Resolume HUD

Widget Creator — Complete Guide & Instructions

v1.4 | February 2026 | show-tools.app

ABOUT THIS GUIDE

This is the official instruction manual for Resolume HUD. It covers everything you need to get up and running — from initial setup to advanced features. This guide is split into two parts:

- **Part 1 — Quick Start Guide:** Installation, OSC setup, creating and managing widgets, profiles, and general usage.
- **Part 2 — Web Server / REST API Guide (NEW in v1.4):** Setting up the Resolume Web Server connection, browsing parameters visually, creating API widgets, networking, troubleshooting, and FAQ.

> *You can use either OSC or the Web Server API (or both!) to connect to Resolume. Start with Part 1 to get familiar with the app, then explore Part 2 for the new API features.*

IMPORTANT — SAFETY NOTICE

This software is safe to use. You may see a Windows SmartScreen warning when you first run it — this is because we do not yet have a verified publisher certificate. This is a cost limitation, not a security issue. The software is open source and you can verify the code yourself on our GitHub. Click "More info" then "Run anyway" to proceed.

> *Starting with v1.4, the app includes a built-in auto-updater. You will be automatically notified of available updates when you launch the application.*

GETTING STARTED

The Main Window

When you launch Resolume HUD, you will see the main HUD Manager and Widget Builder. This is your home base for creating, managing, and configuring all of your widgets.

Hamburger Menu (top left)

- **Exit App** — Closes the program and all active widgets.
- **Info** — About section with version and links.
- **Settings** — Customize your experience:
  - ☐ Layout theme
  - ☐ Default widget border color (editable per widget later)

- ☐ Default opacity
- ☐ Language selection (coming soon)

PROFILES

At the top of the main window, you can create, import, export, and switch between profiles. Profiles let you organize different widget setups for different shows or configurations.

01 Select a profile from the dropdown (e.g., "Default").

02 Click the **+** button to create a new profile.

03 Use **Export** to save a profile, or **Import** to load one from another machine.

OSC SETUP

Before creating widgets via OSC, you need to enable OSC communication between Resolume and the HUD.

01 Open **Resolume Preferences** and navigate to the **OSC** tab.

02 Enable **OSC Output** and make sure the destination is set to localhost (**127.0.0.1**).

03 Make sure the **OSC Output Port** in Resolume matches the **UDP Port** in the HUD Widget Creator.

We recommend leaving OSC mapping on "Default" rather than "Send All" to reduce unnecessary data traffic.

New in v1.4: You can also connect via the Resolume Web Server / REST API instead of OSC. See Part 2 of this guide for full instructions.

CREATING YOUR FIRST WIDGET

Widget Types

- **Color** — Displays a live color swatch (e.g., Colorize Hue).
- **Value** — Shows a numeric value or percentage.
- **Bar Gauge** — Visual bar from 0–100, with fill or X/Y modes. Orientation can be vertical or horizontal.
- **Speed** — Displays speed/rate values.

Step by Step

01 Choose a widget type (e.g., Color for a Hue widget).

02 **Set the OSC Address** — You have two options:
Manual: In Resolume, go to Shortcuts, select your parameter (e.g., Colorize Hue), copy the OSC command string, and paste it into the OSC Address field. Make sure the OSC Output icon is enabled for that parameter.
Learn Mode: Skip this for now and use "Learn OSC Address" after the widget is created (see below).

03 **Min/Max Values** — Leave defaults unless you are monitoring a specific range (e.g., BPM or a custom timeline range). Enable and set min/max to display accurate values.

04 **Appearance** — Set the widget name (e.g., "Colorize"), size, opacity, and background color. Default settings work well for most cases — you can always edit later.

05 Review your settings and click **Create**.

LEARN OSC ADDRESS (THE EASY WAY)

If you skipped the manual OSC setup, or want to change a widget's parameter later:

01 In Resolume, enter **OSC Edit** mode and select the desired parameter.

02 Make sure **OSC Output is OFF** for that parameter first.

03 In the HUD Manager, select the widget and click **Learn OSC Address**.

04 Back in Resolume, **turn OSC Output ON** for that parameter.

05 A confirmation popup will appear — click **Yes** and the address auto-populates.

06 Exit the OSC mapper. Your widget is now linked and live.

MANAGING WIDGETS

- **Edit** — Select a widget and press Edit, or use the Quick Edit panel.
- **Enable/Disable** — Toggle widgets on or off at any time.
- **Duplicate** — Clone a widget with all its settings.
- **Link Widgets** — In the Edit view, go to the Create tab and hit Link. Choose which widget to attach to and where (side, top, or bottom). Linked widgets move together as a group.

Closing & Reopening

You can close the main manager window and your widgets will stay live on screen. To reopen the manager, **triple-click** any widget. To close everything at once, use **Exit App** in the hamburger menu.

FEEDBACK & CONTACT

Found a bug? Have a feature idea? Want to brainstorm a new tool? Reach out!

Email: showtoolsofficial@gmail.com

Website: show-tools.app

★ NEW IN v1.4 ★
Web Server / REST API Connection

The following section covers the brand-new Web Server / REST API connection introduced in v1.4. This is a major addition that lets you browse Resolume parameters visually and create widgets without typing OSC addresses.

WHAT IS THE WEB SERVER CONNECTION?

Resolume Arena and Avenue (v7.8 and newer) include a built-in web server that exposes a REST API and WebSocket connection. This allows external programs — like Resolume HUD — to communicate directly with Resolume over HTTP.

Previously, Resolume HUD could only receive data from Resolume via OSC (Open Sound Control), which requires you to manually type or paste OSC addresses for each parameter. The web server connection improves on this in several ways:

- **Visual Parameter Browser** — Instead of typing OSC addresses, you browse your composition in a tree view and click the parameter you want.
- **Automatic Value Ranges** — The API tells the HUD app the minimum and maximum values for each parameter, so normalization is handled automatically.
- **Stable Parameter IDs** — Each parameter gets a unique integer ID that doesn't change even if you rearrange layers or move clips around.
- **Real-Time Updates via WebSocket** — A persistent connection pushes value changes instantly — no UDP packet loss, no dropped messages.
- **Works Alongside OSC** — You can use both OSC widgets and API widgets in the same profile at the same time. They are completely independent.

REQUIREMENTS

Resolume Side

- Resolume Arena or Resolume Avenue
- Version 7.8 or newer (the REST API was introduced in version 7.8)
- The web server must be enabled in Resolume's preferences (see Step 1)

HUD App Side

- Resolume HUD v1.4 or newer

- Both programs must be able to reach each other over the network (same computer works out of the box; see the Networking section for two computers)

Network

- Default port: **8080** (configurable in Resolume)
- Protocol: HTTP (not HTTPS) — no encryption, no authentication
- If using a firewall, port 8080 (or your chosen port) must be open

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STEP 1: ENABLE THE WEB SERVER IN RESOLUME

A Open Resolume Arena or Avenue.

B Open **Preferences**:
Menu bar: Resolume → Preferences (Mac)
Menu bar: Edit → Preferences (Windows)
Or use the keyboard shortcut: **Ctrl+,** (Windows) / **Cmd+,** (Mac)

C Navigate to the **web server settings**:
In Resolume 7.x: Look for "OSC" or "Webserver" in the preferences.
In Resolume 8.x: Look for "OSC / WebSocket" in the preferences.
The exact location may vary by version, but it is always in Preferences.

D Enable the web server — find the toggle/checkbox labeled **"Webserver"** or **"Enable Webserver"** and make sure it is turned ON (checked / enabled).

E Note the **port number**. The default port is 8080. You can change it if 8080 is already in use by another program. **IMPORTANT:** Remember this port number — you will enter it in the HUD app.

F Note the **IP address** (if using two computers):
If Resolume and the HUD app are on the **SAME** computer, the address is always **127.0.0.1** (localhost) — you don't need to change anything.
If they are on **DIFFERENT** computers, note the IP address of the computer running Resolume (e.g., 192.168.1.100).
To find the IP: open a terminal/command prompt and run "ipconfig" (Windows) or "ifconfig" (Mac).

G Click **OK / Apply** to save the preferences.

Verification

Open a web browser on the same computer as Resolume and navigate to:

```
http://127.0.0.1:8080/api/v1/product
```

You should see a JSON response like:

{"name":"Arena","major":7,"minor":20,"micro":0,"revision":12345}

If you see this, the web server is running correctly. If you get an error, double-check that the web server is enabled and the port number is correct.

STEP 2: CONFIGURE THE CONNECTION IN RESOLUME HUD

A Launch Resolume HUD (v1.4 or newer).

B Open **Settings** — click the hamburger menu (three horizontal lines) in the top-left corner, then click "Settings".

C Scroll down to the **"Resolume Web Server"** section.

D Check the box: **"Enable Resolume API connection"**

E Enter the connection details:

HOST:
If Resolume is on the SAME computer: leave as **127.0.0.1** (default).
If Resolume is on a DIFFERENT computer: enter that computer's IP address (e.g., 192.168.1.100).

PORT:
Enter the port number from Resolume's preferences (default: 8080). This MUST match exactly what Resolume is configured to use.

F Click **"Test Connection"** to verify:
If successful: you will see a green message like "Connected — Arena 7.20.0"
If failed: you will see a red message like "Connection failed — is the web server enabled?" (See Troubleshooting section below.)

G Click **"Save"** to save your settings.

H The next time you start the HUD app, it will automatically connect to Resolume on startup (you'll see a green dot in the bottom-right status bar).

STEP 3: TEST THE CONNECTION

After saving your settings, look at the bottom-right corner of the main Resolume HUD window. You should see a status indicator:

GREEN DOT	"API Connected" — Connection is active and working
ORANGE DOT	"API Connecting..." — Currently trying to connect
RED DOT	"API Error" — Connection attempt failed

GRAY DOT "API Disconnected" — Not connected

If you see GREEN: you're ready to create API widgets. If you see RED or GRAY: see the Troubleshooting section.

> *The status indicator only appears when "Enable Resolume API connection" is checked in Settings. If you don't see it, open Settings and make sure the checkbox is enabled.*

STEP 4: CREATE A WIDGET USING THE RESOLUME API

A In the main HUD window, click **"Create"** to open the widget wizard.

Step 1 — Widget Type

B Choose your widget type as usual (Hue Color, Value Text, Bar Gauge, or Speed). Click "Next".

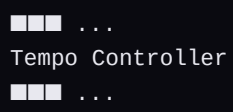
Step 2 — Data Source

C In the **"Data Source"** dropdown, select:
"Resolume API — direct parameter link via web server"
The OSC fields will disappear and the Resolume parameter browser will appear.

Loading Your Composition

D You should see a connection status line (e.g., "Connected (127.0.0.1:8080)"). Click the **"Load Parameters from Resolume"** button. Wait a moment — the app fetches your entire composition from Resolume. A tree view will populate with your composition structure:

```
Layer 1
■■■ Video
■ ■■■ Opacity (0.85)
■ ■■■ ...
■■■ Audio
■ ■■■ Volume (1.0)
■■■ Clip 1
■ ■■■ Video
■ ■ ■■■ Opacity (1.0)
■ ■ ■■■ Speed (0.25)
■ ■■■ Transport
■ ■■■ Position (0.42)
■■■ Clip 2
■■■ ...
Layer 2
■■■ ...
Crossfader
```



Selecting a Parameter

E Expand the tree by clicking the arrows next to each section. Parameters you can monitor are highlighted in the accent color. The number in parentheses is the current value in Resolume. Click the parameter you want this widget to display. Below the tree, you'll see confirmation:
"Layer 1 → Video → Opacity"
"ID: 12345 | Type: ParamRange | Path: opacity"

Display Range (optional)

F If you want to show a custom range instead of 0–1, check **"Use Display Range"** and enter your Min and Max values.
Example: for BPM, set Min=60 and Max=200.
Example: for speed percentage, set Min=0 and Max=1000.

G Click **"Next"** to continue to Appearance (Step 3) and Confirm (Step 4) as usual.

H Click **"Create"** — your widget will appear on screen and immediately start receiving real-time updates from Resolume.

STEP 5: VERIFY REAL-TIME UPDATES

Once your widget is created:

A Go to Resolume and move the parameter you subscribed to. For example, if you chose "Layer 1 → Video → Opacity", drag the Layer 1 opacity slider in Resolume.

B Your HUD widget should update in real time as you move the slider. There should be virtually no delay — WebSocket is faster than OSC. The widget updates regardless of HOW the parameter changes: from the Resolume UI, from a MIDI controller, from OSC input, from another API client — any source triggers an update.

C If the widget does not update: check that the status bar shows "API Connected" (green dot), check that you selected the correct parameter, try editing the widget and re-selecting the parameter, or see the Troubleshooting section below.

USING OSC AND API WIDGETS TOGETHER

OSC and Resolume API widgets are completely independent. You can mix and match them freely in the same profile:

- Widget A: OSC → /composition/video/opacity (port 7001)
- Widget B: Resolume API → Layer 1 → Video → Opacity (parameter ID 12345)
- Widget C: OSC → /composition/layers/1/video/speed (port 7001)
- Widget D: Resolume API → Tempo Controller → BPM (parameter ID 67890)

Both communication channels run simultaneously. The OSC listener runs on its UDP port as always, and the WebSocket connection runs alongside it on the HTTP port.

You can even have two widgets watching the SAME parameter — one via OSC and one via API. They will both update in real time.

When to Use Which

- **OSC is better when:** you're receiving data from a non-Resolume source, you already have OSC addresses configured and working, or you want maximum compatibility with other software.
- **Resolume API is better when:** you want to browse and pick parameters visually, you want automatic min/max range detection, you want the most reliable real-time connection, or you're working exclusively with Resolume.

CONNECTING OVER A NETWORK (TWO COMPUTERS)

If Resolume is running on Computer A and the HUD app is running on Computer B (e.g., a separate display machine, a tablet, etc.):

A Make sure both computers are on the **same local network** (same Wi-Fi, same Ethernet switch, same subnet).

B **On Computer A** (running Resolume):
Find the IP address: open Command Prompt → type "ipconfig" → look for "IPv4 Address" under your active network adapter. Example: 192.168.1.100.
Make sure the Resolume web server is enabled (see Step 1).
Make sure port 8080 is not blocked by the Windows Firewall:
Open Windows Defender Firewall → Advanced Settings → Inbound Rules → New Rule → Port → TCP 8080 → Allow.

C **On Computer B** (running HUD app):
Open Settings → Resolume Web Server.
Enter Computer A's IP address as the Host (e.g., 192.168.1.100).
Enter the port (8080). Click "Test Connection".

D If the test succeeds, save and create widgets as normal.

> *The connection is unencrypted HTTP — this is fine on a local production network but do not expose port 8080 to the public internet. There is no authentication — anyone on the network can connect. Latency depends on your network; wired Ethernet is recommended for the lowest latency. If you're on a venue's Wi-Fi, check with the network admin*

that device-to-device communication is allowed (some guest networks block it).

AUTO-RECONNECT BEHAVIOR

Startup

The HUD app automatically connects to Resolume when it launches. All API widgets immediately start receiving updates. If Resolume isn't running yet, the app will retry automatically (see below).

If the Connection Drops

If Resolume closes, crashes, or the network connection is lost, the HUD app detects the disconnection immediately. The status bar changes to "API Disconnected" (gray dot). Auto-reconnect kicks in automatically:

- First retry: after 2 seconds
- Second retry: after 5 seconds
- Third retry: after 10 seconds
- Fourth retry: after 15 seconds
- Fifth and beyond: every 30 seconds

When Resolume comes back online, the connection is restored automatically — all widget subscriptions are re-established. No action needed from you.

When You Close Resolume Intentionally

The auto-reconnect will keep trying in the background. When you reopen Resolume, the connection will restore automatically. To stop the reconnect attempts, uncheck "Enable Resolume API connection" in Settings.

TROUBLESHOOTING

"Test Connection" shows "Connection failed"

1. Is Resolume running? The web server only works when Resolume is open.
2. Is the web server enabled in Resolume? Open Resolume Preferences and verify the web server is turned on.
3. Is the port correct? The port in the HUD app Settings must exactly match the port shown in Resolume's preferences. Default is 8080.
4. Is something else using port 8080? Another program (like a local web server) might be using port 8080. In Resolume preferences, change the web server port to something else (e.g., 8081) and update the HUD app Settings to match.
5. Is the firewall blocking it? Windows Firewall may block incoming connections on port 8080. Add an inbound rule to allow TCP traffic on port 8080. Or temporarily disable the firewall to test.
6. Are you on the same network? (two-computer setup) Both computers must be on the same subnet. Try pinging Computer A from Computer B: Command Prompt → ping 192.168.1.100. If ping fails, it's a network issue, not a Resolume/HUD issue.

"Load Parameters" shows nothing / fails

1. Make sure the connection is active (green dot in status bar).
2. Make sure a composition is loaded in Resolume. The API returns the currently active composition. If no composition is loaded, the tree will be empty.
3. Try clicking "Reload Parameters" to refresh.

Widget doesn't update when moving a slider in Resolume

1. Check the status bar — is it showing "API Connected" (green)?
2. Check that the widget is using "Resolume API" as its data source (not OSC). Edit the widget and verify on Step 2.
3. Check that the correct parameter is selected. The parameter ID must match what you selected in the tree.
4. Try editing the widget → reload parameters → reselect the parameter.
5. Check Resolume's version — the API requires version 7.8 or newer.

Status bar shows "API Error" (red dot)

1. The connection was established but then failed. Check if Resolume is still running.
2. The app will auto-reconnect. Wait 30 seconds and check again.
3. If it persists, restart both Resolume and the HUD app.

Changed composition structure and widgets stopped working

Resolume parameter IDs are stable — they survive layer reordering and clip rearranging. However, if you create an entirely new composition or delete and re-add layers, the IDs will be different.

To fix: Edit the widget → "Load Parameters from Resolume" → reselect the parameter → Save.

FREQUENTLY ASKED QUESTIONS

Q: Do I need to keep OSC configured if I'm using the API?

No. If all your widgets use the Resolume API, you don't need OSC output enabled in Resolume at all. However, there's no harm in having both enabled — they don't interfere with each other.

Q: Does the API connection use more CPU or network than OSC?

The difference is negligible. The WebSocket connection is very lightweight — it only sends data when a subscribed parameter changes. It may actually use less bandwidth than OSC if you have many parameters, because OSC broadcasts everything while the API only sends what you subscribe to.

Q: Can I use the API connection on a Mac?

The HUD app currently only runs on Windows. However, Resolume's web server works on both Windows and Mac, so if a future Mac version of the HUD app is released, it would work the same way.

Q: What happens if I have the API enabled but Resolume isn't running?

The HUD app will show "API Disconnected" and silently retry in the background. OSC widgets continue to work normally. When Resolume starts, the API connection is established automatically.

Q: Is the connection secure? Can someone hack my Resolume?

The connection is plain HTTP with no authentication. On a local production network this is fine. Do not expose the Resolume web server port to the public internet. Anyone who can reach the port can read your composition and change parameter values.

Q: Can multiple HUD app instances connect to the same Resolume?

Yes. Resolume's web server supports multiple simultaneous clients. Each HUD app instance maintains its own independent connection.

Q: What's the maximum number of parameters I can subscribe to?

There is no hard limit in the HUD app. Resolume handles many simultaneous subscriptions without issue. In practice, you're unlikely to hit any limit with normal usage.

Happy busking!

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