



# Resolve Remote Color Grading

## Introduction

DaVinci Resolve remote grading enables two parties to collaborate in the same Resolve color session while residing in two different locations. In this document, we will walk you through how to set up two DaVinci Resolve Systems to work synchronously during a live session between Colorist (host) and a Director (client).

## Set Up the Network

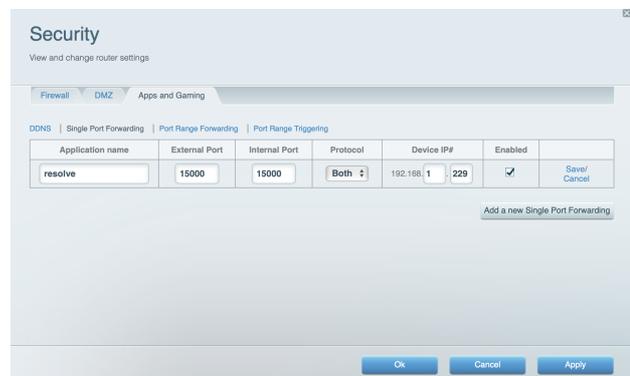
Before you even open Resolve, you need to ensure that the Colorist's computer will be visible to the Director's machine via an IP address. This can be done in one of two ways: **Port Forwarding** or connecting to a **VPN**. Port Forwarding is a much easier setup, and is recommended for most. However, if you have an IT team, you may want to consider setting up a VPN. This requires a server, an IT professional, and a whole lot more work. But using a VPN is also more secure. If you're working with highly sensitive assets and have the IT team to back it up, consider using a VPN.



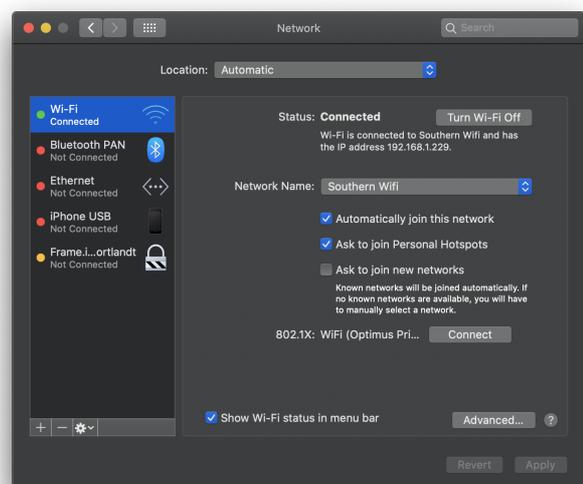
## Port Forwarding

Setting up Port Forwarding requires admin access to your router. If you work at an office with an IT professional, they will likely be in charge of setting this up. If you're doing this from home, you will configure these settings on your Router that is plugged into your modem. This guide uses images from the setup on a Linksys Velop router. There will be slight variations in how you access these settings depending if you're on an Airport Express, Cisco Router, etc. Look up Port Forwarding for your router online and then come back to this guide for the settings to use while setting up the Port Forwarding.

**1.** Resolve defaults to sending and receiving traffic on port 15000. So that it receives traffic, set the Internal Port to 15000. The External Port can be different, but it is simplest to keep it set to 15000. The External Port will be the port others use to connect to your machine. The Internal Port is the one that Resolve will use to listen for the traffic and Frame.io allows them to create teams that group departments together.



**2.** Set the device IP address (IPv4) to the IP address of the Colorist's main computer. If you're on a Mac, go to **System Preferences > Network**. Select either Wi-Fi or Ethernet, depending on how you're connected to the internet. The IPv4 address will be listed under the Status. In this example, the IPv4 address is 192.168.1.229.

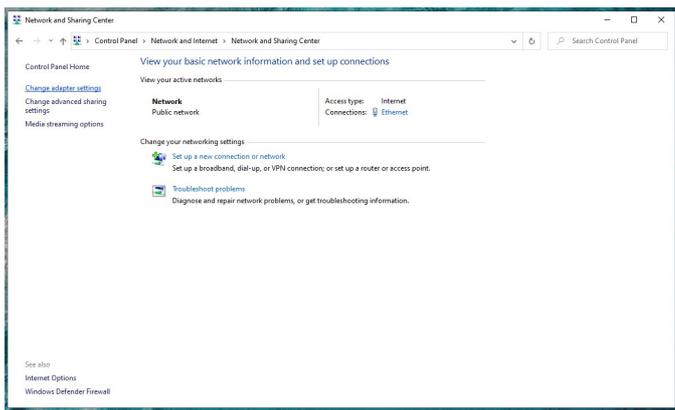
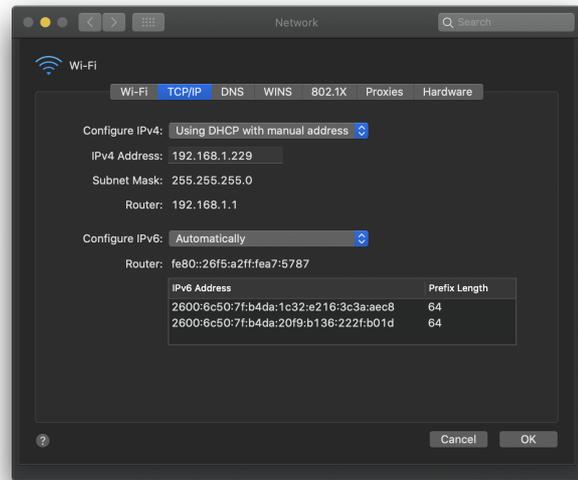


So that your computer's IP address doesn't change, copy your IP address, then click the **Advanced** button in the bottom right corner.



## Port Forwarding

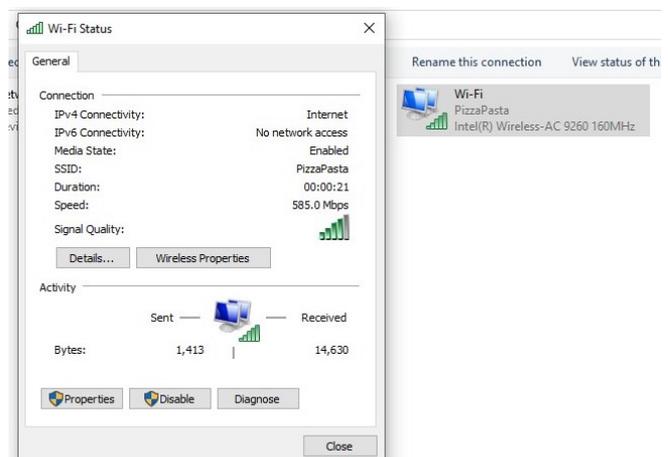
In the Advanced panel, select **\*TCP/IP\***. Change **Configure IPv4:** to **Using DHCP with manual address**. For the **IPv4 Address:**, enter the IP address you copied from the last step. Then click **OK** in the bottom right corner of the screen. This will prevent your router from changing the IPv4 address of your computer and breaking the port forwarding you are setting up.



If you are instead on a Windows machine, you will need to navigate to **Control Panel > Network and Internet > Network and Sharing Center** and click **Change adapter settings**.

Select your network interface (typically Wi-Fi or Ethernet) and then click **Properties**. This will bring you to a long list of properties for the network interface.

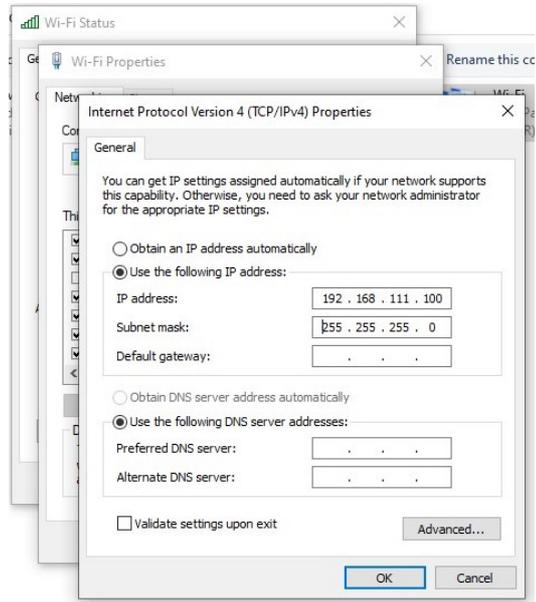
In the Properties, scroll until you find **Internet Protocol Version 4 (TCP/IPv4)**. Double-click.





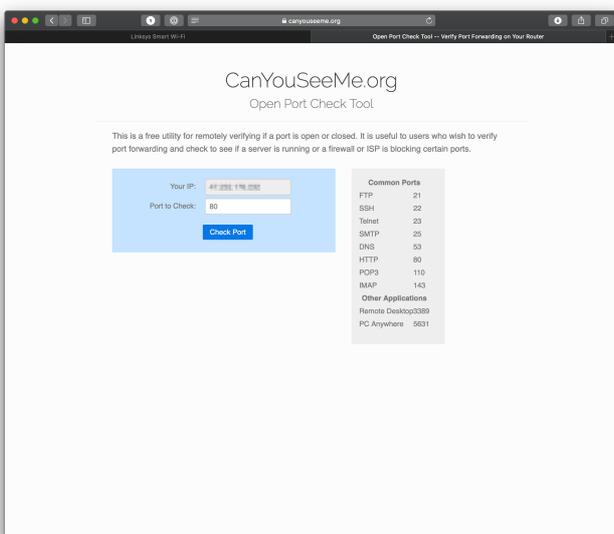
## Port Forwarding

**3.** In the new pane, you will see the IP address currently set for your computer. If **Obtain an IP address automatically** is selected, it is possible that your router will change the IP address of your computer. Copy this address down, switch to **Use the following IP address** and set the IP address to the same one it had been given previously. This will ensure that the IP address of your machine doesn't change.



You will also want to make sure your **Subnet mask** is set to 255.255.255.0. This means that the first 3 numbers in the sequence define your network, and the 4th number specifies your computer on the network. You don't need to do anything with that knowledge. Just make sure to use 255.255.255.0.

Copy the **IP address** into your Port Forwarding configuration page from Step 1.



**4.** Go to **canyouseeme.org** in your browser. This will return an IP address the director can use when connecting to the colorist's workstation. While you're here, enter the External Port number setup in **Step 1** and click Check Port. You will need to have Resolve open on your machine for this test to work. If everything is set up properly, you will see Success on the website. Resolve may give an error about the remote grading session. Since you haven't had a session yet, don't worry about this.



## Port Forwarding

**5.** If you are using a home internet plan, it is likely that your service provider changes the IP address you found in **Step 3** periodically. This may require you to update your Port Forwarding every few days. To prevent this, you can use a Dynamic DNS service like **noip.com** to automatically send people to your IP address, even if it changes over time. Follow the instructions on the website to set up your account.

The address set up with the service will be the one used by the director to connect to your workstation.



## Virtualized Private Network (VPN)

Working on a Virtualized Private Network (VPN) is more secure than Port Forwarding, but can require a lot more work when setting up. Setting up a secure VPN is outside the scope of this document. If security is of the utmost importance on your project, you will want to put an IT professional on your staff, install a server on your network, and ensure you have zero downtime on the network at your office.

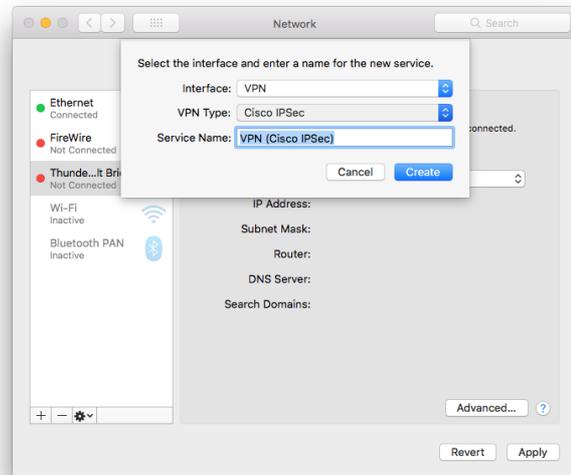
A major downside to setting up a VPN is latency and bandwidth. Even if everything else works, latency can prevent you from having real-time performance during your remote session. But, with the right IT team on staff, you may be able to get this to work well.

Once your IT staff have successfully set up a VPN, you will need to connect both machines to said VPN. If you are on Mac, you can use the following steps to connect.



## Virtualized Private Network (VPN)

1. On your Mac, choose Apple menu > System Preferences, then click Network.
2. Click the Add button in the list at the left, click the Interface pop-up menu, then choose VPN.
3. Click the VPN Type pop-up menu, then choose what kind of VPN connection you want to set up, depending on the network you are connecting to. Give the VPN service a name, then click Create.
4. L2TP is an extension of the Point-to-Point Tunneling Protocol used by internet service providers to enable a VPN over the internet.
5. IPSec (Internet Protocol Security) is a set of security protocols.
6. IKEv2 is a protocol that sets up a security association in IPSec.
7. Enter the server address and the account name for the VPN connection.
8. Click Authentication Settings, then enter the information you received from the network administrator.



9. If specified by your network administrator, click Advanced to enter additional information such as session options, TCP/IP settings, DNS servers, and proxies.

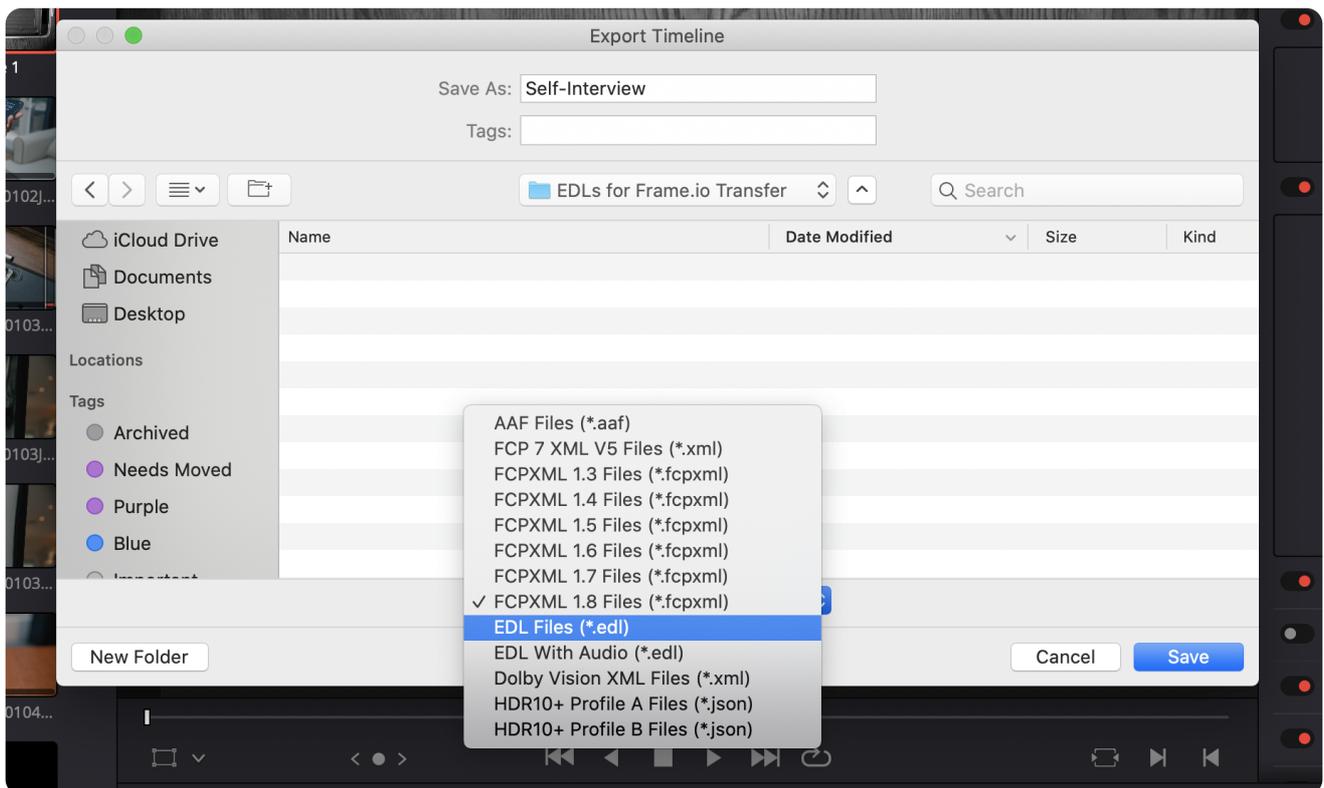
The additional information you can enter depends on the type of VPN connection you're setting up.

10. Click Apply, then click OK.



## Sharing Media

For DaVinci Resolve Remote Grading to work properly, both the Colorist and Director need to have a copy of the media used in the timeline. To prepare for this, you would traditionally copy all the necessary media to a hard drive and ship it. However, with updates to cloud-based technology, this is no longer necessary.



You can use Frame.io Transfer to upload either the Camera Originals or Proxy media to your Frame.io account. The Director can then download just the media necessary for the Timeline that will be reviewed during your remote grading session.

In Resolve, select your timeline and choose File>Export AAF, XML... and select EDL from the drop-down menu.

Send the EDL to the Director via Frame.io, email, or Slack. They can then open Frame.io Transfer and select Set List to select the EDL. They can then select the folder in Frame.io that contains the media.



## Sharing Media

Resolve's Remote grading allows the Colorist and Director to have two separate representations of the media. This means that the Colorist can have the Camera Originals while the Director has Proxies. Because of this, the Director has the ability to download either the Camera Originals or Proxies. Once they have made their selection, Frame.io Transfer will begin downloading the footage in the background.

## Sharing the Timeline

You will also need to share your Resolve timeline with the Director. This can be done either with the EDL you created in the last step, or by exporting a DaVinci Resolve Project File (DRP). With your Resolve Project open, select File>Export Project. Select a name and destination for the Project File. Email/Slack/Text this DRP to your Director.

On their end, they just need to download the DRP, open Resolve, and then double click on the DRP that was sent to them. Resolve will proceed to open that project on their behalf.

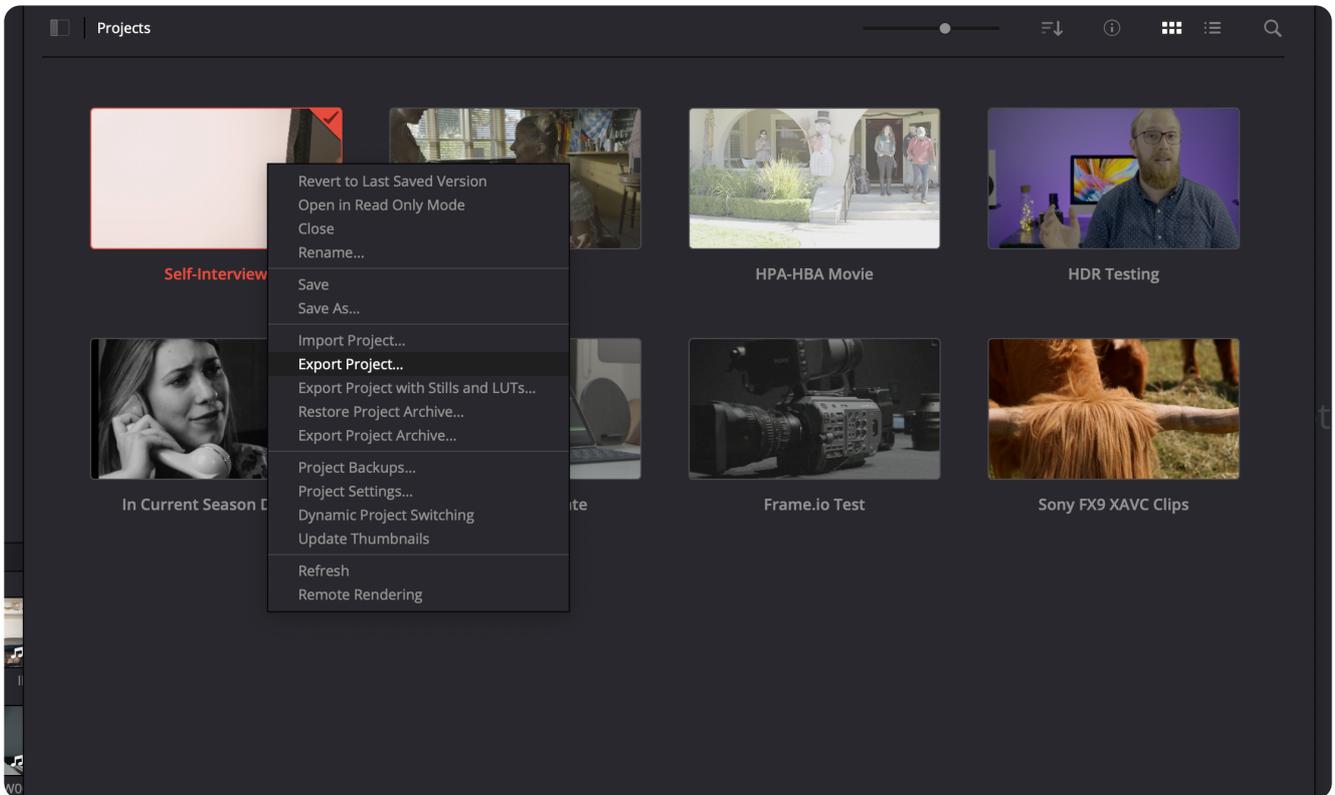
## Set Up Resolve

It is imperative that both the Colorist and Director are using the exact same version of DaVinci Resolve Studio. It is best to use the latest version downloaded directly from the Blackmagic website. Versions from an App Store may be missing key functionality, even if it is the paid version.

If you do any work before the remote session, make sure that there are no proprietary effects used in the grade that are not available to both computers. If you are using Input, Output or other LUTs in the Color Management settings for the Project, make sure the Director has the same LUTs and that their settings are mirrored to your own. It is also important that both the Colorist and Director have the exact same Resolve Timeline. Exchanging Resolve DaVinci Resolve Project (DRP) files is the easiest way to ensure this.



## Set Up Resolve



This can be done in one of two ways. From the Project browser, right click on your project and select Export Project. Alternately, if your project is already open, you can simply select File>Export Project.

In either case, this will export a .drp file that you can then send to the director via Frame.io, email, or Slack.

Have the Director open Resolve. They can then double click on the .drp file on their side, which will launch the Project inside Resolve. If necessary, they can relink to the media you sent them.

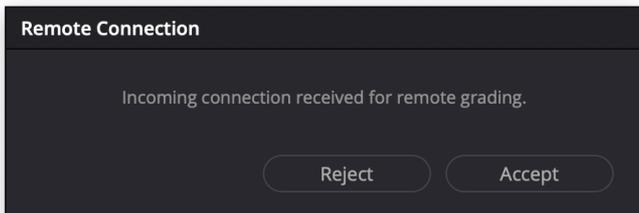
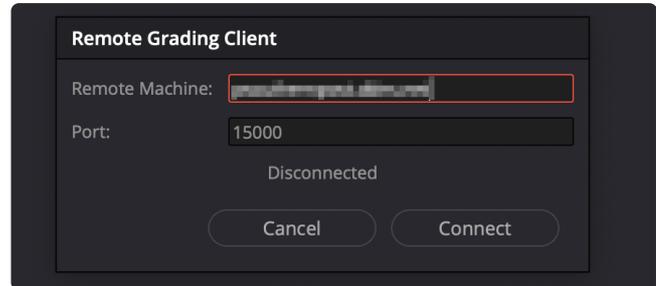
Don't make any changes to the Timeline on either end once the DRP has been sent from the Colorist to the Director.

Once the media has been linked on the Director's computer, it is time to connect. Have the Director go to the Color page, then select Workspace>Remote Grading (⌘G).



## Set Up Resolve

For Remote Machine, use the IP address the colorist obtained either when setting up Port Forwarding or VPN. Leave the Port Number set to 15000 unless you changed it during setup of Port Forwarding.



The Colorist will see a prompt asking whether or not to accept the connection. Once they accept, you're off to the races.