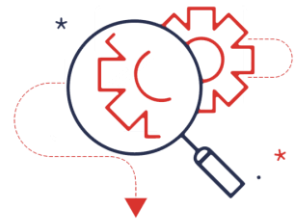


commX Discover

— By **commit** —

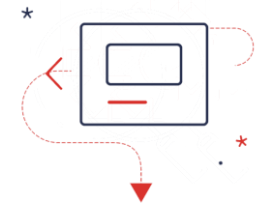




Investigate
& Screen Matrix



Multimedia
Streaming &
VOD

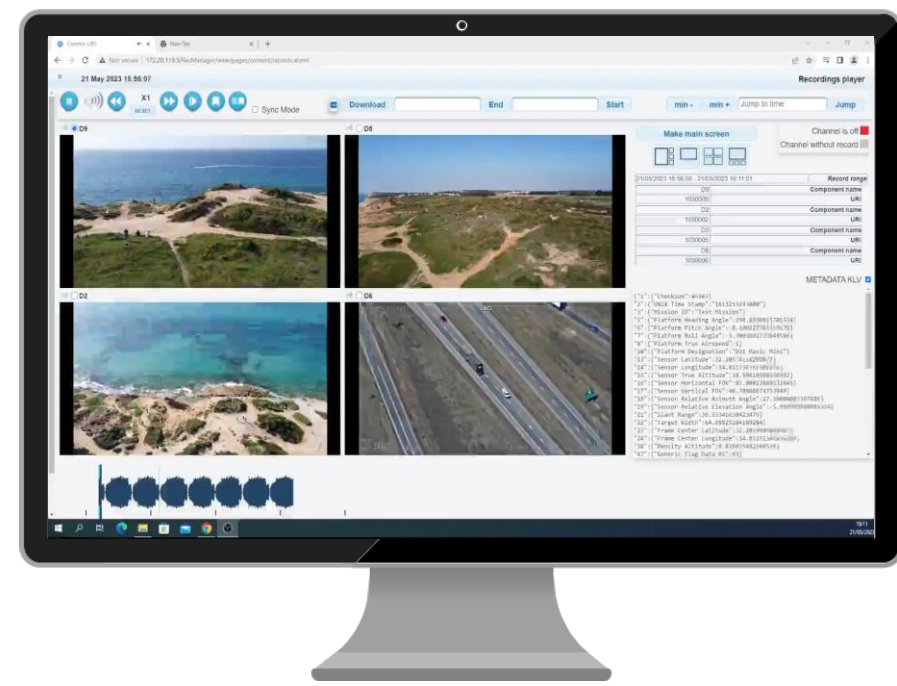


Web-Base
Interoperability
H.265



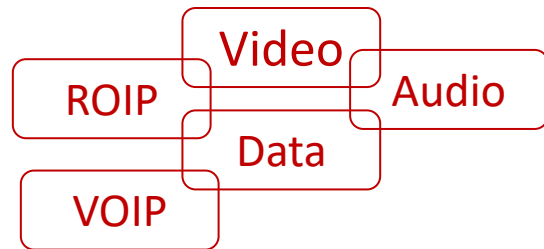
STANAG
4609 / KLV

CommX Discover



More About CommX

- The system, which is container-based, can record multiple types of media, including:



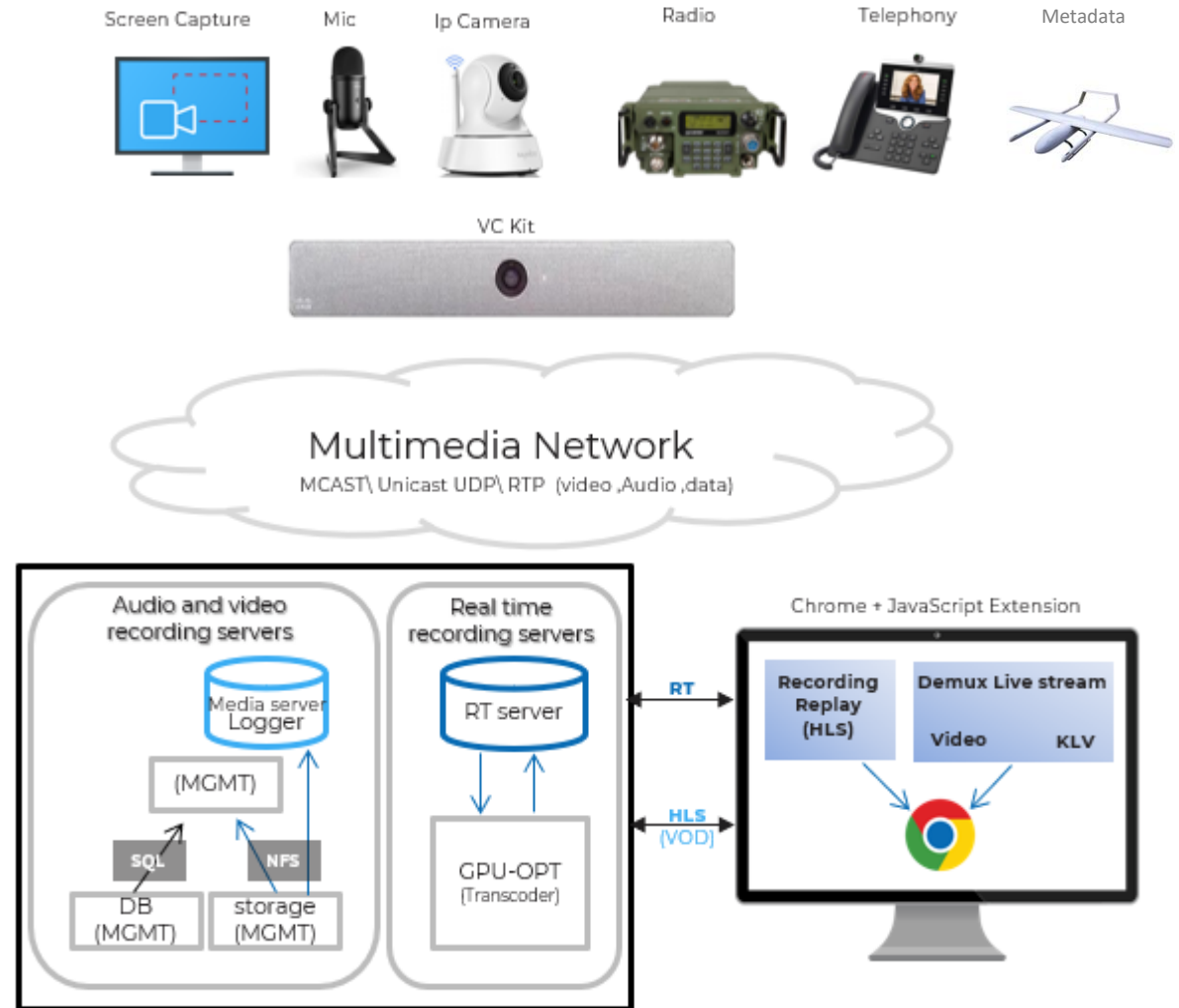
- With a web browser, the user can:
 - Investigate historical recordings
 - Watch real-time streams
 - Manage the system
 - Monitor the system

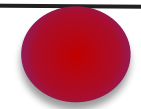
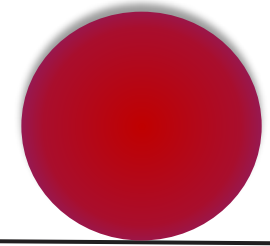
- The system has a REST API interface
- View all streams in real-time



A little bit more about CommX Architecture...

- Receiving information from various sources
- Unicast and multicast support
- Redundancy of streams recording
(with multi streams)
- Long-term storage

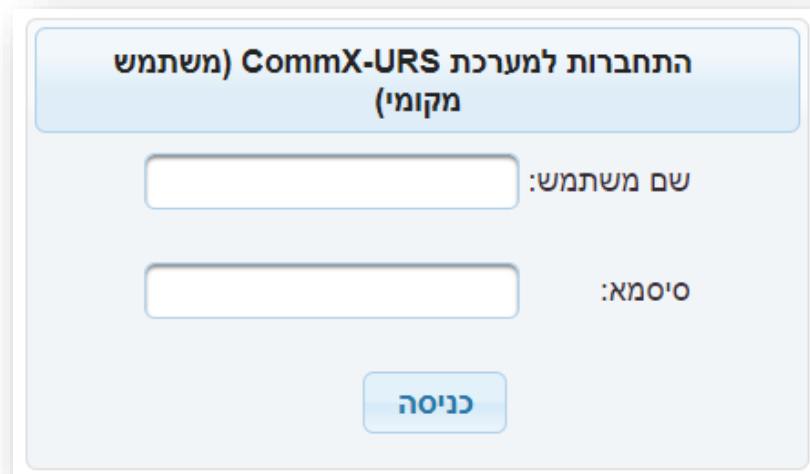




Meet the System

Log in to the system

- The recording system works through a WEB interface
- The interface can be accessed from the CHROME browser by entering the IP address of the server
- On the Identification screen, it is required to enter a username and password



התחברות למערכת CommX-URS (משתמש מקומי)

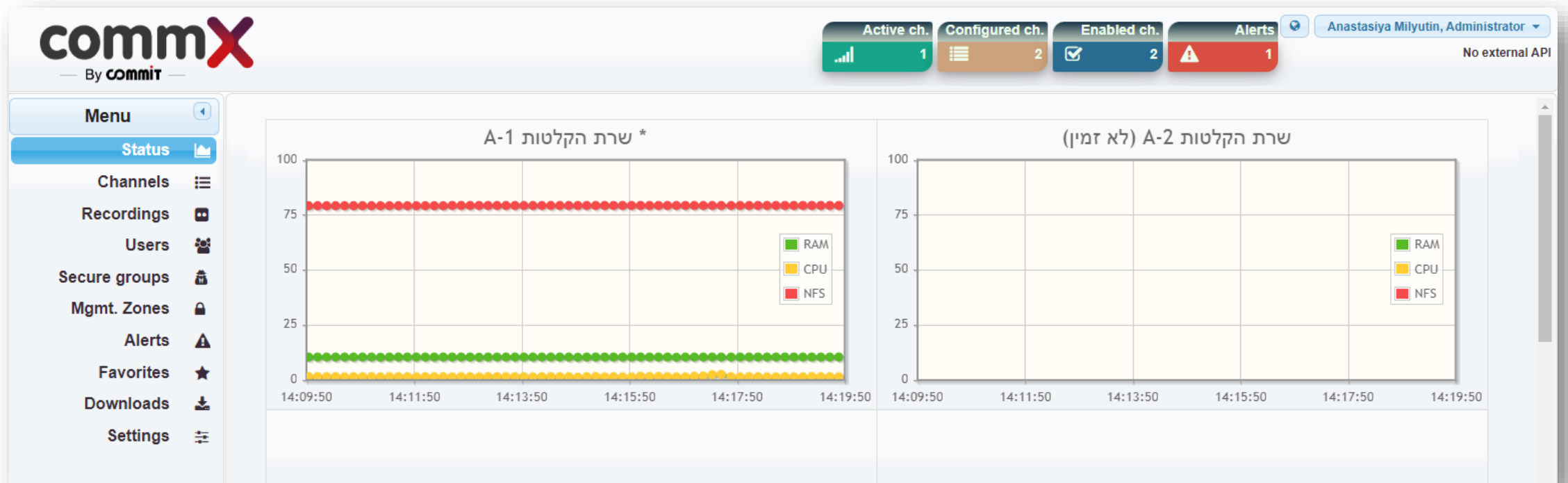
שם משתמש:

סיסמא:

כניסה

Main Screen

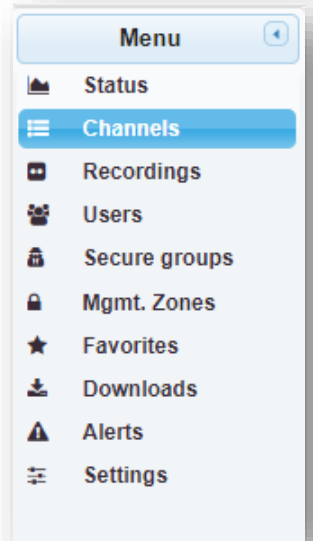
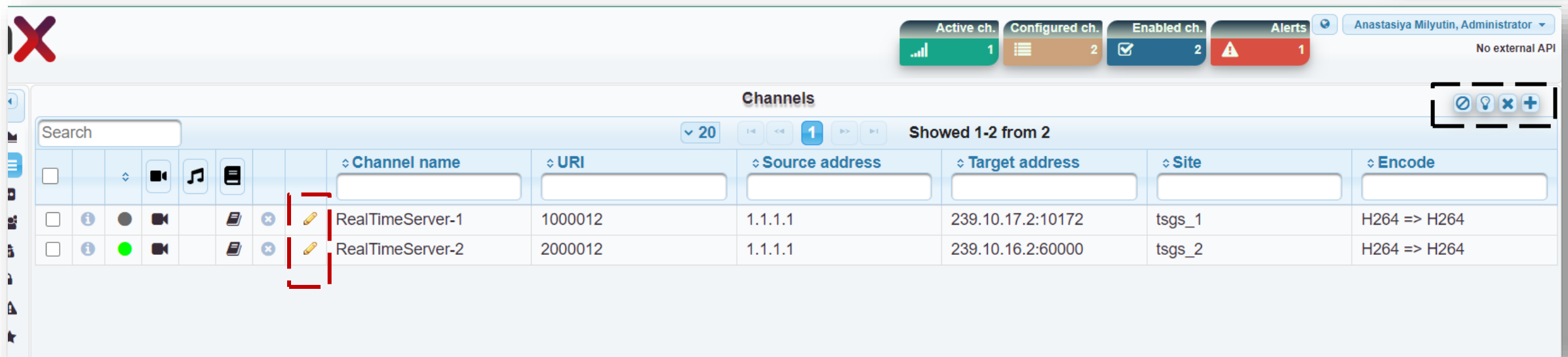
- The user's main menu and options will be adjusted according to their access level (The Access level)



Channels

- The "channels" tab contains all the recording channels defined in the system.

Here you can: Add \ Delete \ Edit all types of channels.

The screenshot shows the 'Channels' management interface. At the top, there are status indicators for 'Active ch.' (1), 'Configured ch.' (2), 'Enabled ch.' (2), and 'Alerts' (1). The user is identified as 'Anastasiya Milyutin, Administrator'. The main area displays a table of channels with columns for Channel name, URI, Source address, Target address, Site, and Encode. Two channels are listed: 'RealTimeServer-1' and 'RealTimeServer-2'. A red box highlights the edit and delete icons for the first channel.

Channel name	URI	Source address	Target address	Site	Encode
RealTimeServer-1	1000012	1.1.1.1	239.10.17.2:10172	tsgs_1	H264 => H264
RealTimeServer-2	2000012	1.1.1.1	239.10.16.2:60000	tsgs_2	H264 => H264

Channels – Adding a Channel

- Click  to add a new channel

A new settings window will appear.

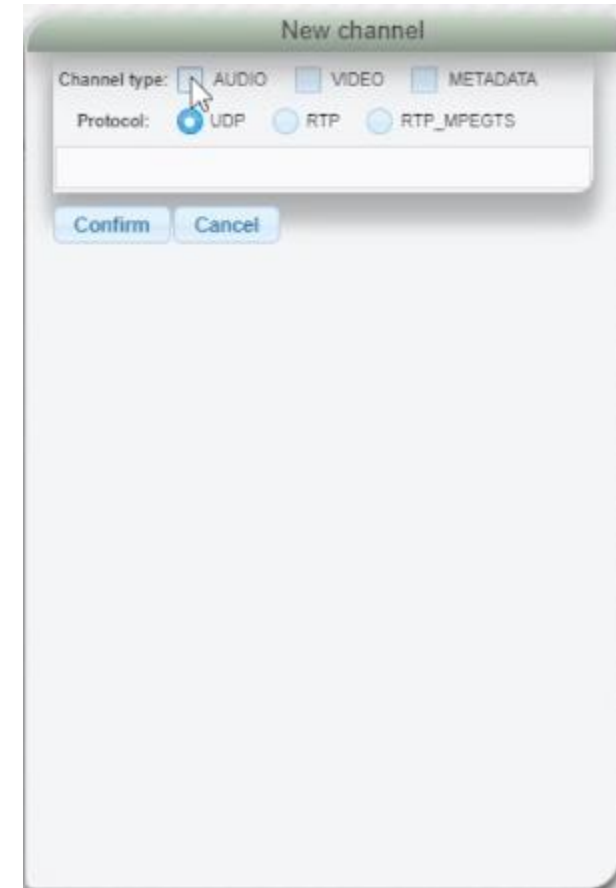
Here you can define which type of channel you want, including

Video

Audio

Metadata

Depending on the channel that was chosen, you will be able to configure different settings.

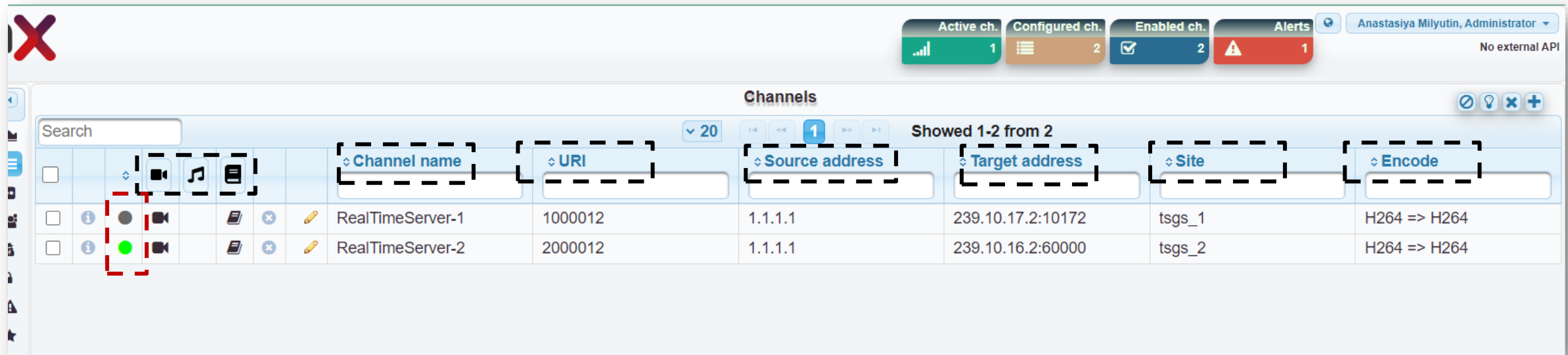


Channels - Table

You can sort according to characteristics such as:

- Type of channel – Video\Audio\Data
- Status of the channel – On\Off
- Channel name
- Source address

And more...



The screenshot shows a web interface for managing channels. At the top right, there are status indicators: Active ch. (1), Configured ch. (2), Enabled ch. (2), and Alerts (1). The user is identified as Anastasiya Milyutin, Administrator. The main section is titled "Channels" and displays a table with the following columns: Channel name, URI, Source address, Target address, Site, and Encode. The table contains two rows of data:

Channel name	URI	Source address	Target address	Site	Encode
RealTimeServer-1	1000012	1.1.1.1	239.10.17.2:10172	tsgs_1	H264 => H264
RealTimeServer-2	2000012	1.1.1.1	239.10.16.2:60000	tsgs_2	H264 => H264

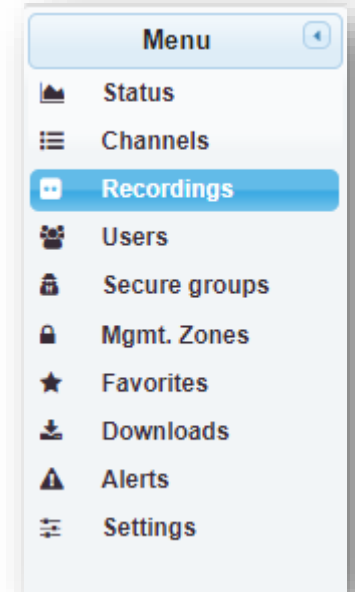
Recording

The recording tab is where you can find all the recordings sorted by categories.

To watch and manage recordings:

1. Set a range of time (limited to 3 days or less)
2. Sort by the category you need
3. Choose 1 to 4 recordings to watch and manage

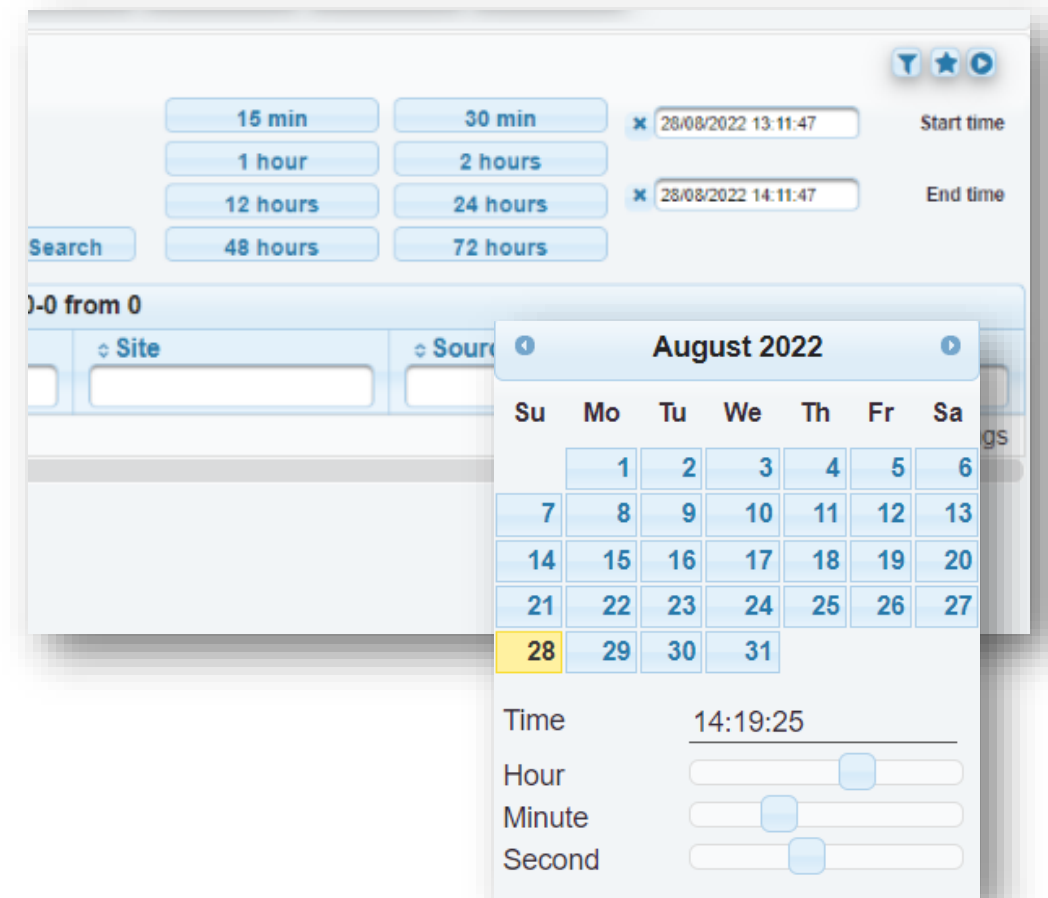
You can save the recording to bookmark by clicking 



Recording – Set The Time



There are two ways to choose time ranges -

- Using the buttons that give time ranges from the current hour
- Manual selection

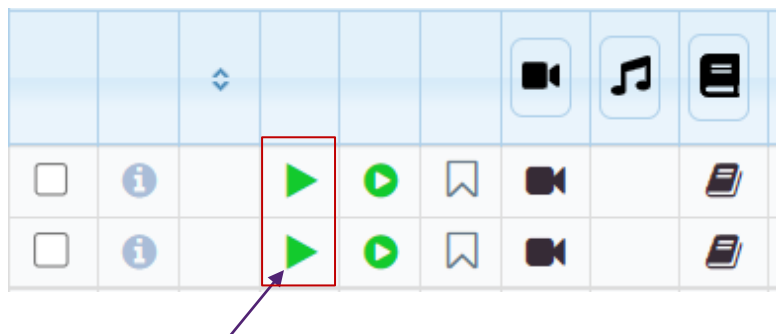


Recording – Play the Record as LIVE

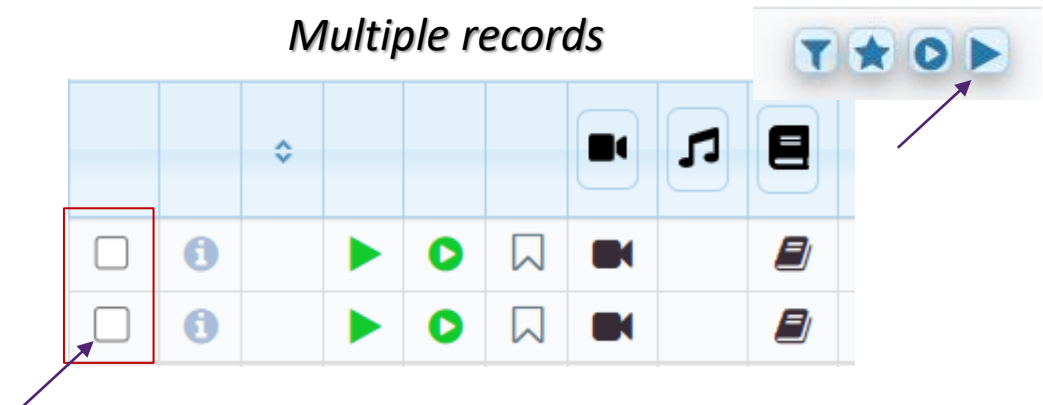
There are two ways to play records

- Click the  next to the desired record to play one at a time
- Select the checkbox next to all the records you want to play and click the  to play multiple records

One record





Multiple records



Recording – Play the Record as VOD

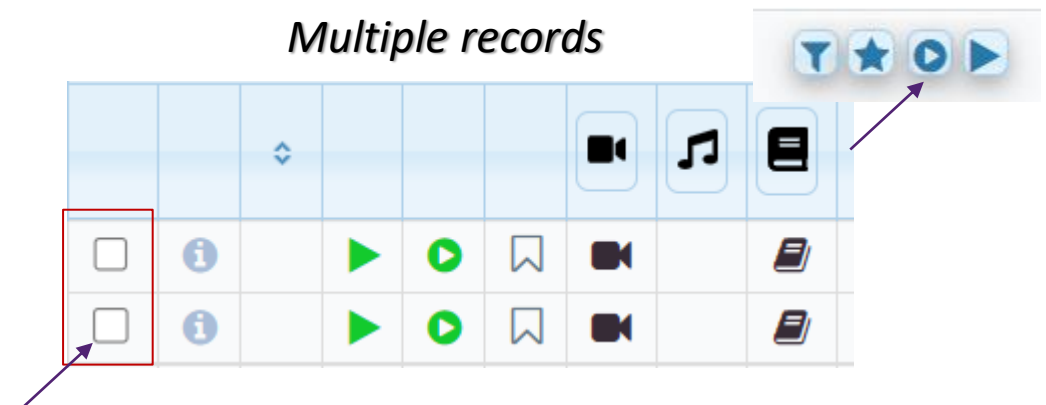
There are two ways to play records

- Click the  next to the desired record to play one at a time
- Select the checkbox next to all the records you want to play and click the  to play multiple records

One record



Multiple records



Recording – The Player Menu

The screenshot shows a video player interface with several annotated controls:

- play**: Points to the play button.
- Changing speed**: Points to the speed control buttons (X1, X2, X3, X4).
- Set RT**: Points to the 'Live' button.
- Set Range time for Downloading**: Points to the 'Download', 'End', and 'Start' buttons.
- Jump to time**: Points to the 'Jump to time' button.
- Mute**: Points to the mute icon.
- Play by frames**: Points to the frame advance button.
- Bookmark list**: Points to the bookmark icon.
- Sync all the records**: Points to the 'Sync Mode' checkbox.
- Set Bookmark**: Points to the bookmark icon.
- Change the configuration of the screens**: Points to the screen layout configuration icons.
- KLV option**: Points to the 'METADATA KLV' checkbox.

The interface also displays a video feed of a highway with a truck, and a table for record ranges:

Record range	Component name	URI
08/09/2022 15:59:29 - 08/09/2022 16:14:25	RealTimeServer-2	2000012
	RealTimeServer-1	1000012

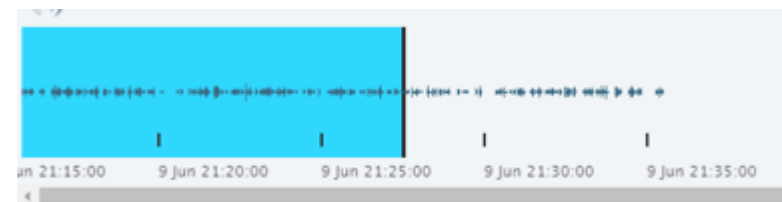
Additional UI elements include 'Channel is off' and 'Channel without record' indicators, and a 'Jump' button.

Recording – The Player Menu





Record without audio

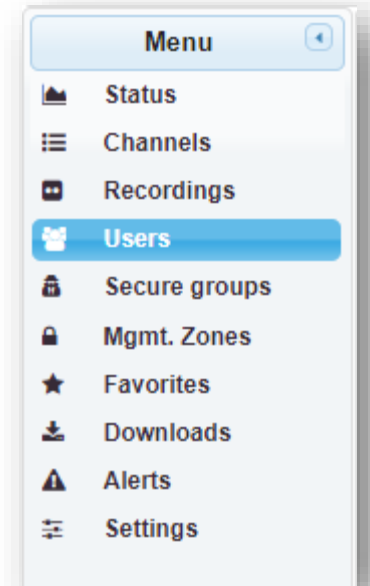


Record with audio









User

- Add new users to access the system by clicking on 
- Delete a user by clicking  . To delete multiple users, select the users and click 
- Edit a user by clicking on 



Users ✕ +

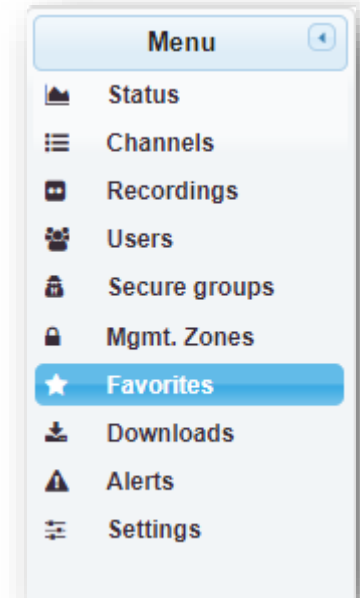
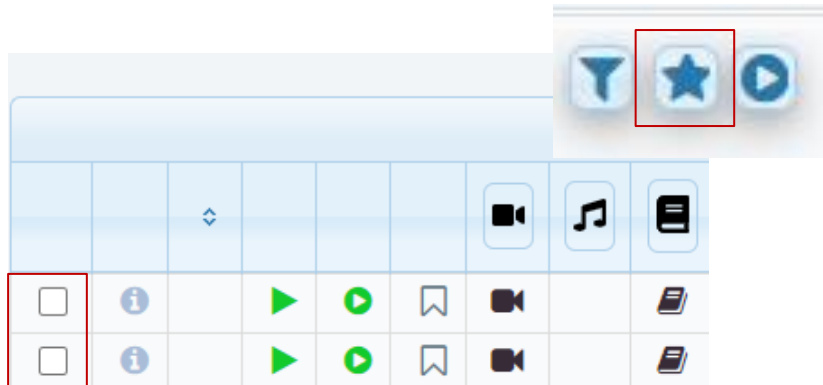
Search ▼ 20 1 ▶▶ ▶▶ Showed 1-2 from 2

				◊ Username	◊ First Name	◊ Surname	◊ Rights	◊ Access zone	◊ Source
<input type="checkbox"/>				David	David	Brooks	MANAGER		DB
<input type="checkbox"/>				nastya	Anastasiya	Milyutin	ADMINISTRATOR		DB

You can give permissions to the user by utilizing this [access level table](#)

Favorites

Select the recordings that you want to save as a Favorite and press the star icon 



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

Favorites

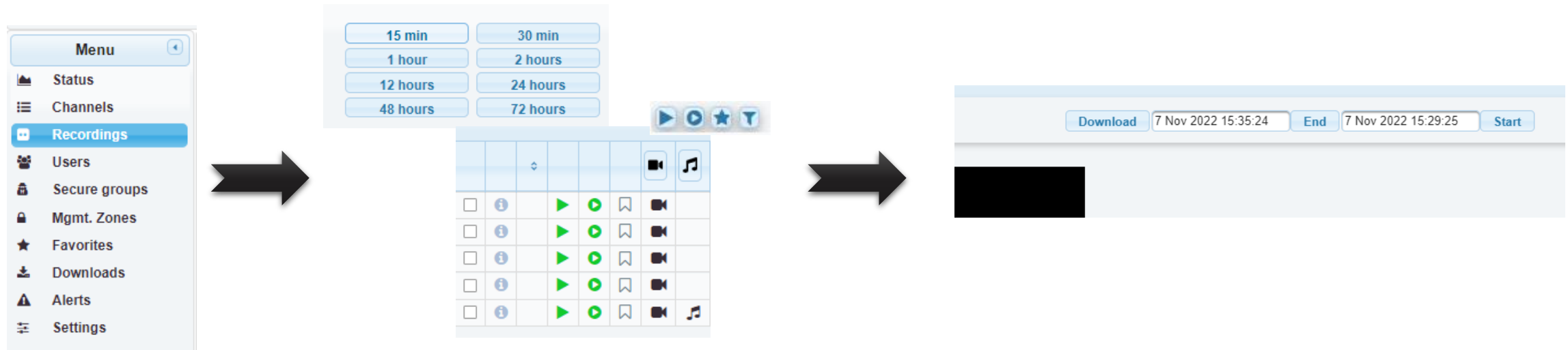
Group name		Count of records	Start time	End time
<input type="checkbox"/>	good one	2	08/09/2022 11:38:57	08/09/2022 12:08:52

Showing 1 of 1 records. Search:

Downloads

To download a recording and save it on your computer:

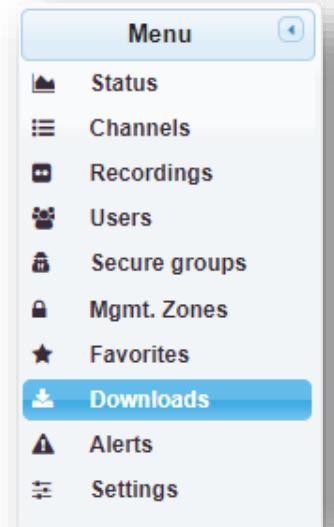
1. Select the relevant video at the “Recording” tab > select a time range > click Download



Downloads

2. Go to the Download tab

Selected at the Recording tab > Click on Download again, and the recording will start downloading to your computer (just like any download in the Chrome browser).

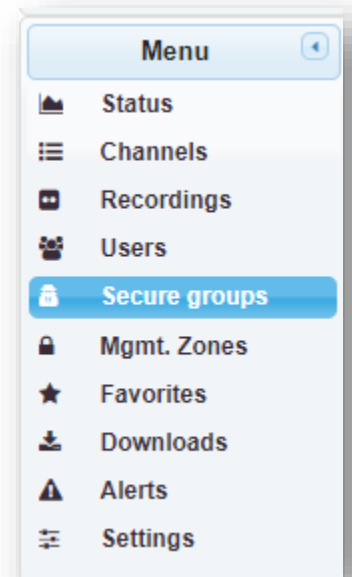


Downloads				
▼ 20 ◀ << 1 >> ▶ Shown 1-1 from 1				
◦ Last change time	Download	Prepaering progress	◦ Starttime	◦ End time
07/09/2022 15:51:16	Download	<div style="width: 100%; text-align: center;">100%</div>	07/09/2022 15:39:49	07/09/2022 15:42:0

Secure Groups

To secure an entire channel, whether permanently or only for a certain time period, you can put it into "Secure groups".



The channel will only be available to users with appropriate access privileges



Secure groups				▼ 20		1		Showing 1-1 from 1		Search
<input type="checkbox"/>		Isolate group ID	Isolate group name	Count of channels						
<input type="checkbox"/>	●	1	Moshe	1						

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

Secure Groups

- To add a channel to the list, choose any channel from the table below and press 
- To remove a channel from the group, choose the channel and press 

Channels(1)
Time(0)

Channels included into group ↓

5
←
→
1
←
→
Shown 1-1 from 1
Search

Role	General	Site	Source address	URI	Channel name	Target address	
TSGS	TSGS	tsgs_1	1.1.1.1	1000012	RealTimeServer-1	239.10.17.2	<input type="checkbox"/>

Channels not included into group ↑


5
←
→
1
←
→
Shown 1-1 from 1
Search

Role	General	Site	Source address	URI	Channel name	Target address	
TSGS	TSGS	tsgs_2	1.1.1.1	2000012	RealTimeServer-2	239.10.16.2	<input type="checkbox"/>

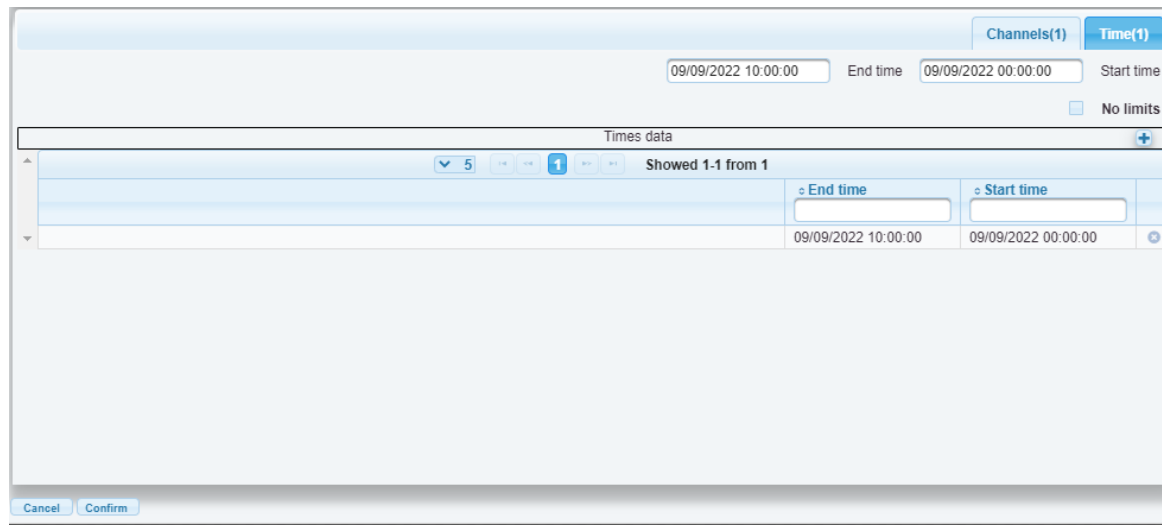
Cancel
Confirm

Secure Groups

To add a time range for a Secure Group:

1. Press the “Time” tab
2. Enter a start and finish time
3. Press 

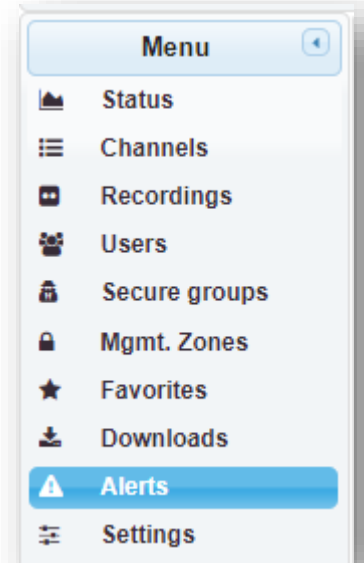
You can choose unlimited time by clicking the “No limits” checkbox



Times data	
End time	Start time
09/09/2022 10:00:00	09/09/2022 00:00:00

Alerts

- All system actions and alerts will appear in a table according to the log level
Critical alerts will appear in red status



Active ch. 2 Configured ch. 2 Enabled ch. 2 Alerts 1

Anastasya Milyutin, Administrator

No external API

Alerts

Search [] 20 1 2 3 4 5 6 7 Showed 1-20 from 132

	Date and hour	Last time	Dangerous level	Type	Description	Source
●	23/08/2022 22:07:52	06/09/2022 16:54:39	Critical	Logger Unreachable	לא זמין A-2 לוגר	Logger
●	23/08/2022 22:07:52	06/09/2022 16:54:39	Warning	No channel activity	ערוצים מופעלים אך לא מבוצעות הקלטות	Manager
●	06/09/2022 14:17:03	06/09/2022 14:17:03	Info	User update	פרטי משתמש עודכנו: nastya	Manager
●	06/09/2022 11:48:17	06/09/2022 13:33:17	Warning	Logger High NFS	אחסון מתמלא A-1	Logger
●	06/09/2022 11:48:17	06/09/2022 13:33:17	Warning	Logger High RAM	זיכרון גבוה A-1	Logger
●	06/09/2022 11:46:26	06/09/2022 13:33:17	Critical	AD Unreachable	AD: ניתוק מרע: eeeee	AD
●	06/09/2022 13:14:31	06/09/2022 13:14:31	Info	User update	פרטי משתמש עודכנו: nastya	Manager

Access Level

	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

Docker Version Installation



Always use a reference

- We will define the connectors according to the type of application that needs to be run on it. We can see all the applications according to the main architecture of the system
- Docker must be configured according to the desired systems
- In order to get a reference, copy from an existing virtual system that contains the system you want to upload
- If you cannot copy from an existing virtual system, all the files are in the appendices below. Please note that the files need to be mapped according to the environment you created and the relevant IP addresses

To copy files between virtual systems, use the command

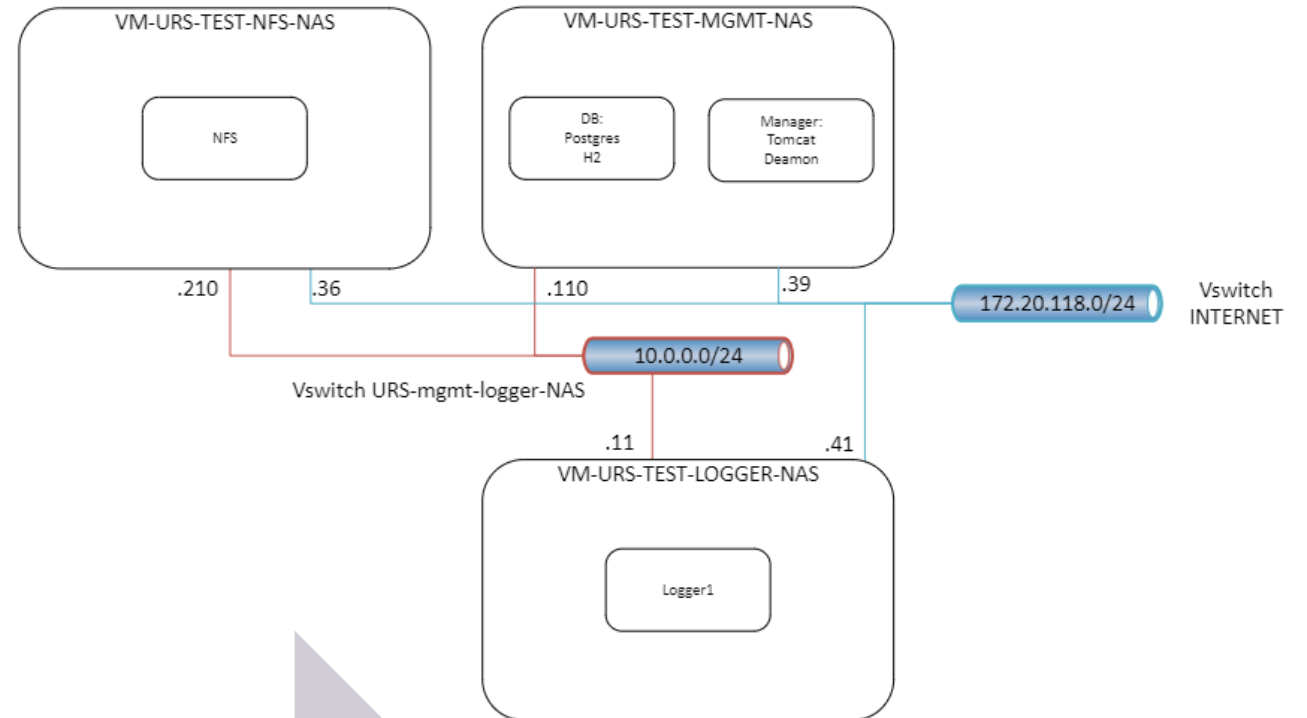
rsync -av user@__ip addr__: /home/user/docker/docker-compose.yml ◆ (the . Is important)

Small Architecture

For example

- VM-URS-NFS -The storage of the Recording
- VM-URS-TEST-MGMT – The recording manager
- VM-URS-TEST-LOGGER- The recorder

The recording is a combination of NFS & MGMT



The MGMT updates the Logger on the existing channels, and everything related to labeling the information

The Logger records and produces the information according to what he learned from the MGM

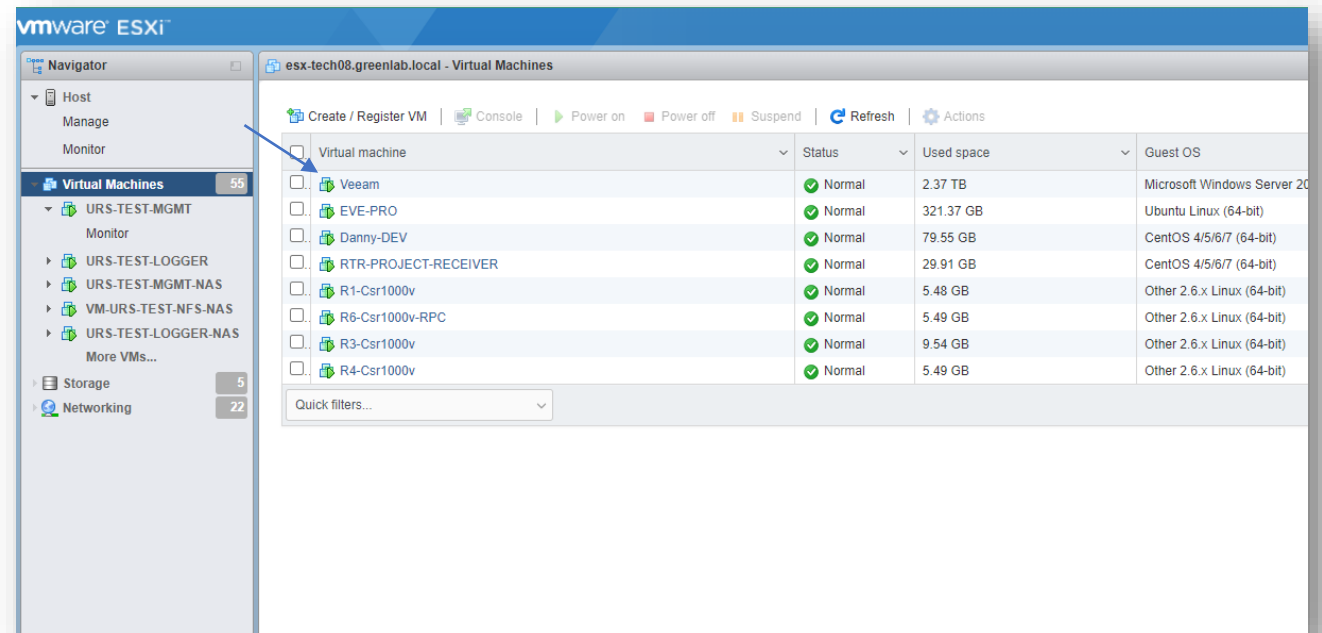
The information that arrives goes to NFS to store the recording

Virtual Machines

According to the architecture - 3 VMs should be installed.

The amount of VM depends on the number of Loggers we want to upload

The environments based on Ubuntu-Linux operating systems



Preparation for Docker Environments

These are the commands to be copied and run one by one -

- `sudo apt-get install -y apt-transport-https ca-certificates curl software-properties-common`
- `curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add`
- `sudo add-apt-repository "deb [arch=amd64] https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"`
- `sudo apt update`
- `sudo apt-get -y install docker-ce`
- `sudo curl -L "https://github.com/docker/compose/releases/download/1.29.2/docker-compose-\$\(uname -s\)-\$\(uname -m\)" -o /usr/local/bin/docker-compose`
- `sudo chmod +x /usr/local/bin/docker-compose ; mkdir docker ; cd docker/`

Preparation for Docker Environments

The file must be edited so that it can work with the REGISTRY

```
nano /etc/docker/daemon.json
```

Change the file with your server IP.

```
{  
"insecure-registries" : ["172.20.118.250:5000"]  
}
```

For Stand-alone systems

The list of the latest contents that the disk should contain

Linux Packages:

- apt-transport-https
- ca-certificates
- curl
- software-properties-common
- gpg
- docker-ce
- docker-compose
- ssh
- net-tools
- Vim (optional)

CommX Packages:

- daemon
- postgres
- h2
- NFS
- Logger
- Tomcat

For Stand-Alone Systems

A command to copy the packages that are on the disk

- `sudo dpkg- i *package-name*.deb`

There is no need to configure Registry because there is no connection to an external network, but we would like to change the Docker configuration (docker-compose.yml) and the environment file (.env)

For Example:

- Image of H2 with Registry be like –

`image: "172.20.118.250:5000/h2:latest"`

- Image of H2 without Registry be like-

`image: "h2 "`

Run the Dockers

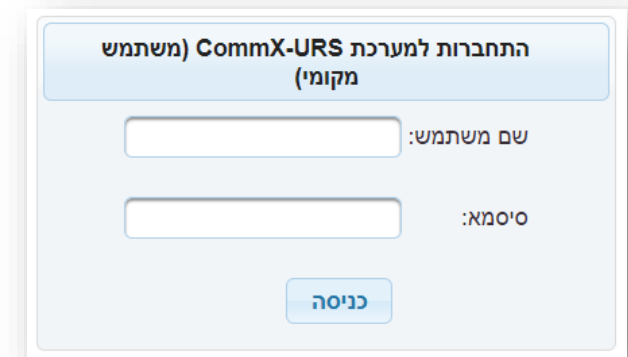
- `sudo docker-compose up -d`
- `sudo docker ps` - To show all the running dockers

Checking The System

Check the Web

Go to web by using the MNGM IP

1. Log in to the system
2. We will check if there are any alerts on the system
3. Try to add a channel
4. Start streaming on this channel
5. Check the recording

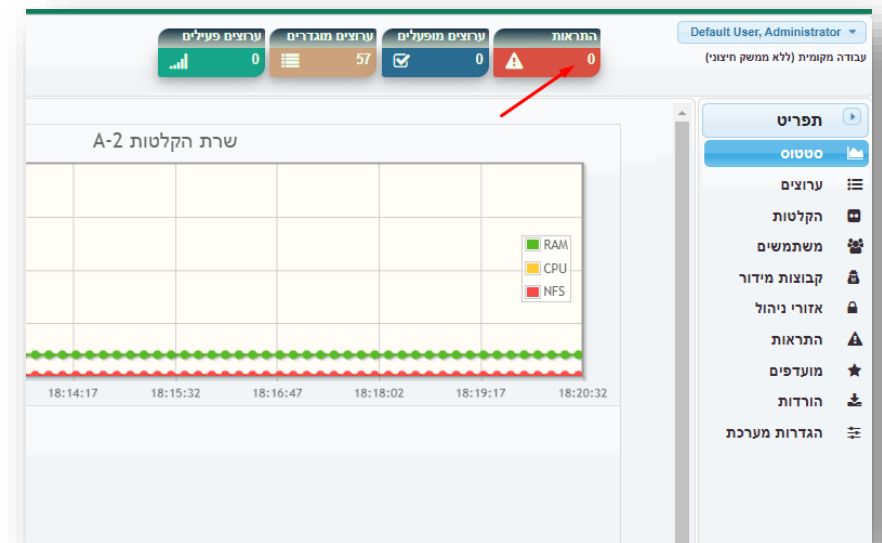


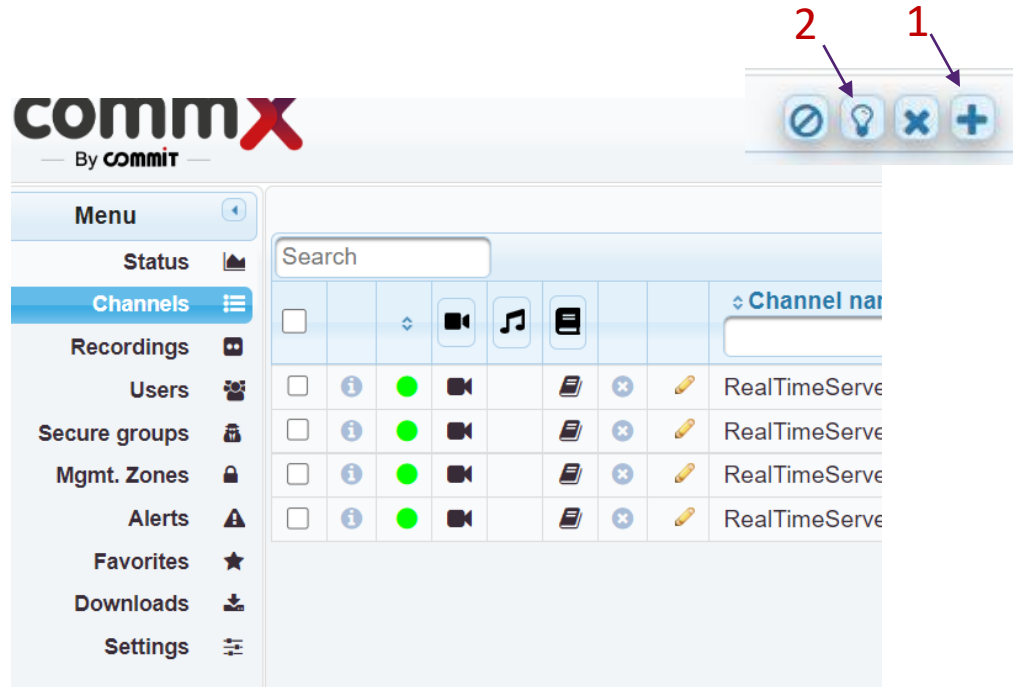
התחברות למערכת CommX-URS (משתמש מקומי)

שם משתמש:

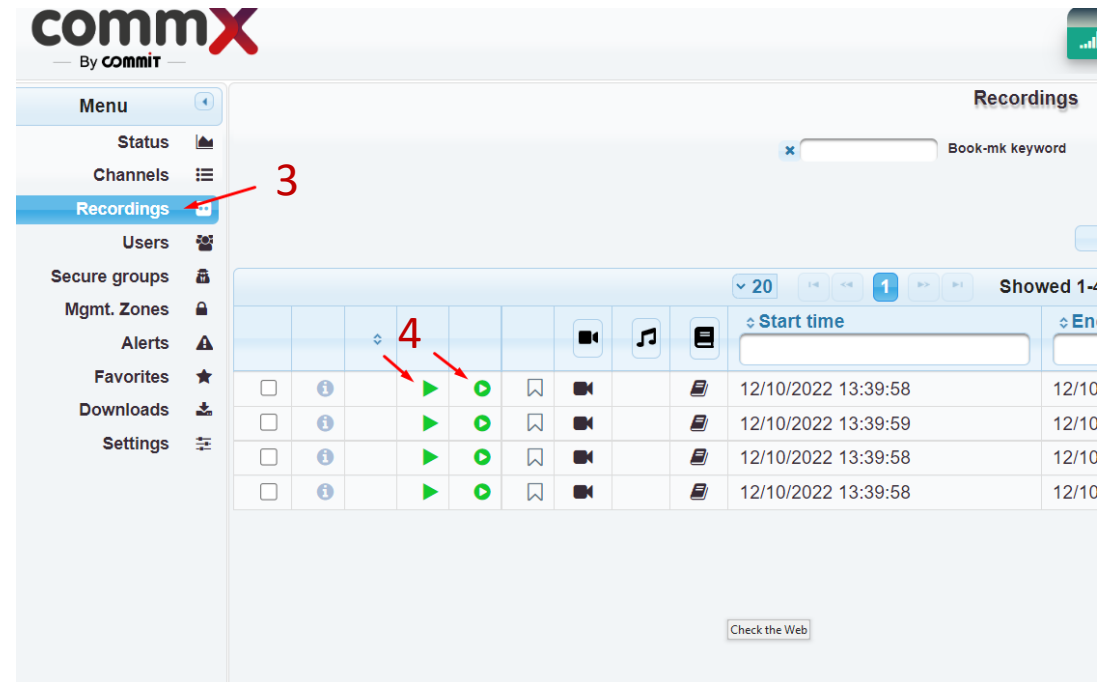
סיסמא:

כניסה





1. Try to add a channel
2. Open the channel and start to stream on this channel
- 3+4. Check the recording after a few seconds



Troubleshooting

Troubleshooting

In the Alerts menu we can see current alerts (active in red)

No Web UI

Can not login

Logger
unreachable

No live mode
working

Check advance logs

DB
unreachable

No channel
activity

Click on your relevant trouble

THANK YOU!



<https://www.comm-it.com/>

No Web UI

1. Check your network connection
2. Verify IP on the web (<https://172.20.118.22/RecManager>)
3. FW – (IT)
4. Check tomcat service is running (via Docker) Next page
5. Nginx configuration (service/docker is up and running) Next page

No Web UI - Advance check

1. Check tomcat service is running (via Docker)
2. Nginx configuration (service/docker is up and running)

ssh to the MNG (IP of the website)

Put the Commands :

Cd /home/demo/docker

Sudo su -> put your admin username and password

Docker-compose ps – all needs to be **UP**

If not -

Docker-compose up -d <service_name>

```

root@Demo-Server:/home/demo/docker# docker-compose ps
-----
      Name                                Command                                State
-----
daemon_COMPOSE    /bin/sh -c bash /usr/local ...      Up
h2_COMPOSE         /bin/sh -c /ko/h2/bin/h2.sh         Up
nfs_COMPOSE        /usr/bin/nfsd.sh                     Up
nginx_COMPOSE      /docker-entrypoint.sh nginx ...     Up
postgres_COMPOSE  docker-entrypoint.sh postgres       Up
quic_COMPOSE       /bin/sh -c /usr/local/bin/ ...      Up
streamer_COMPOSE  bash -x /usr/local/bin/run ...      Up
tomcat_COMPOSE     /bin/sh -c bash /usr/local ...      Up
urs_api_COMPOSE   /bin/sh -c bash /usr/local ...      Up
urs_logger_COMPOSE /bin/sh -c bash /usr/local ...      Up
  
```

↑
service_name

BACK

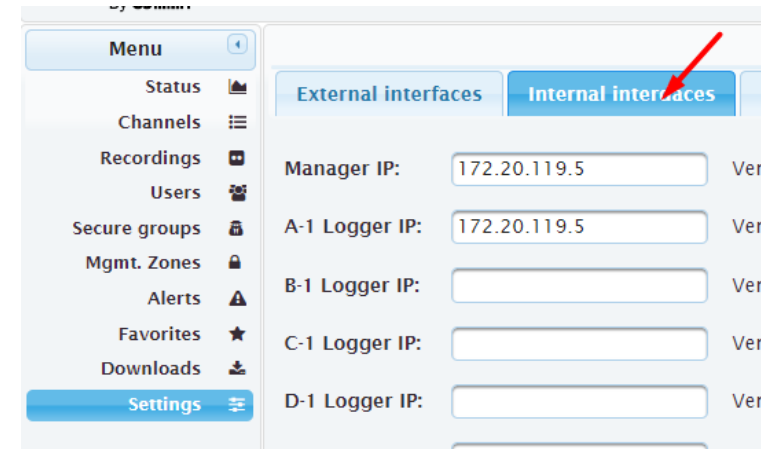
Can not login

1. Check that the username and password are configured in the system (Users menu) – reset the password if needed.
2. Check if AD (LDAP) used – check the ActiveDirectory configuration and ensure the user is in the relevant groups based on its permissions

Logger unreachable

If you saw "Logger unreachable" in the Alerts table, this is what you should do:

1. Check ip connectivity
2. Check LOGGER_IP configurations in the ENVIRONMENT VARIABLES (you can see it as well in the Settings/Internal interfaces tab)
3. Check the logger docker/server if it is running ok – restart it if needed



Cd /home/demo/docker

Docker-compose ps → all needs to be **UP**

If not -

Docker-compose up -d <service_name>

```
root@Demo-Server:/home/demo/docker# docker-compose ps

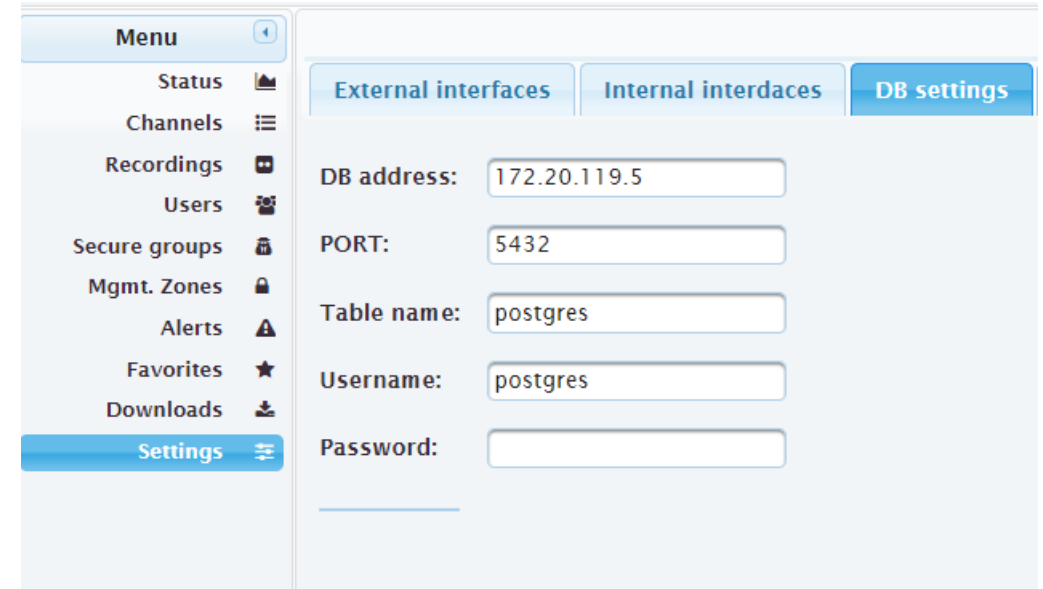
```

Name	Command	State
daemon_COMPOSE	/bin/sh -c bash /usr/local ...	Up
h2_COMPOSE	/bin/sh -c /ko/h2/bin/h2.sh	Up
nfs_COMPOSE	/usr/bin/nfsd.sh	Up
nginx_COMPOSE	/docker-entrypoint.sh nginx ...	Up
postgres_COMPOSE	docker-entrypoint.sh postgres	Up
quic_COMPOSE	/bin/sh -c /usr/local/bin/ ...	Up
streamer_COMPOSE	bash -x /usr/local/bin/run ...	Up
tomcat_COMPOSE	/bin/sh -c bash /usr/local ...	Up
urs_api_COMPOSE	/bin/sh -c bash /usr/local ...	Up
urs_logger_COMPOSE	/bin/sh -c bash /usr/local ...	Up

↑
service_name

DB unreachable

1. Check IP connectivity
2. Check DB_IP/DB_PASSWORD configurations in the ENVIRONMENT VARIABLES (you can see it as well in the Settings/DB tab)
3. Check the db/Postgres docker/server if it is running ok – restart it if needed



The screenshot shows the 'DB settings' tab in the CommX interface. The left sidebar contains a 'Menu' with options: Status, Channels, Recordings, Users, Secure groups, Mgmt. Zones, Alerts, Favorites, Downloads, and Settings (highlighted). The main content area has three tabs: 'External interfaces', 'Internal interferences', and 'DB settings' (selected). The 'DB settings' tab contains the following fields:

DB address:	<input type="text" value="172.20.119.5"/>
PORT:	<input type="text" value="5432"/>
Table name:	<input type="text" value="postgres"/>
Username:	<input type="text" value="postgres"/>
Password:	<input type="password"/>

No channel activity

Alert – when the channels are active and should be recorded

Check the logger connectivity (Multicast /FW /Infrastructure)

BACK

No Live mode working

Check that HTTPS is used for connecting the system

<https://172.20.118.XX/RecManager>



BACK

Advance Logs

For more advanced logs, connect via SSH to the Manager (the same IP you utilized to connect to the web)
We recommend doing that with MobaXterm.

Logs of the dockers can be viewed –

- Cd /home/demo/docker
- docker-compose logs <service_name>
- docker-compose logs -f --tail=100 **tomcat (example of last 100 tomcat logs)**

The logs can be enabled in the DEBUG level using the ENVIROMENT VARIABLE in the : **.env** file
nano /home/_username_/docker/.env

LOG_LEVEL – can have DEBUG,WARNING,INFO (in the future can be done via GUI)

GUI related functionality is in the **tomcat (Manager)**

Initial sync is in the **daemon**