



CommX Discover

- User Manual -

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Overview

About this manual

Welcome to the CommX Unified Recording and Investigation System (CommX Discover). This user manual is for those users who are responsible for operating, maintaining, and troubleshooting the CommX Discover, including:

- Client Operators
- System Administrators
- Integrators

Most of the configuration will be controlled by the CommX Discover Client. For more information, see the administrator manual for CommX Discover.

More Info

For more advanced information, please refer to the following files:

- CommX Discover Interface Guide
- CommX Discover Installation Guide
- CommX Discover Troubleshooting
- CommX Discover FAQ

What's new?

We have recently developed new tools and capabilities to improve the overall security and contributes to business intelligence.

- **Real Time** – Watch Channels in Live Mode with ultra-low latency
- **Investigation Area** – Investigate scheduled activity and interesting events
- **Matrix Screen**– Stream your channels to any remote screens on different PCs

Real Time

Now it's possible to see in LIVE streaming of the videos on several channels at the same time, whether synched together or with a combination of VOD recordings.

- Watch up to 4 channels on Live streaming - on sync mode or with VOD combine
- Ultra-low latency – 200ms end to end
- Several users can watch the same videos at the same time, using the web browser

Investigation area

Aside from the classic capabilities of a recording system, CommX developed an area for conveniently prioritizing important investigative activity - both for scheduled activity or important events.

- Schedule an event for recording that is going to happen now or at a future time
- Prepare templates for future recordings that includes the relevant channels and participants related to the record
- Add files to share with other users
- Lock recordings from being deleted
- In one investigative case, consolidate all the critical channels and recordings for dealing with a past suspicious incident
- Download relevant records

Matrix Screens

Consolidating and simplifying your investigations and recording viewing is critical, as screens can be in different locations, it can be cumbersome to drag channels to relevant screens, you might want to use other PCs, etc.

Meet the new **CommX DISCOVER feature - Matrix screen**. Now you can stream the Channels on all the desired screens, including those nearby or connected to other PCs, **all from one platform**.

Requirements and considerations

Recommended system requirements

Your available system resources impact your performance, as they determine the speed for encoding assets and the number of streams, bitrate, and type of encoding that's possible. The following hardware specifications are recommended for optimum performance:

Name	Description
CPU	11 th Generation Intel® Core™ i7-10850H 5.1 GHz max or better
RAM	32 GB
Network	GbE network interface card
Hard Disk Space	240 GB Solid State Drive for OS and Security Center applications, with a minimum of 6 GB of free disk space to install the Security Center Client application
Graphics	Dual NVIDIA® GeForce® RTX 2080 video card (at least NVIDIA GTX 1660)
Operating	64-bit operating system

Minimum system requirements

Name	Description
CPU	9 th Generation Intel® Core™ i7-9700 or better
RAM	16 GB
Network	GbE network interface card
Hard Disk Space	120 GB Solid State Drive for OS and Security Center applications, with a minimum of 6 GB of free disk space to install the Security Center Client application
Graphics	256 MB PCI-Express x16 video card
Operating	64-bit operating system

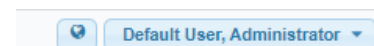
Configuration

Most of the configuration should be completed by your system administrator in conjunction with the CommX Installation Guide file, but you can configure some elements, depending on your permission.

Settings

Right-to-left Language Support

The CommX DISCOVER system supports three languages, including the ability to read in Right-to-left format.



For now, the following languages are supported:

- English
- Russian
- Hebrew

You can change the Right-to-left setting very easily by clicking the world icon, which can be found in the upper right corner.

Channels

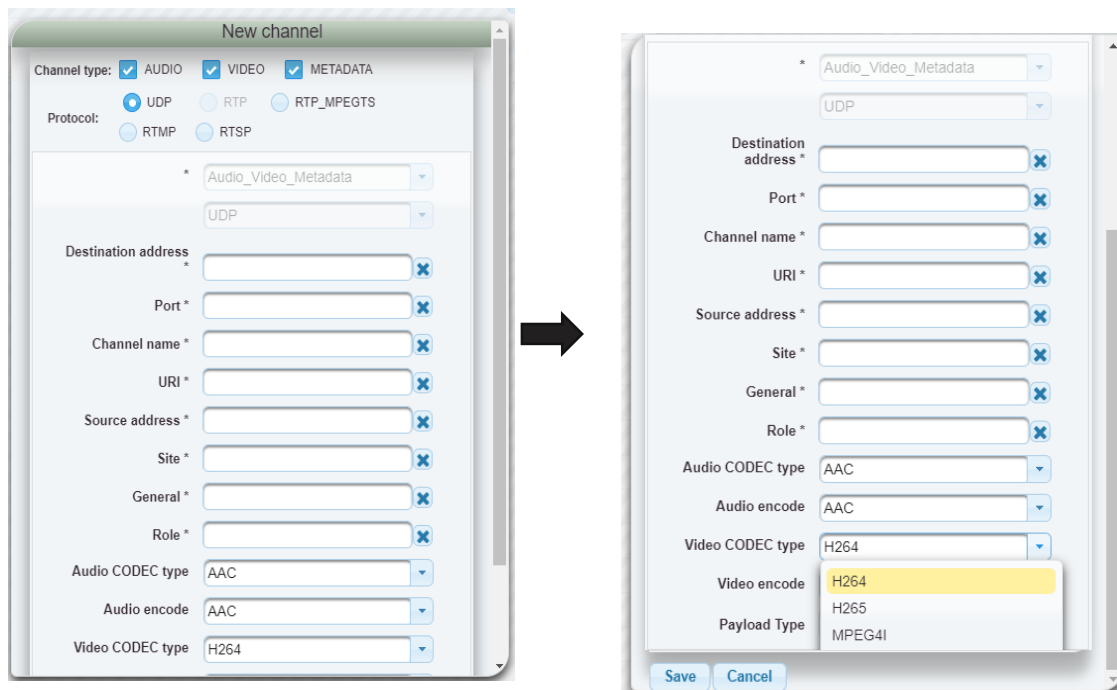
The "Channels" tab contains all the recording channels defined in the system. You can configure and add a new channel to the system, including video, audio, or metadata types. For more complex recordings, you can combine the type of the channel. In addition, you can choose the protocol streaming between UDP\RTMP\RTSP_MPEGTS.

Channels								
Search	20	1	Shown 1-2 from 2					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Channel name	URI	Source address	Target address	Site	Encode
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RealTimeServer-1	1000012	1.1.1.1	239.10.17.2:10172	tsgs_1	H264 => H264
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	RealTimeServer-2	2000012	1.1.1.1	239.10.16.2:60000	tsgs_2	H264 => H264

To add more channels to the list:

1. Enter "Channels"
2. Press
3. Select the relevant channel type check box
4. Enter additional settings.

The table below shows an example of additional settings:



To configure the channel settings, follow these steps:

Select the desired type of content the channel will listen to:

Audio, Video, or Metadata.

This selection determines the type of data that will be received and processed by the channel.

Choose the appropriate protocol for the channel. The protocol defines the rules and specifications for transmitting the data. You can choose from the following options:

- UDP (User Datagram Protocol): A simple, connectionless protocol suitable for real-time streaming of data.
- RTP (Real-Time Transport Protocol): A network protocol specifically designed for delivering audio and video over IP networks.
- RTP_MPEGTS (Real-Time Transport Protocol - MPEG Transport Stream): A protocol for transporting MPEG-based audio and video streams over IP networks.
- RTMP (Real-Time Messaging Protocol): A proprietary protocol used for streaming audio, video, and data over the internet.
- RTSP (Real-Time Streaming Protocol): A network control protocol used for controlling the delivery of streaming media.

Carefully selecting the content type and protocol ensures that the channel is properly configured to receive and process the desired data. Refer to the documentation for detailed instructions on configuring specific content types and protocols for your channel.

Name	Description
Destination Address	Destination addresses from which the recording comes
Port	Destination port number format from which the recording
Channel	Channel name. Up to 50 characters.
URI	URI of the streaming recording
Source address	Source address of the streaming recording
Site	Site of the streaming recording
General	General information for the channel
Role	Role of the channel
Audio CODEC type	Audio CODEC type
Audio encode	Audio encode
Video CODEC type	Video CODEC type
Video encode	Video encode
Payload Type	Payload Type
Audio codec	Advanced Audio Coding (AAC) is an audio coding standard for lossy digital audio compression. Designed to be the successor of the MP3 format, AAC generally achieves higher sound quality than MP3 encoders at the same bit rate.
Audio encode	Advanced Audio Coding (AAC) is an audio coding standard for lossy digital audio compression. Designed to be the successor of the MP3 format, AAC generally achieves higher sound quality than MP3 encoders at the same bit rate.
Video codec type	<p>H265 – High-Efficiency Video Coding is a video compression standard designed as part of the MPEG-H project.</p> <p>H264 - Advanced Video Coding is a video compression standard based on block-oriented, motion-compensated coding. *</p>

	MPEG4I - video standard, It focuses on defining the syntax and structure of the video codec, enabling efficient compression and storage of video files.
KLV save	If you would like to have Metadata in your recording, choose Yes. If not, choose No.
Bitrate (kbps)	Bitrate is the amount of data encoded for a unit of time, and streaming is usually referenced in megabits per second (Mbps) for video, and in kilobits per second (kbps) for audio. From a streaming perspective, a higher video bitrate means a higher quality video that requires more bandwidth.
Resolution Width	H265 – High-Efficiency Video Coding is a video compression standard designed as part of the MPEG-H project. H264 - Advanced Video Coding is a video compression standard based on block-oriented, motion-compensated coding. * MPEG4I - video standard, It focuses on defining the syntax and structure of the video codec, enabling efficient compression and storage of video files.
Resolution Height	H265 – High-Efficiency Video Coding is a video compression standard designed as part of the MPEG-H project. H264 - Advanced Video Coding is a video compression standard based on block-oriented, motion-compensated coding. * MPEG4I - video standard, It focuses on defining the syntax and structure of the video codec, enabling efficient compression and storage of video files.
Framerate	Frame rate is the frequency at which consecutive images are captured or displayed. The default will be zero.
Payload Type	Specifies a general-purpose data format and network protocol for transmitting digital media streams on Internet Protocol (IP) networks.
* NOTE: The Major Difference Between H.264 and H.265 is that H.264 processes frames of video using macroblocks, while H.265 processes information using coding tree units (CTUs). CTUs process information more efficiently, which results in smaller file size and less bandwidth used for your streaming video.	

If you would like to remove any of the channels, just pick the channel you would like by clicking the white box and press X - .



Activate channel

To activate the channels, just pick the channel you would like by clicking the white box and then click the light bulb .

Status

- Green status - the channel is ON and ready to record.
- Red status – the channel is OFF

Users

In the "Users" tab, you can manage which users can access the CommX DISCOVER system and what permissions they will have. The main user during the initial login will have the privileges to create new users. To create a new user, press the + button .

To edit the configuration, press the .

(To reference the permission list, [click here](#))

Users			
Username	First Name	Last Name	Permissions
kabat	kabat	kabat	KABAT
oper	oper	oper	OPERATOR

Create new user

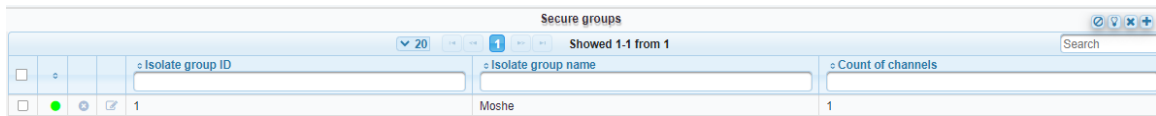
Name	Description
Username	Enter a unique username for the user
First name	Enter the user's first name
Last name	Enter the user's last name
Password	Enter their password
Repeat Password	Enter the same password as above
Role	You can choose which permissions to give the user. The options are Operator, Administrator, Kabat, and Manager. To understand the permissions list, please refer to this table .

Permission list

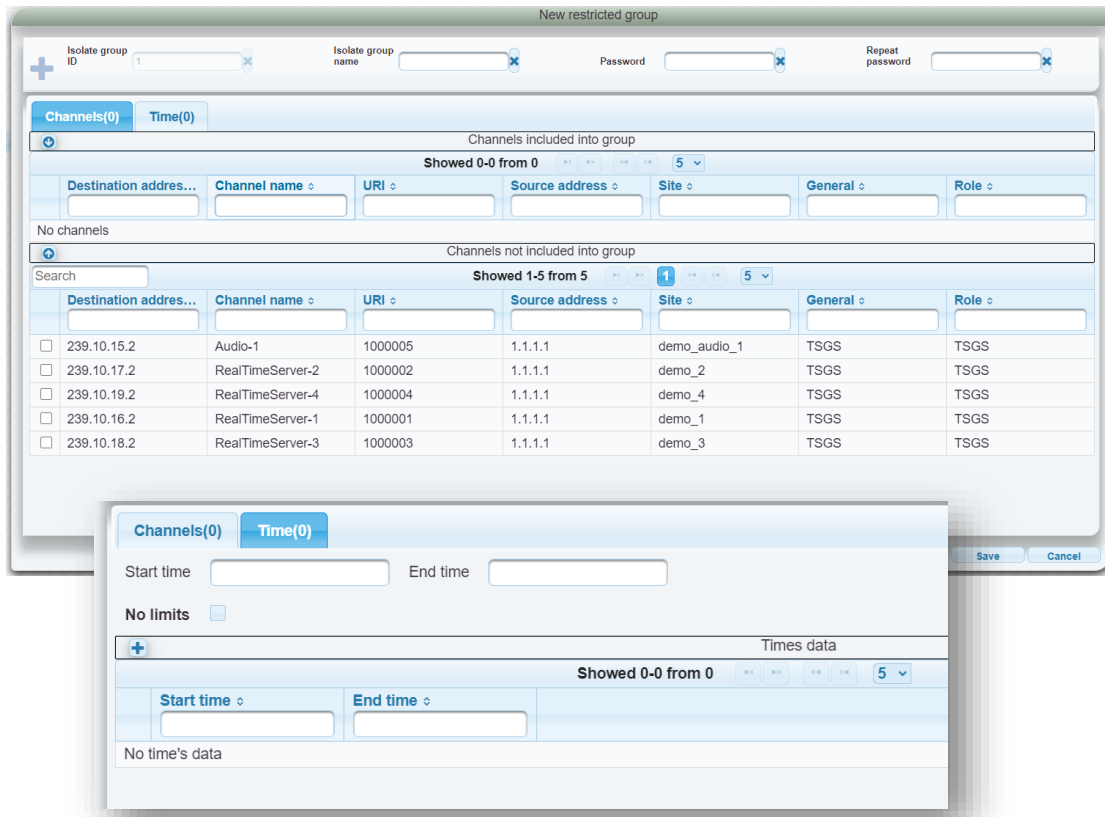
	Operator	Manager	Admin	Kabat
<i>Status</i>	Read Only	Read Only	Read Only	Read Only
<i>Channel</i>	Read Only	Read Only	Read Only	Read Only
<i>Recording</i>	Read Only	Read Only	Read Only	Read Only
<i>Users</i>	Not Available	Read\Write	Read\Write	Read Only
<i>Alerts</i>	Read Only	Read Only	Read Only	Read Only
<i>Settings</i>	Not Available	Not Available	Read Only	Not Available

Secure groups

If you would like to Secure an entire channel, even if for only a certain time period, you can add the channel in "Secure groups". Only people who have the permission and know the password will be able to watch the channel during the specified time.








To add a secure group , press + and a window with settings will appear.



Name	Description
Group ID	Enter your ID number
Group name	Enter group name from 2-30 characters.
Password	Enter their password
Password again	Enter the same password as before
Start time	Enter the time you would like to start the secure video.
End time	Enter the time you would like to finish the secure video.

No limit	Secure the channel - press the box .
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Steps for adding or removing a channel to Secure Groups

- To add a channel to the list, choose any channel from the table and click  .
- To remove a channel from the group, choose the channel and click  .
- To add a time range, click the “Time” tab, enter the required start and finish times and click  .
Or
You can allow for unlimited time by clicking the “No Limits” checkbox.
- Press “Save” for confirmation.
- To remove any of the channels, just pick the channel(s) by clicking the white box(es)  and click X -  .

Settings

Some of the settings are for the user's convenience and some are for server configurations. The system setting can only be changed during the installation of the system and only by an administrator user.

Debrief case settings

For a more convenient way to use the “Debrief Case” Area, different properties can be selected according to the user's needs.

Enter up to four properties and define them by name. Then enter the “Debrief Case” and check the table.

Matrix settings

Set all your screen and define them by name.

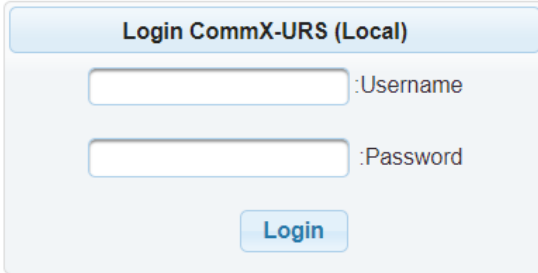
Check which screen is connected to the system and select how many of them are relevant.

Operation

Logging in and Out

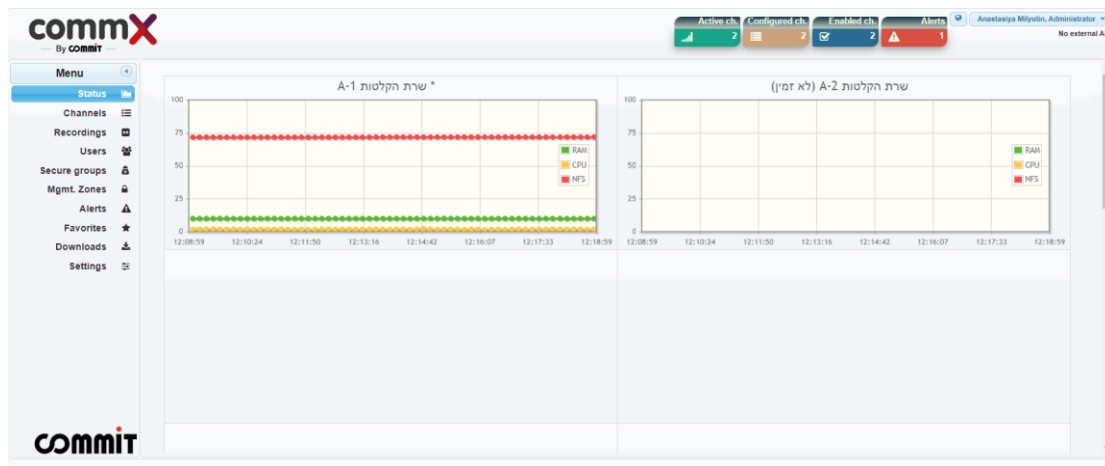
Log in and out

1. Enter the website (Example - <https://x.x.x.x/RecManager>) .
The CommX-DISCOVER login screen will be displayed.
2. Type in your Username and password and press Login.



The login form is titled "Login CommX-URS (Local)". It contains two input fields: the first is labeled ":Username" and the second is labeled ":Password". Below the fields is a blue "Login" button.

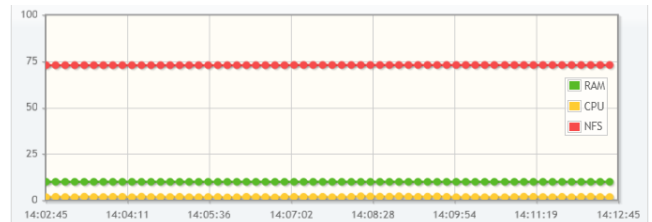
The CommX-DISCOVER dashboard will be displayed.



Status

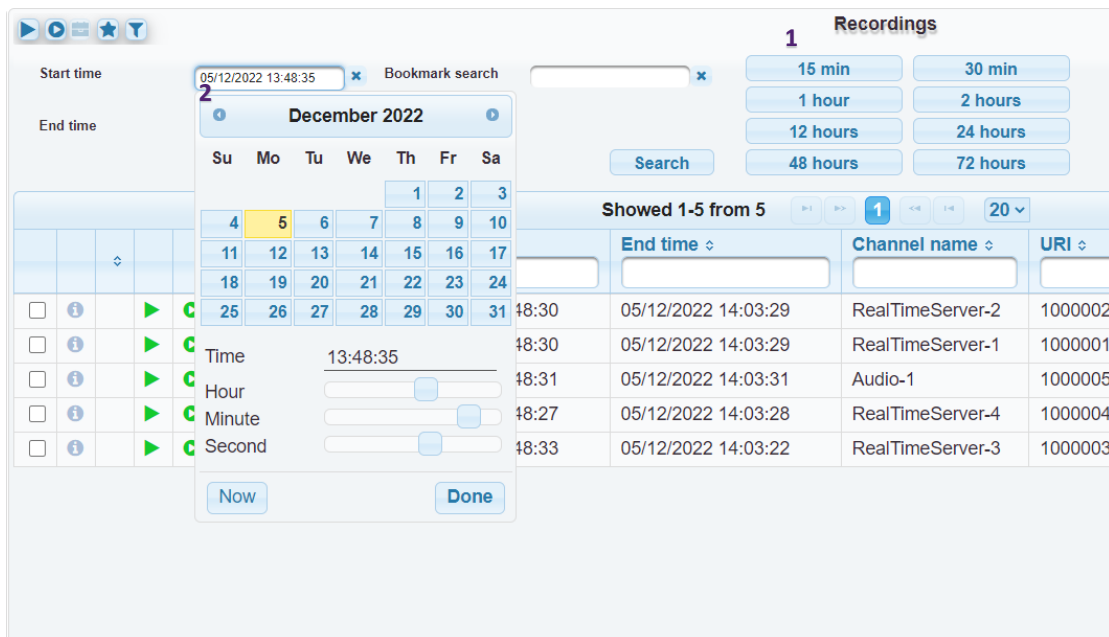
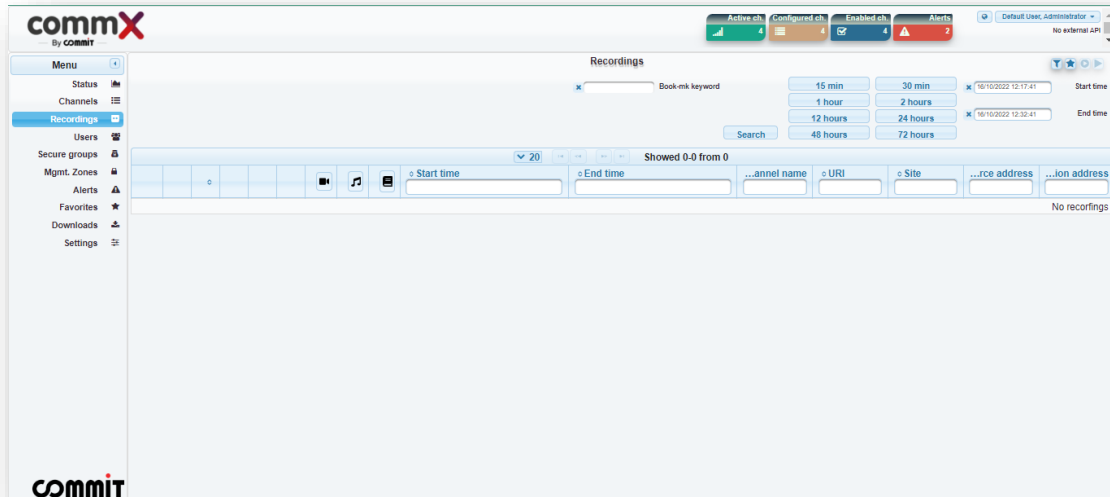
The main and first screen you will see in CommX DISCOVER system is the status screen. This screen shows the system status in terms of RAM, CPU and NFS.

- NFS - storage of the system
- CPU - processor that the system consumes
- RAM - the memory that the system consumes



Recording

The recording tab is the heart of the system. Here you can find all the recordings, according to the relevant times and the categories that you are interested in. You can filter by categories such as audio recordings, video, classification and more. Some of the recordings will be encrypted according to the user's settings. After the selection of the recordings, you can enter the "Recording Player" window to view the recordings and investigate the event.



Steps to find a record

To find a relevant recording:

1. Set a time range

There are two ways to find the relevant time range.

Number	Button	Description
1		<p>For a more convenient and quicker method, you can press the minutes/hours buttons. Each click you select will be calculated from the existing time and X time back (Depending on the selection).</p> <p>For Example: I chose the 30 min button The time now is – 12:00 The system will show you all the recordings from 11:30 to 12:00</p>
2		<p>For a more manual selection method, you can choose Time range manually by clicking on the date. A window will appear, from which it will be possible to select an exact date and time. You should choose a start time and an end time.</p>

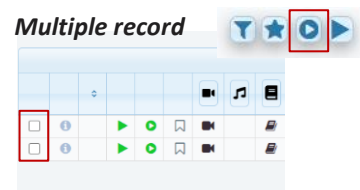
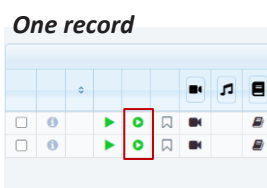
2. Filter by your needs

After choosing the applicable range of time, it's possible to sort by categories or by type of recording.



	Start time	End time	channel name	URI	Site	rfc address	rget address
<input type="checkbox"/>	28/08/2022 15:27:52	28/08/2022 15:42:41	...TimeServer-2	2000012	tsgs_2	1.1.1.1	...0.16.2:60000
<input type="checkbox"/>	28/08/2022 15:27:50	28/08/2022 15:42:41	...TimeServer-1	1000012	tsgs_1	1.1.1.1	...0.17.2:10172

3. Choose the VOD record

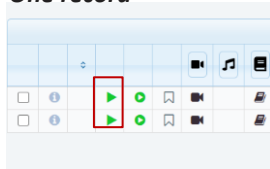
You can select and view a single recording by clicking on the icon . For viewing multiple selection of recordings, you can select up to 4 recordings and click on the icon .



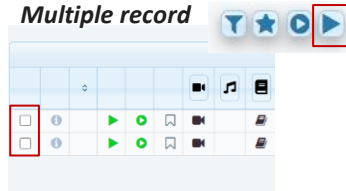
4. Choose the Live streaming

You can select and watch a single recording by clicking on the icon . For multiple selection of recordings, you can mark up to 4 recordings and click on the icon .


One record

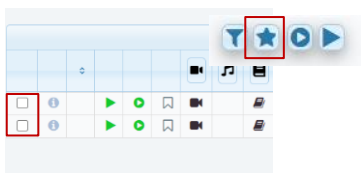


Multiple record



Select Favorites

- Select the recordings that you want to save in Favorites and click the star icon .

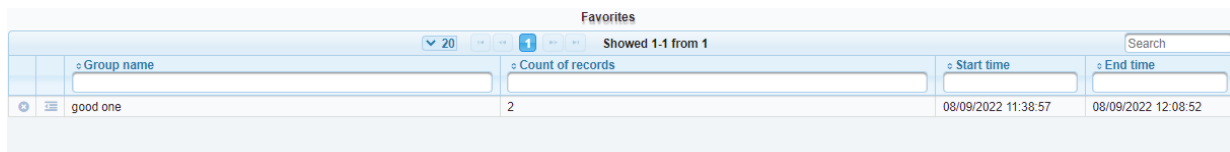


<input type="text"/>	Group name
<input type="text" value="13:48:30 05/12/2022"/>	Start time
<input type="text" value="14:03:29 05/12/2022"/>	End time
<input type="text" value="2"/>	Count of records

After clicking the star icon, a settings window will appear.

Name	Description
Group name	Enter group name from 2-30 characters.
Start time	Displays the start time that you selected to save in Favorites.
End time	Displays the finish time that you selected to save in Favorites.
Count of records	Displays the number of recordings you have selected

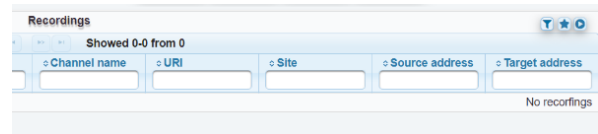
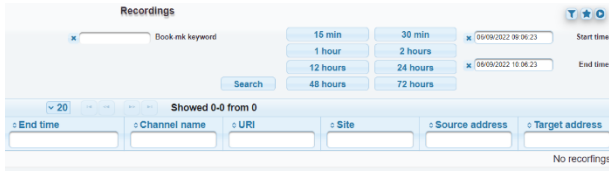
- To view the list of all favorites, go to the “Favorites” tab.



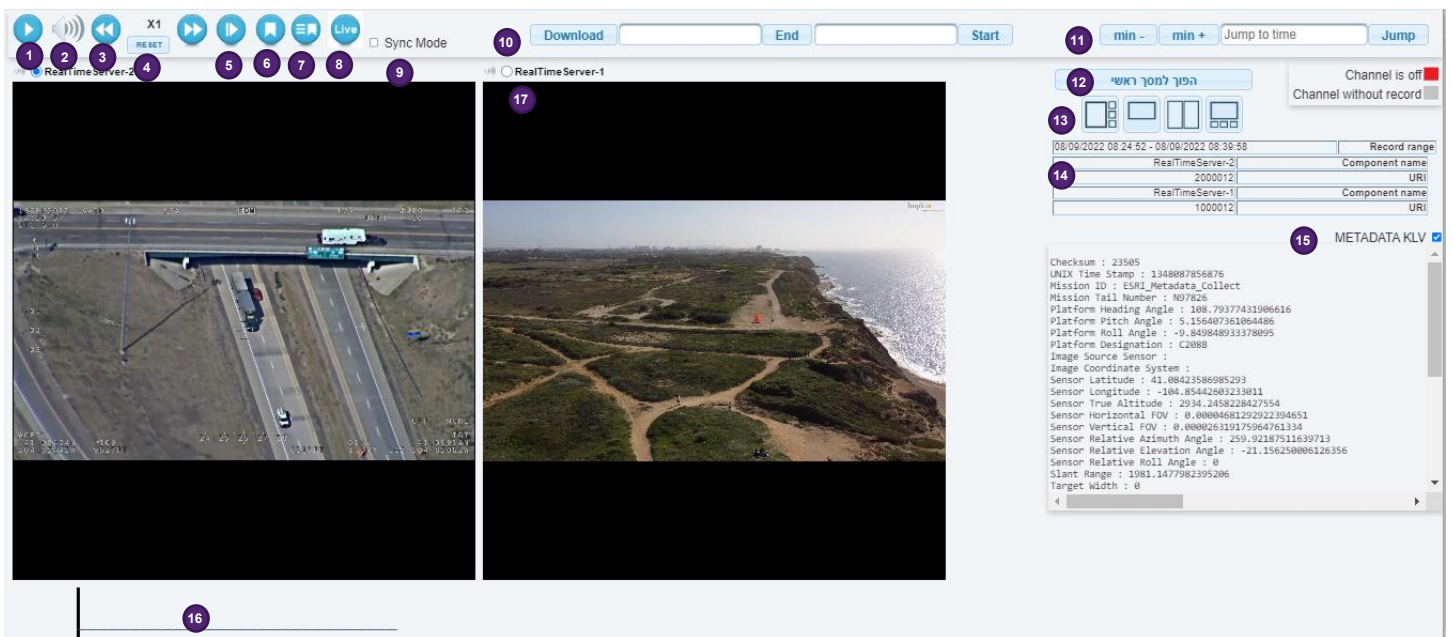
Display\Undisplay Time Filter

- For filter recordings by Time, click the icon -

For Display\Undisplay recordings time filter , click the icon



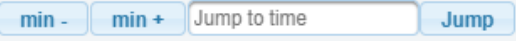


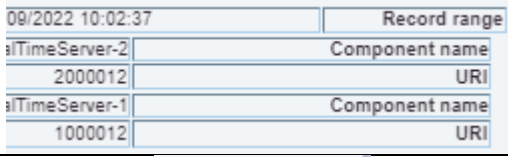





Recording Screen




Different functions could be displayed according to the selected video clip.


	Functionality	Button
1	Play/stop the video	
2	Mute/Unmute the video	
3	Speed change to - x2, x4, x8, x16 Or to - x0.5 , x0.25	
4	Reset the speed to normal speed x1	
5	Jump forward by one frame	
6	Add a Bookmark on the video	
7	View the entire list of defined bookmarks	

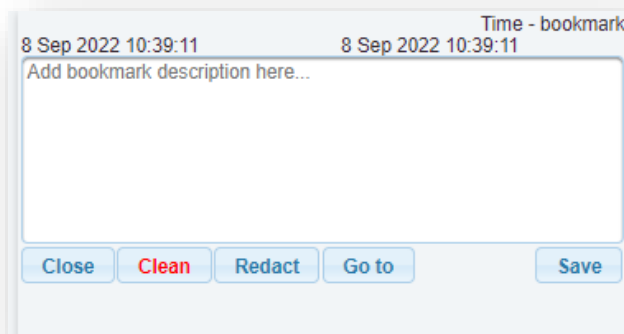
8	Watch in Real Time mode	
9	Sync fully between all recordings	<input type="checkbox"/> Sync Mode
10	Prepare for download- a start & end time must be set for the requested download	
11	Jump to a specific time in the record You can move by 1 minute through the video	
12	Select which video record will be in the main screen – Select the relevant video and press the button	
13	Select layout of the screens	
14	More info about the selected video	
15	Select to display KLV metadata of the selected video	<input type="checkbox"/> METADATA KLV
16	The timeline of the selected video	
17	To select the video clip by click the radio button	
18	Mute the video	

Bookmark

Use a bookmark for quick access to interesting moments in the recording.

- Select the clip and then click on the bookmark.  A small window will appear on the right side where you can add notes and save the bookmark.
- After saving the Bookmark, you can edit it again.

To view the entire list of bookmarks, click on the  button.



Download

To download a recording and save it on your computer:



1. Select the relevant video.
2. Select the time range that you would like to download within the video.
3. Click Download.
4. Go to the Download tab.

The Download tab shows all the videos that are ready for download. The first video on the list will be the video you just selected at the Recording tab.

5. Click on Download again.

The recording will start downloading to your computer just like any download in the Chrome browser.

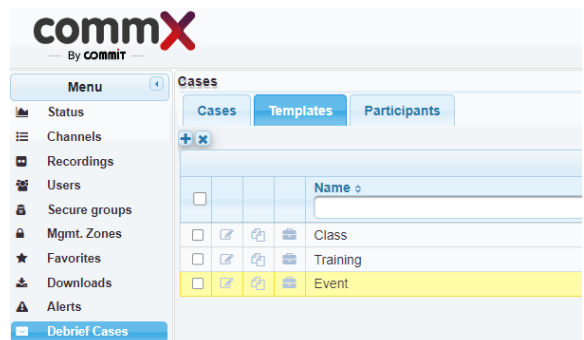
Downloads				
▼ 20 1 Showed 1-1 from 1				
◦ Last change time	Download	Prepaering progress	◦ Starttime	◦ End time
07/09/2022 15:51:16	Download	100%	07/09/2022 15:39:49	07/09/2022 15:42:0

Debrief case

Introducing a revolutionary new investigation recording system that streamlines and simplifies the investigation process. The system is designed to automate and organize the recording process. It features pre-scheduled recording, saving of special events, participant tagging, file saving and the ability to save recordings permanently. It aims to streamline the investigation process and make it easier to access and organize relevant information.

System capabilities:

- Pre-scheduled recording, where recordings are automatically made at specific times or interval
- Saving recordings of special events, which allows for easier and more efficient investigations by only keeping relevant recordings.
- The ability to add participants related to the case, which allows for easy identification and organization of recordings by person.
- Saving files in the case, which allows for easy access and organization of all relevant documents and recordings.
- The option to define that the recording will be saved forever, which ensures that important recordings are not accidentally deleted.



Troubleshooting

When something goes wrong, CommX DISCOVER provides the information you need to troubleshoot the problem. Below is the list of Alerts that you can be received from the system.

For more information go to Troubleshooting Doc.

Alert name	Log level	Location	Description
PERSISTENT_DB_STATUS	Critical	DB	Persistent DB Access No access to external database
IN_MEMORY_DB_STATUS	Critical	DB	No access to internal database
AD_STATUS	Critical	AD	Disconnection from the AD
AD_LOGIN_PROBLEM	Warning	AD	AD login problem
API_STATUS	Critical	API	API access problem
LOGGER_NO_RTP	Warning	LOGGER	There is no audio on all activated channels
ACCESS_VIOLATION	Warning	Manager	Access from invalid address
API_ACCESS_VIOLATION	Warning	API	Access from invalid address
CHANNELS_RADIO_LIMIT	Warning	Manager	Exceeding the limit of radio channels in the system
LOGGER_STATUS	Critical	LOGGER	Not available Logger
LOGGER_CPU	Warning	LOGGER	High CPU
LOGGER_RAM	Warning	LOGGER	High memory
LOGGER_NFS	Warning	LOGGER	Full storage
LICENSE_RESTRICTION	Warning	Manager	The number of channels that were not added due to a license violation is