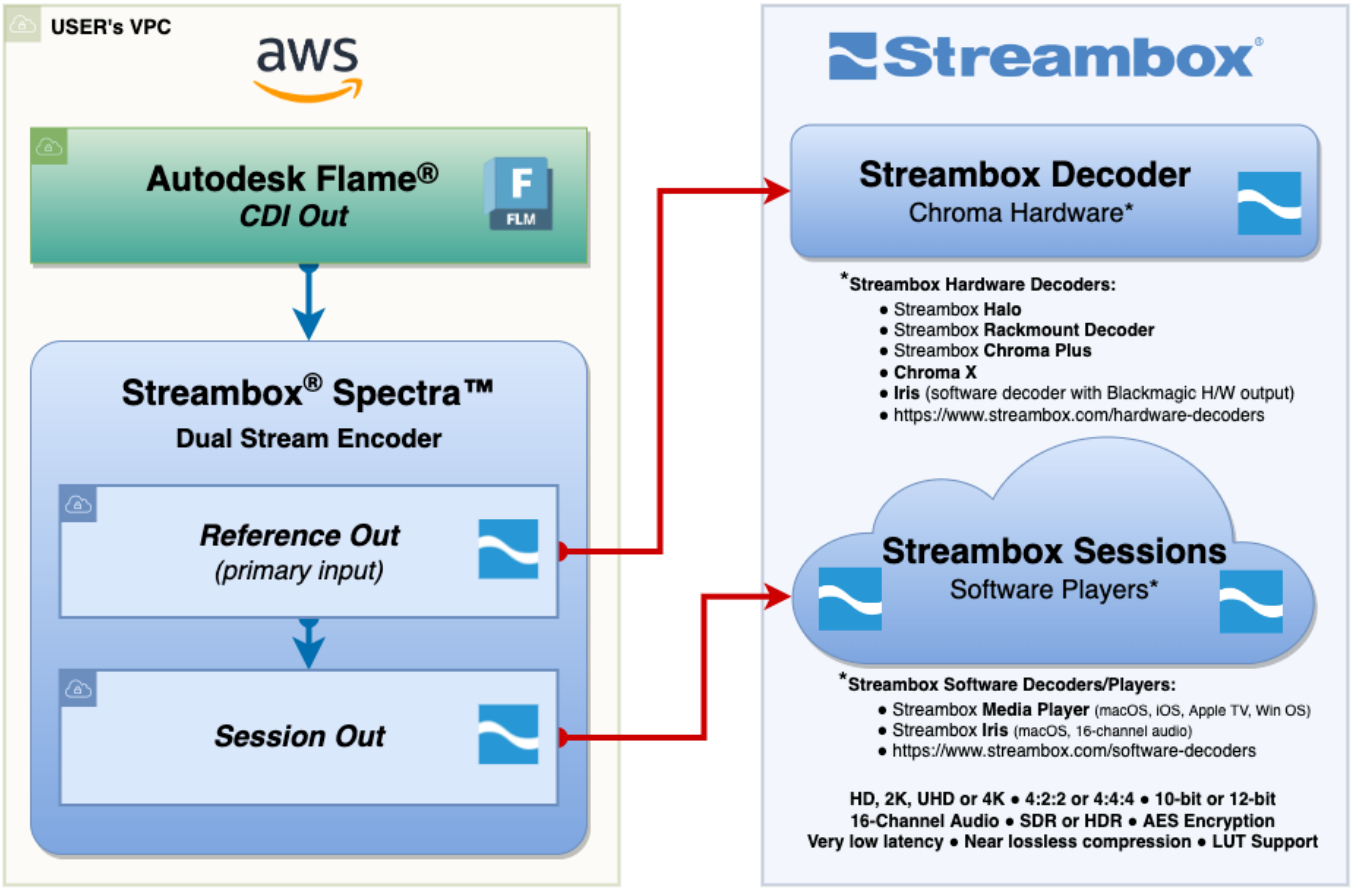

Autodesk Flame® to Streambox® Spectra™ via AWS-CDI – Setup Guide –

Notes:

- The AWS-CDI capability of Autodesk Flame is part of technology build under development.[1]

- Note: This document reflects the current feature-set which may change without notice. We will attempt to keep all users up to date on any such changes. Ver. 0.7 10/21/22 Beta release.

[1] Autodesk Safe Harbor Statement: We may make statements regarding planned or future development efforts for our existing or new products and services. These statements are not intended to be a promise or guarantee of future delivery of products, services features but merely reflect our current plans, which may change. Purchasing decisions should not be made based upon reliance on these statements. Autodesk assumes no obligation to update these forward-looking statements to reflect events that occur or circumstances that exist or change after the date on which they were made.

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Introduction

Streambox Spectra for AWS CDI is a software solution for Remote Reference Monitoring and "over-the-shoulder" live reviews. Spectra is dual stream software media encoder designed to receive AWS-CDI input (see image above). Using Spectra, an editor or colorist can deliver real-time, high-quality video for review on Streambox devices anywhere in the world via private or public networks. As a dual stream encoder, Spectra can direct one stream to a reference monitor and the other stream via a Streambox Session for one-to-many global connectivity with no compromise in quality, effectively creating multiple virtual screening rooms (see image above).

We present here how to setup Autodesk Flame[2] with Streambox Spectra on AWS-CDI.[3]

[2] Autodesk Flame
[3] AWS-CDI (Amazon Web Services - Cloud Digital Interface)

Getting Started - Spectra for CDI

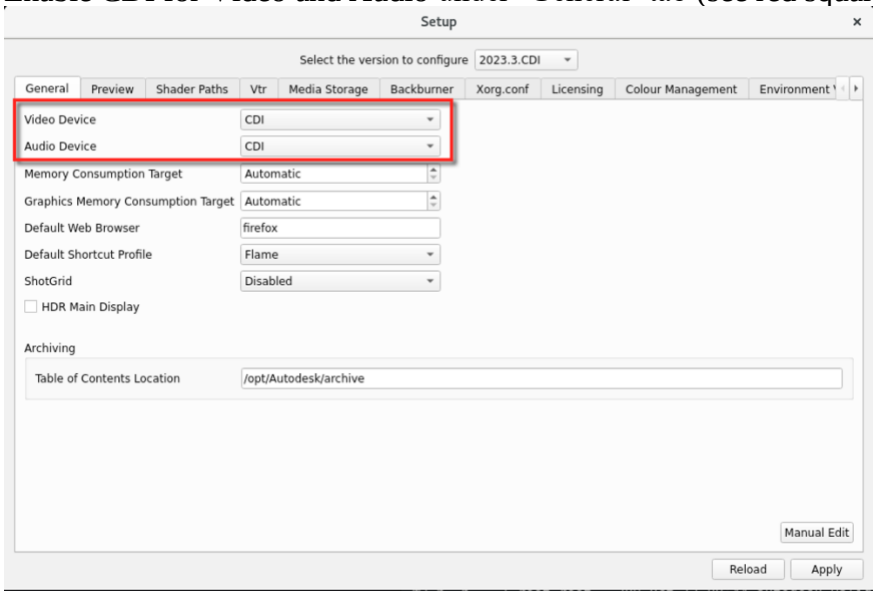
You will install Streambox Spectra on the same AWS-VPC (G4DN) as Autodesk Flame.

- From the DCV[4] remote desktop, log onto the Flame host
- Open 'Terminal' from the 'Activities' panel.
- Download and Install Streambox Spectra:
- In Terminal Enter the following (copy from here and paste there):

```
curl -fsSL https://streambox-cdi.s3-us-west-2.amazonaws.com/aws/install.sh | sudo bash -s -- -b flame
```

- See Appendix 2 to confirm that ULIMIT settings are configured correctly for your Linux Install.
- Open Flame Setup:

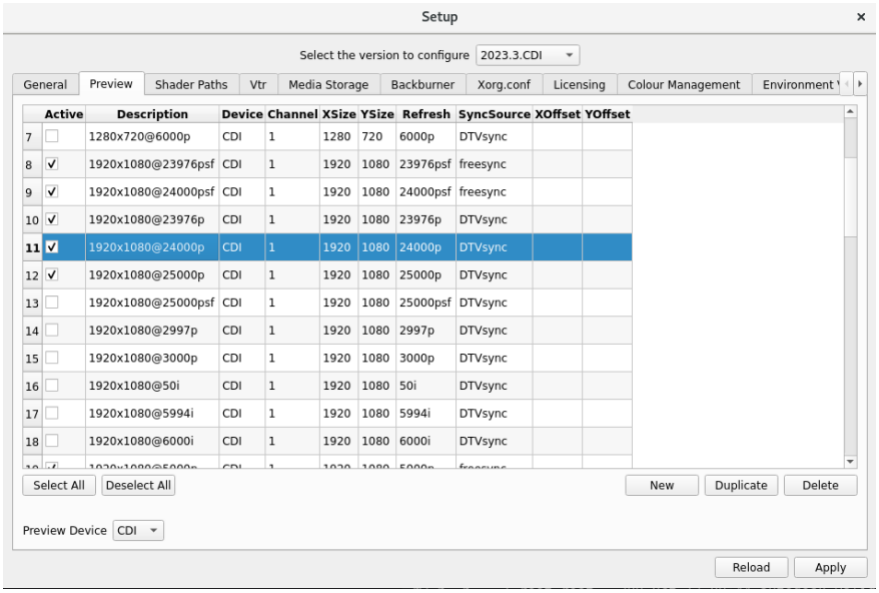
  - Enable CDI for Video and Audio under 'General' tab (see red square)



[4] https://aws.amazon.com/hpc/dcv/

Return to Getting Started

- Make ‘Active’ the desired resolutions in the Preview Tab



- Follow Autodesk Licensing instructions.
- Start Flame from ‘Activity’ panel
- In Flame, open the ‘Broadcast Monitor’ page from the ‘Preferences’ menu.
- Make sure the ‘CDI Output’ is checked (this is the link between Flame and Spectra)

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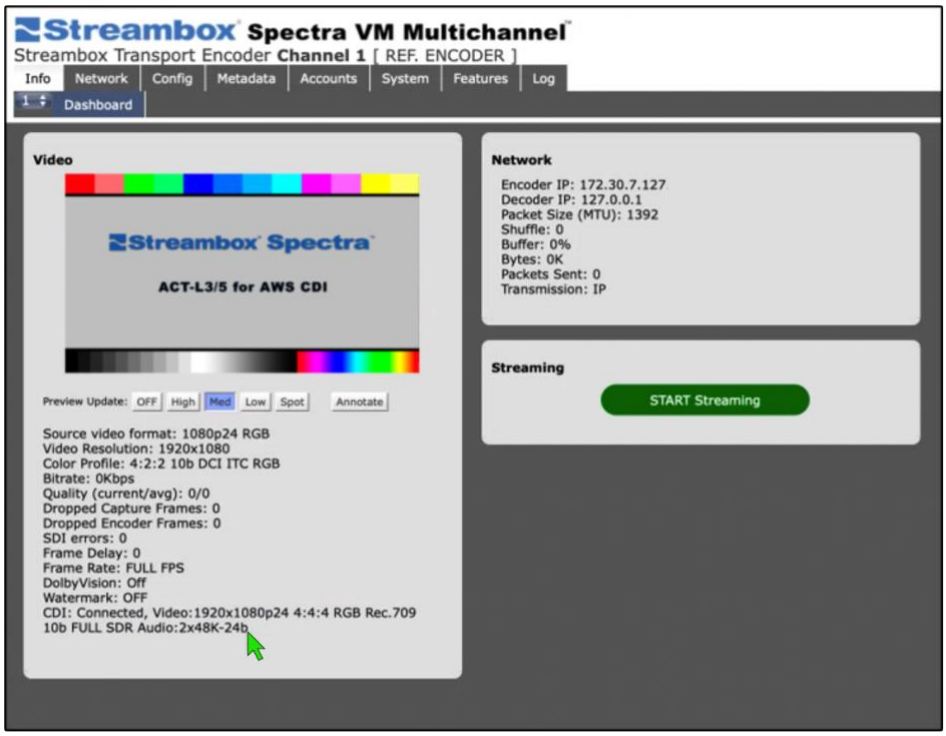
Setting up Spectra

Spectra for SDI is a single ingest dual output encoder. The primary encoder (REF. ENCODER) serves as the reference and must always be ‘On’ to use Spectra with Flame. The secondary encoder (SESS. ENCDER) can stream to the Streambox cloud via Sessions for reviewing at remote locations worldwide.

- Open a browser on the Flame Desktop and ‘Enter’
  `localhost`
- Login in (initially with):
  Username: `Administrator` Password: `demo`
- ‘Turn On’ both encoders (red arrow)
- Activate Spectra for CDI (See Feature Activation section below)
- Click on ‘REF. ENCODER’ to open the primary encoder

Reference (Encoder) Monitor

The reference encoder is used as the primary CDI ingest from Flame and as an output for a reference monitor.



Here is the main Info page with video preview and input/output stats. This is also where you will start and stop the outbound stream. You can see (green pointer) what is being ingested from Flame via CDI.

Return to Getting Started

Setting up a Reference Monitor

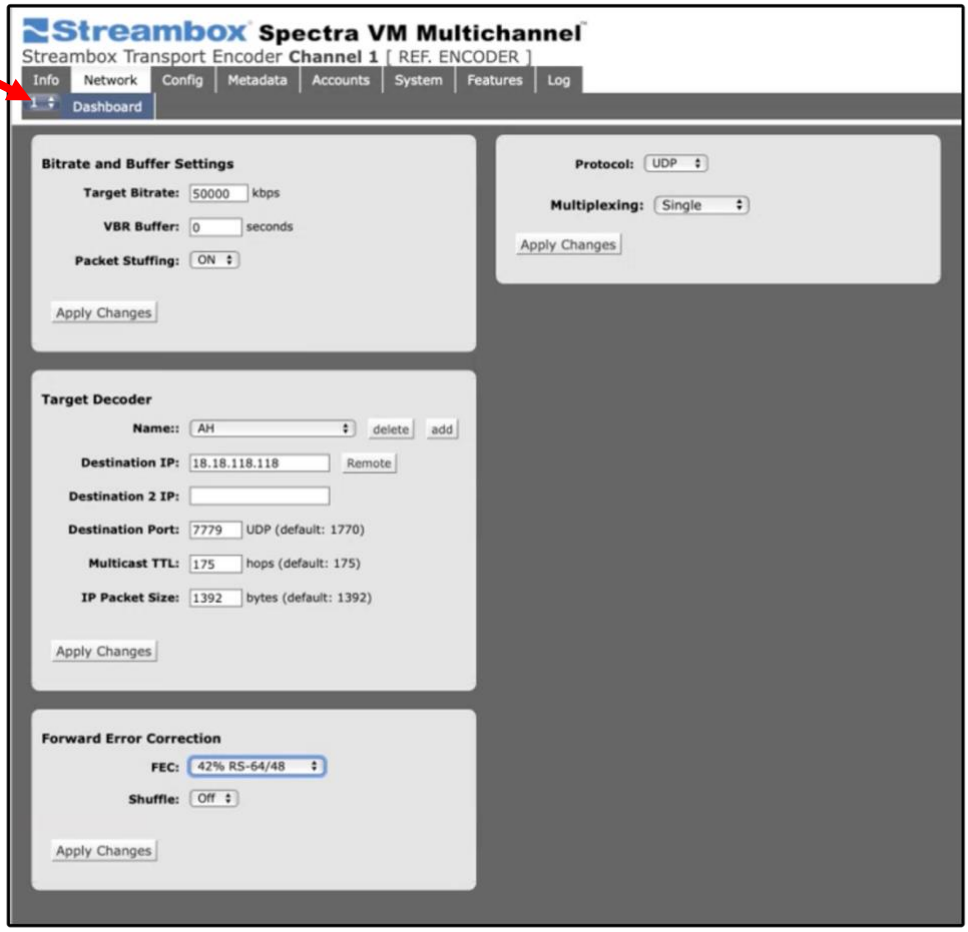
Below we provide basic settings for setting up a reference monitor. Please feel free to review our Resource Documents or contact Support for help fine tuning your settings.

- Open the 'Network' tab on Spectra (see image below)
- Set a target bitrate (for HD, 20 to 30 is good; for 4K, 40 to 80 is good)
- Set VPR buffer (0 will ensure the lowest latency, some network conditions may require upping that to 0.2-0.5)
- Don't forget to 'Apply Changes'
- Enter 'Destination IP' which is the public IPv4 of the reference monitor (we will review connecting the reference monitor to a Streambox decoder below)
- Enter the 'Destination Port' which, by default, is 1770 but can be any appropriate port number (based on locate requirements/restrictions).
  Note: You will have to setup port-forwarding on your local network/router to direct the incoming stream to your Streambox decoder. Again, feel free to contact Streambox support is you need assistance.
- 'Apply Changes'
- Set Protocol to UDP, Single ('Apply Changes' if any were made)
- Set FEC to 42% RS-64/48 ('Apply Changes' if any were made).
  Note: This setting is based on our HD tests and may vary given other video parameters. As always, feel free to contact Streambox support is you need assistance.

Return to Getting Started

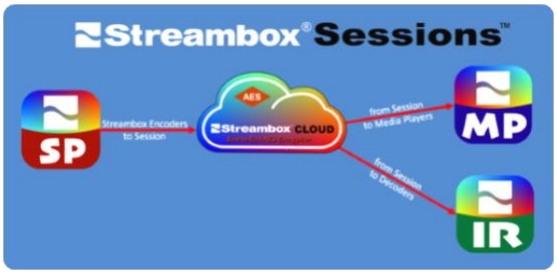
- Next, we will set up the Streambox decoder to receive this reference stream. As an example, you can review the setup for the Streambox Chroma+ decoder (or the setup documents for your specific Streambox decoder).

  Once that is done, all you need to do is Start/Stop the outbound stream on the 'Info' tab (see above).



Return to Getting Started

Setting up a Session

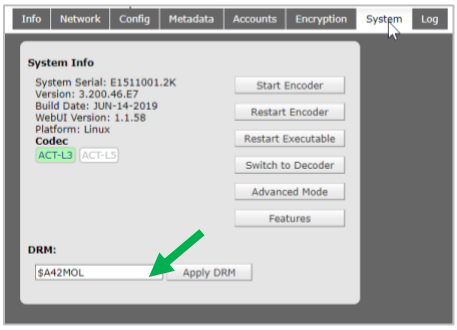


Streambox® Sessions™ simplifies video production collaboration. This is ideal for offsite producers, colorists, advisors, and other stakeholders. All you need to do is create a Session, stream to the Streambox Cloud using the Session code, and share the Session ID with collaborators. They need only click the Session's link or enter the Session ID into a Streambox Media Player (or Streambox Decoder), and within seconds they'll see the live stream, all reviewing the same high quality, color rich, video.

The secondary encoder is ideal for streaming a Session. Please refer to the Sessions Setup Guide and other relevant documents on from Streambox Resources. And of course, feel free to contact Support for additional assistance.

Below are the basic steps to stream to a Session from the Sessions Encoder (SESS. ENCDER).

- Switch to the SESS. ENCDER (2) from the 'Dashboard' or dropdown selector (see red arrow in Spectra image above)
- On the 'Network' tab and select the 'Target Decoder' from the dropdown that matches the Session prefix ($_). See 'Session Prefix…' table below.
- On the 'Network' tab enter 1770 for the port number. Remember to 'Apply Changes'
- On the 'Network' tab, enter a 'Target Bitrate' that is reasonable for the receiving collaborators, e.g., 8000kbps for HD; 20000kbps for 4K (depending on the network, WiFi or Mobile may not be able to handle either of these bitrates – we recommend LAN where possible)
- On the 'System' tab Apply the 'Encoder DRM' (aka Session DRM) that was setup on Live.Streambox.com (eg., $A12345). See image, green arrow.
- You are now ready Start/Stop streaming to this Session from the 'Info' tab
- Note Reference encoder should be enabled for Session encoder to receive CDI video. Reference encoder does not have to be running.



Return to Getting Started

Session Prefix, IP, & Regions

Live Server	Prefix $	IP Address	Region
Live**US**.streambox.com	A	52.25.129.48	USA (Oregon)
Live**USEast**.streambox.com	B	54.83.19.155	USA (Northern Virginia)
Live**AU**.streambox.com	C	52.62.2.246	Asia Pacific (Sydney)
Live**DE**.streambox.com	E	54.93.179.19	Europe (Frankfurt)
Live**EU**.streambox.com	F	54.247.100.52	Europe (Ireland)
Live**JP**.streambox.com	G	52.69.71.156	Asia Pacific (Tokyo)
Live**SA**.streambox.com	H	54.233.86.10	South America (Sao Paulo)
Live**SG**.streambox.com	I	52.76.243.157	Asia Pacific (Singapore)
Live**IN**.streambox.com	J	52.66.83.26	Central Asia (India)
Live**Post**.streambox.com	P	52.8.239.106	USA (California)

Feature Activation

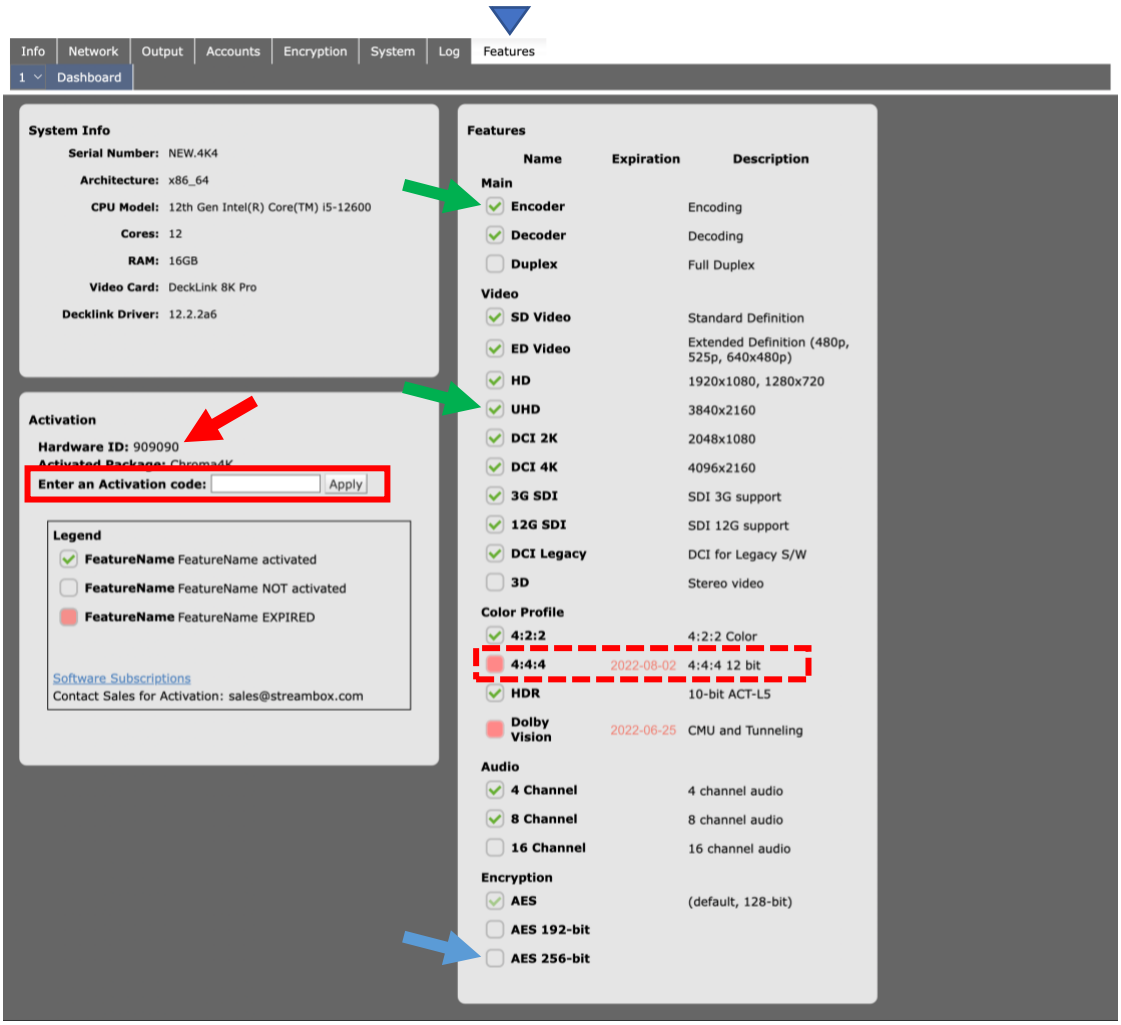
You may have to activate new features or re-activate expired features. This is accomplished from the 'Features' tab (see below). If you need an activation key, contact Streambox Sales or Support (whichever is applicable). You will need to provide the Hardware ID which can also be found on the Features tab. Once you receive the Activation code(s), you apply them one at a time. You will see the feature 'checked' once the activation is successful (sometimes you may have to refresh the page to see the update).

Note 1: You only need activate the feature on one channel – it will then be available on both channels. You will need a 2 Channel license to use Spectra with the Flame workflow.

Note 2: Examples in Feature tab (see blue wedge – image below)

- Hardware ID (red arrow – required to obtain activation code)
- Activation Code field (solid red outline – enter activation code here)
- Activated Feature (green arrow – e.g., see Encoder, UHD)
- Inactive Feature (blue arrow – e.g., see AES 256-bit, requires activation)
- Expired Feature (dashed red outline – e.g., 4:4:4)

Return to Getting Started



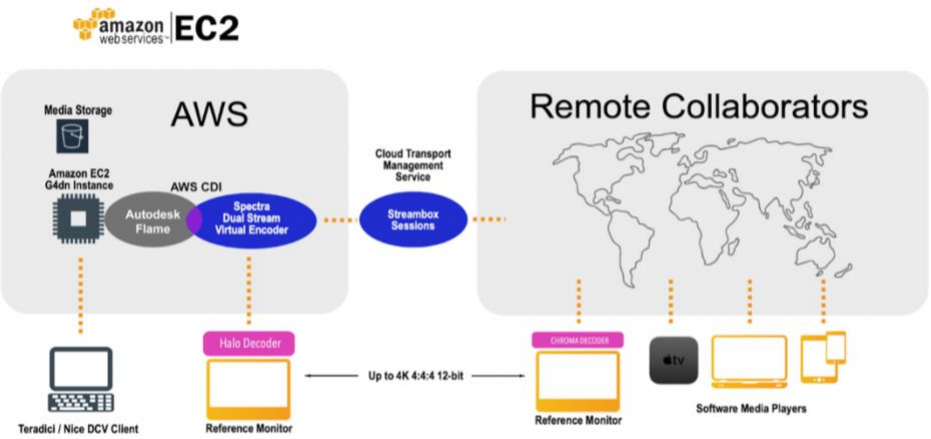
Return to Getting Started

Appendix 1 - Workflows

Streambox offers two AWS-CDI configurations that are well suited adjuncts to Autodesk Flame's workflows.

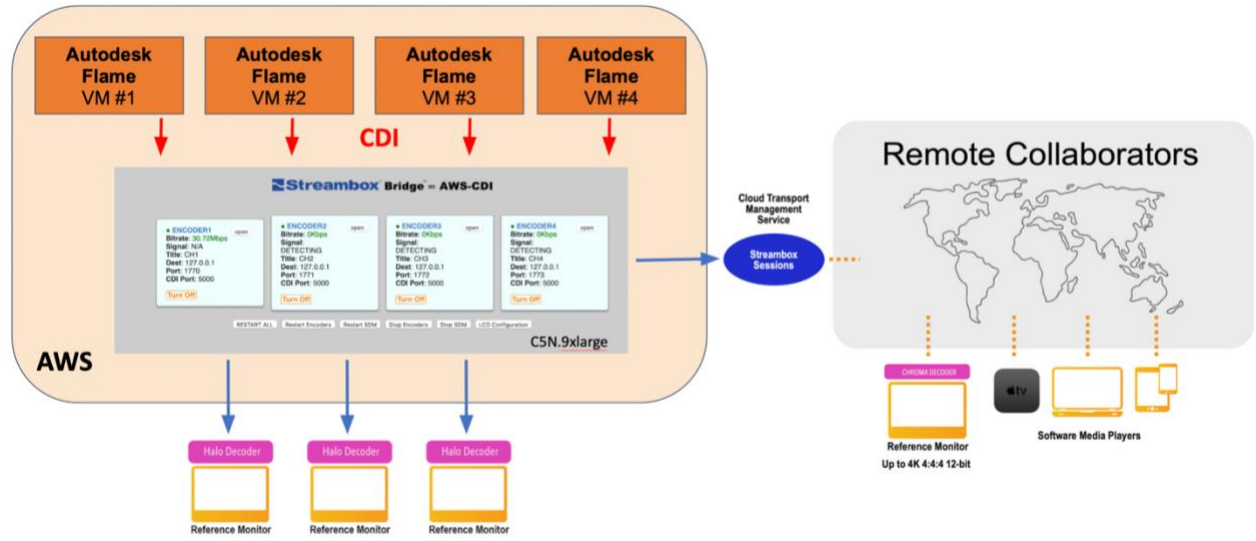
Autodesk Flame Workflow 1

Single EC2 Instance for Spectra and Autodesk Flame (as described above)



Autodesk Flame Workflow 2

Streambox Bridge™ (C5N.9xlarge) with multiple Autodesk Flame stations
Note: On Flame's Preferences, Broadcast Monitor page, CDI Options IP and Port match the associated IP and CDI port number of Streambox Bridge.
(For details: https://aws.amazon.com/marketplace/pp/prodview-k7lobhofikc2a)



Return to Getting Started

Appendix 2 - ULIMIT Configuration

Rocky Linux configuration requires a properly configured ULIMIT for AWS CDI to work.
You can check if the configuration file already exists by executing:

```
sudo cat /etc/systemd/system.conf.d/limits.conf
```

If "No such file or directory" is displayed, please execute the following to create correct ULIMIT settings.

```
$ sudo mkdir /etc/systemd/system.conf.d
$ sudo vi /etc/systemd/system.conf.d/limits.conf
[Manager]
DefaultLimitNOFILE=8192
DefaultLimitMEMLOCK=infinity
$ sudo reboot
```

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