

## r21.0 Changelog

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| r21.0 Release - 87976  
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Release day - 30th March

### New Features

- DSOF-18466 4K XR Camera Compositing Improvements
- DSOF-18044 Colour Insider Group Improvements

### Feature Request

#### *Colour tools*

We have added a number of colour tools to Designer for the first time. This includes a colour dropper tool to allow users to select colour for keying using an ink dropper instead of manually looking for the colour.

Waveforms, vectorscope and histogram have also been added as tools to provide highly accurate colour information across the production chain, from viewing monitors when building content to the LED displays and projectors being used to playback the content.

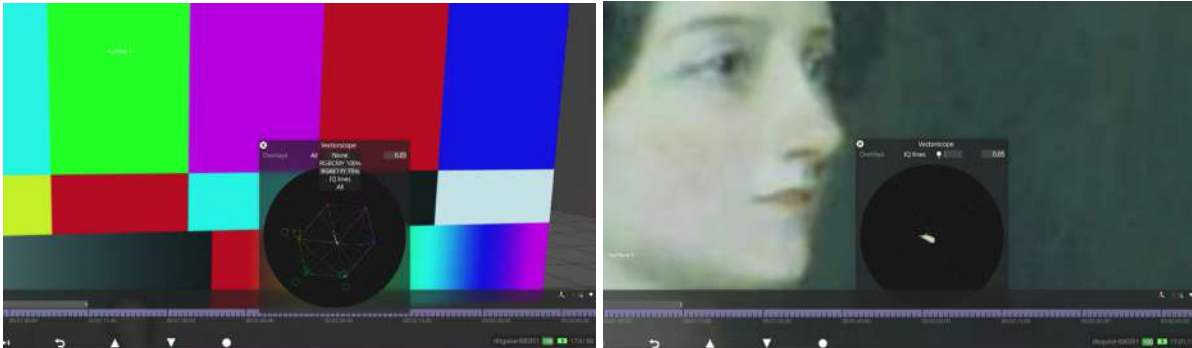
To access these tools, right click the preview and you will have access to the histogram alongside the waveform and vectorscope.

- DSOF-16029 Video Scopes - Vectorscope

The vectorscope plots the chroma of the image. Chroma is the colour information that is left when you remove the luma. This would typically be used to confirm colour accuracy against known test patterns, or to colour correct images objectively.

The vectorscope has two overlays that can be combined or used separately:

- RGBCMY - red, green, blue, cyan, magenta, and yellow markers at 75% or 100% saturation
- IQ lines - this is used to correct skin tones



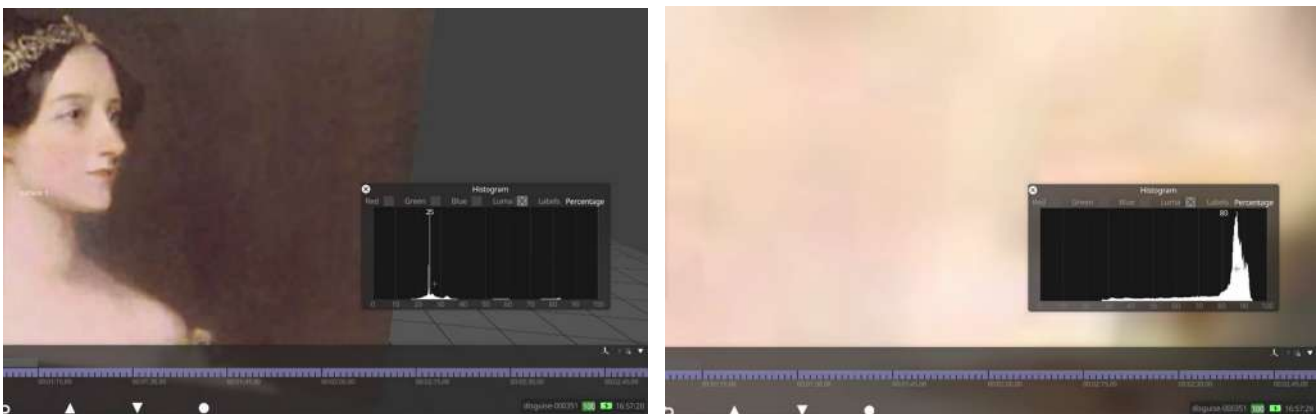
- DSOF-19630 Per feed rectangle vectorscopes

We have enabled the vectorscope tool to be used on content that is outputting via a feed rectangle that does not fill an output.

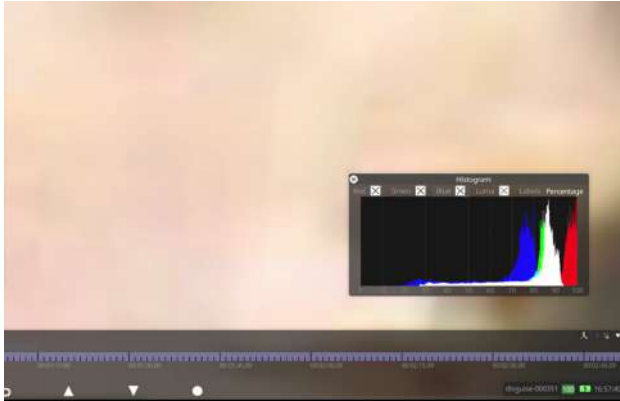
- DSOF-16020 Video Scopes - Histogram

The histogram shows the number of pixels that are a certain value. The horizontal axis shows the value, and the vertical axis is the percentage of pixels at that value. The left side of the histogram is the lowest value (e.g. black), and the right hand side is the highest value (e.g. white).

A peak means that the majority of the image is at that value. In the example below we see a peak of around 25 which tells us it is mostly dark grey. If we were to zoom into a brighter spot, the peak will move to the right to signify that it is mostly white.



The histogram can take its value either from the red, green or blue channels, or from the combined luma value i.e. brightness as seen below



The horizontal axis on the histogram can be accessed by clicking on the 'Labels' button on the histogram. This enables us to label the histogram in a number of ways:

- Unlabelled
- Labelled by raw value (0-255 for 8-bit images, 0-1023 for 10-bit images, 0-1 for floating point images)
- A percentage from 0 to 100
- A nit value on the Perceptual Quantizer (PQ) scale. This is common for HDR outputs

Histograms are mainly used to verify the end-to-end signal of an image. This is particularly useful when there is a known value in the content, and we want to make sure that it remains at that value throughout the signal chain.

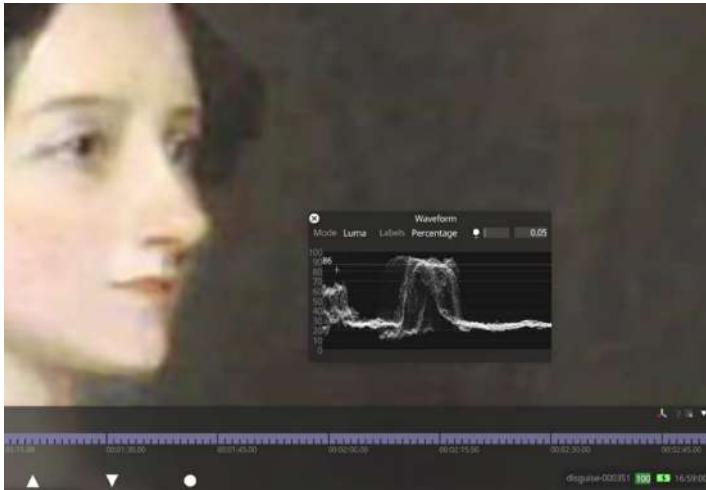
- DSOF-16018 Video Scopes - Waveform

The waveform is a histogram for each column of pixels in the image. The horizontal axis is now the same as the image's horizontal axis i.e. left of the waveform is the left of the image, and right of the waveform is the right of the image. This means that panning the image will have the same pan effect on the waveform.

The vertical axis is the value of the pixel, which was previously the horizontal axis of the histogram. Down on the waveform vertical axis is the lowest value (e.g. black), and up side is the highest value (e.g. white).

The brightness at each point in the waveform is the amount of pixels at that value, which was previously the vertical axis of the histogram.

In the example below, we can see the values on the left and right hand side are lower. The middle of the waveform on the other hand has a lot of higher values. This indicates that the left and right parts of the image are dark, and the middle of the image is bright.



The waveform has three modes which can be accessed by clicking on the 'Mode' button on the waveform:

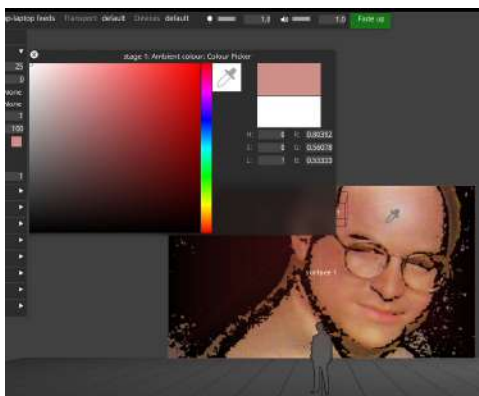
- Luma - the same brightness value from the histogram
- RGB - red, green and blue values are overlaid on each other
- Parade - red, green and blue values side-by-side

The values of the waveform can be presented as a value, a percentage or as PQ nits.

Waveforms are typically used to ensure that the image is within safe limits i.e. above a minimum black level or below a maximum white level, and to balance the red, green and blue channels.

- DSOF-19721 Add scope and histogram functions to video inputs and/or virtual cameras.
- DSOF-18625 Add ink dropper to colour picker UI

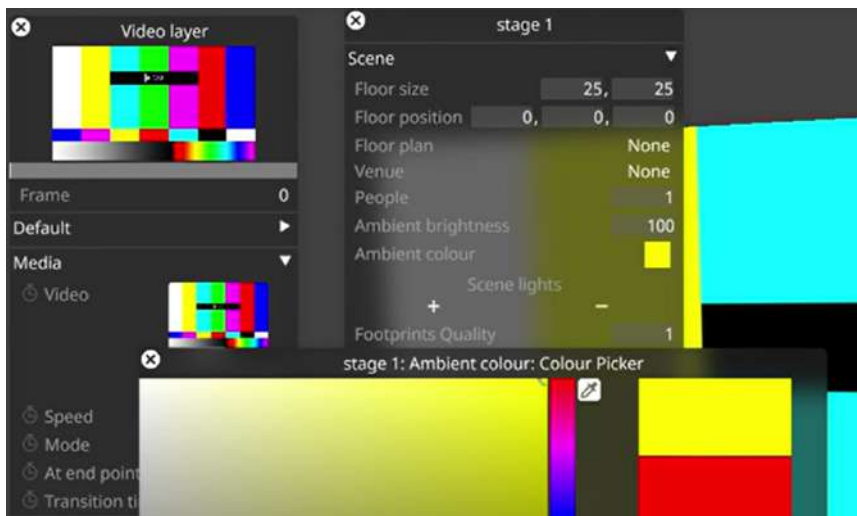
We have added an ink dropper tool to enable users to select colour instead of manually looking for the colour by RGB, making it much easier when it comes to keying.



There are multiple ways to access the colour picker tool, for example;

Chroma Key Layer - Add Layer -> Effects -> Chroma Key -> Key Colour

The tool is also available within other modules such as, VideoIn Layer, Colour Adjust Module, Green Screen, DMX Screen and within the BitMap Module.



- DSOF-18296 Including the server name in the diag folder

We have now included the server name included in the diags for support queries.

- DSOF-17301 Non-stylised custom colour primaries/transform function idt/odt for ACES

This feature adds a new dropdown named "Utility" to the ACES transform widgets for input transforms and output transforms. This dropdown allows the selection of a mix-and-match set of colour spaces and transfer functions to input/output transform from/to.

- DSOF-16793 Ability to control Spatial Maps with AnimateObjectPreset

Spatial maps are now assignable within the AnimateObjectPreset layer. In previous versions, the workaround was to use OpenLayers.

- DSOF-13139 Promote non transparent ui to a project setting

In Designer there is an option to disable the transparency of certain widgets to improve performance. Previously this was settable via:

d3 manager / Advanced Machine Settings / Graphics / disableUITransparency

And

d3 manager / Advanced Project Settings / Graphics / disableUITransparency

This setting has now been promoted to a dynamic setting via the internal 'Project Settings' option list under the 'User Interface' collapsible widget.

- DSOF-11229 Ability to remove video output sync (genlock) within d3

In r21 we have added a button to 'Remove Genlock' where there is currently a button to 'Apply Feed Settings'. We have also included a confirmation notification confirming to users the removal of genlock as seen below:



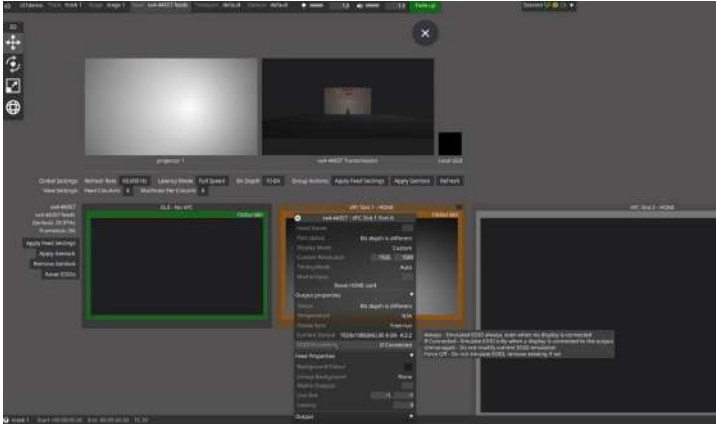
- DSOF-10146 Add DXGI support for HDR displays
- DSOF-8200 Enable a backface culling option on stage view

In r21 we have enabled this feature to allow users to see through meshes. This is a useful tool if working in a large venue where complicated stage meshes and geometry is used, or working with dome surfaces and want the ability to see through things.

When in the camera view, we have created a new setting called 'Face Cull Mode'. When set to 'None' users can see both the back and front of a surface. When set to 'Back', users can only see the front of surfaces, and surfaces rendered from behind are invisible. When set to 'Front', users can only see the back of surfaces, and surfaces rendered from the front are invisible.

- DSOF-5796 Option to force emulation of disconnected outputs (usually DP VFC cards)

You can now also change your EDID Emulation method to be 'Always'. This forces emulation of the disconnected output. This is a particularly useful feature for HDMI card and Display Port card when users don't have an actual display device plugged in.



- DSOF-5321 Keyboard shortcut for Layer Library.

We have added a shortcut to bring up the Layer Library. To access this, right click on a layer or a group of layers and select 'Save As'. That layer will then show up in the Layer Library. In previous releases, the Layer Library was accessible by right clicking onto the timeline and selecting 'Import Layer'.

## Improvements

### RenderStream

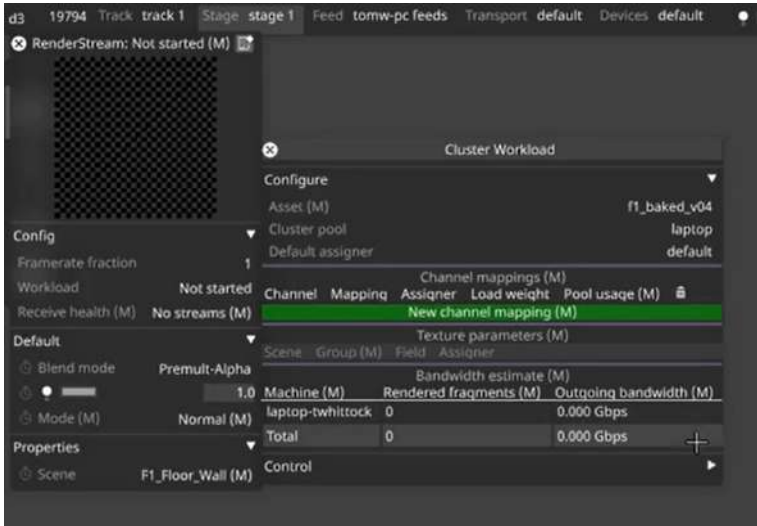
RenderStream has been used on some of the largest shows on the planet, which has led to a host of stability and performance improvements and helps push its capabilities further. These include:

- DSOF-19757 RenderStream: highlight 'Default Assigner' field if the selected ClusterAssigner is in an unsupported configuration
- DSOF-19564 RenderStream: Notch engine settings

We have created custom engine settings for NotchHost with the following option switches:

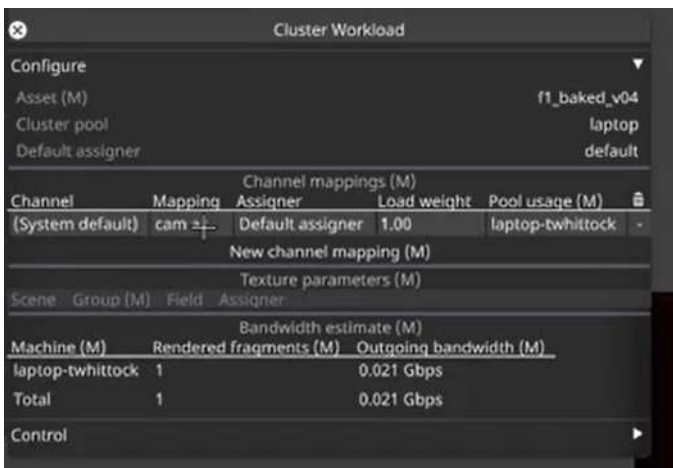
- notchDisableLiveLoading
- notchLazyLoading
- enableNotchNDI
- DSOF-19567 Improvements to RenderStream UI

We have aimed to simplify the RenderStream UI by consolidating a number of features into one location. This includes removing mapping from layers, and moving most of the workload configuration options from layer editor to workload. The configuration section has been cut down as seen in the screenshot below:



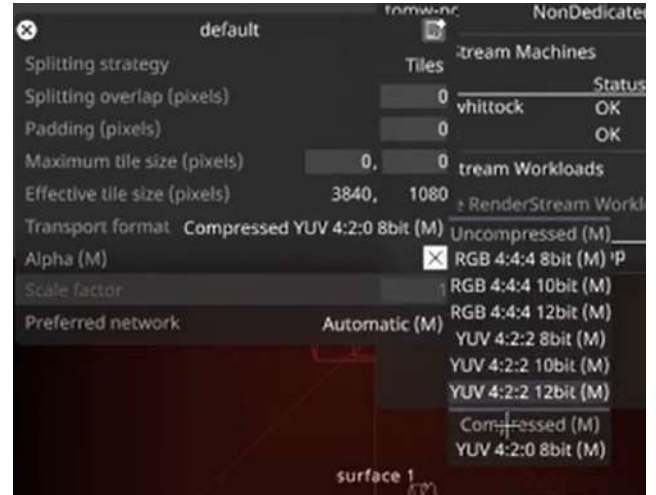
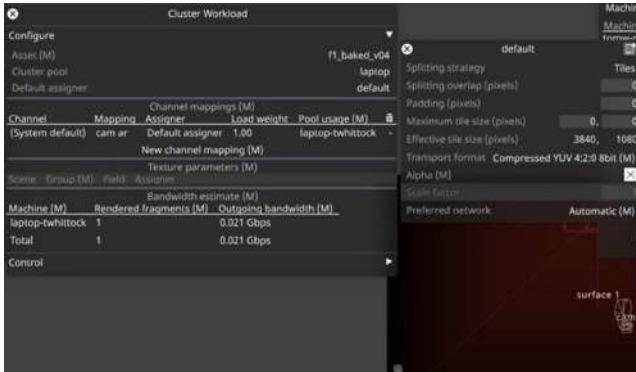
There are now two main parts in the configuration, that being the workload and the receive health. 'Workload' is exclusively related to what is happening on the rx machine on a network, and 'receive health' is exclusively related to what is happening on the vx machine on a network.

We have also removed the current cluster assignment UI and replaced it with the channel mapping list - located in the screenshot below. Channel in RenderStream is a look in the scene, and helps us understand what it is that we are looking at i.e. the back plate or the front plate. Mapping looks at how we get content to the stage.



Assigner tells us how to transport content across the network. The assigner UI is largely unchanged compared to previous releases as seen in the screenshot below on the left. The main difference is the 'transport format' option, which is now consolidated into a single selection as seen in the screenshot below on the right. This shows all the valid transport formats that are available.





- DSOF-19402 Actor Status Widget Renderstream section should only show machines that are currently in cluster pools in the project

In previous releases, any machine that a project has ever seen is presented with a RenderStream file in the list of all RenderStream machines. We have enabled the list to be filtered to only include machines currently in the cluster pool.

- DSOF-19401 The Actor Status Widget RenderStream machine dropdown should start collapsed.

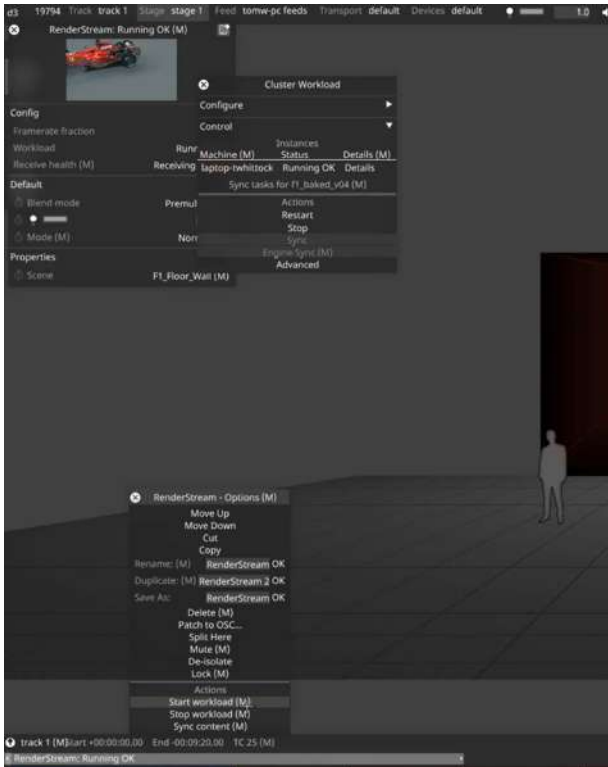
In previous releases, the RenderStream machine widget always opened as maximised by default even when users are not using RenderStream. We have now made the widget closed by default.

- DSOF-19384 Ability to clean up list of streams on RenderStream machines.

In r21 we have added a button above the list of streams in the RenderStream Machine editor, which allows the user to clear the list of unused streams.

- DSOF-19366 Ability to start/stop a RenderStream layer by right-clicking Layer on the timeline

We have added an 'Actions' section at the bottom of the right-click menu on the RenderStream layer as seen in the screenshot below. From here we can start, stop or sync content from the timeline.



- DSOF-19349 Move forceUnrealRenderStreamWindow to option in UI

In r21 we have moved 'forceUnrealRenderStreamWindow' to 'UnrealEngineSettings' so that it can be changed without having to restart the entire Designer session.

- DSOF-19338 RenderStream workload details should show startup messages

In previous releases, when using the 'details' window on an asset that has exited very quickly, the details window showed nothing. The information was available as a tooltip on the stopped status, but many users will turn tooltips off or not think of hovering over the status to see the reason for failure. In r21 we have added the startup messages to the details window.

- DSOF-19048 RenderStream: cannot balance multiple low load channels onto a single render

Frame fragments are assigned in an order of lowest load first to render machines, so that splits/tiles are distributed across multiple render machines for optimal performance. This logic failed to account for low-priority channels that would ideally go onto a single render machine.

In r21, we have changed the logic so that users can still distribute splits/tiles across multiple render machines, but allow low load channels to accumulate on any machine with available load (i.e. highest unsplit/original load first order).

- DSOF-18761 Per-engine settings in RenderStream

We have created an EngineSettings location for settings that are specific to the running of the render engine. This enables users to reuse or easily switch between settings when setting up a project.

- DSOF-18692 RenderStream: process more network events per loop iteration

The RenderStream thread on all render nodes has a main loop that waits for comms events before doing its own checks. This meant that comms was only able to process one event per iteration.

As the logic of the main loop grew, the time spent doing unnecessary checks, whilst comms events are being queued increases. This can result in processing a long queue of comms events.

In r21 we have increased the maximum timeout to be the same level as d3's comms, so that the RenderStream thread is allowed to process more than one event per iteration. Setting the maximum timeout to a non-zero value also enables timeout logging, which is critical for diagnosing networking issues.

- DSOF-18557 RenderStream: append newline to all rs\_logToD3 calls
- DSOF-18494 List editor for RenderStreamMachines

We have created a List Editor for multiple RenderStream machines. This can be accessed by right clicking onto a cluster pool and from here users can see name, load factor and preferred adapter columns.

- DSOF-17970 RenderStream: notify the user if the Controller machine is not online

In r21, we have created a warning notification to highlight to the user if the Controller machine is not online, and therefore needs changing to another machine in the session in order to bring the streams back.

- DSOF-17565 RenderStream: allow the same machine to be added multiple times as an Understudy

In r21, we have enabled a single machine to be added multiple times as a Render Machine within a ClusterPool. In previous releases, a render machine could only be added as a RenderStream understudy once.

- DSOF-17564 RenderStream: ensure 'Engine animation sync' option is disabled / hidden when a non-Unreal asset is selected

In previous releases, the 'Engine animation sync' option was seen in the MultiChannelClusterAssigner menu for all RenderStream assets. We have removed the option for 'Engine animation sync' for anything other than when Unreal assets are detected.

- DSOF-17181 RenderStream: better indicator that a Source Machine must be set when attempting to Sync

In r21 we have created a notification to show users if no Source Machine is set and the Sync button is clicked.

- DSOF-16931 RenderStream: Add colour channel toggles to stream preview

In r21 we have added colour channel toggles in the RenderStream preview so that individual channels can be toggled on or off - for example, allowing previews of the alpha channel or to preview the stream without alpha.

- DSOF-19538 Improve & update information available in RemoteStream editor
- DSOF-19385 No way to see if a stream is regarded as online in RemoteStream editors

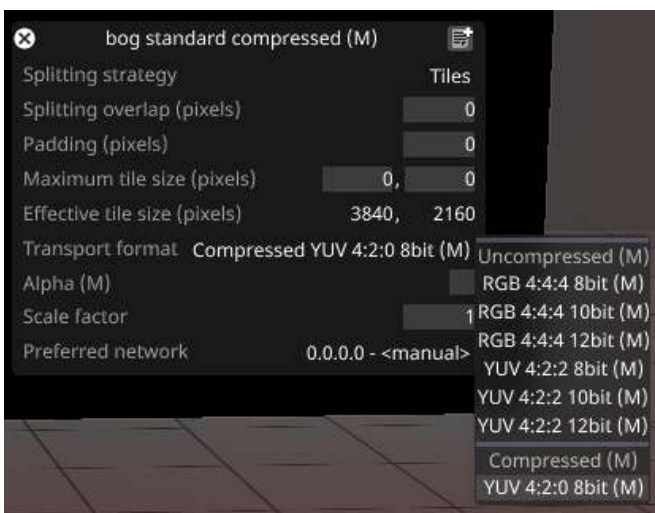
In r21, if users are troubleshooting RenderStream not working, we can now see if the stream workload is online in the RemoteStream editor.

- DSOF-18748 Notify user if trying to use a renderstream workload across render nodes running different d3 builds

In previous versions of Designer, the RenderStream workload would fail to start if the render nodes in a cluster pool do not have the same version of d3 on them. We have now enabled a notification to users if the nodes do not all have the same version of d3.

- DSOF-19248 Present all and only valid transport formats

In r21, when creating a new ClusterAssigner, we have automatically generated multiple default ClusterAssigners based on the most common use cases. These can be seen in the screenshot below:



- DSOF-17230 Add "Local loopback" auto populated network interface to the Preferred Adaptor list in RenderStream Cluster Assigners

In r21, we have automatically selected a loopback on a RenderStream Cluster Assigner if no other connections are possible. In previous versions, the workaround was to set the preferred adaptor to Manual and type 127.x.x.x IP in.

- DSOF-17083 Add Swagger APIs for RenderStream workloads

We have added APIs for RenderStream to enable basic control commands, including workload status' and the ability to start, stop and sync workloads.

- DSOF-18356 d3service should refresh adapters for preferred renderstream adapter selection if they change on the machine

We have enabled the list of IP addresses and subnets available in the RenderStream Layer/Cluster Assigner/Preferred Network menu to be refreshed automatically if any network settings on the machine change. In previous releases, users would need to restart d3service.

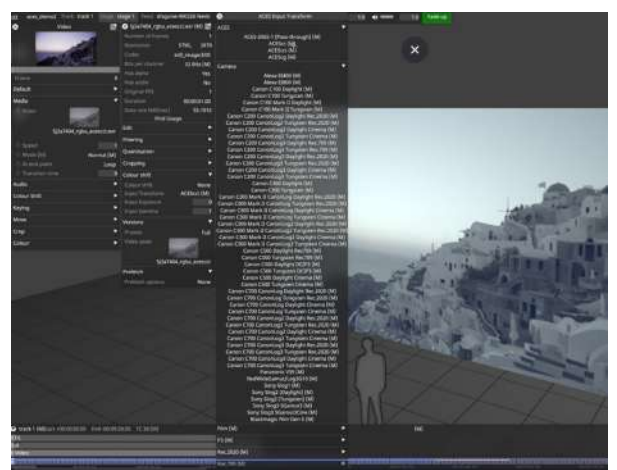
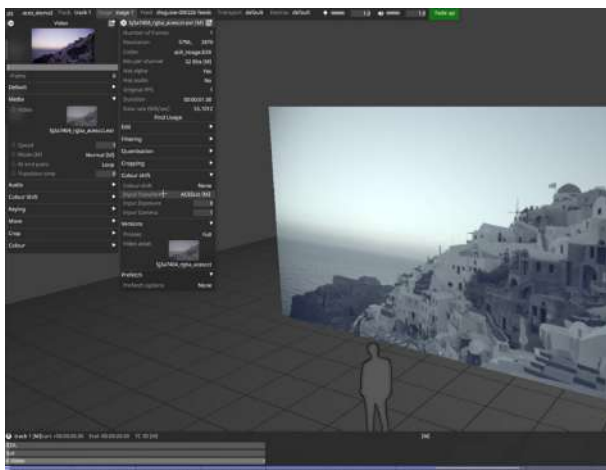
- DSOF-18285 Consolidate RenderStream frame info in one place
- DSOF-15669 Clustered rendering: only sync required asset files
- DSOF-15102 Show alpha checkerboard in RemoteStream editor window

In the RenderStream content preview in r21, we can now render the view on top of the alpha checkerboard pattern to assist with troubleshooting issues with alpha.

### Colour Improvements

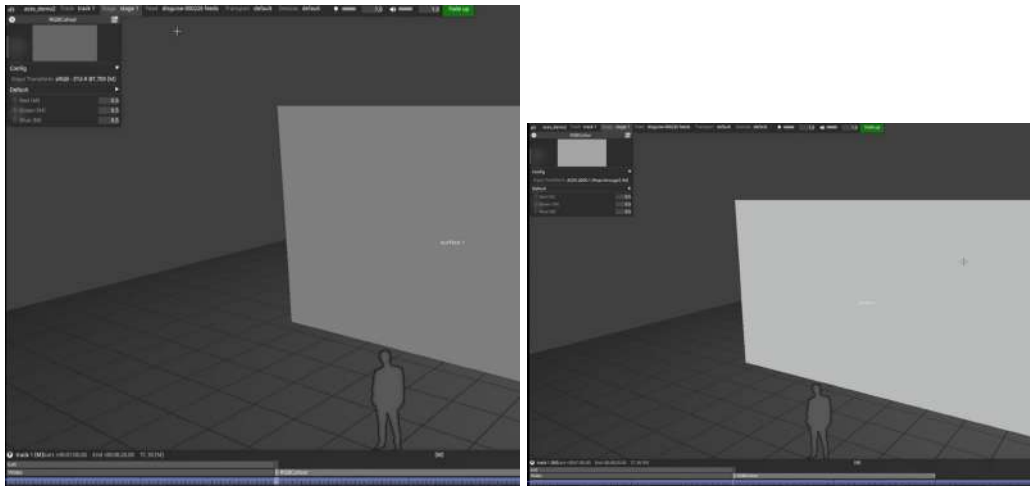
- DSOF-19094 Add Gen5 IDT for Blackmagic colour

In the Input Transform menu, go to Camera and there is now an option to pick Blackmagic Film Gen 5 colour information. This would be used if you had content from a Blackmagic camera using Film Gen 5 colourspace



- DSOF-19051 RGBColour layer should allow IDT

To access this, select RGBColour from the layer drop down menu. From the below menu, you can now choose your colours i.e. ACES-2065-1 and the RGB colour layers are automatically interpreted as ACES-2065-1.

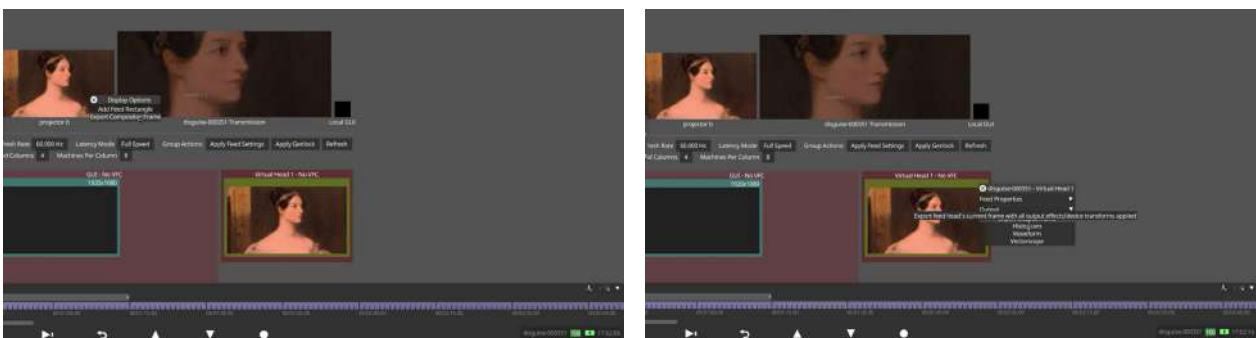


- DSOF-19340 Screenshot/export image to EXR

In r21 we have included the ability to export lossless images from:

- Video inputs - 8 or 10 bit images (16-bit if a layer stack is applied)
- The compositor - 16-bit floating point images using EXR (before ACES transforms)
- The feed output - 8 or 10-bit images (after ACES transforms)

The export format is specified in d3 / Project Settings / Screenshots / Output Format.



To access these tools, right click the preview and you will have access to Export Frame.

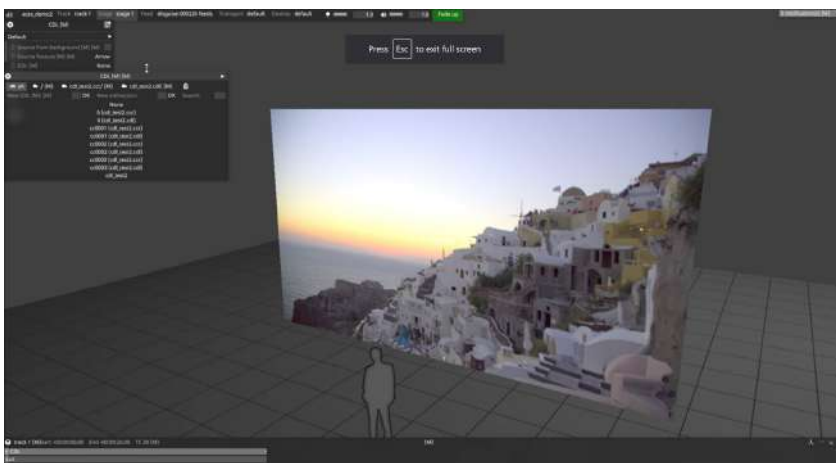
- DSOF-1985 unable to output lossless feed stills

In previous releases, users previously have been able to use alt+f then alt+x to screenshot various feed outputs in order to get stills to use for rigging purposes. This is no longer possible as pure masters, editors etc. have null feeds, so alt+f doesn't work. We have now moved the button from the feed rectangle to the port config editor.

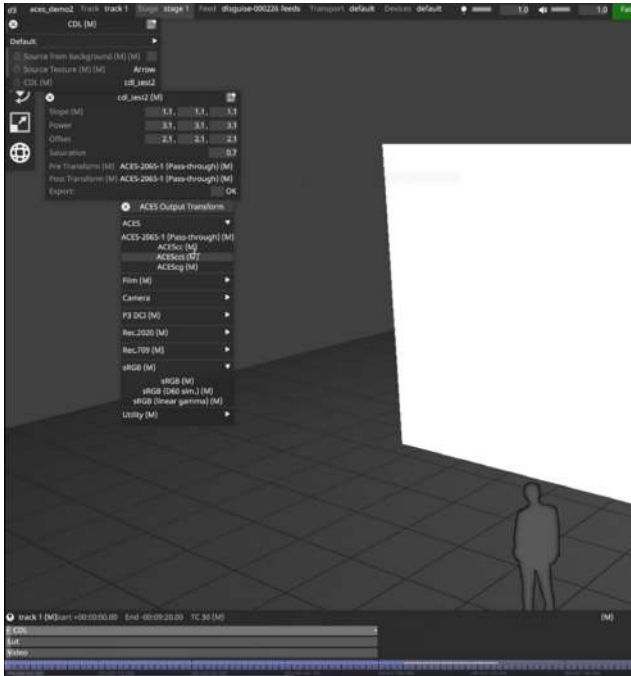
- DSOF-17902 CDL Import / Export

We have added the ability to import and export colour decision list (CDL) files - a format developed by the American Society of Cinematographers (ASC) - to exchange standard colour correction information between post production tools. The data from a CDL file is simpler than a LUT, and allows users to make colour transforms on images.

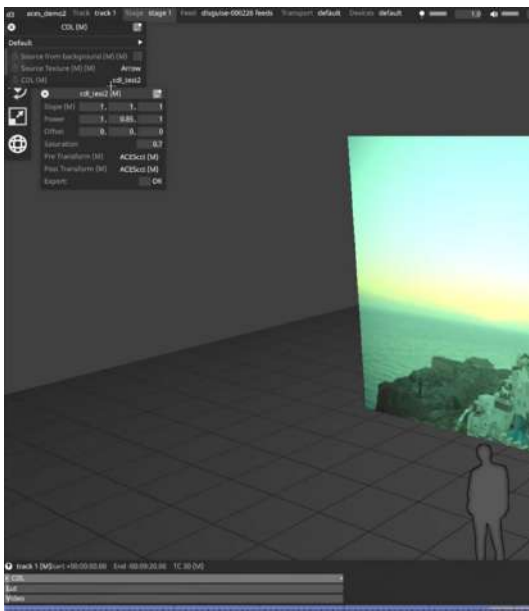
In Designer we now support importing and exporting CDL files as seen below - accessible via the ACES mode (d3 / Colour Management / ACES):



CDL files that we support are .ccc and .cdl. These are different container formats. The .ccc format only holds one transform whereas .cdl can hold as many transforms as required. Like the LUT layer, we have a pre and post transform. CDLs are generally applied in a logarithmic space such as ACEScct as found below:



The slope, power and offset controls are found in other colour grading software. They are defined in a way that if users exported their CDL in another software, such as DaVinci Resolve, when it is applied in Designer it will appear the same.



You can then create a new CDL and export it as a .ccc or .cdl file here. This can be found in the output folder:



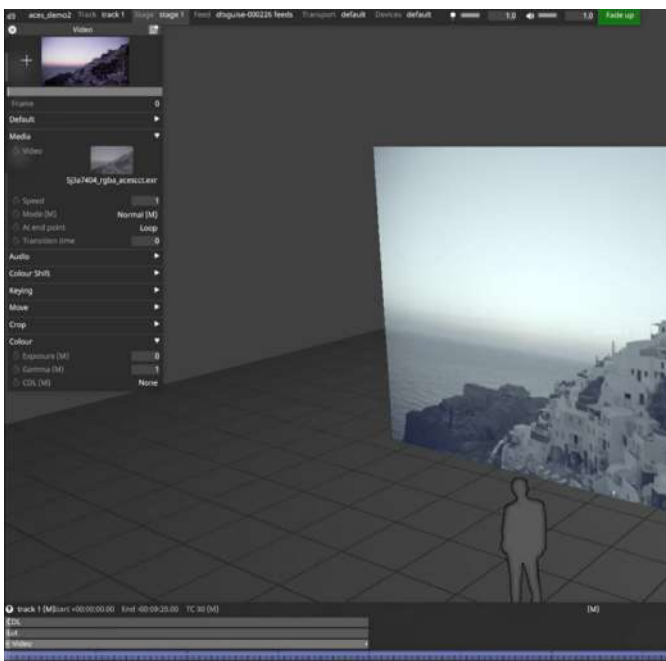


- DSOF-19098 CDL Transforms

We have enabled CDLs to have input and output transforms like LUT layers. These are found by switching to ACES mode / Create a CDL layer / Create a CDL / Open the CDL Editor and there users can see that there are both pre and post transform options.

- DSOF-17901 Linear Exposure and Gamma Controls available on a layer in ACES mode

These controls have been added under Colour on the Video Layer as found below:



Exposure, gamma and CDL can now be set in the linear space. Exposure input control adds and removes stops of latitude whilst gamma controls contrast, whereby a higher gamma is a higher contrast and a lower gamma is a lower contrast. These combine with the input exposure and gamma values on the clip.

- DSOF-17625 Ability to apply an input device transform (IDT) directly to VideoIn

We have enabled users to apply an input device transform (IDT) directly to the camera in feed (VideoIn object) so that it doesn't need to be applied via a layer. All instances of the VideoIn then have the correct IDT applied. The list of IDTs is dependent on the Colour Management setting that is selected, for example if using ACES.

- DSOF-17433 Pre/Post ACES transforms should only be attached to LUTs

In r21 we have simplified the UI of ACES Colour Management in Designer in regards to LUTs. We have removed 'Pre' and 'Post' LUT transform options on displays and LUT layers, and attached them to LUT objects.

#### *Additional Improvements*

- DSOF-6656 Buffer DMX screens texture downloads to remove CPU stall

Users had reported seeing increases in DMX output payloads which could lead to performance drops on the media server in which it is outputting from. We have now implemented buffering to enable performance improvements for DMX outputs.

- DSOF-19859 Prevent intermittent crashes when using very large (16K+) NotchLC content
- DSOF-19836 Make CodeMeter series 2 dongles work with Runtime v7.40

We have seen instances where some CodeMeter Series 2 dongles cannot be used on some PCs. Whilst the dongle can be seen as a disk drive, it is not recognised by the CodeMeter Runtime.

We have created a small tool d3cmu . exe that does the following:

- Abort if no CodeMeter Runtime is installed (need the CM service to run for cmu32 to perform tasks)
- Checks whether any CodeMeter dongles with older series 2 hardware are plugged in
- If yes, it lists all that use MSD as USB connection mode instead of HID
- If list is not empty, the tool verifies that dongle firmware is at least v2.02, and Runtime at least v5.0. If yes, this will switch the dongle to HID mode and log details to the console. If no, it will prompt the user to do this manually. The user is then prompted to unplug and replug the dongle.
- DSOF-19823 Catch2 tests: log failure to console to assist troubleshooting of test issues
- DSOF-19760 Add tooltips to the feed rectangle buttons

In r21 we have added tooltips for the feed rectangle buttons for the following:

Button	Tooltip text
Cut/Split (horizontal)	Split horizontally
Flip (horizontal)	Flip horizontally
Cut/Split (vertical)	Split vertically
Flip (vertical)	Flip vertically
Rotate Anti-clockwise	Rotate left 90°
Rotate Clockwise	Rotate right 90°
Bin	Delete
Lock resize	Lock resize
Lock	Lock

- These can be found when selecting the feed rectangle in Feed View and hovering the mouse over each of the buttons.
- DSOF-19712 Allow UDP Indirection Controller to switch if key is contained with the UDP string or partially-matching strings
- DSOF-19702 When enabling sequencing the keywidget should automatically appear

In previous versions sequencing was enabled but no keywidget appeared. In r21, when a user adds a layer to the timeline, opens the editor and clicks on the stopwatch icon on a field to enable sequencing, the keywidget now appears, and means that no additional clicks are required.

- DSOF-19599 Update help text of esc enter to make it clear that it saves on exit

In r21 we have updated the help text when using 'esc' to exit d3 to say 'save and exit', making it clear to users before exiting a session.

- DSOF-19552 GUI: only close active widget when pressing esc

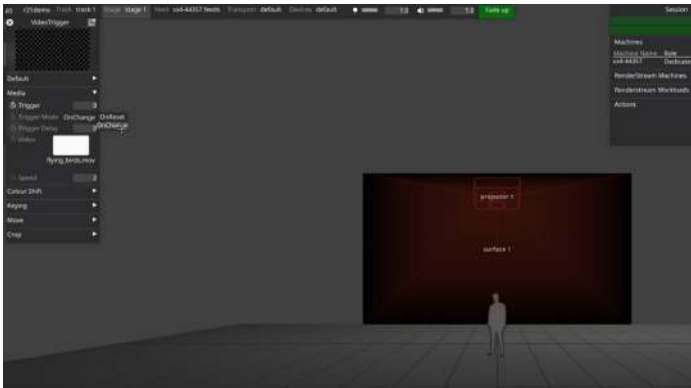
In r21 the 'esc' key is used to close the current active/focused widget, and SHIFT + ESC closes all.

- DSOF-19529 NotchLC: cache compiled shader

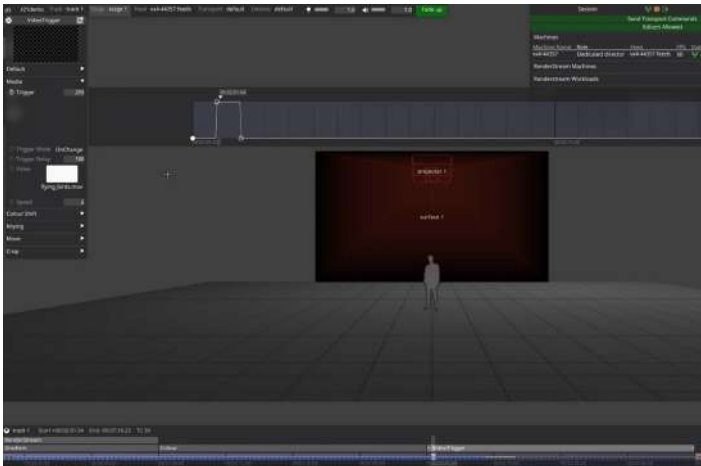
We have removed a hang in r21 when starting NotchLCSubsystem subsystem for the first time

- DSOF-19495 upgrade to latest CodeMeter SDK/Runtime v7.40 or later
- DSOF-19469 Allow setting of delay and trigger mode for VideoTrigger module

For sequencing, we have created a new mode called VideoTrigger. In previous version, this mode always used to be 'OnReset'. We have now created a new mode called 'OnChange' and 'Trigger Delay' as seen below:



Users can now set a delay on the video trigger which means that it will not trigger until the specified frame count. In the screenshot below, we have used a frame count of 180 frames:



- DSOF-19453 Autosave indicator

In r21 we have added an 'Autosaving' indicator with a 5 second countdown in the bottom right hand corner of Designer. This is located above the timeline.

- DSOF-19413 Show last opened project in d3manager

In d3 manager, when working with multiple project files it can be easy to open an incorrect/older file by mistake. To help avoid this, we have now indicated which project was the last to be opened.

- DSOF-19359 Improve 'Unreal DDC path' and 'Unreal log level' tooltips
- DSOF-19309 Move engine settings from assigner to asset
- DSOF-19302 Expressions: support module properties

Expressions are used to access computed values - for example, the current frame the video layer is playing. In previous releases, expressions could only access keyframed values. In r21, we have now enabled expressions to be used in all modules in d3.

An example of where this can now be used is in the case of fading the brightness down at the end of a clip, an expression can now be used on the brightness field that reads the frame index to do the fade.

- DSOF-19287 Disable CORS for d3 APIs

In r21 we have disabled CORS - a HTTP mechanism that prevents a web browser from loading resources from another domain - as it prevented machines on a d3 network from receiving API calls between multiple machines.

- DSOF-19232 Default typed in option switches to true

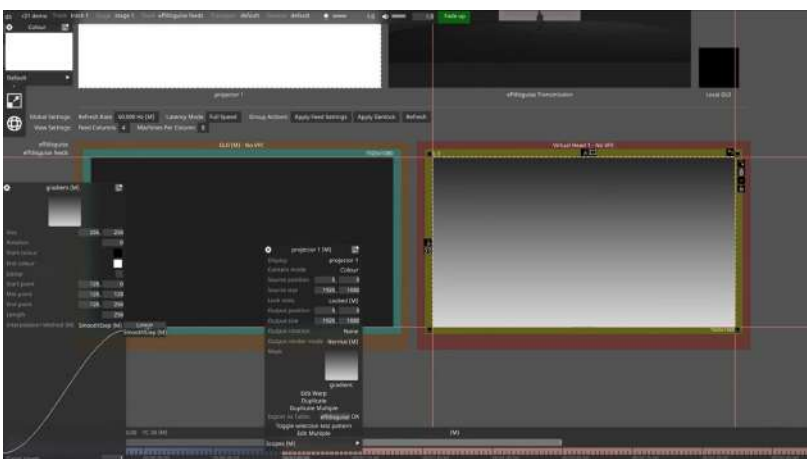
When in previous versions of d3 manager, if a user typed the name of a hidden option switch to set it - or in the case of bool a user would want to set it to true - then you would have to search for it, press enter and then set it. In r21, if a user searches for the hidden option switch then it defaults to true.

- DSOF-19222 Shortcut to quit all machines in session

In r21 we have created the shortcut of SHIFT + ESC + ENTER to quit all machines in the session without asking for a confirmation

- DSOF-19144 Add smoothstep interpolation to gradients

Gradient Layer and Gradient Texture have an additional interpolation method called 'Smoothstep'. This allows for a smoother transition between light and dark, and supports those that are projection mapping onto surfaces. This can be seen in the example below:



- DSOF-19037 Improved EDID emulation support for HDMI devices
- DSOF-18915 Option to 'lock' feed rectangles so that they cannot be edited, in the same way that feed scenes and other objects can be locked

In r21 we have enabled the feed rectangles within a feed scene to be locked so that they cannot be accidentally edited. This works in the same way that a feed scene, a layer or a surface can be locked in Designer.

- DSOF-18911 Enable Spatial Calibration to be used as a Frame of Reference

To accommodate mixed tracking system which track both cameras and other objects, we have enabled other objects to have a spatial calibration of a camera as their frame of reference. This in turn enables the spatial offset learned from the camera calibration to be applied to the other objects, as they are all being sent by the same system and therefore the same zero point.

This can now be selected in r21 thanks to a new 'SpatialCalibrationFrameofReference' button which allows a spatial calibration to be selected.

- DSOF-18794 Populate -ConcertDisplayName with unique node names when starting a workload & joining a MUE session from d3

When using a large number of machines in a multi-user session, in previous releases each node that joins the session with the same display name. This display name is set per machine in the defaultengine.ini file, and was overwritten on target machines by the file from source machines when syncing an Unreal project using the RenderStream sync function. The node names are now given unique names to make the session easier to administrate.

- DSOF-18675 Observation debugger now renders wireframe of alignment object
- DSOF-18663 More descriptive tooltip for spatial calibration scope
- DSOF-18580 Set DDC configuration for unreal engine on rx's via d3

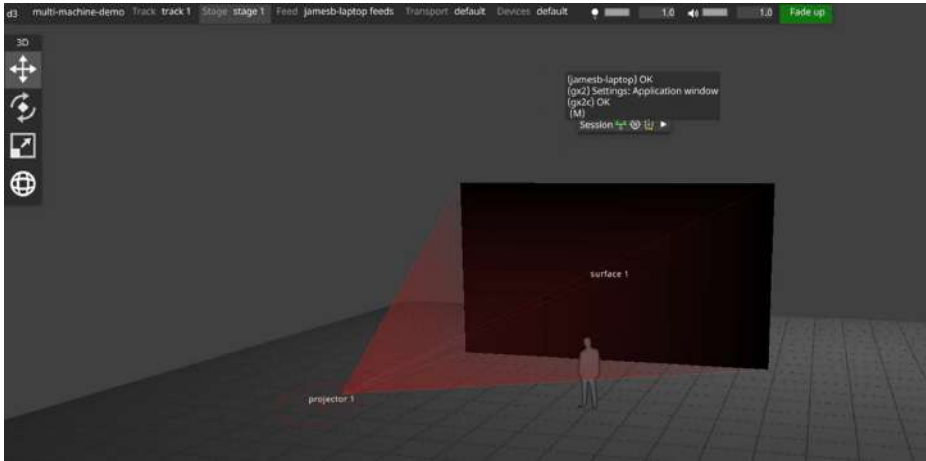
In r21 we have enabled the configuration of DDCs (Display Data Channel) for Unreal Engine in order to reduce shader compilation times.

- DSOF-18573 Move shader cache to project folder to avoid stalls during playback on freshly reimaged machines

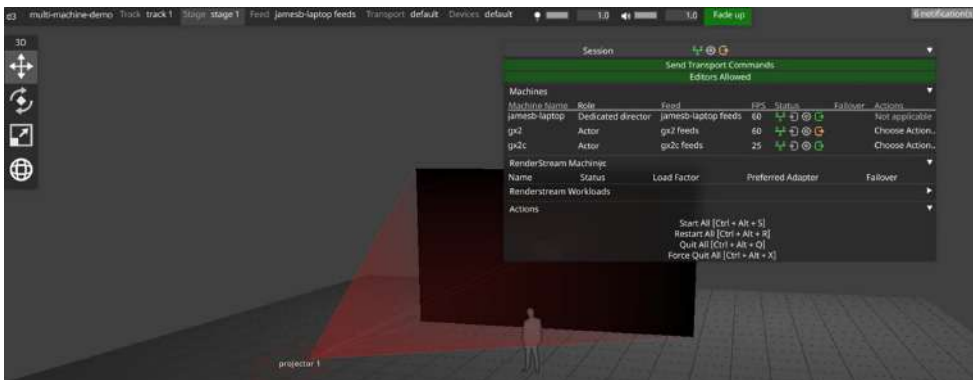
In r21 we have synced the pre-compiled ShaderCache to be moved into the project folder so that it is available on all machines in the session. This now travels with the project and enables precompiling to be handled during editing or show prep.

- DSOF-18532 Improve network status widget indicators to give a broader indication of machine status

We have made improvements that make the status of your session in Designer much clearer. This includes additional information added to the session widget as seen below:

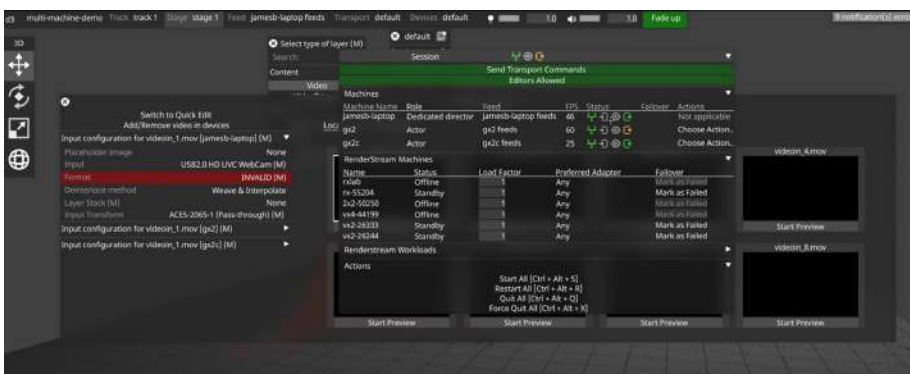


The three icons break out into additional menus. Each machine then has four dedicated icons as seen below:



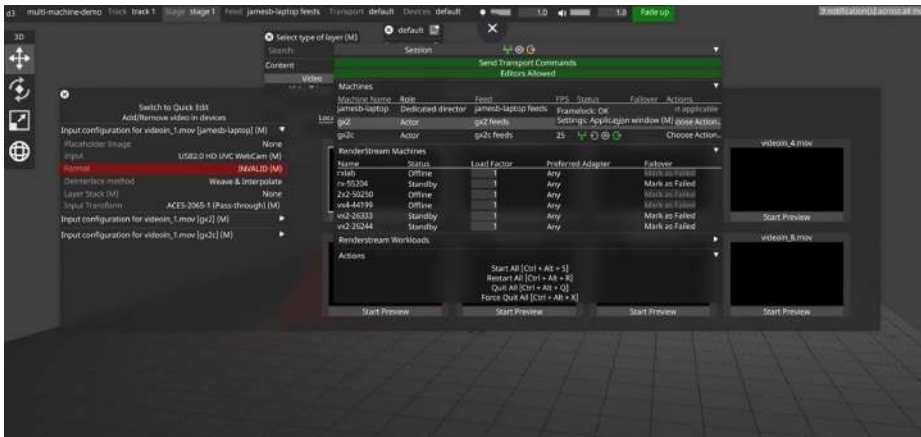
The first icon is for network information. It tells us about transport control and remote status, and whether the machines are connected to d3net. If the icon is green, this indicates to us that transport control is in sync and remote status is up to date. If the icon is orange, this indicates to us that the remote status of the machine is offline.

The second icon is for the status of video inputs into the disguise media server as seen below:



The third icon is for the genlock status of the disguise media server. If the machine is genlocked, then the icon will be green and if not then the icon will be grey.

The final icon is for framelock status to help identify any other output issues. In the example below, we show that the framelock is OK but the disguise media server is currently running an application window which means that it won't necessarily be in sync.

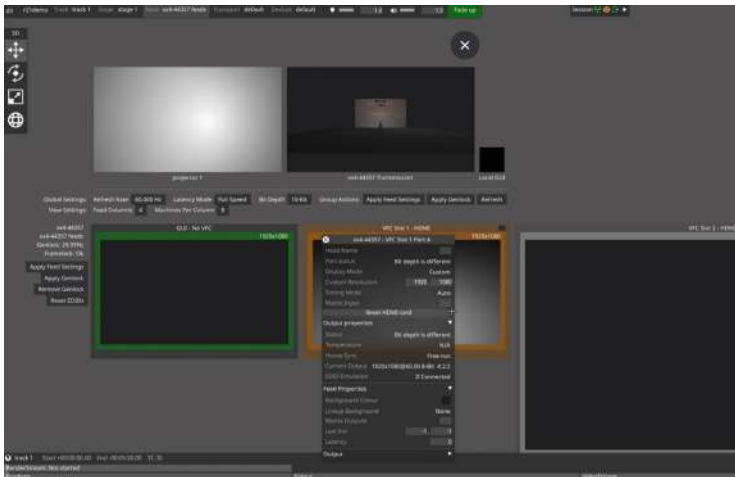


- DSOF-18495 Differentiate duplicate machines in cluster pool

In r21 we have added a suffix to a RenderStream machine if it appears within a cluster pool multiple times.

- DSOF-18486 Add option to run "hdmifix" from feed view

We have added an option to reset the HDMI VFC card from inside Designer via the 'Reset HDMI card' button as seen in the screenshot below. This replaces the old method of running 'd3utils.exe -hdmifix' outside of Designer





- DSOF-18451 Add a shortcut to the API documentation in d3 Manager

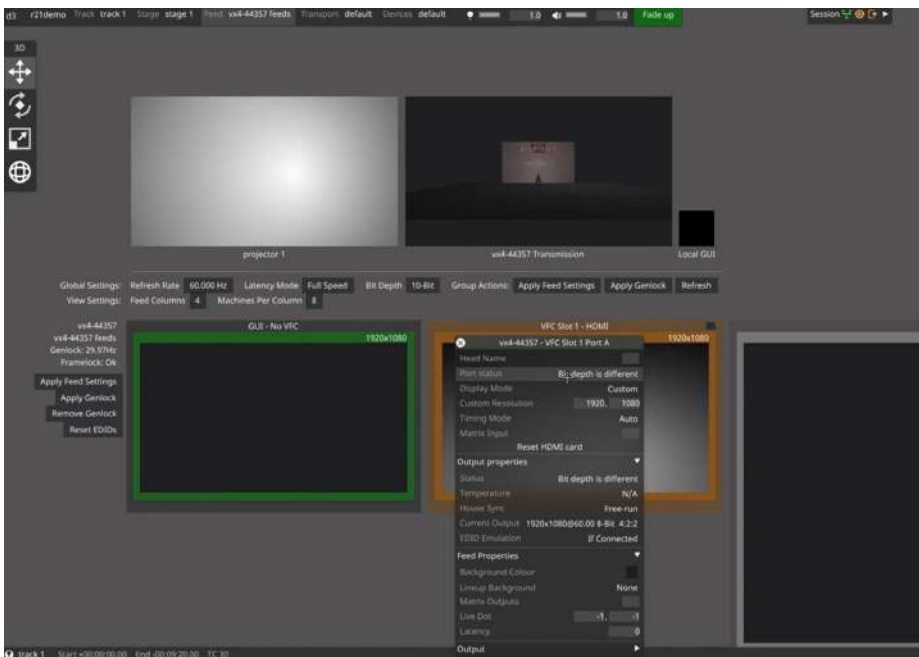
To access this feature, open up d3 manager and go to the help menu. From here, click on 'Open API Documentation'. Once you do that, it opens the Swagger UI where you can access all the UI endpoints.

- DSOF-14082 API - /docs/v1/Swagger.json should be a combined file with all APIs

The API docs page now shows the whole API by default "d3api" option - this should be first in the drop down. The docs can viewed at this url when d3 is running: <http://localhost/docs/v1/index.html>

- DSOF-18441 Warn in feed view when output bit depth does not match

We have created a warning in Designer if the bit depth is set different to your current output bit depth via the orange border and the port status as seen below:



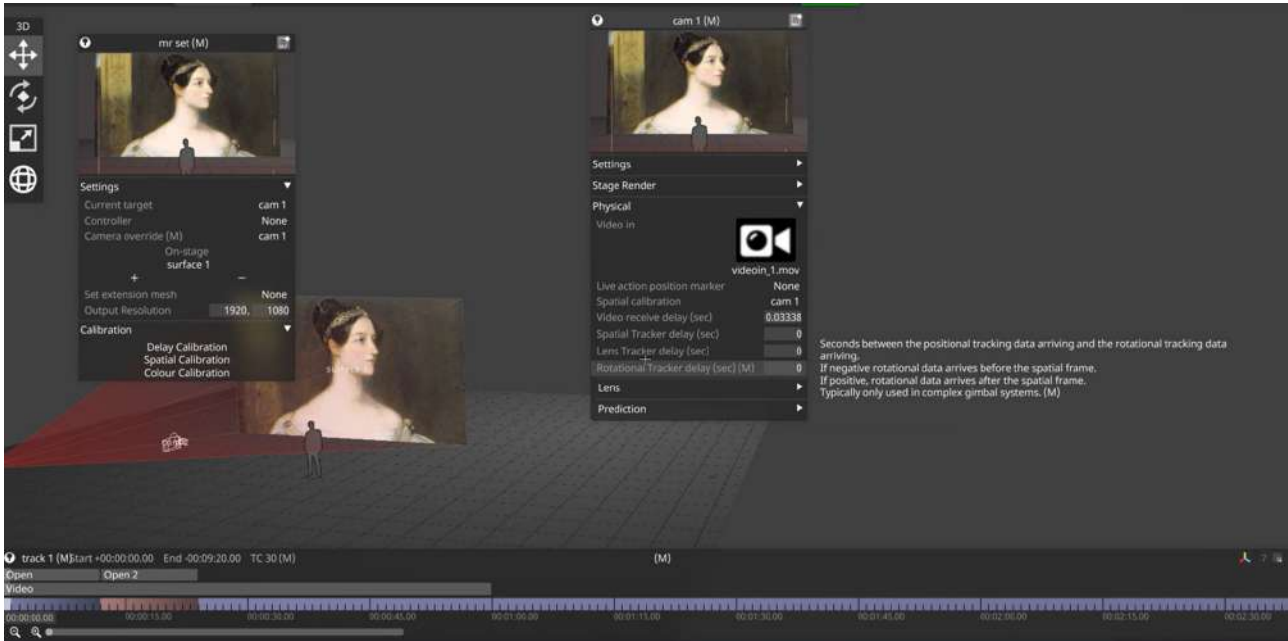
Users can now see the current output chroma subsampling information in the feed scene, which previously were only available in the GPU settings.

- DSOF-18434 Add context menu option to windows explorer to set d3 project as the startup project

In r21 we have added an option to the right-click menu on Windows for .d3 files that enables users to set the file as the startup project. The workflow for this is to right click a d3 project, see 'Set as a d3 Startup Project' and click. When running d3.exe, that project should then start.

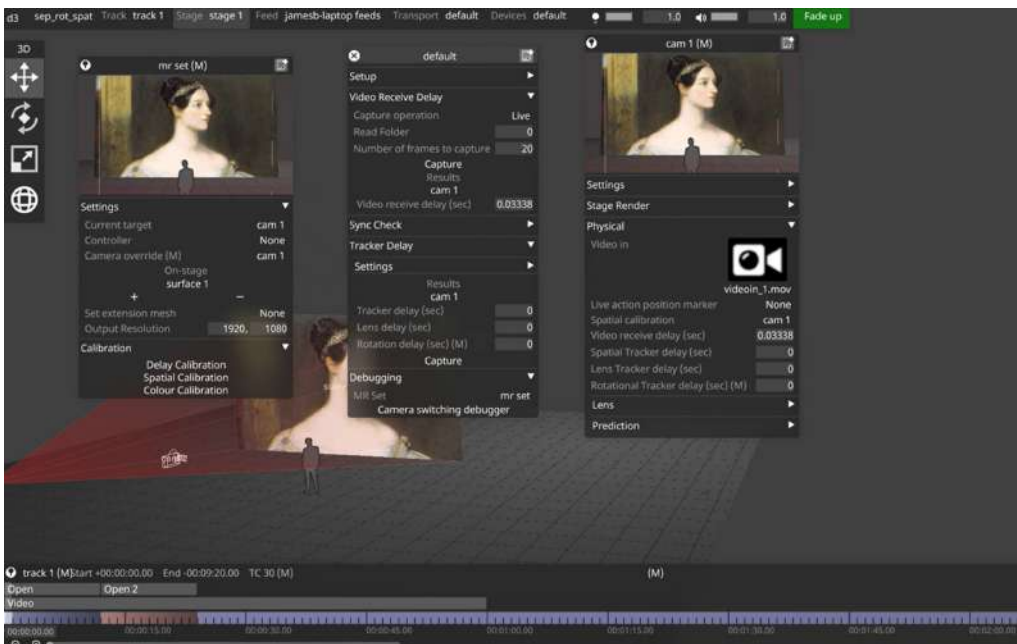
- DSOF-18426 Warn user when actor is in application mode
- DSOF-18295 Add Separate rotation delay to the camera in case your tracking source sends rotation and translation separately.

This is enabled by going to d3 manager / Machine Settings / Advanced Machine Settings and turn on the enableSeperateRotationAndSpatialDelays option switch. You will then get the menu below:

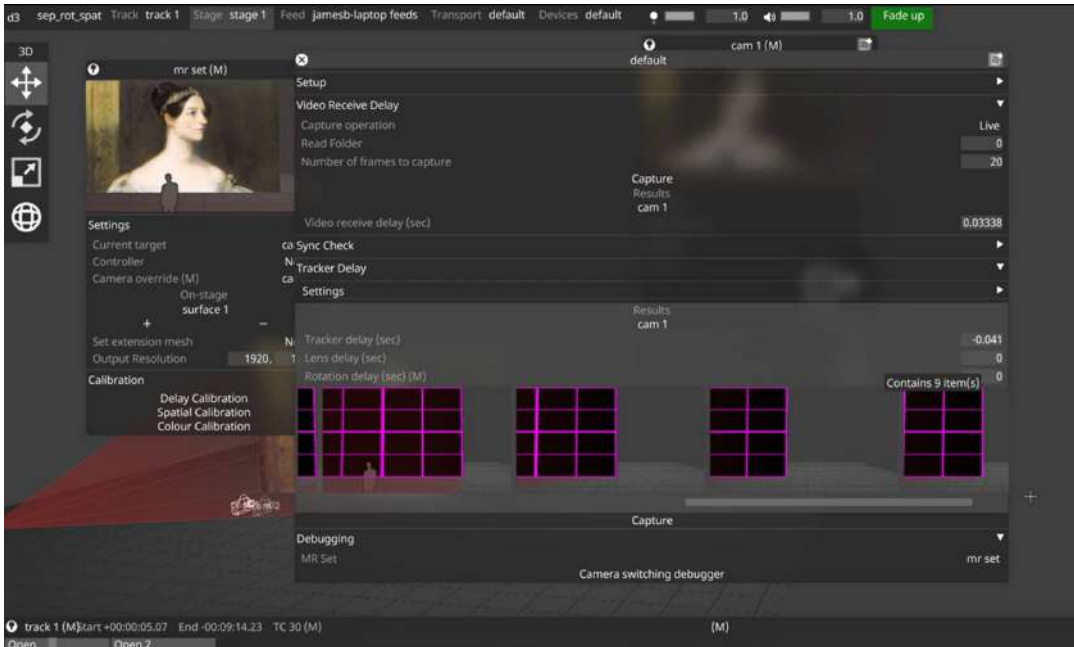


The rotational tracker delay would typically be used in complex gimbal systems - for example, a cable-suspended camera system where the camera is controlled by the gimbal that surrounds it, meaning that both the camera and the cable system are located on two different tracking systems.

From the above menu, go to Delay Calibration and you then get the default menu in the middle of the below screenshot:



The tracking delay can then be amended below. Rotational delay can also be added:



- DSOF-18274 Implement support for BlackMagic SDI routers

In r21 we have implemented the BlackMagic VideoHub Ethernet protocol. This can be enabled by searching for the BlackMagicVideoHubMatrix as an option in the device menu, and then adding a BMVmatrix device in d3.

- DSOF-18206 User should be able to view stream performance across all machines instead of just the local one

In previous releases, if users had two machines in session and RenderStream is being sent to both machines, users could only view the local FPS of the stream. In r21, we have enabled users to see the FPS of the streams on the remote machine too. This can be found under 'Receive Health' in the RenderStream module.

- DSOF-18123 DCS LDT Telemetry protocol for streaming lens data integration

We have enabled the DCS LTD Telemetry protocol to enable users to track zoom and focus data from lenses when using the DSC LTD boxes over Ethernet for use in xR and virtual production.

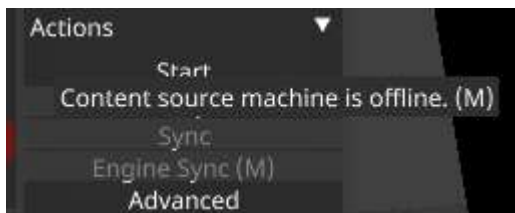
- DSOF-18092 Ability to cut and paste a layer

We have added the ability to cut layers that can then be pasted into another section of a track. Copy and duplicate were the only other options before.

- DSOF-1709 Copying and pasting of (multiple) layers

- DSOF-17507 d3service to use single Comms instance
- DSOF-16657 User friendly notification when sync source isn't available

In r21 we have created a notification to show users when trying to sync to a source that doesn't exist. This has now been resolved with a 'Content source machine is offline' notification as seen here:



- DSOF-15572 Display Observations error in the Observations list editor
- DSOF-14290 HttpControlModule: basic HTTP control

In r21 we have enabled a basic control module for HTTP:

- A URL
- A Method (GET/POST (with no body) currently supported)
- A header field for specifying a key-value collection of headers
- DSOF-12038 Dismiss previous "screenshot saved" on-screen text when taking a screenshot in d3
- DSOF-11277 Confirm with prompt when exiting on a director with actors/understudy still active in session.

We have created an 'are you sure?' prompt when exiting on a director machine with actor/understudy machines still active in session. If a user quit on a director machine without first quitting the actors and/or understudies, you would then have to go into each machine to shut down and start again. This is no longer the case thanks to the prompt.

- DSOF-10969 Expose chroma sub-sampling information to users in the feed view

In r21 we have added the chroma subsampling information in the video feed view as part of the EDID configuration.

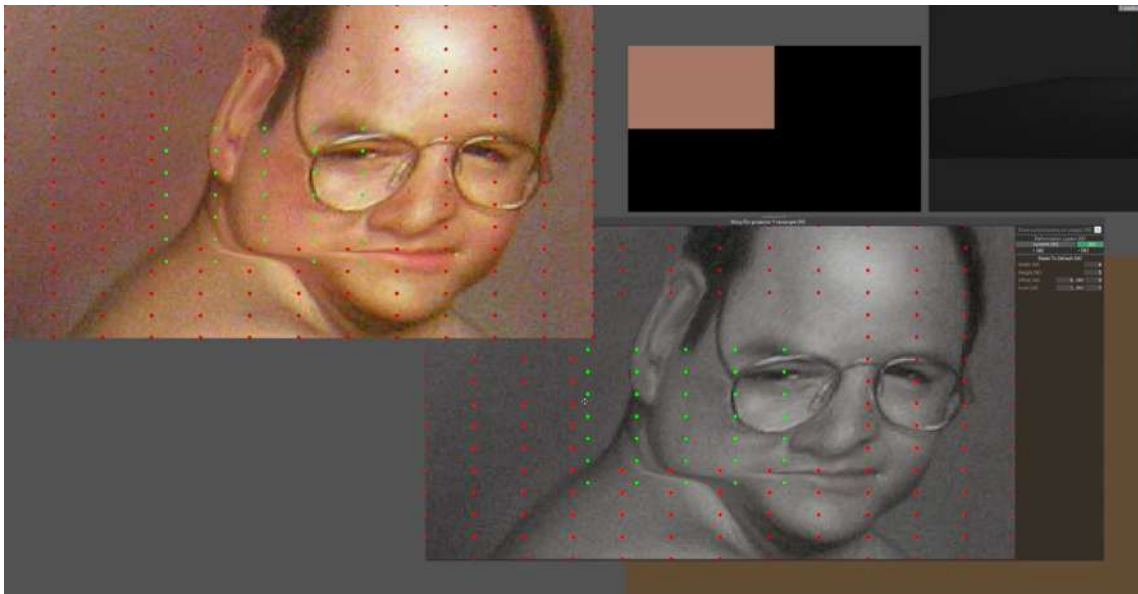
- DSOF-10417 Shortcut to rename selected layer

We have added a shortcut to rename selected layers. This can be accessed by using CTRL + R. This shortcut is also available for multiple layers or group layers.

- DSOF-9984 Add tooltip for projector study
- DSOF-6869 Improve Console logging for shows being controlled by Artnet

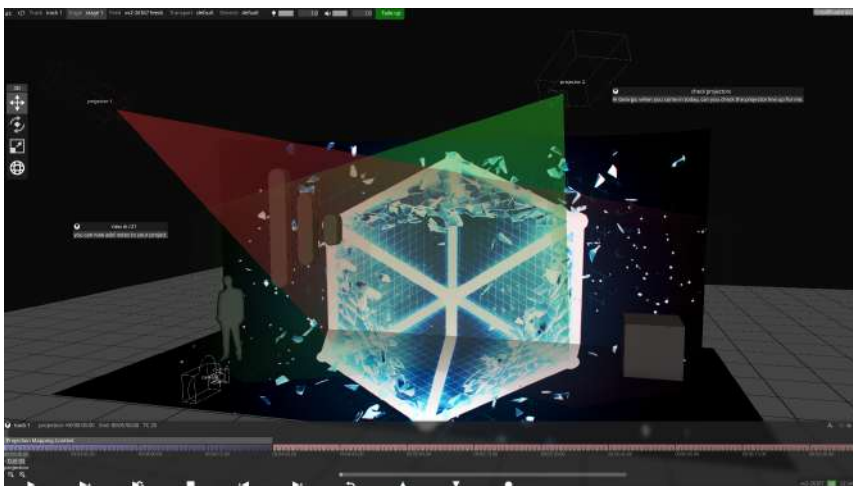
- DSOF-4109 Search Function in keyboard shortcut widget (F1)
- DSOF-4094 Warp points to appear on outputs

Warp points can now be added to the output so that users can see exactly which part of the output is being manipulated as seen below:



- DSOF-19224 Link "sticky notes" to any object or widget

We have created a notepad tool within Designer. These notes can be stickied to specific parts of the project - for example, a note in the feed view to tell the operator to check specific things, or a warning note on a later to not do something.



- DSOF-19332 Ability to save notes to output folder as a txt file

As outlined above, in r21 we have created a new notes feature. These notes can be exported, saving the note(s) as a .txt file to the output folder so that it can be saved and used in a technical notes session. To use this feature, right-click on the note title and click 'Save As'.

- DSOF-1598 Asset library: have a 'Root' tab which shows only the assets placed in the root.

## Fixes

- DSOF-20013 - Fixed OmniCal simulated plans
- DSOF-20009 - Fixed an issue where GUI text was rendering incorrectly in some widgets
- DSOF-20003 - Fixed the Receive Health window being unreadable
- DSOF-19989 - Fixed RenderStream channel mapping order not being user controllable
- DSOF-19985 - Fixed rawTracking.tRecieved being displayed is an Alignment Object is not selected before Manual Observation is taken
- DSOF-19971 - Fixed an Access Violation in InputMapManager
- DSOF-19969 - Fixed an issue where fully zooming out timeline hid layers and removed timeline zoom buttons
- DSOF-19967 - RenderStream: Fixed an issue where layers using PreComps as texture input did not show orange arrow
- DSOF-19964 - Fixed an issue where manage workloads caused new workloads to start continuously
- DSOF-19960 - Fixed an issue where machines reports different active and output resolutions
- DSOF-19954 - ACES: Fixed an issue where LUT Pre/Post Transforms are not copied to selected LUT objects on upgrade
- DSOF-19947 - Fixed an issue where GUI Observation List did not add observations after a number of 12
- DSOF-19944 - Fixed an Access Violation when opening the DeviceStatus widget
- DSOF-19940 - Fixed an issue where feed mapping still used the lock icon to link source

- DSOF-19939 - RenderStream: Fixed an issue where a layer mapped to PreComp failed to render unless a dummy screen was added to PreComp mapping
- DSOF-19934 - Fixed ESC no longer closing feed mapping editor
- DSOF-19933 - Fixed an issue where a user was unable to edit coordinate and resolution values of feed rectangles
- DSOF-19916 - RenderStream: fixed an error on dedicated director when screens are not visible
- DSOF-19915 - Improved text layout in debug window
- DSOF-19914 - Fixed an issue when looking at smaller full res content on half res screen
- DSOF-19900 - Fixed OmniCal report widget being cut short
- DSOF-19896 - Fixed an issue with a large amount of RenderStream projects dominating the screen
- DSOF-19895 - Fixed an issue where Renderstream active latency was less than variable latency value
- DSOF-19885 - Fixed an issue where selected feed rectangles were missing text readout of coordinates and resolution
- DSOF-19880 - Fixed an issue where newly detected RenderStream machines were always displayed in the Renderstream Machines drop-down
- DSOF-19876 - Fixed an issue where the tracker delay could not be calibrated - VLL out of sync
- DSOF-19871 - RenderStream: Fixed 'NoneType' error when Workload widget open + layer breaking when performing remote install on render node -
- DSOF-19862 - Fixed an issue with render nodes crashing when reconfiguring
- DSOF-19852 - Fixed Tracker Delay calibration tool not working for lens calibration
- DSOF-19849 - Fixed an exception being thrown when setting the Preferred Network Adapter to Automatic in an image parameter assigner
- DSOF-19838 - Fixed an issue where you could not right click on RenderStream machines in the bandwidth estimate
- DSOF-19829 - Fixed an issue where 'Power' in a CDL widget brought up the wrong widget of values
- DSOF-19825 - Improved RenderStream camera switching
- DSOF-19818 - Fixed an issue where you were unable to right-click on group layers and have a popup for controls

- DSOF-19813 - Fixed an issue where open layer connected fields are not sequenced
- DSOF-19812 - Fixed an issue where RenderStream assignments confusingly report "0.0.0.0 <manual>" for automatic selection of preferred network adapter
- DSOF-19811 - Fixed an issue where adding the first screen to a mapping in the RenderStream layer did not immediately set the mapping resolution to the screen resolution
- DSOF-19810 - Fixed an issue where you could not create an uncompressed stream without selecting a preferred network adapter
- DSOF-19807 - Video: Fixed CDL being active when ACES is disabled
- DSOF-19803 - Fixed an issue where RenderStream channel mapping tables didn't deal with lots of items well
- DSOF-19795 - Renderstream: Fixed an issue when upgrading existing RenderStream layer to new channel mapping workflow created many extra channel mappings
- DSOF-19794 - Fixed Receive Health reporting Good when receive rate is significantly less than request rate
- DSOF-19792 - Fixed an issue where overscan smoothing/interpolation errors caused flickering
- DSOF-19790 - Fixed an issue where the scroll bar covers up the delete icon in the channel mapping list in the cluster workload widget
- DSOF-19784 - RenderStream: Fixed an issue with non-progressive, non-BGRA transports getting stuck on first frame
- DSOF-19783 - Fixed 'bad allocation' error when launching d3
- DSOF-19782 RenderStream: Fixed "Unhandled transport type" when using NDI (with enableRenderStreamNDI option switch)
- DSOF-19781 RenderStream: Implemented a fix for incorrect bandwidth estimates for multiple instances of the same machine
- DSOF-19779 - ACES: Fixed 'Input Transform' field appearing for certain Texture resources regardless of Colour Management
- DSOF-19776 - Fixed the default audio buffer being too small
- DSOF-19769 - Fixed AMDADLDisplay::colorFormat throwing ADL\_ERR on headless display emulator
- DSOF-19762 - Fixed the ability to spread streams across multiple NICs on VX machines
- DSOF-19756 - Fixed an issue where RenderStream compressed wouldn't send if no adaptors are connected



- DSOF-19755 - Fixed RenderStream bandwidth estimate not updating when changing mapping or assignment settings
- DSOF-19754 - Fixed an erroneous Prompt of bit depth change when no change is occurring
- DSOF-19749 - Fixed an Access Violation when adding ANY layers in the timeline
- DSOF-19747 - Fixed GPGPU: first GpGpuResourceID always being invalid
- DSOF-19746 RenderStream: Fixed asset field not highlighting if there is a single render node and it does not have the asset
- DSOF-19744 RenderStream: Improved notification for missing render engine
- DSOF-19743 RenderStream: Fixed various RenderStreamModuleConfig errors when setting a Content Source Machine
- DSOF-19742 - RenderStream: Fixed asset sync information being missing
- DSOF-19734 - Fixed an access violation in response to RenderStream list workloads API
- DSOF-19729 - Fixed an issue where screens used in an MRset backplate Stage Render layer have an incorrect proxy level set.
- DSOF-19728 - Fixed the Cluster Workload UI not refreshing when texture parameters are added / removed
- DSOF-19727 - RenderStream - Fixed a major hang when starting up with texture parameters mapped
- DSOF-19726 - RenderStream: Fixed multiple Access Violations when starting workload if 'Channel Instances' separator is open
- DSOF-19725 - RenderStream: Fixed an Access Violation when adding new channel mapping before assigning Default ClusterAssigner
- DSOF-19716 - Fixed an issue where camera switching was not clean when using minimal latency mode with fractional frame rates
- DSOF-19708 - Fixed an issue where Camera Frustum movement only worked in Director but not in Actors when using an axis tracking source
- DSOF-19707 - Fixed an issue where incorrect names were suggested when duplicating various resources
- DSOF-19696 - Fixed an issue with RenderStream Frame request when multiple streams are served from one instance
- DSOF-19691 - Improved Feed Outputs icon

- DSOF-19688 - Fixed LUT layer missing capitalisation
- DSOF-19683 - Fixed inconsistent naming for hidden / invisible option for projectors
- DSOF-19680 - Fixed an issue with list editors field sorting not working
- DSOF-19667 - ACES: Fixed the 'Colour' separator appearing for Video layers / modules regardless of Colour Management option
- DSOF-19666 - Fixed an Access Violation when pressing Esc after deleting a layer / module
- DSOF-19659 - HoldOutputSystem: Fixed newStatusAction not being triggered on controller
- DSOF-19655 - Fixed an issue where pinning camera switching debugger didn't persist through restarts
- DSOF-19654 - Fixed Textbox / Thumbnail text not fading when hitting ESC to close widget
- DSOF-19642 - Fixed an issue where the main thread hung due to early render access < NotchLCSubsystem::doUpdate
- DSOF-19636 - Fixed an Access Violation when closing Video Input Patch Editor while previewing input
- DSOF-19635 - Fixed an issue when loading a new media resource resulted in invalid access error
- DSOF-19619 - Fixed an issue where excluded mappings were still excluded when option switch is disabled
- DSOF-19589 - Fixed an issue where the Editor's titlebutton/bar didn't always update
- DSOF-19584 - Fixed Feed Rectangle widget being missing to adjust the resolution size
- DSOF-19579 - Fixed an Access Violation when selecting prop with no mesh
- DSOF-19578 - Fixed an issue where workload status widget breaks GUI after closing RenderStream layer editor
- DSOF-19577 - Root folder box no longer shown if there are no other folder boxes
- DSOF-19576 - Pressing Escape now finds a window to close, if there is nothing focused (except fixed windows)
- DSOF-19575 - When selecting objects in the stage or venue editor lists, other currently selected objects are deselected
- DSOF-19574 - Fixed an issue where a selected layer couldn't be deleted with delete key
- DSOF-19571 - RS: Fixed Notch blocks with uppercase letters not syncing between machines

- DSOF-19570 - Fixed an issue where content appears behind camera when rendering to backplate.
- DSOF-19559 - Fixed an issue with d3service access violation and invalid Renderstream settings when parsing incomplete uproject file
- DSOF-19558 - Fixed an issue where Layer editor did not receive focus when opened
- DSOF-19553 - Improved performance when zooming in XR
- DSOF-19551 - Added Engine Sync tooltip
- DSOF-19544 - Fixed an issue where the wrong widget receives click when clicking d3 window to regain focus
- DSOF-19543 - Fixed RenderStream notifications being displayed in blank projects - unexpected workload
- DSOF-19540 - Fixed an issue where the screen in StageRender layer blurry on first frame on camera switch
- DSOF-19537 - Sticky Notes icon will no longer overlap the layers widget's name
- DSOF-19534 - Fixed d3 hanging when opening console in gui if a console file is large
- DSOF-19531 - Fixed Multiple errors when changing Colour Management option with RenderStream widgets open
- DSOF-19528 - Fixed YUV4:2:2 causing artifacting in RenderStream
- DSOF-19524 - Added notifications that active latency is higher than can be displayed
- DSOF-19518 - Fixed an issue where RenderStream camera switching wasn't clean at framerate fractions other than 1
- DSOF-19502 - Fixed an issue where RenderStream machines which have their d3service process terminated never go offline
- DSOF-19498 - Fixed an issue where the multi user session host field's tool tip prompted to enter an IP, rather than the device name
- DSOF-19497 - Renamed P3DCI spaces to P3D65 where appropriate
- DSOF-19491 - RenderStream: Fixed a 'NoneType' error when attempting to open Actions menu for unconfigured Workload in Session widget
- DSOF-19485 - RenderStream: Fixed 'unprocessed frames' error spam after failing over when Actor controls rendering
- DSOF-19483 - Fixed VFC Slot UI overlapping in Feed view

- DSOF-19479 - RenderStream Uncompressed - fixed bandwidth estimates being wrong (much too low) for Drop-Frame framerates.
- DSOF-19478 - Fixed uncompressed remote texture parameters being flipped
- DSOF-19475 - Fixed an issue where VideoInTexture: was longer visible to users
- DSOF-19470 - Fixed an access violation when setting DMX lights XML file to None
- DSOF-19468 - Fixed ACES colour inside StageRender appearing different to direct mapping
- DSOF-19465 - Expressions: fixed an error messages are overwritten with "Invalid ReflectionValue"
- DSOF-19463 - Fixed an issue where Colour Picker fights with Keying property to result in continuous flash
- DSOF-19461 - Fixed an issue where Tooltips are always present when "Only When f1 is Pressed" is selected and help widget has been open and closed once
- DSOF-19459 - Fixed an issue where uUnticking all Histogram channels creates exceptions
- DSOF-19458 - Fixed an issue where Warp Deformation Layers "green/brown" activation rectangles are incorrectly displayed
- DSOF-19447 - Fixed an issue where feed rectangle selections don't show individual resolutions/positions but boundary ones instead
- DSOF-19439 RenderStream: Fixed an error when attempting to start a UE workload with an Understudy
- DSOF-19438 RenderStream: Fixed 'frame response error' when failing over
- DSOF-19437 - RenderStream: Fixed an Access Violation when starting workload
- DSOF-19435 - Fixed multiple Access Violations and NoneType error when undoing duplicated layer mapped to PreComp
- DSOF-19426 - Fixed "invalid stoull argument" when mis-typing dmx expression so that there is a letter instead of a number for the universe or channel
- DSOF-19424 - Fixed failing over to a understudy using RS, displaying a '!!!! input.size() < output.size()' error
- DSOF-19422 - Fixed an issue where an error thrown and 0KB file created when attempting to export EXR screenshot not in 10-bit mode
- DSOF-19420 - Fixed an issue where the Colour Picker dropper makes colour selection when Esc is pressed

- DSOF-19419 - Improved performance when using the Colour Picker
- DSOF-19412 - Improved the visibility of the toggle warp grid button
- DSOF-19409 Fixed an issue where it was not possible to export OBJ files
- DSOF-19407 - Fixed an Access Violation when exporting current camera view
- DSOF-19405 - Fixed an issue where Filmed & Set Extension were not being rendered on Actors
- DSOF-19395 "discarding request" message when launching many RenderStream assets
- DSOF-19391 - RenderStream: Fixed an issue with invalid unordered\_map <K, T> key when attempting to start workload
- DSOF-19387 - RenderStream: fixed failover failing if unassigned streams conflict
- DSOF-19386 - RenderStream: fixed failover potentially causing the standby instance to fail
- DSOF-19381 - Reduced internal renderstream console logging if engine does not set custom logging functions
- DSOF-19360 - Fixed an issue where you could not select properties of MR set active camera using expressions
- DSOF-19356 RenderStream workload control API - Fixed an issue sending start for an already started workload restarting the workload
- DSOF-19331- Fixed RenderStream layers becoming stuck in "Awaiting Requests" status, restarting d3 restores functionality
- DSOF-19330 - RenderStream: Fixed a crash on shutdown when not running workload/in UE editor
- DSOF-19329 - Added GPGPU VRAM usage in vmem readout
- DSOF-19328 NotchHost: Fixed an issue where unrelated notch blocks will be hot-loaded and stall streams
- DSOF-19327 - Fixed an issue where CITP incorrectly converts UTF-8 to wstring
- DSOF-19325 - AssetLauncher: Fixed an issue where a failure to resolve a shortcut aborts process
- DSOF-19317 - Fixed performance drop when a track with precomps duplicated multiple times
- DSOF-19313 - Fixed an issue where the Profiler could not be opened
- DSOF-19311 - Fixed an issue where Notch host instances accumulated when restarting renderstream workloads, leaving zombie instances which aren't killed

- DSOF-19307 - Fixed console spam when using direct maps with Notch Host Renderstream
- DSOF-19306 - Fixed the error notifier continuously flashing
- DSOF-19305 - Fixed VideoIn images not being captured for blob detection
- DSOF-19301 - Fixed an issue where most controls are disabled when a colour picker is open
- DSOF-19298 - No cursor when colour picker dropper is active
- DSOF-19296 - Fixed the colour picker dropper causes main thread to hang and spam access violations
- DSOF-19295 - Fixed a discrepancy between video clip data rate in tooltip and widget
- DSOF-19279 - Fixed a issue where, on RS start after changing cluster pool, notification "Failed to find session node for workload instance id: XXXXXXX" was present
- DSOF-19278 - Made fields of axistrackingsource nullable
- DSOF-19277 - Fixed after Alt + Tabbing out of d3 - focus was stolen back by d3
- DSOF-19264 - XR: Fixed an error when attempting to open Coordinate System debugger with 2+ observations taken from the same position
- DSOF-19263 XR: Fixed an issue where Lens Poses were not removed when all relevant observations have been individually deleted
- DSOF-19261 XR: Fixed an error when attempting to open Coordinate System debugger with Calibration Scope 'Registration Only' or any Calibration Scope and manual observations
- DSOF-19257 - Fixed an issue where restarting a single or multiple machines in a d3net session doesn't bring them back online
- DSOF-19255 - Fixed an issue where the ath in fullscreen notification when exporting current camera frame / view is empty
- DSOF-19254 - Fixed Unicode characters not being supported in d3 projects path
- DSOF-19251 Camera: Fixed an issue where venue objects could still be lasso/shift-selected when venue visibility is off
- DSOF-19250 - Fixed an issue where Spherical camera rendered stage with reversed z order
- DSOF-19245 Notch: Fixed LoadDFX fails with unicode block paths
- DSOF-19244 - Fixed an issue where process creation does not support unicode paths
- DSOF-19242 - Fixed an issue where SyntaxError spammed the console when newlines are present in Web layer string fields

- DSOF-19240 - Fixed being unable to reset OmniCal QuickAlign lineup
- DSOF-19238 OmniCal: Fixed being unable to open View Calibration
- DSOF-19237 - Fixed Esc + Enter shortcut not presenting confirmation dialog
- DSOF-19235 - Layer Stack: Fixed video playback speed being doubled when in 'Normal' mode
- DSOF-19229 - Uxfade: Fixed an access violation in PlayHead::playModeChanged
- DSOF-19221 - Fixed the format field in video input patch not updating immediately when input format is changed
- DSOF-19214 - RenderStream is now spelt correctly in RenderStream machine settings
- DSOF-19208 - Fixed an issue where Async file loading meant that max width and height values in SlugFont were not initialised if extent is called too early
- DSOF-19207 - Fixed Slug rendering slightly wider than previous DxFont for the same point size and font
- DSOF-19205 - Fixed Callsite specified text scaling no longer working in font rendering
- DSOF-19203 - Text objects now cache scale and rebuild dynamically when scale changes
- DSOF-19190 - XML Workflow - Fixed an Access Violation when loading XML files without a fixture
- DSOF-19187 - Fixed an issue where an empty session name crashes all comms instances
- DSOF-19183 - Fixed an error thrown when attempting to Add Observation without having expanded Blob Settings separator
- DSOF-19180 - Fixed Renderstream not working if controller machine is replaced by understudy
- DSOF-19178 - Fixed an issue where d3 cannot run with embedded display manager due to not being able to share channels within a single comms node
- DSOF-19163 - Fixed an issue where dragging Vicon device out of the list in device manager and re-adding it requires a restart of d3 before Vicon data is received again
- DSOF-19162 - Fixed an issue where stopping and starting Vicon streaming data, the d3 Vicon device did not reconnect
- DSOF-19153 - Fixed an issue when a multi-user session is in use with UE saving the scene, a crash could occur
- DSOF-19152 - Fixed an issue where faces / vertices / edges culled by Face Cull Mode were still selectable

- DSOF-19123 - Fixed an issue where video layers in layer stack flickered
- DSOF-19122 - Fixed a NoneType error when opening profiler - machine double-unsubscribed
- DSOF-19115 - Fixed an issue where project diagnostics would try to compress files that are much too large
- DSOF-19103 - Fixed: Content Table Export - Feature exports all tracks instead of selected
- DSOF-19095 - Fixed asset source error being shown in the wrong place
- DSOF-19093 RenderStream: Fixed an issue where there was no way for a follower to know if streams changed
- DSOF-19070 - Fixed an issue where the first slice of RenderStream Uncompressed is offset incorrectly when padding is set
- DSOF-19062 - RenderStream: Fixed stream conflict when splitting Unreal workload across multiple render nodes
- DSOF-19054 - Fixed an issue when RenderStream versions did not match, d3 would hang when opening the Cluster Workload tooltip window
- DSOF-19049 - RenderStream: Fixed an issue where assignment forecast does not show manually assigned fragments
- DSOF-19046 - Fixed an issue where genlock indicator was mis-matched between Session monitor and Feed View
- DSOF-19045 - Fixed an issue where you would be unable to open editor of 'New luma keyed input' if closed
- DSOF-19042 - Fixed an issue where system diagnostics did not store log files created in Saved folder of Unreal projects
- DSOF-19027 - Fixed an issue where dragging left/right to adjust parameters can sometimes result in values outside of the min/max range
- DSOF-19017 - Improved UI to sign post error with preferred network setting in assigner after IP has changed
- DSOF-19015 - Fixed an Access Violation launching RS workload when engine-specific settings object has not been created
- DSOF-19013 Fixed: "WorkloadManager: Attempted to update running process for workload instance that doesn't exist" notification when using 2 x RS layers, each with a different workload controller
- DSOF-19011 - Fixed an issue where MR set content was not rendering at overscan resolution



- DSOF-19008 - Fixed an issue when adding a layer to the stack, remnants of the layer creation window floated around
- DSOF-18998 - Fixed an issue where direct-mapped UE Renderstream content stretched to fit screen
- DSOF-18994 - Fixed an issue with RenderStream API not responding with RenderStream layers which haven't been started
- DSOF-18981 - Fixed "object has no attribute 'previewShowAlpha'" error when opening layer editor for TransportControl layer / module
- DSOF-18971 - Fixed an issue where opening the debug menu created access violations
- DSOF-18967 - Fixed an issue where selecting edit on a layer in the stack that already has its editor open will close that editor
- DSOF-18959 - Fixed an issue where several layer stack changes could not be undone/redone
- DSOF-18957 - Fixed an issue where MR set components don't update camera proxies
- DSOF-18935 - Fixed an issue where Pickwhipping Surface Brightness to open layer did not populate parameter name
- DSOF-18934 RenderStream: Fixed an issue where stream width not divisible by 8 results in missing pixels in slices
- DSOF-18932 - Fixed an issue where renaming multiple layers does not increment properly in Layer Stacks
- DSOF-18891 - Fixed an issue where Bitmap colour palette did not change if the RGB values are manually selected
- DSOF-18889 - Fixed a segmentation fault thrown by layer tests
- DSOF-18884 - Fixed the fade layer / module being broken
- DSOF-18882 - Fixed being unable to undo pre/post input transform
- DSOF-18877 - Fixed a deadlock in RenderStream comms/logging functions
- DSOF-18819 RenderStream: Fixed an issue where workloads which choose to shut down cleanly appeared as crashed
- DSOF-18812 - Fixed an audio output buffer error on startup, stopping any audio output device from working
- DSOF-18774 - Fixed objects that aren't "on stage" taking mouse selection

- DSOF-18765 - Fixed an issue where the speed value of 1 didn't work after being set to 0 in the videotransition module
- DSOF-18762 - Fixed an issue where d3 returned "has an exposed parameter of unsupported type "float4"" after loading a notch block
- DSOF-18754 - Fixed an issue where forcing slow streams (25FPS) to run at 50FPS causes bandwidth usage to be double what is shown in the bandwidth estimate tool
- DSOF-18753 - Improved RenderStream bandwidth usage
- DSOF-18742 - Fixed RenderStream Frame Response Error
- DSOF-18739 - RenderStream: fixed an issue where if default maps are set to 'None' but the scene selection is set to 'Maps', UE scenes will crash on startup
- DSOF-18737 - Fixed an issue where workload widget could not be opened if no machines are online in the cluster pool
- DSOF-18734 - Renderstream: Fixed Compressed RS "Packet Loss detected" and stream flashing gray
- DSOF-18733 - Fixed an issue where a RenderStream Uncompressed stream definition did not take into account layer framerate fraction.
- DSOF-18714 - Fixed an issue where the tracker delay tool rendered overlaid lines as white
- DSOF-18713 - Fixed an issue where the tracker delay calibration tool rendered wrong lines for complex mesh
- DSOF-18693 - Fixed an issue where d3 could not export a Projector Study if one already exists
- DSOF-18690 - Fixed an issue where the stage render layer didn't render to multiple viewpoints properly
- DSOF-18689 - Fixed an issue where removing list controller from MR set didn't set target to None
- DSOF-18665 - Fixed an issue where the window size grows by number of nodes when disableUnrealConfigUpdate enabled
- DSOF-18642 - Fixed an issue where the measurement arrow was no longer being displayed
- DSOF-18637 - XR: modified behaviour of taking manual observations when Alignment Object set to "None"
- DSOF-18635 - Fixed an issue where the MultiChannelMapping editor couldn't show all feed mappings in list
- DSOF-18629 - Fixed an issue where deleted LayerStack modules stay popped up

- DSOF-18624 - Fixed an issue where dragging on property to modify the value only worked on the label itself
- DSOF-18603 - Fixed an issue where a video layer sequenced with speed 0 followed shortly after by an increased speed will repeatedly prefetch incorrect frames
- DSOF-18600 - Fixed an issue where playing NotchLC at low speeds causes periodic spikes in CPU load
- DSOF-18579 - Fixed render nodes showing as "Idle" in d3manager when workload is running
- DSOF-18572 - Fixed an issue where d3service would crash if you have a circular shortcut in your Renderstream Projects folder
- DSOF-18559 - Fixed Batch-Process OCL Interop Locks
- DSOF-18553 - Fixed an issue where starting a stream after stopping it prompts error message
- DSOF-18548 - Fixed an issue where if the director is not subscribed to a RenderStream, active latency gets stuck at a high value
- DSOF-18527 - RenderStream: Fixed an issue where adding a machine 2+ times to a ClusterPool along with another machine results in false subnet error
- DSOF-18525 - RenderStream: Fixed an issue where 'Restart' after failover left old Notch Host instances running
- DSOF-18513 - Fixed an issue where all render nodes are shown in error when an error effects any of them
- DSOF-18496 - ACES: Fixed 'Input Transform' field appearing twice in Camera editor widget
- DSOF-18490 - Cannot start d3 when large number of machines are on the network
- DSOF-18481 RenderStream: Fixed 'workload instance mismatch' error when starting RSUC workload with 3 machines
- DSOF-18479 - Improved performance in feed view with lots of screens / projectors
- DSOF-18474 - Fixed 'TLS initialization failed' error when starting d3 or RenderStream workload
- DSOF-18464 - Network widget 'mark as failed' button is no longer greyed out
- DSOF-18452 - Fixed mobile editors that join a session reporting themselves as offline nodes until project restart.
- DSOF-18450 - Fix Module search to matches correct names
- DSOF-18445 - Fixed an issue where machine status widget goes off screen when many machine renderstream machines exist

- DSOF-18417 - RenderStream: Fixed an issue where streams could occasionally drop before recovering
- DSOF-18414 - Fixed critical graphs sometimes not updating
- DSOF-18403 - Fixed an issue where d3 dropped frames when running 12k x 2160 renderstream over 4 x4k outputs
- DSOF-18400 - Fixed RenderStream Uncompressed sending applications failing to send with cudaErrorAlreadyMapped
- DSOF-18375 - Fixed an issue where no\_devices\_with\_ip error did not call out the fact that you cannot set 169 or 255 as the first octet.
- DSOF-18372 - Fixed an issue where starting up a director with an actor already in session will force the director to wait for 120 second timeout to launch,.
- DSOF-18369 - Fixed an issue where Content Source Machine cannot be populated immediately after populating machines into cluster pool
- DSOF-18358 - Fixed an Access Violation when setting a machine from editor -> director with enableMediaStaging option switch set
- DSOF-18345 - Fixed ValueBox expressions being incorrect for resources with sub-paths
- DSOF-18341 - Fixed serialization helpers silently failing
- DSOF-18340 - Fixed an issue where a mismatch between machine name and host name prevents RenderStream discovery
- DSOF-18329 - Fixed Timecode tags not going red when track gets duplicated
- DSOF-18268 - Fixed d3 installer overwriting custom RenderStream Projects Folder registry key
- DSOF-18240 - Fixed an issue where a hang would occur on closing d3 when ingesting bad file
- DSOF-18205 - ACES: Fixed RGB values being incorrectly converted to DMX values when mapped to DMX screens or DMX lights
- DSOF-18190 - Fixed an issue where the output feed turned red when surface is out of stage view.
- DSOF-18179 - Fixed Unpacked apx files in project resulting in an illegal attempt to create an absolute folder path
- DSOF-18149 - Fixed machine role logging not being called often, which can lead to old and incorrect information in the console
- DSOF-18129 Renderstream: Fixed CUDA error: cudaErrorMemoryAllocation - out of memory

- DSOF-18065 RenderStream: Fixed an issue where schema from machines not in the ClusterPool read
- DSOF-18032 - Fixed a typo in console\_d3service.txt when indicating the adapter index
- DSOF-17948 RenderStream: Fixed Content Source Machine should reporting as out of sync if used as render node
- DSOF-17947 RenderStream: Fixed schema / JSON changes not synchronising on Sync
- DSOF-17941 Omnical: Fixed an issue where calibration reports could not be reopened once the project has been closed
- DSOF-17886 - Fixed an issue where the GUI did not update on Director when muting a layer on an Editor (while locked to Director)
- DSOF-17792 RenderStream: Fixed workload crashing when terminating d3
- DSOF-17648 - Fixed an issue where isRenameTableEnabled created "phantom" entries
- DSOF-17579 RenderStream: Fixed an issue where Bandwidth Estimate table caused Workload Instances to become misaligned
- DSOF-17534 RenderStream: Fixed an issue where Engine Health reported as "Error" when failed over
- DSOF-17514 - Fixed an issue where content rendered from tracked perspective of Camera out of sync between machines
- DSOF-17512 Fixed an issue where RenderStream layers report receiving health 'good' when it's not.
- DSOF-17511 RenderStream: Fixed an issue where the instance status in Cluster Workload widget was not always correct
- DSOF-17489 - Fixed an issue where Images reprojected badly on bad camera switch
- DSOF-17457 - Fixed an issue where Symbols cannot be loaded for encrypted dlls
- DSOF-17368 - Fixed an issue where you could multi-select actors in ActorStatusWidget but could not issue actions against the whole selection
- DSOF-17364 - Fixed an issue where IdentityDomain had one less resource than the resource system at first project run
- DSOF-17342 - Fixed an issue where RenderStream attempted to use unplugged adapters for ndisplay sessions
- DSOF-17284 - Fixed an issue where console files have unix line endings, causing incorrect formatting in certain applications

- DSOF-17255 - Added .rc files to d3assetlauncher, d3renderstream and d3renderstreamsendsend
- DSOF-17148 - Fixed an issue where after assigning a dmx table to a screen, d3 adds two empty lines in the CSV file.
- DSOF-17133 - RenderStream: Fixed a workload command failure when attempting to quit multiple Unreal streams on single machine
- DSOF-17121 - Fixed an Access Violation reinstating mr set to stage list that has had it's led screens removed
- DSOF-17052 - Fixed an issue where on AvailableStreamsChanged logged on any comms node leaving the session caused false logging and excessive spam
- DSOF-16993 - Fixed an issue where Actors that hang on launch would cause the Director to never start due to waiting for project sync behavior
- DSOF-16910 - RenderStream: Fixed an issue where the wrong log was used for multiple instances on a single render node
- DSOF-16853 - Fixed the Installer not creating start menu shortcut to d3 manager on a RX
- DSOF-16748 - Fixed an issue where turning off machines currently in the cluster workload while the Workload widget is open caused an error
- DSOF-16716 - Fixed an issue where leaving a layer name blank meant you cannot then rename it
- DSOF-16661 - RenderStream: Fixed bound-check error when sync task is removed from list and notification still open
- DSOF-16603 - RenderStream - Fixed Access Violations when starting d3 with an existing Unreal workload still running on rx's
- DSOF-16597 XR: Fixed 'no active viewports' error when MR Set has no target camera
- DSOF-16469 - Fixed an issue where a machine rejoining a session was reported as expired
- DSOF-16417 - Renderstream: Fixed editor's RenderStream layer statuses not matching servers in the session
- DSOF-16416 RenderStream: Fixed an issue where Editor machines repeatedly log 'Unable to create video capture stream' notifications while in session with a machine running uncompressed RenderStream
- DSOF-16389 - Fixed an Access Violation on attempting to start workload with no mapping assigned to a channel
- DSOF-16256 - Fixed being unable to set separate overscan components for RenderStream

- DSOF-16072 - Provided an indication that d3 is not fullscreen when it expects to be and vice-versa
- DSOF-15553 - Fixed an issue where the feed mapping editor showed white screens in a Notch. Then shows the first pixel in future use
- DSOF-15452 - Warn users when the DxTexture / VideoFile is greater than the local limitation
- DSOF-14796 - Fixed Text/Images on the Virtual Lineup Layer being at the wrong proxy level
- DSOF-14313 - Fixed Spatial maps rotating around the wrong point
- DSOF-13470 - Fixed an issue where reference points created after creating a point outside mesh will lead to RT: topological sort notifications
- DSOF-12837 - Fixed an issue where looping within a section with loop play mode occasionally played content of first frame in next section
- DSOF-12387 - Fixed an issue where tRender quality degraded over time, causes stuttering playback after a few hours
- DSOF-12246 - Fixed an issue where props in stage could not be selected/deselected via the Venue editor window.
- DSOF-10962 - Fixed an issue where generated EDIDs were not compatible with all HDMI devices, and may fail to acquire correct mode/bit depth/sampling in some situations
- DSOF-10868 - Fixed ideoClip bit depth is not being propagated from VideoFile after ingest
- DSOF-9815 - Fixed an issue where fade up/down/hold with an editor in independent mode affected the master
- DSOF-8936 - Fixed an issue where isolating a group mutes every layer on the timeline
- DSOF-8817 - Fixed an issue where hidden objects can still be interacted with
- DSOF-6599 - Notch: Fixed DfxSystem incorrectly matching different blocks on filenameAndExtension
- DSOF-4904 - Fixed an issue where the sticky pin icon could be lost when editors or cue list refreshes
- DSOF-3319 - Fixed an issue where sSetting track total length to 0, then change to non-0, might not show the newly set time