

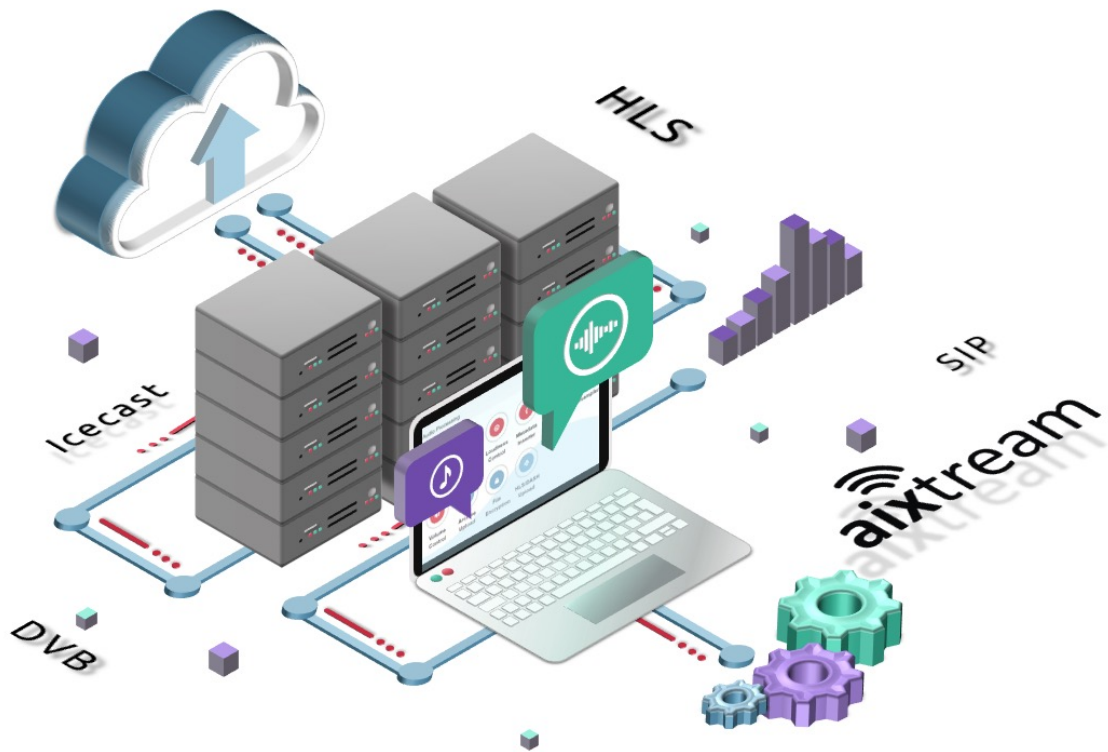


10 new tips to get the most of aixtream

Explore aixtream functionalities

Find useful tips to unleash the power of aixtream's unlimited functionalities

October 2022



Introduction

We are happy to issue our Tech Guide 2 to give you the most of aixtream software. Easy configuration & customization —the possibilities are grand and keep expanding! Our team is dedicated to making your experience and your work easier and more enjoyable. Thanks for choosing us!

Best Regards,
Your Ferncast Team

Tips to maximize your operations!

1. aixtream allows in-depth filtering of system messages
2. You can lock PIPEs to avoid unauthorized or unintentional edits
3. You can configure a custom 'Quick Actions ' control panel for a variety of actions in the aixtream GUI
4. You can change the time until a user login session timeout in aixtream occurs to enhance security or convenience
5. You can set the minimum amount of storage space which aixtream will always keep available (by automatically deleting older files)
6. You can adjust the size of the jitter buffer and enable packet-loss concealment for RTP and SIP connections in aixtream
7. The Ferncast Team can help you perform extremely specific user role configuration via LUA scripts
8. You can take pictures of the system and network metric of an aixtream system directly in the GUI
9. You can define presets for PIPE element configurations to quickly apply the same configuration to multiple PIPEs
10. You can configure how often in aixtream should attempt to retry after a connection failed and how long it should wait in between



1

aixstream allows in-depth filtering of system messages

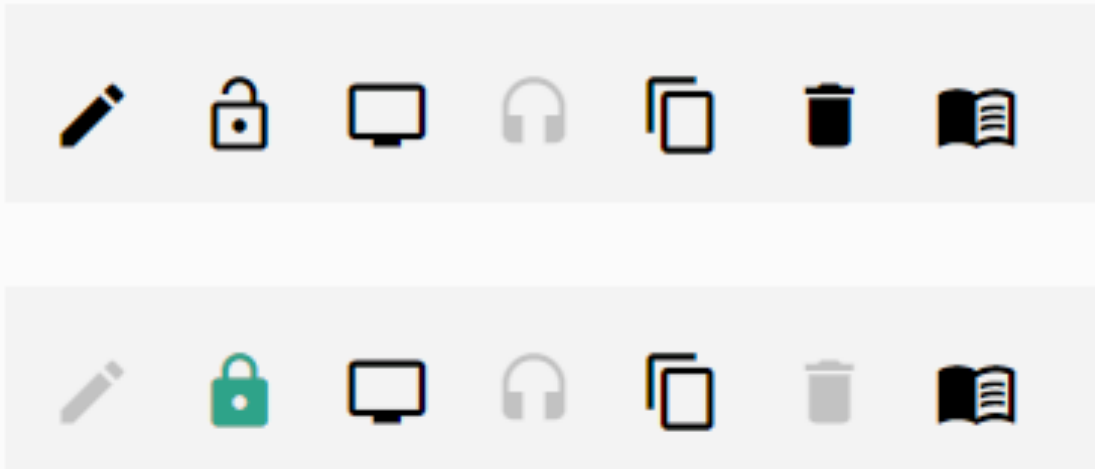
The screenshot shows the aixstream web interface. At the top is a navigation bar with tabs: Dashboard, Phonebook, PIPEs, On-demand, Archive, Applets, Monitoring, and a settings gear icon. Below this is a sub-menu with tabs: Users, User Roles, SIP Accounts, Call Profiles, Licenses, Log, Audio, Network, and System. The 'Log' tab is selected. Below the sub-menu are filtering options: Startdate (mm/dd/yyyy), Minimum Level (Info), Object Filter (Object Types), and Event Codes (Code). There are 'Refresh' and 'Export' buttons. The main area is a table with columns: Datetime, Object, User, and Message.

Datetime	Object	User	Message
19.05.2022 - 17:42:16		root	[1003] User login: User 'root' logged in.
19.05.2022 - 11:42:33	New Pipe 1 ...	root	Object "stream" updated: b5cc66fd-7314-43e2-98ef-3b09fa23600a.
19.05.2022 - 11:42:33	New Pipe 1 ...	root	[API] Update Pipe "New Pipe 15".
19.05.2022 - 11:42:28	New Pipe 1 ...	root	Object "stream" created: b5cc66fd-7314-43e2-98ef-3b09fa23600a.
19.05.2022 - 11:42:28	New Pipe 1 ...	root	[API] Create Pipe "New Pipe 15".
19.05.2022 - 09:26:28		root	Method "networkConfigExport" called.
19.05.2022 - 09:26:28		root	Updater error: HTTP error: Couldn't resolve proxy name.
19.05.2022 - 09:24:24		root	Method "networkConfigExport" called.
19.05.2022 - 09:21:23		root	Method "networkConfigExport" called.
19.05.2022 - 09:20:42	New Pipe 1 ...	root	Object "stream" updated: 7e7fd36c-8e9e-46ef-9ad5-bf8005666c09.
19.05.2022 - 09:20:42	New Pipe 1 ...	root	[API] Update Pipe "New Pipe 14".
19.05.2022 - 09:20:39	New Pipe 1 ...	root	Object "stream" created: 7e7fd36c-8e9e-46ef-9ad5-bf8005666c09.
19.05.2022 - 09:20:39	New Pipe 1 ...	root	[API] Create Pipe "New Pipe 14".
19.05.2022 - 09:20:34		root	Method "networkConfigExport" called.
19.05.2022 - 09:20:32		root	[1003] User login: User 'root' logged in.
17.05.2022 - 10:06:19	Live-Übertr.	shakeFM	Object "stream" updated: 0f50d916-91be-420d-b6e2-dd08ce5c280b.
17.05.2022 - 10:06:19	Live-Übertr.	shakeFM	[API] Update Pipe "Live-Übertragung".
17.05.2022 - 10:06:18	Live-Übertr.	shakeFM	Object "stream" updated: 0f50d916-91be-420d-b6e2-dd08ce5c280b.
17.05.2022 - 10:06:18	Live-Übertr.	shakeFM	[API] Update Pipe "Live-Übertragung".

The Log menu in aixstream is extremely detailed and tracks just about everything that goes on in the system. Because the depth of information can easily overwhelm a user, it also features many functions to filter the view in order to help users find specific system messages. This includes filtering by how critical the event is, which parts of the system are affected as well as specific reoccurring messages. But even so a user might sometimes just want to learn exactly what is going on with one specific connection or call. For this purpose, it is possible to limit displayed log messages to those related to a specific PIPE. Users can find this option in the PIPEs menu. Among the icons to the right of the PIPE, users can find a book icon ("Show log messages"). When clicked, a new window will appear that shows all recent log messages that relate to this PIPE only. This view can then be filtered further just like the main Log menu.

2

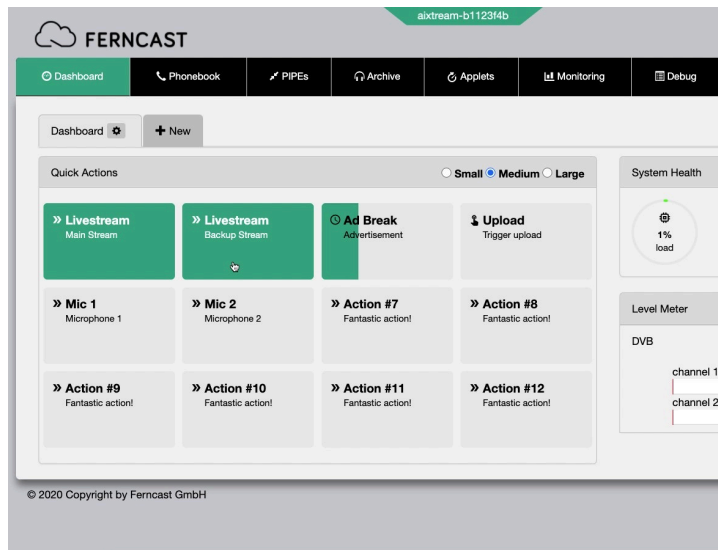
You can lock PIPEs to avoid unauthorized or unintentional edits



In a complex system running productively, accidental changes of the configurations must be avoided at all costs. While the architecture of the PIPE concept makes such accidents unlikely to begin with, and quick to fix when they do happen, user errors can never be ruled out with absolute certainty. Furthermore, when multiple users are operating the same system, it is easy to inadvertently make changes to PIPEs other users have already configured fully or that you were not meant to touch in the first place. The aixtream GUI helps prevent such errors by allowing users to “lock” a PIPE and thus bar users from making changes to the configuration without unlocking it first. The icon button to enable this can be found in the icon toolbar to the top right of the PIPE. Between the “Edit PIPE” and “Send to monitor PIPE” options.

3

You can configure a custom 'Quick Actions' control panel for a variety of actions in the aixtream GUI



Many audio streaming and recording use cases require very complex workflows. Sometimes these workflows are too context sensitive to be automatized fully. Thus, they require manual switching of audio inputs/outputs or activation of various functions by a human operator. Even applications outside the master control room (MCR) or interview management can benefit from the ability to adapt the user interface to specific requirements. For this purpose, we have the **Quick Actions** widget. With this tool the user can configure a custom control panel in the Dashboard menu. You can define buttons and switches that trigger or regulate nearly every action possible in the aixtream user interface. Users can switch or reroute active inputs and outputs; change the number of output channels (for example from stereo to multichannel); play recorded jingles, messages or DTMF sequences and many more. You can get started with Quick Actions by adding the Quick Actions widget to your Dashboard, defining some Quick Action applets in the Applet menu and setting the actions they trigger. Setting up a Quick Action control panel is powerful but complex, so feel free to contact us if you need help!

4

You can change the time until a user login session timeout in aixtream occurs to enhance security or convenience

The screenshot displays the 'System Configuration' window of the aixtream interface. It features a top bar with the title 'System Configuration' and an 'Expert' toggle. Below this, there are configuration fields for 'Hostname' (set to 'aixtream-c001c0de') and 'Timezone' (set to 'Germany: Europe/Berlin (UTC+02:00)'). A 'WebRemote' section is expanded, showing settings for 'Website title' ('aixtream-demo'), 'Website title color' (a green color bar), 'Show clock' (set to 'Off'), 'Session timeout' (set to '10' minutes, with the text 'min' to the right), and 'Unsafe HTTP headers' (set to 'On'). The 'Session timeout' field is highlighted with a red underline.

Depending on the operational circumstances, the ideal length of time a user may remain idle until they are automatically logged out of the system can vary a lot. For some users, having to log in again after leaving the user interface alone for a few minutes may be annoying or slow down overall operation. In other cases, it is of vital importance there is no chance an unauthorized person can access the device via another user's active session. For this reason, aixtream supports a customizable session timeout for user logins. The user can precisely define the duration of inactivity after which the user is automatically logged out. Users can find the option to configure this in the System sub menu of the Settings menu. In the WebRemote folder they find the Session timeout field in which the length of time can be defined in minutes. If a user does not interact with the user interface for that many minutes, they are logged out of the system.

5

You can set the minimum amount of storage space which aixtream will always keep available (by automatically deleting older files)

System Configuration

Expert

Hostname

ⓘ

aixtream-c001c0de

Timezone

ⓘ

Germany: Europe/Berlin (UTC+02:00)

WebRemote

Audio

Updater Proxy

ⓘ

http://proxy.example.com

IP local port range

ⓘ

32768-60999

Archive quota

ⓘ

10%

On-demand job limit

ⓘ

0

A danger that audio recording use cases have to deal with, especially those in which audio is continuously being recorded without any interruptions, is that the available storage space will eventually run out. The aixtream system deals with this by allowing the user to set an “archive quota” to determine how much storage space should always be kept free. If the amount of available space falls below this value, the system automatically deletes the oldest files in the archive until there is enough space available again. The users can find the option to configure this in the System sub menu of the Settings menu. There is the Archive quota field, in which the minimum amount of storage space that should be left free can be defined (either in percent of total available space or absolute values). Keep in mind that you may have to also configure an external backup upload or regularly move recorded files manually before they are deleted from the aixtream system.

6

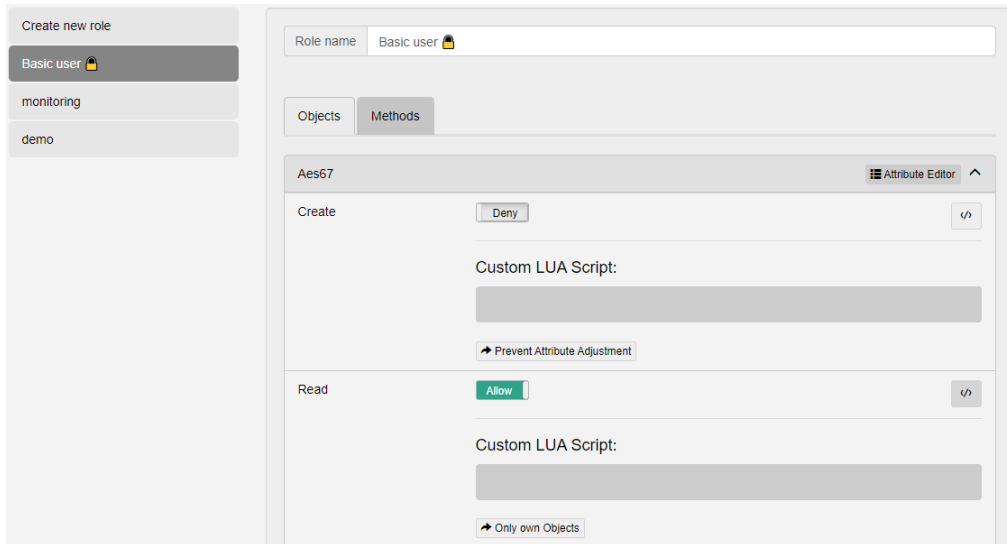
You can adjust the size of the jitter buffer and enable packet-loss concealment for RTP and SIP connections in aixtream

Setting	Value	Unit
Name	Default	
Size of jitter buffer	200	ms
Packet size hint	20	ms
Decoder PLC	Off	
Max. reconnect count	0	
Auto-reconnect wait-time	10	s
Auto-call on register	Off	
Use local SDP	Off	
Allow PT reassignment	Off	

Many features to improve connection quality are available. Especially when performing a live audio call of some kind, latency should be small, but the quality of the audio must remain high, even on low-bandwidth connections. That is why many techniques have been developed over the years to maintain audio quality even under difficult conditions. In aixtream some of these are configured in the Call Profiles menu. There you can create a new profile (with your priority list of codecs and bitrates) and also define the size of the jitter buffer in milliseconds and enable Decoder PLC (Packet-Loss Concealment) for this profile. Once the profile has been created, you can set it as the used Call profile when creating or editing a SIP contact in the Phonebook menu and also when creating or editing a PIPE with RTP source or RTP sink elements in the PIPEs menu. This way you can set that call profile to be used with SIP calls and RTP connections, respectively.

7

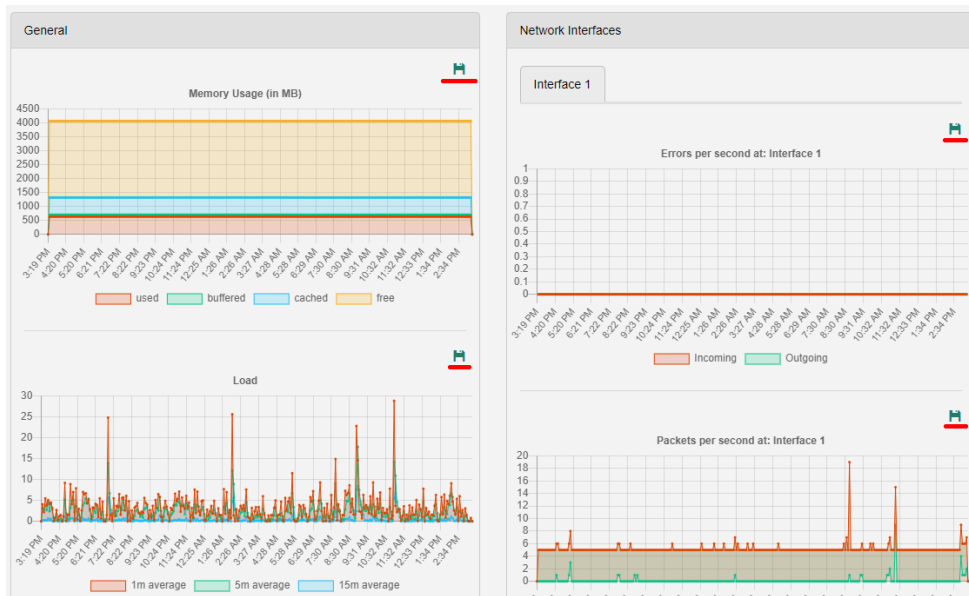
The Ferncast team can help you perform extremely specific user role configuration via LUA scripts



Unlike some other systems which limit the users to static, predefined user roles, the aixstream user role management allows admins to customize very precisely what users with a specific user role should be allowed to do. However, sometimes even more specific rules are needed. An example of this would be if the directors wanted to ensure that a group of users is generally forbidden from activating and pausing connections but should be allowed to manage one particular PIPE. Whereas the general permission settings are limited to an “allow/deny” binary, the aixstream system also makes it possible to create LUA scripts to define very specific permissions. Technicians who are savvy coders may be able to write these themselves by referencing UUIDs from the Debug menu, but Ferncast also offers assistance in this matter. If you tell us what permissions you require, we can provide the finished LUA scripts directly to you.

8

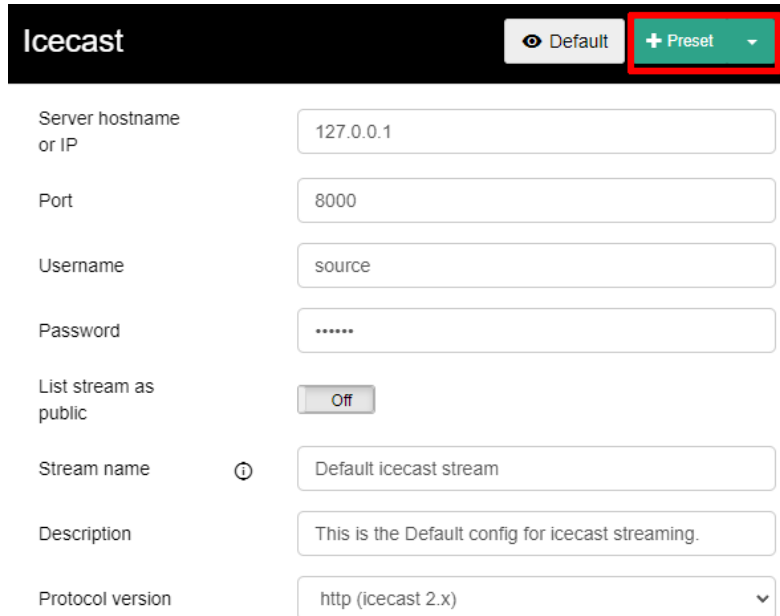
You can take pictures of the system and network metrics of an aixtream system directly in the GUI



Being able to quickly communicate issues with the system for the sake of troubleshooting in an error case can be a big help. The most important aspect in this regard when talking about live systems like aixtream is normally the log of system events. It allows specific errors to be found quickly. Some issues are not so easily identified though. In those cases, it may be useful to track the overall system and network health. This includes CPU load, RAM usage and packet losses. In aixtream there is the Monitoring menu for this. It displays all the aforementioned information in two neat columns. When it is necessary to communicate any troubleshooting information from this menu to us, a general screenshot of the view could be made with your computer, but this may be awkward for various reasons. If you just want to create a single image of one of the Monitoring statistics, you can simply click the floppy disk icon to the top right of each graph to save an image of only that graph. This image can then be transferred to the Ferncast support team without any hassle.

9

You can define presets for PIPE element configurations to quickly apply the same configuration to multiple PIPEs



The screenshot shows the Icecast configuration interface. At the top, there is a black header bar with the 'Icecast' logo on the left and two buttons on the right: 'Default' (with an eye icon) and '+ Preset' (with a downward arrow). The '+ Preset' button is highlighted with a red rectangular box. Below the header, the configuration form includes the following fields:

- Server hostname or IP: 127.0.0.1
- Port: 8000
- Username: source
- Password: *****
- List stream as public: Off (toggle button)
- Stream name: Default icecast stream (with an information icon)
- Description: This is the Default config for icecast streaming.
- Protocol version: http (icecast 2.x) (dropdown menu)

Configuring many different connections and streams can be very tedious. Especially if some aspects of the connection regularly change; for example, because the remote destinations of a large-scale RTP streaming application regularly change or you regularly have to change the file used as an input in a non-live application. Changing all these manually to the same value when you have to do this for 50 or more connections is tiresome and time-wasting. In aixtream you can define a preset when configuring a PIPE element. This serves two purposes: Firstly, the user can easily reuse a default configuration again and again. Secondly, and more importantly, they ensure that the same PIPE element across multiple separate PIPEs has exactly the same configuration. Any changes to the preset will apply to all PIPE elements using that preset. You can find the option to configure a preset in the top right corner of the element configuration window (the one you see after clicking on a PIPE element to configure it). Click this button, give the preset a name and confirm with the green floppy disk icon. Now this preset can be selected and applied to a PIPE element in the future by clicking the downward-facing triangle next to the Preset button and selecting the Preset. Any changes made to the configuration after the PIPE element has been assigned a preset, is applied to all PIPE elements with that preset.

10

You can configure how often aixtream should attempt to retry after a connection failed and how long it should wait in between

General Settings

Pause mode		Discard	
Number of audio channels		1	
Sampling rate		0 Hz	
Auto-restart wait-time		15	s
Max. retry count		5	
Use backup configuration		Off	

Save

Cancel

Connections are not always stable in the broadcasting and streaming world. Sometimes the input fails due to human error or technical failure, sometimes a network or transmission issue makes it impossible to reach the destination. In those situations, it is important that operators do not have to manually restart connections, especially if the error resolves itself within a few seconds without any intervention from the operators. In aixtream automatic retries in the case of errors can be configured for each PIPE and entire PIPE groups.

For individual PIPEs, the maximum number of retries and the wait time between retry attempts in seconds can be changed in the **Edit PIPE** menu for the PIPE you want to configure. Click on the **Settings** button (wrench icon) next to the text field with the PIPE's name at the top. In the dialog menu which now appears, you can find Auto-restart wait-time and Max. retry count. There you can adjust those values. Please note that "99" for retries means an infinite number of retries. "0" disables retries entirely. For PIPE groups, these options can be found in the **Edit Streamgroup** menu when creating or editing a PIPE group (pencil icon in the tool bar with the PIPE group name).

Contact

Want to find us?

Reach out to us to learn more about aixtream! We can even schedule a personal presentation and offer a demo installation for you to try out.

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