Cinegy Cinegize 24

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Table of Contents

Preface . . . 1
User Manual . . . 2
1. Installation . . . 3
2. Interface . . . 10
2.1. System Tray . . . 11
Dashboard . . . 11
Settings . . . 12
Exit . . . 12
3. Settings . . . 13
3.1. General Settings . . . 14
3.2. Video Quality Settings . . . 14
3.3. Audio Settings . . . 16
3.4. Network Settings . . . 17
3.5. Public Sharing Settings . . . 18
3.6. Service Settings . . . 19
3.7. Info . . . 21
4. Operating . . . 22
4.1. Setup . . . 22
Host Mode . . . 22
Client Mode . . . 23
Connection . . . 23
Controls . . . 25
4.2. Windows Service Mode . . . 27
System Recommendations . . . 28
.1. Software Only . . . 28
.2. Disclaimer . . . 28
.3. No Damage . . . 28

Preface

Cinegize takes center stage as the game-changer in remote control solutions for one or many PCs or workstations via LAN, Wi-Fi or Internet, providing the highest quality and lowest-latency access possible.

It is specifically designed to deal with high resolutions, high frame rates on full-screen, including audio playback while having minimal impact on both the host and client machines.

Cinegize allows user to take command over the connection types, video quality, and latency with ease. It adapts to the nuances of various connections by achieving latency of around 1 fps.

Cinegize provides remote control without the need for additional hardware – a user can leverage the prowess of his discrete or integrated GPU, whether it's NVIDIA, AMD, or Intel. It features the automatic CPU fallback and ensures a seamless experience even when GPU video encoding is not available.

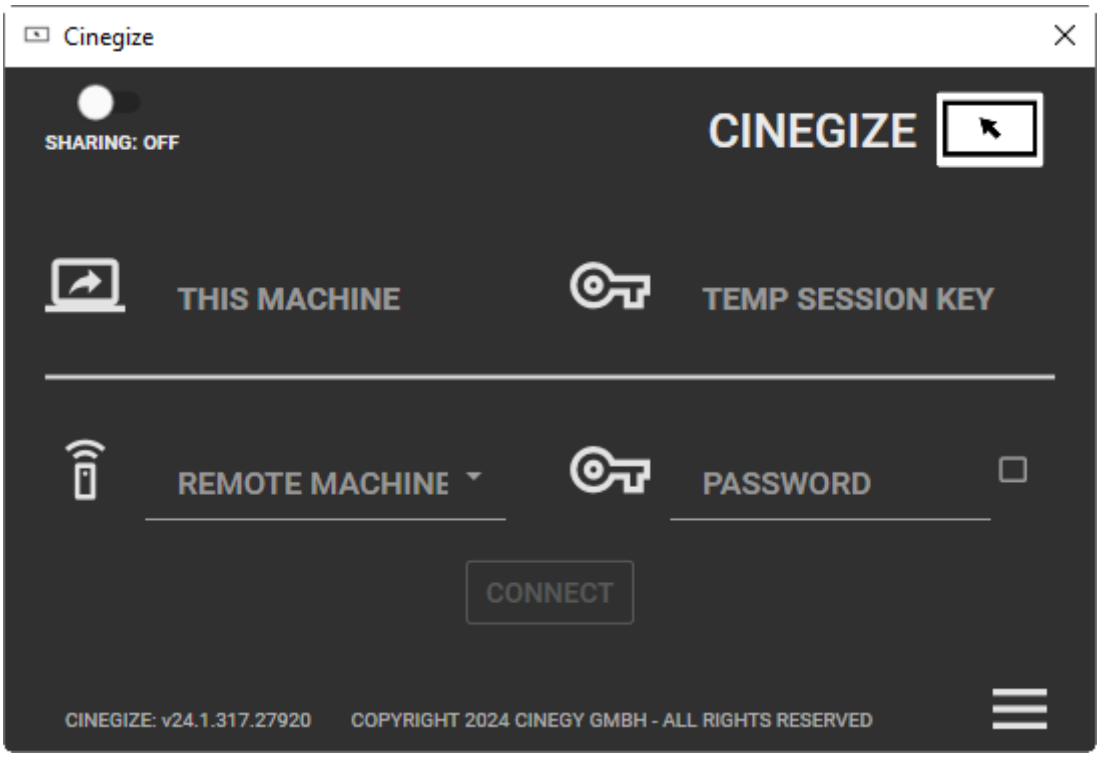
Cinegize ensures AES-256 encryption, providing a secure, peer-to-peer connection with no room for interference. Another prominent feature is connecting to multiple hosts simultaneously, effortlessly navigating firewalls without the hassle of a VPN.

The keyboard/mouse and clipboard integration are realized through a dedicated control channel allowing interactivity with the host.

The open standards that are adopted by Cinegize – SRT and RTP – break free from proprietary protocols and ensure flexibility and compatibility. More flexibility is provided by optional features such as TURN and STUN servers for WebRTC.

Cinegize transcends resolution restrictions, offering hyper-fast Daniel2 encoding for resolutions beyond 8K and ultra-low latency encoding.

A new virtual display adapter takes remote access with GPU acceleration using VMs, VDI, cloud workstations or remote PCs without connected screen.



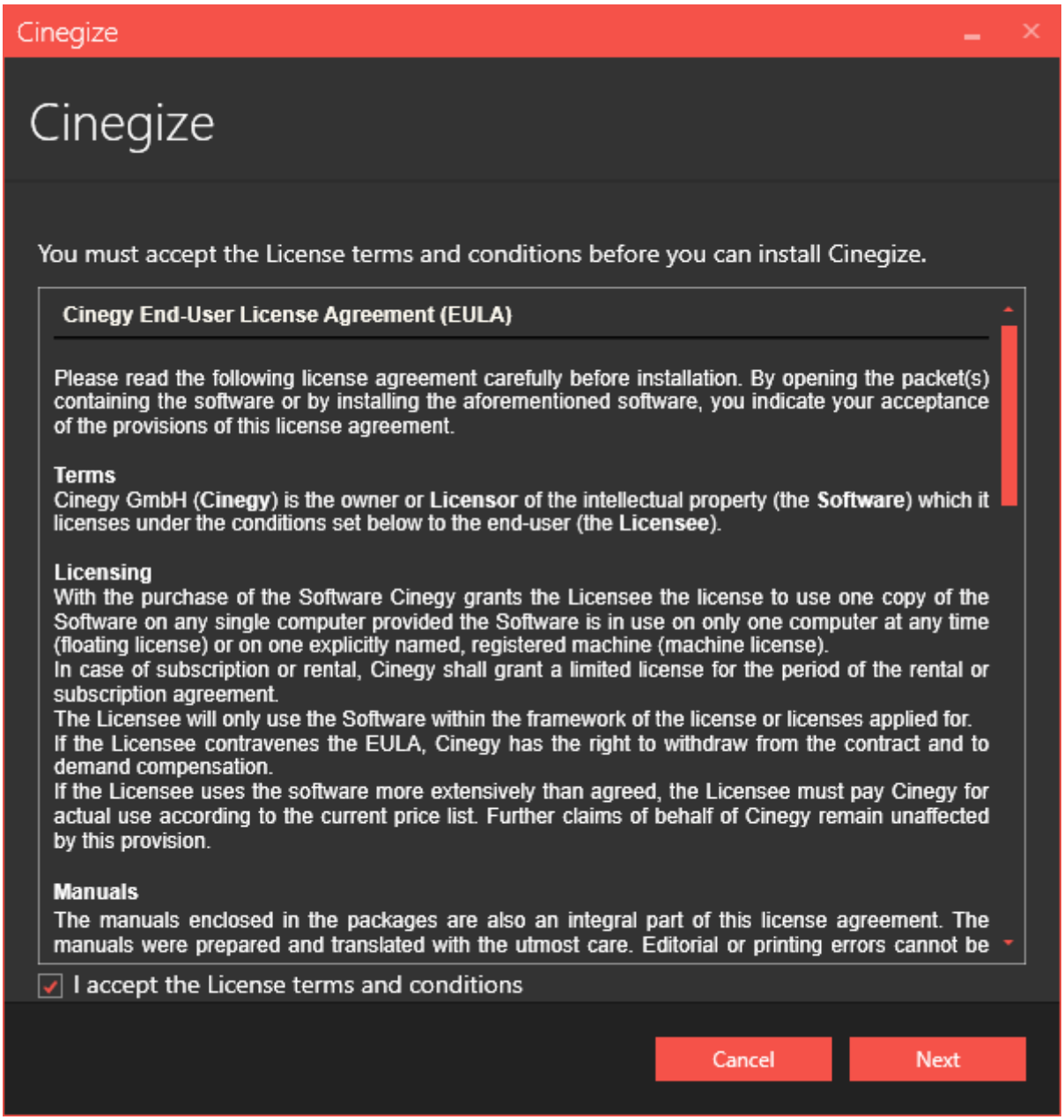
User Manual

Chapter 1. Installation

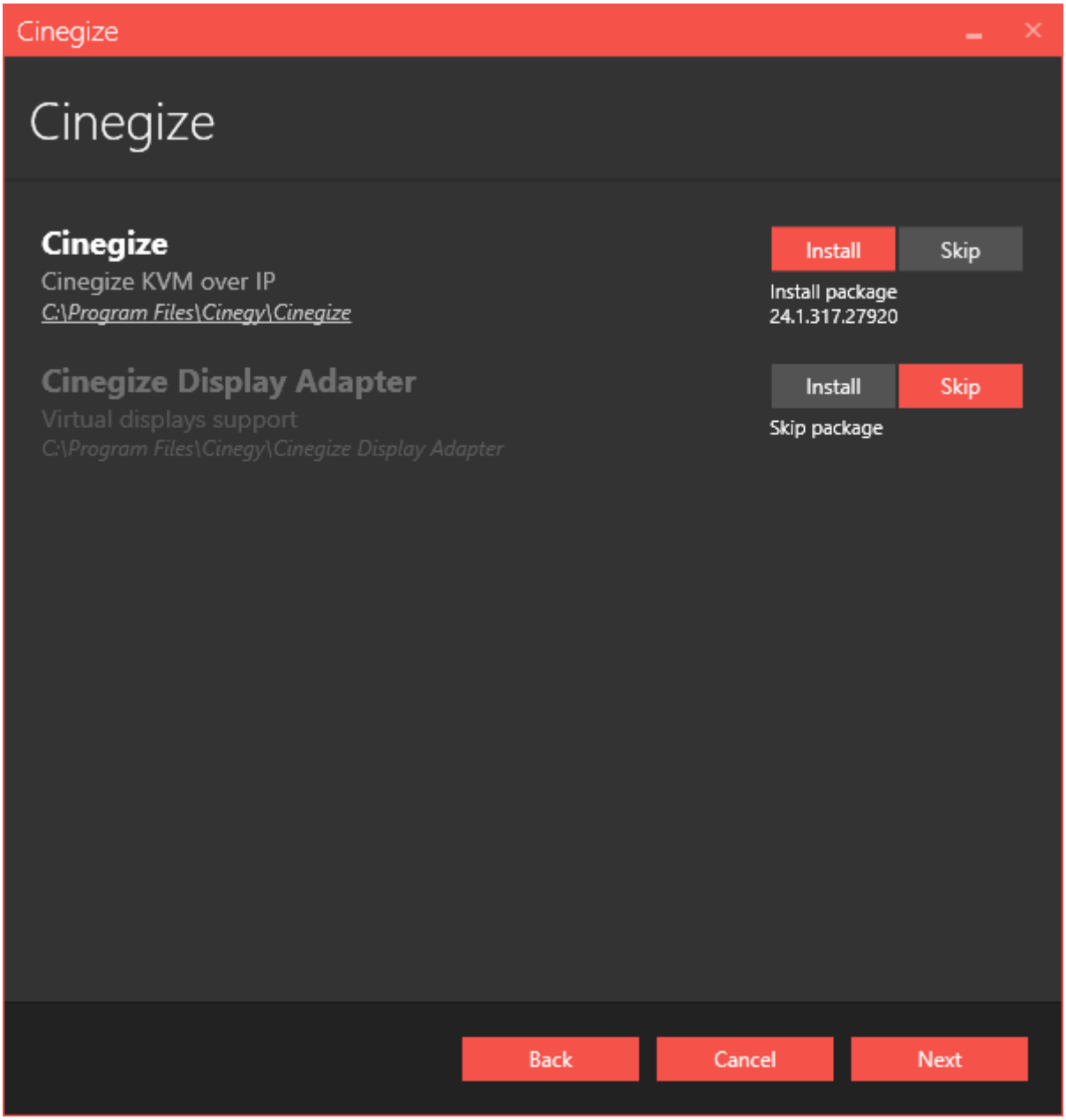
Cinegize is currently an early beta version, and access is currently provided at no cost pending release. Visit the official Cinegize website to review the most important features and download the latest version.

Administrator rights are required to complete the installation, but this ensures that any host sessions will allow full access to any elevated application windows.

To start the installation, run the Cinegize-Installer.exe file. The setup wizard will be launched:



Read and accept the license agreement and press "Next" to proceed with the installation:

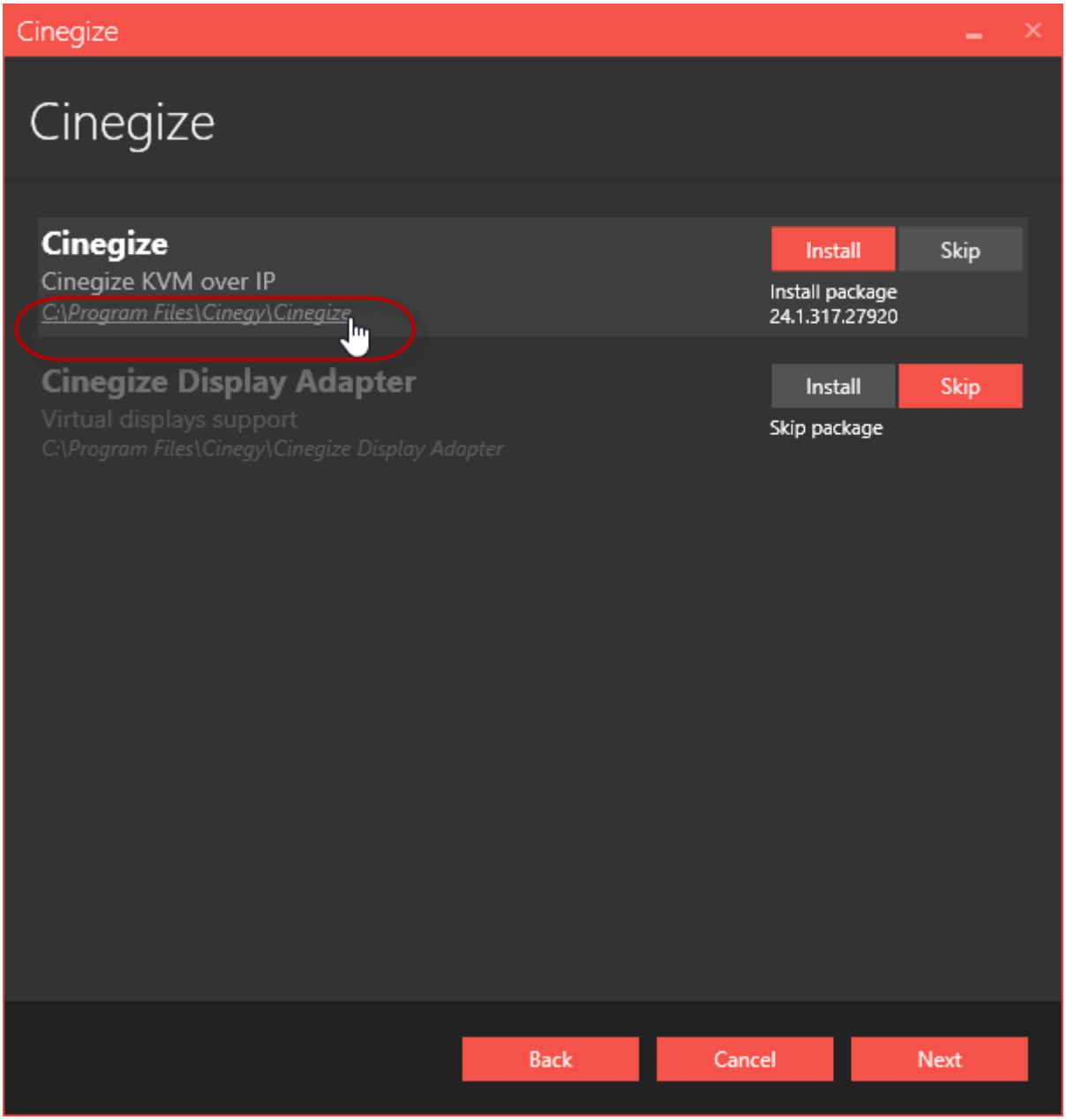


By default installation of Cinegize Display Adapter is skipped. Virtual display adapter is required for use with virtual machines, cloud instances or VDI scenarios without screen attached. To enable it, press the "Install" button.

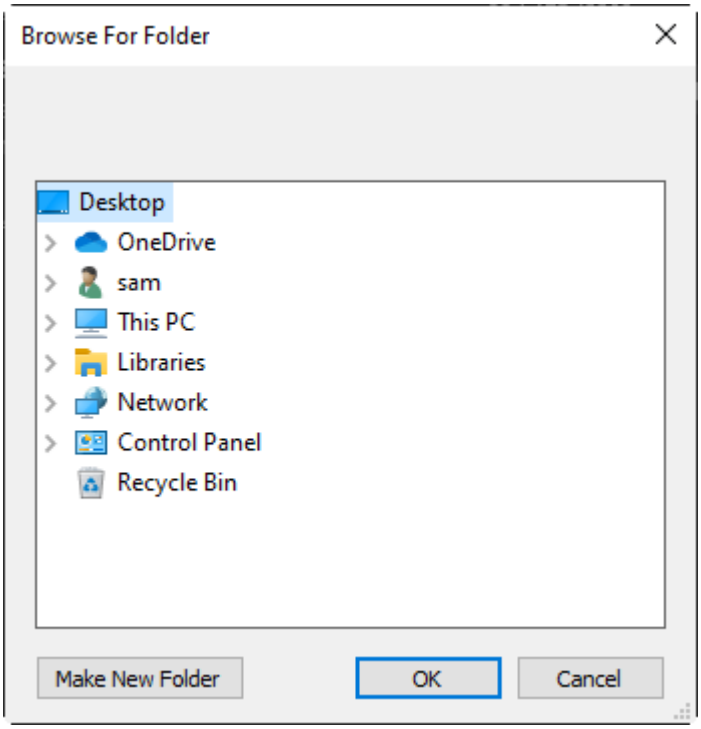
Install — Enabled installation of Cinegize component(s) is indicated by the "Install" option selected and highlighted with red.

Skip — Select the "Skip" option to disable the installation of the Cinegize component.

The default installation directory, which is indicated underneath the component name, can be changed by clicking the path:



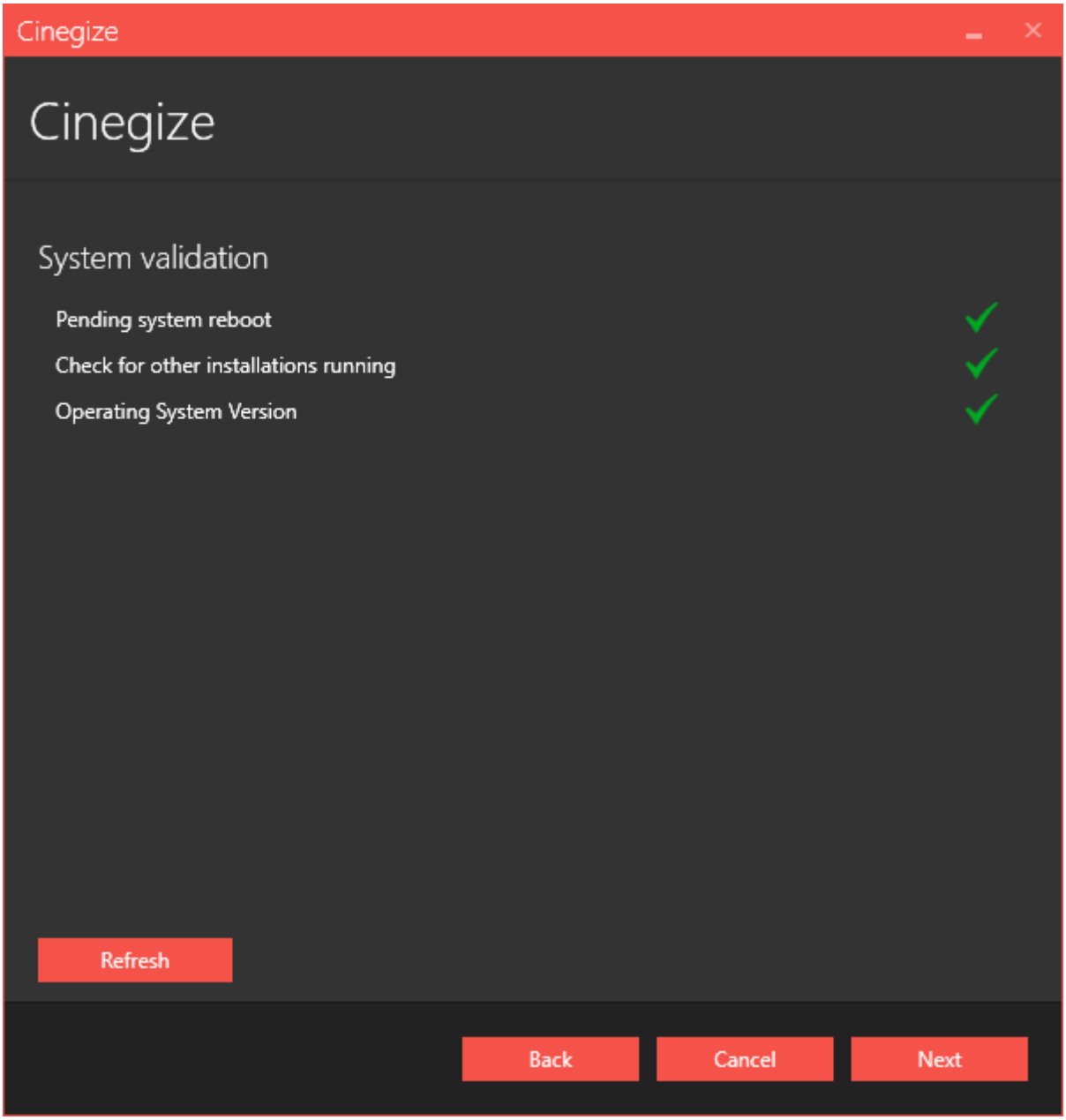
In the "Browse for folder" dialog that appears, select the required folder for your installation:



Make New Folder You can also create a new folder by pressing the "Make New Folder" button and entering a new folder name. Once the folder is selected, press the "OK" button.

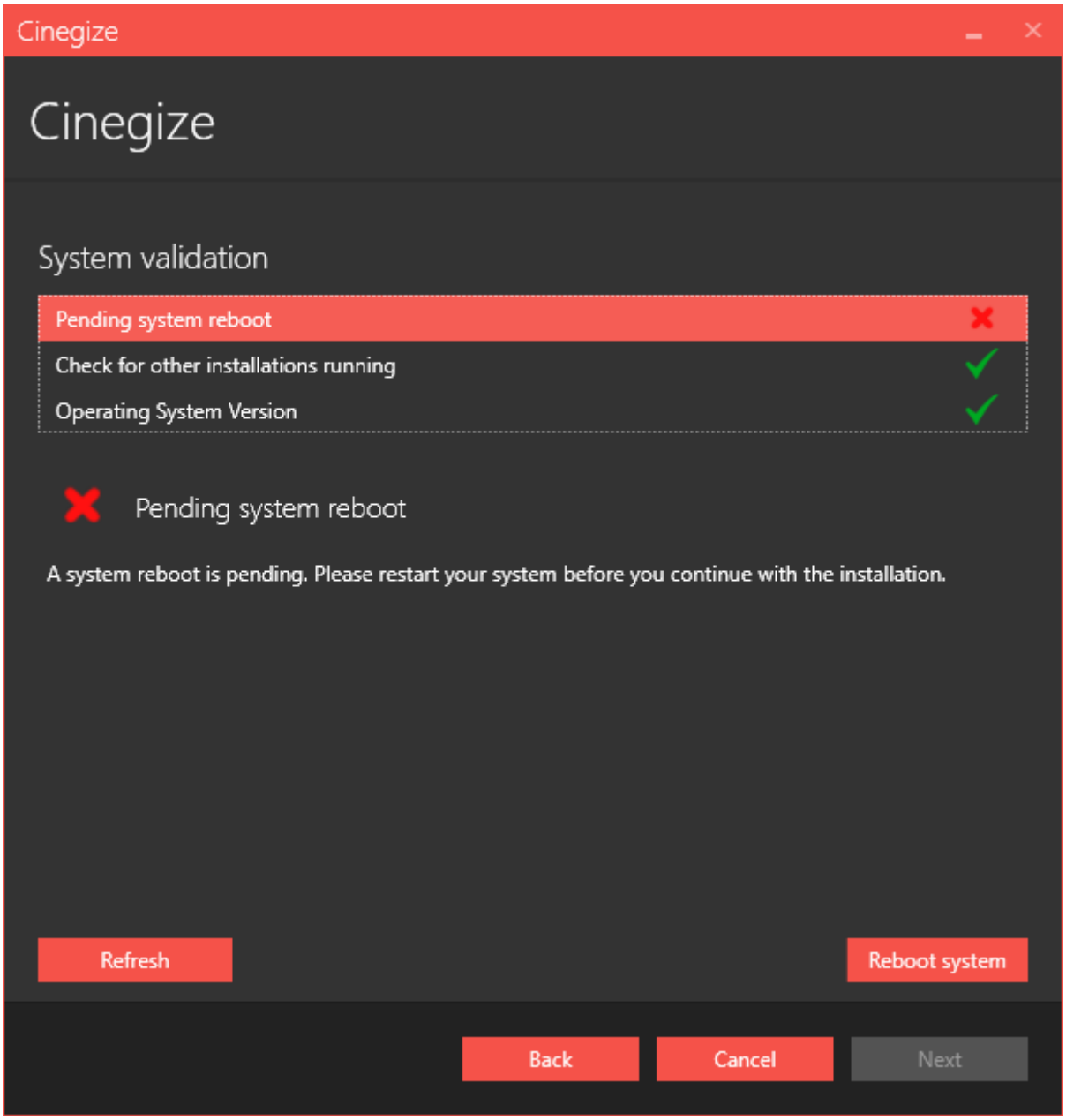
Press the "Next" button to proceed with the installation.

Check whether your system is ready for installation in the following dialog:



The green tick indicates that the system resources are ready and no other processes may prevent the installation. Clicking the validation entry field displays its detailed information.

If any validation reveals that installation cannot be started, the respective field becomes highlighted and the red cross is displayed with the detailed information on the failure reason below.



The explanation differs depending on why the installation cannot proceed.

Refresh — Press the "Refresh" button for the system to recheck installation availability. Once the reason for prevention is excluded, you can proceed with the installation.

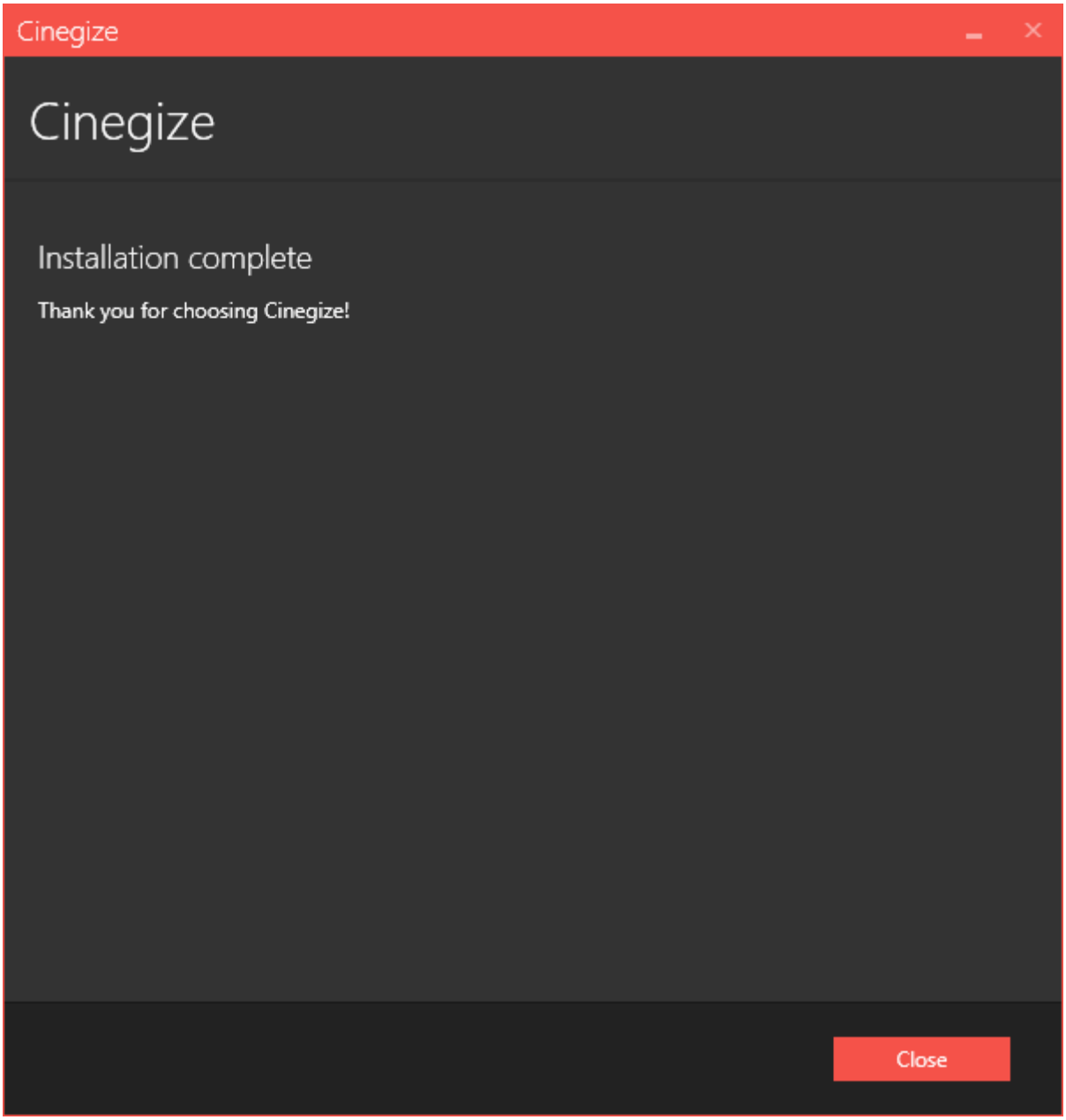
Back — Press the "Back" button to change the installation settings.

Cancel — Press the "Cancel" button to abort and exit the setup wizard.

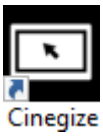
Next — Press the "Next" button to begin the installation.

The progress bar indicates the progress of the installation process.

The following dialog informs that the installation is completed successfully:



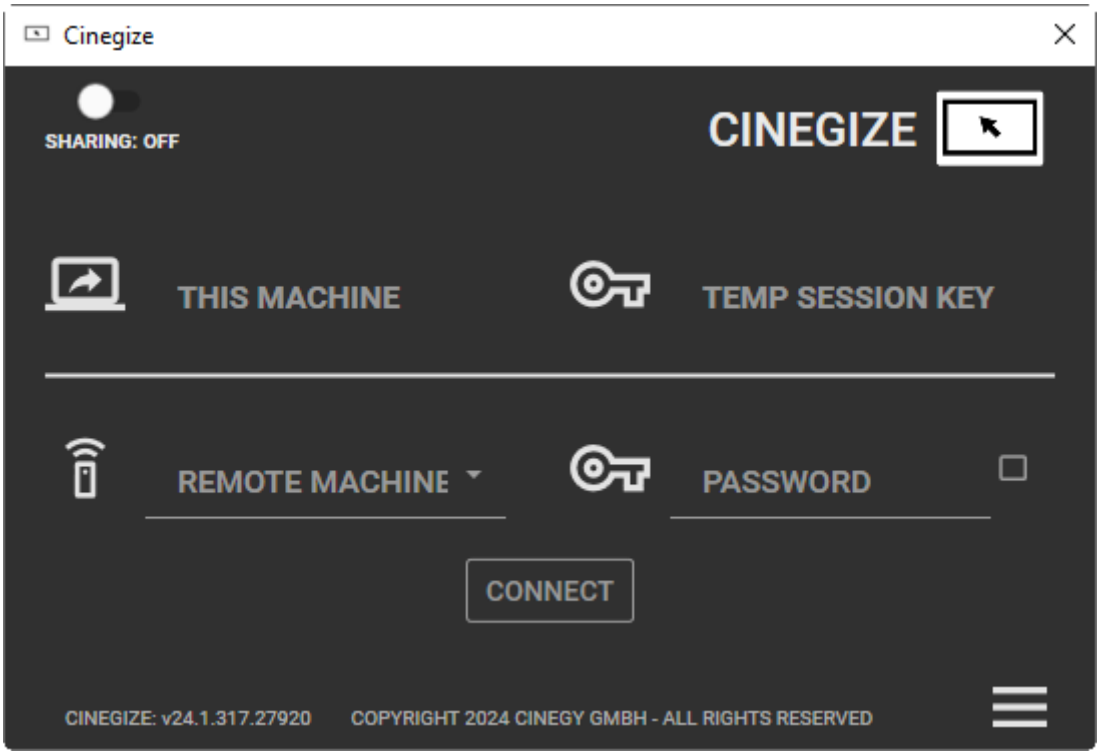
Close Press the "Close" button to exit the setup wizard.



After the installation, the Cinegize icon appears on your Windows desktop. Double-click it to start the application.

Chapter 2. Interface

When started for the first time Cinegize looks as follows:



The following controls are available here:

- **Sharing** – in the "ON" position this slider is used for working in host mode, while client mode requires the slider to be in the "OFF" position.

  Sharing is only supported when Cinegize is running in application mode, so it is disabled in service mode.

  When switching from client to host mode, all active connections will be terminated and you will be warned about this by a corresponding message.

- **This machine** – indicates the name or IP address of the currently operated machine.
- **Temp session key** – a randomly generated session key used for access to the currently operated machine.
- **Remote machine** – the indication of the remote machine name or IP address, as well as a public alias.

  When a public alias is used for remote connections, add `@` to the name (e.g., `cinegy-server@`).

  The drop-down list contains names / IP addresses of the most recently connected clients, with their individual configurations preserved.

- **Password** – a key to connect to the remote machine in client mode. This can be either a temporary key valid for the current Cinegize session or a long-term key specified for service mode.

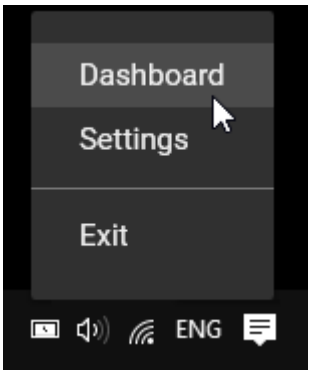
Press this button to open the Cinegize configurator.

Refer to the **Settings** article for details on how to set up Cinegize.

2.1. System Tray

Once Cinegize is launched, the application icon appears in the notification area of the taskbar and remains there, even if the application is minimized to the system tray using the ✕ button.

Right-click on the system tray icon opens the following menu:



Dashboard

Use the "Dashboard" command to open the "Dashboard" window. When the connection is established, detailed information about the Client and the Host current settings is displayed:

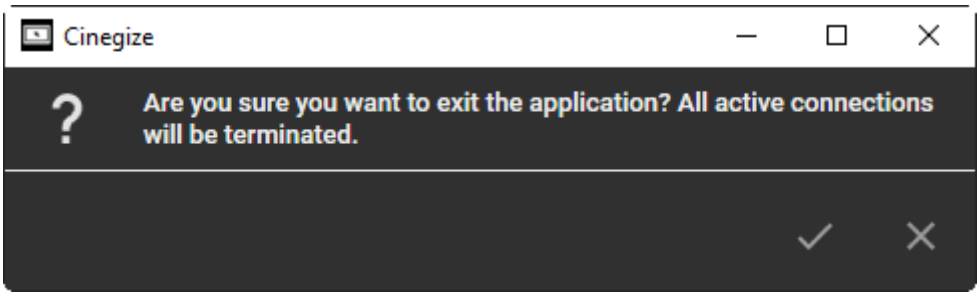


Settings

The "Settings" command navigates to the "Settings" menu when the current settings need to be changed.

Exit

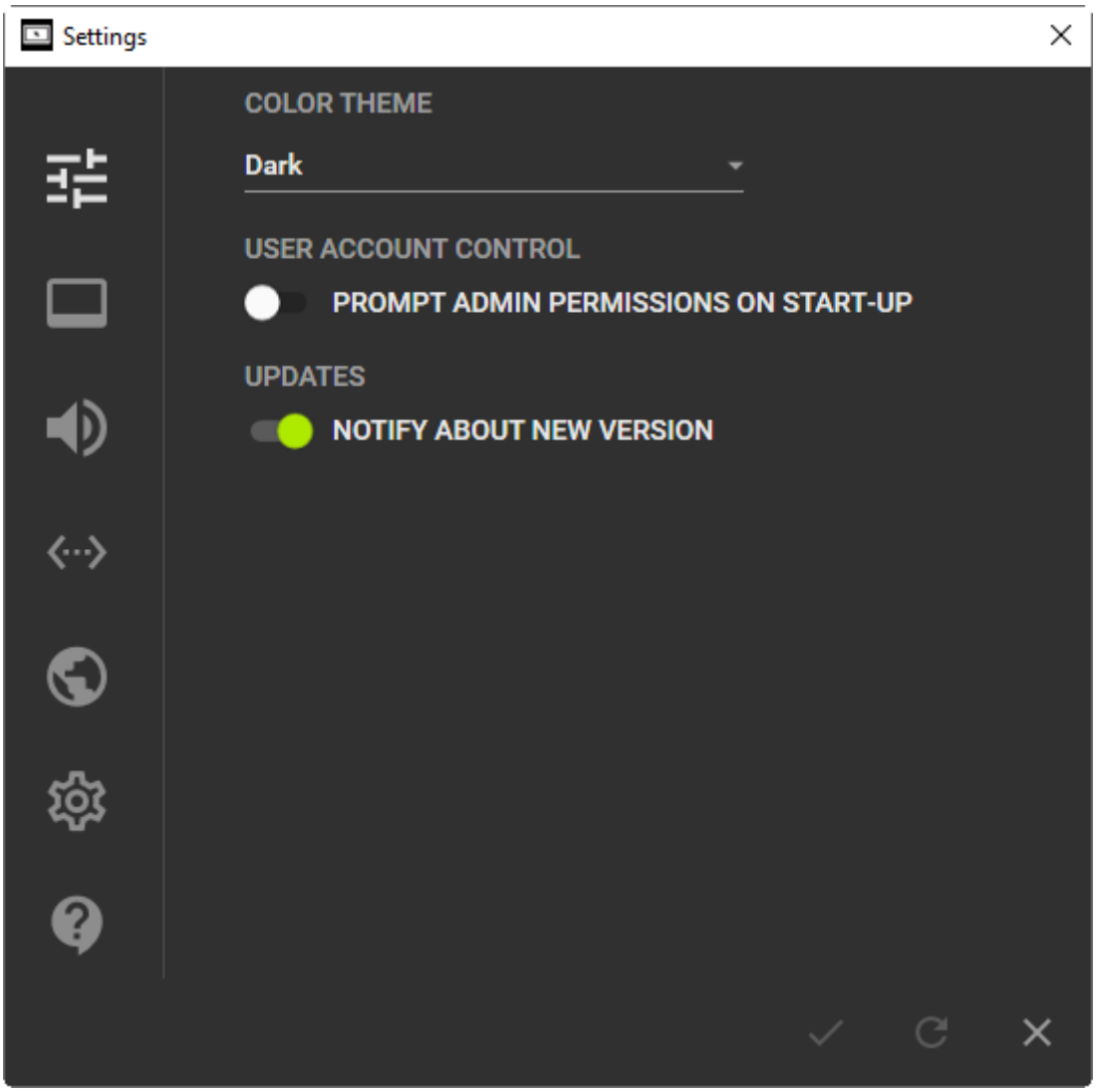
The "Exit" command prompts to close the application with the following confirmation message:



Chapter 3. Settings



To open the configurator, press this button. The following "Settings" dialog appears:



The "Settings" menu is split into the following configuration groups: general, video quality, audio, network, public sharing, service, and information about Cinegize.

In the lower right corner of each tab there is a set of buttons:



To apply the changes, press the "Apply" button.

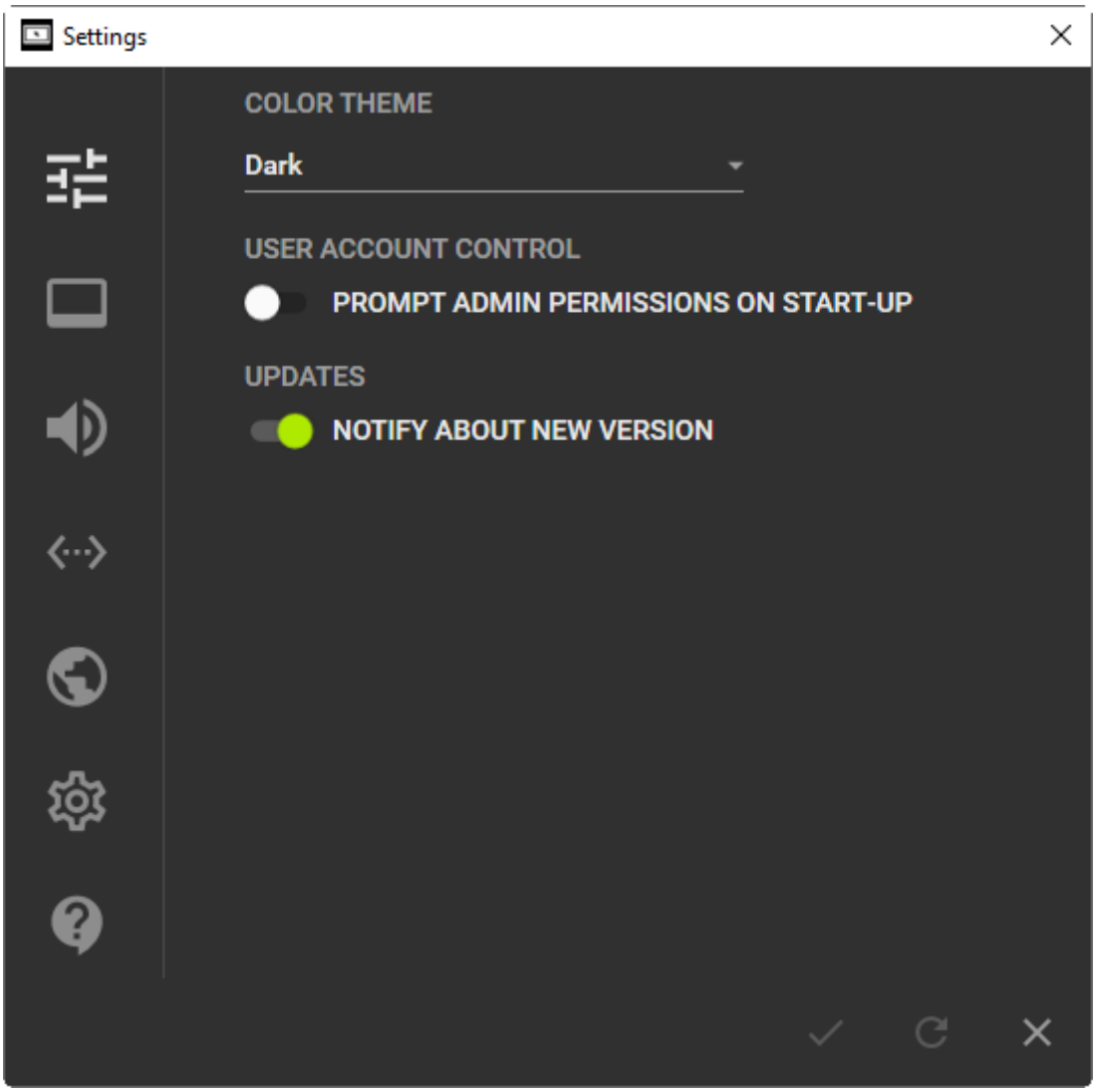


To discard the changes, press the "Discard" button.



To close the "Settings" menu, press the "Close" button.

3.1. General Settings



- **Color theme** – select the "Dark" or "Light" application color theme.
- **User account control** – activate this switcher to have the application ask for administrator permissions at startup to manage lock and login screens, and change service settings.
- **Updates** – activate this switcher to automatically check if a new version of Cinegize is available and, if so, offer to update the software.

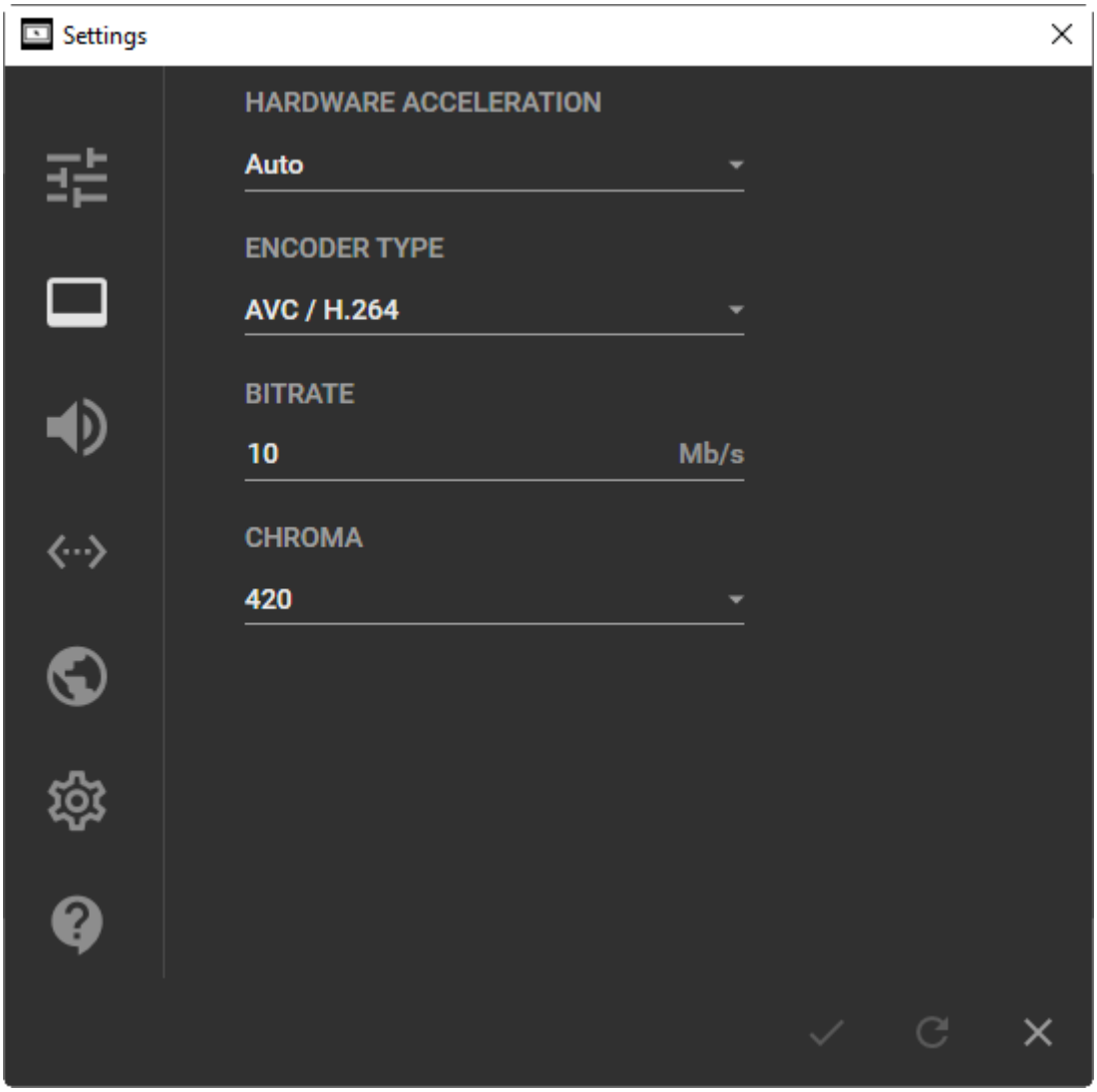
3.2. Video Quality Settings

This configuration is relevant for the client machine.

Cinegize allows manual adjustment of the video quality parameters, allowing adaptation to meet requirements.

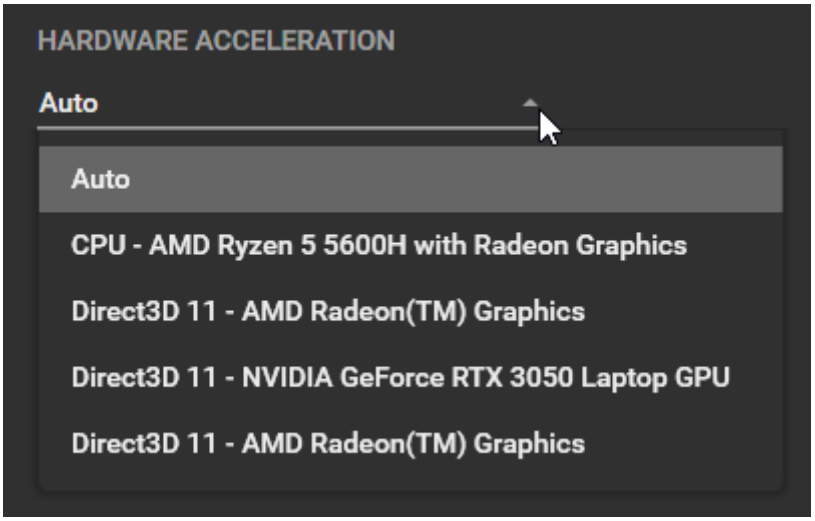
The encoding works with self-contained frames, meaning error recovery times are always low whilst the transmission runs at a variable bitrate between 5 and 60 frames per second as required by host screen updates. This ensures quick updates and no tearing effects whilst saving up to 90% bandwidth at idle.

On the "Video Quality" tab, you can configure the video stream transmission quality parameters:



Here define the following parameters:

- **Hardware acceleration** – use the drop-down list of available connected devices to select whether the default CPU or an external graphics card will be used for rendering effects. Leave "Auto" to let the system detect and use it automatically:



Cinegize can work with any video adapter which supports Direct3D 11 acceleration.

- **Encoder type** – use the drop-down list to define the video encoder type.

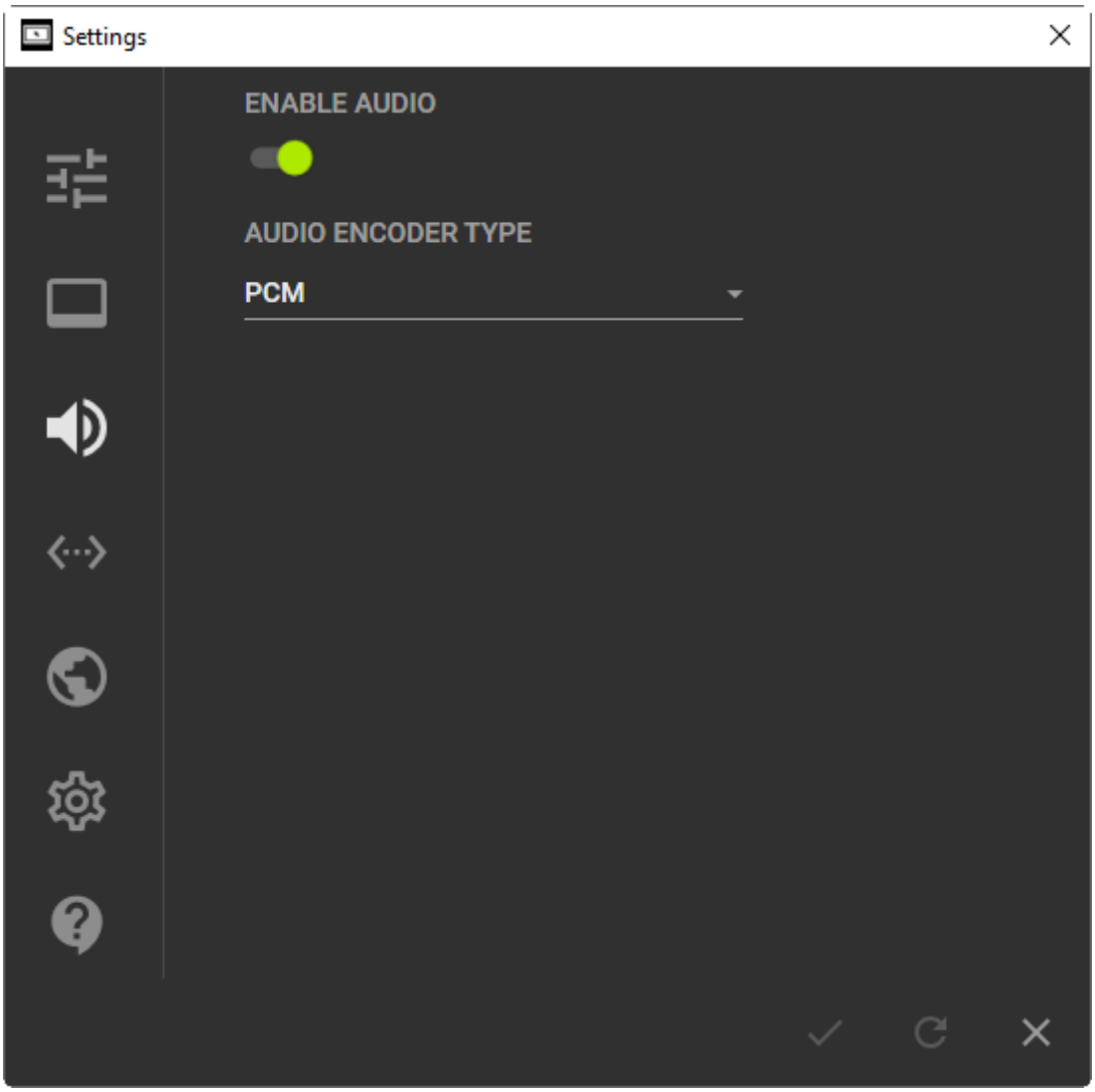
- **Bitrate** – the maximum ceiling bitrate in Mb/s for video encoding.

  For optimal bandwidth, streaming with a low bitrate might be a better option.

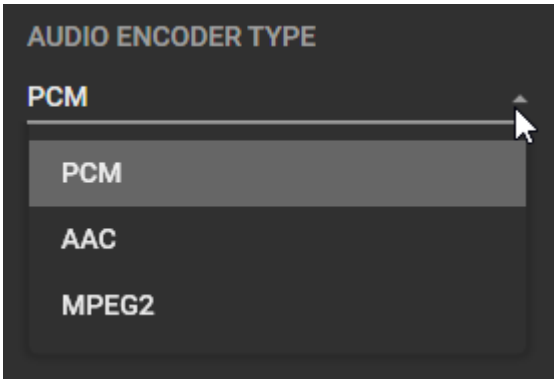
- **Chroma** – the chroma subsampling type.

3.3. Audio Settings

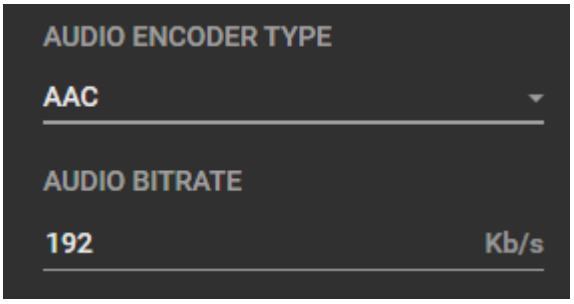
The corresponding switcher determines the use of audio:



When audio is enabled, you can choose the audio encoder type from the drop-down list:

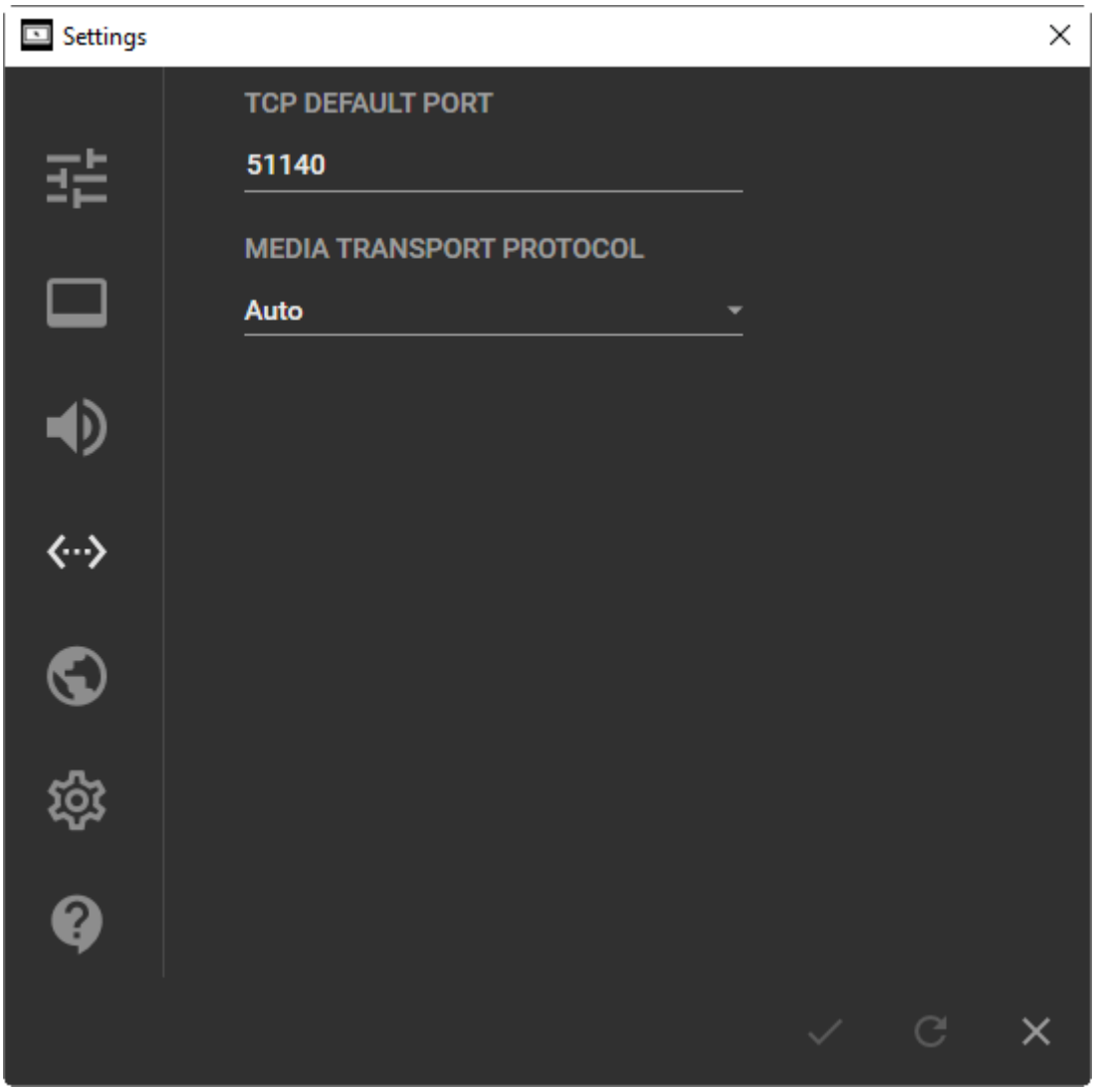


For AAC and MPEG2 encoders you can define the audio stream bitrate to be used:



3.4. Network Settings

In this tab, you can define your network configuration:



Typically, the "TCP default port" is set to 51140. You can change this value manually using the keyboard.

For proper work of Cinegize, the TCP general port value on the client machine must be the same as on the host machine.

If the specified port is blocked on application startup, the appropriate error is logged to log files (at the path C:\ProgramData\Cinegy\Cinegize) for service mode, or reported to the console for application mode.

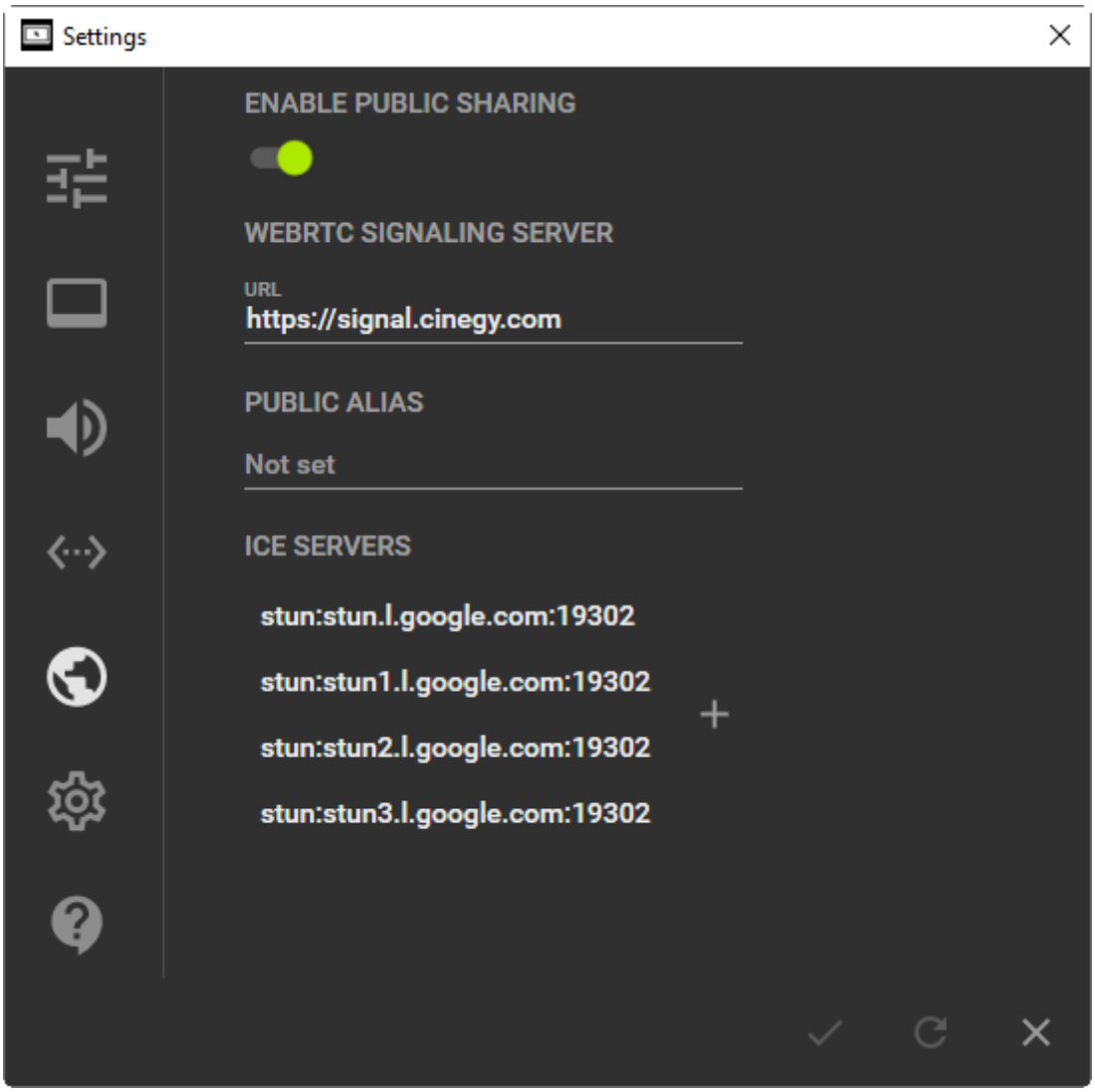
From the "Media transport protocol" drop-down list, choose the stream protocol type (UDP, SRT, SRT (low latency), or RTC) or leave "Auto" to let the system detect and use it automatically.

In SRT (low latency) mode there will always be the minimum delay that is currently possible, but you can manually define the SRT delay when using the SRT protocol.

3.5. Public Sharing Settings

Working in public networks by Cinegize is performed by registering the host machine in the integrated ICE servers via TURN and STUN services. This provides real-time communications including high-quality video as peer-to-peer, so you can connect remotely from anywhere.

Use the corresponding switcher to enable public sharing:

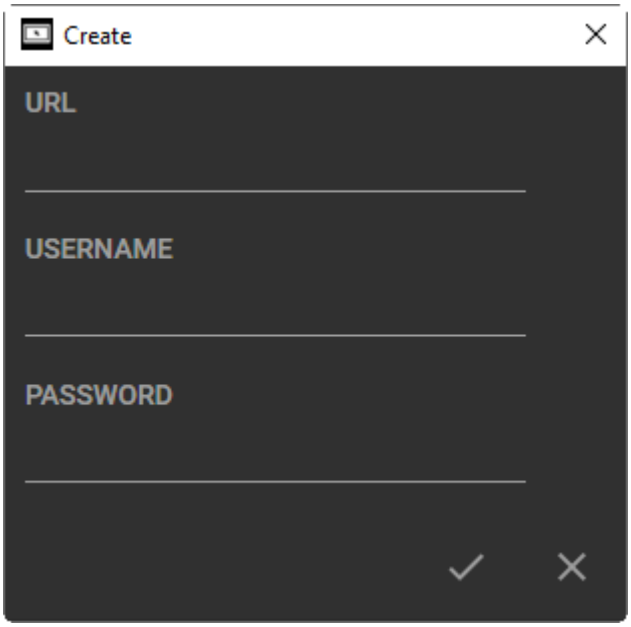


In the "URL" field, you should specify the WebRTC signaling server URL address.

Currently, the URL address set by default leads to the Cinegy signaling server provided for testing purposes.

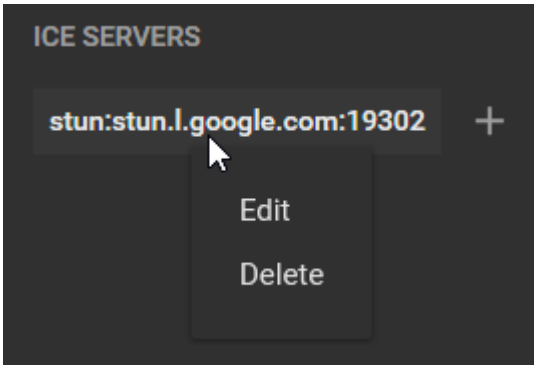
In the "Public alias" field, you can optionally define a user-defined name for the current machine to be used instead of an IP address for remote connections.

The list of currently used ICE servers is displayed below. Press the + button to add a new ICE server; the following dialog box will appear:



Here, define the URL address of a new ICE server. Optionally, you can define the username and password for using this server.

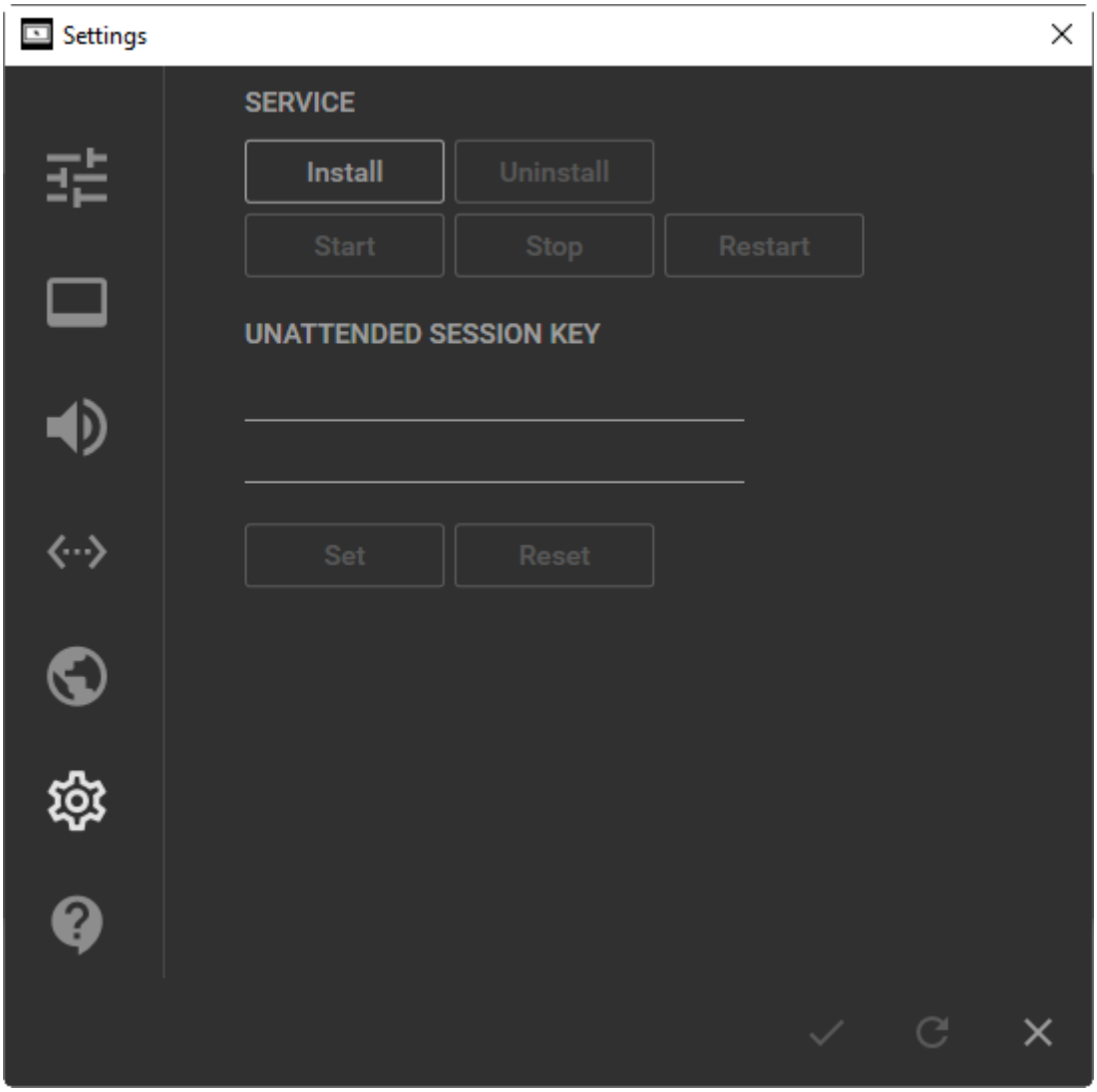
To make changes to the existing ICE server configuration or to remove it, use the "Edit" or "Delete" command from its context menu:



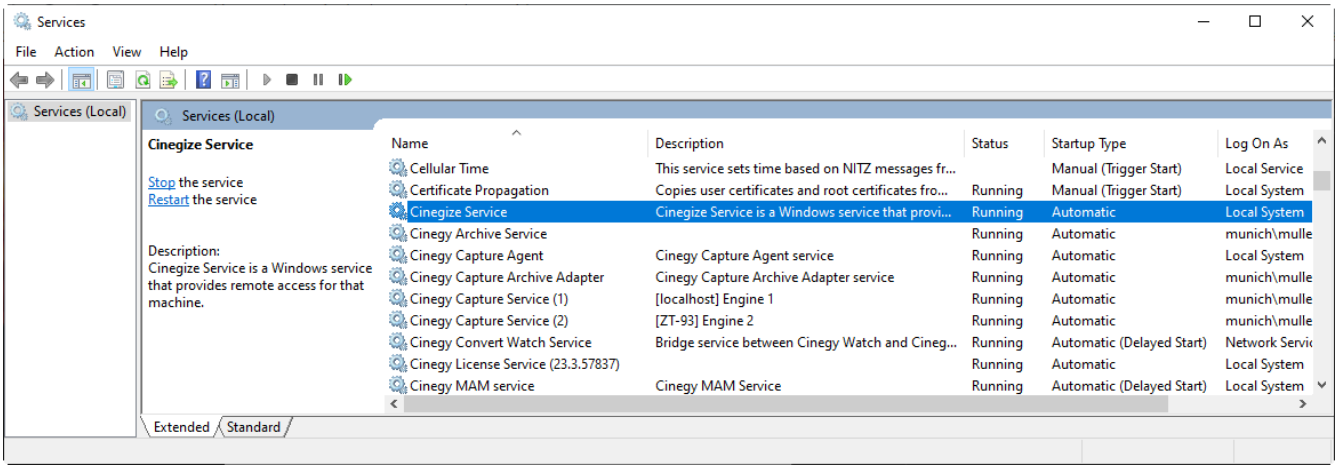
3.6. Service Settings

To manage the Cinegize service, the user must have administrator rights and Cinegize must be launched using the "Run as administrator" command.

Cinegize can operate as a Windows service. This mode provides automatic hosting after machine startup.



In the "Service" tab, press the "Install" button to install the Cinegize service as a Windows service. Then press the "Start" button to start the service:



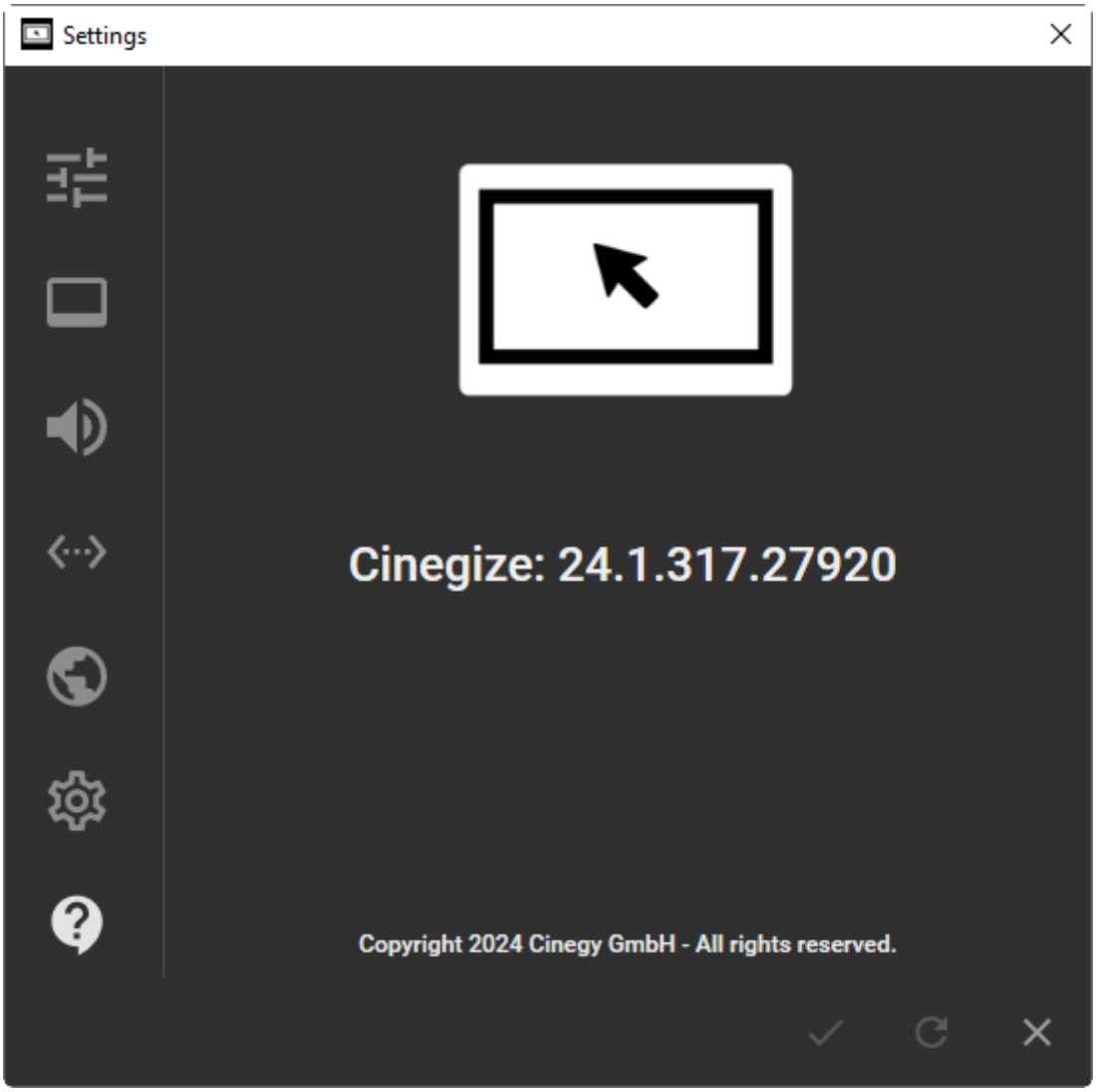
In the "Unattended session key" field, set a personal password for unattended access when Cinegize operates as a Windows service in host mode. Then press "Set" to apply the password set.

Refer to the **Windows Service Mode** paragraph for details on operating Cinegize as a Windows service.

The service can be stopped, restarted, or uninstalled by pressing the corresponding buttons in the "Service" tab of Cinegize.

3.7. Info

The "Info" tab contains the Cinegize version number and copyright information:



Cinegize configuration settings and log files are stored in the following path: *C:\ProgramData\Cinegy\Cinegize*.

Chapter 4. Operating

Cinegize is the logical step of standard software replacing proprietary hardware. It is replacing traditional, high-end hardware-based KVM-over-IP solutions or expensive VDI solutions, which fail to do high-end graphics and video anyway.

Cinegize provides the same high-quality experience you have using a high-end 3D modeling or video editing workstation being sat physically in front of a directly connected monitor, but being remotely connected via the local network running the Cinegize client software on an ordinary Windows PC.

This is not using H.264 or HEVC hardware compression with its known issues and problems but an advanced massive parallel processing video codec designed to run on GPUs natively (please visit **Cinegy's Daniel2 website** for more information). Resolutions like UHD, 8K, or 16K are not a problem for Cinegize, no matter what color depth or frame rate.

4.1. Setup

For proper work of Cinegize, the client and the host machines should be in the same domain!

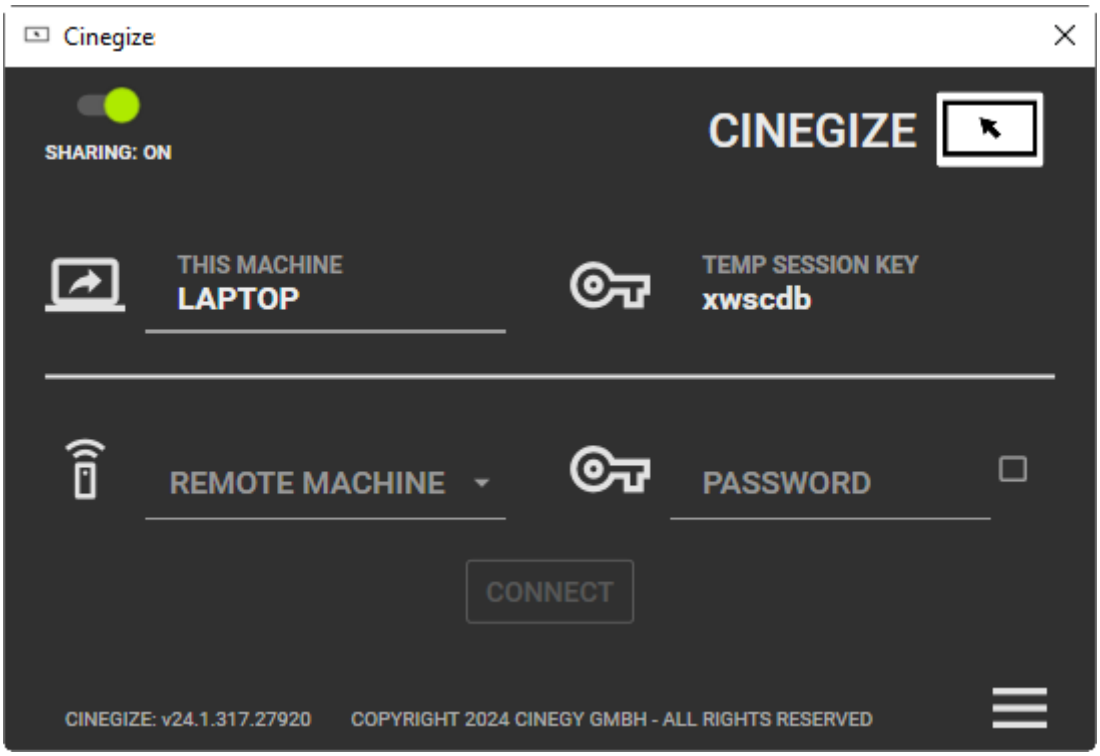
Cinegize is not an Internet remote access or support software like TeamViewer or AnyDesk. It is for use within a local network or a private, high-speed WAN. Think of Cinegize as a virtual, high-end KVM-over-IP replacement.

Cinegize can operate in two modes: as a host and as a client.

Cinegize provides synchronization of plain text copied to the clipboard between client and host machines.

Host Mode

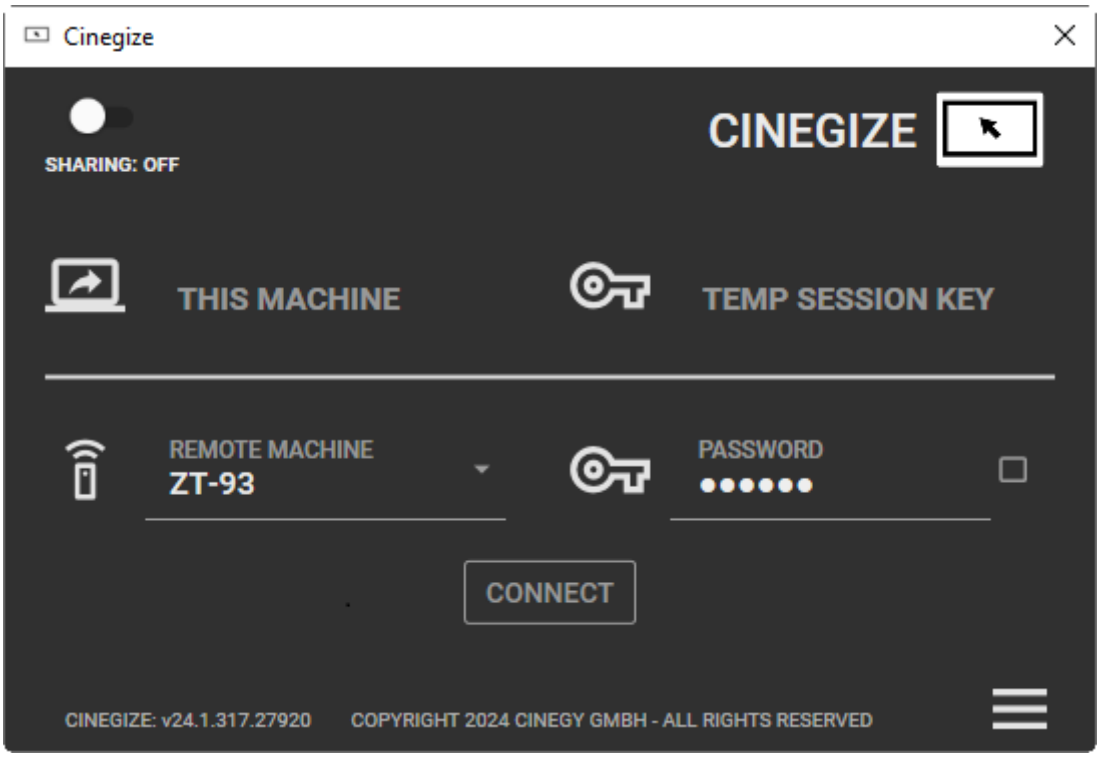
Set the "Sharing" switcher to "ON" position:



In the corresponding fields, you will see the name of the host machine and the temporary session key that you need to provide to the client machine to connect.

Client Mode

Make sure that the switcher "Sharing" is in the "OFF" position for work in client mode. There is no need to install and run the Cinegize service to work in this mode. In the corresponding fields of the main window insert the remote host machine name/IP address and the password generated on the host machine:

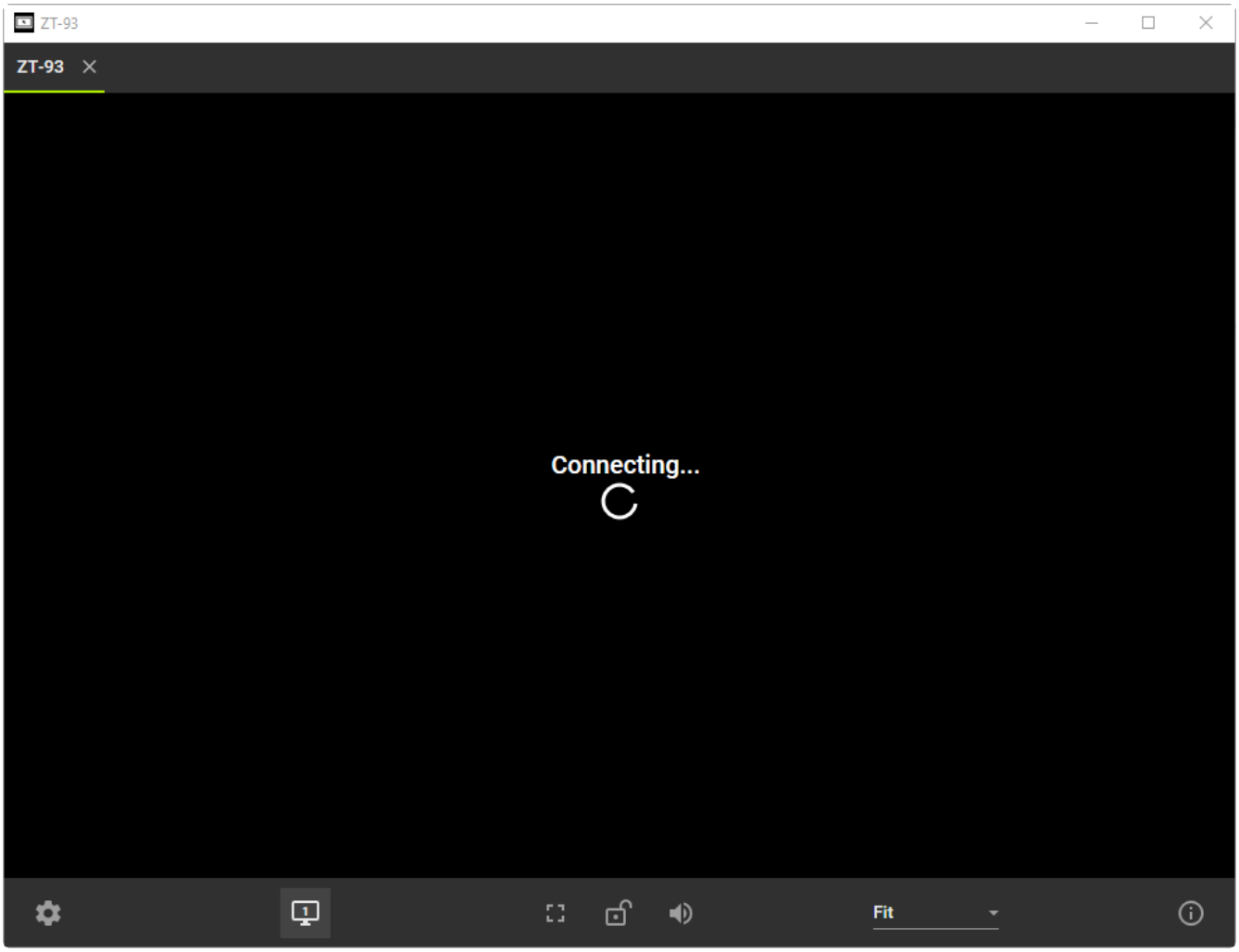


Connection



After specifying the host credentials on the client machine, click the "Connect" button.

The connection process will be displayed:

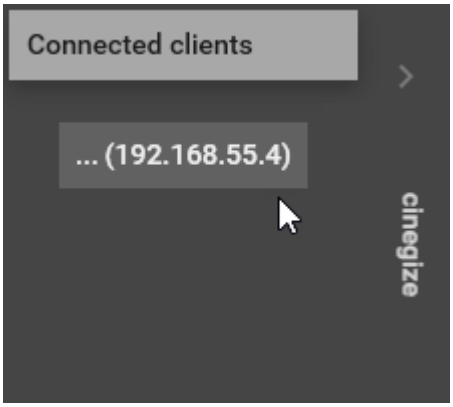


If no connection can be established, an appropriate error message is displayed, indicating the reason for the failure.

As the result of a successful connection, the "Cinegize" pane appears on the right side of the host machine desktop:



Click < and the window with info about the connected client will expand:

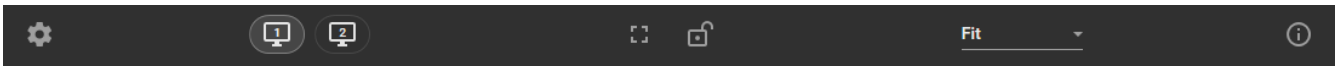


If a poor connection to the host is detected, this is indicated by a flashing red icon located in the upper right corner of the window.

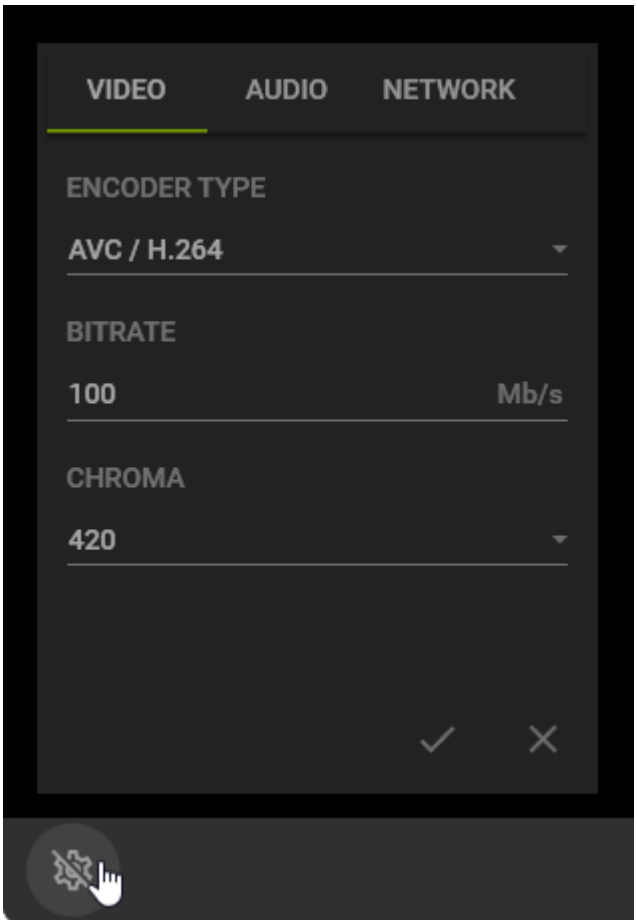
Detailed information on the performance of Cinegize is available in the log files stored in the following path: *C:\ProgramData\Cinegy\Cinegize*.

Controls

The connection settings and client console window controls are located at the bottom of the window:



Use this button for quick access to the settings of the current connection. The following configurator appears:



Here you can re-configure video and audio quality parameters of the session, as well as network configuration.

Refer to the **Settings** section for more details about connection configuration.



One or more monitor icons are displayed here. The number of icons corresponds to the number of monitors on the host machine. Clicking on the icons allows switching between monitors.



Use this button to expand the application window to full screen. You can also switch between normal mode and full-screen mode using the `AltGr+F` keyboard shortcut.

In full-screen mode, you can access the connection controls through the toolbar, which becomes available when hovering the mouse pointer over the top of the window.

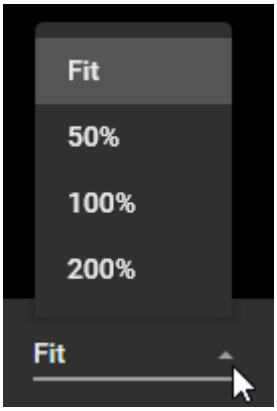


This button sends the `Ctrl+Alt+Del` command to the host machine to unlock its console. You can also use an alternative key combination `Ctrl+Alt+Ins`.



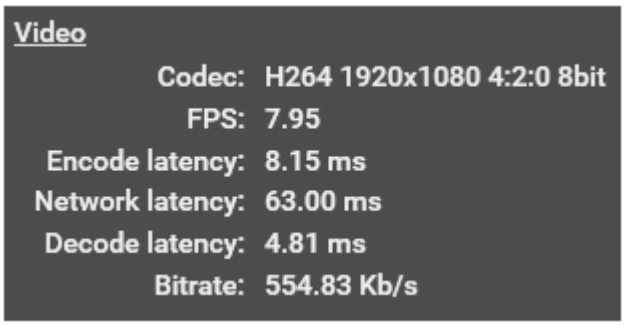
This button provides access to the volume slider, which allows you to change the volume level of your stream by moving the slider with your mouse.

You can easily adjust the display scale of the application by selecting the desired scale from the "Fit" drop-down list in the lower left corner:





Press this icon to display a pop-up window with actual stream data (such as framerate, bitrate, etc.):

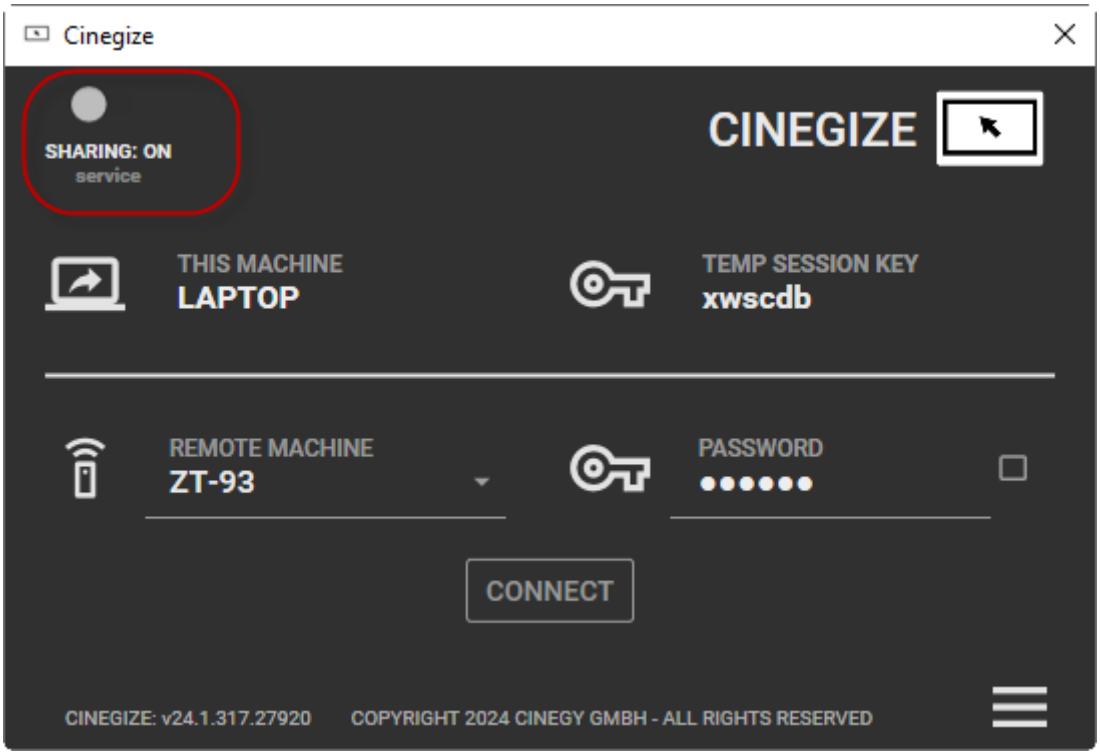


The shortcut for this action is `AltGr+I`.

4.2. Windows Service Mode

This mode provides automatic hosting after machine startup.

To operate in this mode, you should install and start the Cinegize service as described in the **Service Settings** paragraph.



Once installed, the Cinegize service will automatically start as a host when the machine boots, allowing the user to connect to the login screen as if he were physically sitting in front of it. This is perfect for providing remote access to a virtual workstation hosted in a LAN-connected data center, or for using centralized equipment that is physically isolated from an operator workstation.

System Recommendations

Cinegize was designed with the express goal of meeting exacting quality capabilities and at the same time having a minimal impact on the host. Using the massively-parallel Daniel2 codec allows ideal optimization running on GPU as well as modern multi-core CPUs with features such as AVX. Since any desktop remoting software is not an end goal alone, keeping the load added by this function as small as possible is a critical benefit of Cinegize.

.1. Software Only

No additional hardware needed – just the power of your graphics card, preferably a recent NVIDIA card. On the client side, an integrated graphics card will do.

The minimal supported NVIDIA driver version is 456.81. We recommend that you perform the process of NVIDIA drivers update only upon stopping Cinegy applications. For detailed instructions on installing NVIDIA driver, please refer to the NVIDIA Drivers installation article.

Daniel2 GPU encoding and decoding are supported by NVIDIA video boards that have CUDA Compute Capability 3.5 and higher. If the NVIDIA video board has the CUDA Compute Capability of an earlier version, then use Daniel2 CPU encoding and decoding.

The required hardware largely depends on the video resolution to be played back at each machine running Cinegize.

Video is transmitted with light-weight compression including rapid error recovery, offering a bandwidth efficiency of up to 20:1 compared to uncompressed. Cinegize requires a cabled LAN connection between sender and receiver with minimal network packet loss, operating at 1Gbps speed for up to UHD60 4:4:4 mode.



8K (7680x4320) resolutions at high-quality mode require 5Gbps or higher network speeds.

Cinegize utilizes the GPU to compress or decompress in real time the video output where it is created, thus offloading the CPU.

The minimum requirements to install and/or run are Windows 10 64-bit (Enterprise, Home, or Pro), 4GB of RAM, a suitable CPU (dependent upon the host resolution and quality intended for transmission), and preferably a recent NVIDIA graphics card, which can be used to offload the encoding or decoding using NVIDIA's CUDA.

Users of NVIDIA Quadro GPUs can benefit from the NVIDIA Capture SDK (NVFBC) features available, allowing a further reduced host PC load.

Cinegize runs also without GPU acceleration creating minimum CPU load.

.2. Disclaimer

Cinegize is currently an early beta version, and access is currently provided at no cost pending release. This release is not meant for production use but only for evaluation and demonstration purposes.

.3. No Damage



Cinegy refuses any responsibility for any damages resulting from the use of Cinegize. For the avoidance of any doubt: Cinegy refuses any liability for any damage resulting from the use of its Cinegize beta software.