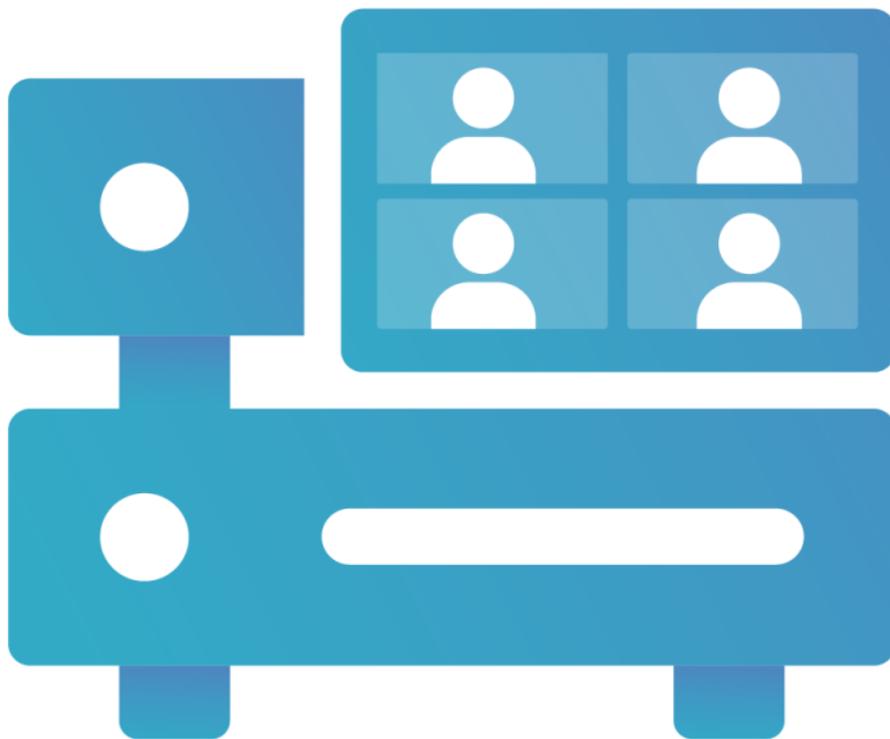


# TrueConf MCU

Administrator guide



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## 1. What is a classic transcoding MCU server?

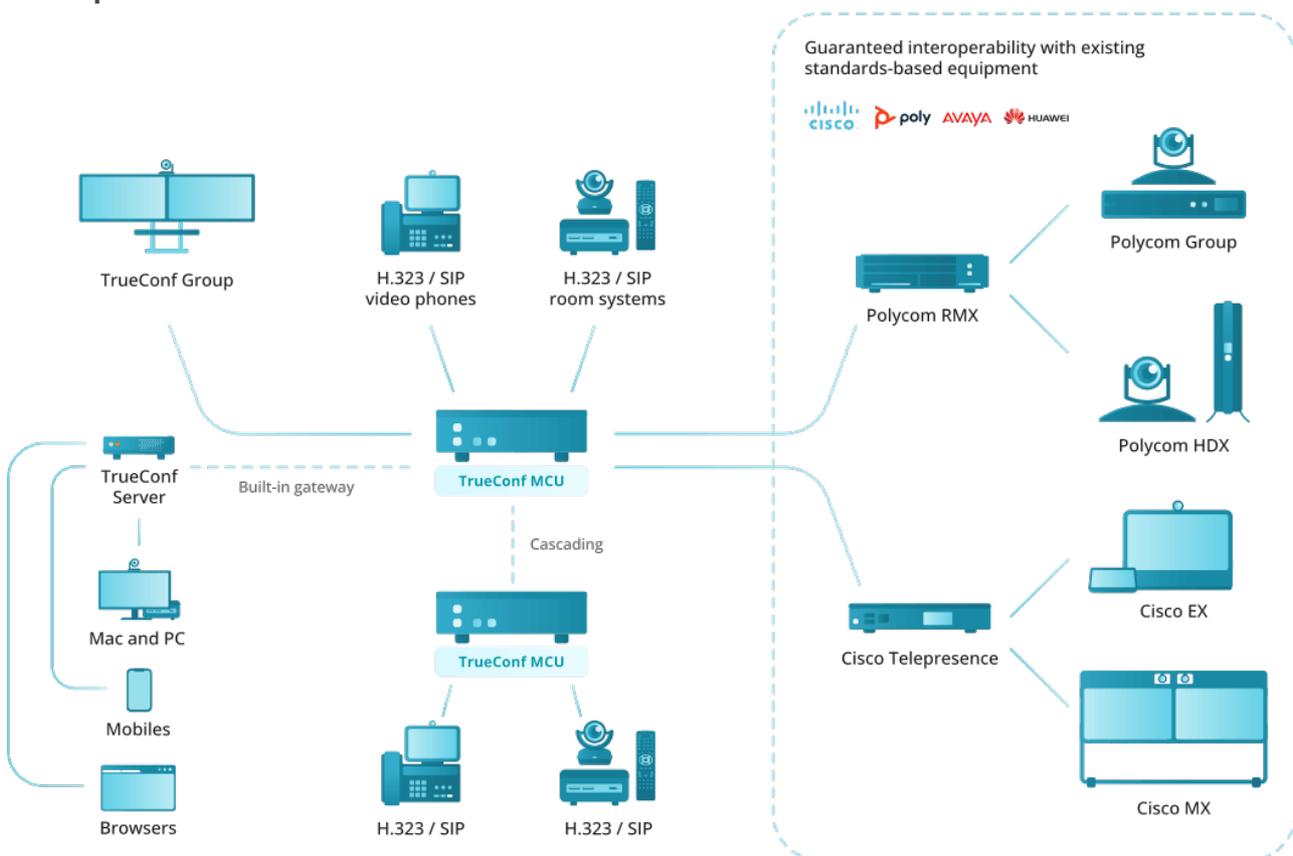
### 1.1. Purpose

TrueConf MCU is a software-based video conferencing server designed for holding multipoint conferences. It provides standard MCU server functionality and ensures integration with SIP/H.323 video conferencing endpoints by Polycom, Cisco and Lifesize, Huawei, and others. TrueConf MCU is also compatible with software video conferencing solutions such as Polycom Real Presence Desktop/Mobile.

So, [TrueConf MCU is a software alternative](#) to such solutions as Polycom RMX, Polycom RealPresence Collaboration Server, Cisco Meeting Server, Avaya Scopia, Pexip Meetings, or Poly Clariti.

To use TrueConf MCU, you must have a physical server or a hypervisor that meets the system requirements.

### 1.2. Operation scheme



### 1.3. TrueConf MCU features

#### 1.3.1. Supported protocols

- H.323 video calls, including H.221, H.225, H.231, H.239, H.241, H.242, H.243, H.245, H.281, H.283, H.350, H.460, H.460.18, H.460.19 protocols support
- Video calls via SIP, including ICE, TURN, BFCP, RFC 2833 support
- Video calls via RTSP protocol
- Remote camera control (FECC, H.224, H.281)
- TCP/IP, SRTP, TLS, Static IP, DHCP, IPv4, IPv6, DNS
- Support for management via SSH, WEB (HTTP, HTTPS) and NTP
- Time synchronization via NTP
- MTU modifiable size
- QoS support: DSCP, DiffServ

### 1.3.2. Supported video codecs

- H.261, H.263, H.264 Baseline Profile, H.264 High Profile

### 1.3.3. Supported audio codecs

- Opus, AAC, G.711, G.719, G.722, G.722.1, G.722.1c, G.723, G.726, G.728, G.729

### 1.3.4. Features

- Conference modes include general, lecture, and speaker. Each mode supports up to 250 participants with Ultra HD (2160p) video quality.
- Schedule conferences or create virtual rooms, enjoy a number of scheduling options for recurring meetings (set a number of repetitions, repeat every day, every week or every month)
- Send email invitations to a scheduled conference
- Lock conferences from new participants (they can be added only by the administrator)
- Set up a conference ID (either automatically or manually)
- Automatically end conferences if there are no participants for a certain period or if only one participant remains
- Select a speaker before a conference starts
- Schedule media file playback before the start of a conference
- Real-time monitoring and management of active conferences
- Display conference participants' names in the layout
- If the connection failed, a participant will be prompted to reconnect to the meeting after the connection is restored
- View participant's video, content and layout in use
- Set up and manage participants' devices
- Move participant from one conference to another on the fly. Participant's camera and microphone can be turned off if needed
- Set both general layout for all participants or an individual layout for each user (including an active speaker) and create a layout specifically intended for recording and streaming
- Configure a type of every video window in the layout: empty window, autofill, fixed participant, active speaker, participant shuffle, or content window
- Switch to the layout with a priority window in one click for each participant
- Select a video scaling mode with or without cropping or select an automatic mode ( TrueConf MCU will automatically determine the best scaling mode)
- Remove a participant's self-view from the automatic layout to save up screen space
- Create overlay layouts displaying a full-screen window with thumbnail windows laying on top of it
- Create audio channels with attendees (able only to receive audio) and presenters (able to sent audio)
- Remove non-video participants from the layout to free layout windows for other users
- Select audio and video codecs, maximum resolution, fps and video bitrate when creating a conference
- Display volume level in the video windows
- Stream conferences to external RTMP sources
- Show media files such as images and videos during a conference (they can be displayed in the primary and secondary video streams)
- Stream from VNC servers during a conference
- Use built-in noise cancellation and automatic gain control individually for each participant
- Address book where you can add new users, edit existing ones, and form groups
- Recording of conferences and presentations (second stream).
- Configurable main and sub stream encoding profiles for adjusting the balance between frame rate and image

quality depending on the channel bandwidth

- Connect IP cameras and view IP streams via RTSP
- PTZ camera control
- Control participants' devices with DTMF commands
- Authorize to log into TrueConf MCU control panel
- Integrate with TrueConf Server via cascading
- Compatible with Polycom, Cisco, Lifesize hardware endpoints, as well as Polycom RealPresence desktop and mobile software
- Compatible with Debian
- Support for Oracle VM VirtualBox, VMware ESXi, KVM hypervisors, Microsoft® Hyper-V, Xen.
- Works in LAN/VPN without internet access

### 1.3.5. Administration features

- Real-time monitoring and system data tracking
- Export system logs and call history
- Check connection to any video conferencing server directly from TrueConf MCU web interface without the need to call the endpoints registered on it
- Capture traffic and download it in the **.pcap** format
- Adjust settings for storing, viewing and searching through media files
- Specify the maximum size of file storage
- Set up network connection (TCP/IP ports, NAT passing)
- Set up call parameters (protocols, their priority and order of calls)
- Set up a SIP/H.323 gateway
- Second channel bandwidth limitation in percentage ratio
- Set a time interval for shuffling or alternating participants in the layout
- Change video layouts skins
- Customize participant's display name styles
- Add user avatars for address book contacts
- View information about TrueConf MCU license and software module versions
- Update TrueConf MCU
- Import and export the built-in database
- Import and export the address book
- Server shutdown, MCU or OS restart directly from the web interface
- Assign a specific role to each user with corresponding permissions: administrator, operator
- Manage TrueConf Group endpoints: network-based update of firmware and configuration from the TrueConf MCU control panel, tracking activity statuses, and ability to link an endpoint with a contact in the address book
- Configure connection with the outgoing mail server.

## 1.4. System requirements

	Basic configuration	Recommended configuration
CPU	Intel(R) Xeon(R) Silver 4210 CPU @ 2.20GHz	Intel(R) Xeon(R) Gold 6230 CPU @ 2.10GHz
CPU sockets	1	2

RAM (DDR4)	32 GB	64 Gb or more
Effective RAM speed	2400 MHz	2933 MHz or higher
Peak memory bandwidth	19200 Mbps	23464 Mbps or more
Disk space	512 GB (SSD is preferred)	512 GB or more (SSD is preferred)
Network	1 Mbit/s in both directions for 720p@30fps	2 Mbit/s in both directions for 1080p@60fps. If a virtual machine or server is used, Ethernet 1 Gbit/s is recommended.
Ports	<a href="#">The list of ports that need to be opened for correct operation of TrueConf MCU →</a>	
Operating system	Dedicated or virtual Debian 10/11	
Supported hypervisors	Oracle VM VirtualBox, VMware ESXi, KVM, Microsoft® Hyper-V, Xen	
<b>Maximum number of participants displayed in the layout for standard and preferred configurations *</b>		
A general layout (1080p) used for all participants	30	64
Individual layouts (1080p) used for all participants	6	15
Individual layouts (720p) used for all participants	12	30
* Testing conducted with H.264 codec used for all participants		



Please note that TrueConf MCU can support up to 250 participants.

### 1.4.1. Improved performance when working with TrueConf Group endpoints

If the TrueConf Group endpoint is connected to TrueConf MCU, the streams sent between them are optimised thanks to the exchange of additional data. For example, if the layout window with the video from the endpoint is made smaller on the MCU, the server will request and receive a video stream with a smaller resolution from the device. This leads to reduced CPU load for the MCU and makes it possible to connect a larger number of TrueConf Group endpoints simultaneously than other hardware endpoints of other vendors.

## 2. MCU deployment

Select the version of Linux to download the distribution of TrueConf MCU :

- Debian 10 – [https://trueconf.com/download/mcu/linux/trueconf\\_mcu\\_debian10\\_amd64.deb](https://trueconf.com/download/mcu/linux/trueconf_mcu_debian10_amd64.deb)
- Debian 11 – [https://trueconf.com/download/mcu/linux/trueconf\\_mcu\\_debian11\\_amd64.deb](https://trueconf.com/download/mcu/linux/trueconf_mcu_debian11_amd64.deb)

\* To correctly configure a static IP address, we recommend reading the [article in our knowledge base](#).

### 2.1. If Internet connection is available

i To install TrueConf MCU, you need to have superuser (root) rights.

1. Update the system packages using the console command:

```
apt update && apt -y upgrade
```

sh

2. To start installation, run the following command in the directory with the downloaded distribution:

```
apt install -yq ./<file_name>.deb
```

sh

3. The installation of the TrueConf MCU server begins. During installation, click **OK** to accept the terms of the license agreement.

You may need to install additional dependencies. In this case, run the following command:

```
apt install -f
```

sh

Once the dependencies are installed, TrueConf MCU installation will resume.

4. To test TrueConf MCU, run the following command:

```
systemctl list-units | grep tcmcu
```

sh

If installation is successful, the status will be **active**.

### 2.2. Installation in the private network

When TrueConf MCU is installed, missing packages (dependencies) are downloaded. So, if the host does not have Internet access, additional system settings must be configured before starting the installation.

In addition to the TrueConf MCU distribution, you will need to obtain a full set of installation disks for the target OS.

Below, we will provide an example of deployment on Debian 11.

i All further operations will require superuser (root) rights.

\* The instruction below shows how to create folders with certain names, but you can select any names for them.

## 2.2.1. Step 1. Downloading images using jigdo

To download the full set of Debian 11 disks, we will use the [jigdo](#) tool.

1. Install the **jigdo** package with the following command:

```
apt install jigdo-file
```

sh

\*

If you are going to download a set of disks for Windows, download jigdo from the [official website](#) .

2. To download each image, you will need two files: **\*.jigdo** and **\*.template**. Download them for the first three ISO images at [this link](#) .

3. Go to the directory with the downloaded files:

```
cd /path_to_files/
```

sh

4. Execute the command:

```
jigdo-lite debian-update-11.8.0-amd64-DVD-1.jigdo debian-update-11.8.0-amd64-DVD-1.template
```

sh

5. Do not enter anything in response to the prompt **Files to scan:**. Just press **Enter**.

6. In response to the **Debian mirror:** question, enter the mirror address `http://ftp.de.debian.org/debian/` and press **Enter**.

7. For the question **Debian non-US mirror:** enter the mirror address `http://ftp.de.debian.org/debian/` and press the **Enter** key. The necessary files will start to be downloaded (you will see the corresponding notification in the terminal). The first `.iso` image will be downloaded.

8. Repeat the steps 4-7 to download other discs (DVD-2, DVD-3).

9. After downloading the iso files, copy them to the target machine with the **scp** command, or for instance, by using a USB drive.

## 2.2.2. Step 2. Copying files to the workstation

1. Connect a USB drive to your server.

2. You will need to get additional information about the USB drive. To do it, run the following command in the terminal:

```
fdisk -l
```

sh

You will see information about all drives. Find out which of the drives is your USB drive. You can do it by checking the disk size. For example, you may need to check information about this disk `/dev/sdc1` , but in your case it may be `/dev/sdb1` :

```

/dev/sdb6 158541824 1953501183 1794959360 855,9G Microsoft basic data
/dev/sdb7 1953501184 1953523711 22528 11M BIOS boot

Disk /dev/sdc: 14,5 GiB, 15514730496 bytes, 30302208 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x000b94f5

Device Boot Start End Sectors Size Id Type
/dev/sdc1 2048 30302207 30300160 14,5G b W95 FAT32

```

3. Create a folder with the following command:

```
mkdir /home/$USER/usb/
```

sh

4. Run the following command to mount the USB drive to the `/home/$USER/usb` folder:

```
mount /dev/sdc1 /home/$USER/usb/
```

sh

5. Create an iso directory:

```
mkdir /home/$USER/iso
```

sh

6. Copy data from the USB drive to the `/home/$USER/iso/` folder:

```
cp -r /home/$USER/usb/ /home/$USER/iso/
```

sh



Copying data may take some time.

### 2.2.3. Step 3. Connecting OS images as a repository

Then, you will need to mount OS images as a repository:

1. Create the directories with the following commands:

```
mkdir /debian
mkdir /debian/dvd4
mkdir /debian/dvd5
mkdir /debian/dvd6
```

sh

2. Mount ISO images of the operating system:

```
mount -o loop /home/$USER/iso/usb/debian-11.8.0-amd64-DVD-1.iso /debian/dvd4
mount -o loop /home/$USER/iso/usb/debian-11.8.0-amd64-DVD-2.iso /debian/dvd5
mount -o loop /home/$USER/iso/usb/debian-11.8.0-amd64-DVD-3.iso /debian/dvd6
```

sh

3. To make sure that the drive is properly mounted, run the following command:

```
df -h
```

sh

Filesystem	Size	Used	Avail	Use%	Mounted on
udev	2,0G	0	2,0G	0%	/dev
tmpfs	394M	5,8M	388M	2%	/run
/dev/sda1	216G	15G	190G	7%	/
tmpfs	2,0G	16K	2,0G	1%	/dev/shm
tmpfs	5,0M	0	5,0M	0%	/run/lock
tmpfs	2,0G	0	2,0G	0%	/sys/fs/cgroup
tmpfs	394M	0	394M	0%	/run/user/1000
/dev/loop0	3,5G	3,5G	0	100%	/debian/dvd4
/dev/loop1	4,4G	4,4G	0	100%	/debian/dvd5
/dev/loop2	4,4G	4,4G	0	100%	/debian/dvd6

```
root@debian:~#
```

4. Open the repository configuration file with the **nano** editor and make sure that all the lines are commented out:

```
nano /etc/apt/sources.list
```

sh

If some of the lines are not commented out, comment them out with the “#” character which should be put the beginning of each line and add the following code at the end of the file:

```
deb [trusted=yes] file:/debian/dvd4 buster contrib main non-free
deb [trusted=yes] file:/debian/dvd5 buster contrib main non-free
deb [trusted=yes] file:/debian/dvd6 buster contrib main non-free
```

sh

Save changes with **Ctrl+O** and close the editor with **Ctrl+X**. Update the list of packets and make sure that no error occurred during the process:

```
apt update
```

sh

## 2.2.4. Step 4. MCU installation

Since you previously copied deb-package together with OS images, TrueConf MCU installation will be located in the `/home/$USER/iso/usb/` path. To install TrueConf MCU via the terminal, run the following command:

```
apt -f install /home/$USER/iso/usb/<file_name>.deb
```

sh

To make sure that the server has been started, run the following command:

```
systemctl list-units | grep tcmcu
```

sh

## 2.3. Authorization

TrueConf MCU starts automatically once the video conferencing server is launched. You can connect to the server from a browser using its IP address. You will need to enter your login and password on the authorization page.

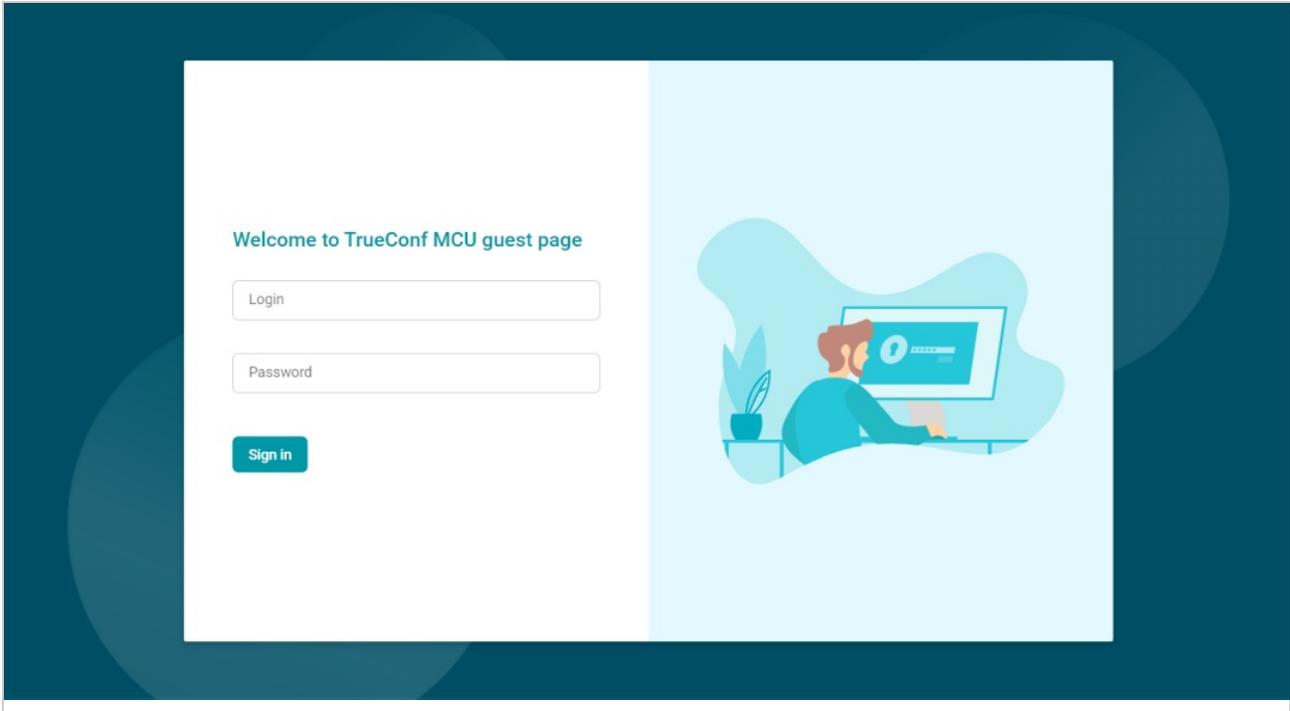


Authorization data by default:

Login - **admin**

Password - **admin**

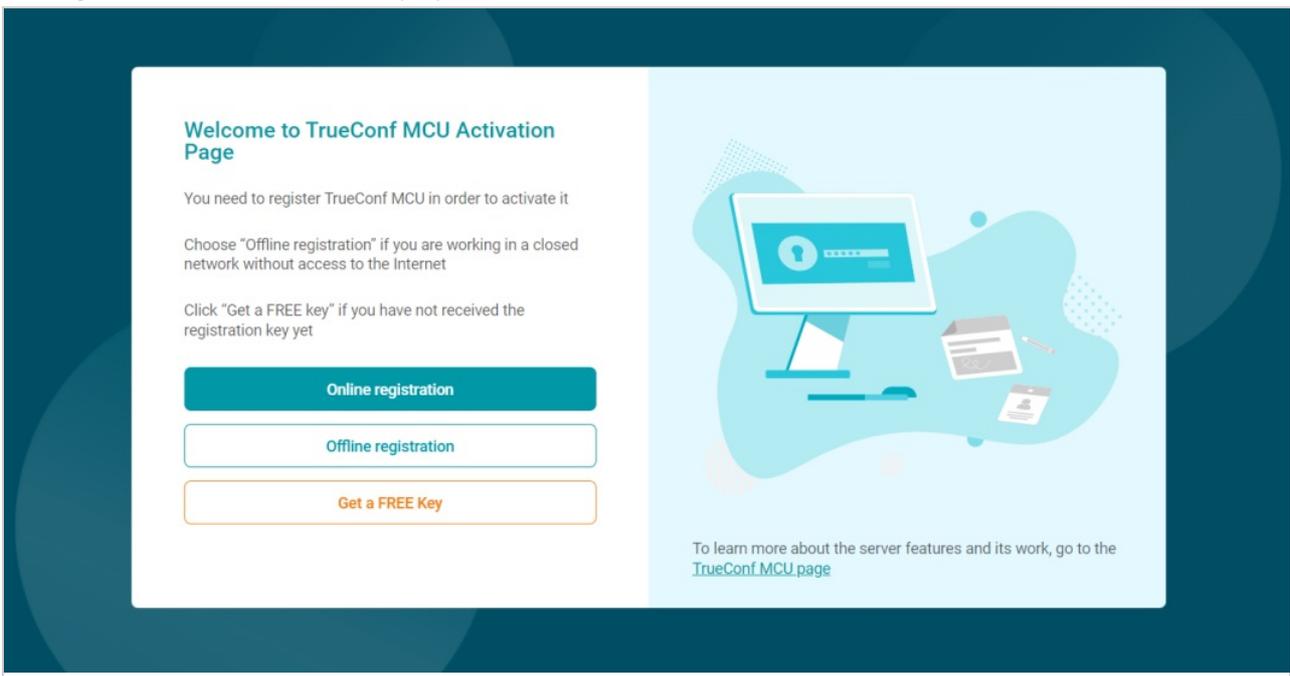
You can [change](#) the authorization data after [registering](#) the server.



## 2.4. Registration

During registration the server detects [certain hardware parameters](#) of the machine. If you change them, the license will become invalid. Your manager and technical support can correct the hardware key bound to the license **completely free of charge**.

The registration window will be displayed after [authorization](#):



### 2.4.1. Online

On the [registration page](#), click the **Online registration** button, then enter the key (received by email) in the **Registration Key** field, and click the **Register** button.

TrueConf MCU page'."/>

**TrueConf MCU online registration**

Enter the registration key and server name and click «Register»

Click «Get a FREE key» if you have not received the registration key yet

Registration key

Server domain name

**Register**

[< Back](#)

To learn more about the server features and its work, go to the [TrueConf MCU page](#)

### 2.4.2. Offline

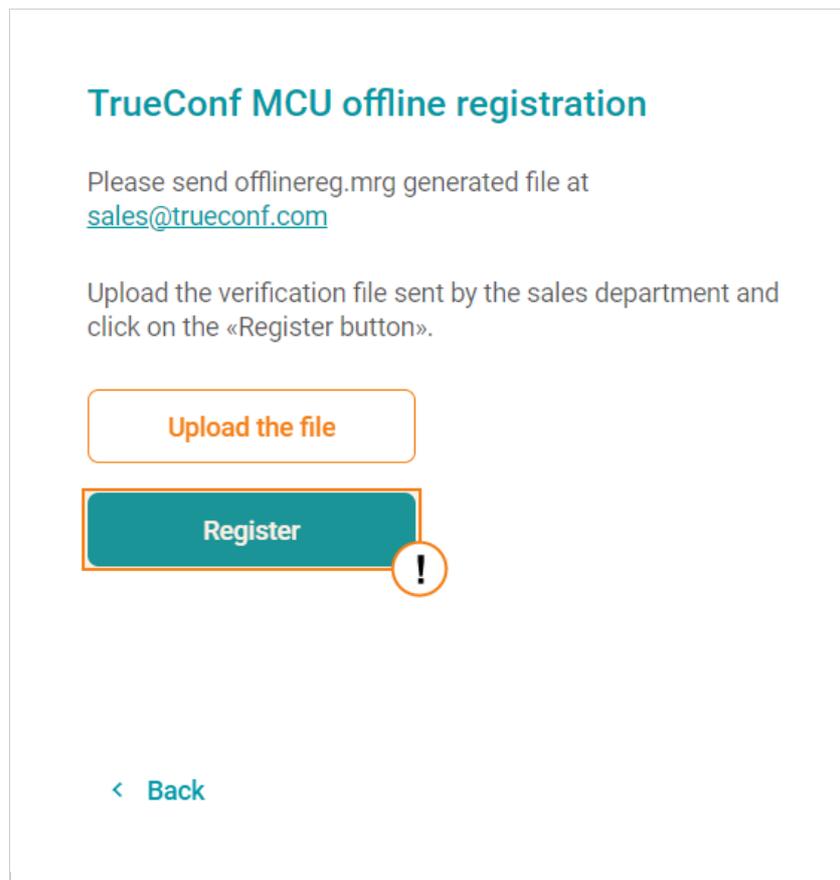


Offline registration is available only in the TrueConf MCU full version. If you would like to request a trial version that works without Internet connection, please contact our [sales department](#).

If you are working in a closed network without access to the Internet, click the **Offline registration** button on the [registration page](#). Then, enter the key received by email, and click the **Create a registration file** button. The file **regoffline.mrg** will be generated and its download to your computer will start automatically. Save the file in a convenient directory and click **Next**.

Send the previously saved file **regoffline.mrg** to our [sales department](#) email address.

You will receive a registration confirmation file in the reply email. Upload it and click **Register**.



If the activation is successful, you will be automatically redirected to the TrueConf MCU [control panel](#).

## 2.5. Performance

To assess the performance of the computing platform, TrueConf MCU uses metrics based on the speed of executing core operations: transcoding, scaling, moving data from one memory area to another, etc.

It would be a major misconception to think that everything depends on the number of cores and clock speed. One should also consider memory speed which is determined by various factors like memory type, the number of memory channels (slots on the motherboard), and the size of the CPU cache.



In virtualization systems, memory operates slower than the memory in hardware servers.

Performance also depends on the number of CPUs since data needs to be transferred between them.

The [calibration](#) procedure is needed to measure these indicators on a specific platform and determine how many connections and of what type the server can handle without degrading resolution and frame rate (FPS).

### 2.5.1. Power

We would also like to pay much attention to CPU power management in Linux. It is an important factor that affects server performance.

By default, Linux runs a processor in power-saving mode. You can check the current mode with the command:

```
sudo cpupower frequency-info
```

sh

You can enable maximum performance mode by using the command:

```
sudo cpupower frequency-set --governor performance
```

sh

By default, this utility is not included in the system, but it can be installed from repositories for most Linux versions:

```
sudo apt install linux-cpupower
```

sh



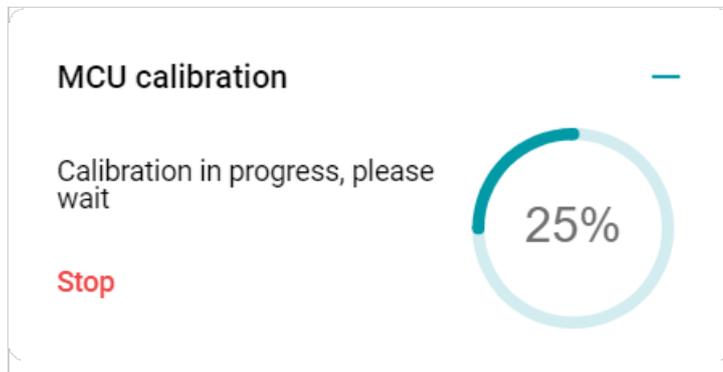
As far as we know, full support for power management was introduced in Debian 11.

## 2.5.2. Calibration

To ensure better performance, you should perform calibration each time when the server hardware is changed or when a major update of TrueConf MCU is released (e.g., an update from v 1.2 to v.1.3). This will allow you to increase the maximum number of users simultaneously participating in a conference and improve audio and video quality. Calibration also affects the correctness of the display of [server statistics](#).

To perform calibration, go to the **Administration** → **Calibration** section and click **Start calibration**.

In the lower right corner there will be the calibration progress bar. You can end this process by clicking on the **Stop** button. During calibration TrueConf MCU will automatically rate the server performance in different modes and with different audio and video codecs.



When the calibration process starts, all ongoing conferences will be forcibly ended. Also, you won't be able to hold conferences on the server until the process is completed or canceled. The calibration can take several hours and depends on the server capacity.

## 3. MCU update

TrueConf MCU is a classic transcoding server that allows you to establish connection with both hardware SIP/H.323 endpoints and the users of TrueConf client applications. This solution is being actively developed, and we will show you how to properly install updates for it. Check [our blog](#) and newsletter to learn about the release of new versions.

To update TrueConf MCU, download the distribution:

- Debian 10 – [https://trueconf.com/download/mcu/linux/trueconf\\_mcu\\_debian10\\_amd64.deb](https://trueconf.com/download/mcu/linux/trueconf_mcu_debian10_amd64.deb)
- Debian 11 – [https://trueconf.com/download/mcu/linux/trueconf\\_mcu\\_debian11\\_amd64.deb](https://trueconf.com/download/mcu/linux/trueconf_mcu_debian11_amd64.deb)

### 3.1. From the control panel

**!** Updating TrueConf MCU from the control panel is recommended if only the third digit in the version number is changed (e.g., from 1.5.0 to 1.5.1). For major releases when the first two digits are changed, for example, from 1.4 to 1.5 or from 1.5 to 2.0, a clean installation of the new version is required as [shown below](#).

1. In the control panel, go to the **Administration** → **About** section.
2. Click the **Upload file** button and select the downloaded package.
3. When it is added to the list, click the  icon to install the update.
4. Later you can delete unnecessary files from the list by clicking the  button.

### 3.2. Clean installation of the update

**i** The TrueConf MCU, which includes major innovations, requires a clean installation after deleting the previous version. Typically, this applies to the release of major versions with changes in the first two digits, for example, from 1.4 to 1.5 or from 1.5 to 2.0.

#### 3.2.1. Step 1. Save a backup of necessary settings

Save the server configuration as [shown here](#).

**\*** When transferring data from version 1.5 to 2.0, you have to use the **.csv** format, which will restore **only** the list of contacts and groups.

#### 3.2.2. Step 2. Delete the current version

On the OS where TrueConf MCU is installed, go to the terminal and execute the command:

**Debian**

```
sudo apt purge trueconf-mcu -y
```

sh

#### 3.2.3. Step 3. Install the new version

1. Install the new version following [our instructions](#).
2. Open the TrueConf MCU control panel and [activate the software with your registration key](#). This key can be found in the email which was sent to you when this solution was downloaded for the first time.

### 3.2.3.1. What is the hardware key bound to?

The registration key is bound to the following parameters:

- MAC address
- BIOS ID.



If you change the hardware configuration of the virtual or physical machine where TrueConf MCU is installed, it will be necessary to reset the hardware key binding. To do it, please contact your manager or [technical support](#).

### 3.2.4. Step 4. Restore data from the backup copy

Restore the TrueConf MCU configuration from the saved file as [shown here](#).



To restore the configuration from TrueConf MCU version 1.5, select a backup in the **.csv** format.

## 3.3. Server calibration

[Calibration](#) is **required** after update.

You can now start working with the new version of TrueConf MCU.

## 4. License

After [installing](#) the TrueConf MCU video conferencing server, you will need to activate it with the registration key.

\* You can get a three-week trial, so you can try all the features and benefits of TrueConf MCU before purchasing it. Just [contact us](#) in any convenient way.

Please note that even the free version of TrueConf MCU has no limits on the duration of a conference and enables users to participate in conferences for as long as they want.

The differences between the paid and free versions of TrueConf MCU are described in the table:

License type	Free	Premium
Maximum number of concurrent conference participants	100	Up to 250
Maximum number of concurrent conferences	4	Unlimited
"TrueConf MCU Free" watermark in the upper right corner of the screen during video meetings	Yes	No
Connection to the registration server (via 443 TCP port)	Required	Not required

### 4.1. License information

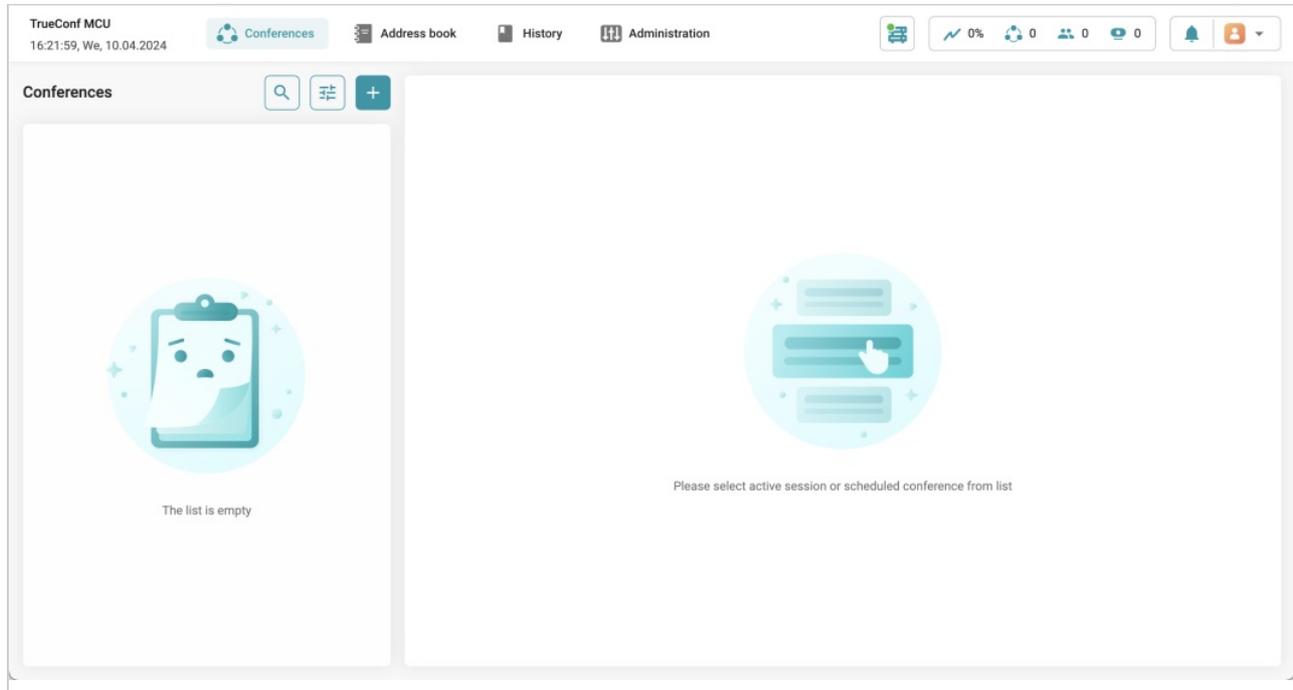
To view information about the current license or the license agreement, and to [re-register the server](#), go to the **Administration** → **License** menu:

License details	
Current license type	Paid
Connection to the registration server	Not required
Maximum number of active connections	250
Max number of displayed participants	250
Current license expiry date	01.01.2024
License agreement	<a href="#">View</a>
Registration details	
Server ID	MCU2VI
<a href="#">Re-register</a>	

## 5. Control panel

**i** The user list panel is displayed only when the browser window is more than 1600 pixels wide and the zoom level is set at 100%.

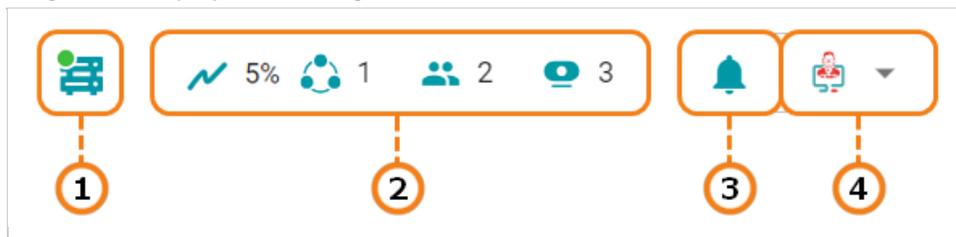
After authorization, the main window of the web interface will open:



On the left side of the control panel, you can find the date and time, which can be [adjusted in the settings and synchronized with an NTP server](#).

The main menu of TrueConf MCU is in the center. Each item is described in detail in the corresponding section of the documentation.

The following widgets are displayed on the right side:



1. Server status. By clicking on this UI element, you will open a page with buttons for restarting and stopping TrueConf MCU. It will also be possible to restart the OS where the server is installed.
2. System information widget that displays the level of computer resource usage, the number of ongoing conferences, the total number of connected participants (SIP/H.323), devices (VNC/RTSP), and media files.
3. Notification center. This is where one can check notifications, for example, when a user enters the [waiting room](#).
4. The user, who is currently logged in to the control panel. Here, you can also change the language and log out of the control panel.

### 5.1. Waiting room

When a user makes a call to TrueConf MCU without specifying a conference ID (in the format `#h323:@<server_name>` or `#sip:@<server_name>`), he/she will be placed in the waiting room. In this case, a notification will be displayed in the notification center of the TrueConf MCU control panel, and the counter number on the  button will increase. Click on this button to open the list of users waiting for connection:

<input type="checkbox"/>	Display Name	Action	
<input type="checkbox"/>	Kathryn Floyd		
<input type="checkbox"/>	Jane Flowers		
<input type="checkbox"/>	James Wolf		
<input type="checkbox"/>	Albert Moore		

\*

A user will remain in the waiting room until he/she enters the ID or the administrator moves this person to one of the conferences. After 60 seconds, waiting time will expire and the user will be disconnected.

To add a user, click the  button, find the required conference in the list, and click the **Move** button.

## 6. Address Book

In the **Address book** section, you can add new users, edit existing ones, and create user groups.

1. Select how the list should be displayed: by users or by groups.
2. Search for contacts in the address book.
3. Sort the list (from A to Z) or (from Z to A).
4. Create a new user or group (when the list is displayed by groups).
5. User contact that includes:
  - display name
  - call string
  - delete button.
6. Selection of multiple users for deletion.
7. The card of the selected contact which provides user information divided into tabs: [Information](#), [Profile](#), [Address](#), [Account](#).

You can also select multiple users and delete them in bulk.



You cannot remove users who are currently participating in a conference from your address book.

### 6.1. Creating a contact and group

To add a new user to the address book, click , enter the display name, and click **Save**. This will open the [contact card](#) on the [Profile](#) tab.

To create a group, you need to switch to the group display and repeat the steps described above. After that, an empty group card will open where you can add users, edit the group name, or delete the group (without deleting its participants).

### Marketing

Participants: 3 Remove

Group name (9/128)  Save

Participants  Add

<input type="checkbox"/>	Display Name	Email	Phone	Action
<input type="checkbox"/>	 Daniel Reed sip:reed@10.110.2.240	reed@video.company.com	+19991234567	
<input type="checkbox"/>	 James Wolf sip:wolf@10.110.2.240	-	-	
<input type="checkbox"/>	 Kathryn Floyd	floyd@video.company.com	-	

## 6.2. Contact card

### 6.2.1. Information

Here you can:

- View information added in other tabs (display name, login, email, phone, addresses)
- Upload a user avatar
- Add a contact description
- pin the user's address in the contact list using the  ;
- Add a contact to groups and assign the necessary [roles](#) to this user.

**Daniel Reed**
Remove

---

Information

Profile    Address    User account

User name:

Daniel Reed

Login:

reed

E-mail:

reed@video.company.com

Phone:

+19991234567

Description

Technical Specialist in Marketing Department

Address

Daniel Reed

sip:reed@10.110.2.240 ★

---

Daniel Reed

h323:reed@10.110.2.240

Additional

Groups:

+

Marketing

×

Roles:

+

Operator

×

## 6.2.2. Profile

In this tab, you can specify:

- Display name
- Email where invitations to a scheduled conference will be sent
- Phone number
- UI language of the control panel (this option is relevant if the user is assigned the role of operator or administrator who can access the control panel).

These details are displayed in the [contact card](#) on the **Information** tab.

## 6.2.3. Address

Here, you can assign multiple addresses with different protocols (SIP, H.323, RTSP, VNC) to a contact. To do it:

1. Click the **Add** button.
2. Select the type of protocol that will be used for connection.
3. Enter the route address.
4. Click the **Save** button.

If needed, specify the **Display name** which is the name shown during a conference. If not specified, the username will be displayed in a conference.

### 6.2.3.1. Additional

In the **Additional** tab, you can select audio and video codecs, configure the resolution limit and bitrate for the outgoing video stream, and check the **Cascading** box.

**Adding an address**
✕

General
Additional

Audio codecs

<input checked="" type="checkbox"/> AAC	<input checked="" type="checkbox"/> g.722.1 24 kbps	<input checked="" type="checkbox"/> g.722.1c 48 kbps	<input checked="" type="checkbox"/> g.726 32 kbps	<input checked="" type="checkbox"/> OPUS
<input checked="" type="checkbox"/> g.711	<input checked="" type="checkbox"/> g.722.1 32 kbps	<input checked="" type="checkbox"/> g.723	<input checked="" type="checkbox"/> g.726 40 kbps	
<input checked="" type="checkbox"/> g.719	<input checked="" type="checkbox"/> g.722.1c 24 kbps	<input checked="" type="checkbox"/> g.726 16 kbps	<input checked="" type="checkbox"/> g.728	
<input checked="" type="checkbox"/> g.722	<input checked="" type="checkbox"/> g.722.1c 32 kbps	<input checked="" type="checkbox"/> g.726 24 kbps	<input checked="" type="checkbox"/> g.729	

Video settings

Maximum frame size

No limits

Maximum bitrate (kbit/s)

No limits

Cascading

Video codecs

<input checked="" type="checkbox"/> h.261	<input checked="" type="checkbox"/> h.264
<input checked="" type="checkbox"/> h.263	<input checked="" type="checkbox"/> h.264-high

Cancel
Save

If cascading is activated for a participant, his/her self-view will be removed from the layout. This may be helpful, if a conference hosted on a different instance of TrueConf MCU or TrueConf Server is connected as a meeting participant.

You can specify multiple addresses for a single contact:

**Daniel Reed**
Remove

Information
Profile
Address
User account

Add

🔍 Search

<input type="checkbox"/>	Display name	Action
<input type="checkbox"/>	Daniel Reed sip:reed@10.110.2.240	<div style="display: flex; justify-content: center; gap: 10px;"> <div style="border: 1px solid #00a0e3; border-radius: 5px; padding: 2px 5px; color: #00a0e3;">✎</div> <div style="border: 1px solid #e53935; border-radius: 5px; padding: 2px 5px; color: #e53935;">🗑</div> </div>
<input type="checkbox"/>	Daniel Reed h323:reed@10.110.2.240	<div style="display: flex; justify-content: center; gap: 10px;"> <div style="border: 1px solid #00a0e3; border-radius: 5px; padding: 2px 5px; color: #00a0e3;">✎</div> <div style="border: 1px solid #e53935; border-radius: 5px; padding: 2px 5px; color: #e53935;">🗑</div> </div>
<input type="checkbox"/>	Daniel Reed rtsp:reed.com/rtsp_camera	<div style="display: flex; justify-content: center; gap: 10px;"> <div style="border: 1px solid #00a0e3; border-radius: 5px; padding: 2px 5px; color: #00a0e3;">✎</div> <div style="border: 1px solid #e53935; border-radius: 5px; padding: 2px 5px; color: #e53935;">🗑</div> </div>

When multiple protocols are specified, TrueConf MCU will make calls sequentially according to the priority set in the **Administration → Calls → Protocol priority** section of the server settings.

To add a TrueConf video conference as a participant, use either SIP or H.323, but instead of a username, enter the string `00<Conference_ID>`, where `<Conference_ID>` is the [conference ID](#).

For example, `00639499375243@video.company.com`

## 6.2.4. Account

You can set a **login** and **password** for a user so that this person could access the control panel for server administration or hold conferences. When settings are saved, the contact will automatically be given the **Operator** role.

Information	Profile	Address	User account
Login <input type="text" value="reed"/>			
New password <input type="password" value="....."/> 			
Confirm the new password <input type="password" value="....."/> 			
<input type="button" value="Save"/>			



Here, you can also modify authorization data.

## 7. Video communication formats

TrueConf MCU supports various video conferencing formats that you can use depending on the current business task.

### 7.1. Voice activity detection mode

Voice activity detection mode is a special mechanism that automatically creates an optimal video layout from all the participants who are speaking at the moment.

\* Voice activity detection can be enabled both [during a conference](#) and [when a conference is scheduled](#), but only in the **General mode**.

To enable/disable this feature, use the buttons  and  in the [conference "header"](#). When this feature is enabled, the focus will automatically shift to the active speaker.

### 7.2. Conference modes

TrueConf MCU supports the following video conference modes:

- **General**
- **Lecture**
- **Speaker**.

#### 7.2.1. General

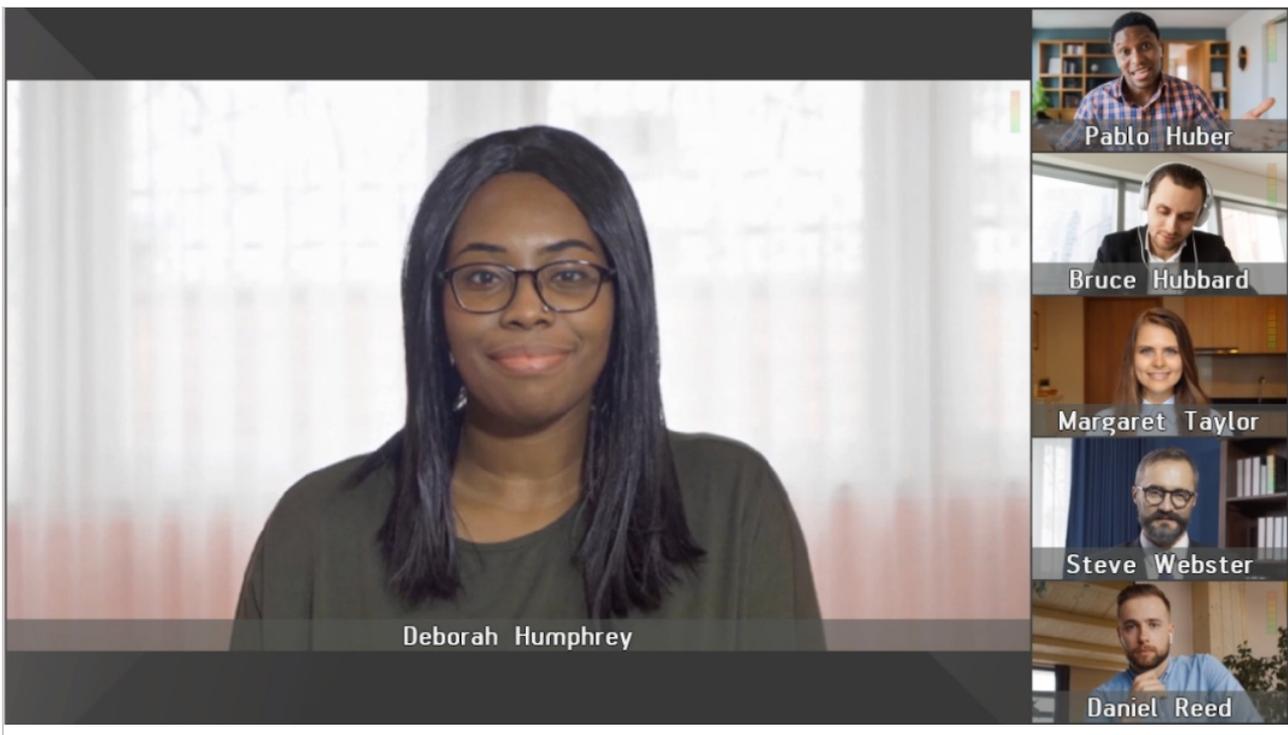
This is the default conference mode without restrictions and predefined settings. In this mode, a speaker can be spotlighted manually with the "[crown](#)" and [automatically](#).

##### 7.2.1.1. Crown

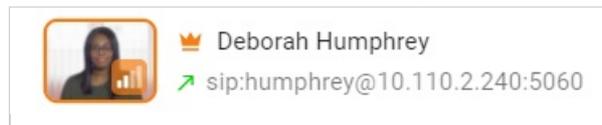
It is possible to mark a participant with the crown [during a conference](#) and [when scheduling an event](#).

**i** The crown and [voice activity detection mode](#) **cannot** be used together.

To display a user in the enlarged window, select this person in the list of [conference participants](#) and click the button  which is next to this person's name.

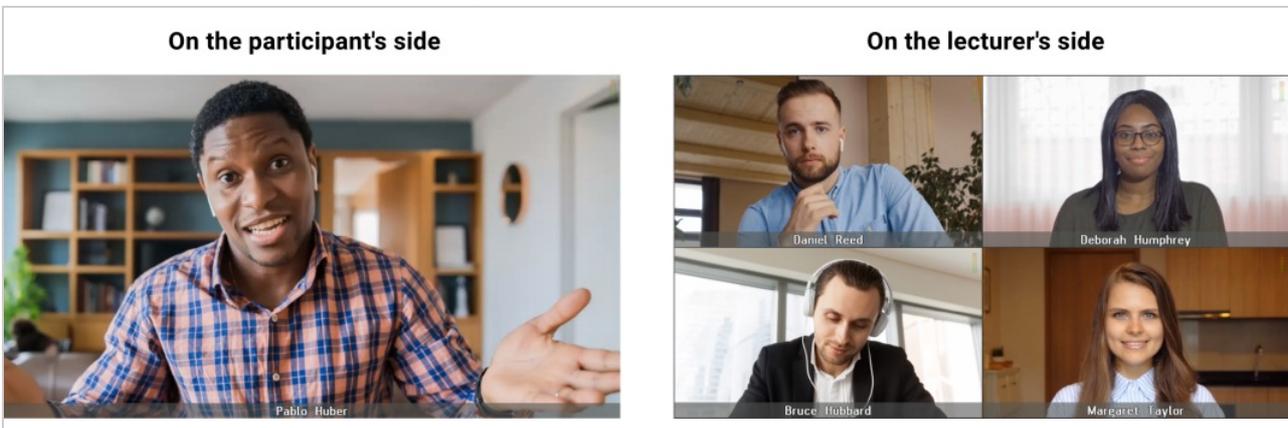


If a participant is marked with the crown, this person will be highlighted in the list:

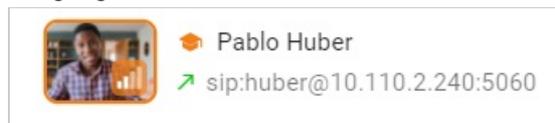


## 7.2.2. Lecture

**Lecture** is a mode in which the selected participant (lecturer) is always displayed in the video layout of other participants in a full-screen video window, while the lecturer can see the video windows of all participants.



The lecturer status **is not automatically assigned** to anyone during a conference. **Only** the **operator** can appoint or change the lecturer. To appoint one of the participants as the lecturer, click the  button next to the user's name. This person's frame will be highlighted.



To fully understand how this mode works, let us consider an example of a student audience:

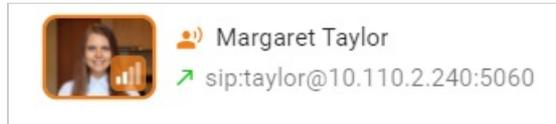
1. **Lecturer is absent.** Until the lecturer is appointed in a conference, all participants can see each other as in a regular student classroom. In this case, **VAD** is enabled and participants are alternated in the layout automatically.
2. **Lecturer is present.** When the lecturer is appointed (or connected to the conference), **VAD** is disabled while the

participants and the speaker will receive the video layout as shown above.

### 7.2.3. Speaker

**Speaker** — in this mode the speaker is always displayed to attendees in the single full-screen layout window. There can be **only one** speaker who is determined with the help of [voice activity detection](#). This feature is enabled by default and cannot be disabled. If the speaker is not present, all participants will receive the [layouts assigned to them](#).

The active speaker is highlighted with the icon  (speaker) in the list of users:



## 7.3. Switching modes

When conference mode is changed, different settings are applied. If you switch back to the **General** mode:

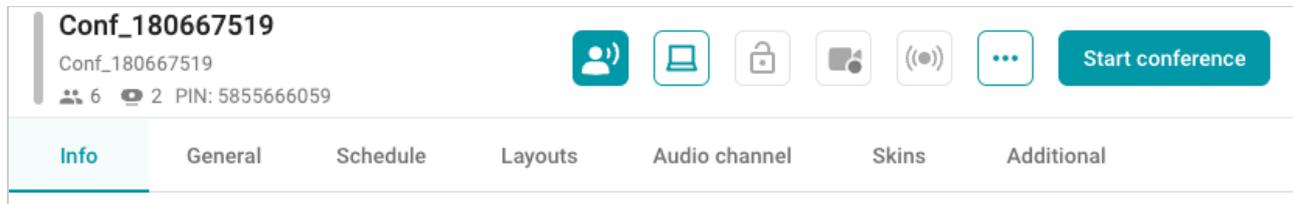
- [Voice activity detection](#) is **enabled**
- The lecturer or the last presenter (active speaker) becomes a regular participant without any additional privileges
- [The crown](#) is **not automatically assigned** to anyone
- [Voice activity detection](#) becomes **available**
- All participants receive the [video layouts assigned to them](#).



This logic applies to both scheduled and active conferences, regardless of whether voice activity tracking is enabled in general mode or not.

## 8. Creating a conference

To create a meeting in the **Conference** section, click the  button. You will see a window that provides information about the new conference, for example, `Conf_397062486`. For the sake of convenience, conference settings will be divided into tabs. Each tab is fully described below.



The screenshot shows a conference settings window for 'Conf\_180667519'. The header includes a 'Start conference' button and icons for participants, devices, lock, video, audio, and a menu. Below the header are tabs for 'Info', 'General', 'Schedule', 'Layouts', 'Audio channel', 'Skins', and 'Additional'.

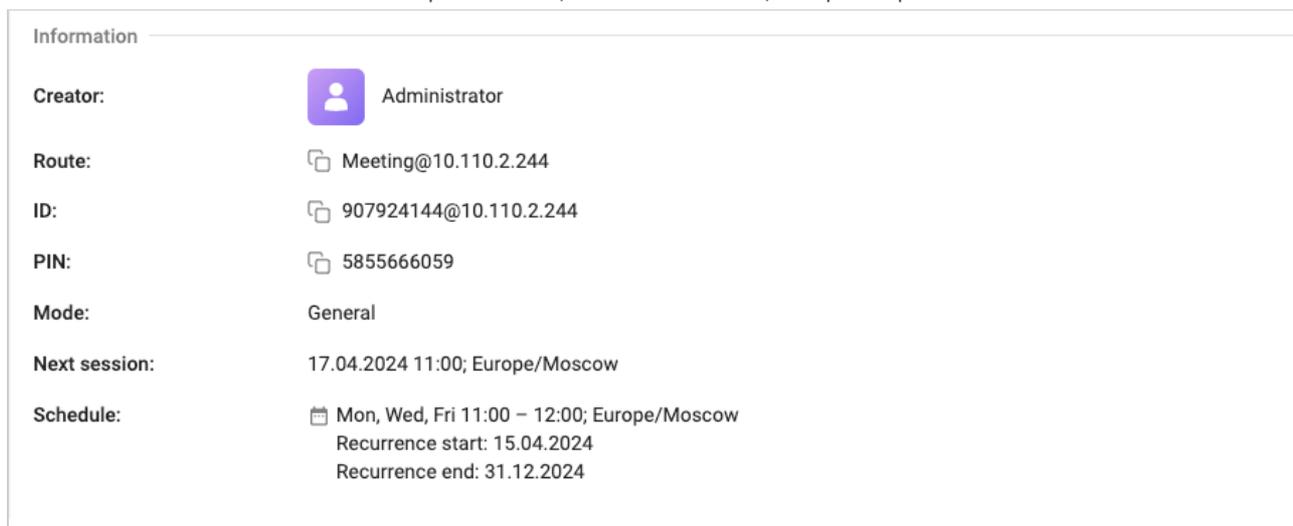
In the settings "header", above the tabs, there are buttons that allow you to:

- [Send conference invitations](#)
- Enable [voice activity detection mode](#)
- [Add media files to the conference](#)
- Make use of other features available [during an ongoing conference](#).

To copy the conference with all its settings, click the  button and select the **Copy a conference** option.

### 8.1. Information

The **Info** tab includes the main event parameters, list of media files, and participants.

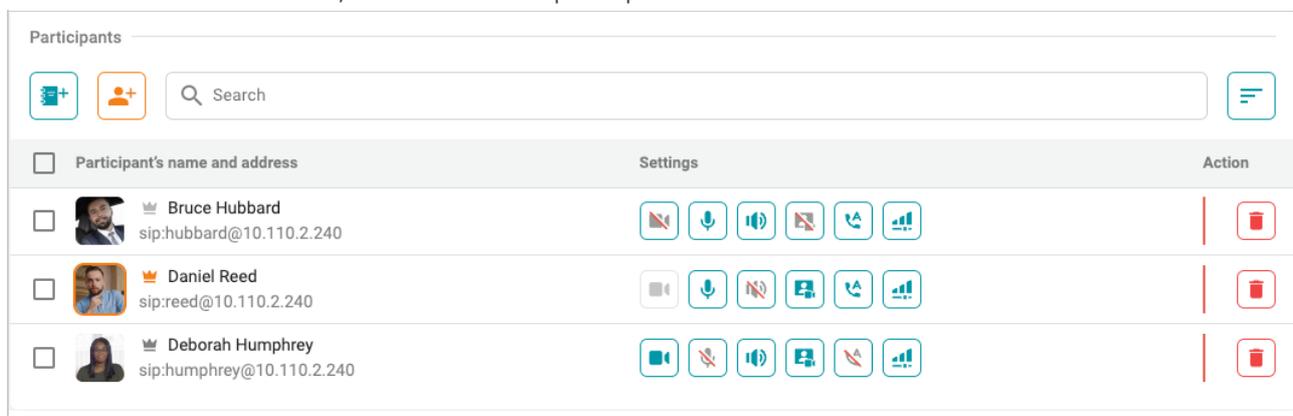


The 'Information' tab displays the following details:

- Creator:** Administrator
- Route:** Meeting@10.110.2.244
- ID:** 907924144@10.110.2.244
- PIN:** 5855666059
- Mode:** General
- Next session:** 17.04.2024 11:00; Europe/Moscow
- Schedule:** Mon, Wed, Fri 11:00 - 12:00; Europe/Moscow  
Recurrence start: 15.04.2024  
Recurrence end: 31.12.2024

### 8.2. Participants

At the bottom of the **Info** tab, there is the list of participants.



The 'Participants' tab shows a search bar and a list of participants with their names, addresses, and control icons for mute, video, and other settings.

Participant's name and address	Settings	Action
<input type="checkbox"/>  <b>Bruce Hubbard</b> sip:hubbard@10.110.2.240	     	
<input type="checkbox"/>  <b>Daniel Reed</b> sip:reed@10.110.2.240	     	
<input type="checkbox"/>  <b>Deborah Humphrey</b> sip:humphrey@10.110.2.240	     	

In this section, you can [add new participants](#) and configure peripheral devices before the conference starts. The following actions are available for each participant:

 and  — display/do not display a participant in an enlarged window.

 and  — turn a participant's camera on/off.

 and  — unmute/mute the microphone.

 and  — turn speakers on/off.

 and  — enable/disable transmission of video from the conference to the participant.

 and  — enable/disable an invitation call to the participant at the start of the conference.

 — set up the participant's devices: adjust volume and microphone gain, enable/disable noise suppression and AGC.

To change the order of participants, click the  button.

### 8.3. Adding participants

To add participants from the [address book](#), click the  button.

To connect a user by address, click the  button. You will open the pop-up window with settings for the data transmission protocol, address, participant's display name, and peripheral devices (including noise suppression and AGC).

#### Connecting a participant

✕

General

Additional

Format

Auto

Enter an address

taylor@video.company.com

Display name (15/128)

Margaret Taylor

Audio and video settings









Audio settings

Noise cancellation

Use default settings

Noise cancellation is working

AGC

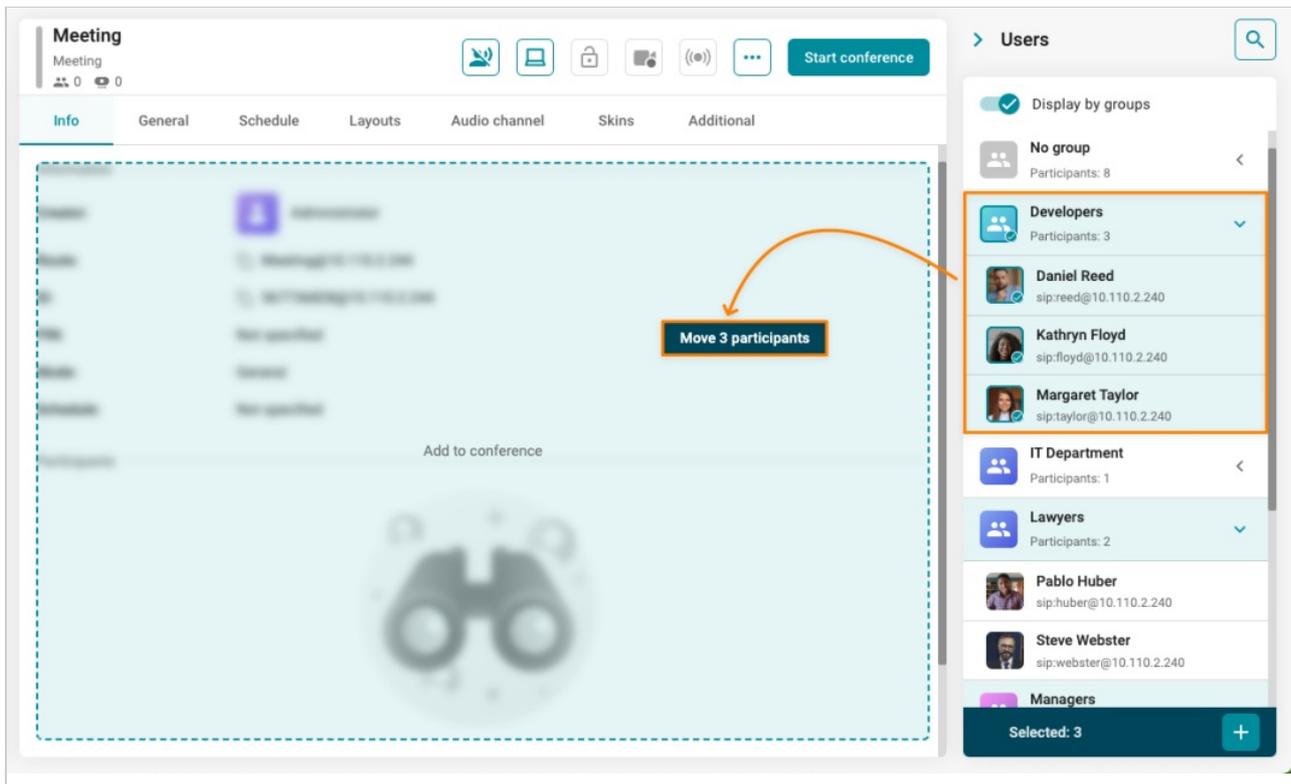
Use default settings

AGC is working

The **Additional** tab includes the settings [described here](#).

#### 8.3.1. Adding participants on the fly

If the [user list panel](#) is displayed on the right side, you can quickly add participants by selecting them in the **Users** sidebar and drag them with your mouse into the conference settings area:



## 8.4. Main

This section includes the settings for the conference name, route, ID, and PIN.

Conference name (7/128)

Route (14/512)

🔗

ID (9/512)

✖
🔄

Conference PIN (10/10)

🔄

Allow access to conference via link

### 8.4.1. Conference name

The event name, which is also used on the [conference connection page](#). This name can be changed on the fly [during the conference](#), but it will be restored to its original value when the conference ends.

### 8.4.2. Route

**Route** is a mandatory primary identifier used for accessing the conference. It can consist of digits, Latin letters, hyphens, and underscores. By using the 🔗 button, you can choose not to use the conference name as its route.

For example, in the picture above, the route would look like this `Conf_855958710`. To generate a new value, click the  button; if you need to clear the field, click .

### 8.4.3. ID

**ID** is an additional conference identifier consisting **only** of digits. It is used for alternative access to the conference and for connecting via DTMF. This identifier is generated automatically when the conference is created, but it is not mandatory. You can delete it as described above.

### 8.4.4. PIN

A conference can also be protected from unauthorized access with a PIN code. It consists **only** of digits. One can change the PIN of an [ongoing conference](#). However, when the event ends, the previous PIN will be restored.

### 8.4.5. Conference connection page

To let participants join the conference from TrueConf client applications, you can enable and share a link to the conference connection page. To do it, check the box **Allow access to conference via link**. For more details about the connection page, check the [corresponding section](#).

### 8.4.6. Conference modes

Select the conference mode:

- General
- Lecture
- Speaker.

Each of these modes is described in [this section](#).

### 8.4.7. Settings for conference participants

In this section, you can specify settings for the users added to the conference.

Conference participants settings

Maximum number of participants (5-250) 1

Self-view in the layout 2

Automatically
▼

Automatically selected by the server

Conference start call settings 3

Use default value
▼

Call participants when conference is started

Auto redial participants if the connection is lost 4

Show a volume bar 5

Mute participants on entry 6

Stop participants' video on entry 7

1. Select the maximum number of participants.

2. Select the settings for displaying participants' self-views in the layout:
  - **Automatically**
  - **Display**
  - **Don't display for active speaker**
  - **Don't display for all**
3. Configure settings for calling participants at the start of the conference:
  - **Call participants when conference is started**
  - **Don't call participants when conference is started**
  - **Use default value.**
4. Check this box to make sure that participants can be re-invited to the conference if the connection is lost. If the operator of a video conferencing server disconnects a participant on purpose (via web interface), auto dialing will be disabled for this conference session.
5. Display volume level in the video windows.
6. Check the box to automatically mute meeting participants upon entry.
7. Check the box to stop participants' video upon entry.

## 8.5. Schedule

### 8.5.1. Conference duration

To set the duration of the conference, select the required value in the **Duration** drop-down list.



If no schedule is set for the conference, it will be turned into a virtual room by default.

### 8.5.2. Automatic conference ending

In this section, you can set the rules for ending the current conference automatically. They are similar to the settings available in the [Administration](#) section.

### 8.5.3. Adding a schedule

Click the **Add** button to make the conference recurring (repeating).

Select the repetition mode in the pop-up window. Depending on the selected mode, various settings will be available:

- **Do not repeat** – set scheduled date and time.
- **Weekly** – the time and day(s) of the recurring meeting will also be specified
- **Monthly** – the dates selected for recurrence will be specified.

Below you can find the example of a weekly conference repeated on certain days (meeting duration and validity period of the schedule are also included).

**Adding a schedule**
✕

**Weekly**

The conference will be held weekly on the selected days

▼

Session time

Start time

End time

Repeat

Hold daily

MON

TUE

WED

THU

FRI

SAT

SUN

Recurrence period (optional)

Recurrence start

Recurrence end

Time zone

### 8.5.4. Sending a conference Invitation

To send an invitation to the event, you need to:

1. Configure the [SMTP gateway](#)
2. Make sure that the [invited participants](#) have an email address added in their [profile](#)
3. Set [schedule](#) for the conference.

After this, the button will become active in the conference control panel; it will allow you to send an invitation.

## 8.6. Layouts



Video layout configuration is available only for SIP and H.323 connections.

Video layouts can be set both when creating a conference and during the event. By default, the **For all participants** layout is created. It is received by all the participants who do not have their individual layouts. For example, the global layout will be received by the participant who joined the conference by ID.

To [edit the video layout For all participants](#), click the button which is next to the layout name in the list.

You can create an individual video layout for one or more users. To do it:

1. Click the **Add** button.
2. A pop-up with the list of conference participants will open.

### Layout recipients ✕

The layout settings are available only for SIP и H.323 endpoints

Username and address

 James Wolf  
sip:wolf@10.110.2.240

 Teresa Olson  
sip:olson@10.110.2.240

 TrueConf Group  
sip:10.160.2.55

3. Select the users for whom you are creating the video layout, and click the **Next** button.
4. You will switch to [layout editing mode](#).

### 8.6.1. Editing a video layout

In editing mode, the main video layout settings are available in the **General** tab. Here you can:

1. Enable/disable the automatic video layout created by TrueConf MCU depending on the current number of connected conference participants.
2. Use overlapping video layout mode. In this type of layout, one of the video windows is expanded to fill the entire screen, while the slots of other participants are placed over it.
3. Set the number of available video windows.
4. Activate automatic rotation (alternation) of participants. This feature works if the number of participants is greater than the number of video windows.

1
 **Automatic layout**  
The layout is created automatically depending on the number of participants. If this option is chosen, it will be impossible to change the settings of video windows.

Maximum frame size
2

Use default settings
▼

Layout type
▼

Flexible

3
 **Enable overlay view**

Flexible layouts

Number of video windows
4

Unlimited
▼

5
 **Automatic speaker focus**  
If the number of participants is larger than the number of available video windows, participants will be displayed in the layout by turns

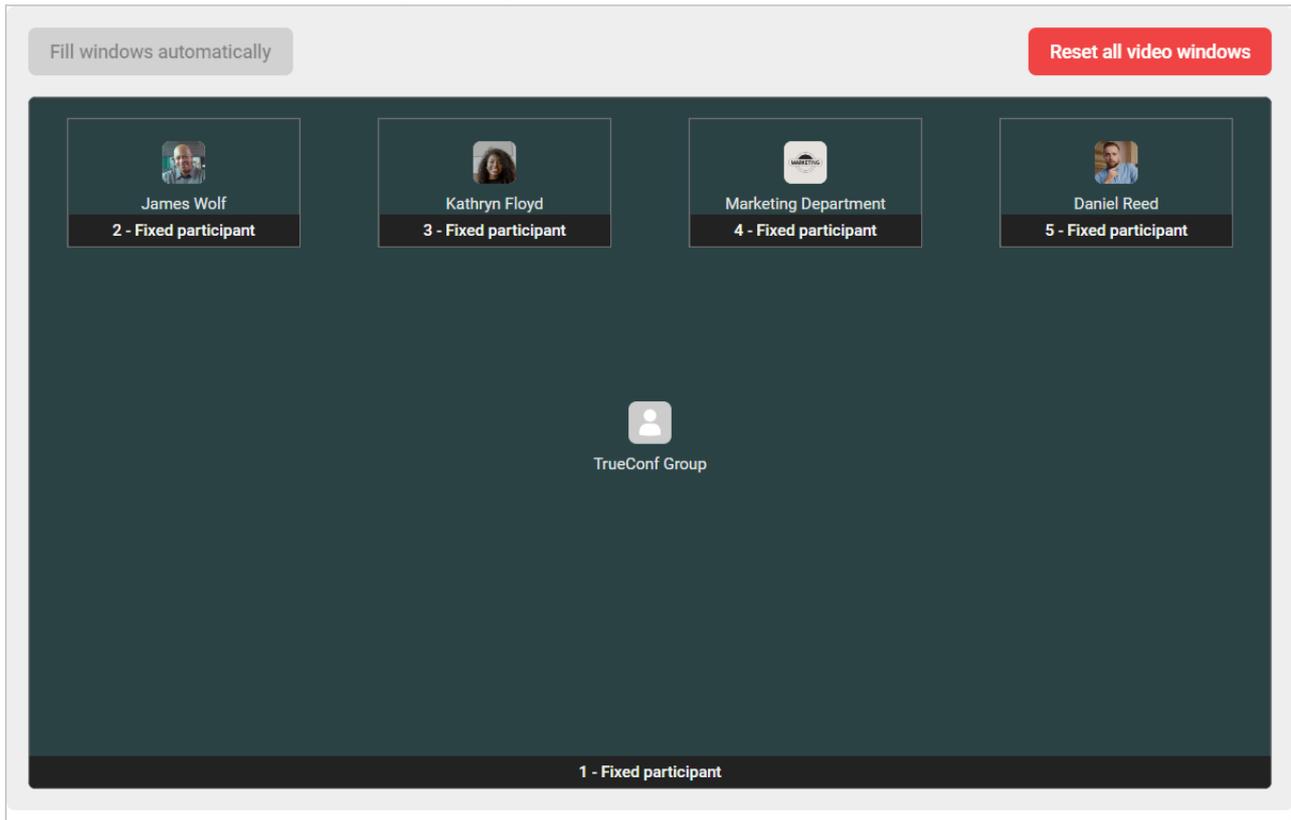
When the automatic video layout is disabled, you will be able to select the type of layouts and access the [layout](#)

[constructor](#) described below.

## 8.6.2. Layout constructor

To use the constructor:

1. Disable the automatic video layout
2. Select the layout type:
  - **Flexible** — works with any number of video windows in the layout.
  - **Predefined** — works with a predefined number of video windows that cannot be changed (the number is specified next to the thumbnail).
3. Select the video layout, specify the number of video windows, and activate the overlay mode, if necessary.
4. Click **Fill windows automatically** or configure video windows as [shown below](#).



### 8.6.2.1. Manual configuration

Select a video window in the constructor menu. The settings window will be displayed on the right side. Choose one of the options in the **Video window type** drop-down list (various settings will be available depending on your choice):

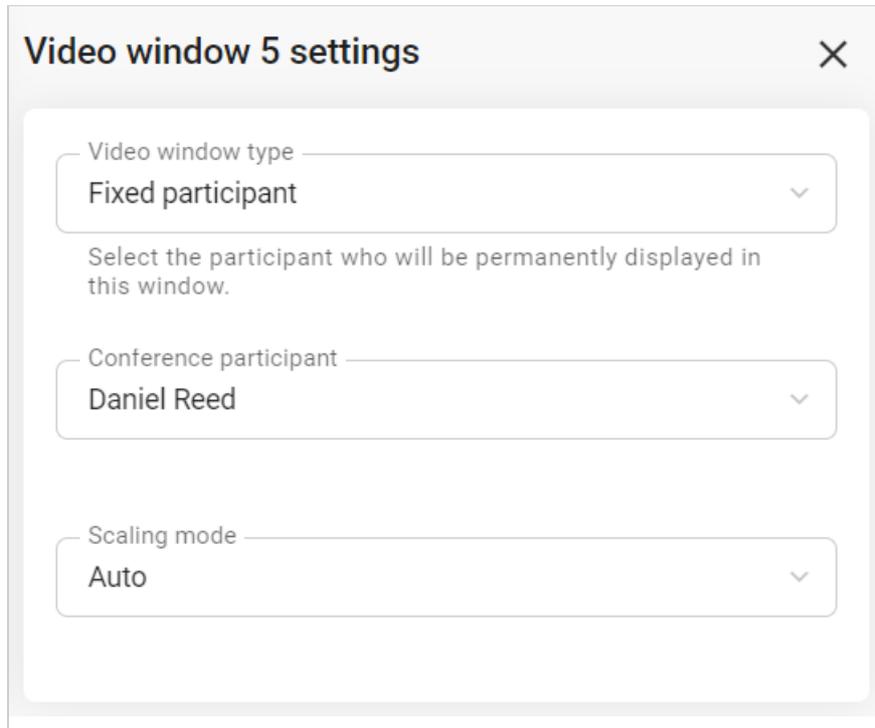
- **Empty** — an empty video window, for example, for a participant who might be invited during the conference
- **Fixed participant**: one of the [participants](#) will be permanently displayed in the selected window
- **Active speaker** — display of the participant who is currently speaking



The active speaker will be displayed in the video window only when [voice activity detection](#) is enabled. Available only in the **General** mode.

- **Autofill** — automatically displays one of the participants. To enable automatic rotation of participants in this video window, check the **Shuffle participants** box. The rotation time can be configured in [Administration](#) → [Video](#).
- **Content**: the window will be used for displaying the content shared by participants, e.g., desktop or slides.

**i** Only one video window can be selected for content sharing.



**Video window 5 settings** [X]

Video window type  
Fixed participant [v]

Select the participant who will be permanently displayed in this window.

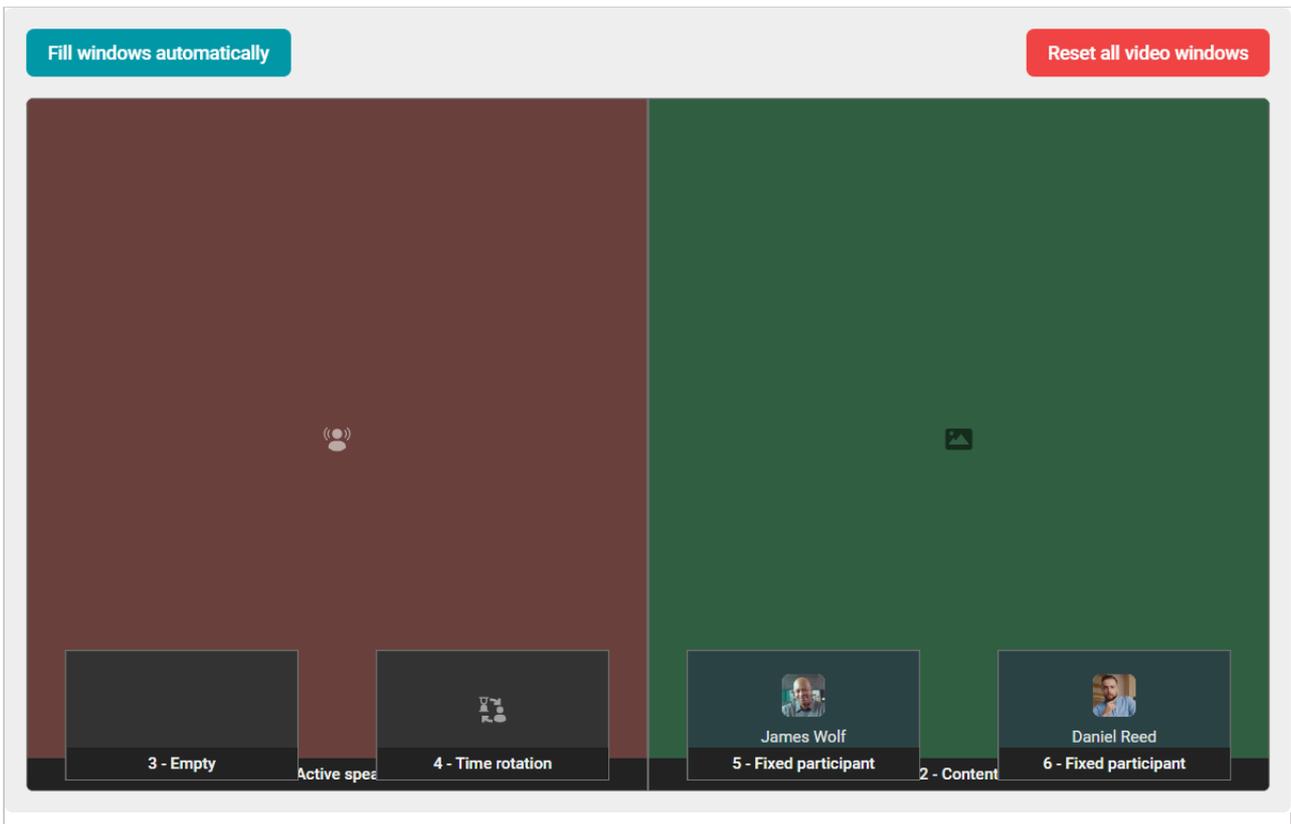
Conference participant  
Daniel Reed [v]

Scaling mode  
Auto [v]

You can set scaling for each video window, if it is not of the **Empty** or **Content** type:

- **Crop video** — this mode is intended for displaying the maximum number of windows in the layout.
- **Don't crop video** — in this mode, a participant's video is scaled to fit the layout windows. In this mode, the video is not cropped which helps to improve MCU performance when rendering the layout.
- **Auto**: TrueConf MCU determines the best video scaling mode depending on the current resource usage.

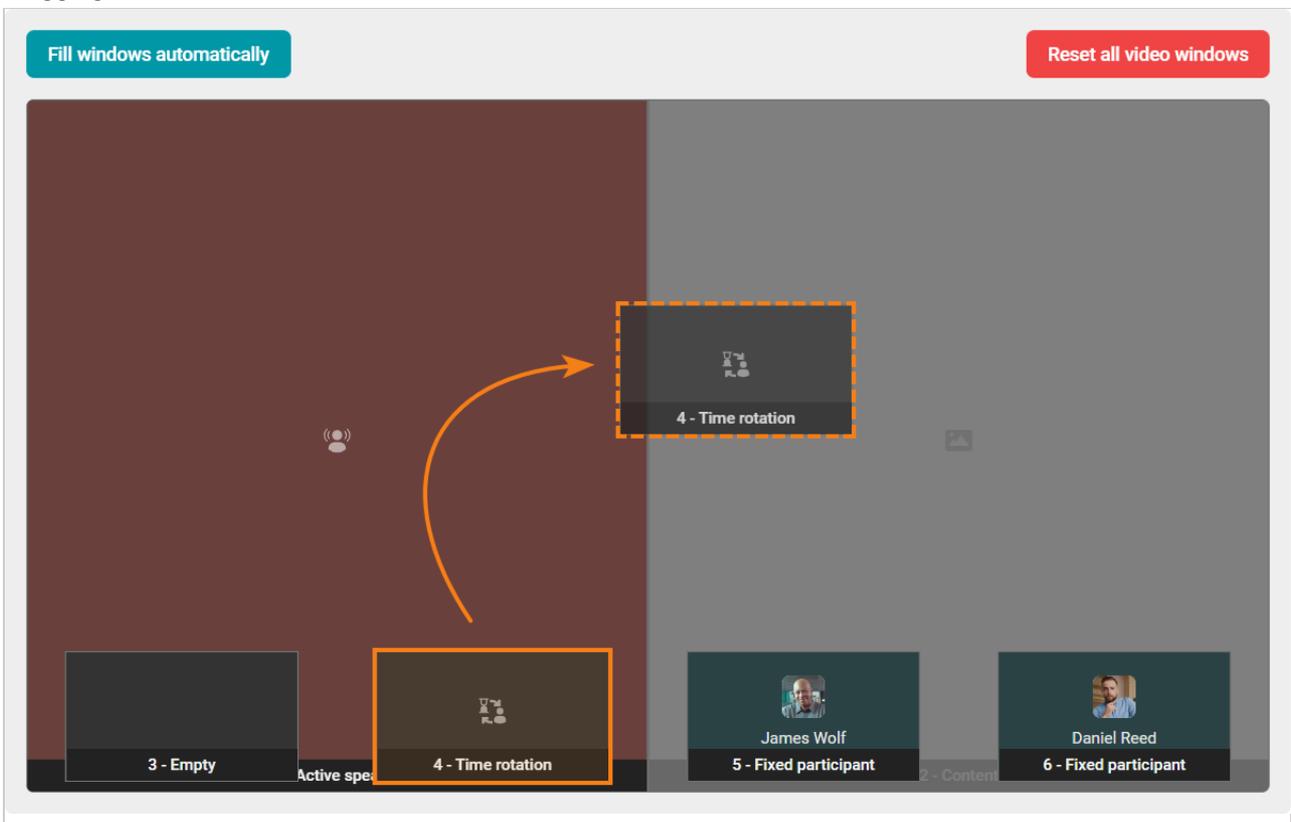
Below there is an example of a general overlapping layout consisting of six video windows with all types represented.



After setting up the video layout, click the **Save** button to exit editing mode.

### 8.6.2.2. Editing the layout on the fly

If you need to quickly change the current video layout, for example, to rearrange windows, you can do it by simply dragging one of the video windows in the constructor:



## 8.7. Audio channels

In TrueConf MCU, you can split video conference participants into audio streams, each of which can be assigned a speaker or listener role. This option significantly simplifies the organization of events where simultaneous translation into several languages is required.

To create a new channel, press the **Add** button. In the window that appears:

1. Enter the channel name.
2. Add attendees and speakers.
3. Click the **Create** button.

←
**New channel**

Channel name (12/128)

▼ Listeners

Add

<input type="checkbox"/> User display name and address	Action
<input type="checkbox"/> <b>James Wolf</b> sip:wolf@10.110.2.240	<input style="width: 20px; height: 20px; border: 1px solid red;" type="button" value="✖"/>

▼ Presenters

Add

<input type="checkbox"/> User display name and address	Action
<input type="checkbox"/> <b>Marketing Department</b> sip:room@10.110.2.240:5060	<input style="width: 20px; height: 20px; border: 1px solid red;" type="button" value="✖"/>

Cancel
Create

## 8.8. Design

By default, all conferences follow the layout style defined in **Administration → Skin styles**. To apply a different style for all layouts of a given conference, check the **Enable custom settings** box and customize everything as you see fit. Check the **Customization** section for more details on styles.

## 8.9. Additional

In the **Additional** section, you can configure the settings of **recording** and video/audio transmission for the selected conference:

- Enable/disable noise suppression and AGC
- Select audio and video codecs to be used
- Set the resolution, bitrate, and scaling mode
- Specify settings for using participants' avatars in the video layout.

By default, values from the global **call** and **video** settings are used.



Disabling some codecs can solve compatibility issues with some SIP endpoints. To learn more about this question, please contact our [technical support team](#).

### 8.9.1. Recording of the conference and presentation

To optimize conference recording, you can select the quality:

- Highest
- Optimal
- Minimum size.

You will also see the maximum duration of the video recording which will be estimated based on the available space in the [video storage](#):

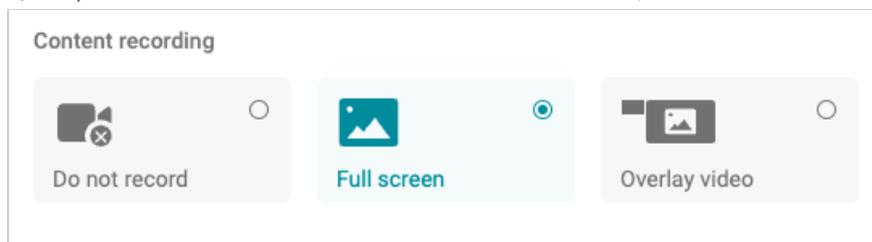


Conference recording

Recording quality  
Highest

Maximum recording length - 9 hours

To configure presentation (secondary stream) recording or disable it, select the corresponding option in the settings (by default, the presentation will be recorded in full-screen mode):



Content recording

Do not record

Full screen

Overlay video

## 9. Joining a conference

A conference held on TrueConf MCU can be joined via SIP and H.323 protocols.

One can view the links for joining the event by clicking the  button next to the name of the ongoing conference [on its page](#).

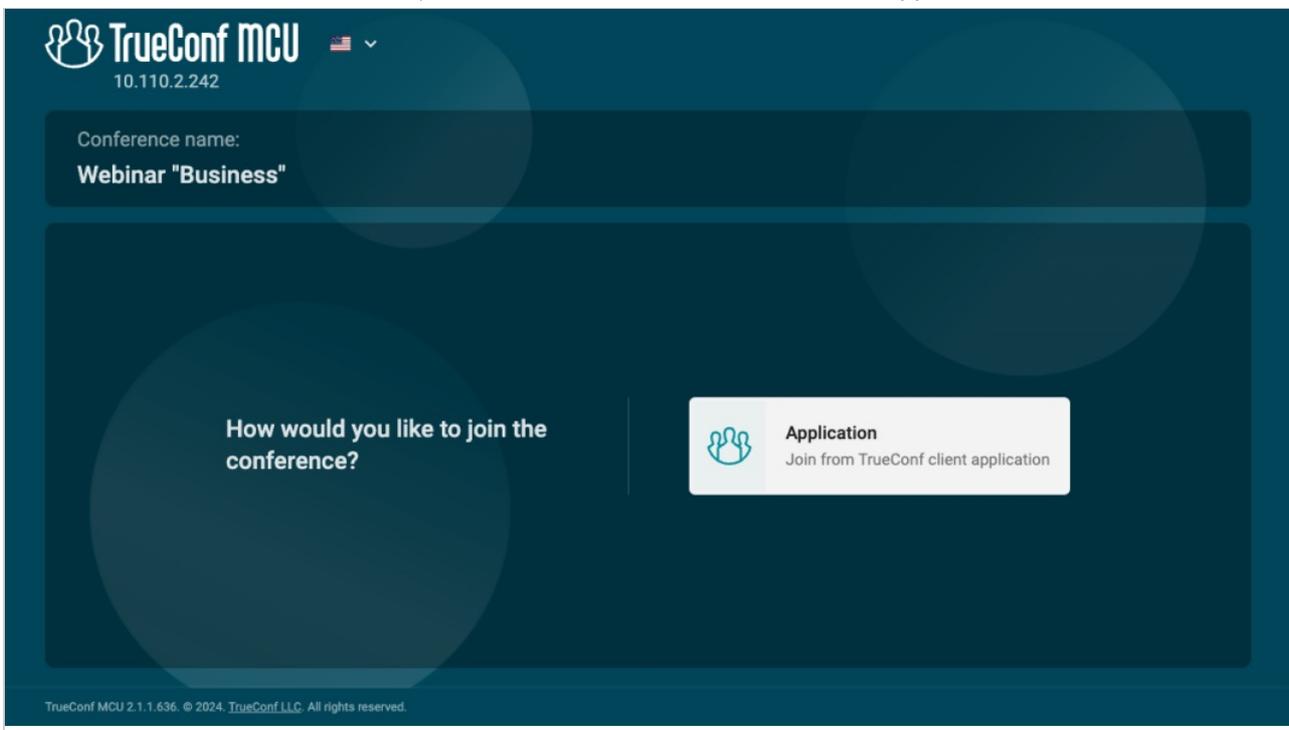
\* Check [here](#) for more details on the conference route, ID, and PIN.

### 9.1. For TrueConf users

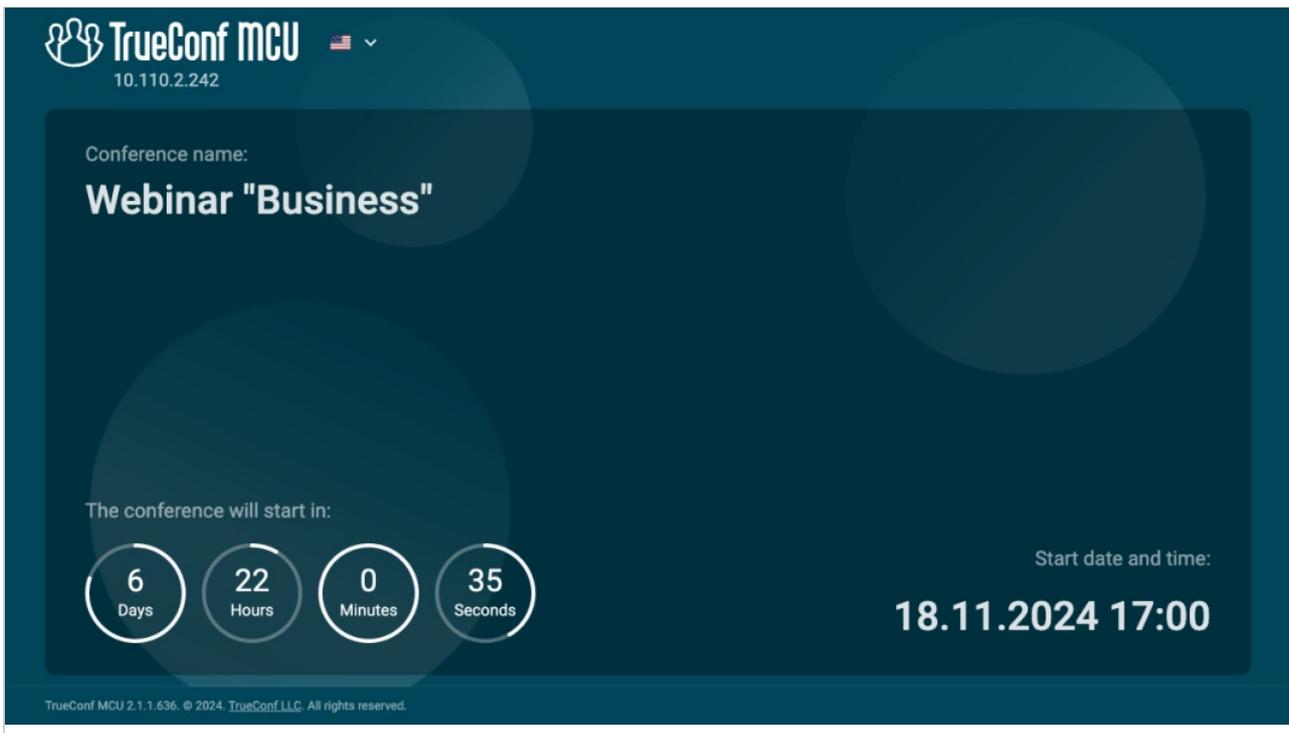
You can share the link to the conference connection page with the users of TrueConf client applications.

\* To do it, you should first create a conference and [check the box](#) **Allow access to conference via link** for this event.

If the conference has already started, by following the link, a participant will open the page with the event name and the button that enables users to join the conference from TrueConf client applications.



On the page of a scheduled conference, there will be a countdown timer indicating the time remaining before the start of the event.



If the link to the conference connection page is unavailable, TrueConf users can join the event with the help of the call string in the following format:

1. Via SIP protocol (if its use is allowed in the settings):

- #sip:<id>:<pin>@<server\_name> , where:
  - <server\_name> — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address
  - <id> — route or conference ID
  - <pin> — conference PIN (if available).
- #sip:@<server\_name>,<id># , where:
  - <server\_name> — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address
  - <id> — route or conference ID.
- #sip:@<server\_name> , where:
  - <server\_name> — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address. In this case, a user will be directed to the [waiting room](#) and will need to dial the ID with the keypad in order to join the conference.

2. Via H.323 protocol (if its use is enabled in the settings):

- #h323:<id>:<pin>@<server\_name> , where:
  - <server\_name> — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address
  - <id> — route or conference ID
  - <pin> — conference PIN (if available).
- #h323:@<server\_name>,<id># , where:
  - <server\_name> — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address
  - <ID> — the route or conference ID.
- #h323:@<server\_name> , where:
  - <server\_name> — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address. In this case, a user will be directed to the [waiting room](#) and will need to dial the ID with the keypad in order to join the conference.

## 9.2. For SIP/H.323 endpoints

To make a call to a conference on TrueConf MCU from a software or hardware endpoint via SIP or H.323 protocol, use one of the following formats:

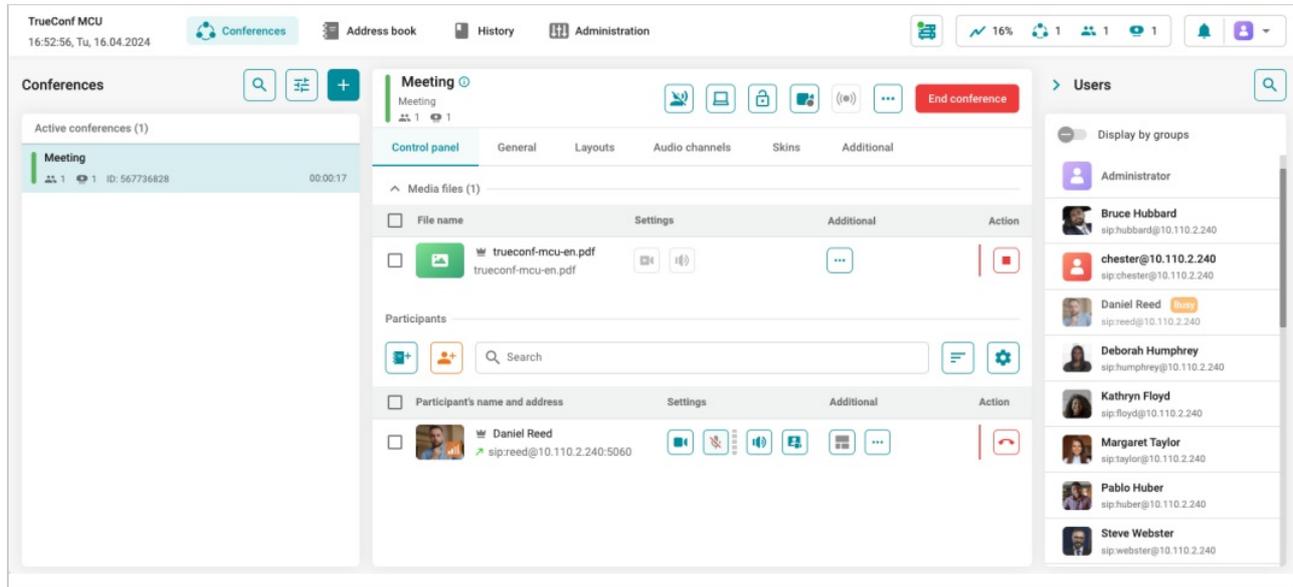
- `<id>:<pin>@<server_name>` , where:
  - `<server_name>` — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address
  - `<id>` — route (for endpoints allowing users to type characters) or conference ID
  - `<pin>` — conference PIN (if available).
- `<server_name>` , where:
  - `<server_name>` — the domain name of the PC where TrueConf MCU is installed, or its IPv4 address. In this case, a user will be directed to the [waiting room](#) and will need to dial the ID with the keypad in order to join the conference.



[Additional stream optimization](#) is used when joining a meeting from TrueConf Group endpoints.

## 10. Management of an ongoing conference

The list of ongoing conferences is displayed in the **Conferences** section in the left side of the window. When one of the conferences is selected, its control panel will open so that you could manage this event.



The UI and features on the page of an ongoing conference are almost identical to the settings available when a conference is created (except for the features listed below).

When an ongoing conference is selected, some options will become available above the tabs in the settings “header”:

-   — deny/allow connection to the conference. The administrator can manually add new participants to it;
-  — start [conference recording](#)
-  — start [conference broadcasting](#).

### 10.1. Control panel

An ongoing conference can be monitored and managed in the **Control panel** tab.

#### 10.1.1. Participants

The features available in this section are closely described in the [Creating a conference](#) section. Here, we will focus on the features that are available only during an active conference.

The list of participants consists of several groups: **media files**, **connected participants**, and **non-connected users**. Depending on the [selected mode](#), next to a user’s name, there may be the [crown](#) and [lecturer](#) buttons or the [active speaker](#) icon.

Media files (1)			
File name	Settings	Additional	Action
trueconf-mcu-en.pdf trueconf-mcu-en.pdf			
Participants			
<input type="text" value="Search"/>			
Participant's name and address	Settings	Additional	Action
<b>Bruce Hubbard</b> sip:hubbard@10.110.2.240:5060			
<b>Daniel Reed</b> sip:reed@10.110.2.240:5060			
Disconnected			
<b>Deborah Humphrey</b> sip:humphrey@10.110.2.240:5060		Session was ended by moderator Disconnected at <b>16:59 (21 seconds)</b>	
<b>Kathryn Floyd</b> sip:floyd@10.110.2.240:5060		Session was ended by moderator Disconnected at <b>16:59 (10 seconds)</b>	

By clicking the name of an active participant, you will open a pop-up that provides [information about this user's connection](#). You will be able to perform several actions on conference participants with the buttons from the list below:



— set up individual layout for this participant;



— re-invite user to the conference;



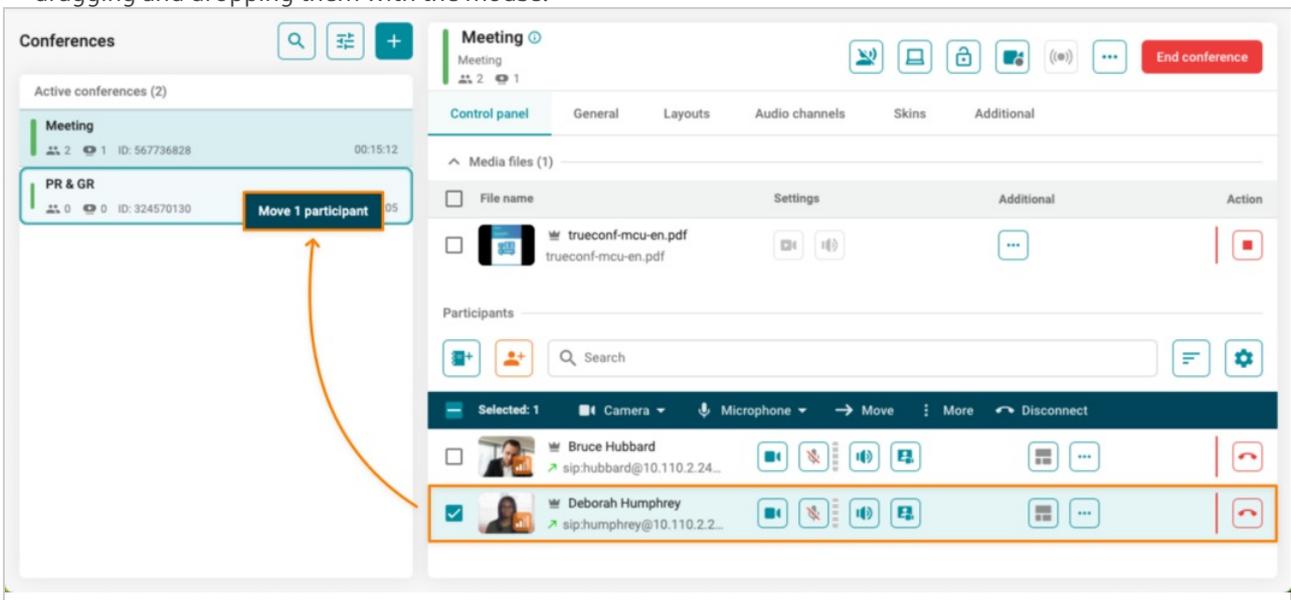
— Configure the display of additional information on the active conference screen:

- Audio and video codecs
- Video stream bitrate
- Users' avatars and their video previews



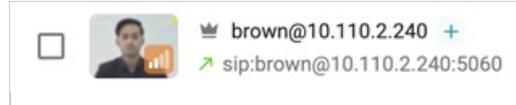
— additional features:

- **Move participant** helps move a user to another active conference. Besides, you can move users manually by dragging and dropping them with the mouse.

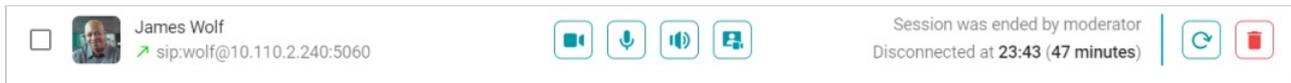


- **Volume control** (sound volume and microphone sensitivity)
- **Tone dialing (DTMF)** — sending DTMF commands to a participant's endpoint. In this pop-up, you can also preview video from a participant's camera.
- **Call details** (data about [incoming and outgoing video streams](#)).

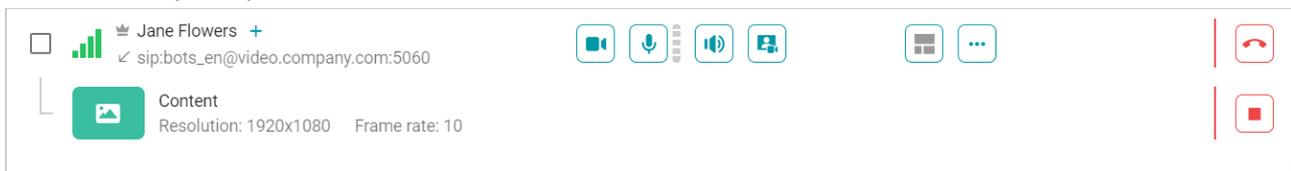
If a participant added to a conference is not yet saved in the address book, you can do so by clicking the **+** button next to the participant's name.



When participants either leave the meeting or are removed by the administrator, a corresponding status will be displayed next to their name:



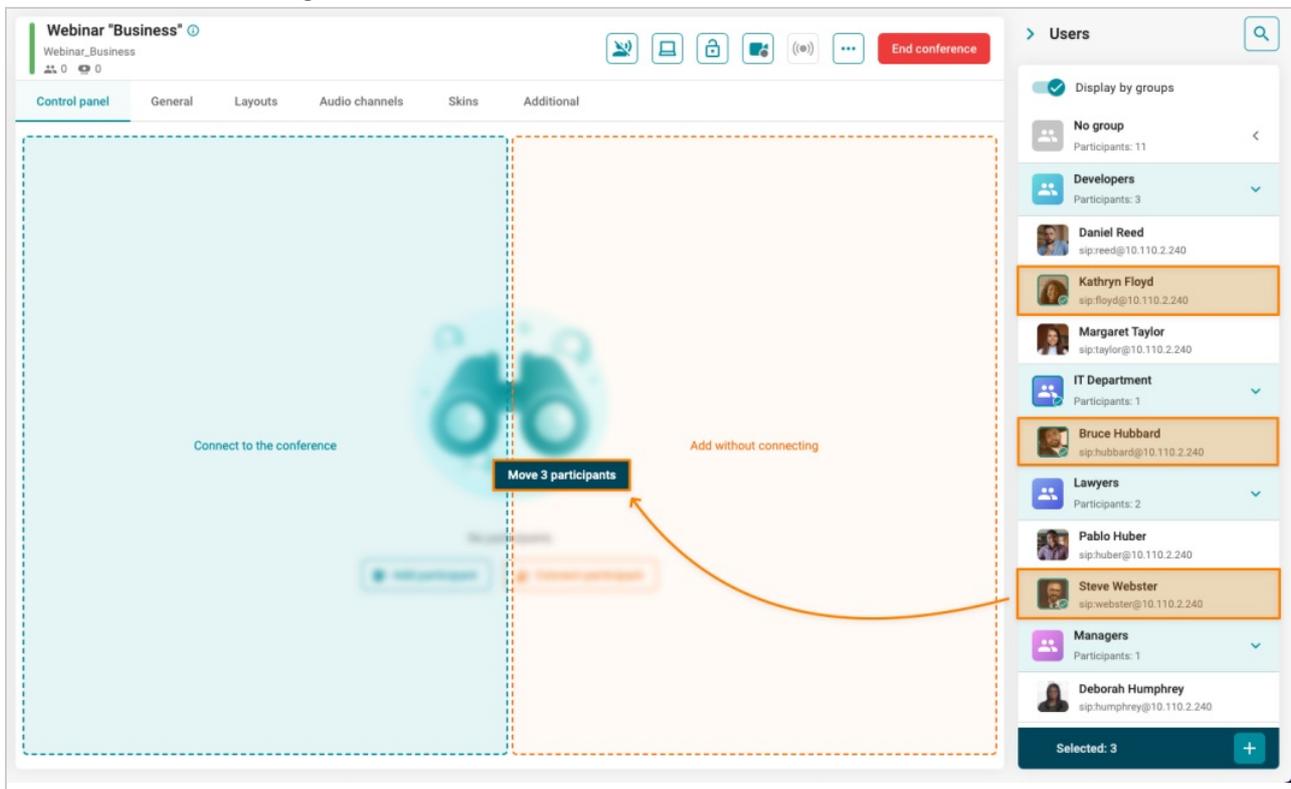
If a conference participant shares content, you will see the video stream info and the forced stop presentation icon under the participant's name.



### 10.1.2. Adding participants with drag and drop

To add a participant to an ongoing conference, you can drag the selected user from the list. Two options are available:

1. **Connect to the conference**
2. **Add without connecting.**



### 10.1.3. Redialing a participant with different parameters

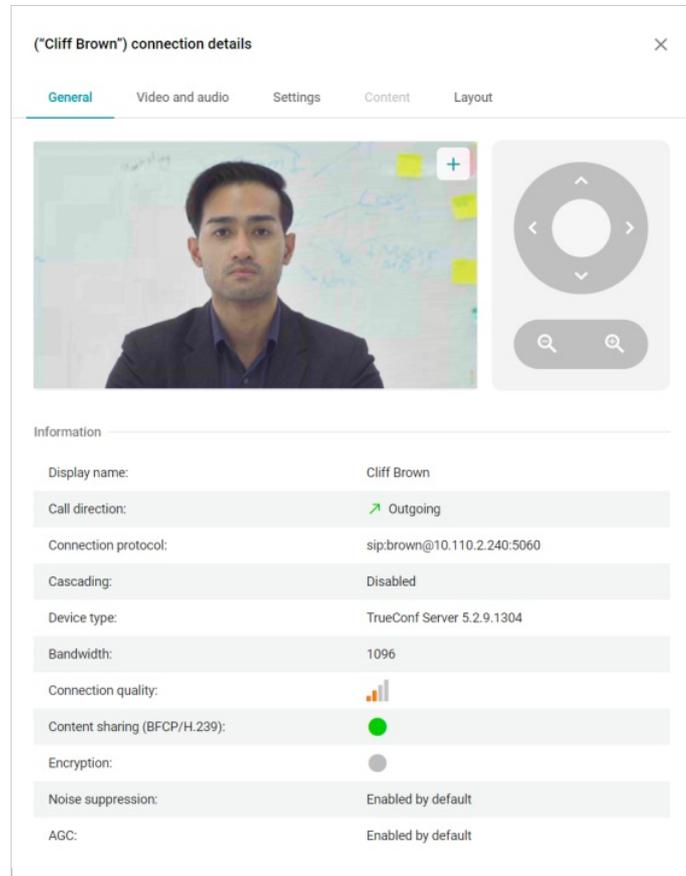
You can re-dial a participant by selectively changing some of the parameters: protocol, address, audio/video

settings, codec list, [cascading activation](#), etc.

To do it, just click on a user's name in the list of unconnected participants, change the required settings in the pop-up window, and click the **Connect** button.

## 10.2. Connection info

When selecting any participant connected to an active conference, you will see the connection info.



In the **General** section, you can see:

- participant's video stream preview
- remote camera control tools (available for compatible PTZ cameras)
- device information

In the **Video and audio** tab you can view information about the audio and video codecs in use.

The **Settings** tab enables the conference operator to:

- Change participant's display name
- Enable/disable the speakers and microphone and adjust their volume and sensitivity
- Enable/disable automatic gain control (AGC).

**Content** tab is used for preview the content shared by a participant.

The **Layout** tab offers a video layout preview window of a conference participant.

## 10.3. Content sharing

During a conference you can share media content:

- images — **.png, .jpg, .jpeg**
- documents — **.pdf**
- video files — **.mkv, .mp4.**

To add media files in the conference control window, click the  button. In the pop-up window, select the

stream that will be used for content sharing:

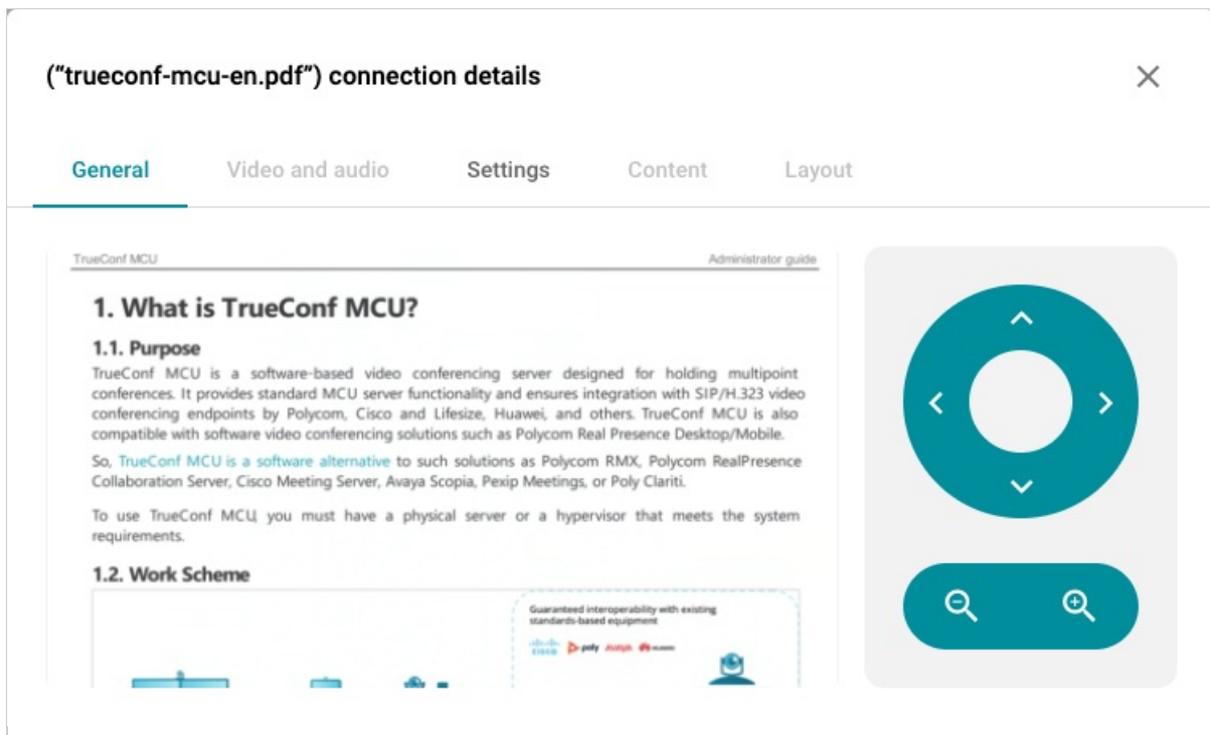
- **primary** — you can select multiple files which will be displayed in the common video layout
- **secondary** — only one file is available for streaming and it will be displayed in a separate window.

\*

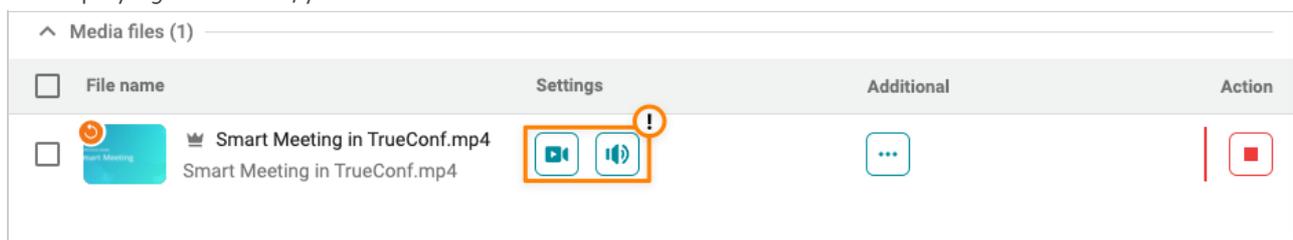
By default, replay is turned on when a video file is streamed into a conference. You can disable replay by clicking the  button which is next to the file name.

### 10.3.1. Features available during content sharing

When showing images or documents, you can open the [connection information window](#) where you can zoom the content in or out, select the area that will be displayed and flip through pages with the buttons for controlling a PTZ camera.

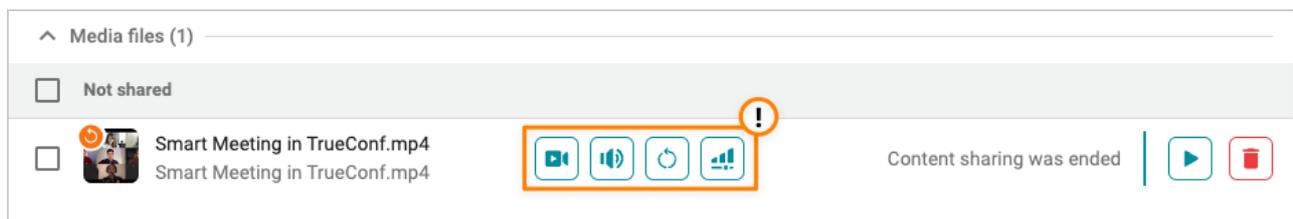


When playing a video file, you can disable its video and audio stream:



To adjust the volume level of the video file, go to the [connection information window](#) and select the **Settings** tab.

When video file streaming is stopped, you can change some of the settings, for example, before the file is re-used:

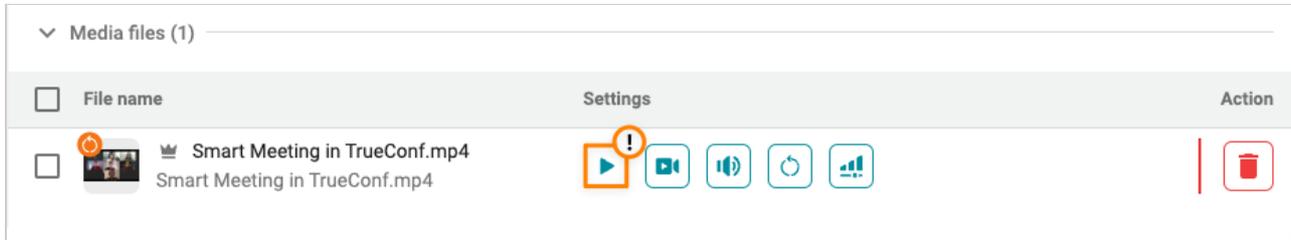


If needed, you can move the streamed file to a different active conference. To do it, click  in the row of the selected file and select **Move file**.

### 10.3.2. Scheduled content sharing

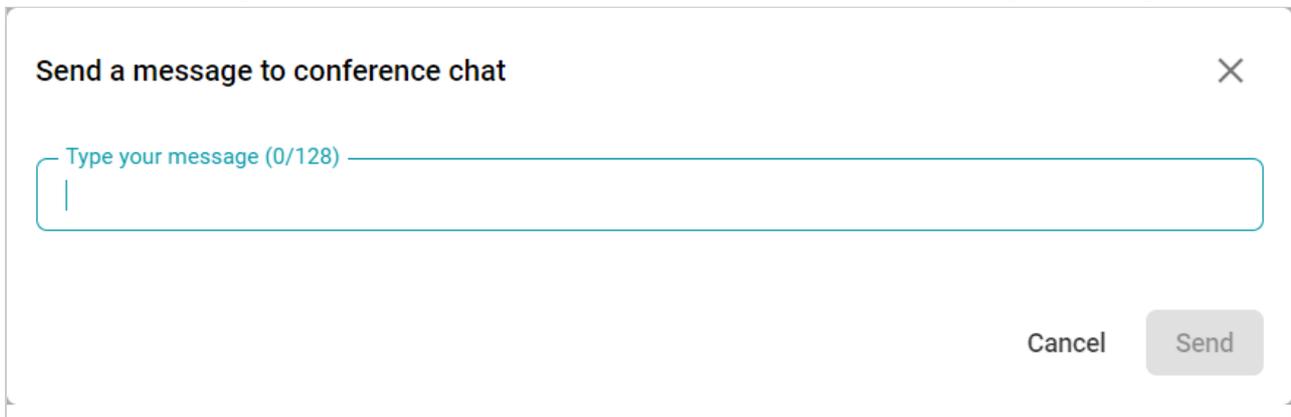
You can add the required files to a conference when [scheduling this event](#), in other words, before the event actually starts. This feature makes it possible to play the file at the start of the conference; so, the video will be used as a placeholder, while the speakers are getting ready for their presentation.

To configure file playback at the start of the conference, you may use the buttons  and . One can do it either when adding a file or in the conference control panel at any stage of event setup.



### 10.4. Sending a message

[Administrators and operators](#) can send a message to an ongoing conference. To do it, click the  button and select **Send a message to conference chat**. You will open the pop-up window for entering the message:



Enter your message and click the **Send** button.

## 11. Conference streaming

TrueConf MCU supports simultaneous streaming of multiple video layouts to popular services: [Wowza](#), [YouTube](#), [CDNvideo](#).

### Conference streaming

✕

You can stream this conference with multiple predefined layouts

For all participants (1)

For all participants

Video windows: -

● Start streaming

For selected participants (2)

For "James Wolf"

Video windows: -

● Start streaming

For "Kathryn Floyd"

Video windows: -

● Start streaming

For this purpose, you need to configure streaming separately for each video layout. The instruction below shows how to configure online streaming.

### 11.1. Setting up a stream on a third-party service

TrueConf MCU does not have built-in integration with streaming services. The general guide for all services is as follows:

1. Sign up on the service website.
2. Create a stream.
3. Configure stream settings (if necessary).
4. Copy the data needed for streaming to TrueConf MCU. Typically, this includes the server address and stream key.

#### 11.1.1. Wowza Streaming Cloud

1. Create a stream as shown on the [official website](#) (steps 1-2).
2. In the **Overview** tab, copy the information from the **Source Connection Information** block:
  - **Primary Server** — server address
  - **Stream Name** — stream key.
3. Paste this data into the corresponding fields in the [stream settings](#) for TrueConf MCU.
4. [Start streaming on Wowza](#) (step 4).
5. [Start streaming](#) the ongoing conference in TrueConf MCU.

#### 11.1.2. YouTube

1. Create and configure your stream. To learn how to do it, read [our article](#).
2. Copy:
  - **Stream URL** — server address
  - **stream key**.

3. Paste this information into the corresponding fields in [stream settings](#) and [start streaming](#) in TrueConf MCU.

### 11.1.3. CDNvideo

1. Create a stream as shown on the [official site](#) .
2. Copy the data from the fields:
  - **URL primary** — server address
  - **Streams** — stream key.
3. Paste this information into the corresponding fields in [stream settings](#) and [start streaming](#) in TrueConf MCU.

## 11.2. Stream configuration on the side of MCU

1. In the conference settings, go to **Layouts**.
2. Click  to switch to editing mode.
3. Open the **Streaming** tab.
4. Specify the following parameters (if necessary):
  - stream quality (up to 4K) and its bitrate (up to 8192 Kbps)
  - video encoding settings
  - stream server address
  - application name
  - stream name/key
  - username
  - password.

## 11.3. Launching a stream on the MCU side

In the list of active conferences, select the required one and start broadcasting using the  button. If the broadcast starts successfully, the status **Streaming** will be displayed.

## 12. General conference settings

### 12.1. Video

To configure general video settings, go to **Administration → Video**.

The screenshot shows a configuration panel for video settings. It contains six numbered items:

- Video storage capacity (GB)**: A dropdown menu with the value **25**.
- Primary video profile**: A dropdown menu with the value **Default**.
- Secondary video profile**: A dropdown menu with the value **Default**.
- Content bandwidth**: A dropdown menu with the value **Auto**.
- Participant rotation interval**: A text input field with the value **20**. Below it, a smaller text input field is labeled "Participant shuffle interval in Autofill layout windows (indicated in seconds)".
- Scaling mode**: A dropdown menu with the value **Don't crop video**.

Here you can:

- Set a storage size limit for video recordings.
- Select an encoding profile for the primary video stream:
  - **Default** — determined by the system
  - **Balanced** — multi-purpose mode for sharing different types of content (a trade-off alternative)
  - **Resolution** — the priority is given to the video stream resolution
  - **Motion** — optimized to display frequent movements
  - **Narrator** — prioritizes definition in videos featuring a narrator.
- Select the encoding profile for the additional video stream:
  - **Default** — determined by the system
  - **Balanced** — multi-purpose mode for sharing different types of content (a trade-off alternative)
  - **Slideshow** — emphasis on the clear display of slides
  - **Movies** — should be selected when streaming video files
  - **Documents** — focus on detailed rendering of text documents.
- Set the bandwidth for the second channel, i.e., the percentage that the additional video stream will take in the overall video stream.
- Set the time interval at which participants will be alternated (rotated) in the layout if a [video layout](#) with alternating participants is selected.
- Select the scaling mode for windows in the layout.

Below you can enable the display of avatars and previews, optimize your events by tracking network channel status (traffic prioritization, [QoS](#)), and by adjusting the maximum frame rate (FPS):

- Show participant placeholder
- Show previews (animated icons) in the list of participants in an ongoing conference
- Video traffic shaping
- Adaptive bitrate
- Forward error correction

The changes in maximum frame rate will take effect only after the system restart. All ongoing conferences will end automatically

Maximum frame rate (FPS)

60

## 12.2. Customization

You can use various color schemes to customize the video layout. To do it, go to **Administration → Skin styles:**

Video windows settings

- Highlight active speakers with a frame
- Increase distance between video windows

Layout skin styles

✓

Display name style

Participants' names

Always display

Font

Select Automatically

Size

Auto

Font color

✓

+

Text alignment

≡

≡

≡

Display name background

✓

+

It is also possible to customize a participants' display name in the video layout. For example, you can edit:

- Font type, its size, and color
- Text alignment

- Background color
- Display name position in the video window.

All the changes will be displayed in the preview window.



## 12.3. Conference settings

Go to **Administration** → **Conference settings** to set the rules for automatic ending of conferences and enable voice activity detection.

### 12.3.1. Automatic conference ending

You can configure automatic conference ending so that it is easier to monitor empty meetings with no participants in TrueConf MCU. The following rules are available:

1. If no one joined the conference after it started.
2. When all participants were disconnected from the meeting.
3. If only one participant remains in the conference.

**Automatic conference ending**

<b>1</b>	<input checked="" type="checkbox"/>	The conference starts, but no one joins it for	Interval <b>15 minutes</b> ▾
<b>2</b>	<input checked="" type="checkbox"/>	No participant in the conference for	Interval <b>5 minutes</b> ▾
<b>3</b>	<input checked="" type="checkbox"/>	Only one participant remains in the conference for	Interval <b>1 minute</b> ▾

After selecting required options, click the **Save** button.

You can redefine these settings for a specific conference when [creating this event](#).

### 12.3.2. Voice activity tracking

To enable [voice activity detection](#) for all conferences, check the corresponding box and click the **Save** button. The selected mode will be enabled for all conferences saved from the *default\** template. This setting applies to all newly created conferences and does not affect previously created ones.

### 13. History

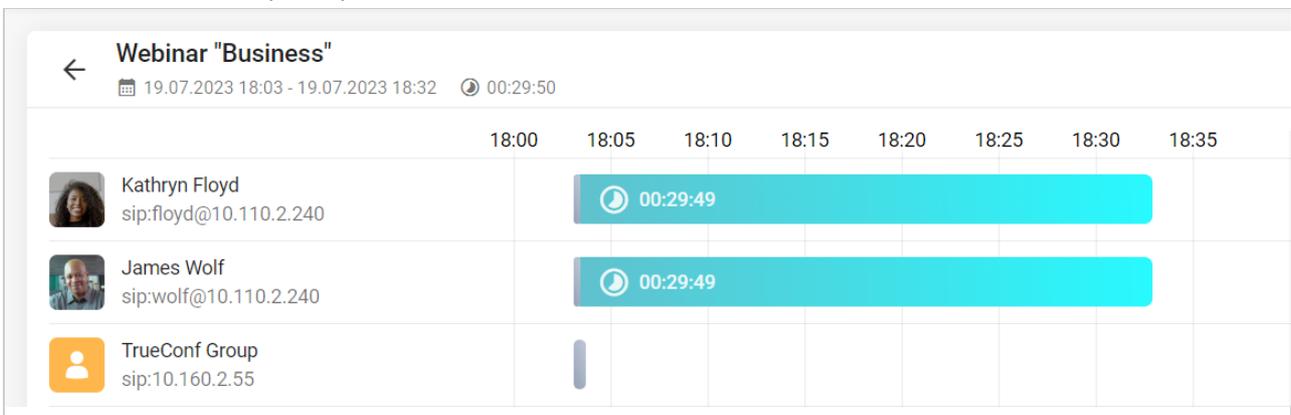
This section contains the entire history of conferences ever held on the server. Here, you can:

- Filter the list of events by date and start time
- Search events by their name
- Sort conferences by their end time
- Check who started and stopped a conference.

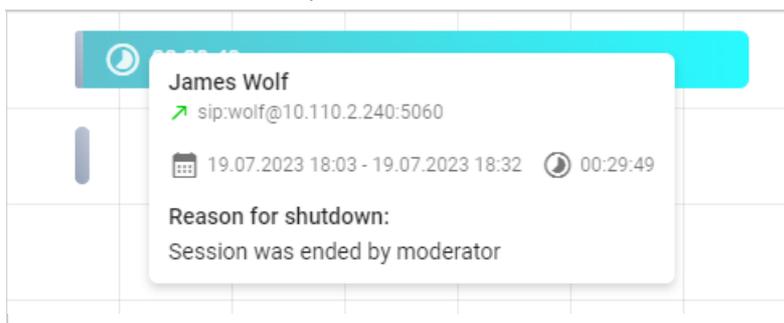
Name	Start time	End time	Duration	Participants	Start mode	End mode
Meeting	16.06.2023 16:21:44	16.06.2023 16:24:18	00:02:34	5	Administrator	Kathryn Floyd sip:floyd@10.110.2.240
~!@#%&*()*_	16.06.2023 16:20:28	16.06.2023 16:23:30	00:03:02	3	James Wolf sip:wolf@10.110.2.240	Administrator
Webinar "Business"	16.06.2023 16:20:04	16.06.2023 16:23:06	00:03:02	0	Daniel Reed sip:reed@10.110.2.240	James Wolf sip:wolf@10.110.2.240
1111	16.06.2023 16:18:23	16.06.2023 16:22:25	00:04:02	5	Kathryn Floyd sip:floyd@10.110.2.240	Administrator
Conf_353476089	16.06.2023 16:13:33	16.06.2023 16:13:35	00:00:02	0	Daniel Reed sip:reed@10.110.2.240	Daniel Reed sip:reed@10.110.2.240
Meeting	13.06.2023 16:01:00	15.06.2023 15:44:01	47:43:01	3	Administrator	System was restarted
Conf_105212116	15.06.2023 20:16:25	15.06.2023 20:17:17	00:00:52	2	Administrator	Administrator
Webinar "Business"	15.06.2023 19:32:37	15.06.2023 20:07:46	00:35:09	5	Administrator	Administrator

#### 13.1. Conference details

Select a conference in the history list if you want to view information about this meeting. You will open a pop-up window with the list of participants and the connection timeline of this event.



You can click on the chart for the selected participant and view detailed information about this person’s participation in the event, for example, duration of participation, connection time, and the reason why this person left the meeting, e.g., this user could leave on his/her own.



## 14. Call settings

To configure call settings, go to **Administration** → **Calls**.

### 14.1. SIP/H.323

The screenshot shows the configuration page for SIP/H.323. It features four main sections, each highlighted with an orange border and a numbered callout (1-4) in a circle on the right:

- 1:** A toggle switch labeled "Use SIP/H.323" is turned on.
- 2:** Two sections, "SIP Settings" and "H.323 settings", both show a status of "Address unspecified".
- 3:** The "Call sequence" dropdown menu is set to "Address book first".
- 4:** The "Protocol priority" dropdown menu is set to "SIP -> H.323".

1. You can select the protocol used for making calls to the video conferencing server: SIP/H.323, SIP only, or H.323.
2. Set parameters and view the status of protocols.
3. Specify the call priority:
  - **Address book first**
  - **Gatekeeper first**
4. Set up the order of using SIP/H.323 protocols when you call users (if you specified [both protocols in the address book](#)).

#### 14.1.1. SIP gateway settings

To set up a SIP gateway, please complete the following steps:

1. In the **Administration** → **Calls** section, click **SIP Settings**.
2. Check the **Registration** box in a pop-up window.
3. To make sure that SIP calls are always routed through the registration server, check the corresponding box.
4. If the **Block spam calls** box is checked, incoming SIP calls will be analyzed. TrueConf MCU will automatically decline calls in case of incorrect connection requests.
5. Select one of the following options in the **SIP encryption** list needed for configuring stream encryption via SRTP:
  - **No encryption** – encryption is not used.
  - **Encrypt when possible** – encryption is preferred, but not required. If encryption is not used on the client side, the participant will still be able to join the conference.
  - **Encrypt all** – TrueConf MCU will not establish connection with the endpoints that do not support SRTP.
6. Specify the IP address of the gateway in the **Server address** field.
7. Enter the authorization data into the **Username** and **Password** fields.
8. Select **Transport protocol** and **Transport protocol**.
9. Close the window and save your changes.

If the registration is successful, **Registered** status will be displayed in the **State:** field.

### 14.1.2. H.323 gateway settings

To set up an H.323 gateway, complete the following steps:

1. In the **Administration** → **Calls** section, click **H.323 settings**.
2. Check the **Use gatekeeper** box in a pop-up window.
3. To make sure that H.323 calls are always routed through the gatekeeper, check the corresponding box.
4. Select **H.235 encryption**:
  - **No encryption** – encryption is not used.
  - **Encrypt when possible** – encryption is preferred, but not required. If encryption is not used on the client side, the participant will still be able to join the conference.
  - **Encrypt all** – TrueConf MCU will not establish connection with the endpoints that do not support H.235.
5. Enter the **H.323 Alias** and **H.323 Extension** into the corresponding fields.
6. Specify the **Gatekeeper address**.
7. Close the window and save your changes.

If the registration is successful, **Registered** status will be displayed in the **State:** field.

## 14.2. Server

**Server**

Video conferencing server name

TrueConf MCU 1

Language

English 2

Far-end camera control (H.281) 3

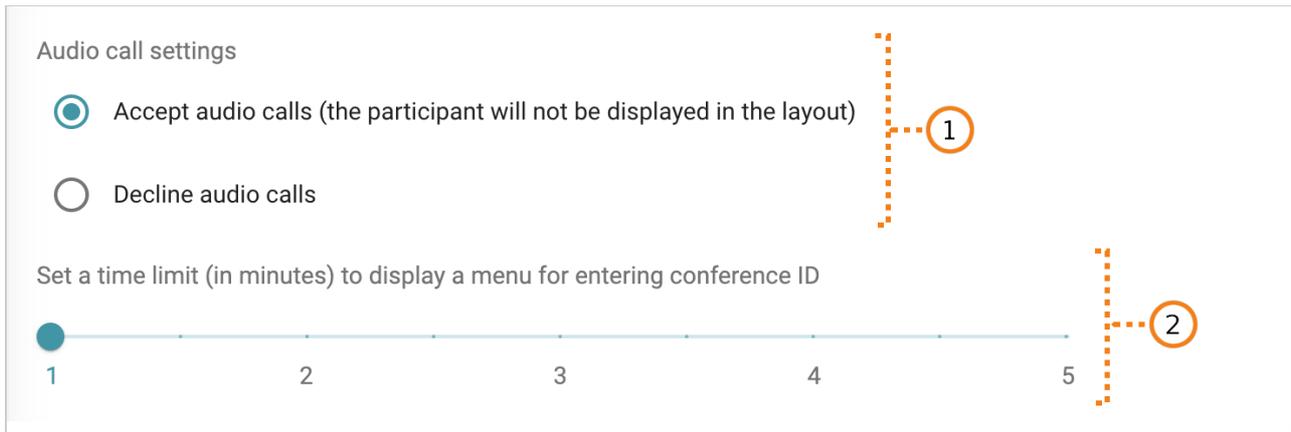
Enable noise cancellation 4

Enable AGC 5

Do not call scheduled participants when the conference is started 6

1. The server name that will be displayed in the top left corner of the control panel and on the screens of conference participants.
2. Select the language of the dialogue window where participants have to enter the conference ID when they join a meeting by making a call to TrueConf MCU by its IP or DNS name. This parameter does not affect the UI language of the control panel.
3. Enable remote control of connected participants' cameras (if this feature is supported by users' devices).
4. Enable noise suppression for all conferences.
5. Enable automatic gain control (AGC) for all conferences.
6. Disable automatic dialing of participants at the start of conferences.

### 14.3. Management of audio calls and setting the time period available for entering the conference ID



1. TrueConf MCU supports management of audio calls. For example, you can accept them without displaying the caller in the video layout or decline them altogether.
2. Indicating the time to display the screen for entering the conference ID, after which the connection with an endpoint will reset

## 15. Network configuration

In the **Administration** → **Network** section, you can:

1. [Perform network diagnostics](#)
2. [Capture traffic](#)
3. [Set the range of TCP/IP ports](#)
4. [Set RTP packet size and QoS parameters](#)
5. [Configure NAT traversal](#)
6. [Configure the outgoing mail server](#)
7. [Configure network interfaces.](#)

### 15.1. Network diagnostics

TrueConf MCU supports network diagnostics that can be performed with the commands: **ping** and **tracert**. To do it, go to **Administration** → **Network** → **Diagnostics**.

#### 15.1.1. With ping

You can check the availability of network resources with the **ping** command. To execute it, enter the IP address or DNS name of the resource in the input field with the text prompt and click **Validate**. The test result will be displayed in the output field (this information will not be editable).

**Diagnostics**    TCP / IP ports    NAT traversal    Network interfaces

---

**Ping**

Enter the address

 **Validate**

Result

```
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=108 time=16.9 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=108 time=16.8 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=108 time=16.7 ms

--- 8.8.8.8 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
```



If you enter an incorrect address in the input field, the output field will display an error from the server.

#### 15.1.2. With tracert

To determine the route of data packets in TCP/IP networks and the path length, you can use the **tracert** command. To do it, follow the instructions described in the [previous section](#).

**Traceroute**

Введите адрес

google.com

**Проверить**

---

**Результат**

```

10 172.253.69.146 (172.253.69.146) 1.499 ms 172.253.69.170 (172.253.69.170) 1.204
ms 108.170.250.33 (108.170.250.33) 2.523 ms
11 108.170.250.66 (108.170.250.66) 1.888 ms 108.170.250.34 (108.170.250.34) 2.213
ms 108.170.250.99 (108.170.250.99) 2.164 ms
12 209.85.255.136 (209.85.255.136) 19.147 ms 142.251.238.82 (142.251.238.82)
19.556 ms 142.250.238.214 (142.250.238.214) 19.433 ms
13 142.251.238.66 (142.251.238.66) 20.732 ms 72.14.232.86 (72.14.232.86) 18.724

```

### 15.1.3. Traffic capture

TrueConf MCU is also equipped with a network analysis tool. It enables you to capture all incoming and outgoing data packets and save the data in the **.pcap** format for further analysis. To start data collection, select the required network interface from the dropdown list and click the **Capture** button. To capture traffic from all interfaces, select **Capture all**. During traffic capture, a table will be displayed below listing the files, capture time, and the size of files.

**Traffic capture**

Network interface

Capture all

**Capture**

<input type="checkbox"/> Network interface	Date and time ^	Size	Action
<input type="checkbox"/> ens192	2023-06-22 17:59:03	1.51 MB	<input type="button" value="Save"/> <input type="button" value="Delete"/>

Click the  button to save the file to your device, or the  button to delete it from the server.

## 15.2. TCP/IP ports

### 15.2.1. Port range configuration

To configure the protocols for the transmission of audio and video streams, go to **Administration → Network → TCP/IP ports**. Here, you can set the port ranges for the following protocols:

- BFCP
- H.245
- RTP.

### 15.2.2. MTU and QoS

Here you can also specify the size of RTP packets or configure priorities for data stream transmission according to the [DSCP](#) protocol:

**Maximum size of RTP packets**

RTP packet size

1280

from 1280 to 1500 (bytes)

---

**Quality of service parameters**

IP precedence

DSCP audio

46

DSCP video

34

DSCP other

0

- **DSCP audio** is for audio traffic
- **DSCP video** is for video traffic
- **DSCP other** is for other traffic, e.g. remote PTZ camera control.



The higher the number, the higher priority will be given to the selected type of transmitted packets.

## 15.3. NAT Traversal

To configure NAT, go to **Administration** → **Network** → **NAT traversal**.

### 15.3.1. Public IP Address

If your server is behind NAT, you can set a public IPv4 address (WAN) to enable remote access to the control panel.

### 15.3.2. Use of ICE

When SIP clients are behind NAT or a firewall, there are usually issues with establishing direct connections for audio and video transmission. ICE solves this problem by allowing clients to find available communication paths and select the ones that are most effective for establishing connections.

To enable this protocol, activate the **Use ICE** switcher.

### 15.3.3. Use of H.460.1

**H.460.1** is a standard that facilitates data transmission (audio, video, etc.) by providing a solution for establishing direct connection between H.323 clients located behind NAT or a firewall.

**H.460.18** defines the protocols and mechanisms like RTP and RTCP that are used for establishing direct media sessions via NAT devices so that clients could exchange media data.

**H.460.19** uses protocols such as HTTP and HTTPS for data transmission between clients. It helps to bypass firewall restrictions and allows clients to exchange information and establish connection to ensure reliable and secure communication.

To use these features, check the boxes **H.460.18** and **H.460.19** in **Administration** → **Network** → **NAT traversal**.



To ensure the correct work of H.460.1, one has to enable registration on the gatekeeper in the [server settings](#).

### 15.3.4. TURN Settings

The TURN server works as a traffic relay between devices when a direct connection cannot be established due to NAT or other network restrictions. To traverse NAT with the help of the TURN server, you need to specify hostname, login, and password.

## 15.4. SMTP

To [send invitations](#) to a [scheduled conference](#), you need to set up integration with the outgoing mail server. To do it, go to **Administration** → **Network** → **SMTP**, enter the required data, and click the **Test and save connection** button.

## 15.5. Network interfaces

Go to the **Administration** → **Network** → **Network interfaces** section to check the system name, MAC address of the network card (interface) or to select the IP addressing mode (static or DHCP). If static mode is selected, you will also need to set:

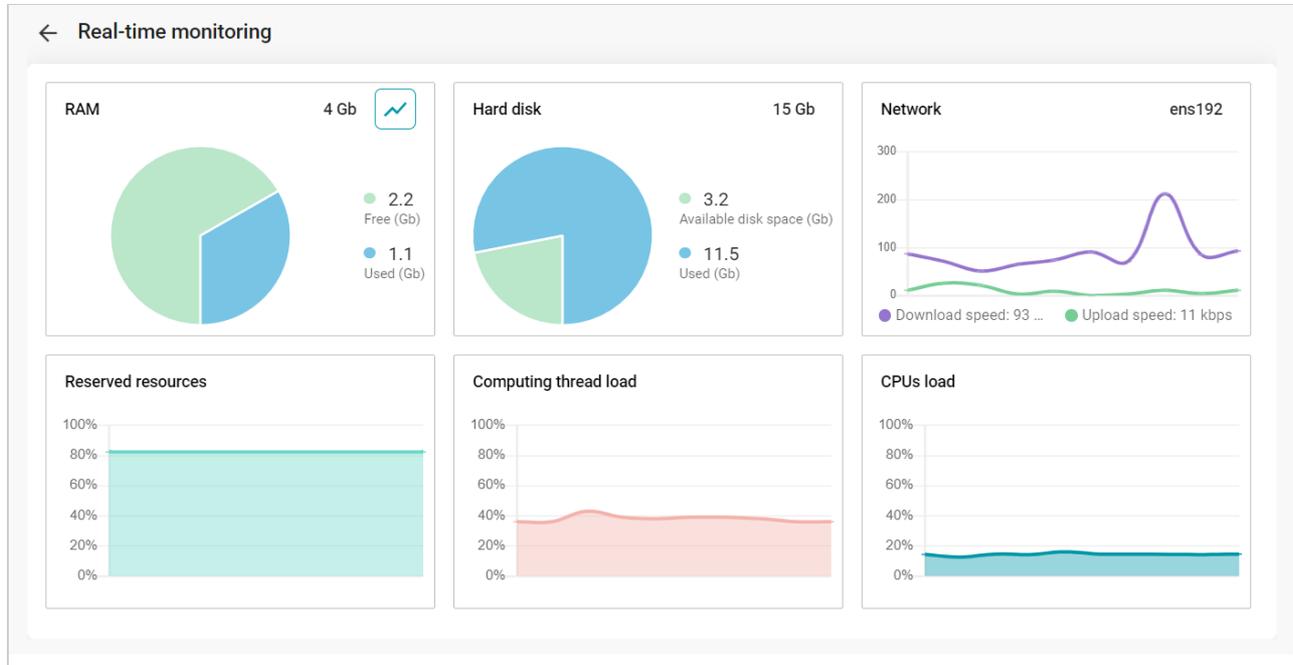
- IP address
- Subnet mask
- Gateway
- Primary DNS server
- Secondary DNS server.

## 16. Additional MCU settings

In the **Administration** section, you can configure other parameters of the TrueConf MCU server: it is possible to create users and set access rights, view performance data, manage backups, etc.

### 16.1. Real-time monitoring

To view data about server resource usage and check system info, go to the **Real-time monitoring** section:



The **Reserved resources** chart displays the overall usage of computer resources, considering memory operations and multiprocessor interaction. The amount of reserved resources is a dynamically changing parameter that takes into account all tasks currently being executed: transcoding, mixing, recording, streaming, video layouts, etc. For more details, read the [relevant section](#). The information will be displayed on this chart after [calibration](#).

### 16.2. Media files

#### 16.2.1. Uploaded files

In this menu, one can view images, videos, and PDF files uploaded on the server, for example, here, you can set up content that will later be shared during a conference.

The screenshot shows the 'Media files' interface with the following components:

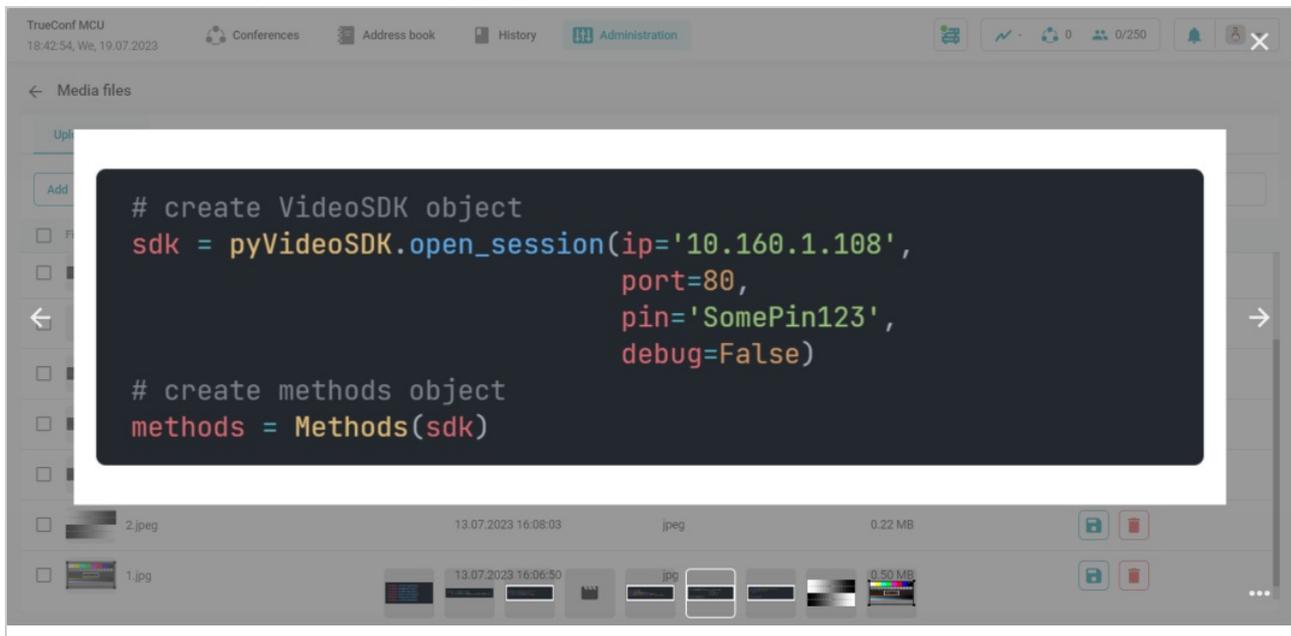
- 1:** 'Add' button to upload a new file.
- 2:** Search bar to search by uploaded files.
- 3:** A table listing uploaded files.
- 4:** Action icons (lock, delete) for a selected file.
- 5:** Another set of action icons for a selected file.

File name	Date and time	Type	Size	Actions
<input type="checkbox"/> slideshow.png	17.06.2023 00:01:38	png	0.04 MB	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> NDI slide.png	17.06.2023 00:01:38	png	0.02 MB	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> login.png	17.06.2023 00:01:37	png	0.04 MB	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> Jellyfish_720_10s_30MB.mp4	13.07.2023 16:06:43	mp4	29.78 MB	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> import lib.png	17.06.2023 00:01:37	png	0.04 MB	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> create object.png	17.06.2023 00:01:38	png	0.05 MB	<input type="checkbox"/> <input type="checkbox"/>
<input type="checkbox"/> addrbook.png	17.06.2023 00:01:37	png	0.04 MB	<input type="checkbox"/> <input type="checkbox"/>

1. Upload a new file
2. Search by uploaded files

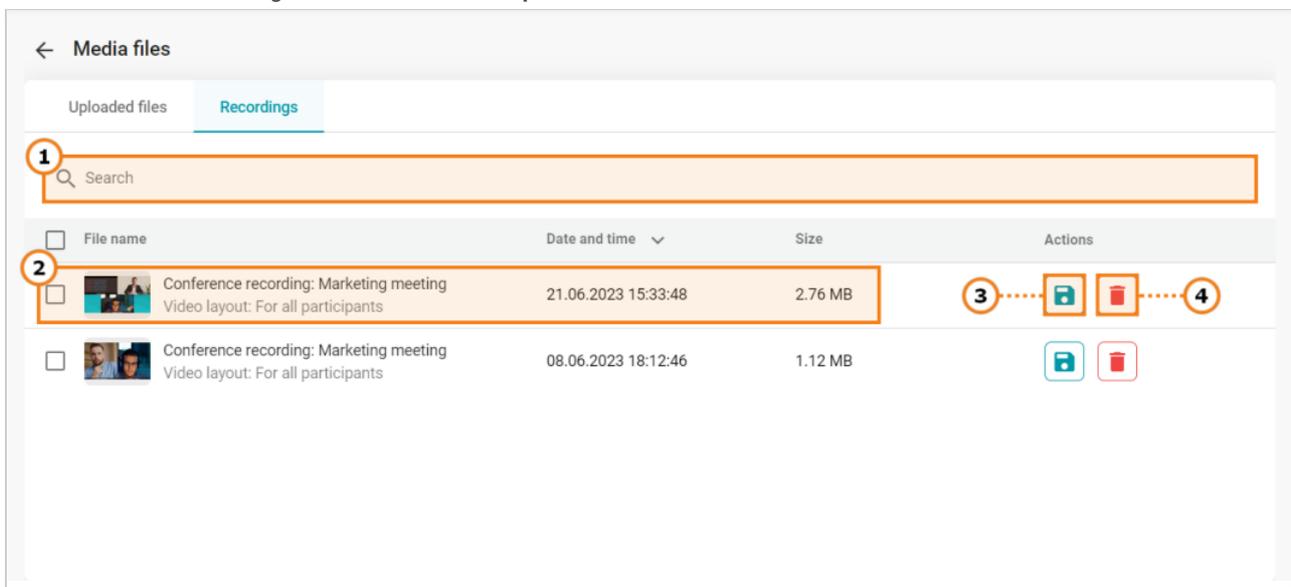
3. Check file info: title, upload date, format, and size
4. Download a file
5. Delete file

Uploaded files can be previewed in the pop-up window:



## 16.2.2. Recordings

All conference recordings are saved in the **.mp4** format.



1. Search for recorded conferences
2. Check file info: title, upload date, format, and size
3. Download a recording
4. Delete a recording



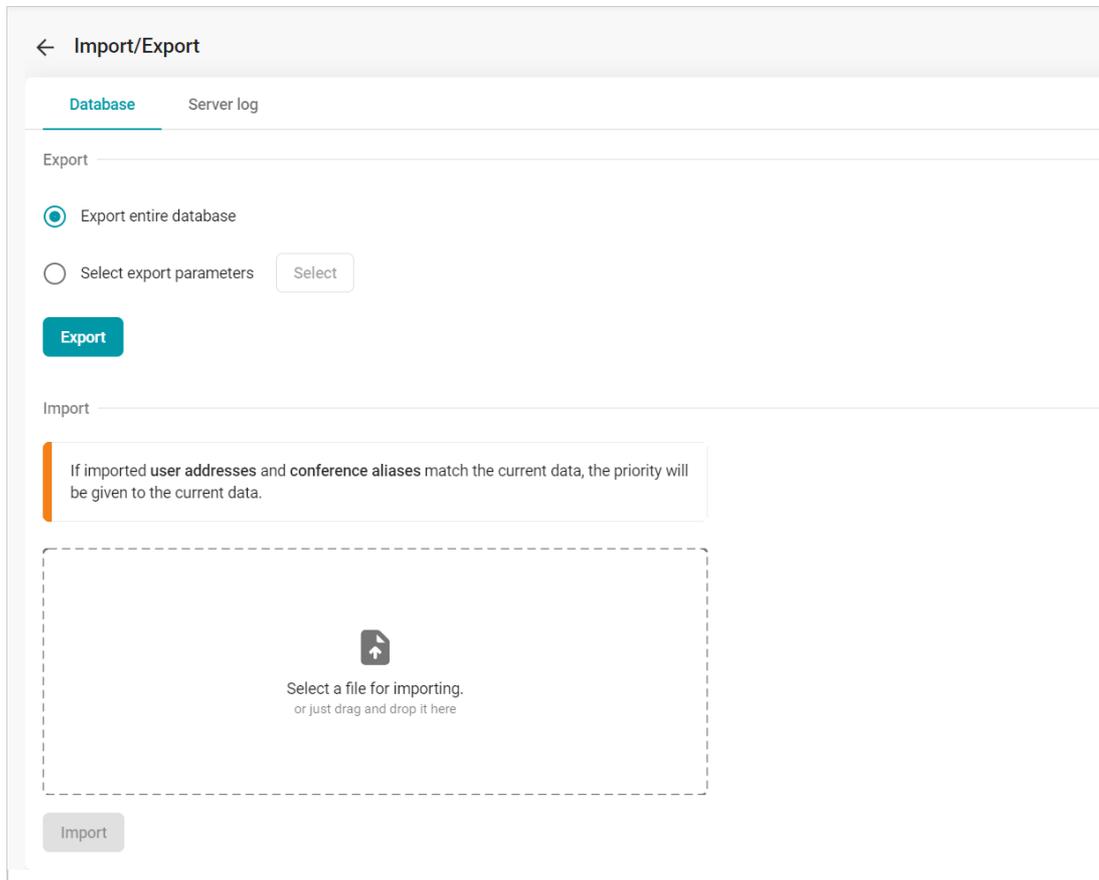
When you click on a recording, a preview window will open (as in the case with [uploaded media files](#)).

## 16.3. Power

In the Power tab, you can restart TrueConf MCU, reboot the operating system, or shut down the hardware server.

## 16.4. Import/Export

To [create](#) a backup, [restore](#) data, or [save logs](#), go to **Administration → Import/Export**.



### 16.4.1. Database

#### 16.4.1.1. Export

To load all data, check **Export entire database** and click the **Export** button.

If you need to export only a subset of data, check the **Select export parameters** box; select the required type of data in the pop-up window, click **Save**, and then click the **Export** button to confirm your choice.

#### 16.4.1.2. Import



If imported user addresses and conference aliases match the current data, priority will be given to the current data.

To restore data from a backup copy saved in the **.7z** format, select the file to import and click the **Import** button.

### 16.4.2. Server logs

Here you can export the logs that may be needed by [technical support](#).

## 16.5. Return to default settings

To delete all data, go to the menu **Administration → Data deletion** and click **Set to default**.

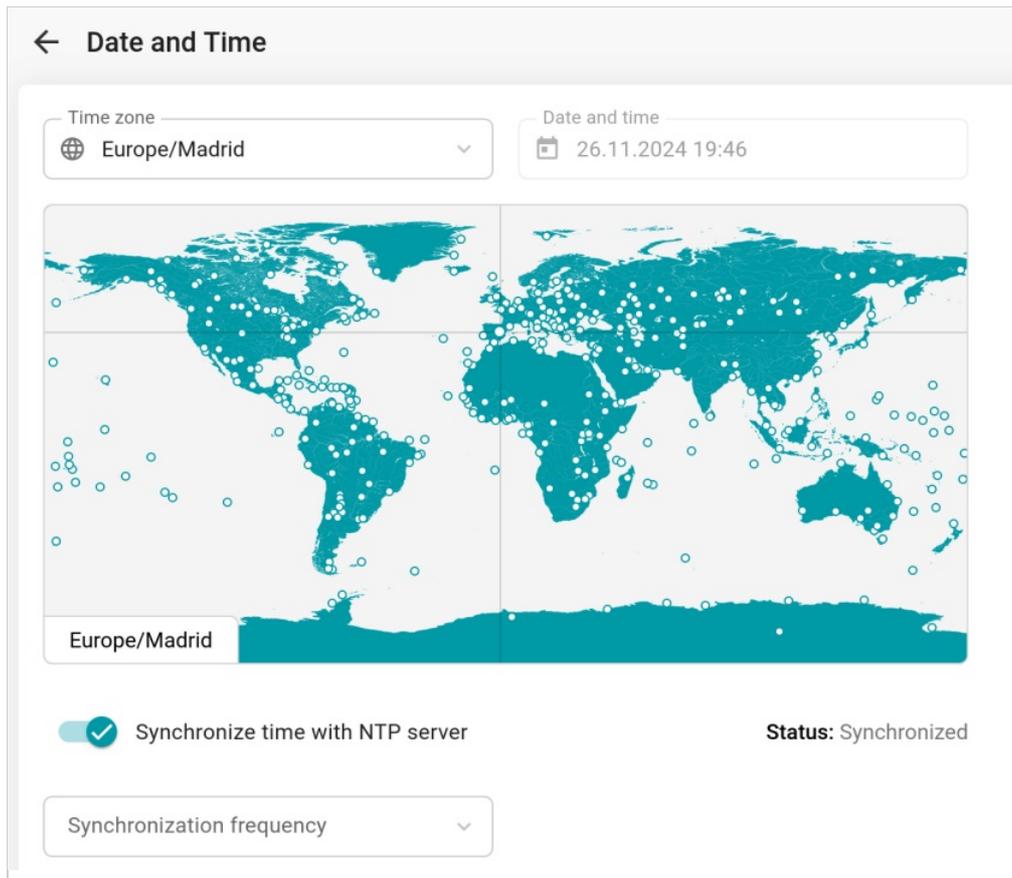


Return to default settings will result in the complete loss of all data, conferences, users, and information on the server. Besides, all ongoing conferences will end.

## 16.6. Date and time

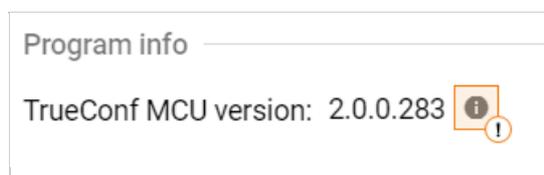
To configure time settings, go to **Administration** → **Date and Time**. Here you can:

- manually set the date and time
- select a time zone from the list or on the map
- synchronize time with an NTP server: it is possible to specify the synchronization frequency and select multiple NTP servers.

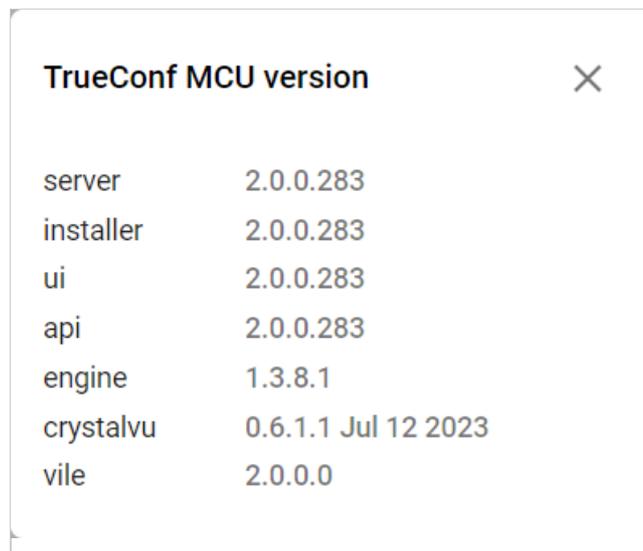


## 16.7. About the program

You can check the version of your TrueConf MCU server in the **About** menu. To get detailed information about the version of installed components, click the  button which is opposite to the TrueConf MCU version:



The following window with detailed information will open:

A dialog box titled "TrueConf MCU version" with a close button (X) in the top right corner. It contains a table of version information for various components.

TrueConf MCU version	
server	2.0.0.283
installer	2.0.0.283
ui	2.0.0.283
api	2.0.0.283
engine	1.3.8.1
crystalvu	0.6.1.1 Jul 12 2023
vile	2.0.0.0

Here you can update TrueConf MCU. Check the [corresponding section](#) to find detailed instructions for updating the software.

## 17. Access management

Initially, on the server there is only one account ( **admin**) which is given the **Administrator** role. You can change its username and password in the [address book](#). This account cannot be deleted.

### 17.1. Roles

TrueConf MCU supports a multi-user administration system:

- **Administrator** — by default, has all the rights to manage the server
- **Operator** — schedules and holds conferences, creates user accounts. An operator does not have access to server settings and user roles.

To configure roles, go to **Administration → Roles**. When you select a role, you will see a card with the main information about this role:

- Role name
- Role description
- The list of users assigned to this role.

← Roles (2)

**Administrator** 👤 1  
Given all the rights by default

**Operator** 👤 1  
Schedules and holds conferences, creates user accounts. Unable to access server settings and user roles.

**Administrator**  
Given all the rights by default

Role name (13/128)  
Administrator

Role description (31/300)  
Given all the rights by default

∨ Users

Add 🔍 Search

👤 Administrator ×

#### 17.1.1. Adding a new user

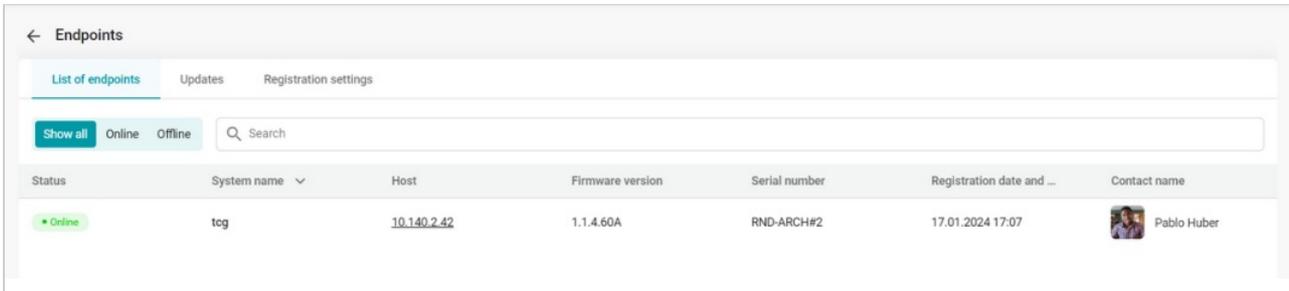
**i** To assign a role to a user, add this person to the [address book](#).

To add a user:

1. Select a role.
2. Click the **Add** button.
3. Select users in the list and click the **Add** button.

## 18. TrueConf Group management

With TrueConf MCU you can manage TrueConf Group endpoints, monitor their statuses and licenses, update firmware, and configurations. To do it, go to **Administration → Endpoint** in the control panel.



### 18.1. Synchronization settings

To set up synchronization, you need to provide the login and password needed for authentication on the endpoint. To do it, go to **Administration → Endpoint → Registration settings** and enter the required credentials.

Next, log in to TrueConf MCU by using [TrueConf Group](#).

### 18.2. Linking a contact to an endpoint

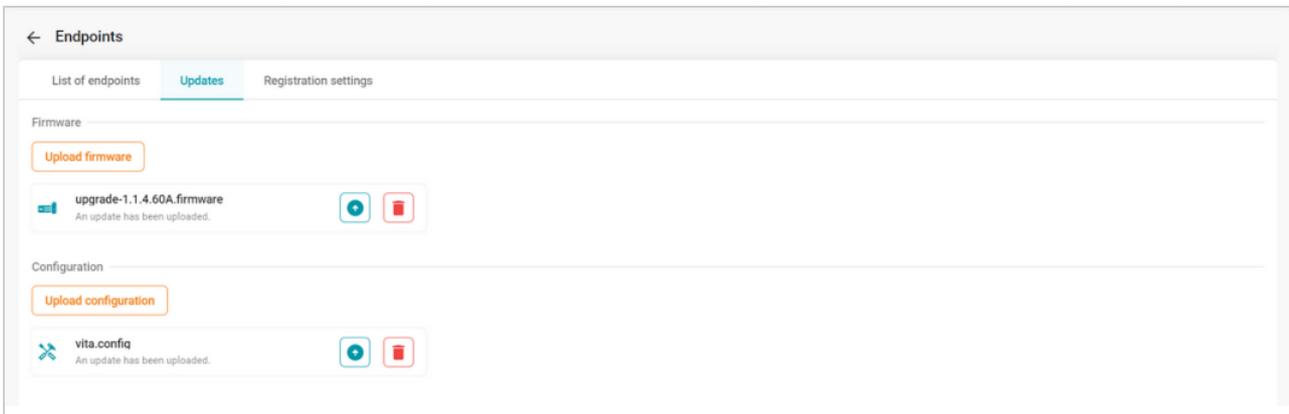
After [synchronization](#), the contact whose name is automatically taken from the [endpoint settings](#) will be displayed in the address book.

You can link a different contact to the endpoint. To do it:

1. Select an endpoint from the list.
2. Click the  button which is next to the **Contact name** item.
3. Select a contact and save the settings in the pop-up window.

### 18.3. Update

TrueConf MCU makes it possible to update the firmware and configuration of TrueConf Group remotely.

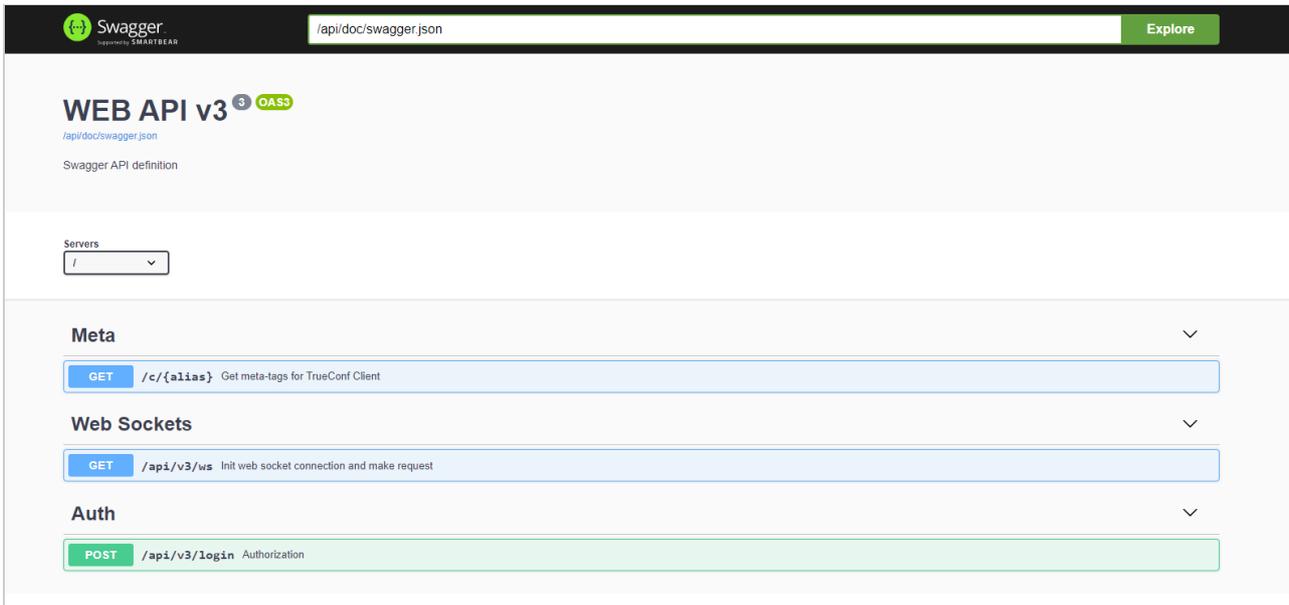


For this purpose, go to **Administration → Endpoint → Updates**, upload the firmware or configuration file, click the  button and update either all or selected endpoints.

The update may take some time, during which the web interface of each endpoint will be unavailable and conferences previously started on the endpoints will be ended. After the firmware update, the endpoints will automatically reboot.

## 19. API

TrueConf MCU supports the OAS3 specification [OpenAPI version 3](#) (previously known as the Swagger Specification).



### 19.1. Features

With the API you can:

- manage:
  - the address book (create, edit users and groups)
  - a conference (layouts, audio channels, participants, etc.)
- receive resource usage data
- update the server
- reboot the OS, shut down or restart the server
- configure time and NTP
- backup, export, and import data (also available in TrueConf MCU version 1.5 or above)
- diagnose network problems
- register a license
- schedule a conference
- and much more.

### 19.2. Access to API

The REST API documentation is available on the machine where TrueConf MCU is installed. To access it, go to the address `{IP_or_FQDN}/api/doc/`, where `{IP_or_FQDN}` is the IP or domain name (FQDN) of the machine with the MCU, for example, `10.110.2.244/api/doc/`.

### 19.3. API help

If you have any questions regarding the product or API, you can contact us in our [WhatsApp community](#).