

Purpose: provide a low-latency feed of multiple Artemis clients into a central OBS application. The method described here includes the following features:

- Stream game content and optionally webcam/microphone feeds from every station on the bridge.
- Switch scenes on any client on-the-fly.
- CPU/GPU requirements are minimal, given sufficient network bandwidth.

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Requirements:

- 1) Director:
 - a) The OBS Director PC should be dedicated to OBS; do not use the Artemis server PC as the Director.
 - b) Dual monitors recommended for OBS "Projector" preview support.
 - c) Dedicated GPU highly recommended: This process was tested on a previous-generation nVidia 1060 laptop system with excellent results.
 - d) 1Gbit+ Ethernet connection to the game LAN.
- 2) Artemis PCs:

- a) 1Gbit Ethernet connection *recommended*. 5Ghz WiFi has been tested on corporate-grade access points (Aruba 500 series) in a low-interference environment, but is generally not recommended at public events where control over the RF environment is not possible.
 - b) Install OBS.
 - c) Install the OBS Teleport plugin.
 - d) Configure OBS to capture Game Window and audio
 - e) Recommended: configure Websocket support (no authentication required).
 - f) Optional: configure additional OBS scenes to include Webcam and/or microphone capture sources.
 - g) Recommended: on the Artemis **server** and any other client which runs **Fighter**, **Main Screen**, or **Observer**, install DXWnd from <https://sourceforge.net/projects/dxwnd/files/> in a subfolder of your Artemis installation and import the DXWnd configuration available at [LTEBridge - Public Google Drive: Artemis.dxw](#)
- 3) OBS Software:
- a) Latest release of OBS:
<https://github.com/obsproject/obs-studio/releases/latest>
 - b) Latest release of Teleport:
<https://github.com/fzwoch/obs-teleport/releases/latest>
 - c) Recommended: create a standalone portable copy of OBS Studio including the Teleport plugin and websocket configuration. Deploy the pre-configured copy to each Artemis PC.
 - d) On each OBS install, enable the websocket feature with no authentication.

Portable OBS Client Setup

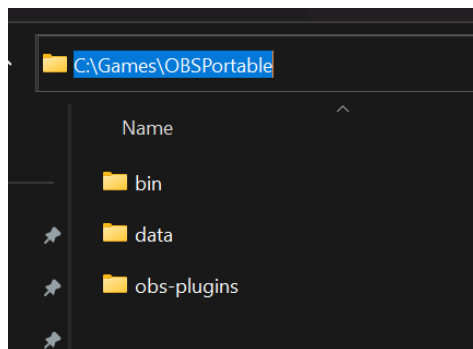
It is assumed your Artemis client PCs are similar in capability. Perform this setup at any client.

Extract OBS files

Create C:\Games\OBSPortable folder.

Download from <https://github.com/obsproject/obs-studio/releases/latest> : scroll to Assets and select the OBS Studio .zip file; as of 1 October 2023, it's **OBS-Studio-29.1.3.zip**

Extract the .zip file into C:\Games\OBSPortable; it should appear as follows:



Download from <https://github.com/fzwoch/obs-teleport/releases/latest> : scroll to Assets and select the **obs-teleport.zip** file.

Open obs-teleport.zip and open the windows-x86_64 folder. There are 2 files in it.

Copy the file *contents* of windows-x86_64 to C:\Games\OBSPortable\obs-plugins\64bit - do not create a windows-x86_64 folder here.

Create an empty text file at C:\Games\OBSPortable\portable_mode.txt

Configure "Safe" Defaults

The following are targeted for low-powered systems to reduce game impact.

Locate and run C:\Games\OBSPortable\bin\64bit\obs64.exe; the Auto-Configuration Wizard should appear.

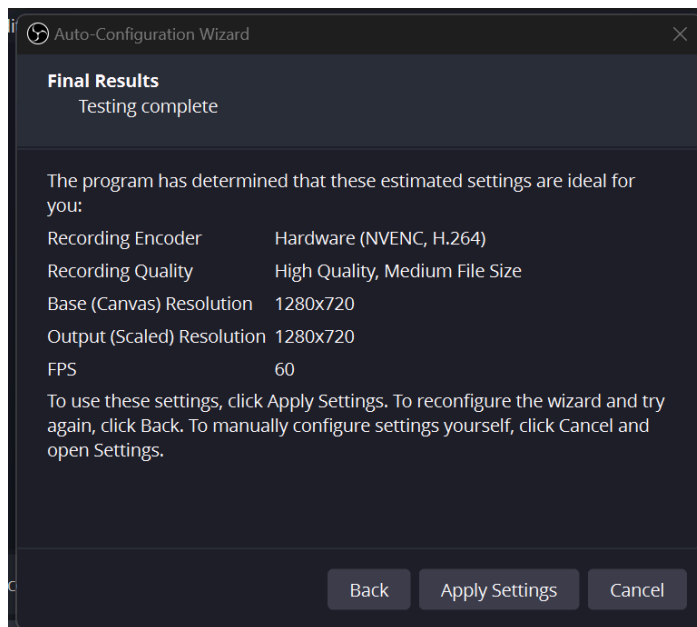
At *Usage Information*, select **Optimize just for recording, I will not be streaming** and click Next.

At *Video Settings*, select:

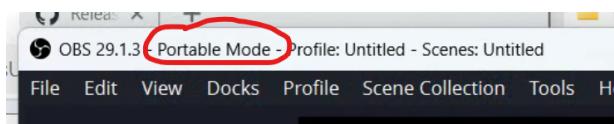
- *Base Canvas Resolution*: **1280x720**
- FPS: Either 60 or 30, but prefer 60 when possible

Click Next.

At *Final Results* you should see settings similar to the following:



NOTE: You should see **Portable Mode** on the main title bar of OBS at this point:



If you do not see **Portable Mode** here, then you should exit OBS and return to the prior steps and ensure you have a text file named `portable_mode.txt` in the `C:\Games\OBSPortable` folder. Otherwise, all the remaining steps will not be correctly copied to other clients.

For *most-compatible* results across multiple systems, adjust the Settings as follows:

Select File > Settings

- Output > Streaming: Change Video Encoder to **Software (x264)**

- Output > Recording:
Recording Path to C:\Games\OBSPortable\recording (create a new empty folder if necessary).
Video Encoder: **Software (x264)**

Select Tools > Teleport, then check **Teleport Enabled**, then OK.

Select Tools > WebSocket Server Settings and set as follows:

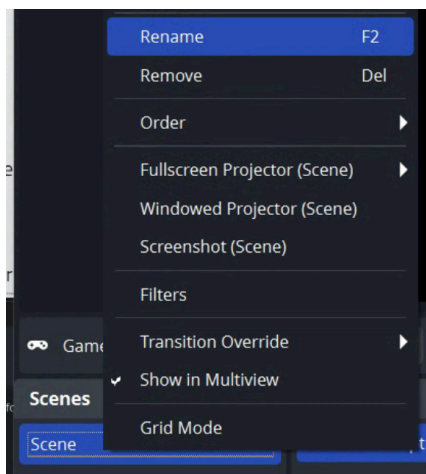
- Plugin Settings: **Enable WebSocket server**
- Server Settings:
Server Port 4455
Un-check Enable Authentication

Select Profile > Rename to change the profile to **ArtemisClient**.

Select Scene Collection > Rename to change the scene collection to **ArtemisClient**.

In Sources, add Game Capture source configured to Mode: **Capture any fullscreen application**

In Scenes, right-click on the **Scene** and rename it to **Main**.



Exit OBS.

At this point, C:\Games\OBSPortable should contain a new **config** folder and a **recording** folder.

Copy the **C:\Games\OBSPortable** folder to each Artemis client on your bridge.

This "portable" copy of OBS should run on just about anything--but the performance will suffer without further adjustment at each client. Proceed to the next section for performance recommendations.

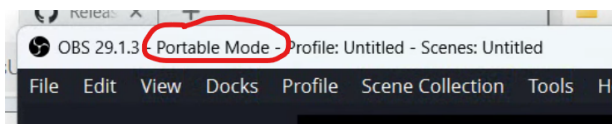
OBS Client Tuning and Setup

The following adjustments are recommended at each client per your specific needs.

Video Encoder to Hardware

At each client, launch **C:\Games\OBSPortable\bin\64bit\obs64.exe** - this should launch OBS with the settings configured previously and should not run the Auto-Configuration Wizard.

NOTE: You should see **Portable Mode** on the main title bar of OBS at this point:



If you do not see **Portable Mode** here, then you should exit OBS and return to the prior steps.

Temporarily turn off Teleport: Select Tools > Teleport, then un-check Teleport Enabled, then OK.

Change Video Encoder to a *Hardware option*: Select File > Settings and in Output > Streaming and Output > Record, change the **Video Encoder** to **any Hardware** option.

Turn on Teleport: Select Tools > Teleport, then check **Teleport Enabled**, then OK.

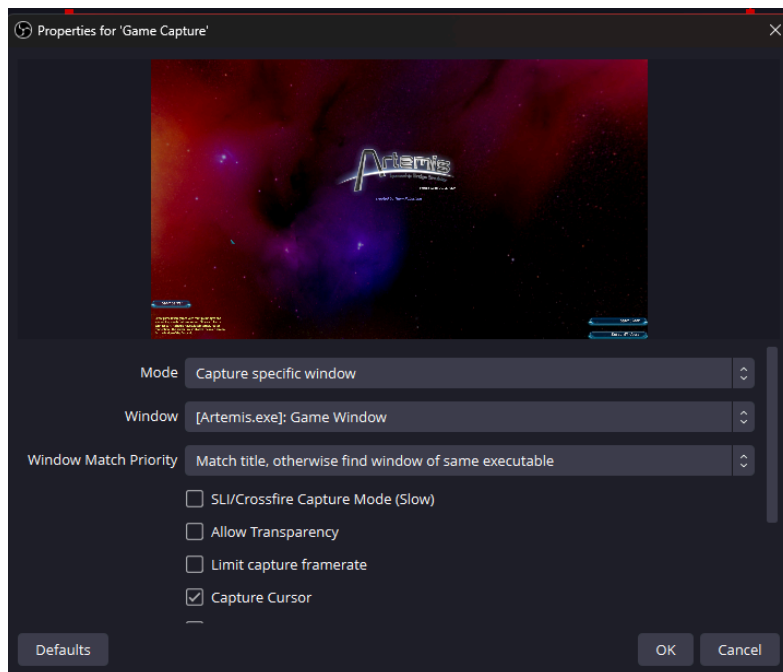
Adjust Source Capture

If your clients run in a different resolution than the Video Settings in OBS--such as running 1080p for the game with OBS configured to capture 720p--you will need to perform a one-time adjustment at the OBS client.

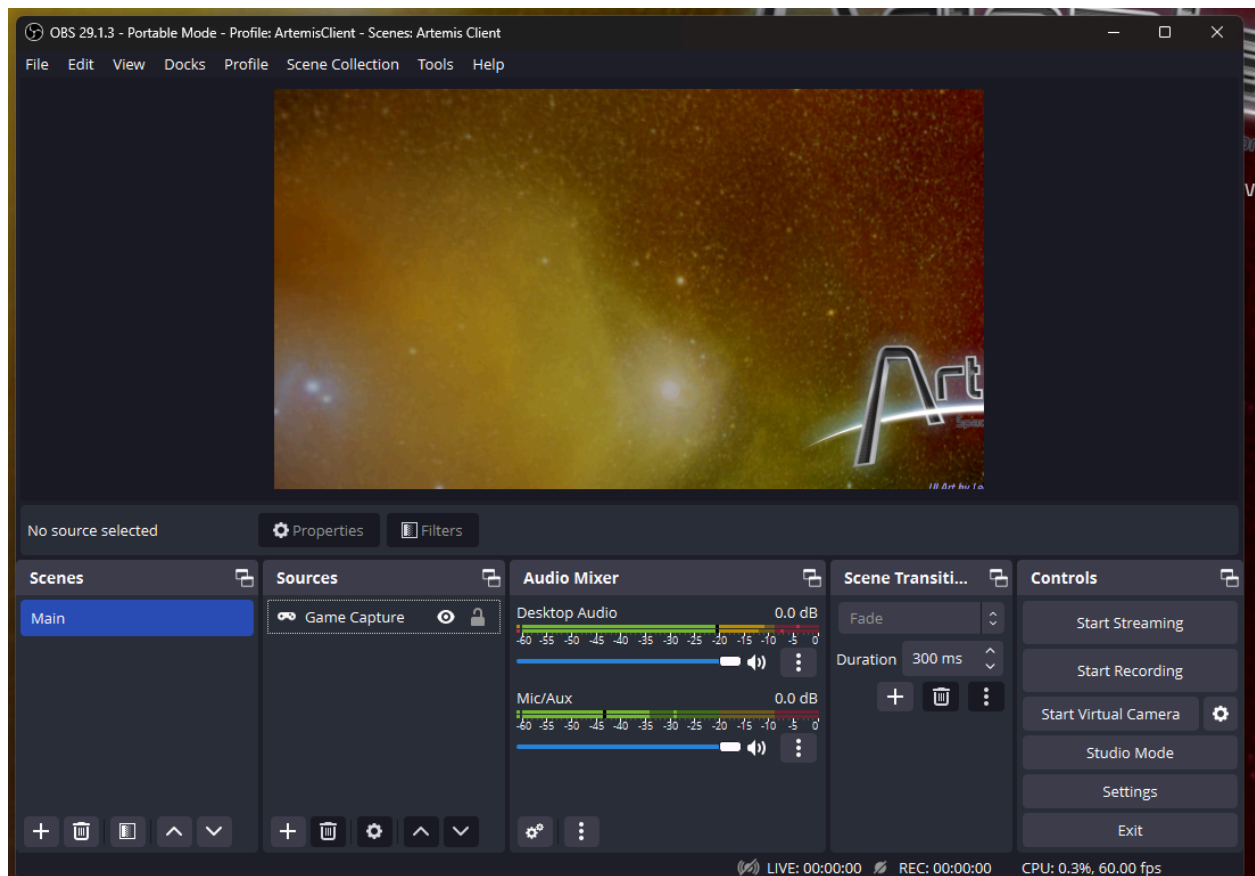
With OBS running, launch the Artemis client and configure it to run in **Fullscreen Windowed** mode. There is no need to join a server at this point.

With Artemis still running, open OBS and review the Source preview. Double-click Sources > **Game Capture** to adjust the Mode and Window options as below, then click OK.

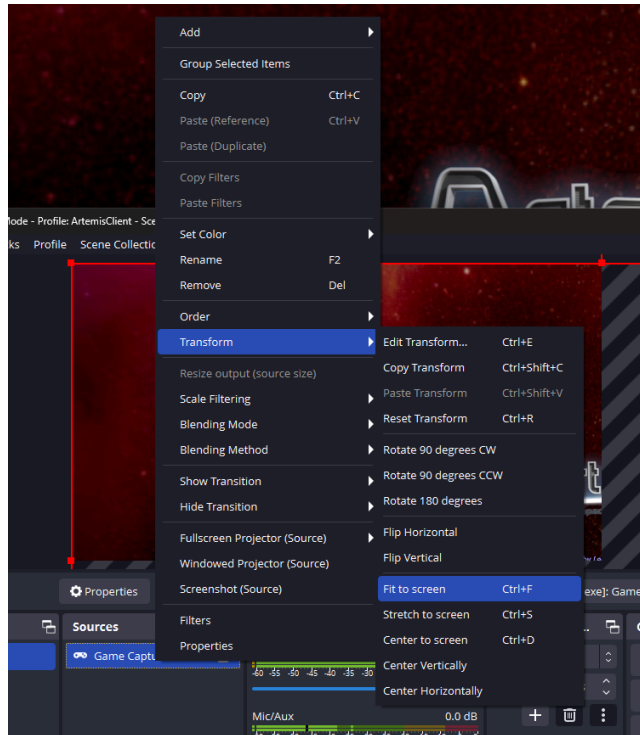
- Mode: Capture specific window
- Window: Artemis.exe: Game window



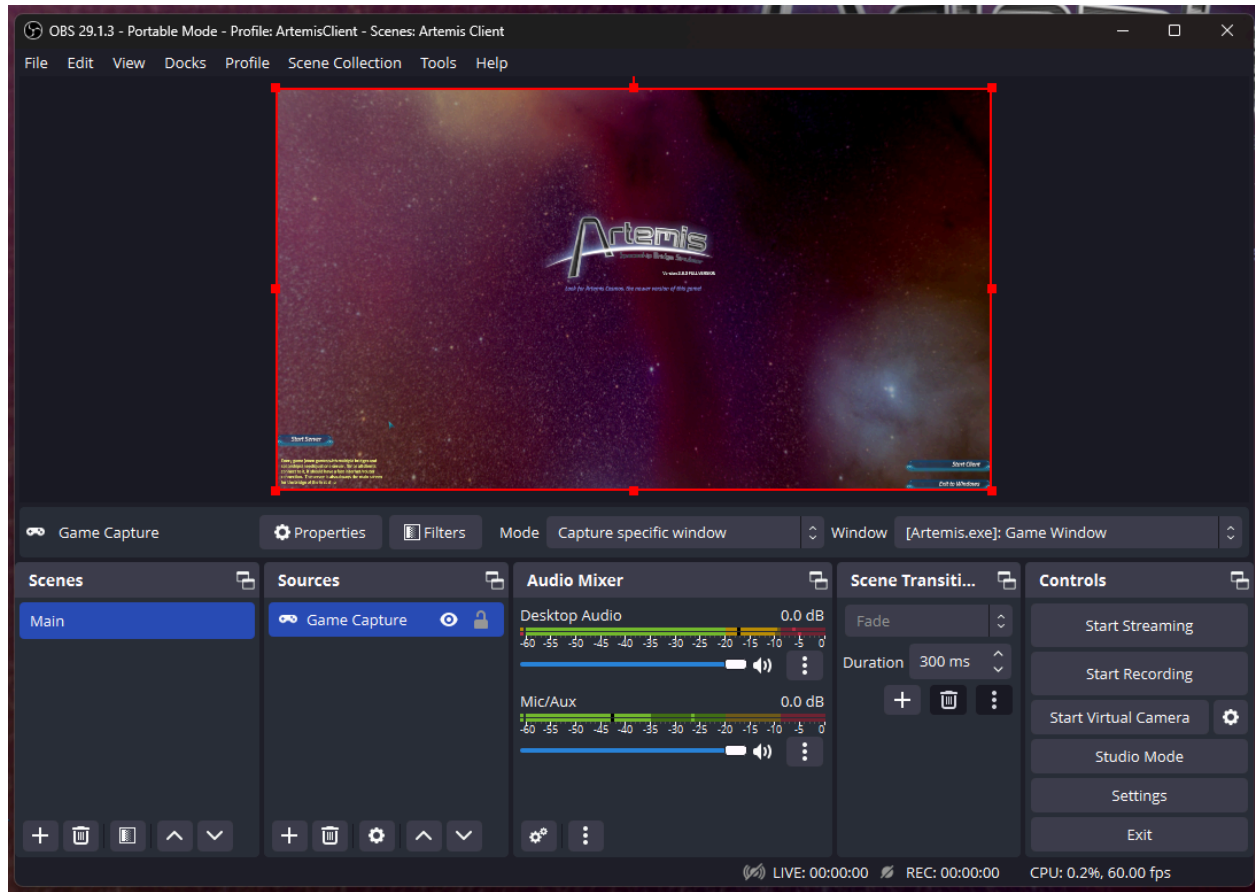
You may see that Artemis is cropped or skewed, like this:



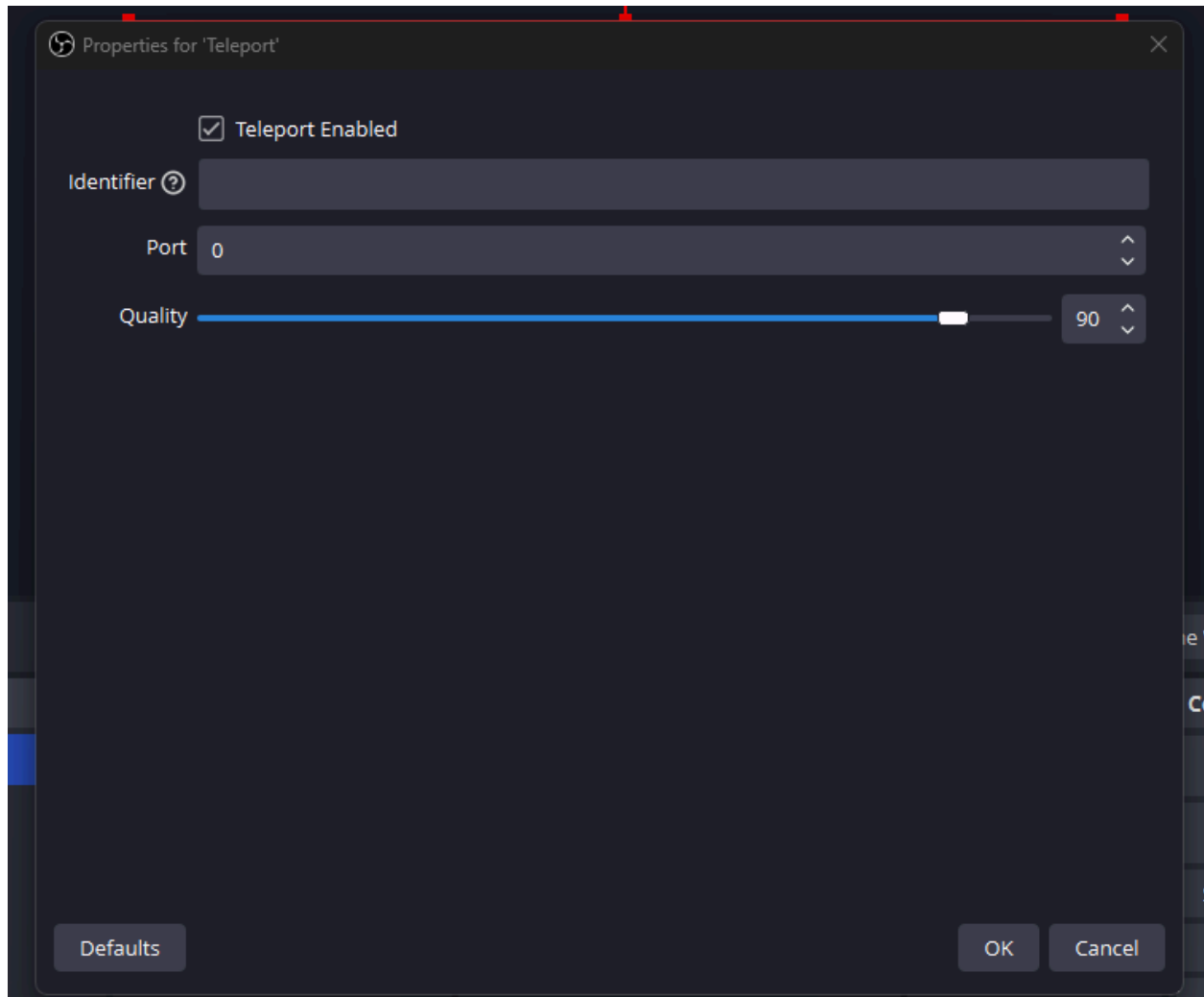
To adjust this quickly to fit, ***RIGHT***-click on Sources > **Game Capture** and select **Transform > Fit to screen**.



This should align the game to the preview window as shown here:



Verify that in the menu Tools > Teleport shows **Teleport Enabled** is checked and click OK.



At this point you may minimize OBS, leaving it open. You do not need to select any streaming or recording options.

You should exit the Artemis client and re-launch it, selecting your preferred screen resolution settings.

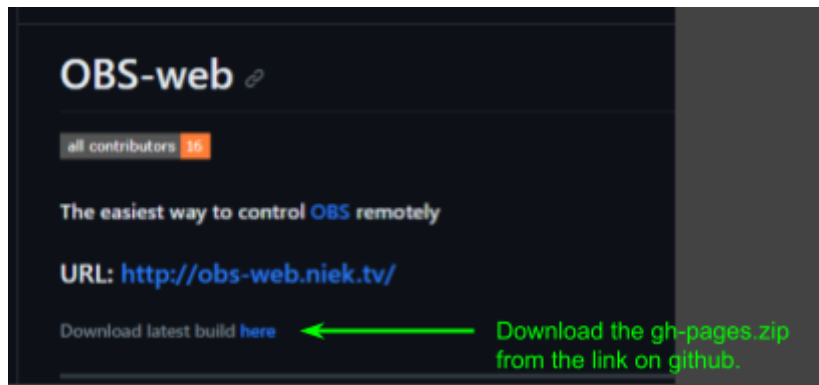
Audio Output Capture

If the game does not send audio via the Desktop Audio capture default in OBS, it may be necessary to add an Audio Output Capture source and set it specific per client.

OBS Production Tips

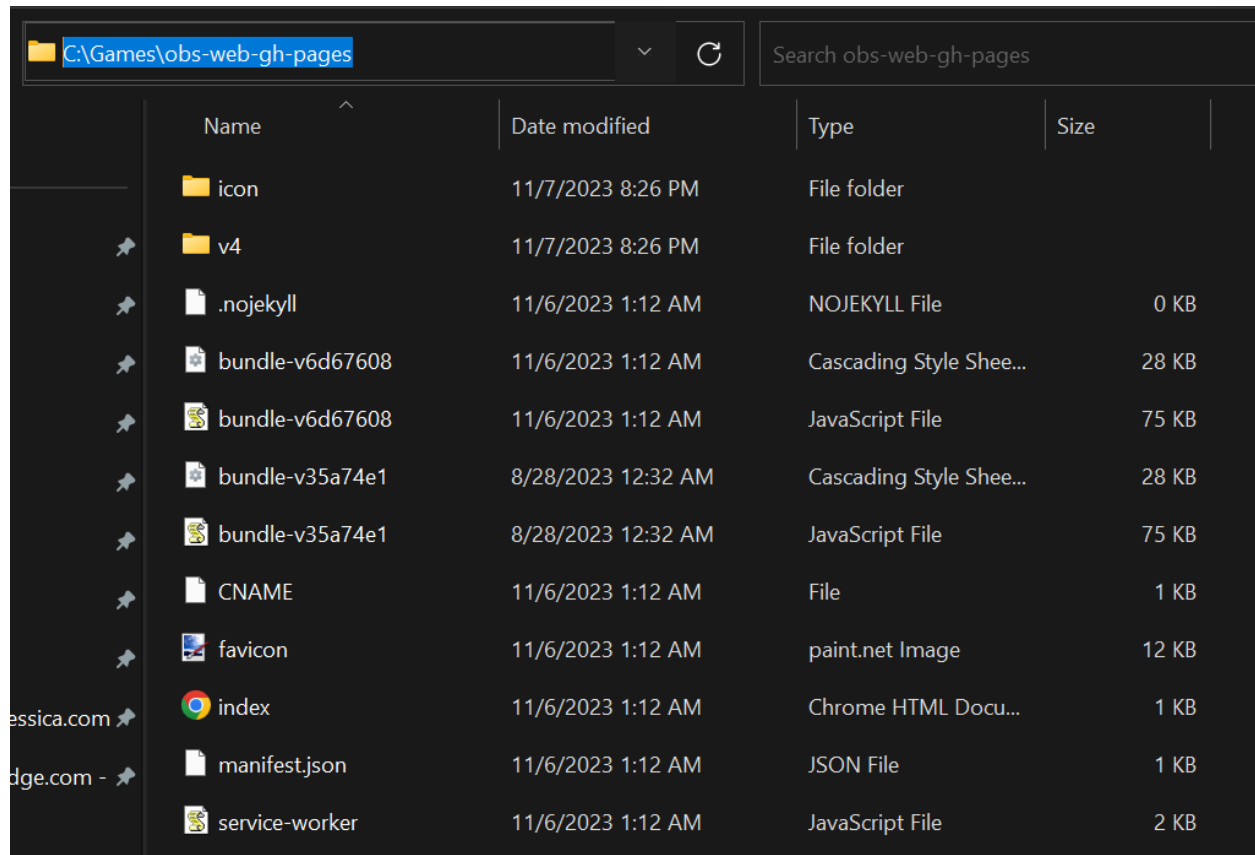
Websocket Controls

You can remotely control the OBS clients from the Director PC. One simple websocket app is <https://github.com/Niek/obs-web> : find the "Download latest build here" link as shown:



Direct link is: <https://github.com/Niek/obs-web/archive/gh-pages.zip>

Extract the .zip file to C:\Games\obs-web-gh-pages : it should appear as follows:



Name	Date modified	Type	Size
icon	11/7/2023 8:26 PM	File folder	
v4	11/7/2023 8:26 PM	File folder	
.nojekyll	11/6/2023 1:12 AM	NOJEKYL File	0 KB
bundle-v6d67608	11/6/2023 1:12 AM	Cascading Style Shee...	28 KB
bundle-v6d67608	11/6/2023 1:12 AM	JavaScript File	75 KB
bundle-v35a74e1	8/28/2023 12:32 AM	Cascading Style Shee...	28 KB
bundle-v35a74e1	8/28/2023 12:32 AM	JavaScript File	75 KB
CNAME	11/6/2023 1:12 AM	File	1 KB
favicon	11/6/2023 1:12 AM	paint.net Image	12 KB
index	11/6/2023 1:12 AM	Chrome HTML Docu...	1 KB
manifest.json	11/6/2023 1:12 AM	JSON File	1 KB
service-worker	11/6/2023 1:12 AM	JavaScript File	2 KB

Double-click the index.html to open the OBS-web application.

Connect to any running OBS client by entering **ws://ip.address.of.client:4455** and click Connect.

Alternate Scenes (Webcam inset, etc)

Each Scene in OBS can contain a different selection of sources. For example, you can add Scenes to include webcam and microphone capture from the clients. By dragging the OBS sources around, you can set up picture-in-picture or overlay effects on top of the main game screen. The websocket application noted above lets you remotely switch between scenes on any client.