

ZOOMOSC VERSION 3.2

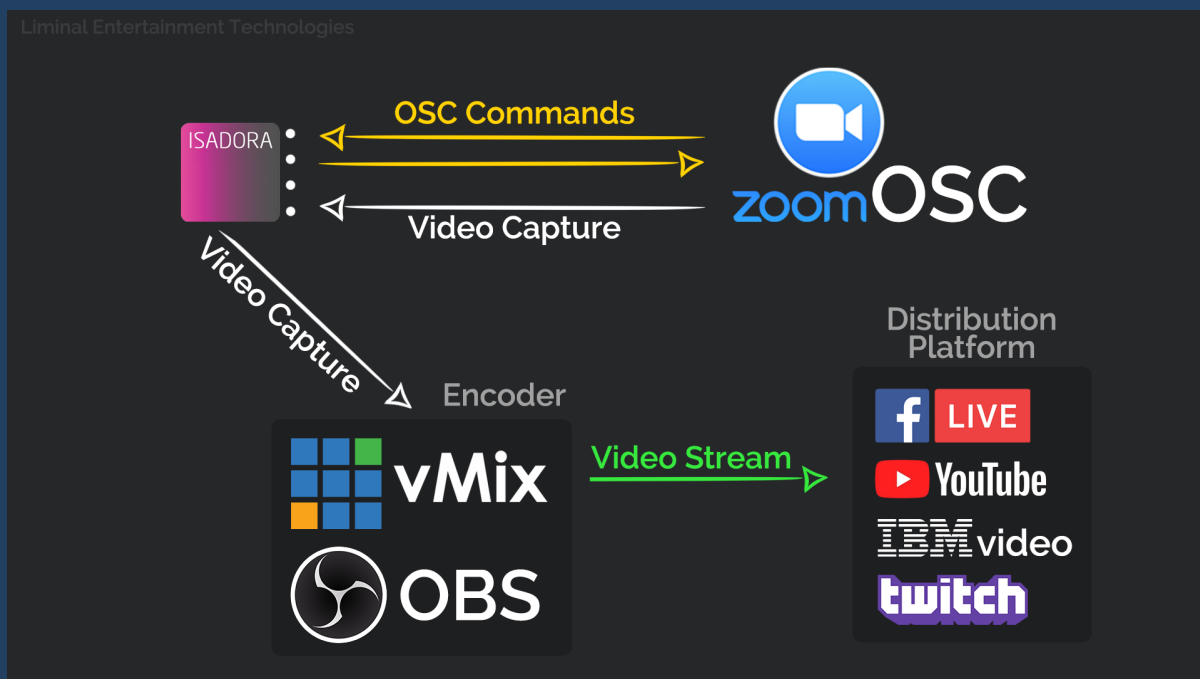
ZOOMOSC SETUP GUIDE

For Windows 10

OVERVIEW

ZoomOSC is an incredibly powerful tool for online performance. At a technical level, ZoomOSC is a modified version of Zoom that adds a bidirectional OSC engine which allows you to send OSC commands to control different functions in a Zoom meeting (such as spotlighting or muting) while also receiving information about participants (such as the order of people in Gallery View).

ZoomOSC can be a linchpin in a larger production workflow that requires a media server and/or broadcast encoder. Video designers with experience in media servers have been able to create advanced show programming.



WORKFLOW

ZoomOSC can be used with both serialized (cued) shows or non-linear control surfaces. From the perspective of video flow, a suggested methodology is to have ZoomOSC in communication with a media server. That way, ZoomOSC can send and receive data and the ZoomOSC window/s can be screen-captured.

We recommend using the multi-display mode of the Zoom interface because you can see a gallery view and a full-screen view simultaneously.

After applying video overlays and effects using the media server, the aggregate AV feed can be sent to an encoder (ex: VMix), potentially using NDI, and then the show's "program output" can be sent to a remote audience on platforms like YouTube and Vimeo via RTMP, or it can be looped back into the Zoom meeting for a program monitor within the call.

GETTING STARTED

1) Run the ZoomOSC Installer

Install the program to a location on your computer, such as Documents, that does not require administrator privileges (for simplicity).

2) When you run ZoomOSC, you will see a console and Zoom interface

The console contains information about the operation of the program that you can use to debug. The Zoom interface operates much like the regular Zoom platform, with a few modifications.

3) Join your Zoom Meeting

The simplest way to accomplish this is to click Only Join. Enter the meeting ID with no spaces, your username, and the meeting password.

Alternatively, sign in with an account that is not associated with a "Log in with..." interface (e.g. "Log in with Google").

Please create a free Zoom account to use for running this application that does not require that sign in system. You can still use your organization's premium account, if you have one, to create the meetings and get access to those features, but you should log into the application with this new account.

4) Control ZoomOSC

Use your favorite OSC Controller (TouchOSC, Isadora, QLab, Bitfocus Companion, etc.) to control ZoomOSC. Send commands to the IP Address that ZoomOSC is running on (127.0.0.1 if running the controller on the same computer as ZoomOSC). ZoomOSC uses UDP port 8000.

MEMORY MANAGEMENT

To use ZoomOSC, you have to store participants in the program's memory. Once you do this, you can call functions (ex: `/zoom/spot 1`) on participants using their ZoomOSC ID.

At any time, you can see the list of participants you've previously stored with the command, `/zoom/list`.

If your talent changes their username - you will not have control over them again unless you call `update` or modify your "performance_config.txt" file and call `load`.

If you don't know the names of the Zoom participants ahead of time - Calling `update` and saving the program's memory to disk using `/zoom/save` is an easy way to externalize the participant data to other applications using "performance_config.txt"

If someone disconnects from the meeting and then rejoins - As an operator, you don't have to do anything to regain control of the participant for the purposes of calling commands. ZoomOSC automatically tracks information about users in the background, provided they rejoined with the same username.

If you want to get creative, you can have your talent swap usernames (or you can do it for them) as part of an improvisational programming scheme. There are enough building blocks to build very powerful control patches!

3 OPTIONS TO STORE PARTICIPANTS

Option 1: Live Update

ZoomOSC will look at all the participants in the Zoom meeting and store them in memory, associating their usernames with a ZoomOSC ID, a placement in a zero-indexed list of participants

`/zoom/update`

Option 2: Save and Load Preset from Disk

ZoomOSC will look for `performance_config.txt` and load its contents into memory. This file is created by calling `/zoom/save`, which takes the contents of ZoomOSC's participant memory and stores them into the text file - (If you don't see the file, try calling `update`, then `save`)

The idea of this text file is that you can just write in the Zoom usernames of the participants you want to have control of, and you can order the file so that you can have persistent bindings between ZoomOSC IDs and Zoom participants that you can use for multiple rehearsals or performances.

`/zoom/save` (Take the contents of memory and save to disk)

`/zoom/load` (Take the contents of "performance_config.txt" on disk and load it into memory)

Option 3: Build as you Go

As users join the meeting, use the `include` command to append them to the end of memory, preserving your previous controls but adding new users.

`/zoom/include`

THE RETURN CHANNEL

Applications can now receive OSC back from ZoomOSC. Presently, ZoomOSC sends OSC packets to port 1234 on the software loopback, 127.0.0.1, on Windows.

The most powerful feature of the return channel is the ability to track participants throughout the Gallery View. You can build upon this framework to create an automatic switching engine to simulate ISO feeds of the Zoom participants.

To use the "galtrack" system:

1. Make sure ZoomOSC is named "ZoomOSC" in the Zoom call
2. Have all participants turn off video (if any were on)
3. If you are using a program monitor, "Hide Self View" /turn off ZoomOSC's video feed
4. Load participants into memory with `/zoom/load` or `/zoom/update`
5. Have participants turn on video
6. Listen to `/zoomosc/gallery/order` to receive the ZoomOSC IDs of everyone in the gallery view in the order in which they appear from top left to bottom right

You can also build reactive programming off of things like `/zoomosc/sound/off` to fire events in your Isadora patch, for example, when such an action occurs.

GLSL LIVE GALLERY ISO FEED SIMULATOR

Automatically crop and identify the gallery.

Liminal has created a free open-source GLSL Shader for automatically cropping the Zoom gallery view.

In addition, we have implemented a set of user actors to use with Isadora to automatically create ISO feeds of the talent in the Zoom call.

Check out our website for a link to download.

<https://www.liminalet.com/zoomosc-setup-guide>

ZOOMOSC 3.2 API

FOR WINDOWS

BEFORE YOU START:

To send commands to ZoomOSC, have your OSC packets target port 8000 on the software loopback device (127.0.0.1) or via the host PC's private IP address if you are connecting from an external device, like QLab running on a Mac on the network.

You can send payloads that are strings, ints, or floats. If you are using strings, use the username of the participant.

COMMANDS GOING INTO ZOOMOSC ON PORT 8000

GLOBAL ACTIONS

Spotlight	/zoom/spot
Un-Spotlight	/zoom/unspot
Request Video On	/zoom/video/on
Set Video Off	/zoom/video/off
Start Screen Share	/zoom/screenshare
Stop Screen Share	/zoom/stopshare
Mute Microphone	/zoom/mic/mute
Unmute Microphone	/zoom/mic/unmute

SELF ACTIONS

Pin User	/zoom/pin
Unpin User	/zoom/unpin
Pin to Second Screen	/zoom/pin2
Unpin from Second Screen	/zoom/unpin2
Turn off Self Video	/zoom/me/video/off
Turn on Self Video	/zoom/me/video/on
Toggle Gallery/Active View	/zoom/gallery

CHAT

Send chat to user	/zoom/chat
Send chat to all	/zoom/chat/all

MEMORY FUNCTIONS

Poll API for users to store in memory	/zoom/update
Append new users to end of memory	/zoom/include
Load from performances_config.txt	/zoom/load
Save to performance_config.txt	/zoom/save
Reset app memory containers	/zoom/reset

CONSOLE DEBUG FUNCTIONS

Print Memory to Console	/zoom/list
Print Status Info	/zoom/survey
Print User Roles	/zoom/roles
Print String	/zoom/print
Print Number of Args Detected	/zoom/report

CHAT AUTO CONTROLS

When ZoomOSC receives the following as chat messages from a meeting host or co-host, it will perform the associated action

Turn Off Video	"/zoom/video/off"
Turn On Video	"/zoom/video/on"
Turn Off Microphone	"/zoom/mute"
Turn On Microphone	"/zoom/unmute"

COMMANDS COMING OUT OF ZOOMOSC ON PORT 1234

OUTPUTS

Order of Gallery View	/zoomosc/gallery/order
Number of Users with Video On	/zoomosc/gallery/count
Call out Video Turn On	/zoomosc/video/on
Call out Video Turn Off	/zoomosc/video/off
Call out Microphone Turn On	/zoomosc/mic/unmute
Call out Microphone Turn Off	/zoomosc/mic/mute

ZOOM ROLE KEY

0 USERROLE_NONE
For Initialization

1 USERROLE_HOST
Role of the Host

2 USERROLE_COHOST
Role of Co-Host

3 USERROLE_PANELIST
Role of the Panelist, Only in Webinar Mode

4 USERROLE_BREAKOUTROOM_MODERATOR
Host role in Breakout Room

5 USERROLE_ATTENDEE
Role of Attendee