

SurvConf 3.10

Instructions Document

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Citations

We provide SurvConf as an open-source tool without restrictions for use. However, if you use SurvConf, we ask that you cite the following two articles (the first is on SurvConf and the second is on SMARTRIQS, which SurvConf leverages to assist with participant matching):

- Brodsky, A., Lee, M.J., Leonard, B. (forthcoming). Discovering new frontiers for dyadic and team interaction studies: Current challenges and an open-source solution—SurvConf—for increasing the quantity and richness of interactional data. *Academy of Management Discoveries*. doi:10.5465/amd.2021.0257
- Molnar, A. (2019). SMARTRIQS: A simple method allowing real-time respondent interaction in Qualtrics surveys. *Journal of Behavioral and Experimental Finance*, 22, 161-169.

Disclaimers

1. Given that SurvConf relies on multiple external services (AWS, Agora, HEROKU, SMARTRIQS), we cannot guarantee that the SurvConf will always be running. As a result, we suggest that you always pilot test your surveys immediately before running them to confirm functionality.
2. Given we do not have access to any of the data you collect, and SURVCONF relies on third party services to function, we make no personal promises with regard the privacy of the data that you collect. You should review the privacy and data policies of all services upon which SURVCONF relies on (AWS, Agora, HEROKU, SMARTRIQS) to ensure they meet the standards set by your institution's IRB/ethics board for your studies.
3. SurvConf is not currently optimized for smartphone use. Although SurvConf does work on some (but not all smartphones) we advise against allowing participants to use smartphones as: a) some participants will not be able to properly access their smartphones video camera via SurvConf within a survey, and b) the participant experience of engaging in a multiple person video call will be fundamentally different on a smartphone (e.g., where not all other matched participant videos are visible and/or are much smaller). By default, SurvConf does not restrict smartphones users from participating, in case you wish to include them, but if you would like to restrict smartphone users from entering the survey, this page provides details on how to do so <https://www.qualtrics.com/support/survey-platform/survey-module/mobile-survey-optimization/>.

For any issues or questions regarding the program and functionalities, please reach out to Minju.Lee@mcombs.utexas.edu.

Notes on Version Updates

V1.00 (Launched on 12/19/2021)

V2.00 (Updated on 12/29/2021)

- Fixed a bug on Qualtrics JavaScript for Video interaction
 - *Note for users:* If you downloaded v1.00 SurvConf .QSF files, you should download and use most recent versions of .QSF files from <https://survconf.com/downloads/>
- Fixed a bug on Heroku API caller app
 - *Note for users:* If you created Heroku API router app using Section IV(c) of One-Time Set-Up Instructions in v1.00 SurvConf Instruction document, you should re-create an app using Section IV(c) of One-Time Set-Up Instructions below (in the v2.00 instructions). If you change the name of the app (**APIROUTER NAME**) in this process, you should update this in Sections II(c)(iii) of the One-Stage or Two-Stage Qualtrics Instructions below.
- Updated AWS video uploads so that SurvConf now uploads the full videos of interactions on AWS S3 server directly rather than only fragmented files each with 10-15 seconds videos
 - *Note for users:* If you downloaded and set up Bulk Video Downloader using Video/Audio Download Instructions in the v1.00 SurvConf Instruction document, you should delete the old bulk downloader files from your computer and follow our new Video/Audio Download Instructions below.

V2.10 (Updated on 5/15/2022)

- *Note for users:* Per this update, if you downloaded SurvConf .QSF files from earlier versions, you should download and use most recent versions of .QSF files from <https://survconf.com/downloads/>
- Fixed a bug for Audio and Single-person interactions
- Updated interaction timer for Video interactions, so that the timer starts running together when all interaction parties arrive the Video interaction page.
- Updated the Agora to version 3.6.10 to address potential bugs in Chrome

V3.00 (Updated on 7/15/2022)

- *Note for users:* Per this update, if you downloaded SurvConf .QSF files from earlier versions, you should download and use most recent versions of .QSF files from <https://survconf.com/downloads/>
- Updated Agora to version 4 to fix bugs and compatibility issues in all browsers.
- Enabled features such as displayNames and skipAfter.

V3.10 (Updated on 9/02/2022)

- *Note for users:* This update includes a small change in Agora usages in SurvConf. If you have already worked on a survey using our v3.00 SurvConf .qsf files, you do not have to download the new files and add all the components again. To upgrade from v3.00 manually, go to Survey Flow and make changes to embedded variables as below:

- Meet_div:

```
<script src="https://cdn.jsdelivr.net/gh/bleonar5/survconf@bf69b41/AgoraRTC_4.js"></script><link rel='stylesheet' href="https://cdn.jsdelivr.net/gh/bleonar5/survconf@bf69b41/call.css"></link>
```

- Test_script:

```
<script src="https://cdn.jsdelivr.net/gh/bleonar5/survconf@bf69b41/videoCall.js"></script>
```

- Video_script:

```
<script src="https://cdn.jsdelivr.net/gh/bleonar5/survconf@bf69b41/videoCallDisplay.js"></script>
```

- Agora usage will not build up when users are stuck on the video/audio compatibility check page.

One-time Set-up Instructions

This section includes the steps to set up your personal accounts for the various services needed to run SurvConf. You only need to do these steps once, and can use your personal keys for all future SurvConf surveys. All of the included services have free tiers; in most cases, you will never incur any cost. Beyond the free tiers you may incur costs, but they tend to be very minimal for most normally sized research studies (e.g., at the time this document was written Amazon Web Services provided 5 GB of video storage for free and charges \$0.023 per GB thereafter).

For ease of following the instructions, we have highlighted each personal key/code that you will create and need to record as a unique color, so you can easily track which codes from this section belong in the appropriate places as noted in the following sections. If you are only going to use text-chat interactions only step I needs to be completed (steps II-IV are only needed for audio/video).

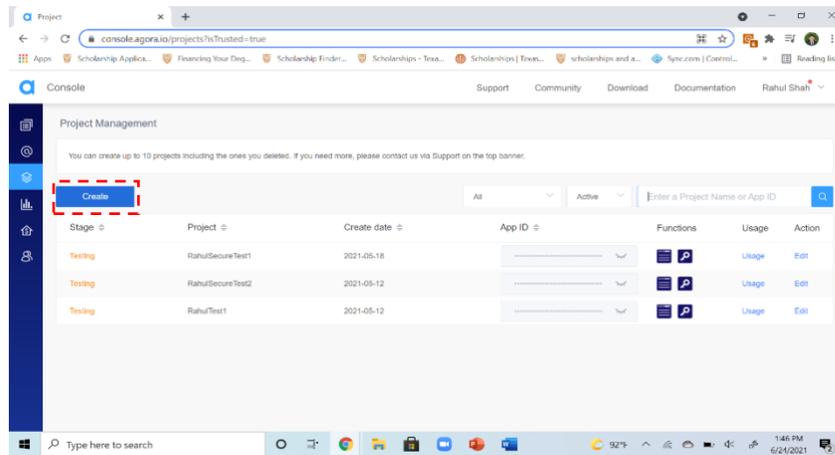
I. SMARTRIQS Set Up

- a. Obtain your SMARTRIQS **ResearcherID** at
 - i. https://chicagobooth.az1.qualtrics.com/jfe/form/SV_3jy2PwIIQjT8RCK
 - ii. [Not Required] For more information about SMARTRIQS and its other functionalities, click on the following link: <https://smartriqs.com/getting-started/>

II. Agora.io Set Up

(NOTE: If you're including only Text Chat interactions among participants and not Video or Audio interactions you can skip this section altogether and ignore section II(c) in the One-Stage or Two-Stage Qualtrics Instructions)

- a. Sign up for an account on agora.io
 - i. If you have difficulty signing up, you can follow the steps in the [following video](#)
- b. In the "Project Management" section, create a new project on the main page by clicking the blue "Create" box in the Upper Left corner of the window.



- c. Insert your Project Name in the box below "Project Name"
 - i. For "Use cases", select "Other-Other"
 - ii. Under "Authentication Mechanism" select the "Secure Mode" option. Then, click the submit button.
 1. For a video walkthrough, [click here](#)
- d. Click on "Edit" at the end of the row of the project in question
 - i. Under "Basic Info," look for a field named "App ID." Save this code.
 - ii. Under "Security Info," look for the "Primary Certificate." Save this code.
 - iii. For a video walkthrough, [click here](#)
- e. At the bottom of the page, enable cloud recording by following these steps:
 - i. Under "Features" look for a field named "Cloud Recording"
 1. Click on the "View usage" box next to Cloud Recording
 2. Then, click on the blue "Enable Cloud Recording" box
 3. Finally, click on the blue "Apply" box
 - ii. For a video walkthrough, [click here](#)
- f. Click on your account name at the top right corner and click on "RESTful API"
- g. You will need to create and download a new "secret" using the following steps:
 - i. Click on the blue "Add a secret" button
 - ii. A new row should pop-up in the table below the button. Click on the blue "OK" button in that row (under the "Action" column)
 - iii. Then, under the "Customer Secret" column click on the blue "Download" button
 - iv. For a video walkthrough, [click here](#)
- h. [OPTIONAL] Agora's video/audio app can sometimes run into an issue for participants if the participant is accessing the survey through a location that has a particularly strong enterprise firewall (e.g., via some universities' on-campus internet or some large corporations on-site Internet). Similarly, if you are pilot testing the survey at your university, you may also run into an issue where the audio/video will not connect due to the university's firewall. For surveys conducted through

crowdsourcing websites (e.g., MTurk/Prolific) we have not found this to be a meaningful issue (as most participants are completing the survey remotely). Additionally, the way that the firewall issue appears is that on the webcam and microphone check page that occurs before the participant matching, participants on the problematic enterprise firewall will simply fail the check (as the survey can't access the webcam) and be filtered out of the survey. However, if you are conducting the study at a site where there may be a firewall issue (e.g., in a university behavioral lab or at a specific corporation) or want to minimize issues with other participants being filtered out, you will want to utilize one of the following three options to avoid the firewall issue:

- i. You can have participants/survey testers access the survey through a guest/roam WIFI network or their home network rather than the main university/corporate network. This is a relatively simple fix, for instance, if you want to run the study in your university's behavior lab and the university firewall is problematic.
- ii. If you're sending the survey to a known population from the university/firm, you can contact the relevant network administrator to allow so it does not get caught by the firewall. For the list of domains to whitelist, see <https://docs.agora.io/en/Agora%20Platform/firewall?platform=Android> (for Web SDK 3.6.7)
- iii. **[NOT RECOMMENDED ANYMORE PER AGORA COST]** The final option is to set up a cloud proxy through Agora, so that the part of the program that is picked up by enterprise firewalls is not run locally. This option takes slightly more initial effort (as you need to email Agora to get the proxy set up) and costs \$500 per month on Agora.io to maintain functionality (as of June 2022), but only needs to be done once. We have already set up the QSF files to accept a cloud proxy associated with your APPID, so the only step that needs to be taken is having Agora set it up. The steps involve:
 1. Email support@agora.io requesting to set up a cloud proxy for use on secure wifi.
 2. AGORA support will provide and ask you to fill in a Cloud Proxy Request form. Here are some answers you can use for the form:
 - a. Company name: [Your institution name]
 - b. CID: n/a
 - c. APPID: [The APPID that you set up earlier in the instructions]
 - d. VID: n/a
 - e. Native or Web: Web
 - f. Region: North America (or *your region*)

- g. Broadcast or Communication: Communication (web conferences)
- h. Number of remote streams subscribed: Up to 8 total users in a room
- i. Video Resolution: Recording: 640*360 (from transcoding config)
- j. Framerate: Recording: 15fps
- k. Bitrate: Recording: 600
- l. Proxy PCU: Enter in the number of users who you may have using SurvConf simultaneously (e.g., "Proxy will mostly be needed for developers and whatever end-users happen to be limited to ".edu" wifi. Unless an experiment is directly drawing from university populations, rarely more than 10-30")
- m. Number of streams for proxy: Follow the formula they provide in the form based on your previous answers (e.g., "At the absolute max possible: 144; On average: 12")
- n. Scenario: Blocked by secure university and enterprise wifis in general
- o. TCP or UDP: Web-tcp
- p. TCP encryption or not: Prefer tcp over tls

III. Amazon AWS Set Up

(NOTE: If you're including only Text Chat interactions among participants and not Video or Audio interactions you can skip this section altogether and ignore section II(c) in the One-Stage or Two-Stage Qualtrics Instructions)

- a. Sign up and log into your AWS account as a root user (https://aws.amazon.com/?nc2=h_lg)
- b. On the top left corner of the main page, expand "Services" dropdown menu. Find "Storage" and choose "S3"
 - i. In the "Buckets" menu, "Create Bucket" button
 - ii. Set up the bucket. For example, you can define:
 1. Bucket name: survconf
 2. AWS region: US East (N. Virginia) us-east-1
 3. Leave everything else to be default
- c. On the top left corner of the main page, expand "Services" dropdown menu. Find "IAM" under "Security, Identity, & Compliance" section and click.
 - i. On the left panel, click "User groups" under "Access management".

1. Click, and find the blue "Create Group" button
2. Type "s3-access-users" as the user group name
3. In the "Attach permissions policies" section, look for "AmazonS3FullAccess" policy. Click on the checkbox next to the policy name, and click "Create policy group"
- ii. On the left panel, click "Users" under "Access management".
 1. Click, and you can see all the users available
 2. To add a new user, click "Add User". Username can be anything, but Access type should be Programmatic access; Set permissions is "Add user to group", and check the box for s3-access-users group.
 3. When you're done, the screen will show "AWS Access Key ID" and "AWS Secret Access Key". Make sure you store both of these keys and pass these to any new user (e.g., RA or coworker who is configuring SurvConf).

IV. Heroku Set Up

(NOTE: If you're including only Text Chat interactions among participants and not Video or Audio interactions you can skip this section altogether and ignore section II(c) in the One-Stage or Two-Stage Qualtrics Instructions)

- a. Create a free account on "Heroku"
 - i. Go to heroku.com
 - ii. Click on the "Sign Up" button in the top right and enter all necessary information
 - iii. For a video walkthrough, [click here](#)
- b. Managing your Heroku account billing [Updated as of 11/14/2022]. You have three options:
 - i. Keep your apps as Hobby tiers:
 1. Change both of your apps to be in the **"Hobby" tier**. **See below for the instruction to change dyno type.**
 2. Make sure you **turn them off**. This way, if you keep them off for the whole month, you won't get charged anything. If you keep them on for the whole month, you will get charged \$14 per month. Partial usages will be prorated. **See below for the instruction to turn on/off the dynos.**
 - ii. Keep your apps under ECO tiers:

1. Go with ECO option on their account>billing page (<https://dashboard.heroku.com/account/billing>) so that they automatically turn on/off your dynos based on your usage – **this costs \$5 flat fee per month for both apps up to 1000 hours per month (20+ days)**. This is great if you're using SurvConf regularly (e.g., few days per month) and want to pay a small amount of fee to avoid inconvenience of turning it on and off every time.
2. Make sure to change both of your apps to be in the "ECO" tier after you sign up. **See below for the instruction to change dyno type**
- iii. Sign up for the student program
 1. If you're a student, Heroku has **a student program that will give a credit of \$13 per month**. Combined with ECO option above, you don't have to pay anything and can keep everything running. I strongly encourage filling out both applications below to receive platform credits:
 - a. https://education.github.com/discount_requests/pack_application
 - b. <https://www.heroku.com/github-students/signup>
 - c.

Change dyno type from Free/Eco/Hobby:

1. From the [Heroku Dashboard](#), select the app you want to scale from your apps list.
2. Navigate to the **Resources** tab.
3. Above your list of dynos, click **Change Dyno Type**.
4. Select the desired tier.
5. Click **Save**.

Turn on/off dynos (= "Scaling"):

1. Select the app you want to scale from your apps list.
2. Navigate to the **Resources** tab.
3. In the app's list of dynos, click the **Edit** button (looks like a pencil) next to the process type you want to scale.
4. Drag the slider to the number of dynos you want to scale to.
5. Click **Confirm**.

- c. Create your "token generator" application
 - i. Click on the following link: [deploy](#)
 - ii. You will need your Agora **App ID** and **Primary Certificate**
 - iii. Under the field "App_Certificate" enter the **Primary Certificate** from Agora

- iv. Under the field "App_ID" enter the **App ID** from Agora
- v. Name the Token something relevant and something you will remember (= "**TOKENGEN NAME**")
- vi. Click on the "Deploy App" button
- d. Create the "api-router" application
 - i. Click on the following app: [deploy](#)
 1. Chose an app name, such as "my-api-router", as something you will remember (= "**APIROUTER NAME**")
 2. Fill in the following configurations
 - a. Under "ACCESS_KEY" fill out the **AWS Access Key** from the .csv file
 - b. Under "API_KEY" fill out the RESTFUL API key from Agora
 - c. Under "API_SECRET" fill out the RESTFUL API secret from Agora
 - d. Under "**APPID**" fill out the Agora App ID you saved on this document
 - e. Under "BUCKET" fill out the S3 Bucket name from AWS
 - f. Under "REGION", use the table below to find your number code ****Note:** Since, I use US_EAST_2, my region variable is 1

- 0 : US_EAST_1
- 1 : US_EAST_2
- 2 : US_WEST_1
- 3 : US_WEST_2
- 4 : EU_WEST_1
- 5 : EU_WEST_2
- 6 : EU_WEST_3
- 7 : EU_CENTRAL_1
- 8 : AP_SOUTHEAST_1
- 9 : AP_SOUTHEAST_2
- 10 : AP_NORTHEAST_1
- 11 : AP_NORTHEAST_2

- g. Under "SECRET_KEY", fill out the **Secret Key** you received from AWS
- h. Under "TOKEN_APP_NAME", fill out the **TOKENGEN NAME** you set for the "token generator app"

One-Stage Interaction Qualtrics Instructions

This section includes steps for running surveys that use one-stage (one-time) interaction among participants.

- I. Creating a new Qualtrics survey
 - a. Click on the “New Project” button
 - b. Click on the “Survey” button, and then click on the “Get Started” button
 - i. Name the survey something relevant and something you will remember
 - c. Under “How do you want to start your survey”, click on “Import a QSF File”
 - i. Download the “SurvConf-Qualtrics Survey Import File-One Time Participant Interaction” file from SurvConf website (<https://survconf.com/downloads/>)
 - ii. Back on the Qualtrics website, navigate to the location you saved the downloaded file from the prior step and then select it within the Qualtrics import menu. Importing this file will automatically create all the JavaScript code, HTML, and embedded variables needed to run SurvConf within your Qualtrics survey.

II. Linking SurvConf to your user accounts

The screenshot shows the Qualtrics Survey Flow editor interface. At the top, there are navigation tabs: Survey, Workflows, Distributions, Data & Analysis, Results, and Reports. Below these, the 'Survey flow' is displayed as 'Published'. A group named 'Group: TOUCH THIS (Set Defaults)' is selected, with options to 'Add Below', 'Move', 'Duplicate', 'Collapse', and 'Delete'. The main content area is titled 'Set Embedded Data:' and contains a list of variables, each with a 'Set a Value Now' link:

- conf_size: Value will be set from Panel or URL. Set a Value Now
- audioOnly: Value will be set from Panel or URL. Set a Value Now
- videoOnly: Value will be set from Panel or URL. Set a Value Now
- recording: Value will be set from Panel or URL. Set a Value Now
- confederate: Value will be set from Panel or URL. Set a Value Now
- use_confederate: Value will be set from Panel or URL. Set a Value Now
- conf_length: Value will be set from Panel or URL. Set a Value Now
- APPID: Value will be set from Panel or URL. Set a Value Now
- agora_token_url: Value will be set from Panel or URL. Set a Value Now
- agora_router_url: Value will be set from Panel or URL. Set a Value Now
- researcherID: Value will be set from Panel or URL. Set a Value Now
- InteractionMode: Value will be set from Panel or URL. Set a Value Now
- maxWaitTime: Value will be set from Panel or URL. Set a Value Now
- proxyEnabled: Value will be set from Panel or URL. Set a Value Now

At the bottom of the list, there is a link 'Add a New Field' and a set of action buttons: 'Add Below', 'Move', 'Duplicate', 'Add From Contacts', 'Options', and 'Delete'.

- a. Enter the 'Survey Flow' in Qualtrics and go to the embedded variables in the “Group: TOUCH THIS (Set Defaults)” section

- b. Click the blue link for 'Set Value Now' next to **ResearcherID** to copy and the one obtained from SMARTRIQS
 - c. Set the values for the APPID (from Agora), agora_token_url, and agora_routing_url variables in the survey flow. *(NOTE: If you're including only Text Chat interactions among participants and not Video or Audio interactions you can skip this section altogether)*
 - i. For APPID variable, insert your **Agora APPID**
 - ii. **agora_token_url** will be based on **TOKENGEN NAME**, defined in IV(b) of One-Time Set Up Instructions. Format is "https://**TOKENGEN NAME**.herokuapp.com". Example is provided in above screenshot, but you need to insert your own **TOKENGEN NAME**. ****MAKE SURE YOU USE "https" instead of "http" AND THAT YOU DON'T INCLUDE A SLASH AT THE END OF THIS URL VARIABLE.**
 - iii. **agora_routing_url** will be based on **APIROUTER NAME**, defined in IV(c) of One-Time Set Up Instructions. (i.e., "https://**APIROUTER NAME**.herokuapp.com"). Example is provided in above screenshot, but you need to insert your own name. ****MAKE SURE YOU USE "https" instead of "http" AND THAT YOU DON'T INCLUDE A SLASH AT THE END OF THIS URL VARIABLE.**
- III. Changing Interaction Criteria *(Note: These are all pre-created embedded variables by the survey qsf file import that can either be changed directly in the Qualtrics 'survey flow' page OR by appending the criteria to the end of a survey URL , e.g., https://mcombs.qualtrics.com/jfe/form/SV_1234abc?conf_size=2&InteractionMode=Chat&recording=true)*
- a. **conf_size**
 - i. This parameter determines the number of people in the interaction session.
 - ii. The value should be an integer between 2 and 8.
 - b. **InteractionMode**
 - i. Based on the Interaction Mode desired enter "Video" or "Chat"
 - ii. If the Interaction Mode is "Video", you can use parameters in III(c) below to make the interaction Audio only or Video only.
 - c. **audioOnly and videoOnly**
 - i. If InteractionMode in III(b) above is set as "Chat", you can ignore this part.
 - ii. These parameters take either "true" or "false" as the values. If either is set as "true", the interaction among participants will be audio only (without video) or video only (without audios).

- iii. By default, audioOnly and videoOnly are set to "false", meaning that the Video interaction will be like regular video conference with video and audio.
- d. recording
 - i. This parameter takes either "true" or "false" as values
 - ii. By default, recording is set to "true"
- e. conf_length
 - i. conf_length determines the length of time that the Video/Audio/Chat interaction session lasts.
 - ii. The value should be an integer (interaction time in seconds)
 - iii. Interaction page will have clocks counting down for the specified length for each person, from whenever that individual joins the Video/Chat screen. (Clocks may run few seconds apart from different participants in the same interaction)
- f. maxWaitTime
 - i. maxWaitTime determines the maximum amount of time that participants will wait for a partner
 - ii. The value should be an integer (interaction time in seconds)
- g. use_confederate
 - i. If you would like to use a confederate, in the Qualtrics survey flow set use_confederate as "yes".
 - ii. Normal participants can be given the usual Qualtrics survey link, and confederates should have "?confederate=yes" appended to the end of the survey link (e.g., https://mccombs.qualtrics.com/jfe/form/SV_1234abc?confederate=yes)
 1. *NOTE:* This currently only works for two person interactions.
- h. nameDisplay
 - i. This parameter takes either "true" or "false" as values
 - ii. This parameter controls whether each participant's role is displayed above their video feed
- i. allowSkip
 - i. This parameter takes either "true" or "false" as values
 - ii. If set to be "true", this parameter decides whether the "next" button is visible and clickable during video interactions
- j. skipAfter
 - i. This parameter applies if "allowSkip" is true and decides when the "Next" button appears.
 - ii. The value should be an integer (time in seconds)
- k. timeToWait

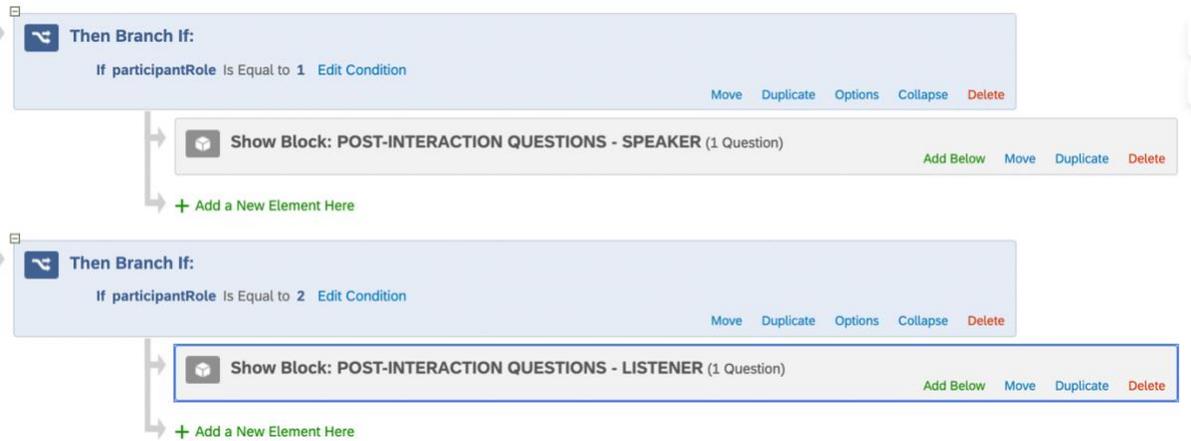
- i. This parameter controls how many seconds the program waits to start the interaction timer after the last new person joins the interaction.
 - ii. The default is 10 seconds. It's advised to use a high value, like 10 or even 15, when conducting larger conferences, and a shorter value like 5 in smaller conferences.

- IV. Group Don't Touch This in Qualtrics SurveyFlow
 - a. Anything under "Group Don't Touch This" should not be altered, as it is a constant and does not change between studies

- V. Designing the Survey with Your Own Questions/Conditions
 - a. In the survey editor view, add your own study-related questions in these two blocks:
 - i. PRE-INTERACTION QUESTIONS AND CONSENTS
 - ii. PRE-INTERACTION INSTRUCTIONS
 - iii. POST-INTERACTION QUESTIONS

 - b. Assigning participants into different conditions
 - i. If you plan to randomly assign participants in the same interaction group into different conditions/roles/instructions (e.g., if you want a communicator and listener role), so that different participants in the same interaction group may receive different set of instruction/questions according to their condition, you can use participantRole variable. By default, we set up SurvConf to randomly assign roles as numbers. For instance, if conf_size was set to 3, three participants would be paired, and then each would randomly be assigned a role (i.e., participantRole=1, participantRole=2, or participantRole=3).

Then for blocks "PRE-INTERACTION INSTRUCTIONS" and/or "POST-INTERACTION QUESTIONS", you can create block variations with different set of instructions or questions for each condition, and use branch logic to show corresponding block for participants in each group (based on the participantRole number). For instance, suppose you want two participants to be paired up in a Video interaction, and ask one of them to take the role of speaker and the other the role of listener in the interaction. You can set up the branch like this in survey flow:



- ii. If you plan to randomly assign different interaction groups to different conditions (e.g., if you want to vary mode of interaction), you can simply create two different SurvConf surveys (one for each group condition). Then, create a third survey, which solely has a Randomizer in the Qualtrics survey flow that randomly redirects participants to one of the other two surveys.
- iii. You can combine steps i and ii above to have variations both within and between interaction groups.
- iv. If you would like to do greater customization and to change the name of the roles (e.g., instead of "1" and "2", have "buyer" and "seller") you will need to alter few embedded variables in the survey flow (roles, getData, and studyID). The roles variable contains the name of the roles separated by commas. You should find the appropriate roles embedded data variable under the relevant If conf_size branch in the Qualtrics survey flow. For instance, if you chose conf_size=3, you should find the branch 'If conf_size is Equal to 3' in the survey flow and change roles=1,2,3 to your desired roles (e.g., roles=buyer,seller1,seller2). getData embedded variable should be set the same with roles. Lastly, due to the way SMARTRIQS matches participants, if you adjusted the roles and getData embedded variables, you need change the studyID to be something different and unique (e.g., agora_conf_3_changed); for this variable, it doesn't matter what name you choose as long as it is different than any other studyID you have used before. If you would like the roles randomly assigned (and are not using a confederate) than you do not need to do anything further. ****NOTE: Your role names should be unique from each other. For example, for conf_size=3, you cannot define roles to be roles=buyer,buyer,seller**
 1. If you are using a confederate, then you need to change the participantRole variables to match the role names you set under the

If branches in the Qualtrics survey flow that include "If confederate is equal" to match those exact same names that you created in the roles you set.

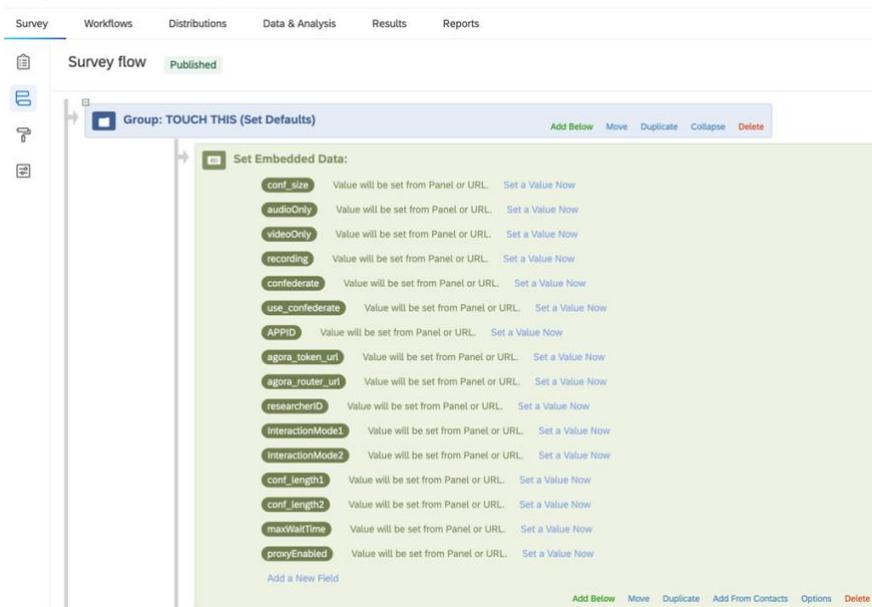
2. If you would like the roles assigned based on non-random criteria, under the "Group: DON'T TOUCH THIS (SMARTRIQS Setup)" delete the embedded variable "participantRole = random"), and you can manually define the participantRole elsewhere in the Qualtrics survey flow (e.g., by using IF branches in the survey flow based on certain criteria) as long as it occurs before the "DON'T TOUCH THIS (MATCHING)" block and the participant roles match the exact role names you previously set and at least one of each role is included per interaction group. (see Methods 2 and 3 in <https://smartriqs.com/randomization/>)

Two-Stage Repeated Interactions Qualtrics Instructions

This section includes steps for running surveys that use two-stage interactions among participants.

- I. Creating a new Qualtrics survey
 - a. Click on the “New Project” button
 - b. Click on the “Survey” button, and then click on the “Get Started” button
 - i. Name the survey something relevant and something you will remember
 - c. Under “How do you want to start your survey”, click on “Import a QSF”
 - i. Download the “SurvConf-Qualtrics Survey Import File-Repeated Participant Interactions-v1.00.qsf” file from SurvConf website (<https://survconf.com/downloads/>)
 - ii. Back on the Qualtrics website, navigate to the location you saved the downloaded file from the prior step and then select it within the Qualtrics import menu. Importing this file will automatically create all the JavaScript code, HTML, and embedded variables needed to run SurvConf within your Qualtrics survey.

- II. Linking SurvConf to your user accounts



- a. Enter the ‘Survey Flow’ in Qualtrics and go to the embedded variables in the “Group: TOUCH THIS (Set Defaults)” section
- b. Click the blue link for ‘Set Value Now’ next to **ResearcherID** to copy and the one obtained from SMARTRIQS

- c. Set the values for the APPID (from Agora), agora_token_url, and agora_routing_url variables in the survey flow. *(NOTE: If you're including only Text Chat interactions among participants and not Video or Audio interactions you can skip this section altogether)*
 - i. For APPID variable, insert your Agora APPID
 - v. agora_token_url will be based on TOKENGEN NAME, defined in IV(b) of One-Time Set Up Instructions. Format is "https://TOKENGEN NAME.herokuapp.com". Example is provided in above screenshot, but you need to insert your own TOKENGEN NAME. ****MAKE SURE YOU USE "https" instead of "http" AND THAT YOU DON'T INCLUDE A SLASH AT THE END OF THIS URL VARIABLE.**
 - vi. agora_routing_url will be based on APIROUTER NAME, defined in IV(c) of One-Time Set Up Instructions. (i.e., "https://APIROUTER NAME.herokuapp.com"). Example is provided in above screenshot, but you need to insert your own name. ****MAKE SURE YOU USE "https" instead of "http" AND THAT YOU DON'T INCLUDE A SLASH AT THE END OF THIS URL VARIABLE.**

- III. Changing Interaction Criteria *(Note: These are all pre-created embedded variables by the survey qsf file import that can either be changed directly in the Qualtrics 'survey flow' page OR by appending the criteria to the end of a survey URL , e.g., https://mcombs.qualtrics.com/jfe/form/SV_1234abc?conf_size=2&InteractionMode=Chat&recording=true)*
 - a. conf_size
 - i. This parameter determines the number of people in the interaction session.
 - ii. The value should be an integer between 2 and 8.
 - b. InteractionMode
 - i. Based on the Interaction Mode desired enter "Video" or "Chat"
 - ii. If the Interaction Mode is "Video", you can use parameters in III(c) below to make the interaction Audio only or Video only.
 - c. audioOnly and videoOnly
 - i. If InteractionMode in III(b) above is set as "Chat", you can ignore this part.
 - ii. These parameters take either "true" or "false" as the values. If either is set as "true", the interaction among participants will be audio only (without video) or video only (without audios).
 - iii. By default, audioOnly and videoOnly are set to "false", meaning that the Video interaction will be like regular video conference with video and audio.
 - d. recording

- i. This parameter takes either "true" or "false" as values
 - ii. By default, recording is set to "true"
- e. `conf_length`
 - i. `conf_length` determines the length of time that the Video/Audio/Chat interaction session lasts.
 - ii. The value should be an integer (interaction time in seconds)
 - iii. Interaction page will have clocks counting down for the specified length for each person, from whenever that individual joins the Video/Chat screen. (Clocks may run few seconds apart from different participants in the same interaction)
- f. `use_confederate`
 - i. If you would like to use a confederate, in the Qualtrics survey flow set `use_confederate` as "yes".
 - ii. Normal participants can be given the usual Qualtrics survey link, and confederates should have "?confederate=yes" appended to the end of the survey link (e.g.,
https://mccombs.qualtrics.com/jfe/form/SV_1234abc?confederate=yes)
 - 1. *NOTE:* This currently only works for two person interactions.
- g. `nameDisplay`
 - i. This parameter takes either "true" or "false" as values
 - ii. This parameter controls whether each participant's role is displayed above their video feed
- h. `allowSkip1` & `allowSkip2`
 - i. This parameter takes either "true" or "false" as values
 - ii. If set to be "true", this parameter decides whether the "next" button is visible and clickable during video interactions.
 - iii. `allowSkip1` is for the first interaction; `allowSkip2` is for the second interaction.
- i. `skipAfter`
 - i. This parameter applies if "`allowSkip1`" or "`allowSkip2`" is true and decides when the "Next" button appears.
 - ii. The value should be an integer (time in seconds)
 - iii. `skipAfter1` is for the first interaction; `skipAfter2` is for the second interaction.
- j. `timeToWait`
 - i. This parameter controls how many seconds the program waits to start the interaction timer after the last new person joins the interaction.
 - ii. The default is 10 seconds. It's advised to use a high value, like 10 or even 15, when conducting larger conferences, and a shorter value like 5 in smaller conferences.

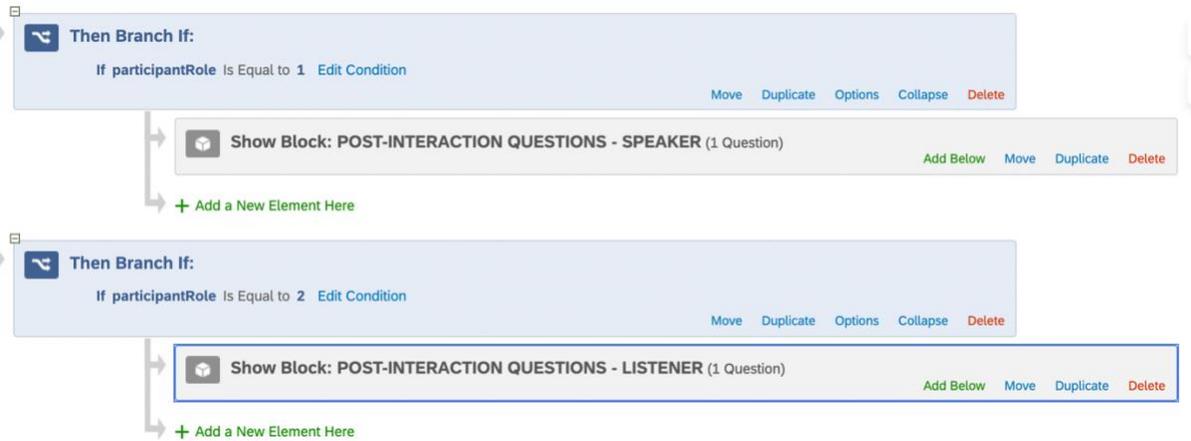
- IV. Group Don't Touch This in Qualtrics SurveyFlow
 - a. Anything under "Group Don't Touch This" is not to be manipulated or touched, as it is a constant and does not change between studies

- V. Designing the Survey with Your Own Questions/Conditions
 - a. In the survey editor view, add your own study-related questions in these five blocks:
 - i. PRE-INTERACTION QUESTIONS AND CONSENTS
 - ii. FIRST PRE-INTERACTION INSTRUCTIONS
 - iii. FIRST POST-INTERACTION QUESTIONS
 - iv. SECOND PRE-INTERACTION INSTRUCTIONS
 - v. SECOND POST-INTERACTION QUESTIONS

- b. Assigning participants into different conditions

- i. If you plan to randomly assign participants in the same interaction group into different conditions/roles/instructions (e.g., if you want a communicator and listener role), so that different participants in the same interaction group may receive different set of instruction/questions according to their condition, you can use participantRole variable. By default, we set up SurvConf to randomly assign roles as numbers. For instance, if conf_size was set to 3, three participants would be paired, and then each would randomly be assigned a role (i.e., participantRole=1, participantRole=2, or participantRole=3).

Then for blocks "FIRST PRE-INTERACTION INSTRUCTIONS", "FIRST POST-INTERACTION QUESTIONS", "SECOND PRE-INTERACTION INSTRUCTIONS", and/or "SECOND POST-INTERACTION QUESTIONS", you can create two block variations with different set of instructions or questions for each condition, and use branch logic to show corresponding block for participants in each group (based on the participantRole number). For instance, suppose you want two participants to be paired up in a Video interaction, and ask one of them to take the role of speaker and the other the role of listener in the interaction. You can set up the branch like this in survey flow:



- ii. If you plan to randomly assign different interaction groups to different conditions (e.g., if you want to vary mode of interaction), you can simply create two different SurvConf surveys (one for each group condition). Then, create a third survey, which solely has a Randomizer in the Qualtrics survey flow that randomly redirects participants to one of the other two surveys.
- iii. You can combine steps i and ii above to have variations both within and between interaction groups.
- vii. If you would like to do greater customization and to change the name of the roles (e.g., instead of "1" and "2", have "buyer" and "seller") you will need to alter few embedded variables in the survey flow (roles, getData, and studyID). The roles variable contains the name of the roles separated by commas. You should find the appropriate roles embedded data variable under the relevant If conf_size branch in the Qualtrics survey flow. For instance, if you chose conf_size=3, you should find the branch 'If conf_size is Equal to 3' in the survey flow and change roles=1,2,3 to your desired roles (e.g., roles=buyer,seller1,seller2). getData embedded variable should be set the same with roles. Lastly, if you adjusted the roles and getData embedded variables, you should change the studyID to be something different and unique (e.g., agora_conf_3_changed). If you would like the roles randomly assigned (and are not using a confederate) than you do not need to do anything further. ****NOTE: Your role names should be unique from each other. For example, for conf_size=3, you cannot define roles to be roles=buyer,buyer,seller**
 1. If you are using a confederate, then you need to change the participantRole variables to match the role names you set under the If branches in the Qualtrics survey flow that include "If confederate is

equal" to match those exact same names that you created in the roles you set.

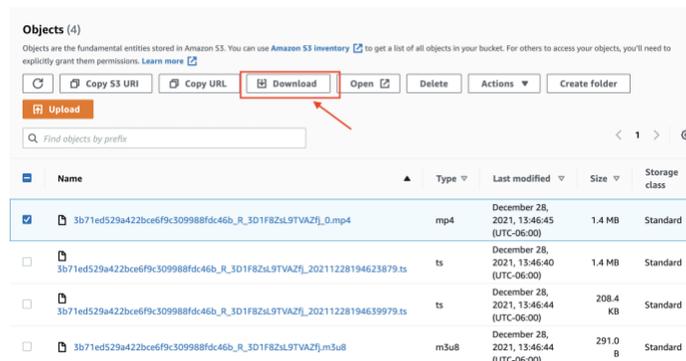
2. If you would like the roles assigned based on non-random criteria, under the "Group: DON'T TOUCH THIS (SMARTRIQS Setup)" delete the embedded variable "participantRole = random", and you can manually define the participantRole elsewhere in the Qualtrics survey flow (e.g., by using IF branches in the survey flow based on certain criteria) as long as it occurs before the "DON'T TOUCH THIS (MATCHING)" block and the participant roles match the exact role names you previously set and at least one of each role is included per interaction group. (see Methods 2 and 3 in <https://smartriqs.com/randomization/>)

Video/Audio Download Instructions

This section includes steps for downloading the videos recorded from participant interactions from the Amazon storage (S3) server. If you haven't included Audio/Video interactions in your survey (i.e., if you only used Chat interactions) or opted out of recording the Video interactions by setting "recording=false", you can skip this section altogether. After downloading your files and made extra copies for security, make sure to delete unnecessary files from AWS bucket to prevent incurring costs.

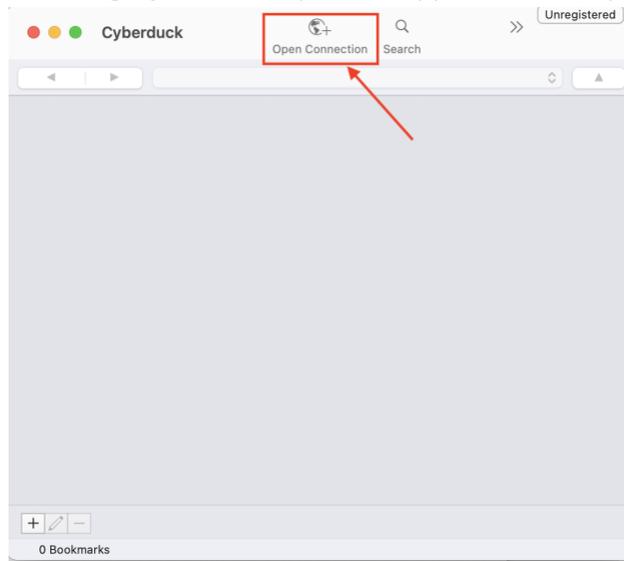
To download individual file(s) separately via AWS web interface:

- I. Log into your AWS account as a root user (https://aws.amazon.com/?nc2=h_lg), using the credentials you created in section III(a) of One-Time Set-Up Instructions.
- II. On the top left corner of the main page, expand "Services" dropdown menu. Find "Storage" and choose "S3".
- III. In "Buckets" section, click on the name of the S3 storage bucket you created in section III(b) of One-Time Set-Up Instructions.
 - a. Each folder name is marked with the unique identifier.
 - b. In each folder, there will be one file with the extension (=type) .mp4, one file with the extension .m3u8, and multiple .ts files. TS files are raw 15-second versions that each video was saved on the server (which was done to reduce upload lag). You can use the .mp4 version that is combined/converted from the raw .ts files. All file names will include Qualtrics identifier/responseID of the participant who took the participantRole = 1 in the interaction session(s).
 - c. When you export the Qualtrics survey responses from Qualtrics website using normal result export functionality, you will find that each individual within a given interaction group has a variable toward the end of the spreadsheet export named 'channelName' that lists the ID of participantRole1 in the group, to allow for determining/matching which participants were in each interaction dyad/group.
 - d. You can download the individual file by choosing each file in the folder and clicking "Download" button.

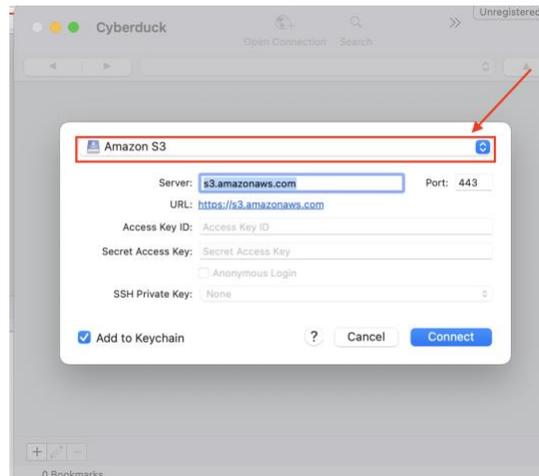


To bulk-download multiple folders/files via third-party app:

- I. [One-time Set-up] For bulk download of many folders and files at once, download a tool with S3 connectivity. We recommend Cyberduck.io (<https://cyberduck.io/>).
- II. To download all files on your S3 bucket:
 - a. After downloading Cyberduck, open the app and click "Open Connection" button:



- b. Make sure you choose "Amazon S3" as the type of connection (see below) and enter your AWS credentials next to **AWS Access Key ID** and **AWS Secret Access Key**:



- c. Double-click on your bucket name
 - i. Select the folders/files you want to download (if you want to download all, you may enter Ctrl+A together on your keyboard to select all)
 - ii. Right click, and click "Download" or "Download To" to download selected files/folders.

Text Chat Download Instructions

If you haven't included Text Chat interactions in your survey, you can skip this section altogether.

- I. Export the normal Qualtrics results from Qualtrics website. The entirety of the chat contents will be included in the exported file in the column towards the end of the file with the name 'chatLog'.
 - a. You will also find that each individual within a given interaction group has a variable toward the end of the spreadsheet export named 'channelName' that lists the ID of participantRole1 in the group, to allow for determining/matching which participants were in each interaction dyad/group.