

TrueConf Al Server

Usage Guide



	Table of Contents
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1. Why AI in video conferencing?	3
1.1. Main Features	3
1.2. Operating Principle	4
2. Start and Registration	5
2.1. Where to get the AI server?	5
2.2. Accessing the control panel	7
2.3. Registration	7
2.3.1. Online Registration	7
2.3.2. Offline registration	8
2.4. View license information	10
3. Al Server Monitoring	12
3.1. Adjusting the graph view	12
4. Event Log (Logs)	13
4.1. Licensing and Launching the Al Server	13
4.2. Accounts	14
4.3. Integration	14
4.4. Upload module	15
4.5. Generating a Record	15
4.6. Recognition module	15
4.7. Operation of the internal database	15
5. Storage	16
5.1. Setting a general limit on occupied space	16
5.2. Clearing space	16
6. Integration with video conferencing servers	18
6.1. Access Levels	18
6.2. Adding a video conferencing server	19
6.3. Editing a previously added server	19
6.4. Integration without key	19
7. Configuring Access to the Control Panel	23
7.1. Adding an account	23
7.2. Editing your account and deleting another user's account	24
8. Transcript Page	25
8.1. Export the conference's mixed audio track.	25
8.2. Transcript Page	26
8.3. Configuring Access to the Control Panel	31
8.4. Transcript Page	32

1. Why AI in video conferencing?

TrueConf Al Server software is an Al-based (machine learning) solution for speech recognition in conferences from TrueConf. It automatically recognizes the audio from your events conducted on TrueConf Server and saves it in text format with speaker separation. It can recognize speech from both group conferences and point-to-point video calls (which are also converted into conferences).

Thanks to seamless integration with TrueConf Server and TrueConf Enterprise solutions, users can access protocols through their video conferencing server without needing to log in to a separate service. This enhances user convenience and reduces the number of different web pages users need to access. We recommend using the video conferencing server's personal area to manage protocols, although it is still possible to log in via the personal area of TrueConf Al Server.

The solution is provided as a software for installation on the customer's premises (onpremise version).

Hereinafter, the terms *decoding*, *transcription*, and *speech recognition* are synonymous and refer to the process of analyzing an audio conference to obtain its transcript (script).

1.1. Main Features

- Automatic speaker detection for accurate attribution of each statement.
- Generating a complete transcript of the conference with phrase separation for each participant (including terminals in meeting rooms).
- The ability to select the primary language for audio track recognition in a conference.
- Display of timestamps (relative time) for individual phrases in the transcript.
- Automatic punctuation insertion.
- Automatic capitalization of the first letter in sentences.
- Correct speech recognition when speakers use different languages.
- Accurate recognition not only of commonly used speech words but also of those that are rarely used.
- Recognition of known abbreviations.
- Correct recognition of numbers and dates and recording them in digital format.
- Successful recognition of audio tracks in challenging acoustic conditions: noise, soft speech, simultaneous speech from multiple participants.
- The ability to recognize audio on both NVIDIA GPU and x86-64 architecture CPU. TrueConf strongly **recommends using the discrete GPU option** for better recognition performance.
- Support for multi-processor systems when processing audio on the CPU.
- Storage of conference audio recordings and speech-to-text transcripts.
- Manually delete any conference recording, including its transcript.
- No limitations on the number of recognized conferences thanks to task queue creation.
- Support for audio processing on systems with both single and multiple NVIDIA GPUs.
- Web interface for managing recognized conferences.

 Authorization on the AI server using a video conferencing server user account, including when the customer's side uses an LDAP directory service, such as Active Directory.

- The ability to integrate the AI server with one or more video conferencing servers.
- Display of ongoing conferences' information: name, Conference ID, start time, and duration.
- Built-in web interface player for playing back the audio file of a conference or call.
- Ability to configure decryption access for both conference participants and any arbitrary user of the video conferencing server.
- Real-time display of conference recognition status.
- Export decryption results in text format (.txt) or in tabular format (.csv).
- Export the conference's mixed audio track.
- Notification to the conference moderator about the successful saving of its recording on the transcription server.
- Conference moderator notification of the successful completion of the transcription process and providing a link to the result.
- Notification to the videoconferencing server users that they have been granted access to view the conference transcription.

1.2. Operating Principle

To use TrueConf Al Server, TrueConf Server version 5.5.0 or higher is required. Additionally, the integration capability with the Al server is governed by a separate license for TrueConf Server:

The ability to integrate the AI server with one or more video conferencing servers.

- Events related to pre-recording on the TrueConf Server side.
- your TrueConf AI Server license, which controls the number of video conferencing servers that can be connected to the AI, as well as depends on the capacity of the purchased hardware and software package.

The following algorithm is used:

- 1. Install TrueConf Server and TrueConf Al Server on different machines.
- 2. TrueConf AI Server is installed on a dedicated physical machine (virtual machines are not supported as AI operation requires maximum interaction with the hardware).
- 3. The video conferencing server is connected to the AI server using an integration key. In this setup, multiple TrueConf Server can be connected to a single instance of the AI server.
- 4. According to the settings of TrueConf Server (whether all events or specific ones are logged), the audio recording of the conference is sent to TrueConf Al Server.
- 5. Speech recognition and transcript creation are in progress. This can be done automatically right after the event ends or manually initiated by the conference owner in the personal area of the AI server. Additionally, the owner can share the original audio and the resulting text with any participant and even other users of their TrueConf Server.

2. Start and Registration

General procedure for integration:

- install TrueConf Al Server;
- activate Al server;
- generate an integration key on each TrueConf Server that needs to be connected to the Al server;
- In the TrueConf AI Server control panel, connect all video conferencing servers.



Video conferencing servers and AI servers must have mutual FQDN resolution to communicate.

After that, you can enable the transmission of audio to the AI server for recognition directly on the TrueConf Server or for each conference.

2.1. Where to get the AI server?

TrueConf Al Server is offered as software for installation on a server that meets the system requirements listed below.

To purchase TrueConf Al Server, contact TrueConf managers using any convenient method. The company's specialists will work with you to select the appropriate equipment option based on the desired conference recognition speed.

- A server with one NVIDIA GeForce 3060 level video card will recognize 60 minutes of audio in approximately 5-7 minutes.
- A server with 2 NVIDIA GeForce 3060 level video cards will recognize 60 minutes of audio in approximately 3 minutes;
- A server equipped with 4 NVIDIA GeForce 3060 GPUs will recognize 60 minutes of audio in approximately 1.5 minutes on average.

Since TrueConf AI Server is provided as software, it must first be deployed on the customer's equipment. We recommend using configurations with at least one NVIDIA 3060 or higher level graphics card, as recognition is significantly faster on a GPU than on a CPU. Multiple GPUs can be used, which will proportionally increase the recognition speed.

The characteristics listed below will generally allow for the recognition of 60 minutes of a conference in 5 minutes (the speed greatly depends on participant activity and is just an average guideline).

System Requirements

Parameter	Value
Operating System	Debian 12
Processor	Intel Core i5 11th generation or higher

Graphics Card (GPU)	NVIDIA 3060 12 GB or better
RAM	At least 16 GB, 32 GB recommended
Internal Storage	SSD at least 512 GB, generally the volume depends on the desired data retention period

It is recommended to discuss in advance the detailed system requirements for the expected load with representatives of TrueConf.

Installation

- 1. Contact your TrueConf manager to obtain two .deb packages that contain the two Al server modules.
- 2. In the OS on the machine where you are installing TrueConf Al Server, execute the following command in the terminal:

```
sudo apt update
```

3. Install both modules using the commands:

```
sudo apt install trueconf-ai.deb
sudo apt install trueconf-ai-server.deb
```

Start and Diagnostics

For these operations, you need to run a special script in the terminal:

```
sudo tcs
```

Further actions can be performed in the menu of this script.

To start the system, sequentially execute the following commands:

- menu Run →Start Al
- menu Run →Start Database
- menu Run →Start API

Diagnostics:

- Displaying the list of Docker containers menu Status →Al Containers list
- container log output menu Status →Get Log Al
- API log output menu Status →Get Log API
- retrieving system service status data via API menu Status →Get Status API

retrieving the status data of the Database system service — menu Status →Get Status
 Database

2.2. Accessing the control panel

After installing TrueConf Al Server, ensure that the machines with it and TrueConf Server can recognize each other by domain names.

You can now log in to the TrueConf Al Server control panel using an administrator account at a URL like: https://[ai-address]/admin/, where [ai-address] is the IP or FQDN (domain name) of your Al server. Alternatively, you can simply go to the server address and click the **Sign in as administrator** link at the bottom.

By default, the login details are:

Login: root

Password: hash

Remember to change the default password after registering your AI server!To do this, go to the **Accounts** section and select your account. There you can also add other accounts for AI server administration as shown below.

2.3. Registration

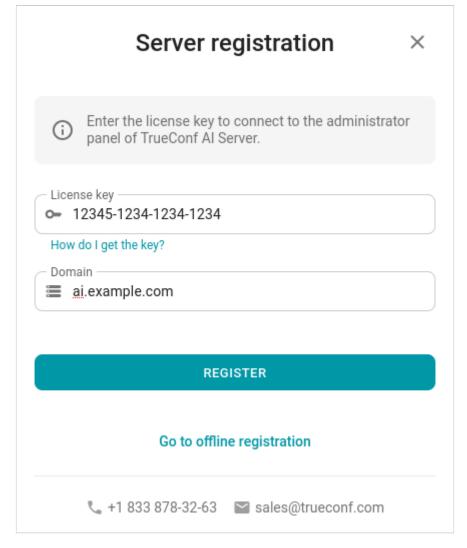
The license for TrueConf Al Server determines:

- the number of video conferencing servers that can be connected to this AI server in full access mode;
- the number of video cards installed on the machine with the AI server;
- (**optional**) the license may also specify a list of TrueConf Server that can be integrated with full access.

Until you register TrueConf Al Server, its control panel will be locked, and only the registration form will be displayed on your screen. There are two registration methods available: online and offline.

2.3.1. Online Registration

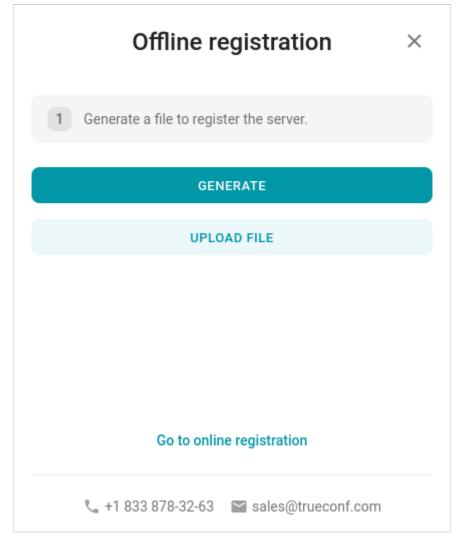
For online registration, the machine with TrueConf Al Server must have access to the registration server reg.trueconf.com via TCP port 443. This method is offered by default:



Enter your key in the registration window (you have most likely received it from your manager via email) and the domain name under which the AI server will be accessible for video conferencing servers. Then just click the **Register** button and wait for the process to complete.

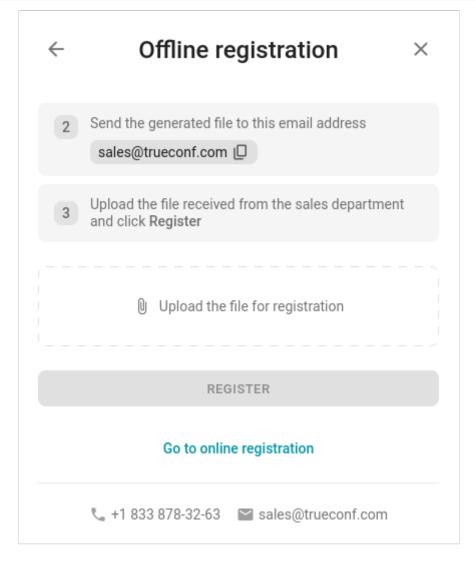
2.3.2. Offline registration

If accessing reg.trueconf.com is not possible, use the offline registration option. To
do this, also specify the registration key and the domain name under which the AI server
will be accessible to video conferencing servers. Then click the **Go to offline registration**button:



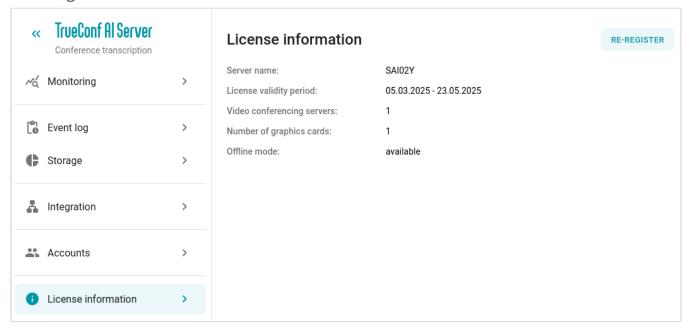
Click the **Go to offline registration** button to create a special .srg file.

Send this file to TrueConf, for example, via email or through technical support. You will receive another file in response, which you need to upload to the designated field and click the **Register** button.



2.4. View license information

To view information about the current license at any time after registering TrueConf Al Server, go to the **License information** section:



There you can re-register the server with a new key using the **Re-register** button. You can also update the license from the registration server reg.trueconf.com with the

current key, for example, if the number of licensed video ports has changed. To do this, click the **Renew license** button.

3. Al Server Monitoring

After registering TrueConf Al Server, you will see the **Monitoring** section in its control panel.



There you can monitor the following Al server performance parameters:

- operation of the decryption module;
- activity of the file upload module from the video conferencing server.

In the **Transcription activity** section, the graph displays how many conferences from each video conferencing server were being processed concurrently at the specified time.

3.1. Adjusting the graph view

Each chart displays changes over the selected display period (by default, for the current day). Each TrueConf Server for which audio recordings are processed is shown in a separate color. You can remove or restore a chart for a specific video conferencing server in the legend by simply clicking on its name.

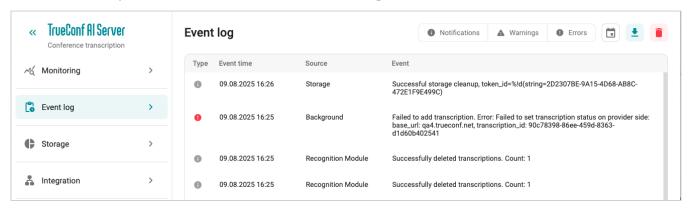
A time filter is available for selective viewing of history.

4. Event Log (Logs)

The **Event log** section displays various events related to the operation of TrueConf Al Server. Each event has a level of importance indicated by an icon: **Notifications** (regular notifications), **A Warnings**, and **9 Errors**.

Detailed information about server events may be required for on-site troubleshooting of server AI issues, as well as for contacting technical support if you are unable to resolve the issues on your own.

Above the table, you can choose to display only one type of event by simply clicking on the desired importance level. To download the logs in CSV format, click the button.



A detailed list of events categorized by modules and importance is provided below.

4.1. Licensing and Launching the Al Server

- * The server activation process is described in the registration section.
 - i TrueConf Al Server registered
 - TrueConf Al Server has been successfully launched
 - Certificate for authentication has been updated
 - License certificate updated
 - TrueConf Al Server has been re-registered
 - A No connection to the global network
 - ▲ Unable to connect to the registration server reg.trueconf.com
 - ▲ Failed to apply the certificate for authorization
 - A Failed to apply the license certificate
 - △ Unable to find the certificate for authentication
 - ▲ Unable to find the license certificate
 - ▲ Failed to update the authorization certificate
 - The authorization certificate has expired

- ▲ Failed to verify the certificate signature
- License parameters have been modified
- ▲ TrueConf Server has been switched to read-only mode
- The maximum file size of 10 MB has been exceeded.
- Registration error for TrueConf Al Server: an incorrect file was uploaded
- Registration error for TrueConf Al Server: the file was generated on different hardware.
 - Registration error for TrueConf Al Server: invalid license key
 - Error registering TrueConf Al Server: invalid domain
 - Registration error for TrueConf Al Server: incorrect hardware binding

4.2. Accounts

- * Account management is described in the relevant section.
 - Account successfully added
 - Account successfully edited
 - Account successfully deleted
 - Failed to add account
 - Failed to edit the account
 - Failed to delete the account

4.3. Integration

- * The setup of the connection to TrueConf Server is detailed separately in the integrations section.
 - Successful connection test
 - Successful source connection for full access
 - Successful source connection for authentication mode
 - 1 The video conferencing server is disconnected.
- ▲ Connection check failed: TrueConf Al Server is disconnected on the TrueConf Server side.
 - ▲ Failed to add source: the integration key is already attached
 - ▲ Failed to attach source: integration key is invalid

4.4. Upload module

* You cannot configure the upload settings of conference audio tracks to the TrueConf AI Server side, but monitoring of these processes is available.

- 1 The file upload process from TrueConf Server has started.
- Files from TrueConf Server have been downloaded.
- Failed to download files: no network connection
- ▲ Failed to download files: Unable to establish a connection with the registration server.
- A Failed to download files: Unable to determine file location

4.5. Generating a Record

Events related to pre-recording on the TrueConf Server side.

- Record created
- Failed to create the record: VAD error and others.

4.6. Recognition module

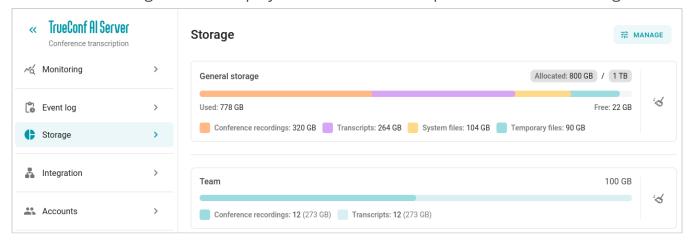
- 1 The recording has been sent for recognition.
- Recording is being recognized
- Recording recognized
- Recognition Error

4.7. Operation of the internal database

- Successful connection
- Successful request
- ▲ Connection attempt failed
- Request execution error

5. Storage

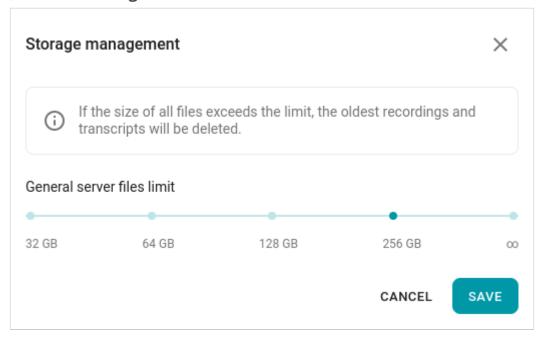
In the **Storage** section, information about the space occupied by conference files on each video conferencing server is displayed. There is also an option to set a total storage limit.



The total space occupied by recording files and transcript files is displayed, along with a breakdown for each connected TrueConf Server.

5.1. Setting a general limit on occupied space

You can limit the total storage space occupied by all files (recordings and transcriptions). To do this, click the **Manage** button:



In this case, older files will be automatically deleted to free up space when the specified limit is reached.

5.2. Clearing space

Be careful when clearing space: any unrecognized events before the cleanup will not receive transcripts, as the audio files will be deleted.

You can free up space on TrueConf Al Server. The following can be deleted:

- all files at once regardless of which TrueConf Server they belong to;
- files that pertain only to a specific TrueConf Server.

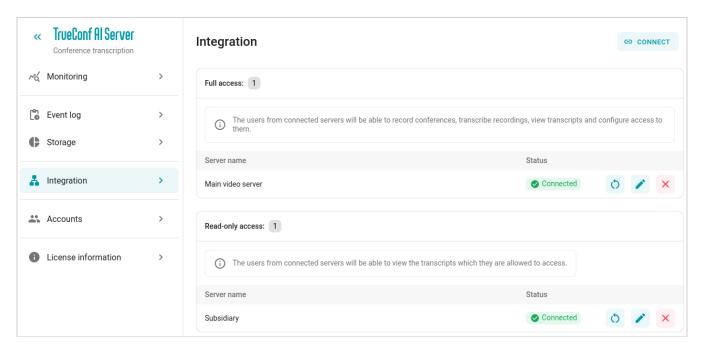
To delete files, click $\stackrel{\cdot}{\bowtie}$ the button in the corresponding row.

6. Integration with video conferencing servers

In the **Integration** section, you can configure the connection with all TrueConf Servers that will transmit audio recordings for recognition. You'll see two lists of servers here: one with full access and another with read-only access.

General procedure for integration:

- The AI server and the video conferencing server recognize each other by their domain names (FQDN). If this is not the case, you need to map the IP addresses in the hosts file on both machines.
- HTTPS is configured on both TrueConf Server and TrueConf Al Server;
- There are corresponding clauses in the licenses for both products, the number of allowed integrations in full access mode is licensed.



6.1. Access Levels

Connection to video conferencing servers is available with two types of access: full access and read-only access.

If the server is connected with **full access level**, its users will be able to:

- conduct conferences with transcription capability;
- send the recording for transcription in your personal area on the AI server side;
- · configure access rights to view the log;
- · view transcription results;
- download transcription results (logs).

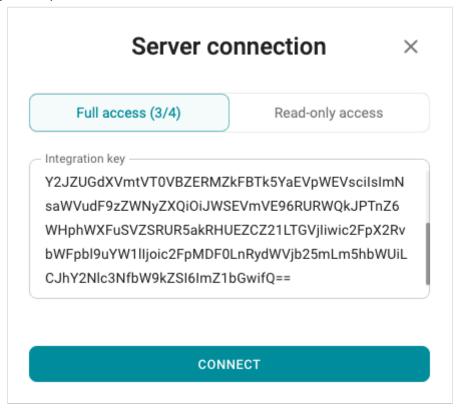
If the server is connected with **read-only access**, its users will be able to:

- log in to the personal area to view transcripts
- view the results of transcriptions they have access to;
- download transcription results (logs).

6.2. Adding a video conferencing server

First, you need to generate an integration key on the TrueConf Server side. To do this, open its control panel and navigate to the **Extensions** →**TrueConf Al Server** section, then generate the key as shown in the documentation.

To add TrueConf Server, click the **Connect** button. A window for entering the generated integration key will open:



You can select the access level for users of this server. A tooltip will display how many full access slots are already occupied, relative to those available according to the license. If the full access slots are exhausted, only read-only mode will be available.

Enter the key and click **Connect** to complete the setup.

6.3. Editing a previously added server

To edit any previously added server (for example, to change the access level), click the button next to its name. The same window will open as when adding a server.

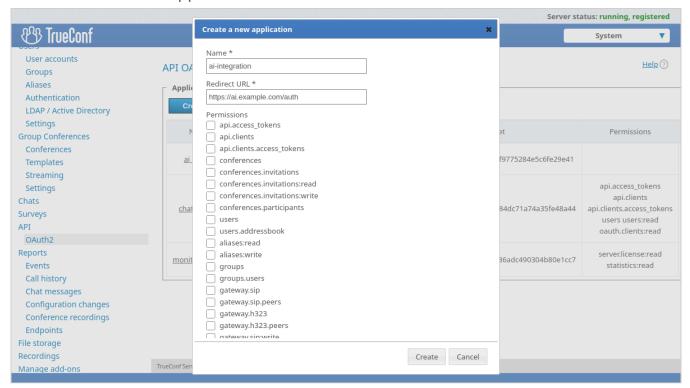
You can delete a previously added server using the × button.

If a disconnection from TrueConf Server occurs and you need to manually attempt to restore it, click the button.

6.4. Integration without key

Connecting to the video conferencing server using an integration key is supported only for TrueConf Server version 5.5.0 and above, as it was from version 5.5.0 that the capability to generate such a key was introduced. However, it is still possible to connect to older VCS servers (version 5.4.5 and below) but **only in read-only mode**.

Preliminary configuration on the TrueConf Server side is required. Open its control panel and create an OAuth application:

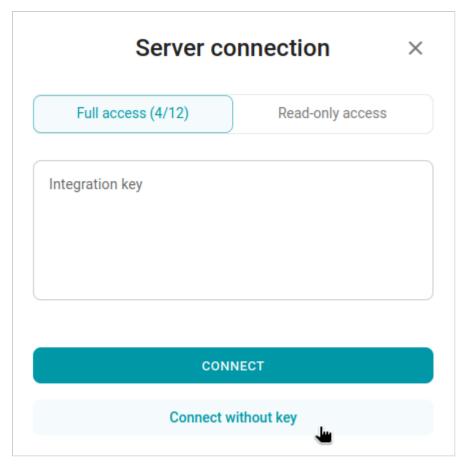


- 1. Go to the **API →OAuth2** section of your TrueConf Server control panel.
- 2. Click **Create a new application**.
- Enter its identifier in the Name field. It is used only for display in the list of applications.
- 4. In the **Redirect URL** field, enter https://ai_server/auth, where ai_server is the IP address or FQDN (fully qualified domain name) of the server with .
- 5. Do not check any boxes in the permissions list and click the **Create** button.

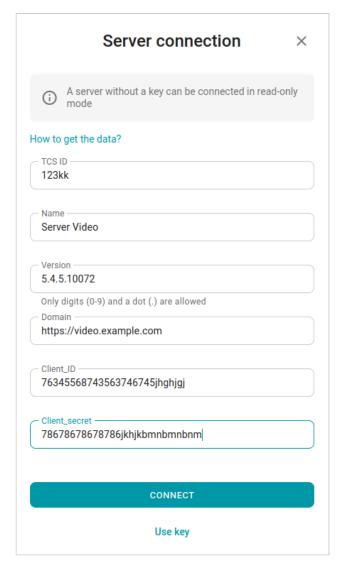
For more details on creating OAuth applications, refer to the TrueConf Server documentation.

In the TrueConf AI Server control panel, connect all video conferencing servers.

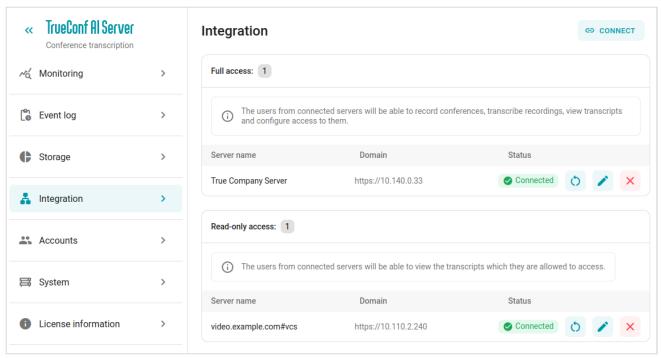
- 1. In the **Integration** section, click the **Connect** button.
- 2. In the window that appears, click **Connect without key**.



3. A window for entering information about the video conferencing server being connected will open. In the **Name** field, you need to specify the name from the **Web** → **Settings** →**Name** field, and in the **Domain** field, enter the TrueConf Server address with the https:// prefix:

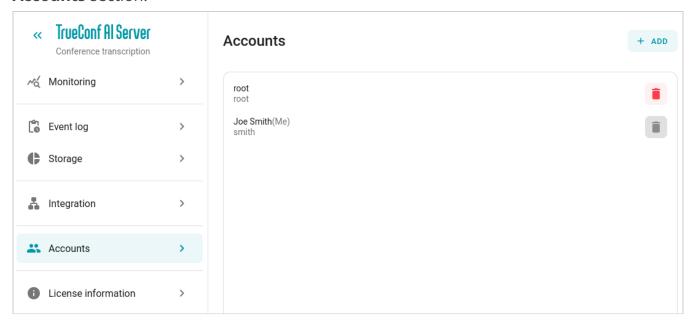


4. Fill in all the fields with the video conferencing server information. After that, click the **Connect** button. If everything is successful, you will see the added server in the **Read-only access** list.



7. Configuring Access to the Control Panel

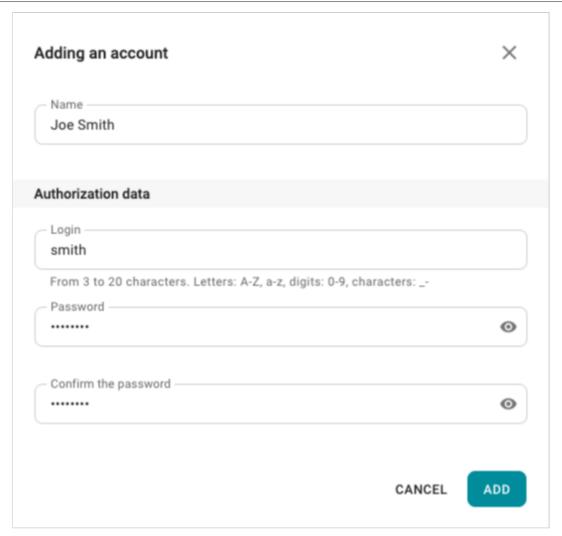
The list of accounts with access to manage TrueConf Al Server is configured in the **Accounts** section:



As demonstrated in the section on the initial startup of the Al server, a default root account is provided for accessing the control panel. Please remember to change its password after the first login to the control panel and server registration.

7.1. Adding an account

Click the **Add** button to grant access to the Al server settings for a new account. Specify the display name, username, and password for the new administrator:



7.2. Editing your account and deleting another user's account

No administrator can edit data for another account, such as changing the password. The only option is to delete another account using the <a> button.

For your account, you can change your name and set a new password. To do this, simply click on your name in the list of accounts and enter the necessary details in the window that appears.

8. Transcript Page

For TrueConf Server users, working with the TrueConf AI Server solution involves recognizing conference audio tracks and using the resulting transcripts (scripts). The video conferencing server administrator can configure automatic audio recognition upon the event's conclusion, eliminating the need for manual initiation.

The following instructions are intended for users of TrueConf Server who will be creating conferences and managing their recognition.

You can manage the list of transcripts in your TrueConf Server personal area and in the TrueConf Al Server personal area. The interface is similar and offers the same features. For information on how to manage conferences in the video conferencing server's personal area, refer to its documentation here.

Below is how to work with the list of transcripts in the TrueConf AI Server web interface.

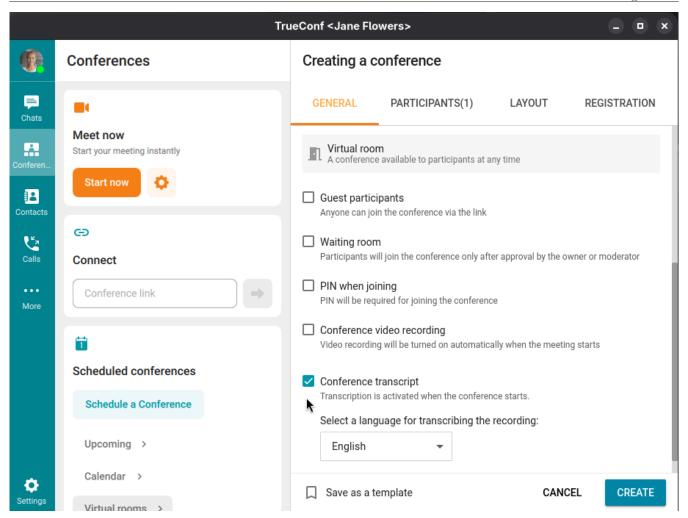
A user may be assigned one of two access levels to the transcript, which will determine the list of available features:

- if you have full access, you will be able to download, configure access for other users, and delete;
- If the server is connected with **read-only access**, its users will be able to:

Access is granted by either a full-access user or an administrator of TrueConf Server. Additionally, default access to transcripts can be configured on the TrueConf Server side. If you are administering the video conferencing server, please refer to its documentation for more detailed configuration settings.

8.1. Export the conference's mixed audio track.

To enable our bot to transcribe audio to text, it must be added as a participant to the desired conference (using the desktop client application of TrueConf as an example):

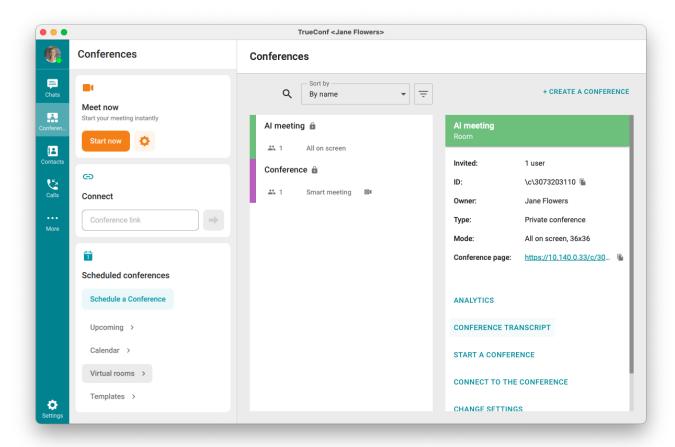


- 1. When creating a conference, go to the **General** tab.
- 2. Check the **Create a conference transcript** box (it may be enabled by default if your administrator has activated automatic recognition for all conferences).
- 3. Select the primary language that the AI will prioritize for audio recognition. If there are phrases in another language, they will still be recognized correctly, but setting a default language will assist the AI in cases where similar languages are used.

8.2. Transcript Page

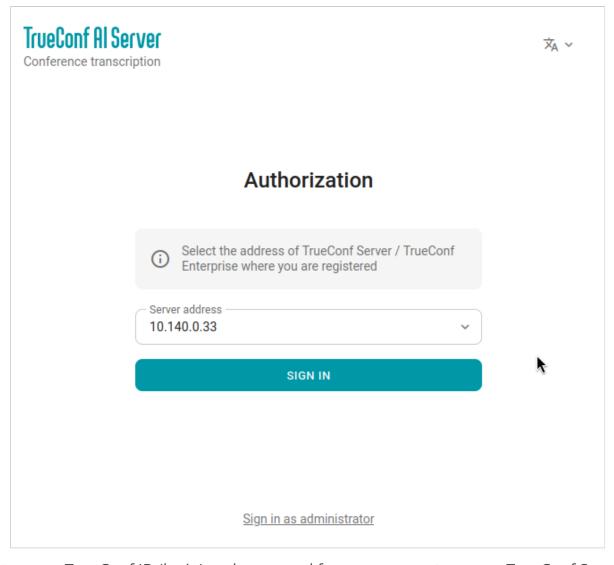
The administrator of TrueConf Server could configure chat notifications to inform you when the conference is ready for recognition and when the transcript is available. In this case, you will receive a link to the transcript in the message.

Otherwise, you can find the conference transcript directly in its card within your personal area or the client application's scheduler:

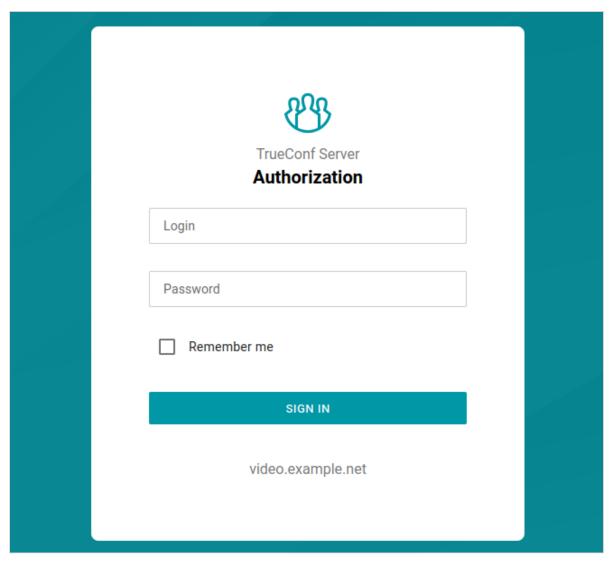


You can also simply go to your TrueConf Al Server URL and complete the authorization process:

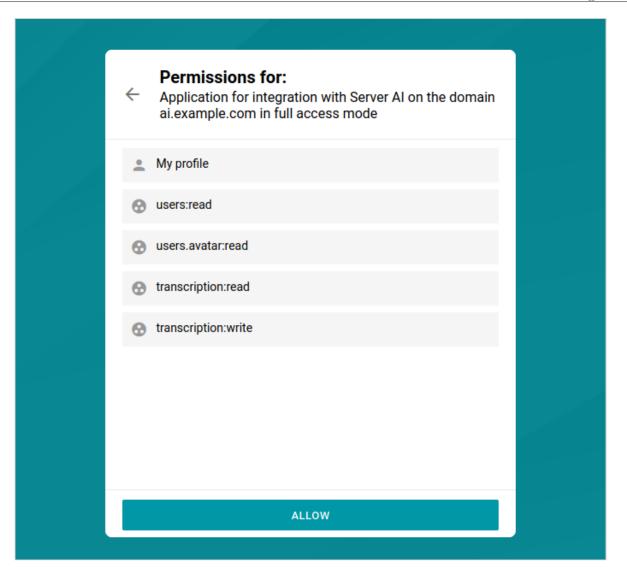
- 1. Go to the Al server page using its address (ask your administrator for this information).
- 2. On the opened page, select your video conferencing server from the dropdown list and click **Sign in**:



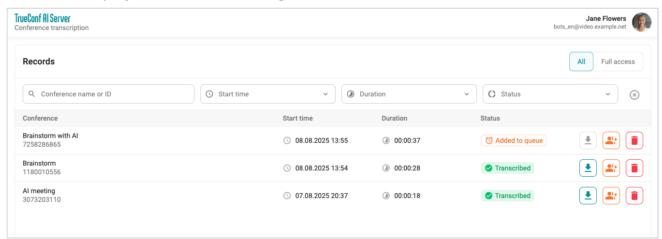
3. Enter your TrueConf ID (login) and password for your account on your TrueConf Server:



4. If you are logging in for the first time, you will need to grant permissions to your account for the Al server. Simply click **Allow**.



5. Real-time display of conference recognition status.



Each conference record in the list is marked with one of the following statuses: recognized, in the process of recognition, or not yet recognized. By clicking on the row of a recognized conference, you will be redirected to the transcript page.

Full access will be set by default

You can delete a previously added server using the 🔀 button.

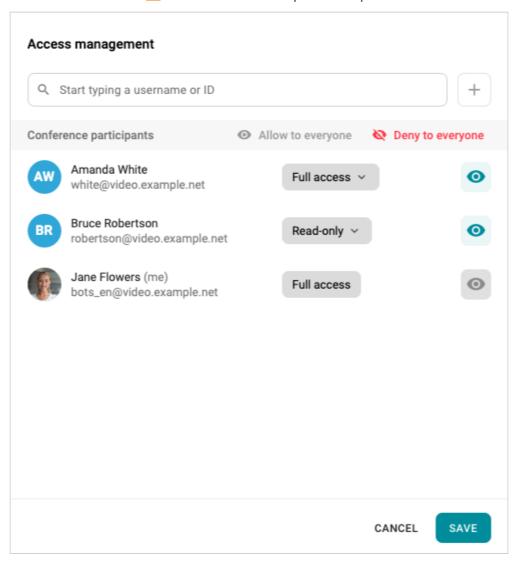
To download the text of an already completed transcript, press the button. You will be able to choose the export format of the transcript: as a *csv* table, a *txt* text file, or a *pdf* document. Additionally, the transcript can be downloaded as an archive with the original audio recording of the conference included.

You can delete the transcript by clicking the • button. This will delete both the transcript and the corresponding original audio track of the conference.

To quickly find the necessary transcripts, you can filter by conference name or ID, duration, event time, and the status of the transcript itself.

8.3. Configuring Access to the Control Panel

If you have full access to the transcript, you can configure access for other users, including those from another video conferencing server if integration with your AI server is set up. To do this, click the button and set up access permissions:

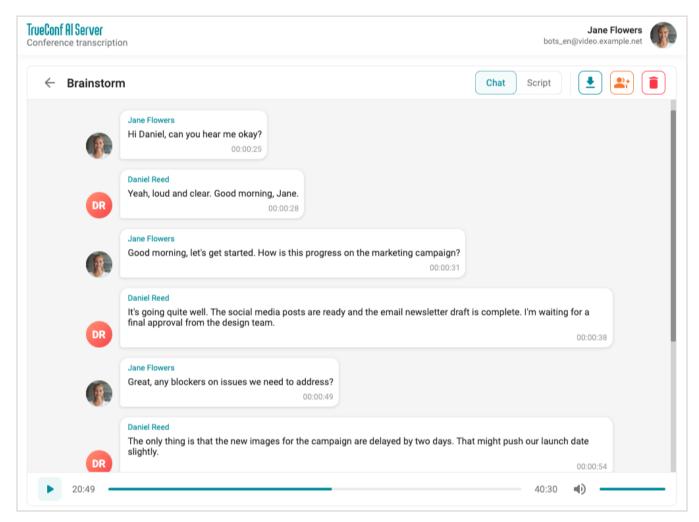


Access level for each user is selected from the dropdown list (read or full access). To revoke access for a conference participant, click the button. To add a user from your own or a third-party server, find them or enter the complete TrueConf ID and click the button.

8.4. Transcript Page

On the specific record page, you can:

- · review the text of the recognized conference;
- start drafting a summary or view it if it has already been received;
- listen to the original audio in the built-in player.



Clicking on any remark will jump to the corresponding point in the player, allowing you to listen to the original immediately.

To view the transcript as plain text with timing (similar to the structure of subtitle files in movies), go to the **Script** tab.