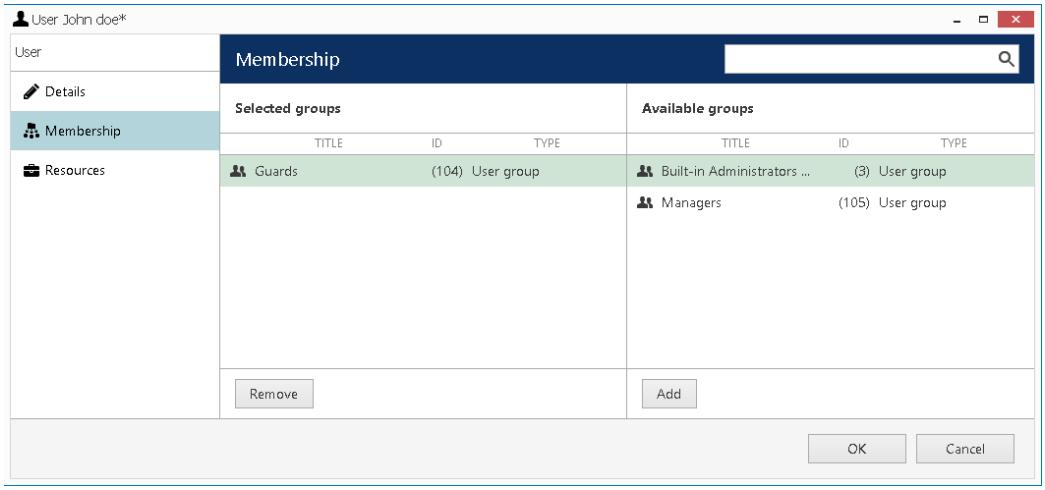
Membership

This describes the adding of a user to a user group.

- In the example below, the user can be considered a potential member for the "Managers group."
- Choose a group from the *Available groups* section, and click on *Add* to add the user to the group.
- To remove a user from a group, choose the group from *Selected groups* and click on *Remove*.

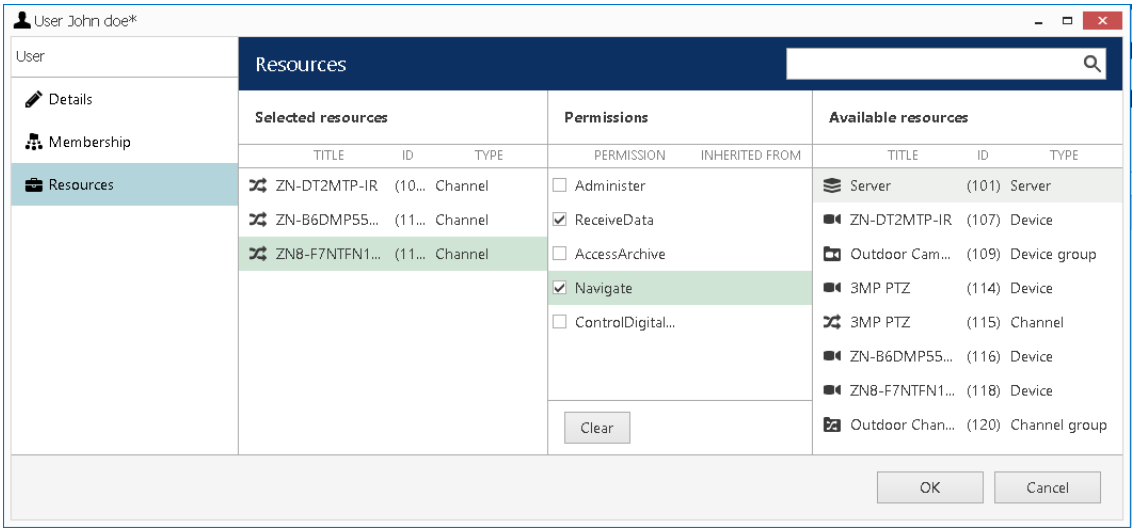


Resources

Resources allow assigning the accessibility to servers, devices, and channels to the user.

A resource may be added simply by checking at least one permission for the server, device, or channel. To remove, the permissions must be cleared; either by deselecting them or by clicking the *Clear* button below the Permissions column.

Users with an empty permission list will not be able to access any servers, devices, or channels, unless they are an administrator.



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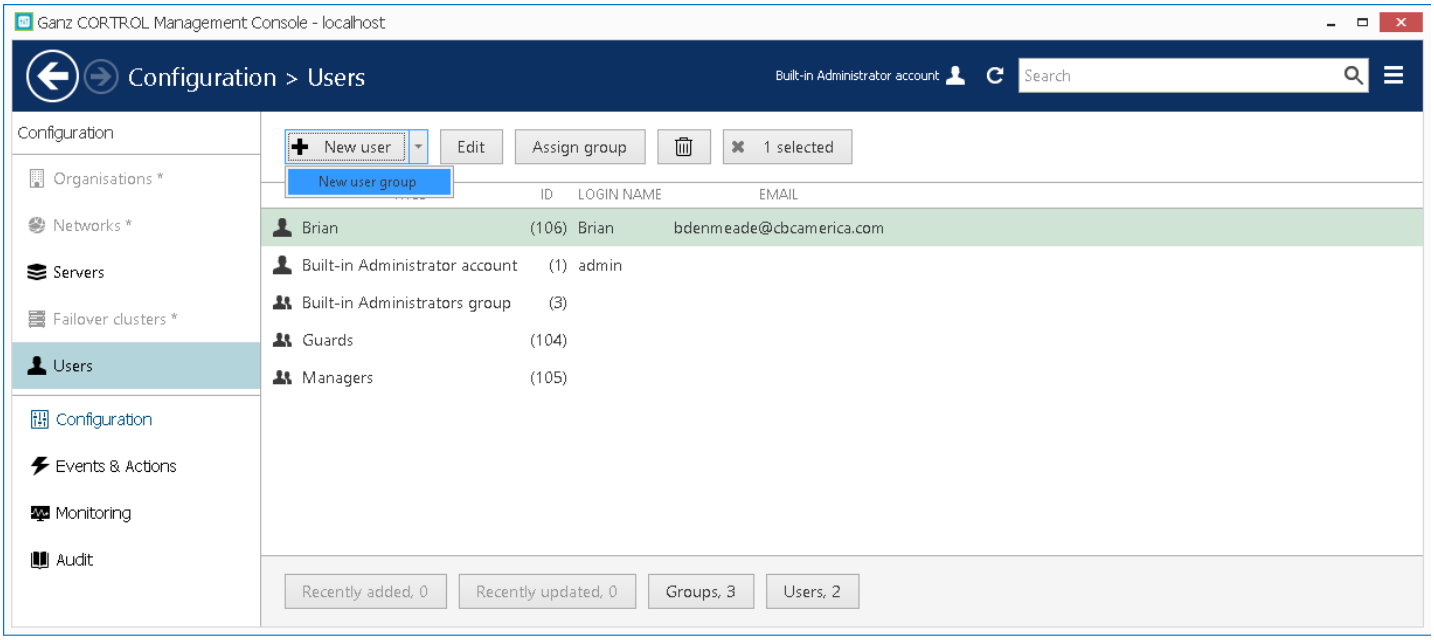
New User Group

A User group represents a grouping of similar intent based user (e.g., grouping security guards, or managers together). Grouping together user with similar intent or application, allows for quick administration.

Creating a user group:

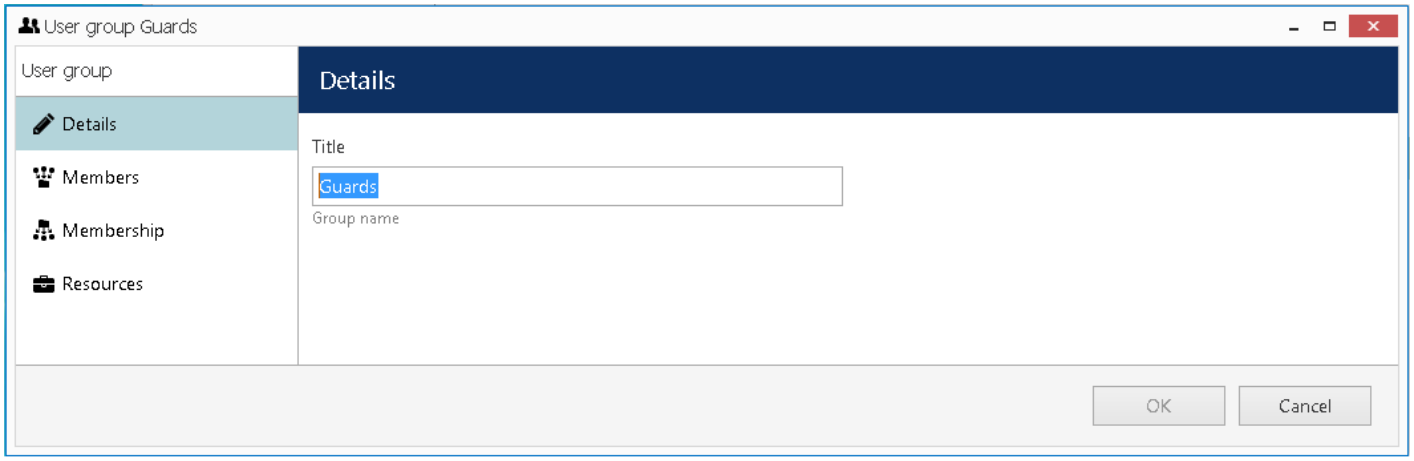
From along the top, select the arrow to the right of "New user", and then select "New user group."



Details

Details offers the option of a title for the user group.

In the example below, the entry of "Guards" has been entered for the user group title.



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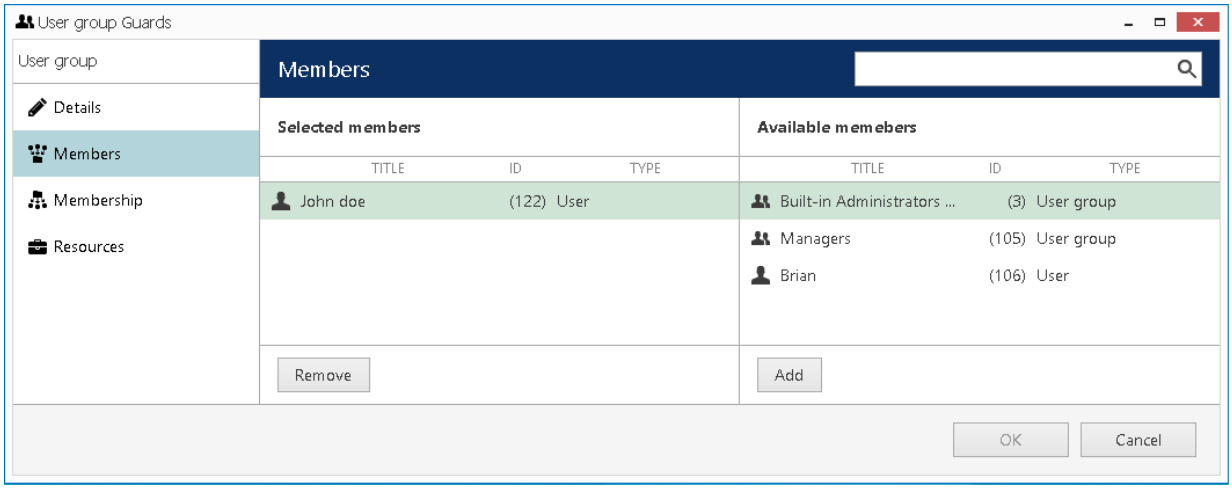
Members

Members allows the addition of users to the user groups previously created.

Users may be grouped together for convenience and ease of administration

Choose the user to add/remove as a member of the user group by use of the *Add* and *Remove* buttons.

One user may belong to several groups at once, as users may have multiple roles at a surveillance location.

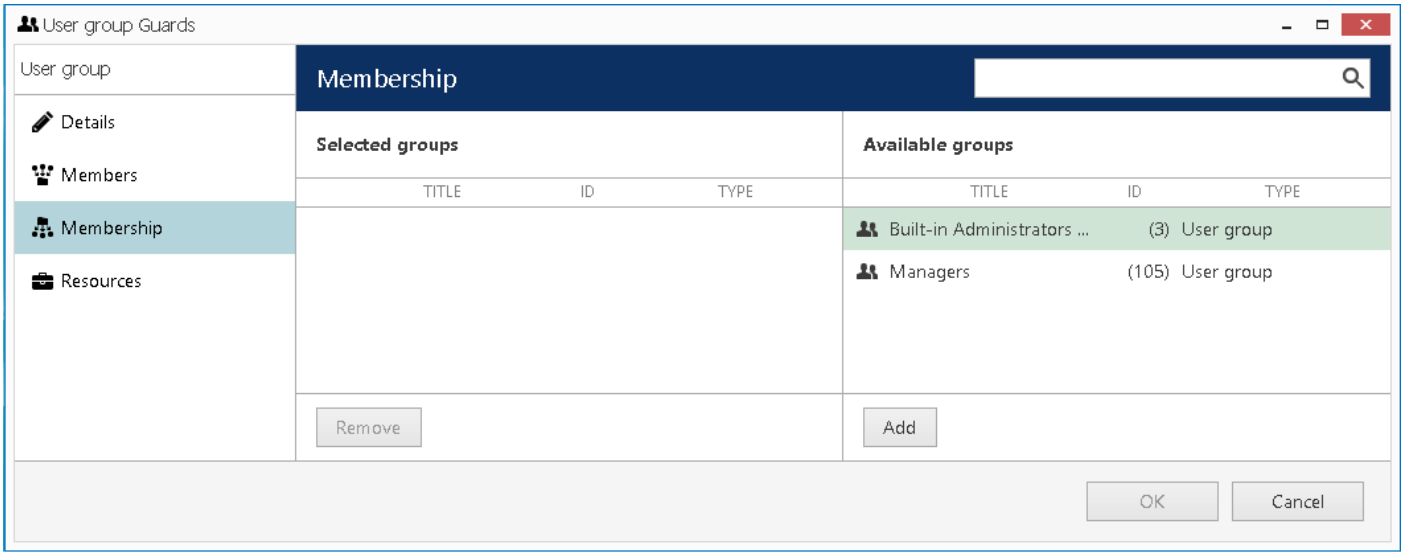


Membership

This describes the adding of a user group to a grouping, or "Membership," of additional groups. The example used is "Guards," and is related to CORTROL Global usage.

- The example user group "Guards" could include the additional group called "Campus Guards."
- Choose a group from the *Available groups* section, and click on *Add* to add the group.
- To remove the group from the *Selected groups* column, select the group, and click on *Remove*.

A user group may be linked to several groups, as groups may have multiple roles in a surveillance system.

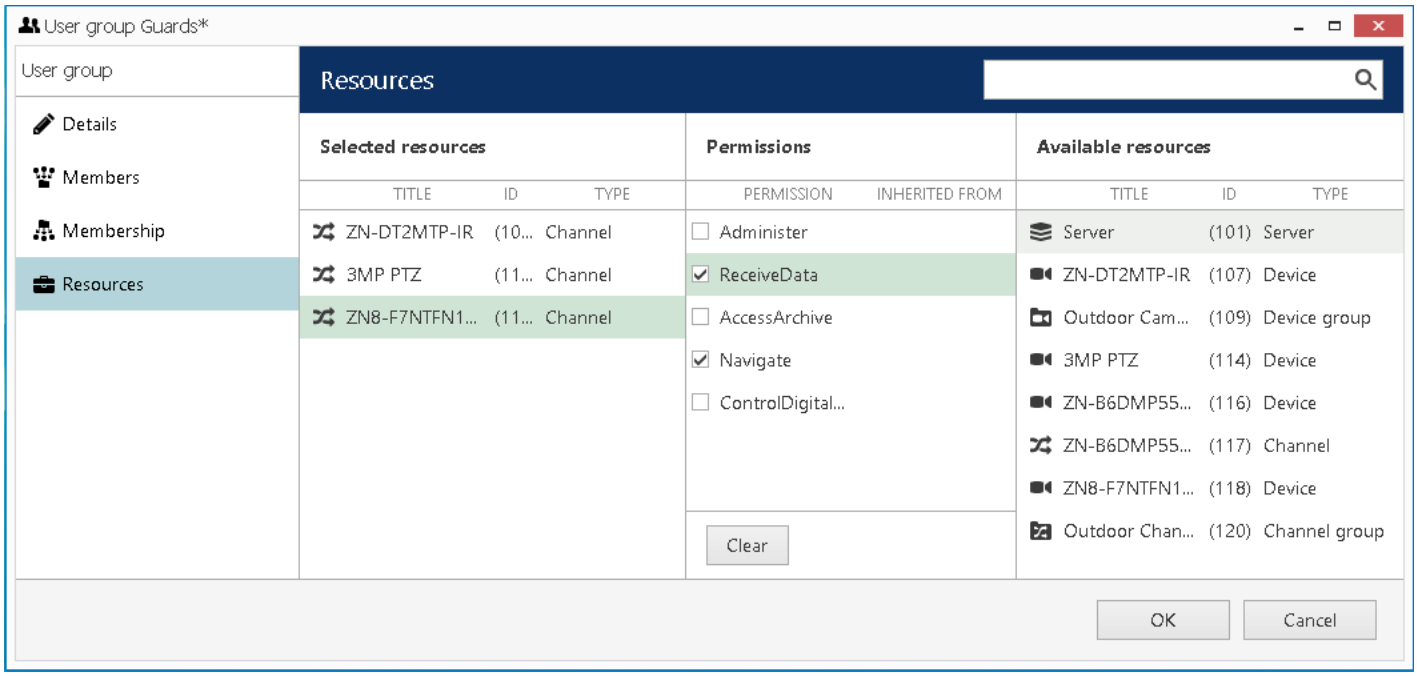


Resources

Resources allow assigning the accessibility to servers, devices, and channels to the user group.

A resource may be added simply by checking at least one permission for the server, device, or channel. To remove, the permissions must be cleared; either by deselecting them or by clicking the *Clear* button below the Permissions column.

User groups with an empty permission list will not be able to access any servers, devices, or channels, unless the group belongs to an administrator.



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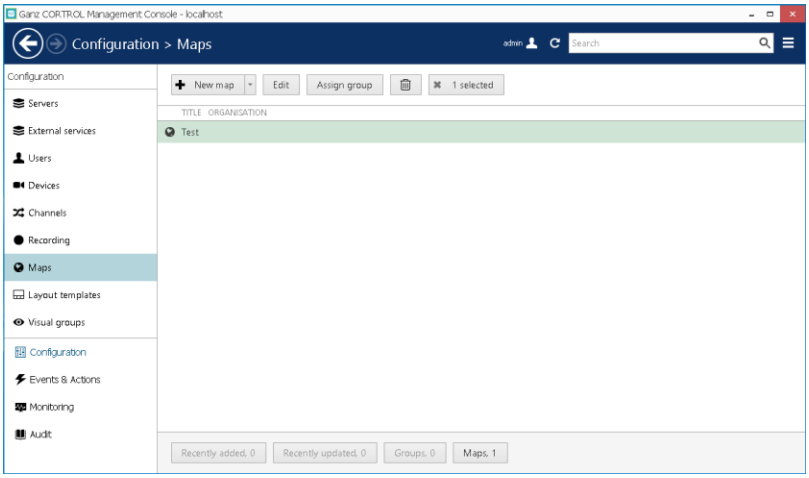
9. Maps

Ganz CORTROL offers interactive, multi-layered maps. Maps offer a comprehensive visual overview of cameras and layouts, providing a complete overview of the entire surveillance installation. CORTROL offers both Maps, and map groups.

From Ganz CORTROL Management Console, select *Maps.*

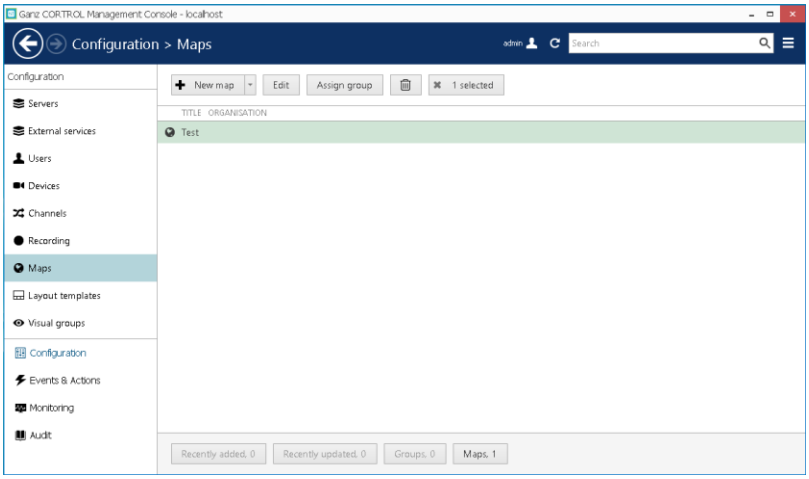
Buttons on the upper panel give the option to create, edit and remove Map resources.



New Maps

By clicking on *New maps*, new interactive multi-layered maps are being created for use in a surveillance installation.

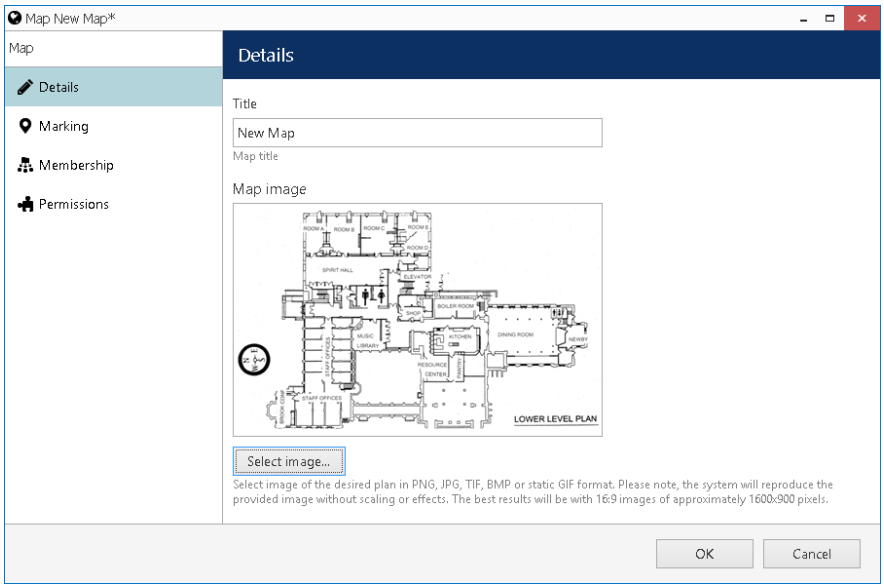
Click on *New map.*



Details

Details offers two sections, one for the title of the map, and one for selection the map image.

- Title: Enter a descriptive label for the map.
- Select image: Select from PNG, JPG, TIF, BMP, or static GIF image formats.



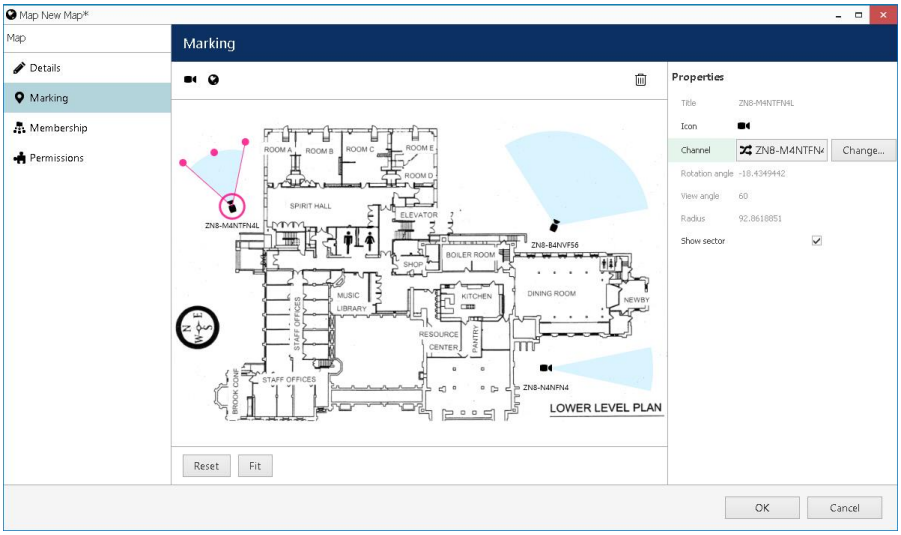
Marking

Once a map has been created, channels need to be added, and their location needs to be marked.

Drag the camera icon in the top left corner over to the map, and drop it to a location that corresponds to an actual camera.

Once the camera icon is placed, drag the red dots of its field of view until the values of the view and radius have been matched to those same values on the physical camera (or closest approximation to it).

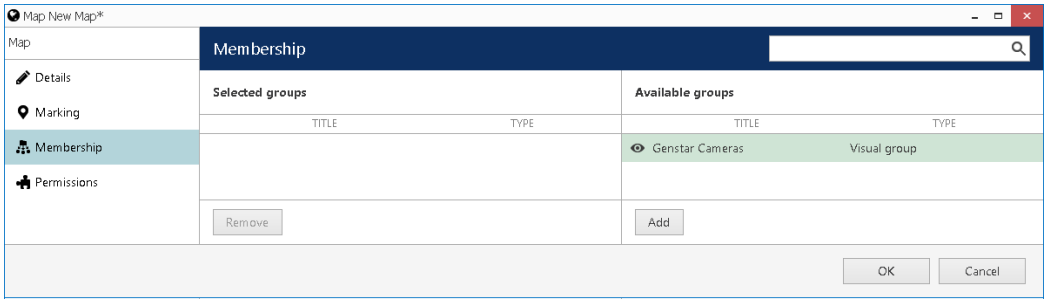
Next, select the *Change* option, ~~and~~ then select the channel the camera marking represents.



Membership

This describes the adding of a map to a group.

- In the example below, the map can be considered a potential member for a visual group
- Choose a group from the *Available groups* section, and click on *Add* to add the user to the group.
- To remove a user from a group, choose the group from *Selected groups* and click on *Remove*.



Permissions

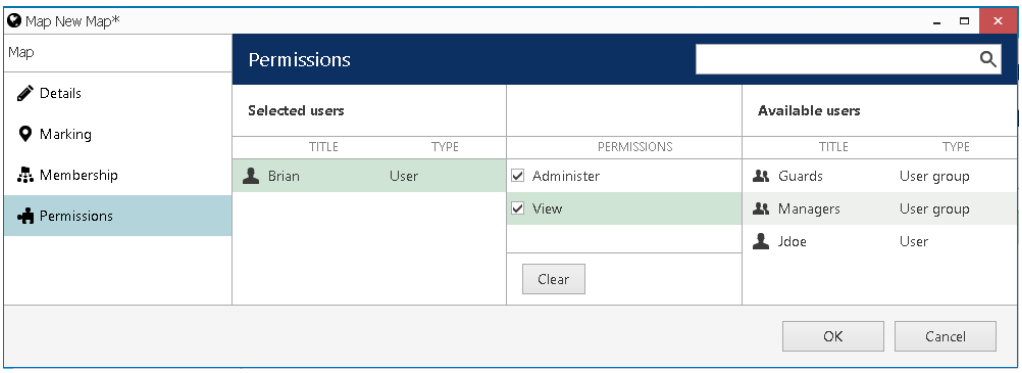
Permissions allow assigning accessibility of the map to a user, or user group.

Adding users and/or user groups is as simple as checking at least one permission for the target server. To remove, just clear the permissions by either deselecting them or by clicking the *Clear* button below the Permissions column.

Permissions range from the following;

- Administer
- ReceiveData
- AccessArchive
- Navigate
- ControlDigitalOutput

A map with an empty permission list will not be available to anyone except for the root (global) administrator.



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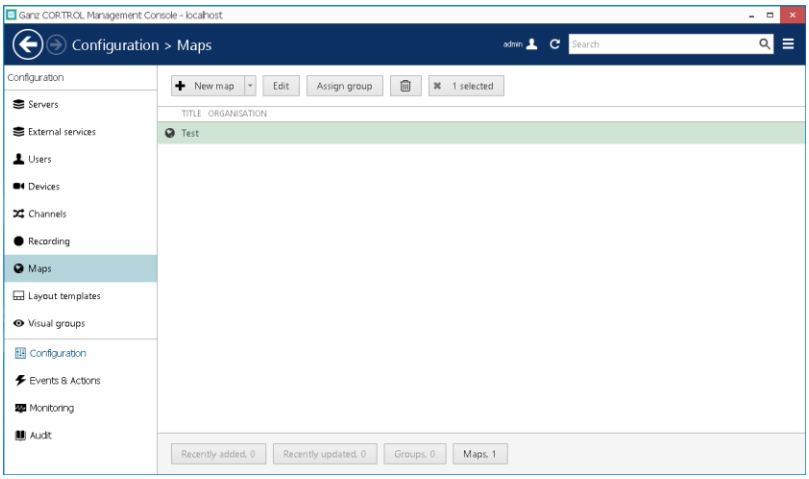
New Map Group

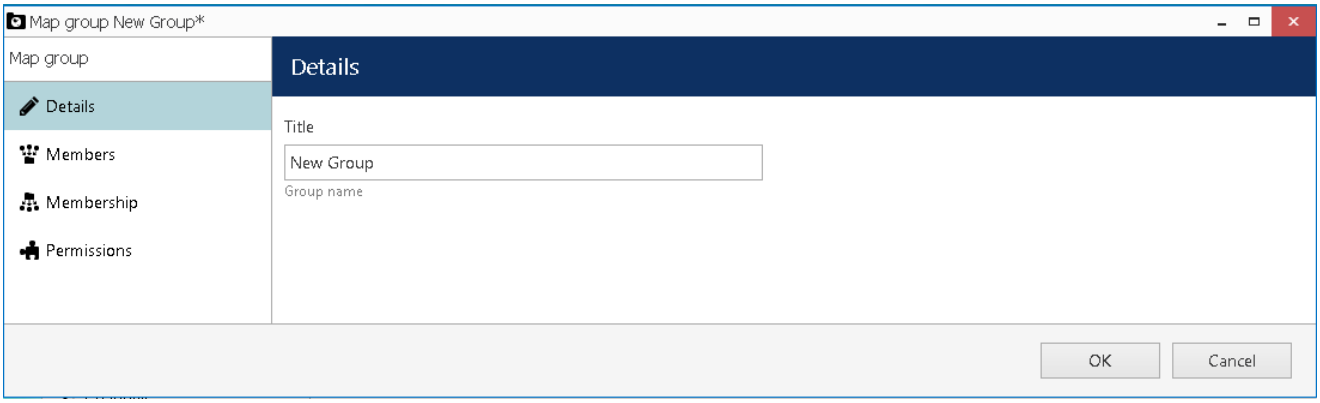
By clicking on *New maps*, new interactive multi-layered maps are being created for use in a surveillance installation.

To begin, click on *New map*.



Details

Details offers two sections, one for the title of the map, and one for selecting the map image.

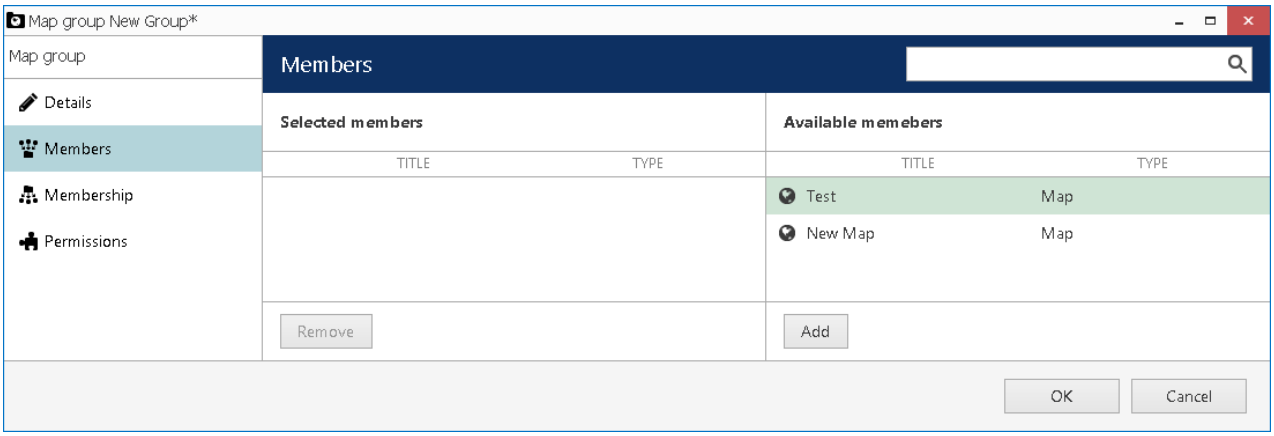


Members

Members allows for the adding of a map to an existing group or groups, allowing group members to access the map.

Group membership helps extend the convenience and ease of administrating a large collection of maps.

Choose the group to add/remove to a membership by use of the *Add* and *Remove* buttons.

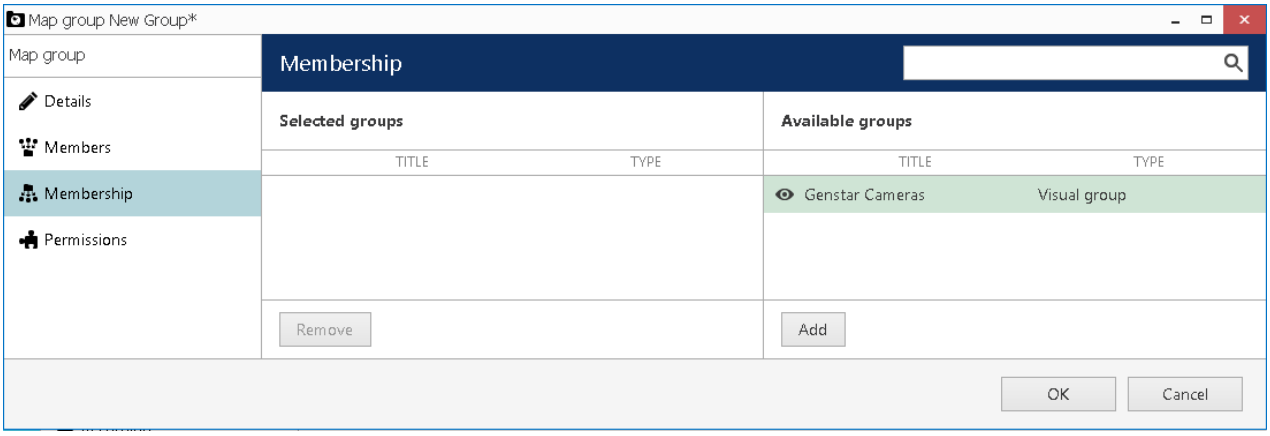


Membership

This describes the adding of a map group to a grouping, or "Membership," of additional groups.

- The example map group below could include the membership with additional group
- Choose a group from the *Available groups* section, and click on *Add* to add the group.
- To remove the group from the *Selected groups* column, select the group, and click on *Remove*.

A map group may be linked to several groups, as groups may have multiple roles in a surveillance system.



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Permissions

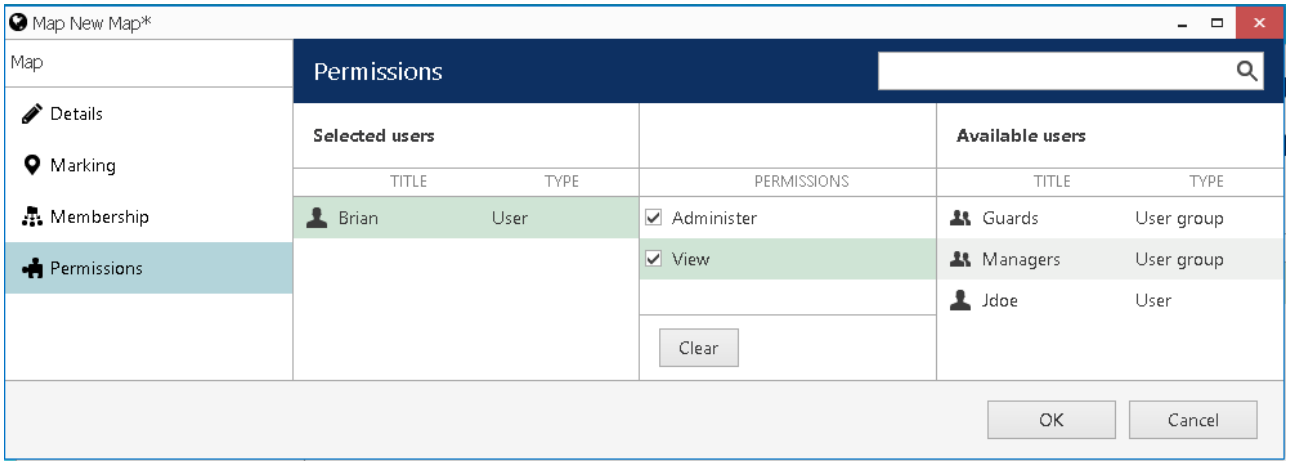
Permissions allow assigning accessibility of the map to a user, or user group.

Adding users and/or user groups is as simple as checking at least one permission for the target server. To remove, just clear the permissions by either deselecting them or by clicking the *Clear* button below the Permissions column.

Permissions range from the following;

- Administer
- ReceiveData
- AccessArchive
- Navigate
- ControlDigitalOutput

A map with an empty permission list will not be available to anyone except for the root (global) administrator.



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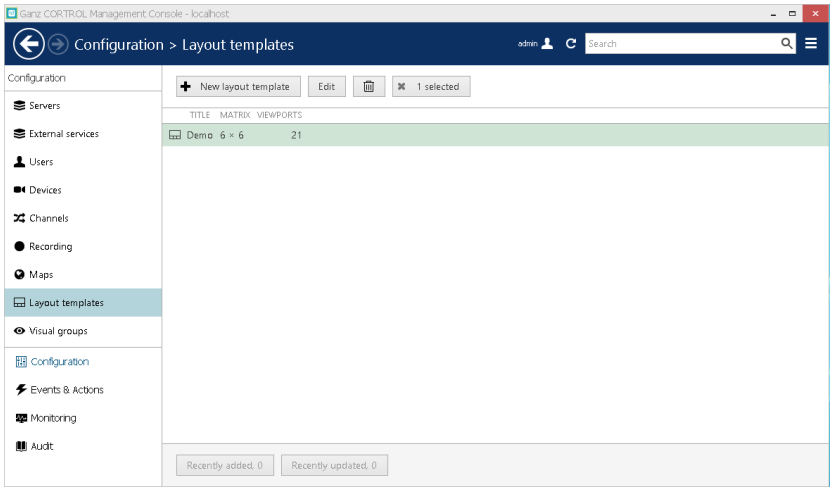
10. Layout Templates

Ganz CORTROL offers the easy creation of custom layouts, or templates. The custom layout templates can be created and then used in any Ganz CORTROL Client applications connected to the target server.

To access layout templates via the Ganz CORTROL Console, go to the *Configuration* section in the bottom left panel and select the *Layout templates* component in the menu on the left.

Buttons on the upper panel give the option to create, edit and remove layout template resources.

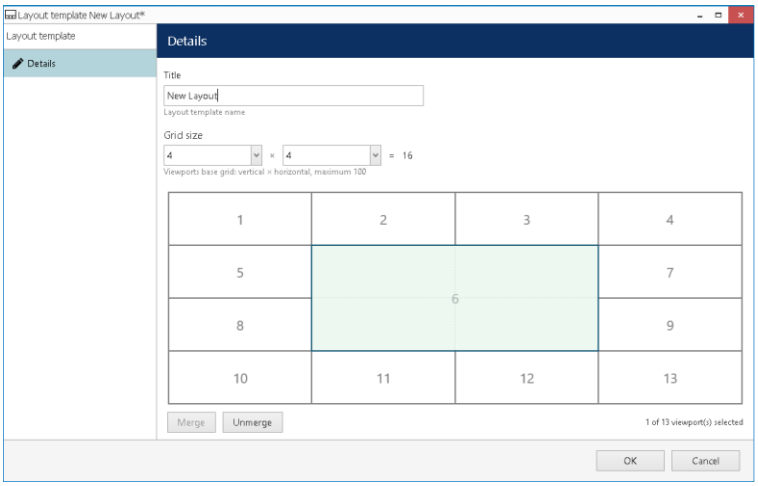


Details

Details offers the following options, as they relate to the creation of a custom layout, or template.

- Title: Enter a descriptive label for the layout template.
- Grid size: Select from any combination of 1 - 20 for the vertical, and 1 - 5 for the horizontal.
- Merge: Select adjoining cells, and select *Merge* to combine the cells into one.
- Unmerge: Select a merges collection of cells, and select unmerge to uncombined the cells.

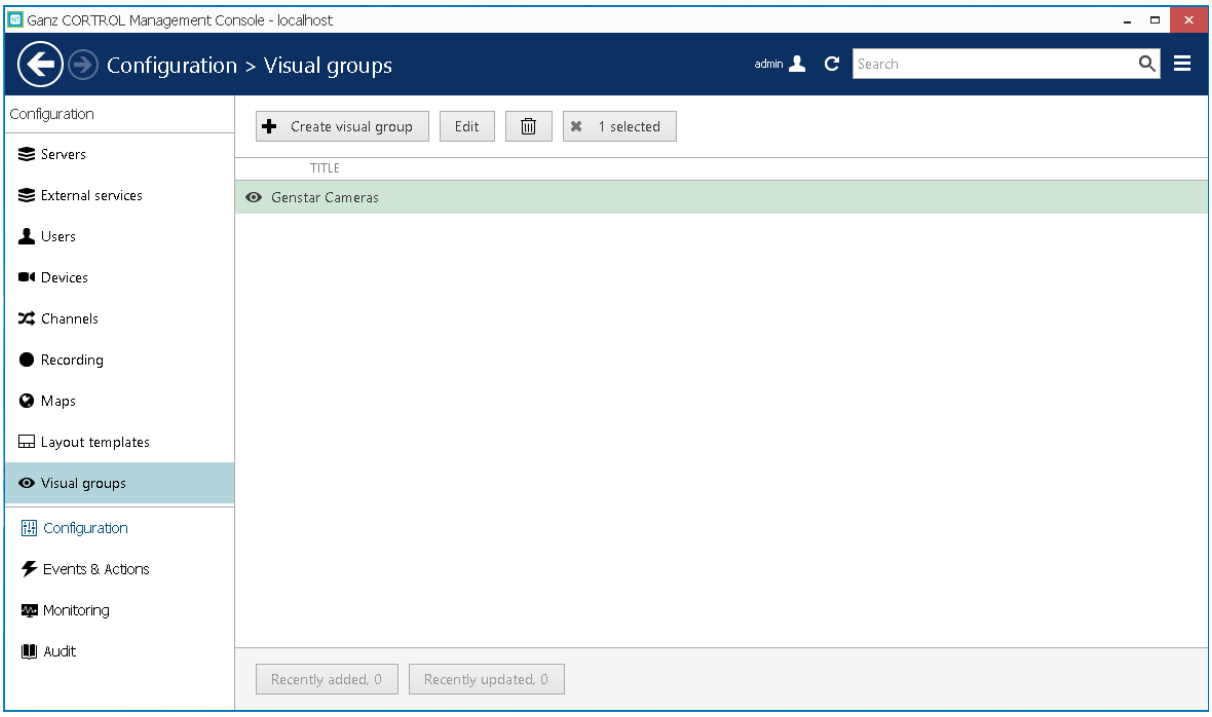
The newly created layout template will appear in the item list and it will also appear in any connected Ganz CORTROL Client applications after synchronization.



11. Visual Groups

Visual groups are a grouping of channels or maps, that offer a single click point, to which Ganz CORTROL offers easy creation.

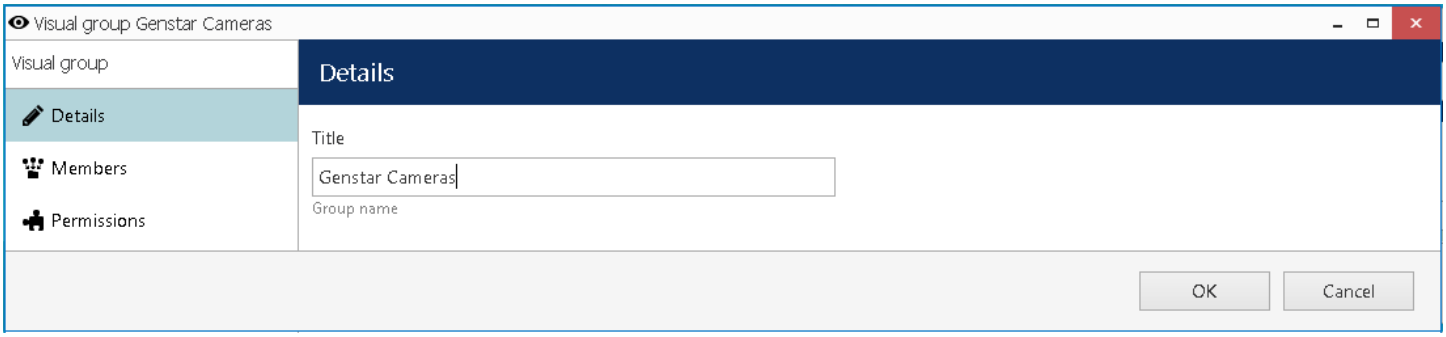
From Ganz CORTROL Management Console, and select “Visual groups”.
Buttons on the upper panel give the option to create, edit and remove visual groups.
By clicking on “Create visual group” we can begin to created new visual groups for use in our surveillance installation.



Details

Details offers the following options, as they relate to the creation of a visual group.

- Title: Enter a descriptive label for the layout template



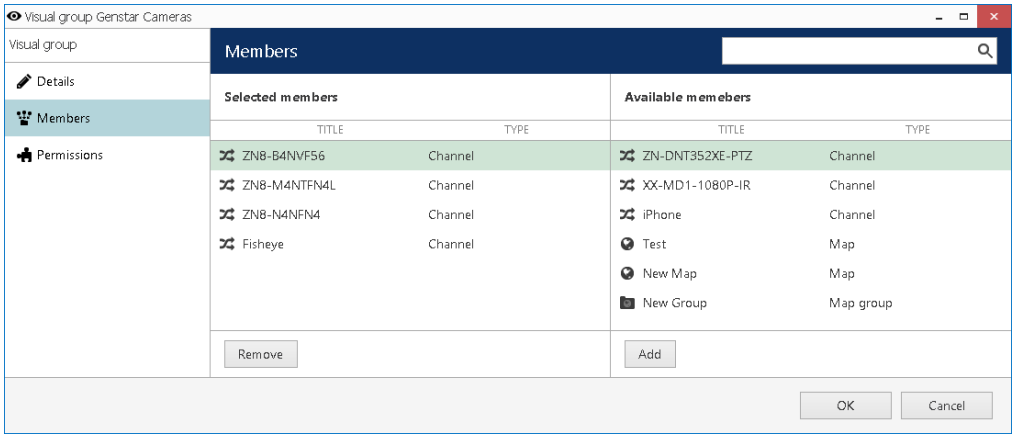
Members

This describes adding channels, or maps to a visual group.

In this case, members refer to channels, and maps, as posed to CORTROL users.

Use members to create either a visual grouping of channels, or a visual grouping of maps, or a combination of both.

Choose the channel/map to add/remove to a membership by use of the *Add* and *Remove* buttons.



Permissions

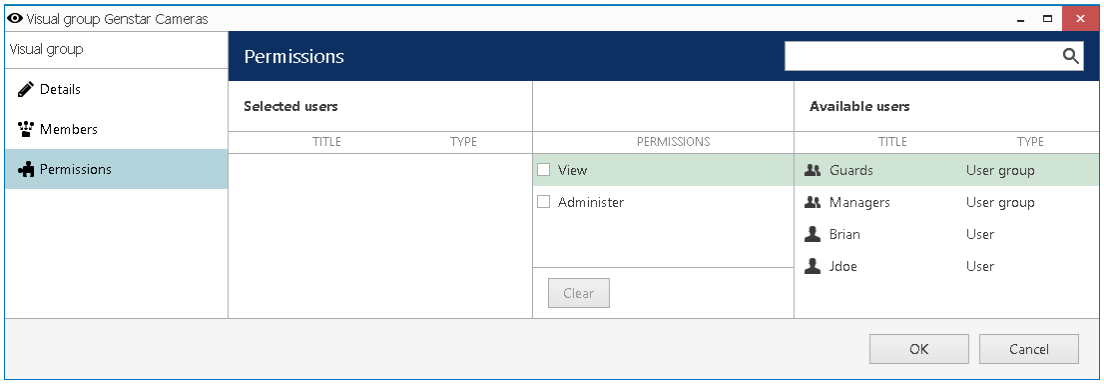
Permissions allow assigning accessibility of the map to a user, or user group.

Add users and/or user groups simply by checking at least one permission for the target server; remove by clearing the permissions - either by deselecting them or by clicking the *Clear* button below.

Permissions range from the following;

- Administer
- ReceiveData
- AccessArchive
- Navigate
- ControlDigitalOutput

A map with an empty permission list will not be available to anyone except for the root (global) administrator.



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12. Streaming Server

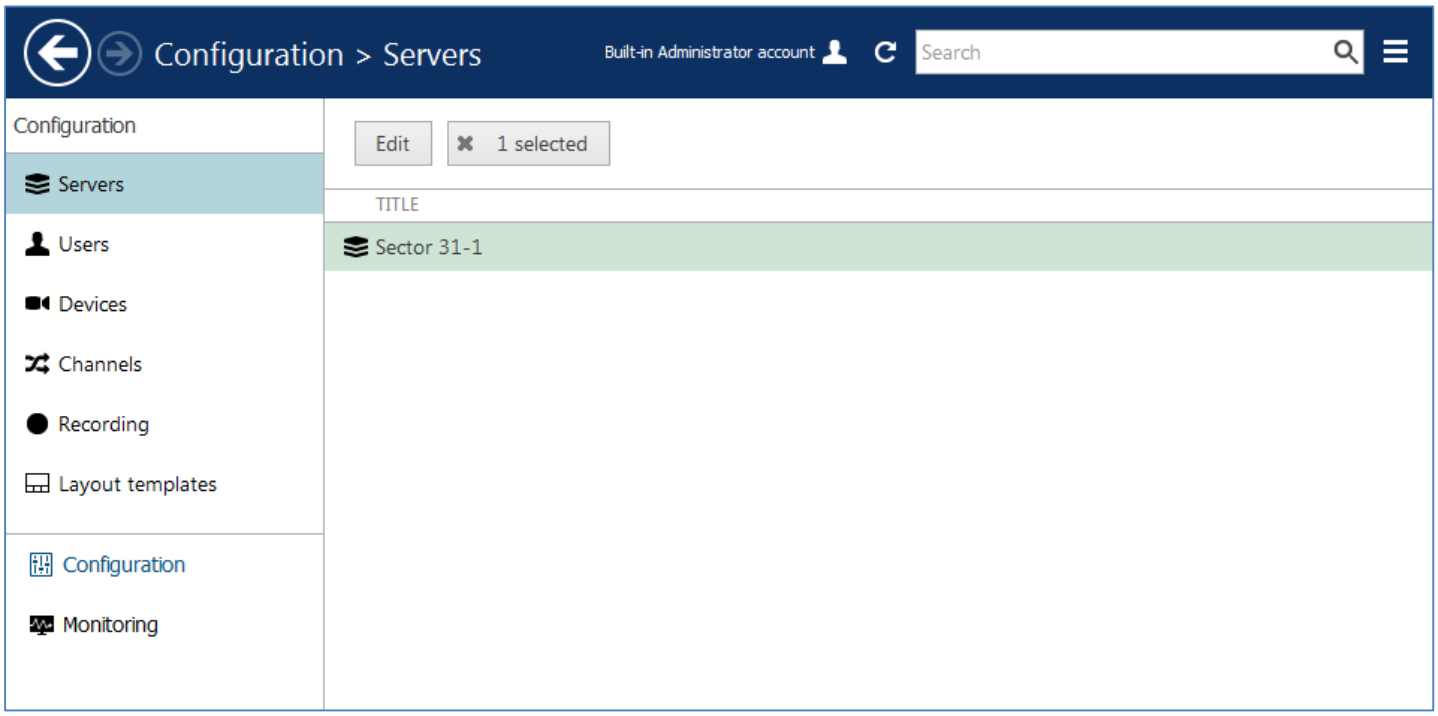
Ganz CORTROL Streaming Server is a part of Ganz CORTROL software integrated into the Ganz CORTROL Server core. It is designed for video streaming to multiple web-browsing platforms such as Mozilla Firefox and Google Chrome.

Major features of the Ganz CORTROL Streaming Server include video stream live view, archive playback, and Pan-Tilt-Zoom control. The Ganz CORTROL Streaming Server optimizes video streaming for web or mobile clients, to a degree dependent on connection speed and device viewing capabilities.

Note: Audio and event streaming are **not** supported by the Ganz CORTROL Streaming Server.

From Ganz CORTROL Management Console, select *Servers.*

Buttons on the upper panel give the option to create, edit and remove Server resources.



Servers menu options

Functions	Options
Edit	Edit selected Server: Details, Connections, Members, Membership, Permissions, Watchdog, Storage
Selected	Indicates number of selected servers. Releases users/groups when selected

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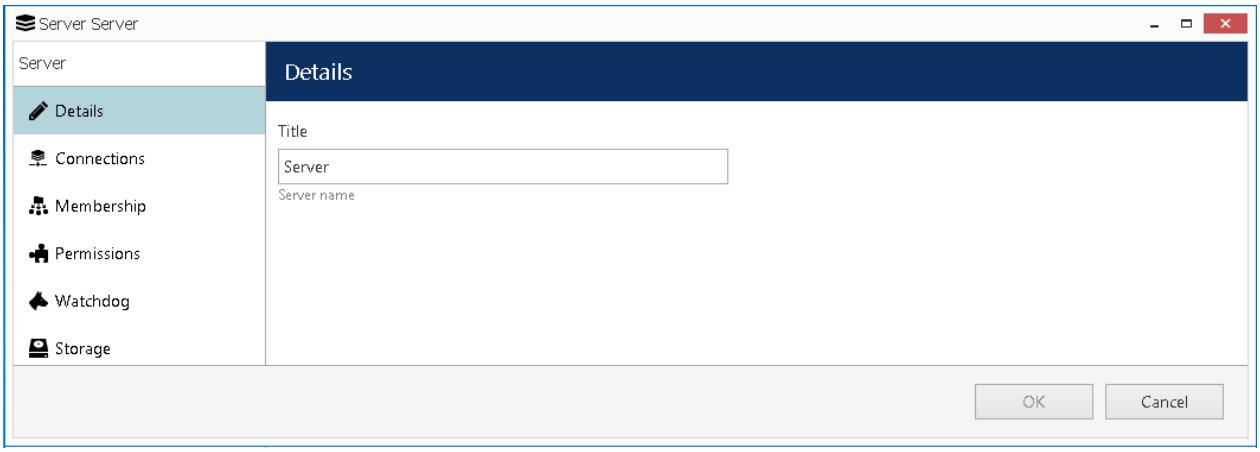
Details

Details offers the option of a title for the Server.

In the example, the entry of "Server" has been used for the server title.

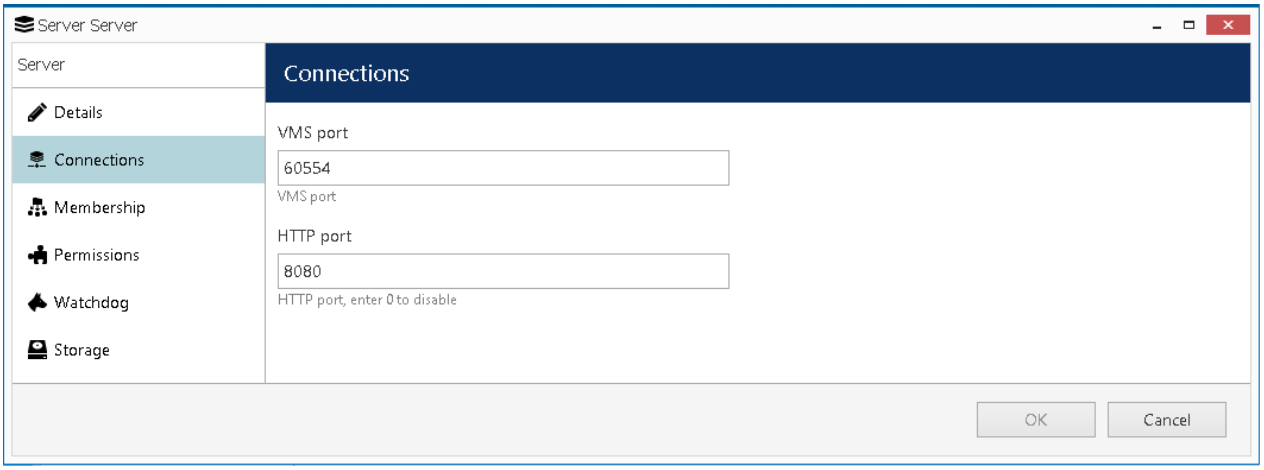


Connections

Connections consists of the Ganz CORTROL VMS port (used by the CORTROL client), and the HTTP port for streaming connections used by the Ganz CORTROL Streaming Server.

Please make sure that the chosen HTTP port:

- Is opened on the target server firewall
- Is properly configured for port forwarding on all intermediate network equipment
- Is not being used by any other application or service on the target server or router



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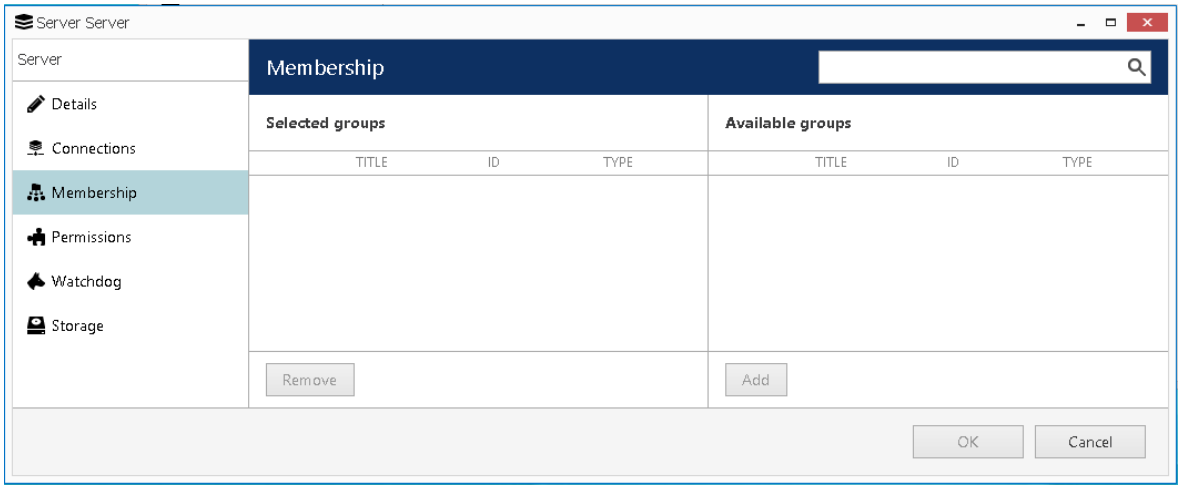
Membership

This is a function related to CORTROL Global for adding a server to a server group(s), by way of membership.
The use of membership, or grouping together servers is for convenience and ease of administration.
Group membership helps extend the convenience and ease of administration that grouping initiates.
Choose the server to add/remove to a group membership by use of the *Add* and *Remove* buttons.



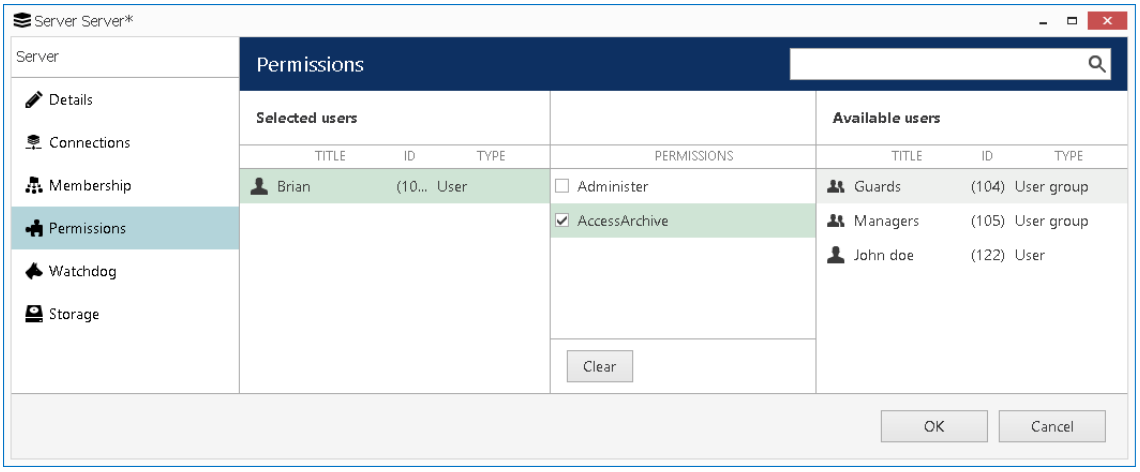
Permissions

Permissions allow assigning accessibility to the server for a user, or user group. Adding users and/or user groups is as simple as checking at least one permission for the target server. To remove, just clear the permissions by either deselecting them or by clicking the *Clear* button below the Permissions column.

Permissions range from the following;

- Administer
- AccessArchive

A server with an empty permission list will not be available to anyone except for the root (global) administrator.



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Watchdog

The Server Watchdog is an integral part of the CORTROL server core. Watchdog protects the software from certain types of failures by automatically attempting to restart the server.

Watchdog operates based on the software and system's overall health monitoring. Default trigger values have been selected on the grounds of our analysis of extensive tests run on systems of different configuration and stability levels.

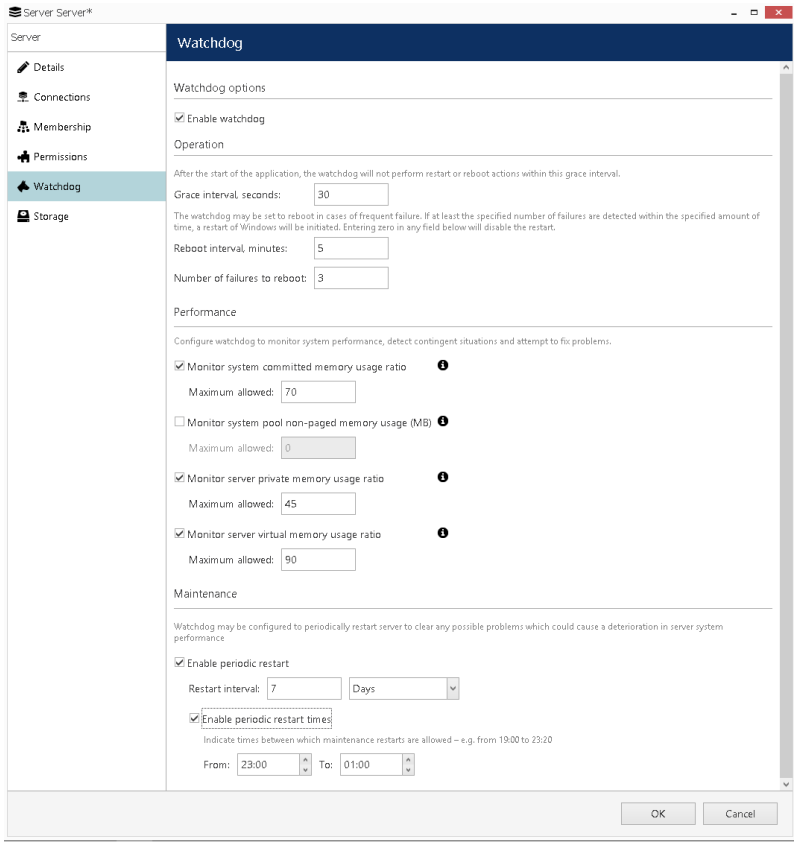
Although it is possible to disable the Server Watchdog service, we strongly advise against doing so, as the principal role of Watchdog is to keep the software operation as stable as possible under the given circumstances.

Watchdog operation can be tracked by messages in the Windows Application log. If experiencing frequent disturbances such as software restarts or server rebooting, this will be an indication of some serious issue related to the software, operating system, and/or underlying hardware. In such a situation, the best courses of action would be the following:

- Read the Windows Application Log, as these may already contain some indication of why Watchdog was triggered.
- Refer to the relevant topic in the Troubleshooting section of this manual to read about typical causes of such cases.
- Send a Problem Report from the faulty server, providing as much information as possible about the issue.
- Consult the CBC AMERICAS, Corp. technical support team directly via cortrol@cbcamerica.com.

Configuration

Watchdog operation can be configured for each server independently. To access Watchdog settings, open the Ganz CORTROL Console and select *Configuration* in the bottom left menu. Select *Servers* from the list on the left, then double-click the desired server, or simply click the *Edit* button on the top panel for the pre-selected server.

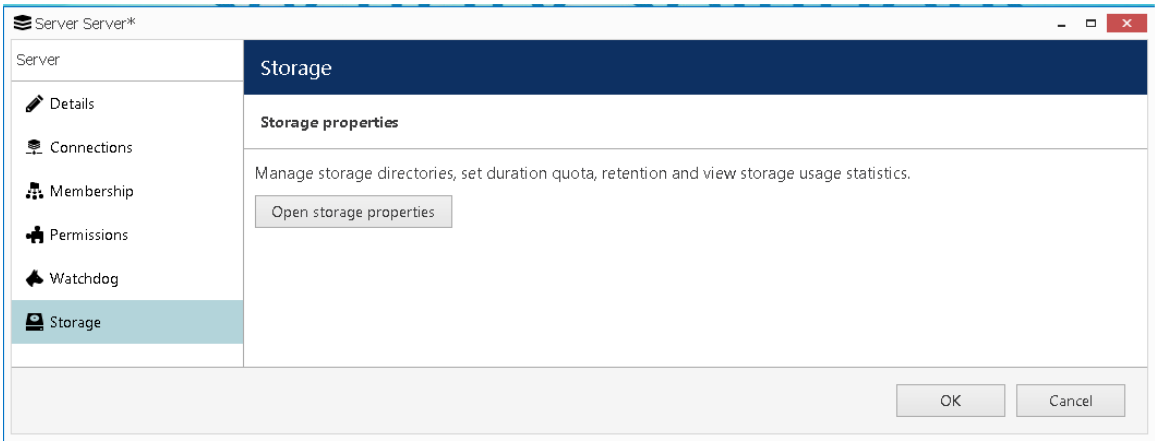


Setting	Description	Default Value
Enable Watchdog	Enables Watchdog operation for the target server	Enabled
Grace Interval, seconds	Time interval in seconds, counting from server start, during which Watchdog will not attempt to restart the software	30
Reboot Interval, minutes	Watchdog will reboot Windows if there have been a certain number (N) of software restarts (N is specified below) in the given time interval. The default for rebooting is 3 restarts in 5 minutes. Setting the specified number to 0 will disable rebooting.	5
Number of Failures to Reboot	Watchdog will reboot Windows in case there have been N software restarts in the time interval specified above. The default for rebooting is 3 restarts in 5 minutes. Setting the specified number to 0 will disable rebooting.	3
System Committed Memory Usage Ratio, %	Watchdog will restart the software if the ratio of total system committed memory exceeds the specified percentage. This value is shown under Memory section of Performance tab in the Windows Task Manager.	Enabled, 70%
System Pool Nonpaged Memory Usage, MB	Watchdog will restart software if the amount of system nonpaged pool memory exceeds the specified amount.	Disabled
Private Memory Usage Ratio, %	Watchdog will restart software if the amount of private memory used by server process exceeds the specified value.	Enabled, 45%
Virtual Memory Usage Ratio	Watchdog will restart software if the amount of virtual memory used by server process exceeds the specified ratio. Ratio shows the amount of virtual memory used by server process versus maximum per-process virtual memory allowed by the OS.	Enabled, 90%
Enable Periodic Restart	Enables automatic software restart every N days or hours. For troubleshooting purposes, it is recommended to use hours.	Enabled, 7 days
Enable Periodic Restart Hours	Limit periodic restart to specific hours (e.g., only restart at night). It is recommended to leave at least a 1h interval for the restarts.	Disabled

Storage

Storage allows for the management of storage directories, setting duration quotas, retention, and viewing storage usage statistics.

From *Storage,* select *Open storage properties.*



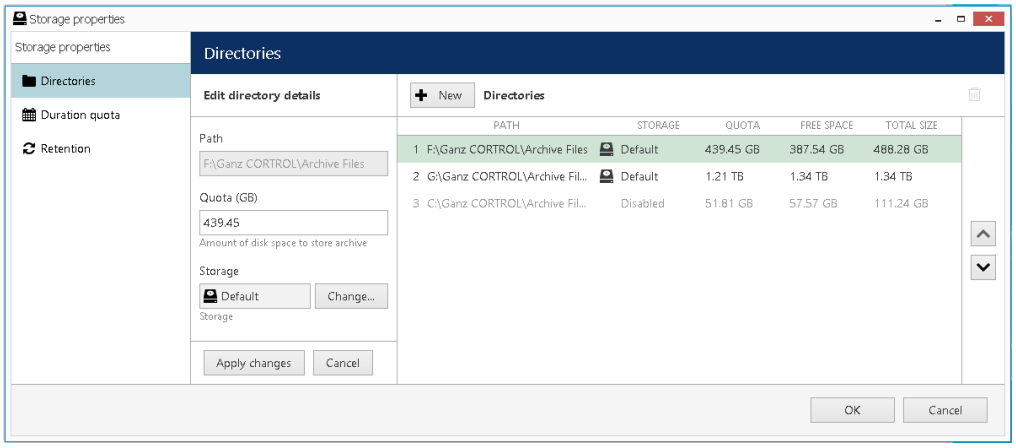
Directories

All available local disks (also mapped network shares that appear as drives in Windows Explorer) will be automatically listed and checked for recording with default archive directories.

Each storage location will be automatically assigned a quota of 90%. It is strongly advised to review all settings and make sure that all storage locations have sufficient free space. If necessary, a lower quota may be set if needed. It is recommended that every recording location have 10-15% of free space; this helps avoid any fragmentation effects, and allows CORTROL to effectively enforce recording quotas.

It is not advised to record to the system drive because it is often used by other processes such as defragmentation, system backup, and storing the Operating System itself. Recording onto the system drive may affect recording efficiency and stability, so by default, disk C: is not selected for recording.

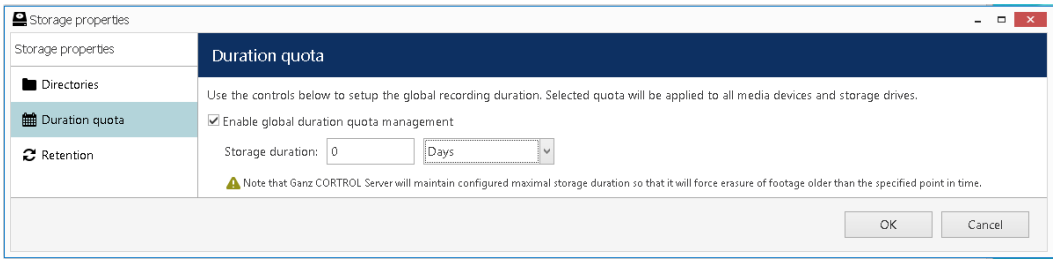
To change the disk quota, simply highlight the desired location for storage from the item list, then enter quota size in GB and click *Apply changes*.



Duration Quota

The global recording duration limit for the server is set here. First, enable quota management, then enter desired number of days. All recordings older than the number of days specified will be erased.

Note: The global duration quota has priority over the individual (per-channel) duration quota that is set in the recording configurations.



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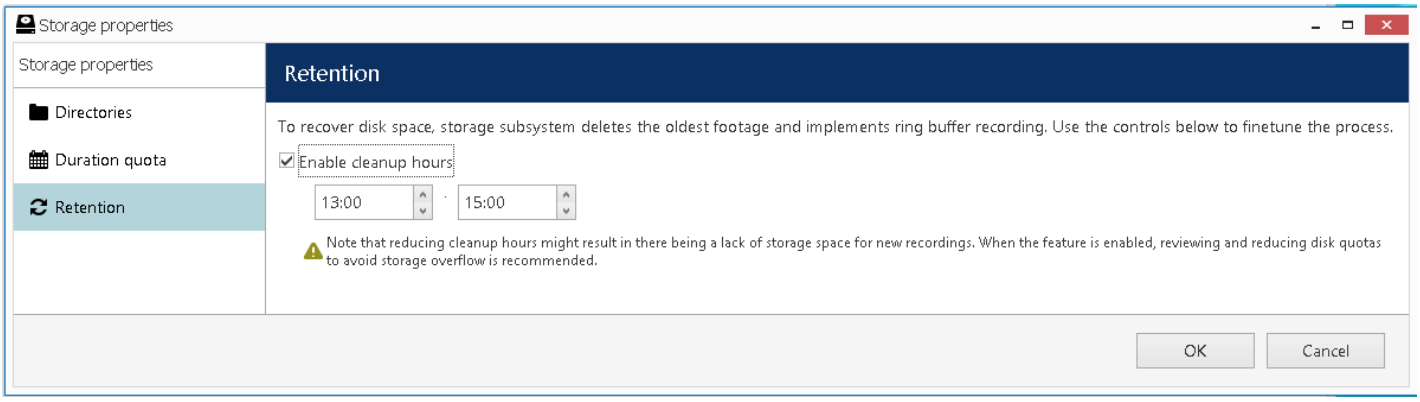
Retention

The software erasing mechanism can be set so that it cleans up old recordings only during specific periods of time (e.g., when the recorder is less overloaded, or when recordings are less important).

To do this, enable the cleanup hours setting and specify the time period during which erasing is allowed.

This control has priority over storage quota. Setting insufficient cleanup time may lead to storage overflow and result in recordings being lost.



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13. Events & Actions

The purpose of Events & Actions is to define events, and designate the actions to take based on the events. Rules must be created to govern how events and actions take place, while being influenced by conditions and schedules.

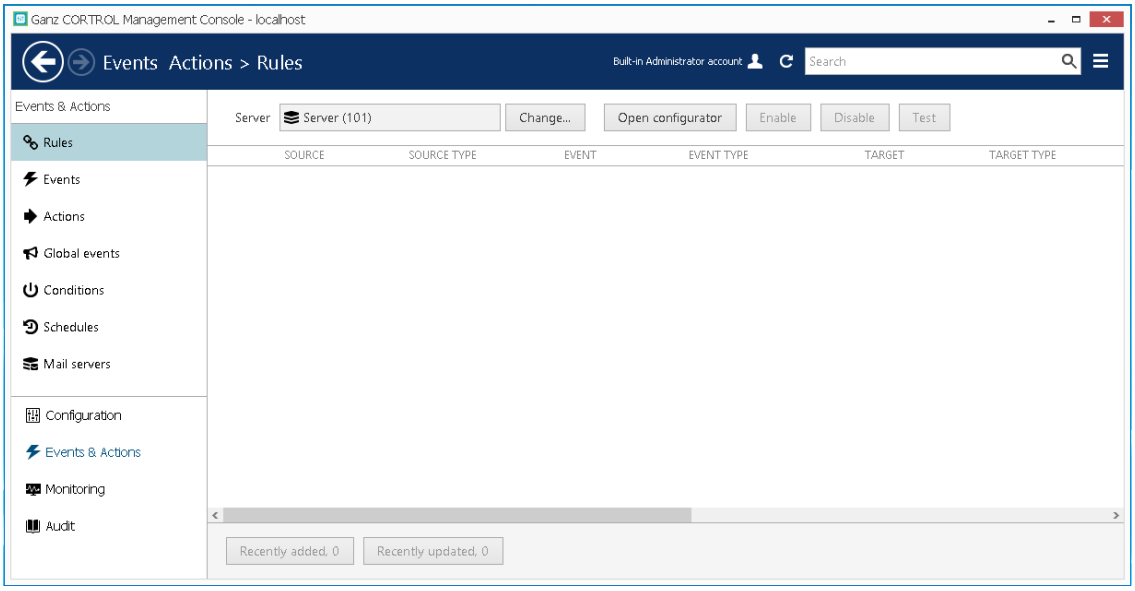
Rules

CORTROL Rules define the interaction between the events that might happen, with the actions that need to take place.

In order to create rules that bind an action to an event, the CORTROL Configurator is required.

From the Ganz CORTROL Management Console/Events & Actions, select *Rules.*

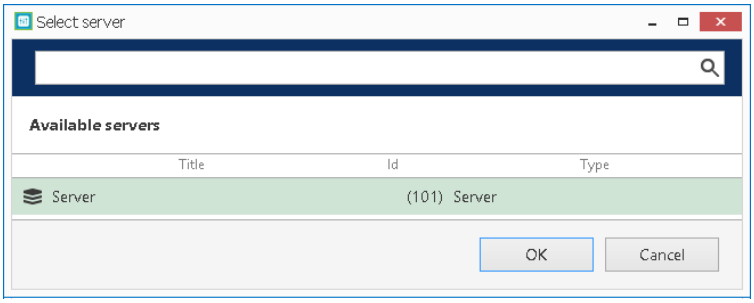
Buttons on the upper panel give the option to create, edit and remove Server resources.



Server Change

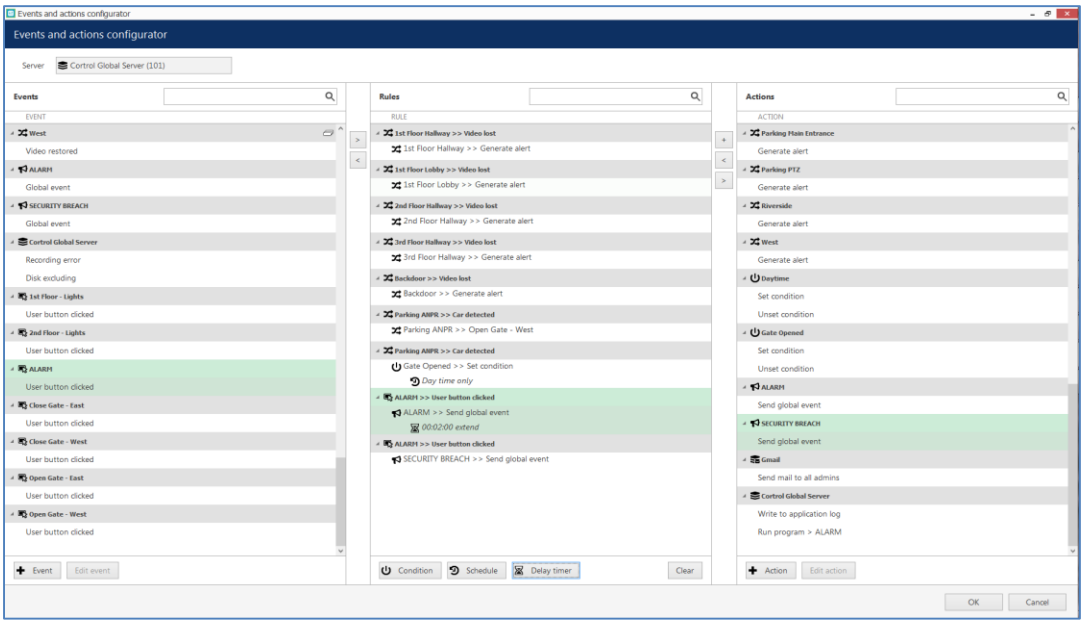
Server Change, related to CORTROL Global functionality, allows the selection of a CORTROL Server to which Rules can be created, modified, and/or deleted. Select *Change…* from the buttons on the upper panel that give the option to create, edit and remove Rule resources.

Within the Server Change function is a listing of available CORTROL Recording Servers to select from. Choose the server to be changed, then click on *OK.*



Configurator

The configurator is where Events and Actions are brought together under Rules.



Events: Events define a Device, Channel, and/or Server side symptom. A few examples include motion detection, recording error, and video loss. Events are initially created under Events & Actions, in the Events menu option.

Rules: Rules are defined by the selection of an event that is modified by a condition, schedule, or delay, that triggers an action to take place upon the meeting of the defined rule.

- **Basic Rule:** Event trigger Action without additional conditions.
- **Basic Rule by Schedule:** Event trigger Action when a schedule is active.
- **Conditional Rule:** Event trigger Action when condition is active.
- **Conditional Rule by Schedule:** Event trigger Action when schedule and condition are active.

Condition: Created under *Events & Actions* > *Conditions*. This option offers a shortcut to selecting from the list of conditions.

Schedule: Created under Events & Actions > Schedules. This option offers a shortcut to selecting from the list of schedules.

Delay time: Option of 00:00:00 - 24:00:00, with a pause mode:

- Create a separate action: A new action will be created even if there is an identical action queued (Delaying).
- Extend a postponed action: No new action will be created if there is an identical action queued.

Actions: Actions define a response to an Event, but can be influenced by rules, with regards to when they can and cannot happen. Initially created under Events & Actions: Actions menu option.

Note: At the top of each column for event, rules, and actions, are filter options that allow search by any part of device name/IP-address/etc. The buttons found between each column are used for adding/removing events and actions to and from the rules column.

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Events

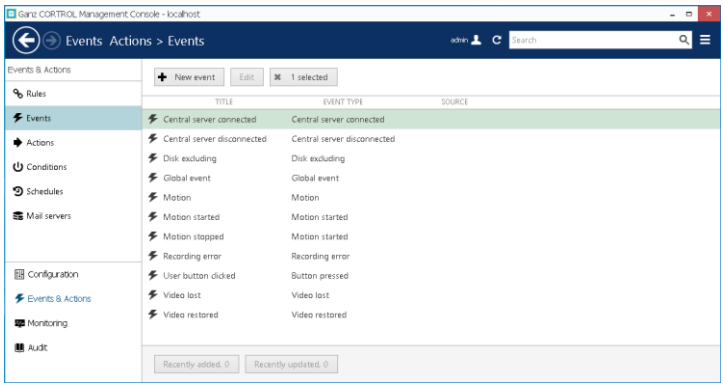
Events define a Device, Channel, and/or Server side symptom. A few examples include motion detection, recording error, and video loss.

From Ganz CORTROL Management Console, select *Events & Actions > Events.*

Buttons on the upper panel give the option to create, edit and remove channel resources.

Description of event sources:

- Central server connected
- Central server disconnected
- Disk excluding
- Global event
- Motion
- Motion started
- Motion stopped
- Recording error
- User button clicked
- Video lost
- Video restored
- Digital Input
- VCA Input
- ExternalService



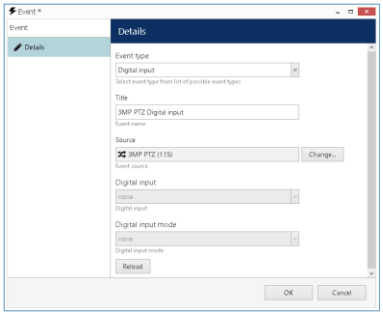
New Event

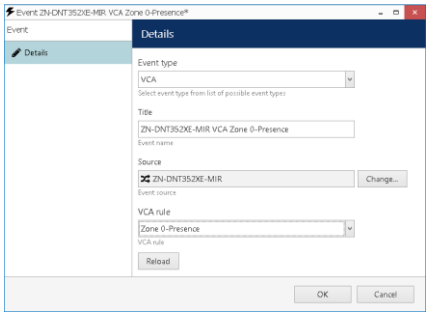
Creation of a new event offers the following options;

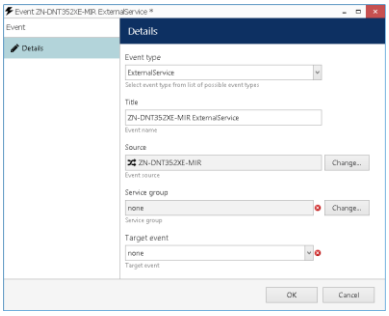
- **Event type: Digital Input**
- Title: Auto populates based on selected source
- Source: Select from available channels
- Digital input: Select from dropdown
- Digital input mode: Select from dropdown

- **Event type: VCA**
- Title: Auto populates based on selected source
- Source: Select from available channels
- VCA Rule: Select from channel associated rules.

- **Event type: ExternalService**
- Title: Auto populates based on selected source
- Source: Select from available channels
- Target event: Select from dropdown





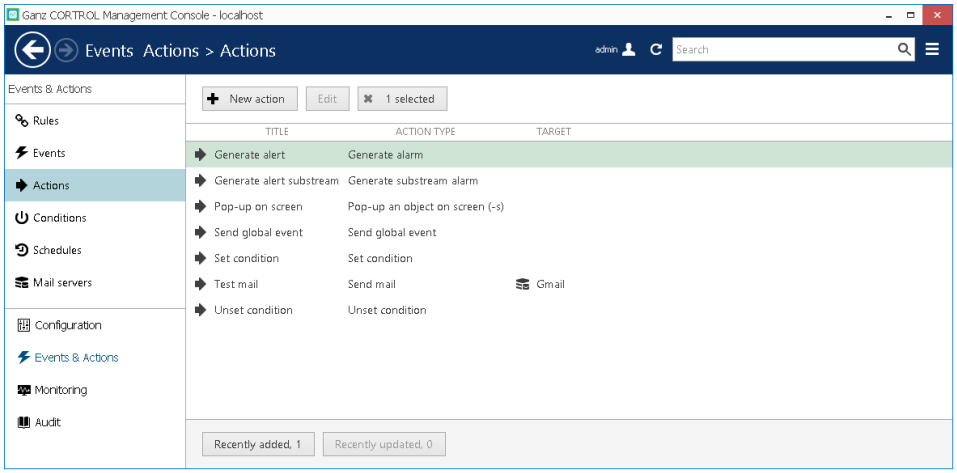


Actions

Actions define a response to an Event, but can be influenced by rules, with regards to when they can and cannot happen.

From the Ganz CORTROL Management Console, select *Actions.*

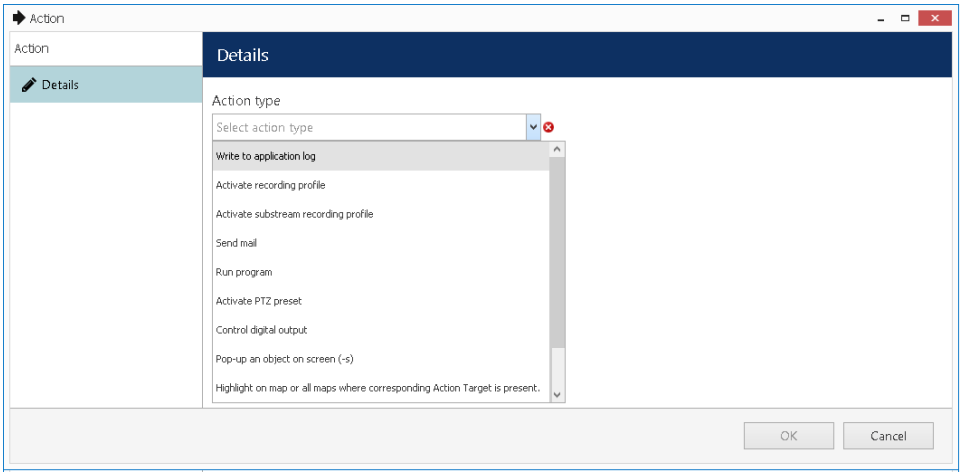
Buttons on the upper panel give the option to create, edit and remove channel resources.



New Action

Note that only begin time is set for each added profile:

- Write to application log
- Activate recording profile
- Activate substream recording profile
- Send mail
- Run program
- Active PTZ preset
- Control digital output
- Pop-up an object on screen (-s)
- Highlight on map or all maps where corresponding Action Target is present



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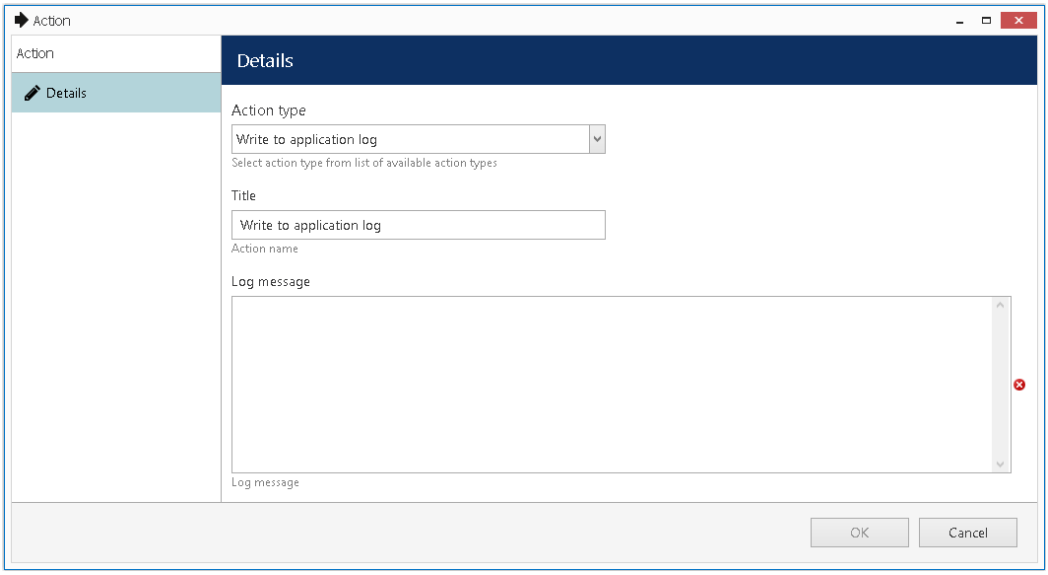
Write To Application Log

When selected as an action response to an event, this action will write a log to the Windows Event Viewer.

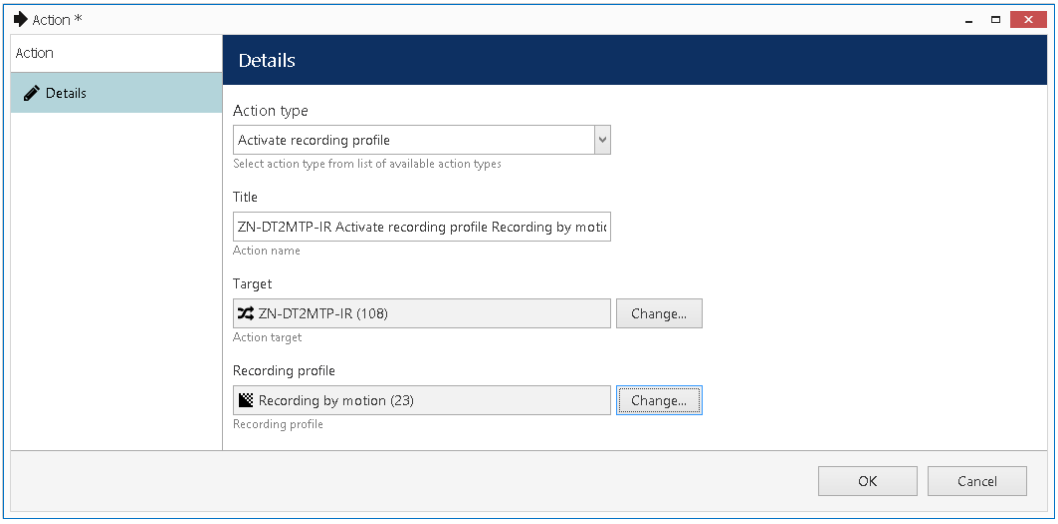
- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Log message: Enter a descriptive message, stating the transpired event, and a suggested course of action.



Activate Recording Profile

When selected as an action response to an event, this action will activate a recording profile on a selected channel.

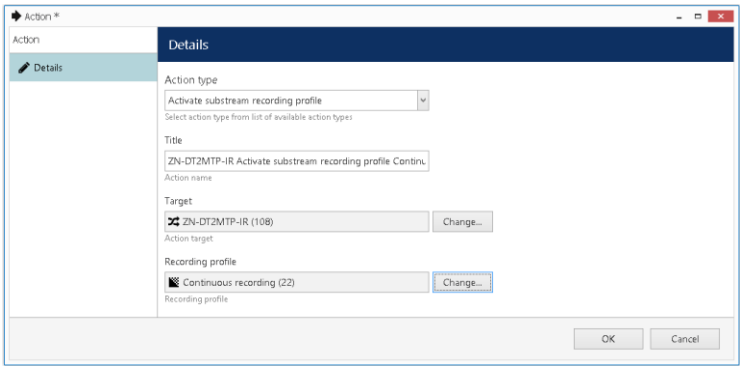
- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Target: Referring to the selected channel to have record based on the recording profile.
- Recording profile: Refers to the recording profile to be associated with the target channel.



Activate Substream Recording Profile

When selected as an action response to an event, this action will record the substream based on a recording profile.

- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Target: Referring to the selected channel whose substream is to be recorded based on the recording profile.
- Recording profile: Refers to the recording profile to be associated with the target channel's substream.



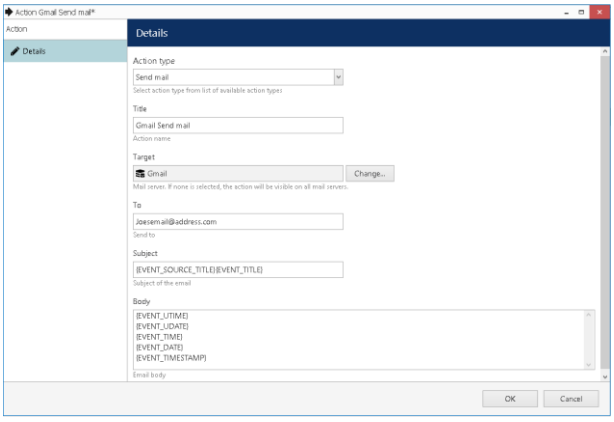
Send Mail

When selected as an action response to an event, this action will generate and send an email to a recipient.

- Title: Enter a defining title that would reflect the transpired event the action is depending on.
- Target: Refers to the selected SMTP server.
- To (Send to): Enter the recipient's email address here.
- Subject: Enter the subject of the email here (programmable with parameters).
- Body: Enter a descriptive message, related to the event behind the notification requirement.

Send mail Parameters: Can be entered into the email *Subject* and or email Body.

- {EVENT_TITLE} – Event as in Video Lost, Video Restored, Motion, Digital Input or VCA Event
- {EVENT_SOURCE_TITLE} - User defined camera title: Hall Camera
- {EVENT_UTIME} - UTC time: 3:28:30 PM (*Taken from Camera*)
- {EVENT_UDATE} - UTC date: 7/7/2016 (*Taken from Camera*)
- {EVENT_TIME} - Local time: 11:28:30 AM (*Taken from Server*)
- {EVENT_DATE} - Local date: 7/7/2016 (*Taken from Server*)
- {EVENT_TIMESTAMP} - UTC timestamp: 2016-07-07 15:28:30:287 (*Taken from Camera*)



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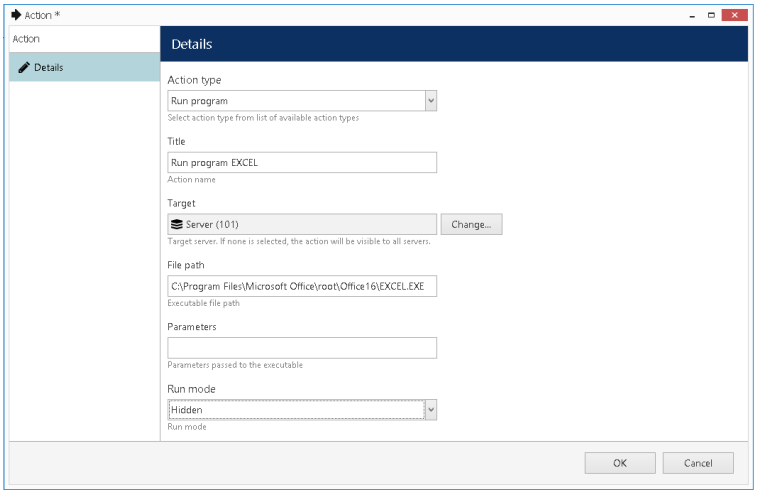
Run Program

When selected as an action response to an event, this action will run a predetermined program.

- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Target: Refers to the selected recording server to which the program will be executed on/against.
- File path: Enter the file path to the program or executable (e.g., C:/Programs/Office/Excel.exe).
- Parameters: This is code that modifies how the program/executable performs.
- Run mode: How the program/executable is running with regards to visibility. (Hidden, Minimized, Normal)

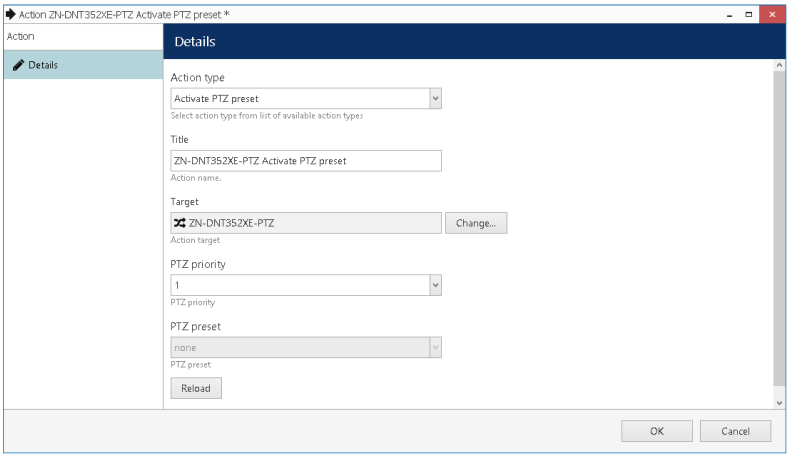


Active PTZ Preset

When selected as an action response to an event, this action will run a predetermined PTZ Preset.

- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Target: Refers to the selected device channel, with the prerequisite programmed presets.
- PTZ priority: Prioritizing the PTZ allows prioritization where PTZ control comes from.
- PTZ preset: Refers the prerequisite programmed preset that is selected to run upon an event trigger.

Note: PTZ priority is defined by 0 - 10 with 0 for the highest priority. A user with higher priority can obtain PTZ control from other users. Thus if an operator is set to 5 and a guest set to 10, the operator with the higher priority of 5 will control PTZ.



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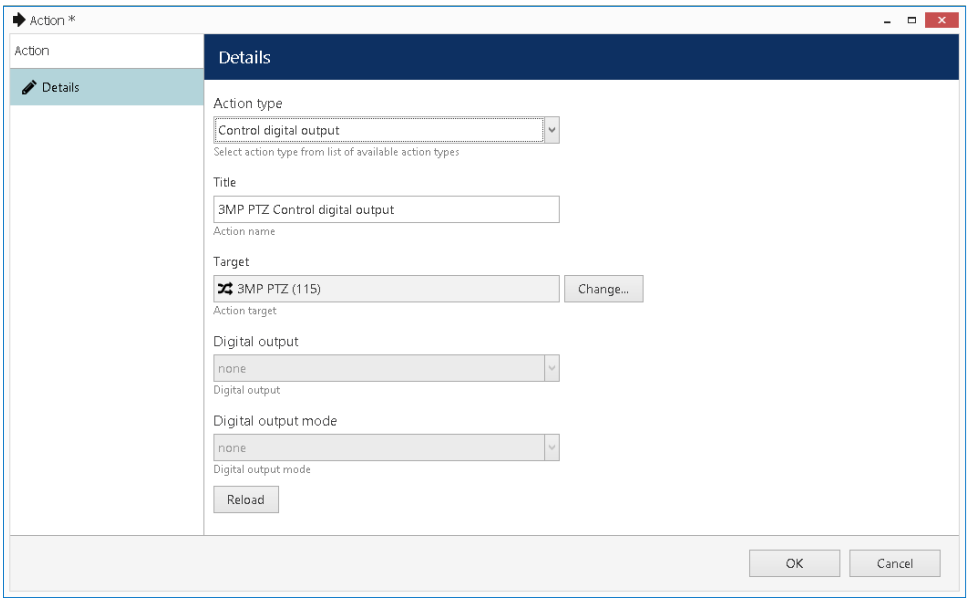
Control Digital Output

When selected as an action response to an event, this action will run a predetermined digital I/O.

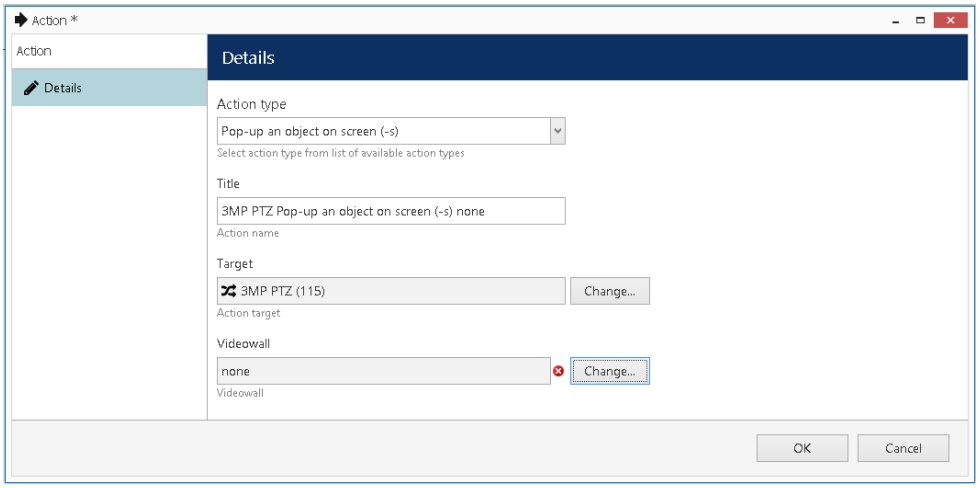
- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Target: Refers to the selected device channel, with the prerequisite programmable I/O port(s).
- Digital output: Refers the prerequisite programmable I/O that is selected to run upon an event trigger.
- Digital output mode: Set to normally open / normally closed.



Pop-up an Object on Screen (-s)

When selected as an action response to an event, this action will pop-up a predetermined object on screen.

- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Target: Refers to the selected device channel that will act as the pop-up video source.
- Videowall: Refers a known Videowall configuration, that is selected to run upon an event trigger.



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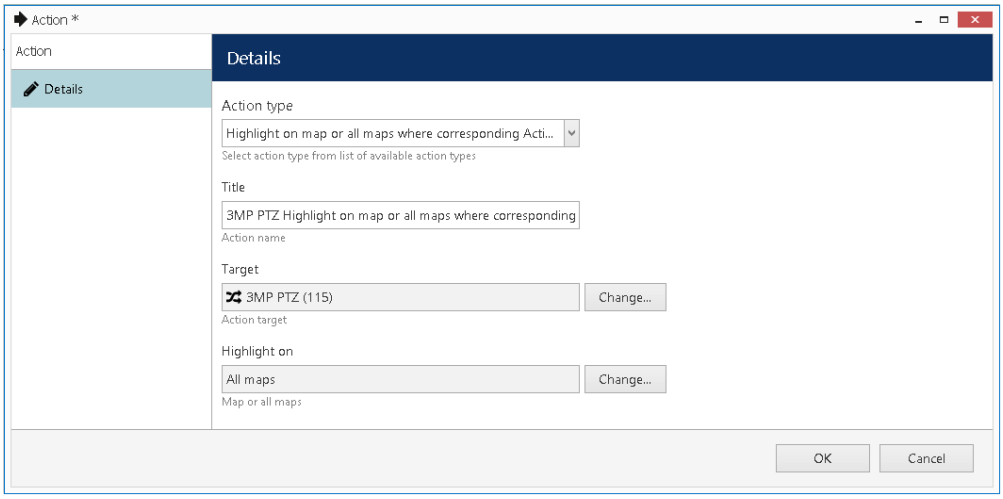
Highlight on Map or All Maps Where Corresponding Action Target is Present

When selected as an action response to an event, this action will cause a device channel to highlight on a map.

- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Target: Refers to the selected device channel, to which will be selected and highlighted on a map.
- Highlight on: Refers the selected map, or all maps to which the device channel is associated.

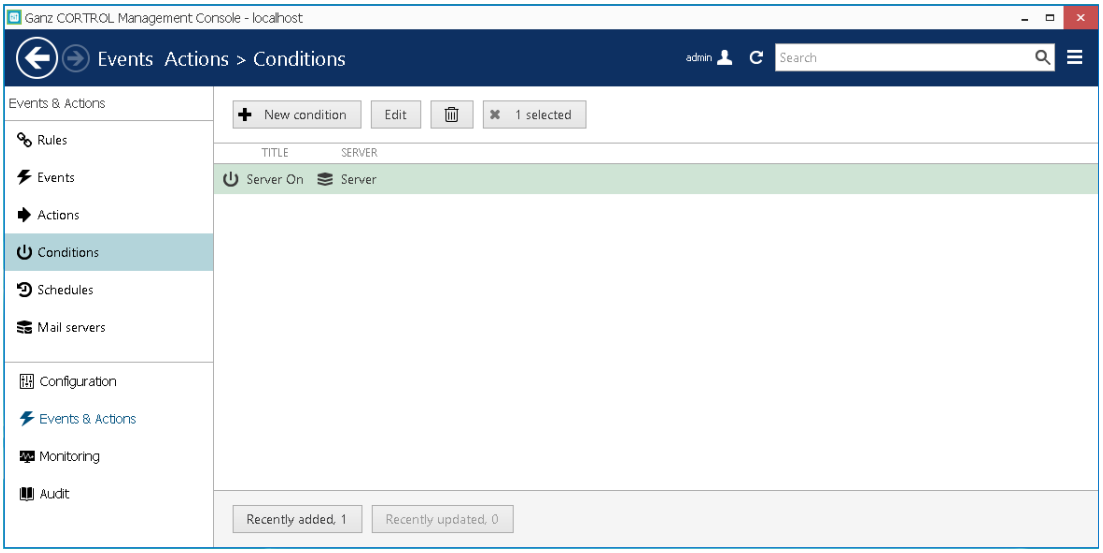


Conditions

The Events & Actions Schedules allow the creation of a rule that says when an action can and not take place, based on time.

From the Ganz CORTROL Management Console, select *Conditions.*

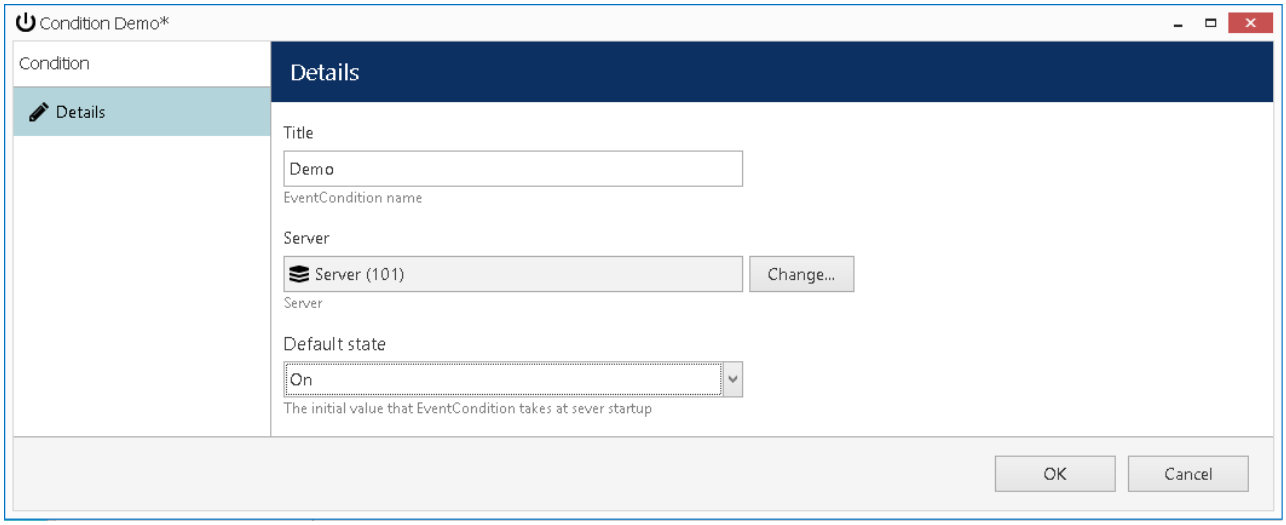
Buttons on the upper panel give the option to create, edit and remove listed conditions.



New Condition

Currently, only a title option is programmable within the new global event selection.

- Title: Enter a defining title that would reflect the transpired event the action is dependent on.
- Server: Select the recording server to which the condition will be performed against.
- Default state: The initial value that the Event Condition takes at server startup. (On / Off)

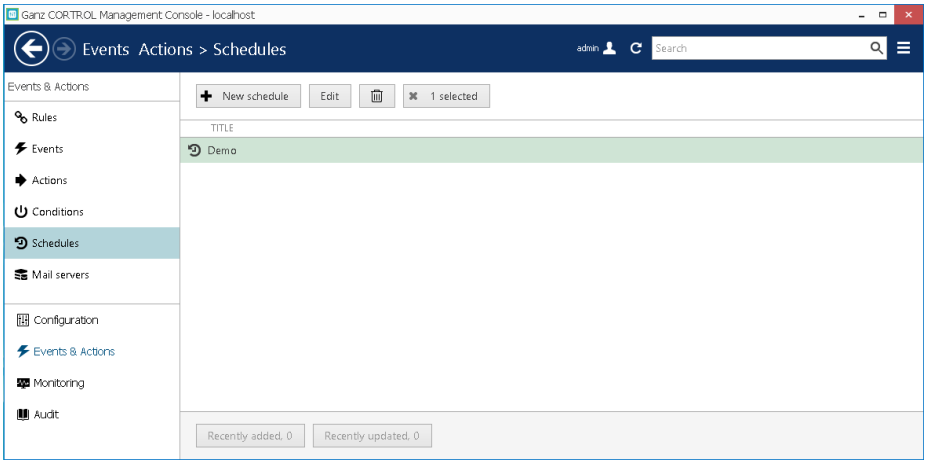


Schedules

The Events & Actions Schedules allow the creation of a rule that says when an action can and not take place, based on time. Schedules supports the creation of multiple schedules, consisting of a "From" and "To" day and time function.

From the Ganz CORTROL Management Console, select *Schedules.*

Buttons on the upper panel give the option to create, edit and remove listed schedules.



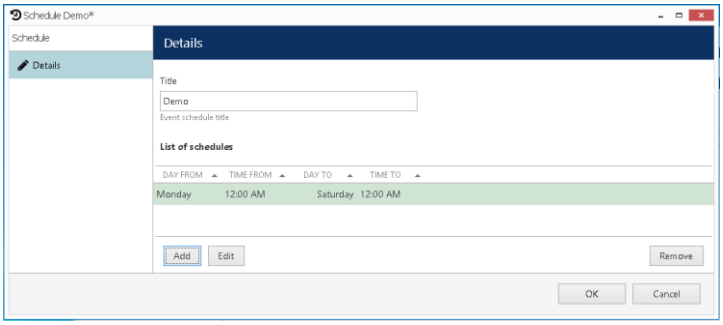
Details

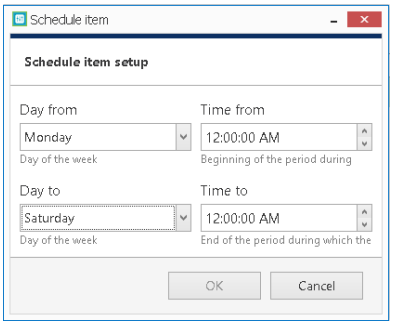
Details offers the following options, related to the created schedule requirement:

- Title: Enter a defining title that would reflect the purpose of the schedule.
- List of schedules: A list of all the currently created and or available schedules, or schedule items.
    - Day from: Selection of the starting day of the schedule item
    - Time from: Selection of the starting time of the day for the scheduled item
    - Day to: Selection of the ending day of the schedule item
    - Time to: Selection of the ending time of the day for the scheduled item

Note: Days range from Sunday - Saturday, while time ranges from 12am to 12pm, non-military style.

Use the *Add, Edit* and *Remove* buttons below to manage the listed schedule items. When finished, click *OK* to save. The newly created schedule will be added to the schedule list.





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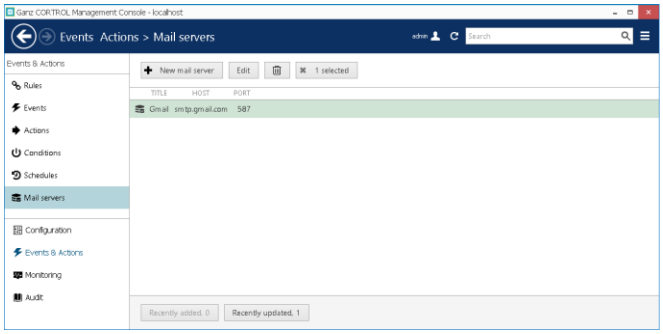
Mail Servers

Mail Servers list potential email or SMTP server accounts. These accounts act similar to an account setup in Microsoft Outlook or Outlook express. Mail Servers provide a portal through which a configured email notification can be sent through, in order to be delivered to a specified email recipient. Email notifications are typically linked to a server or device event, providing an action in response to that event.

From the Ganz CORTROL Management Console, select *Mail servers.*

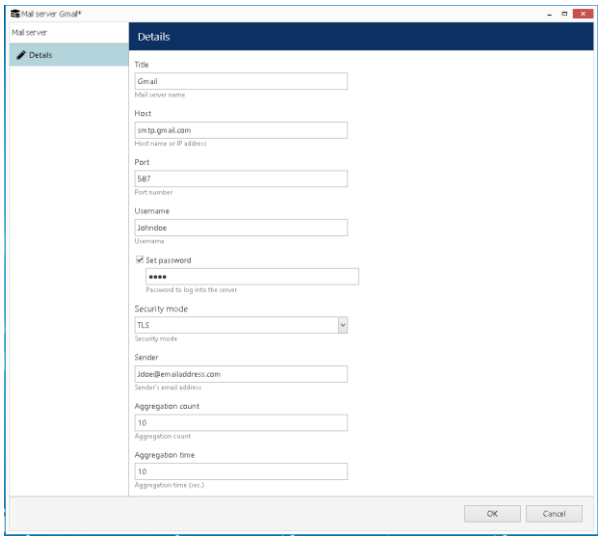
Buttons on the upper panel give the option to create, edit and remove mail server resources.



New Mail Server

New mail server offers the following options, related to the configuration of an SMTP client requirement:

- Title: Enter a defining title that would reflect the host of the SMTP service provider.
- Host: The SMTP or IP address of the service provider (e.g. smtp.gmail.com).
- Port: The communications port dictated by the security mode, and SMTP service (e.g. 587).
- Username: The authorized user ID of the account holder for the SMTP service.
- New password: The authorized user password of the account holder for the SMTP service.
- Security mode: None (Port 25) / TLS (Port 587) / SSL (Port 465)
- Sender: Email address used to identify the sending party of an email notification.
- Aggregation count: The number of emails to group for sending at one time
- Aggregation time: The number of emails to group for sending with in a select unit of time



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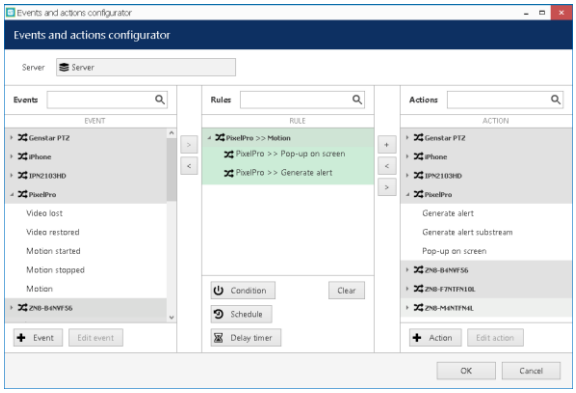
14. Events & Actions – 4 Exercises

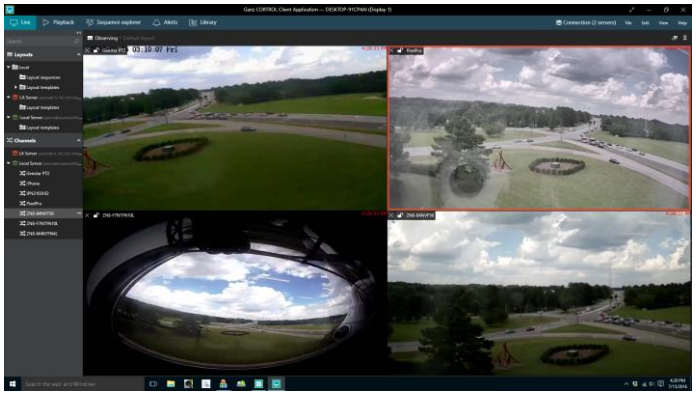
Camera Motion Pop-up

1. Requirement: A camera with motion detection enabled.
    a. Go to Management Console / *Channels*
    b. Highlight a camera, and select *Edit.*
    c. Details: Confirm main stream recording is *Recording by motion.*
    d. Motion detector: Confirm *Camera Motion Detection* is selected.
    e. Go to camera's browser interface and confirm that camera side motion detection is enabled.

2. Within Events and actions configurator:
    a. Go to Management Console / *Rules*
    b. Select *Open configurator*
    c. Events column: Select *Motion* from the motion enabled camera.
    d. Click the > icon to move the event to the Rules column.
    e. Actions column: Select *Pop-up on screen* from the same motion enabled camera.
    f. Select *OK* to save configuration.

3. Within the client:
    a. Confirm no cameras are currently showing.
    b. Trip motion for camera that was configured with *Events and actions configurator.*
    c. The camera will pop up in the first available window, upon detecting motion.
    d. A flashing a red border will appear around this window to draw attention.





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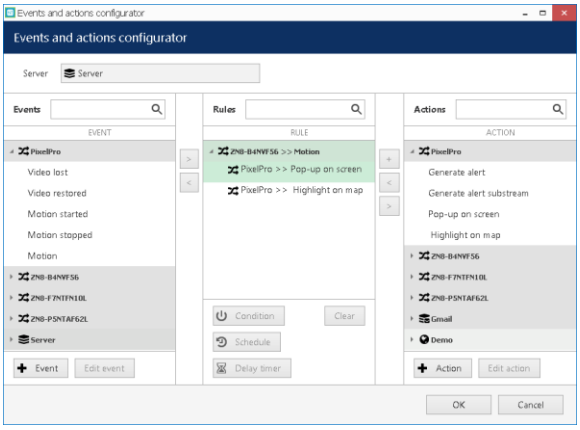
Map Highlight/Motion Pop-up

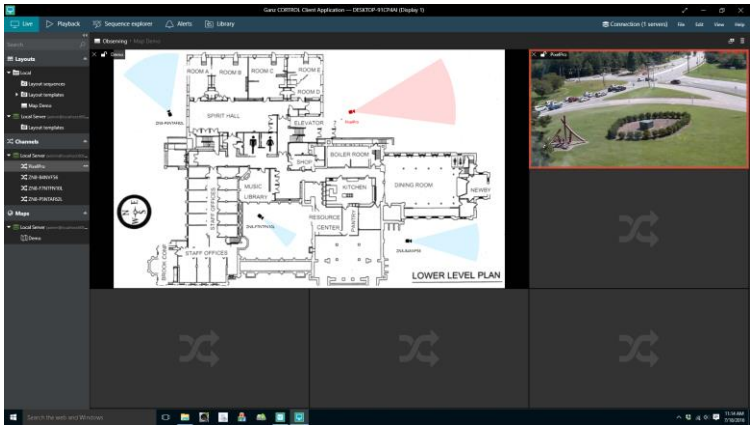
1. Requirement: A map, a camera with motion detection enabled, and a new action.
2. Go to Management Console / *Maps*
    a. Select *New map*
    b. Title: Training
    c. Select the provided map from training.
    d. Select *Marking*
    e. Place cameras
    f. Select *OK*

3. Go to Management Console / Events & Actions / *Actions*
    a. Select *New action*
    b. For *Action type,* select *Highlight on map or all maps where corresponding action Target is present*
    c. Title: Highlight on map
    d. Target: Camera with motion detection enabled
    e. Highlight on: Created map

4. Within Events and actions configurator:
    a. Go to Management Console / *Rules*
    b. Select *Open configurator*
    c. Rules column: Select *Camera >> Motion*
    d. Actions column: Select *Highlight on map* from the same motion enabled camera.
    e. Click on the *+* to add action to rules.
    f. Select *OK* to save configuration.

5. Within the client:
    a. Bring up the Map into the client.
    b. Confirm no cameras are currently showing.
    c. Trip motion for camera that was configured with *Events and actions configurator*.
    d. The camera icon will flash red on the map.
    e. The camera will pop up in the first available window, upon detecting motion.
    f. A flashing a red border will appear around this window to draw attention.





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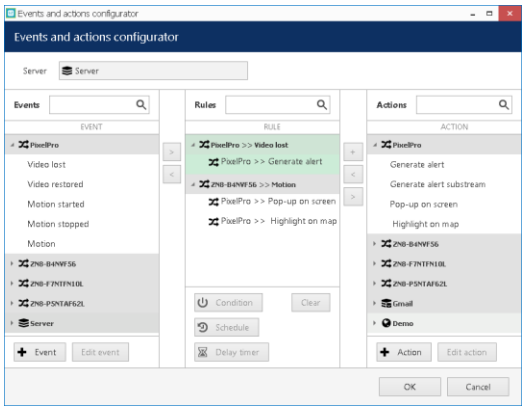
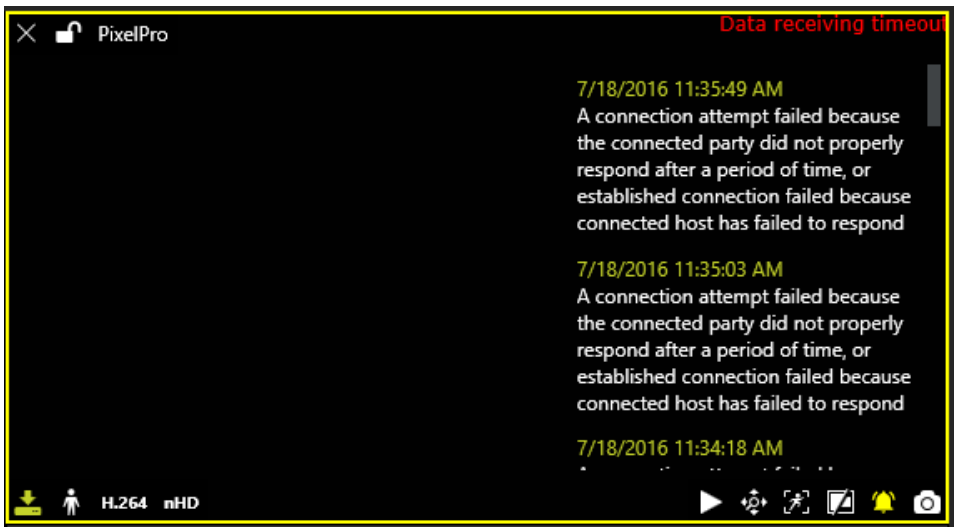
Video Lost: Generate Alert

1. Requirement: A camera with a live video channel.
2. Within the Events and actions configurator:
    a. Go to Management Console / *Rules*
    b. Select *Open configurator*
    c. Events column: Select *Video lost* from the motion enabled camera.
    d. Click the > icon to move the event to the Rules column.
    e. Actions column: Select *Generate alert* from the same motion enabled camera.
    f. Click the *+* icon to move the *Actions* to the Rules column.
    g. Select *OK* to save configuration.

3. Within the client:
    a. The Map and camera should still be loaded in the client.
    b. If not, relaunch the client, and load the map and camera required.
    c. Click on the camera channel, to reveal the action icons.
    d. Click on the bell icon that represents the device alerts.
    e. Disconnect the camera from the network.
    f. The video signal will be lost, and the channel will go black.
    g. A time out message will then appear in the device alerts window.
    h. Reconnect the camera.





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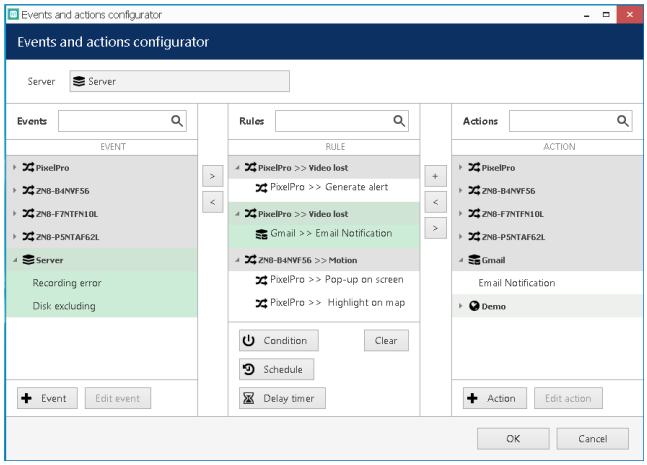
Video Lost: Email Notification

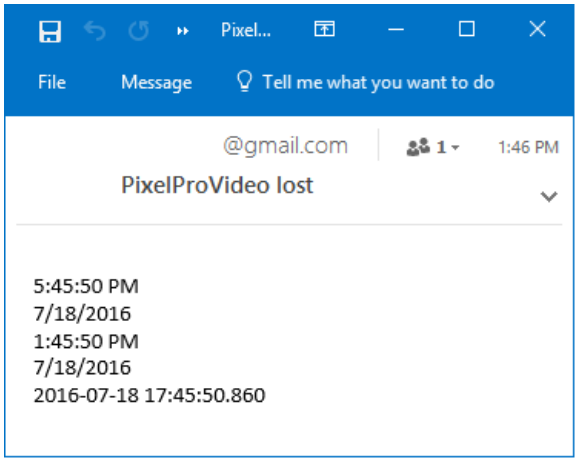
1. Requirement: A camera with a live video channel.
2. Within Events and actions configurator:
    a. Go to Management Console / *Mail servers*
    b. Select *New mail server*
    c. Title: A label representing the provider is suggested (e.g. Gmail).
    d. Host: The SMTP address of email provider
    e. Port: Dependent on provider, (default 25, TLS 587, SSL 465)
    f. Username: Email account logon ID
    g. New Password: Email account password
    h. Security mode: Based on selected port, (none, TLS, SSL)
    i. Sender: Email address could be from providing account, or a different account.
    j. Aggregation count/time: Leave setting as is

3. Go to Management Console / Events & Actions / *Actions*
    a. Select *New action*
    b. For *Action type*, select *Send mail*
    c. Title: Relevant to the nature of the notification (e.g. Lost video)
    d. To: Email recipient of notification
    e. Subject: For this exercise, two email parameters supported will be used, {EVENT_SOURCE} & {EVENT_TITLE}
        i. Using these parameters, the Email will list in subject *Camera* and *Video Lost*.

    f. Body: Other email parameters may be used, or create a unique message.
    g. Select *OK* to save.

4. Within Events and actions configurator:
    a. Go to Management Console / *Rules*
    b. Select *Open configurator*
    c. Rules column: Select *Camera >> Video lost*
    d. Actions column: Select *Email Notification* from the Email Server actions.
    e. Click on the + to add action to rules.
    f. Select *OK* to save configuration.





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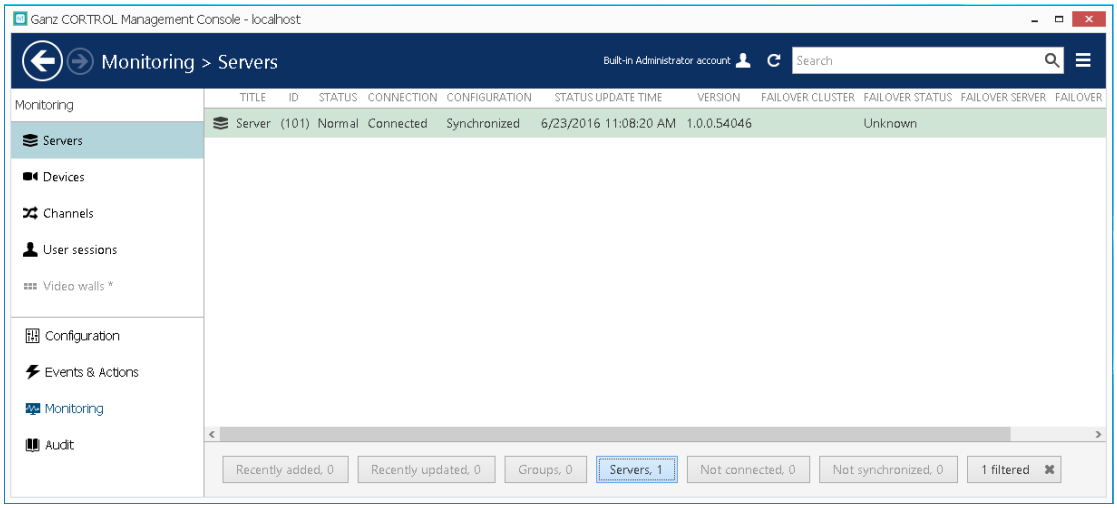
15. Monitoring

Ganz CORTROL provides health monitoring data for server, devices and channels, as well as live status of connected user sessions.

From the Ganz CORTROL Management Console, select *Monitoring*.
Buttons on the bottom panel offer quick information reference points, and a filter option.

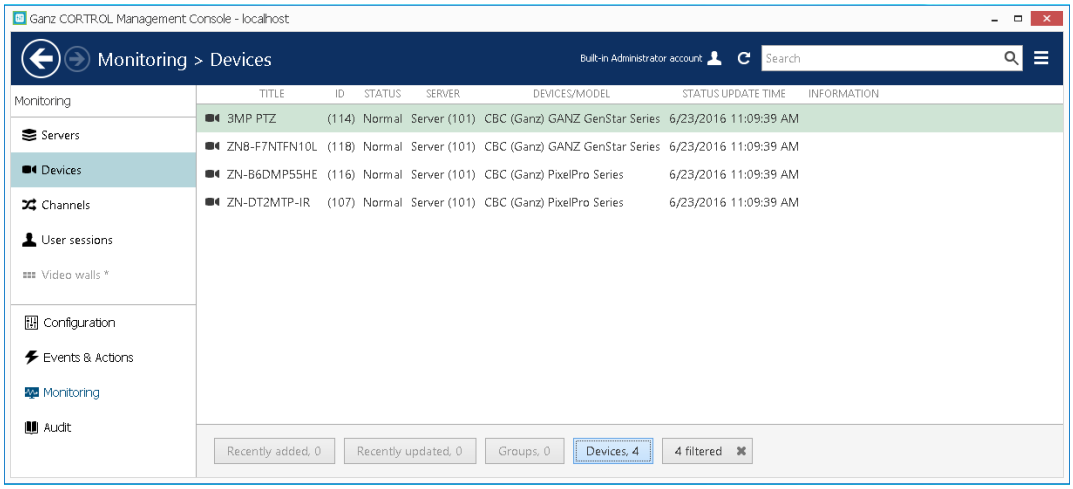
Servers

The server status includes information about connection and synchronization. Both have a numeric status code and corresponding textual status.



Devices

The device summary provides configuration update status and the time of the last communication between the server and device.



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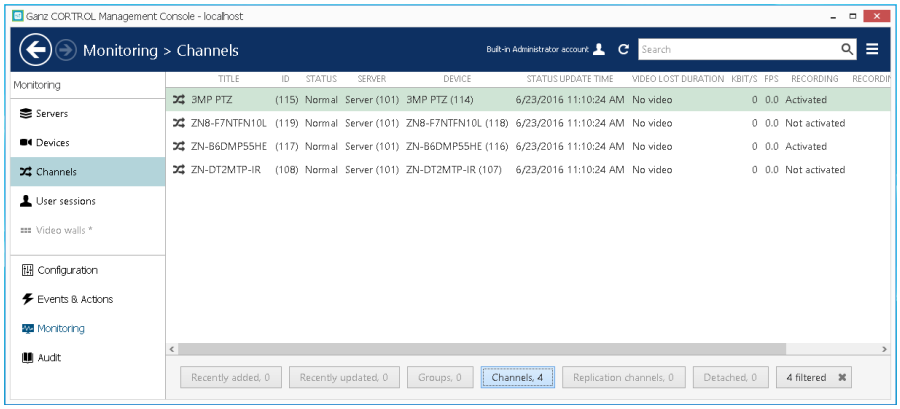
Channels

Along with configuration update results, channel monitoring contains information about the following:

- Video loss
- Stream bit rate
- Stream frame rate (FPS)
- Recording status

Recording status uses the following denotations: 0=currently not recording, 1=recording is active. Note that 'not recording' may mean either that recording is not configured (disabled) or that recording has not been activated according to the schedule.

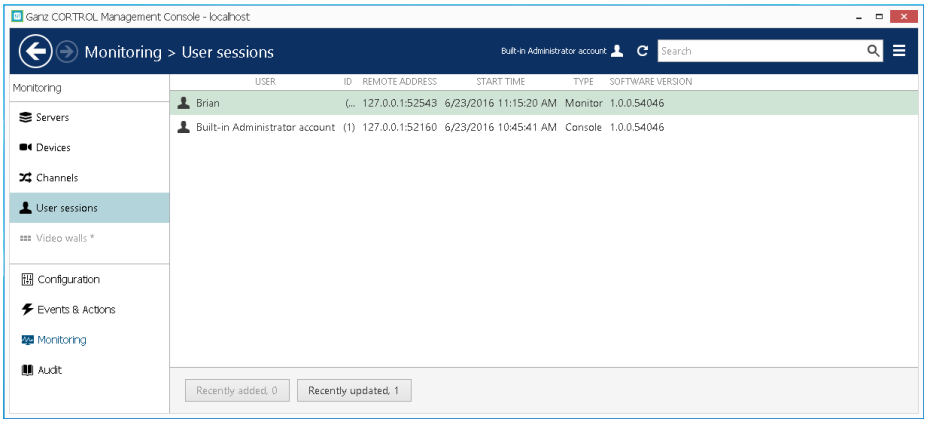


User Sessions

This monitoring area displays currently active incoming Ganz CORTROL Client connections with the following details:

- User account
- Remote address
- Remote (outgoing) port
- Session start time
- Type (Ganz CORTROL Console/Ganz CORTROL Client)

Disconnected sessions will automatically disappear from the list.



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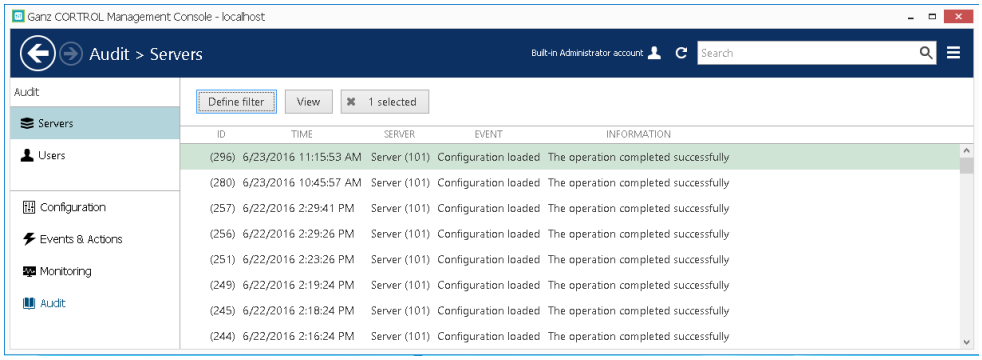
16. Audit

To access the global audit log in Ganz CORTROL Console, choose the *Audit* section in the bottom-left-hand panel. Use the *Search* field in the upper-right-hand menu to filter the records. Press the *Refresh* button to reload the item list.

The audit log contains detailed information about the most important user activities and server events.

From the Ganz CORTROL Management Console, select *Audit.*
Buttons on the top panel offer filter definition, view, and select options.



Log Entries

Events are organized in a way similar to the Windows Event log, and can be filtered and sorted by any field. By default, entries are sorted by time, with latest on top.

Each event contains the following values (internal ID fields omitted):

- ***Time***: event timestamp in system locale-specific format
- ***Class, Subclass*** and ***Event***
    - *Server:* internal server activity
        - *Server activity*: internal server activity
            - *Config loaded*

    - *User:* action was taken by user via Ganz CORTROL Client
        - *Authorized*
            - *Logout:* Ganz CORTROL Client disconnected
        - *Accessed Device*
            - *Receive Data:* stream received
        - *Administered Device*
            - *Administer*

- ***Object Name***
    - User name or server ID

- ***Target Name***
    - Target device name

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Server

Audit option Server is related to audit filters as they relate to the available CORTROL servers.

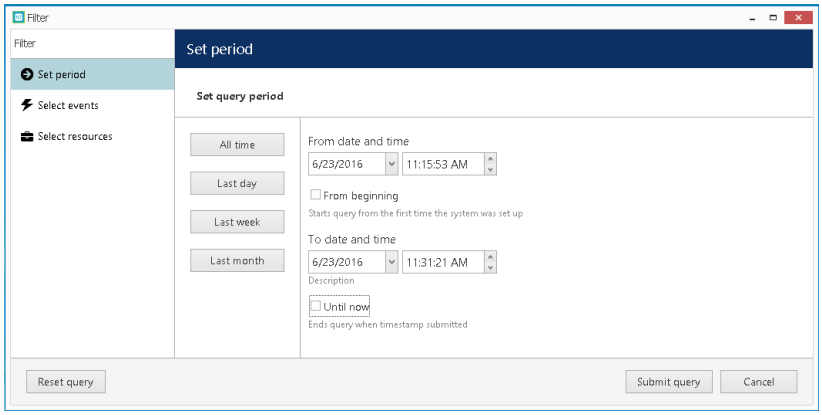
Define Filter: Audit log entries can be filtered for easier analysis. Click the *Define filter* button on the upper panel to bring up the dialog box.

Set period

Date and time can be set manually, or automated controls for preset time boundaries can be used. Start and end boundaries may also be used separately.

In the *Set period* tab, specify the time limits for log output:

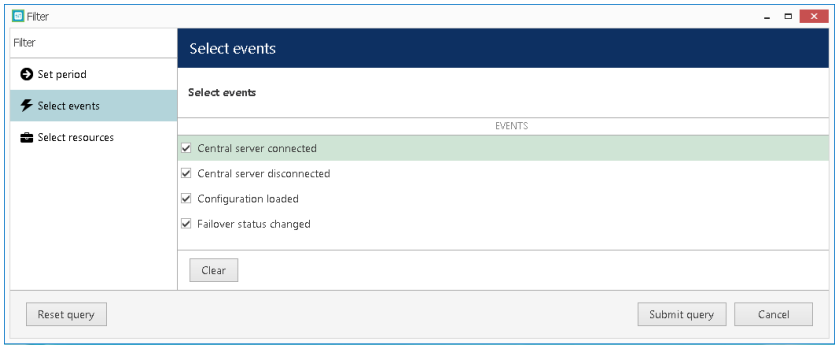
- All time
- Last day
- Last week
- Last month



Select events

In the *Select events* tab, choose specific event sources, groups and types to narrow down the search.

- Central server connected
- Central server disconnected
- Configuration loaded
- Failover status changed



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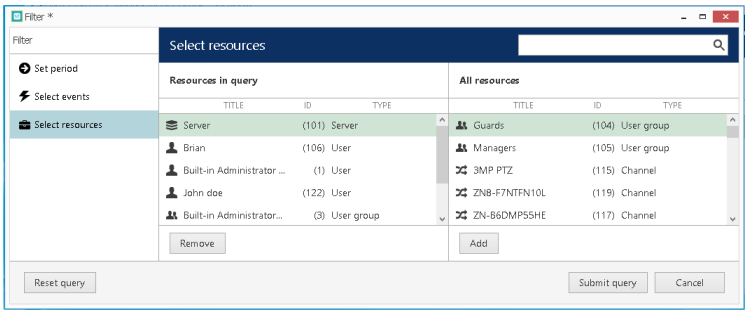
Select resources

In the *Select resources* tab, the specific resources needing to be mentioned can be selected in the log entries. Note that if multiple resources are chosen, the filter will apply *OR* logic, meaning that output log entry will only be displayed if it contains **at least one** resource; it will **not** have to contain all of them.

Search query: Use the *Search* field to filter the resource list. Both the list of *Resources in query* and general *All resources* will be affected by the *Search* filter. Press the *Reset query* button in the bottom left corner at any time to restart filter configuration. When finished, click *Submit query* to view the results.



Users

Audit option Users is related to audit filters as they relate to the available CORTROL users.

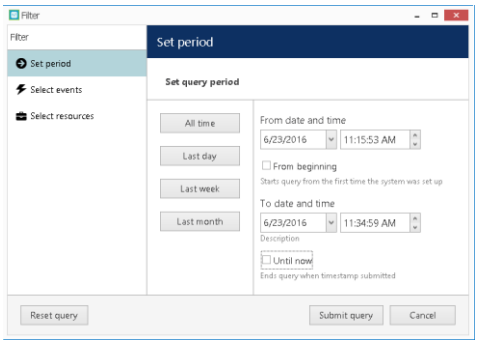
Define Filter: Audit log entries can be filtered for easier analysis. Click the *Define filter* button on the upper panel to bring up the dialog box.

Set period

Date and time can be set manually, or automated controls for preset time boundaries can be used. Start and end boundaries may also be used separately.

In the *Set period* tab, specify the time limits for log output.

- All time
- Last day
- Last week
- Last month



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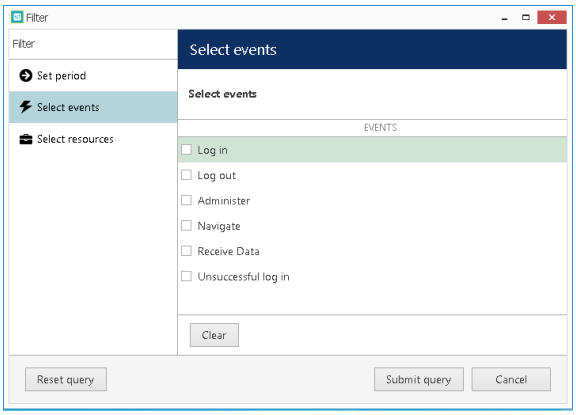
Select events

In the *Select events* tab, choose specific event sources, groups, and types to narrow down the search.

- Log in
- Log out
- Administer
- Navigate
- Receive Data
- Unsuccessful log in

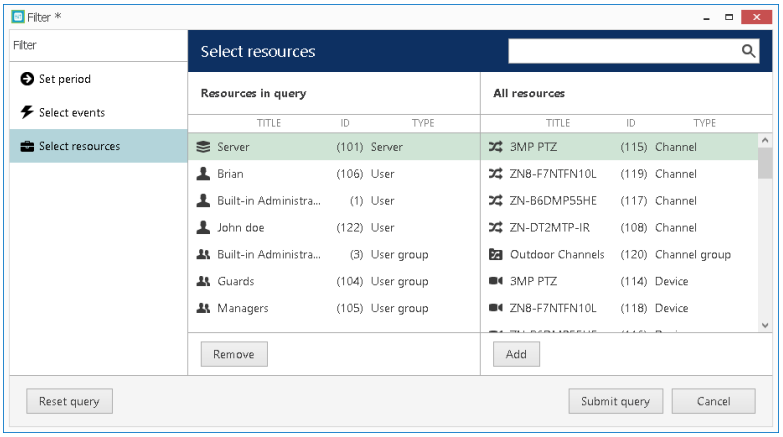


Select resources

In the *Select resources* tab, the specific resources needing to be mentioned can be selected in the log entries. Note that if multiple resources are chosen, the filter will apply *OR* logic, meaning that output log entry will only be displayed if it contains **at least one** resource; it will **not** have to contain all of them.

Search query

Use the *Search* field to filter the resource list. Both the list of *Resources in query* and general *All resources* will be affected by the *Search* filter. Press the *Reset query* button in the bottom left corner at any time to restart filter configuration. When finished, click *Submit query* to view the results.



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8. Problem Report Wizard

CORTROL offers a comprehensive wizard-like tool for structured and detailed problem reporting. The tool is automatically installed at the same time as the product and is thus available on any machine on which CORTROL is installed.

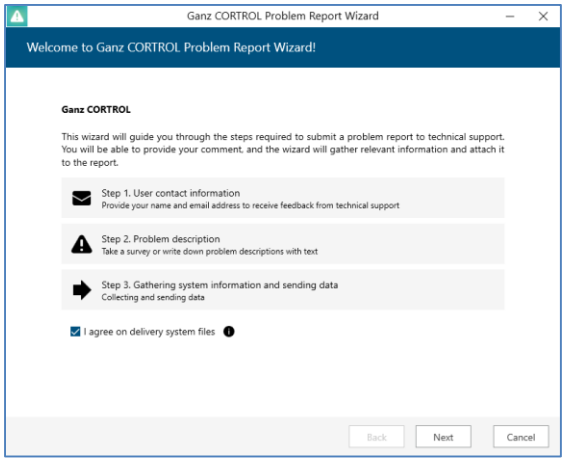
To access the Problem Report Wizard:

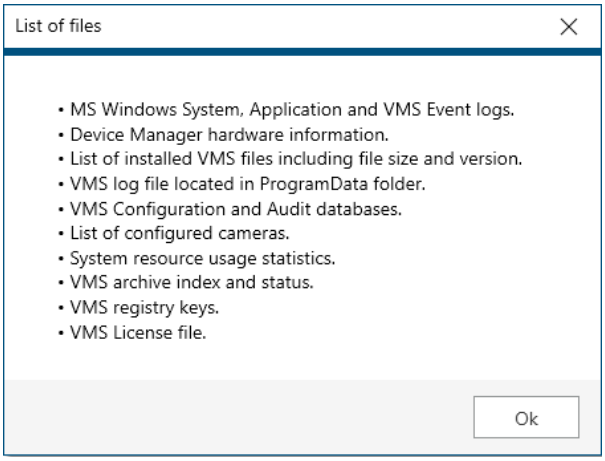
- Windows 8 and newer: use *Start -> All Apps -> CBC AMERICAS, Corp. -> Problem Report Wizard*
- Windows 7 and older: use *Start -> All Programs -> software installation folder -> Tools -> Problem Report Wizard*
- Alternatively, use Windows Start Menu *Search* to locate the Problem Report Wizard in the programs menu.

Make sure to run the Problem Report Wizard on the correct computer. It gathers information from the machine it has been launched on, and **not** from any of the servers connected via Ganz CORTROL Console or Ganz CORTROL Client.

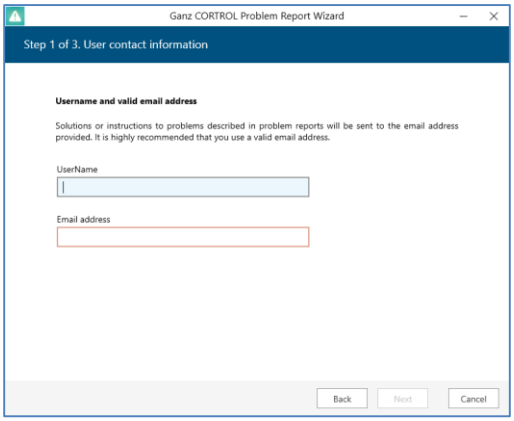
Agree to deliver system files to CBC AMERICAS, Corp. support and click *Next*. You can check which files are being taken from your system by clicking on the information button next to the agreement checkbox.

Note that CBC AMERICAS, Corp. will not transfer your data to any third-party companies. All of the information gathered is required to help CBC AMERICAS, Corp. efficiently resolve the reported problems.





Enter your name and your email address so that the CBC AMERICAS, Corp. support team can contact you. Click *Next* to proceed.



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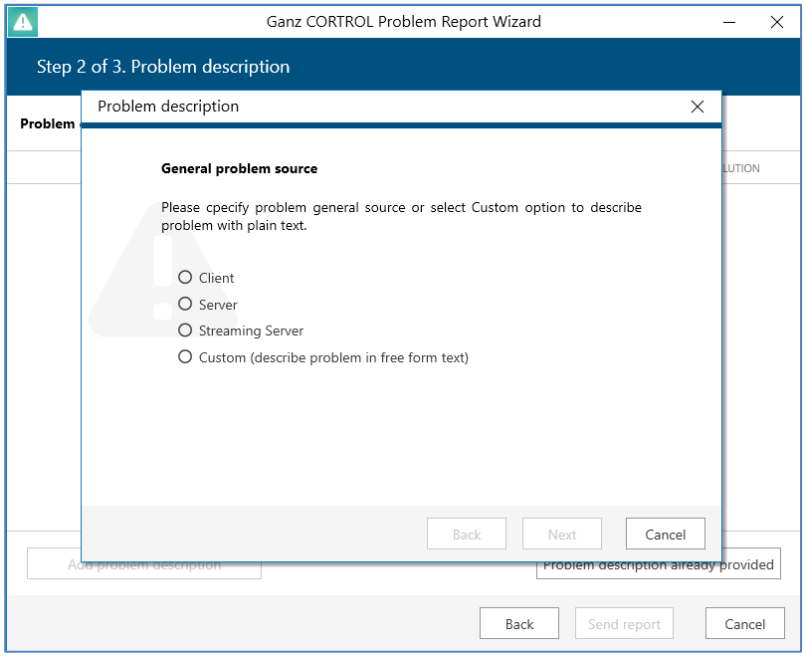
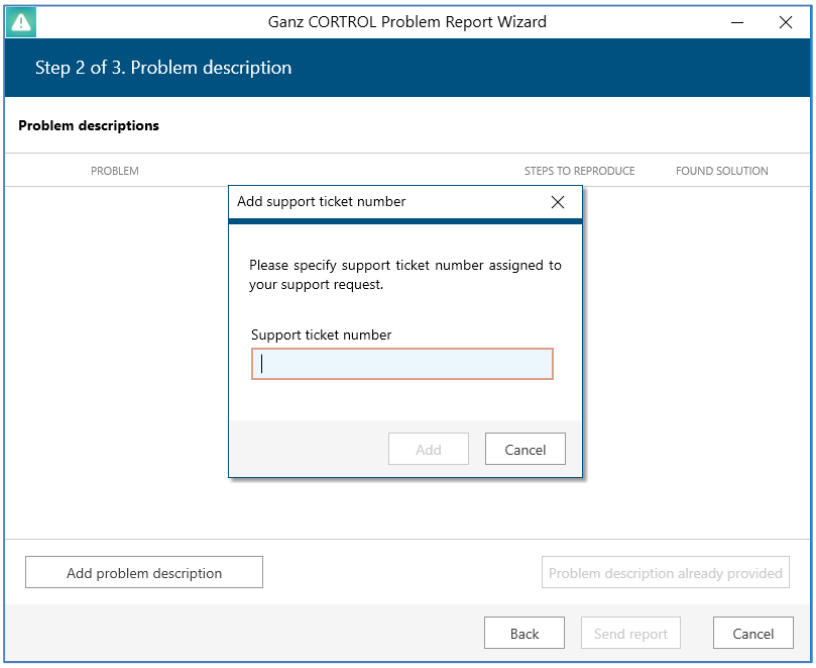
If you are applying a new, unreferenced problem report, click the *Add problem description* button. A short comprehensive wizard will guide you through the main issue categories, allowing you to choose the issues that are most applicable to your situation. You will be given the chance to enter error messages/codes and to attach snapshot(s) as needed. Make sure to provide the maximum amount of relevant information about the issue being experienced, and always include **snapshots** if they are available.



If you were asked by support team to generate a problem report, copy the **ticket ID** from the email communication and add it to the report by clicking the *Problem description already provided* button. This will help the support team to classify your report faster, and it will also guarantee that your report will go directly to the team member responsible for the thread.



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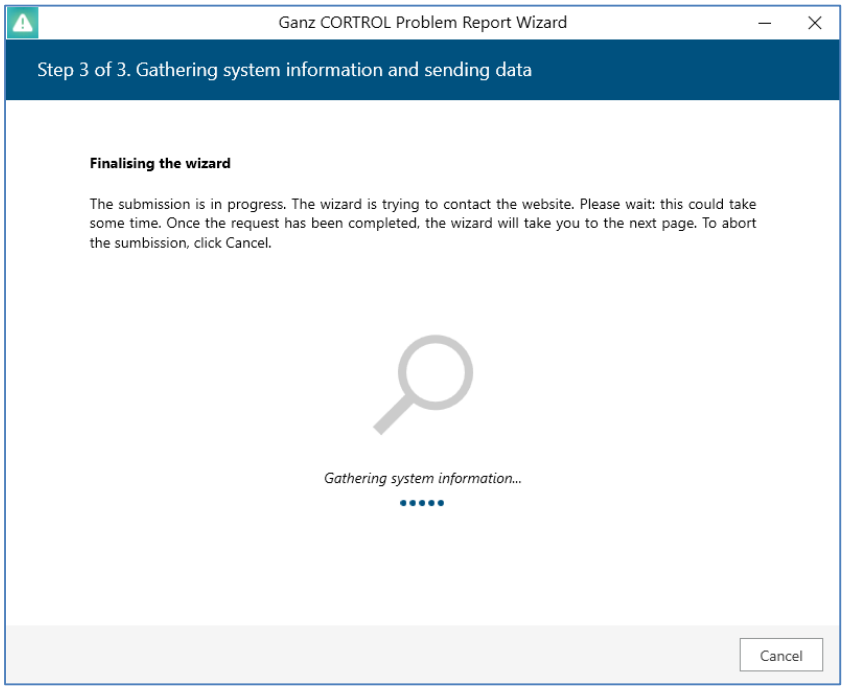
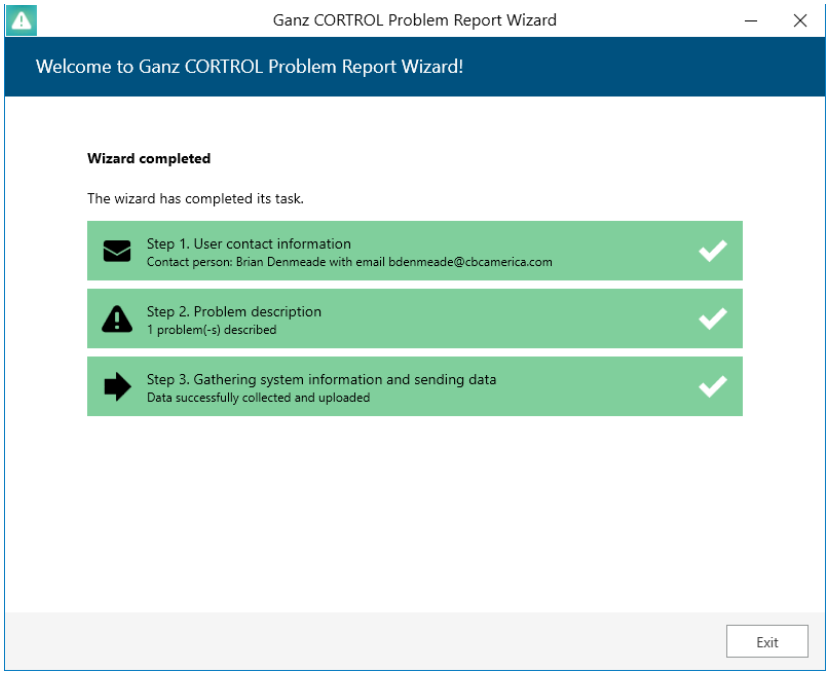
Multiple descriptions may be added to a single problem report. When ready, press the *Send report* button. The wizard will then try to send the report automatically.

If the server is offline, the wizard will not be able to submit the report to CBC AMERICAS, Corp.; instead, the software will prompt to save the generated report locally. Press the *Finalize (SIC in software) wizard without upload* button to finish.



Click *Save report as file* to save the compressed report onto the computer. The report may also be sent manually from any other computer to cortrol@cbcamerica.com. Click *Exit* to close the wizard.



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9. COTROL Quiz (Open book)

1. What is the default username and password to log in as an Administrator to Windows?
    a. root / pass
    b. admin / admin
    c. ADMIN / 1234
    d. admin / "No password"

2. How many IP camera licenses are included when installing CORTROL Prime?
    a. None
    b. 4
    c. 8
    d. 16
3. What Operating System will run the CORTROL client?
    a. Windows XP and higher
    b. Linux
    c. Mac OS X
    d. All of the above

4. What is the resolution limit of CORTROL Prime?
    a. 720p
    b. 1080p
    c. 4K
    d. 8K

5. What port does the CORTROL Server use to communicate with the CORTROL Client?
    a. 80
    b. 8080
    c. 554
    d. 60554

6. What is the default username and password to initially log in as an Administrator to CORTROL?
    a. root / pass
    b. admin / admin
    c. ADMIN / 1234
    d. admin / "No password"

7. How is a device defined within CORTROL?
    a. "Device" refers to any actual video stream delivered to the server.
    b. "Device" profiles allow users to set how data streams are recorded.
    c. "Device" refers to any piece of physical equipment that serves as a data provider.

8. How is a channel defined within CORTROL?
    a. "Channel" refers to any actual video stream delivered to the server.
    b. "Channel" profiles allow users to set how data streams are recorded.
    c. "Channel" refers to any piece of physical equipment that serves as a data provider.

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9. How is a recording profile defined within CORTROL?
    a. "Recording profiles" refers to any actual video stream delivered to the server.
    b. "Recording profiles" allow users to set how data streams are recorded.
    c. "Recording profiles" refers to any piece of physical equipment that serves as a data provider.

10. What is highly recommended once you complete the setup and configuration of the CORTROL system?
    a. Back up the settings by exporting the settings and the license key from the system.
    b. Search for recorded video from the cameras to verify that the motion detection is working.
    c. Verify that all of the steps from the installation checklist have been completed.
    d. All of the above

11. Regarding software such as Anti-virus, defragmentation, and scandisk, what is the rule of thumb?
    a. Configure to scan all available media.
    b. Configure to run on the C: drive and data drive(s).
    c. Configure to run on only the C: drive.
    d. Configure to run on only the data drive(s).

12. What is the advantage of the member's function in CORTROL?
    a. Allows the addition of a device, channel, or user to a grouping.
    b. Allows the addition of a device, channel, or user to profile.
    c. Allows the addition of a device, channel, or user to a server.

13. For software motion detection in CORTROL which is more CPU intensive?
    a. Software (High Accuracy)
    b. Software (High Performance)

14. In CORTROL, the main stream and sub stream must record to the same storage device.
    a. True
    b. False

15. CORTROL allows monitoring Servers, Devices, Channels, and User sessions.
    a. True
    b. False

16. In order to request an evaluation license for CORTROL
    a. Request one through the mobile app.
    b. Request one during the installation.
    c. Request one from www.ganzsecurity.com.
    d. COTROL does not offer an evaluation license.

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10. Course Evaluation

Please indicate your impressions of the items listed below.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The training met my expectations.					
The content was organized and easy to follow.					
The materials were pertinent and useful.					
The quality of instruction was good.					
There was adequate time for questions and discussion.					
Comments:					

Indicate your level of preparedness to complete the following tasks.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Following the System Evaluation Checklist to configure a Ganz CORTROL System.					
Install a client on another computer, making sure it can connect to the server with the expected IP address and one of the user accounts that was set up.					
Display cameras in the layout panels using both the drag and drop and double clicking methods.					
Conduct a video and audio search using the interface to control playback.					
Export video to a USB thumb drive, and or host client location.					
Use the online Help System.					
Troubleshooting basic support issues.					
Comments:					

	Excellent	Good	Average	Poor
How do you rate the training overall?				
Comments:				

	Yes	No
Would you recommend this training to other dealers?		
Comments:		

What aspects of the training could be improved?

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Comments:

11. Check List – CORTROL Setup

	Quick Start
☐	Installation See Quick Start Guide for information on installing the hardware.
☐	Establishing Initial Communications See Quick Start Guide for information on establishing communications from the CORTROL client to CORTROL Server.
☐	Configure IP Cameras See IP Camera Quick Start Guide for information on configuring IP camera addresses, usernames, and passwords.
	Config (Setup)
☐	System Configure the CORTROL Recording Server's system name, time, time zone, and Static IP address.
☐	Storage Ensure all disks are selected for recording except the system drive, C:\ in Windows. Ensure total disk space matches the expected value.
☐	Add IP Cameras Network cameras IP address are configured, and added to the Ganz CORTROL Recording Server.
☐	Camera Recording (IP cameras) Set resolutions: Group1 _____ Group2 _____ Group3 _____ Group4 _____ Group5 _____ Set frame rate: Group1 _____ Group2 _____ Group3 _____ Group4 _____ Group5 _____
☐	Camera Recording (analog cameras) Set resolutions: Group1 _____ Group2 _____ Group3 _____ Group4 _____ Group5 _____ Set frame rates: Group1 _____ Group2 _____ Group3 _____ Group4 _____ Group5 _____ Disable cameras that are not connected.
☐	Camera Settings Name camera. Enable onscreen display. Set motion mask on IP cameras (typically no motion mask set on a new camera, motion recording won't trigger.) Mask motion from irrelevant objects such as moving trees, ceiling fans. Create Layouts for relevant locations, such as doors and hallways. Configure quality/bit rate setting just high enough to see relevant details. If supported by the cameras, set secondary stream, for use in multi-live view screen arrangements. Watch for motion blocks in live to ensure that motion sensitivity and masking are appropriately configured. Configure mechanical PTZ presets.
☐	Schedule No recorded is assigned by default. Change any cameras to continuously record or motion recording as needed. Audio is not recorded by default. Schedule audio recording if necessary.

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	Configure, schedule event notifications if necessary.
☐	Users Add user accounts for the people who will use the system.
☐	Trigger Input Name input triggers to be used. Set radio button to normally open or closed to match physical switch.
☐	Alarm Output Name any alarm outputs to be used.
☐	Notifications Create email profile for system health administrator. Create email profile for security events such as unexpected motion or input triggers. Create email profile for the installer.
☐	Export an archive clip Archive a five-minute clip to confirm recording, and archiving. Insert blank CD / DVD / USB thumb drive.
☐	Event Linking Create events to alert administrator via email of system health issues. Create events to record video on input triggers. Create events to email security administrator upon unexpected triggers or motion. Create event to email installer when license subscription is near expiration.
☐	Export Configuration Settings Save settings and license to a USB flash drive to aid the recovery process, if necessary.
	Live Page
☐	Live Create views as required by users for live viewing or multi-camera search and playback.
☐	Install Client Install the Ganz CORTROL Client on another computer and ensure that it can connect to the Ganz CORTROL Recording Server using the static IP address and one of the configured user accounts.
	Search Page
☐	Search* Connect after 24 hours. Connect after 7 days. *Search to ensure cameras are not recording excessive amounts of motion. If they are, adjust motion sensitivity or windows/masks, or possibly adjust camera for low-light noise. Look at Storage page and extrapolate the storage duration to ensure that it meets requirements. If it does not, decrease frame rate, quality, or resolution.

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12. CORTROL Technical Training – Notes 1

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13. CORTROL Technical Training – Notes 2

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