SplitCam development report for the period from November 18, 2022 to April 18, 2023

Short list of changes

What's new

- **Preliminary working version of tip notifier.**
  Tip notifications are at the final stage of development. Functionality is well defined, most internal interoperation is realized and user interface is already pretty much done.

- **Added notification parameters.**
  Tip notifications now have a set of parameters allowing for many configurations: size and position, multiple image and text fields, animations, and text formatting.

- **Added tip notification sound.**
  Tip notification is an optional parameter: user can turn it on or off. We thought it is quite important to give user an audio feedback whenever a new tip arrives.

- **Notifications support for the first 7 sites.**
  We've added support for a total of 7 popular streaming services and thus covered about 90 percent of active models.

- **Added file verification when updating ingest servers.**
  Network errors do occur sometimes so it turned out to be a necessity to verify ingest servers file format after it was downloaded at the program startup. In case our server is down the file might get corrupted and this caused SplitCam to crash.

- **Added sine wave and zig-zag animation to notifier icon motion.**
  Notification icon moving along a straight line is a bit boring so we added a couple of movement enhancements to make user happier.

- **FRAMESERVER=1 setup option**
  For automated SplitCam setup in studios we've added setup parameter FRAMESERVER=1 to prevent changing WMF EnableFrameServer registry value during program setup.

- **DisableAutoAboutDialog registry option**
  For automated SplitCam setup in studios we've added a registry key check to not automatically show About dialog on version change if 'HKLM\SOFTWARE\SplitCam\DisableAutoAboutDialog' key exists and is not 0.

- **DisableUpdateCheck registry option**
  Following some studio administrators requests we added an option to disable automatic program updates if 'HKLM\SOFTWARE\SplitCam\DisableUpdateCheck' key exists and is not 0.

- **RUN=0 setup options**
  Don't run SplitCam after installation if RUN=0 or /quiet installer command line option is provided. This option is used by system administrators during automated installations of SplitCam.

Updates

- Don't require pressing Ctrl key for zooming in or out on a layer. Now to zoom in or out on a selected layer all you have to do is just turn a mouse wheel.
- CamPlace streaming service is deleted from SplitCam.
- Disabled Chat button in the main application window. Its functionality is replaced with new notifications realization.
- Notifier: drawObject image fit to notifyObject size. Original size get from canvas now. These changes are required for correct scaling of tip notifications when canvas resolution changes.
- Calculate text size from drawObject size. The text size inside tip notification is not defined in points as usual but in percents of the notification size. This is the only way to keep notification presentation consistent with any canvas resolution, and to scale the text along with notification when required.
- The implementation of the notifier has been moved to the new interface.
- Now slideshow layer size is calculated by the maximum image size in array. This approach turned out to work much better when displaying images of different resolution in one slide show layer.
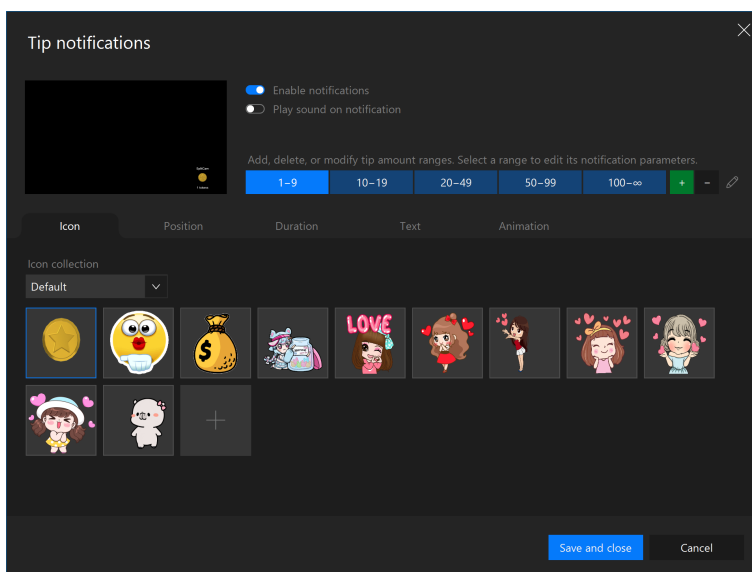
Fixed

- Fixed bug with window grabber.
- Don't check the stream URL format as the format may differ on different platforms.
- Addressed program crashing while working with text layer.
- Emojis in scrolling text layer were rendered incorrectly.
- Fixed rotating layers.
- Fixed error with initializing SplitCam video driver ofter changing the driver name.
- x86 compile and link errors fixed.
- Address the mini window out of sceen bounds issue.
- Fixed excess previous frame when new tip start animation.
- Fixed bug with not working scene transitions when any canvas effects is on.
- Fixed crash when enabling Avoid body option in a floating layer.
- Remove grey background from notifier icon.
- Fixed crash on clicking the Record button.
- Program crashed while working with application audio capture.
- Fixed flipping or mirroring a cropped layer.
- Fixed bug with open/close mike grabber on all scenes when a scene is changed.
- Addressed the issue with not being able to change virtual SplitCam Webcam name on some systems.
- Fixed logging in to an unconfirmed account.
- Fixed error about cloud login with unconfirmed credentials.
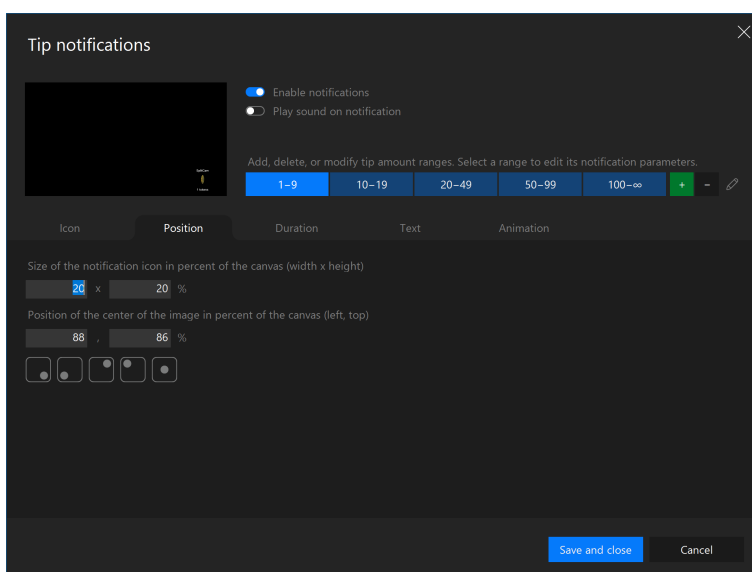- New cloud user registration was not working.

During this 5-months period our work was mostly concentrated around adding tip notifications to SplitCam. It took quite a lot of efforts to bring a user friendly, resources efficient and reliable version of notifications. The work was divided into three parts: UI interface, streaming web sites support, and presentation.
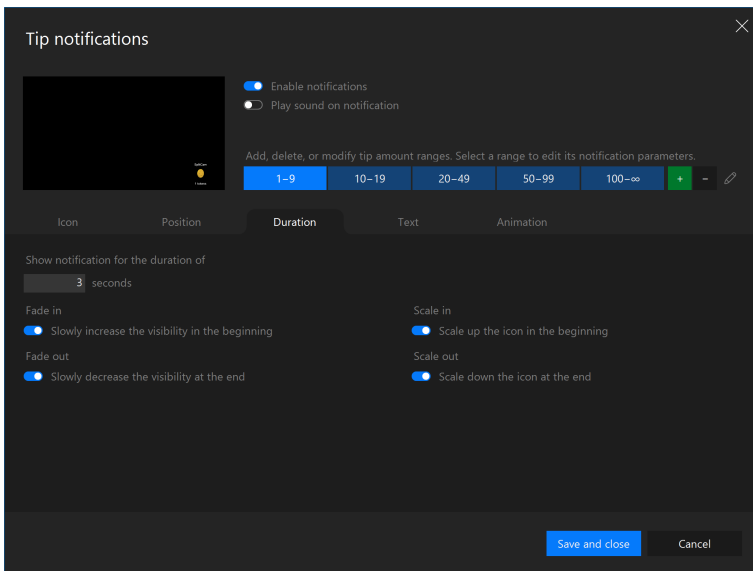
UI interface

The notification settings user interface came through a painful process of tries and errors. Since notifications have a lot of settings many of which have options and subtasks it was a real challenge to design an interface that would make it as simple for the end user as possible. In result we have this settings dialog which is separating settings into categories and makes them much clearer.
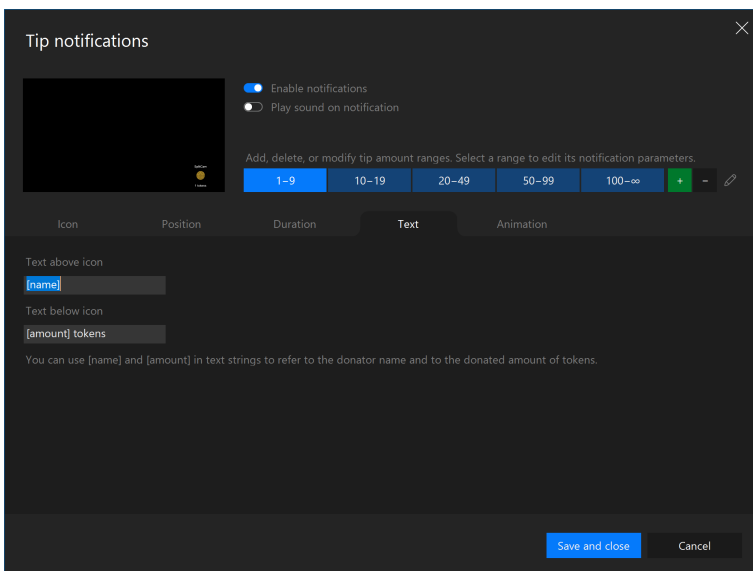

First thing, user selects a tip range in the blue strip to the right of preview window. Then he can select one of existing icons or select his own static or animated image.
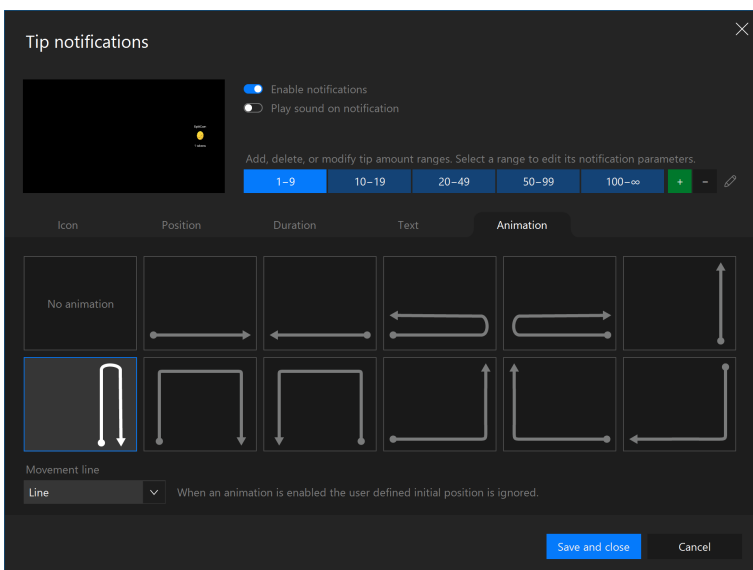

Then user sets up a position for the icon manually or selects one of predefined ones by clicking a button at the bottom of the tab.

Duration tab lets user specify for how long the notification will be visible and some effects of appearing and disappearing: the notification icon can fade in in the beginning, fade out at the end, and/or be scaled in/out at the beginning and at the end.
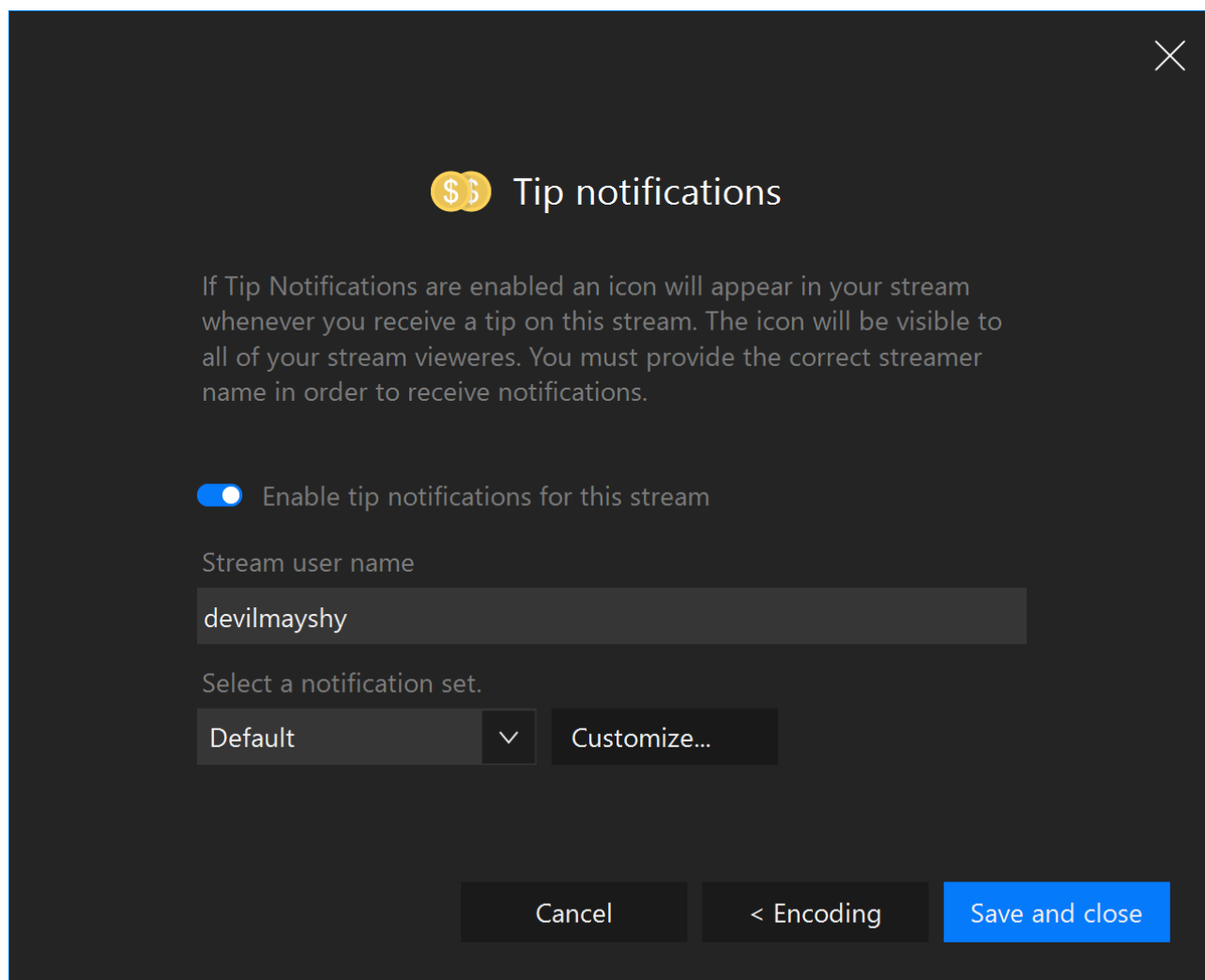

On the Text tab one provides two strings: one to show above the icon and another — below the icon. Later we are planning to add text formatting options and adjusting text position relative to the icon.

At the final step user can enable animation, that is the notification motion on the screen while it is visible. To keep things simple we just add a bunch of predefined motions.

Currently user can set up notifications as a part of creating or editing stream settings.

Only predefined notification sets are available to users at the moment. In future program updates we'll add a possibility to create/delete/edit notifications sets as user wishes.

We are also working on quick notifications access window similar to stream settings window. In this quick access window users will have an easy way to turn notifications on or off for any individual stream or for the whole program without the need to go the settings dialog.
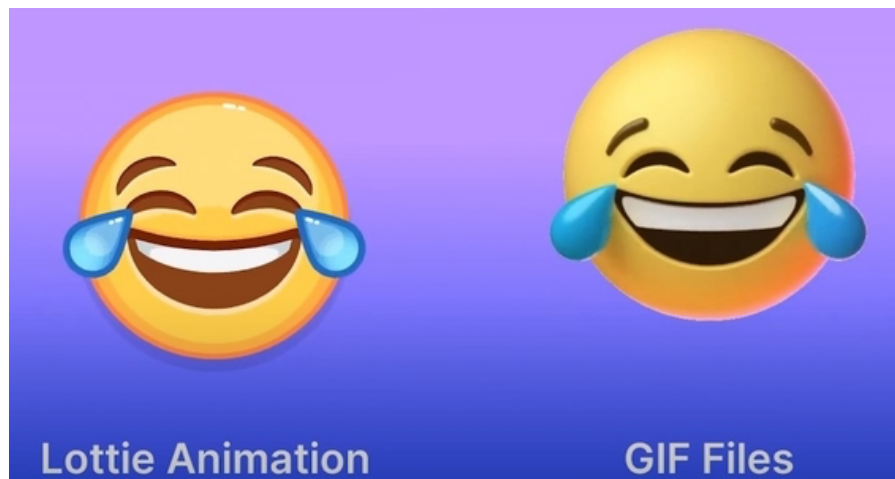
Web sites support

We've already added support for 7 most popular streaming services: MyFreeCams, CamSoda, Chaturbate, BongaCams, Cam4, Streamate, StripChat. Every site needs a new approach and a considerable amount of coding work so we'll add more of them if such need arises.

Tip notification presentation

Tip notifications appear on SplitCam's canvas and are visible to all model's viewers. A good notifications presentation is a great aid in attracting more tips. In the end this is what they are made for. We are doing our best for the notification icons to look great and to give users flexible options to setup notifications to their heart desire. Much is already done in this direction but… more exciting features are just around the corner!

Up to a few years ago GIF format was the only option for portable animated images. And to these days it remains the most popular format on the web for live moving pictures. Most streaming software don't provide other options for animated icons in notifications except GIFs. But here comes Lottie file format with a huge amount of advantages: files are tens times smaller, graphics is nice and smooth at any resolution, hardware acceleration provides great performance, and they can be animated at up to 60 frames per second! Compare it to bulky GIFs most of which provide at most 24 frames per second, look terrible at resolutions or sizes different than they were made for, and don't have hardware support of any kind.

Look how smooth and vibrant Lottie file is and how jaggy and poor GIF is compared to it.

Of course this happiness comes with a price. Lottie format is quite young and we have to put a considerable amount of effort to make it work in SplitCam. Unfortunately there are no open source solutions that we could borrow from. The good thing is our work on this format is in the final stage and in a couple of weeks it will be finished. OBS Studio also added Lottie file support but it is far from practical use yet: it consumes a lot of resources and OBS can't handle several Lottie files on the same scene — if you try, all of them will be slowed down to unacceptable. SplitCam on the other hand plays Lottie files with almost no load and no fps freezes whatsoever.

When we are done working on Lottie format support we are planning to create our own sets of cool unique icon sets that will be distributed with SplitCam.