

Objective

This application guide describes how to capture video using the BehaviorCloud Camera app and manually score the video to generate tabulated data including behavior durations, counts, and latencies.

Common use cases include: coding complex animal behaviors in laboratory or naturalistic settings, coding human behavior as part of psychology research, or coding human behavior as part of market research / user behavior studies.

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1. Creating an Account

To get started you will need a BehaviorCloud account. Set up an account at the [BehaviorCloud](#) website using your institutional/company email address. You will receive an email prompting you to validate your email address and sign in to your new account.

2. Capturing Video

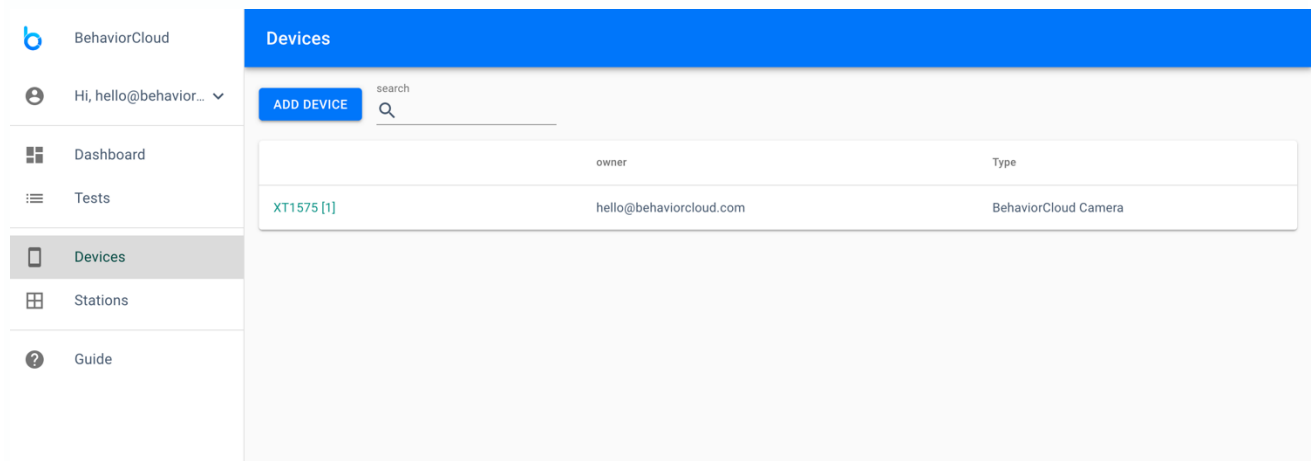
a. Downloading the Camera app

Download the free BehaviorCloud Camera app by visiting [iTunes](#) on your mobile device. Compatible iOS devices include: iPhone, iPad, or iPod Touch. You can purchase a video recording bundle, including a current-generation iPod Touch and mounting hardware, from our online [store](#).

b. Streaming Video

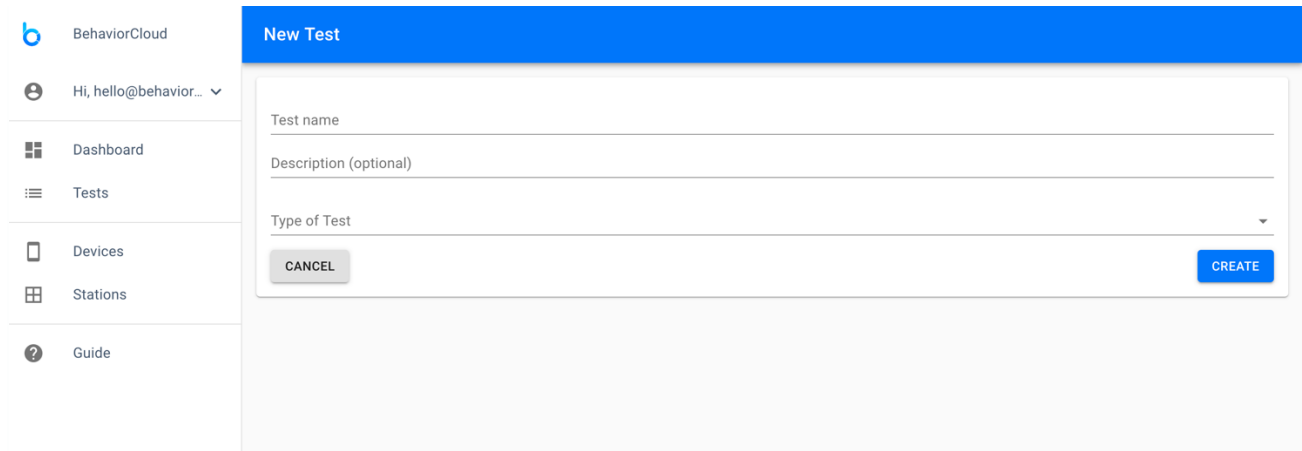
Capturing video with the BehaviorCloud Camera app requires a stable WiFi connection for streaming and a power source for your mobile device. Log in to the BehaviorCloud Camera app using the credentials you created above and mount the mobile device above your cage or maze so the desired recording area is in view. The mobile device running the Camera app serves as the video camera - you will need a second mobile device or laptop computer to control your experiment.

The first time you log in to your account you will see options to add a device or create a test. Make sure you have installed the BehaviorCloud Camera app onto the mobile device you intend to use for recording video (as described above). The first time you log in to the mobile app it will be automatically paired to your account. Check in the Devices page to make sure your mobile device is listed.



owner	Type
XT1575 [1]	hello@behaviorcloud.com BehaviorCloud Camera

Navigate to Tests and click Create Test. Enter a name and select the type of test from the dropdown menu. In this case, you should choose Manual Video Scoring. After selecting the type of test, you will be prompted to enter the duration of the test in seconds.



BehaviorCloud

Hi, hello@behavior... ▾

- Dashboard
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New Test

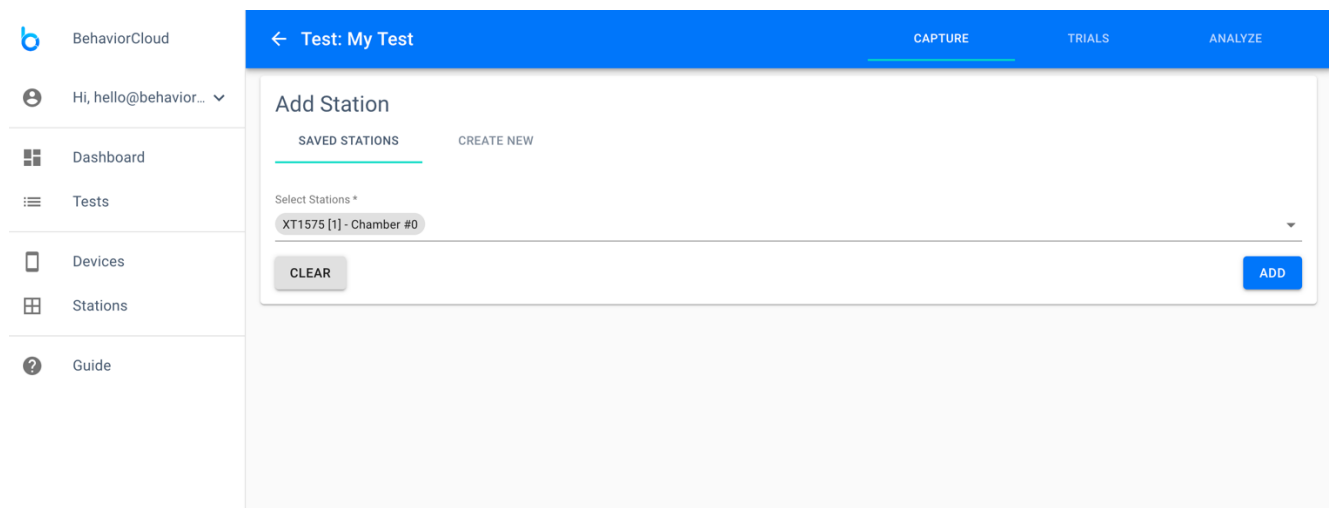
Test name

Description (optional)

Type of Test ▾

CANCEL CREATE

The next screen asks if you would like to capture data or upload data. Click capture data. This takes you to a page for adding stations to your test. A station (sometimes known as a test chamber) is a data-capture set-up consisting of one or multiple data sources. In this case, the station is the mobile device you have connected for capturing video, likely mounted above a maze or cage. If you had multiple mobile devices that you planned to run at the same time (e.g., for running multiple subjects in separate cages), then you could add them all on this page as individual stations.



BehaviorCloud

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Test: My Test

CAPTURE TRIALS ANALYZE

Add Station

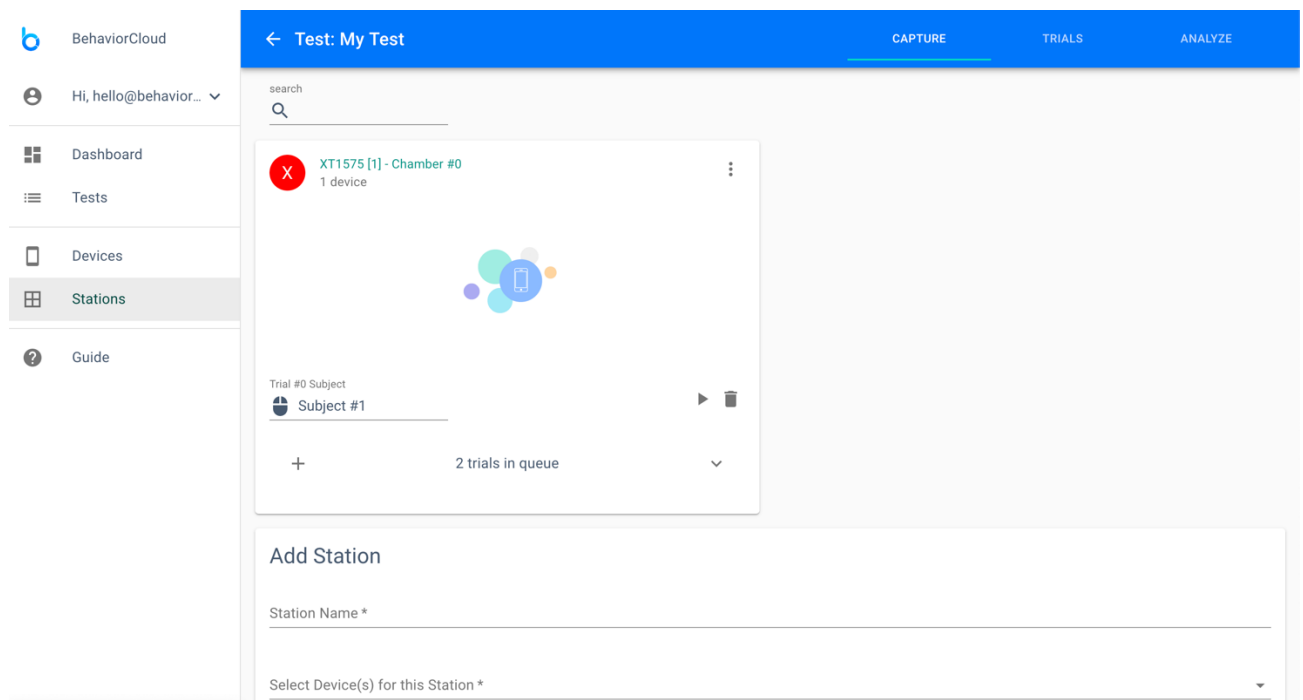
SAVED STATIONS CREATE NEW

Select Stations *

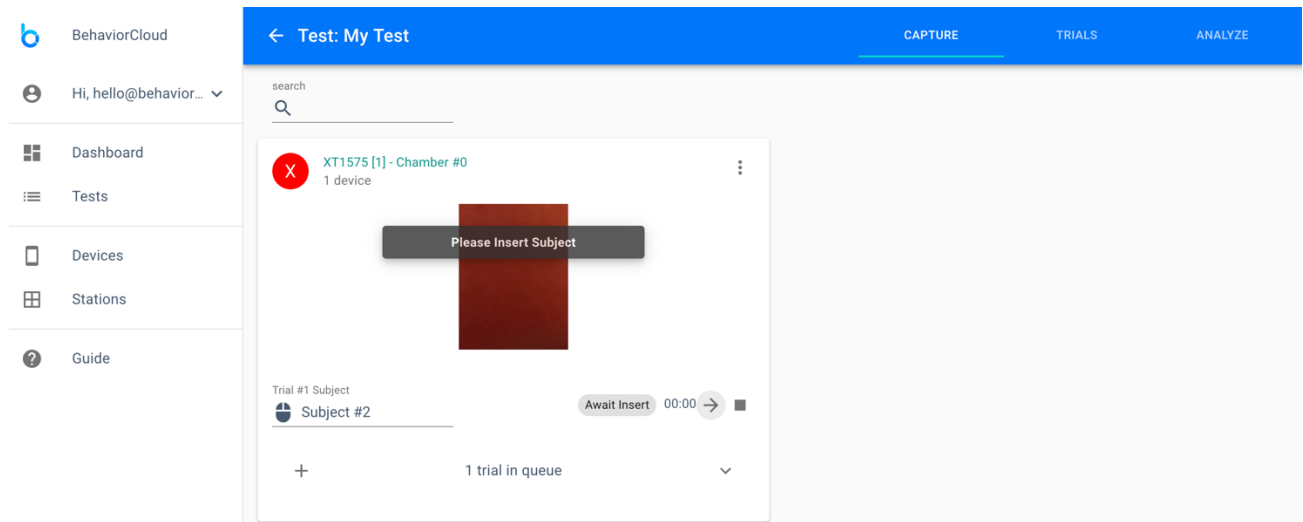
XT1575 [1] - Chamber #0 ▾

CLEAR ADD

After adding your station(s) you will see your main working view for capturing data. Note the three tabs at the upper right of the screen. These tabs allow you to toggle between Capture, Trials, and Analysis views for a given test. In the Capture view, each station is represented by a card. Clicking the plus icon at the bottom left of a station card will allow you to add subjects to the queue for that station. Clicking the play icon to the right of a subject will start a trial.

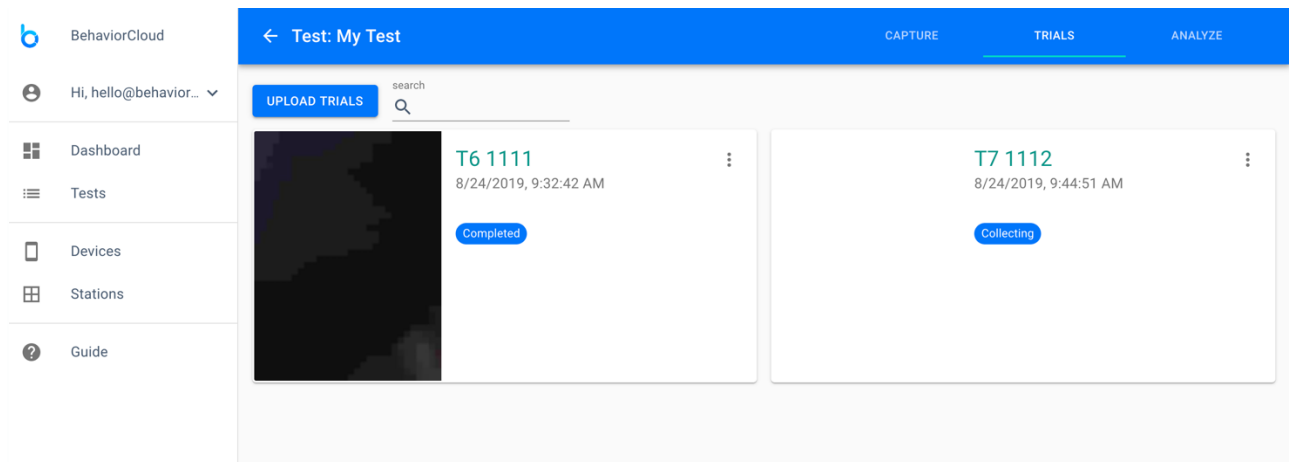


After starting a trial you will see a live preview of the video stream. A prompt will ask you to clear the arena, meaning remove all subjects, shadows, movements etc. from the camera view to provide a clean background image. Click the arrow to proceed when ready. If you're only doing manual scoring analysis, then this step is not critical. Another prompt will ask you to insert the subject. Click the arrow when ready to begin the trial. When time is up, the trial will automatically end and you will be prompted to enter the next subject. Record as many trials as desired.

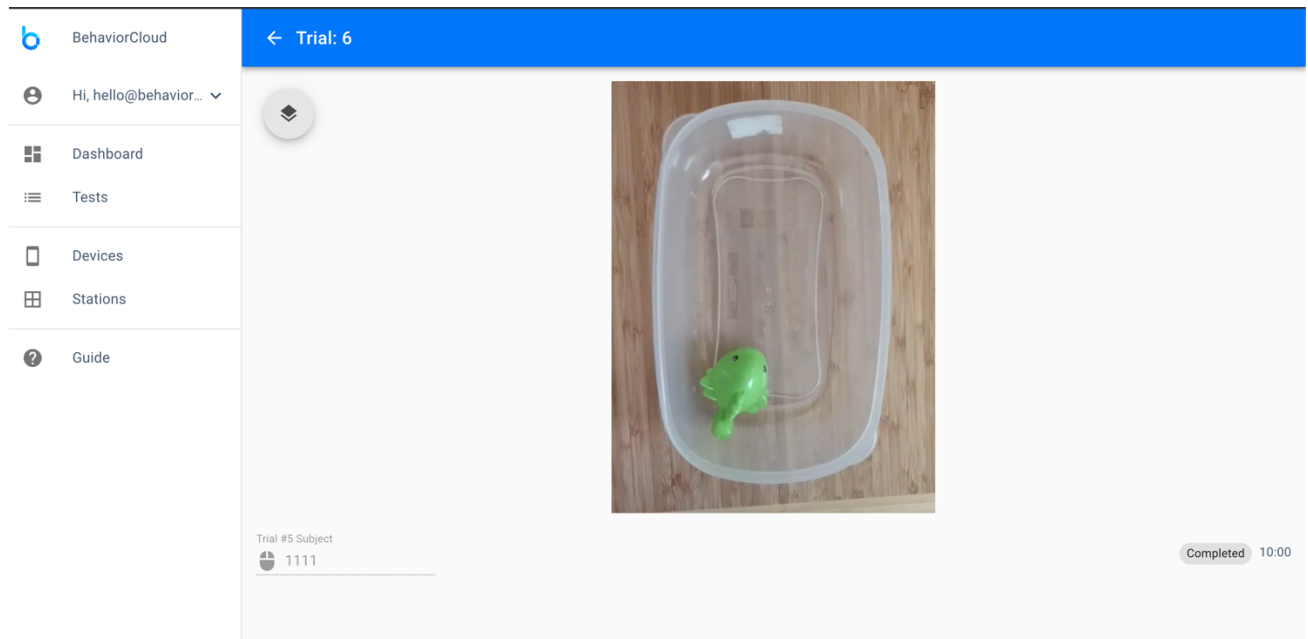


You can also click on a station to go to a more detailed view. If you're running one station at a time, then the detailed view is useful. If you're running multiple stations at the same time, the main Capture view shown in the images above is useful for previewing and controlling all your stations at once.

Navigate to the trials page to see a list of your completed and currently running trials.



Click on a completed trial to see the detail view for that trial. On this page, you can play back your trial or add additional meta-data. Click the overlay icon in the upper left to see options to add a distance calibration, zone map, tracking boundary, or manual scoring data.



3. Scoring Behavior

a. Setting Options

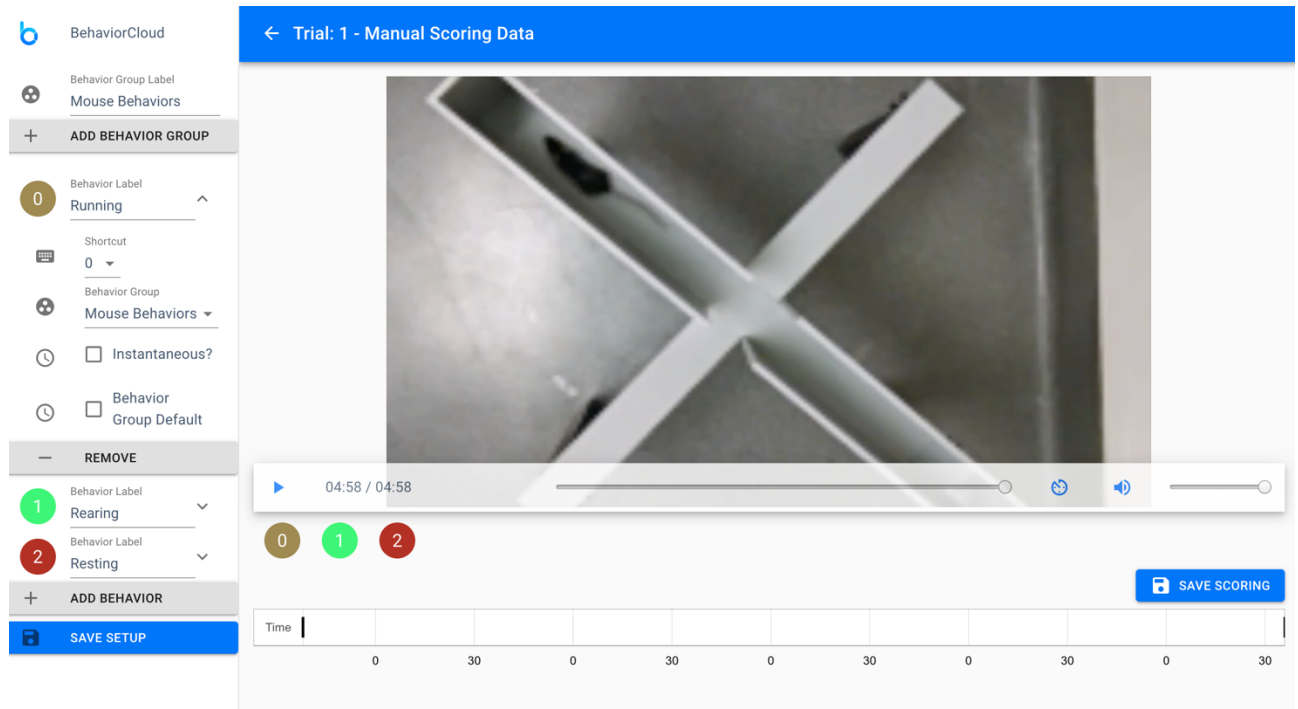
Manual scoring data can be added to any trial from the trial detail view. Click the pencil icon next to Manual Scoring from the overlay icon. In this view, you will see a playback of your video and options on the left to set up the behaviors you wish to score. Use the Add Behavior group to list each behavior you wish to score. Each behavior will get a default keyboard shortcut, which you can change as desired by opening the detail drawer for that behavior. By default, all behaviors are timed but you can select the checkbox to set any behaviors to instantaneous events as needed.

Timed behaviors have a duration, such as running or resting. Instantaneous behaviors are counted events, such as fecal boli.

You can also add individual behaviors to groups to indicate mutually exclusive behaviors. This will allow you to toggle between different behaviors while scoring and the system will automatically end one behavior when another begins. By default, each behavior will operate as an on/off switch and you will need to select a given behavior once to turn it on and a second time to turn it off while you are scoring. When you are finished setting up your manual scoring options, click Save to continue. Your scoring options will be made available for all trials in a test once you set them up for the first time.

b. Coding Behaviors

Play the video and select behaviors to record by clicking the shortcut icons on the screen or by using your keyboard shortcuts assigned to each behavior. Your work will be recorded in the timeline view below the video. Click Save Scoring when finished.



You can play back your video in real-time or choose to speed it up or down using the toggles on the video controls.

4. Analyzing Data

Once you have scored all of your trials, you can check that everything is complete and correct by visiting the Trials tab of your test. Each trial is shown as a separate card with a thumbnail video preview. Manual Scoring will appear as a tag for those trials that have manual scoring data.

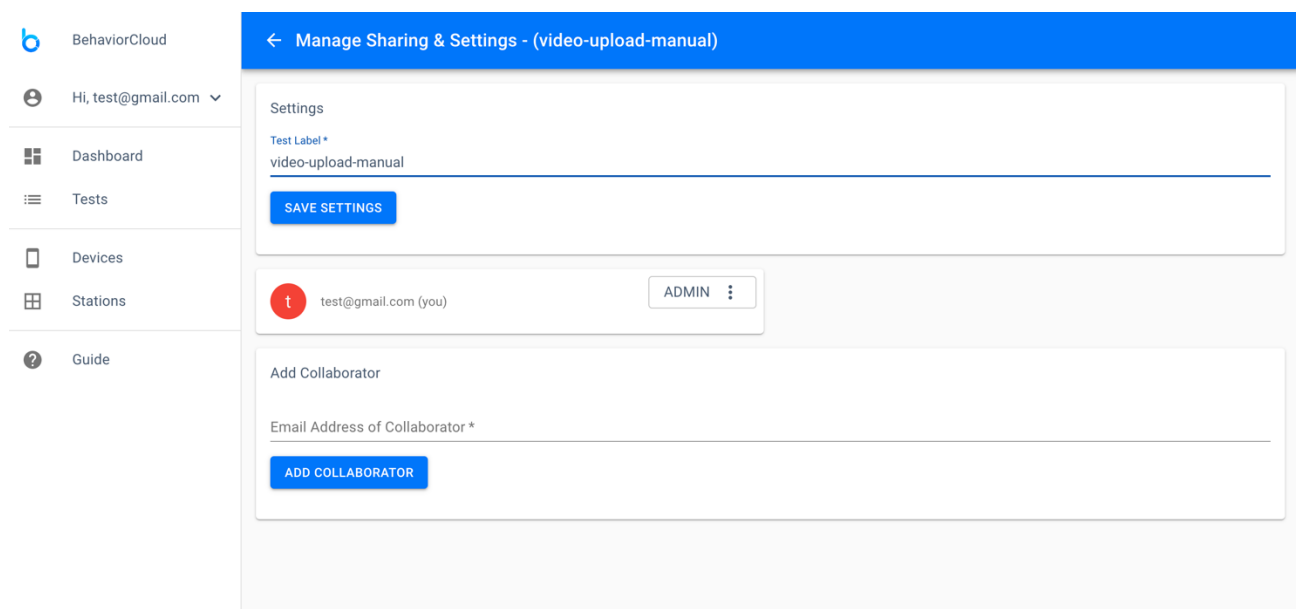
a. Analysis Plan

Navigate to the Analysis tab and you will see a space for your Analysis Plan at the top of the page. This is where you can choose the relevant analyses for your test. Use the plus icon to add an analysis. It will begin processing as soon as it is added. Use the trash icon to cancel or delete an analysis. The results of your analyses will appear in the drawers below your plan. You can expand those drawers to see which results are ready, which results are still being analyzed, and you can view or download your analyzed data.

5. Sharing a Test

a. Adding Collaborators

You can share your data and invite collaborators to contribute to any phase of the experiment through your BehaviorCloud account. Go to Tests to view all of your experiments. Private experiments are indicated by a lock icon and shared experiments are indicated by a share icon. To add a collaborator, select the three dots menu icon to the right of a test and click Manage Sharing and Settings. You will be able to enter the email address of the person you would like to invite to your test. Your collaborator will receive an email notification prompting them to login and access the shared experiment.



The screenshot shows the BehaviorCloud interface. On the left is a sidebar with the BehaviorCloud logo, a user profile 'Hi, test@gmail.com', and navigation links for Dashboard, Tests, Devices, Stations, and Guide. The main content area is titled 'Manage Sharing & Settings - (video-upload-manual)'. It contains a 'Settings' section with a 'Test Label *' field containing 'video-upload-manual' and a 'SAVE SETTINGS' button. Below this is a user card for 'test@gmail.com (you)' with an 'ADMIN' button and a three-dot menu. At the bottom is an 'Add Collaborator' section with an 'Email Address of Collaborator *' field and an 'ADD COLLABORATOR' button.

b. Managing Permissions

The default level of permission is read only. You can manage their level of permission: read only (can view data but cannot edit), read/write (can view, contribute, and edit), or admin (full permission, including to delete an experiment).

6. Downloading Data

All of your data are available for download at any time. Manual scoring produces a table that includes behavior durations, counts, latencies, and timestamps. You can access and download these data from the analysis tab of your test.

Additional Information

Further details can be found in our User Guide at www.behaviorcloud.com/guide.html

For support and inquiries, contact support@behaviorcloud.com