



Viz Engine Release Notes

Version 5.2



Viz Engine



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There are general best-practice solutions, these include setting the antivirus software to not scan the systems during operating hours and that the Vizrt components, as well as drives on which clips and data are stored, are excluded from their scans (as previously stated, these measures cannot be guaranteed).

Technical Support

For technical support and the latest news of upgrades, documentation, and related products, visit the Vizrt web site at www.vizrt.com.

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1 Viz Engine 5.2.1

Release Date: 2024-03-20

These are the release notes for Viz Engine version 5.2.1. This document describes the user-visible changes that have been made to the software since release 5.2.0.

1.1 Improvements: Renderer & Video IO

Summary	Key
LUT support for UE AR graphics	VIZENG-31157
Use GPU copy engine for input transfers	VIZENG-31062

2 issues

1.2 Fixed Issues: Renderer & Video IO

Summary	Key
Random crash during switching of clips in stage in b2b playback	VIZENG-31141
Changing image in the Properties Window doesn't refresh the image in tree and the Properties image icon	VIZENG-31122
Sequence defocus animation can't be saved in the scene	VIZENG-31121
Playing HAP clip to the end will result in error flood	VIZENG-31092
Multiplexer port becomes unresponsive after restarting Connection Broker	VIZENG-31081
Renderer: Subscenes consume too much GPU memory	VIZENG-31074


Summary	Key
Set H/V Phase on Bluefish via BlueToolbox	VIZENG-31057
Viz Engine crash after opening and closing page editor in Channel Branding	VIZENG-31016
Renderer preview command causes flash on the program output	VIZENG-31008
Third taken element results in blank channel when using the same element	VIZENG-31002
Engine does not exit on some laptops	VIZENG-31001
Crash when merging containers with subscenes and control channels	VIZENG-30946
Bad quality on interlaced clips with VML player due to wrong polarity assignation	VIZENG-30710
Engine can't load PNG images with ancillary data over HTTP	VIZENG-30702

14 issues

2 Viz Engine 5.2.0

Release Date: 2024-02-07

These are the release notes for Viz Engine version 5.2.0. This document describes the user-visible changes that have been made to the software since release 5.1.1.

 **Note:** Viz Artist maintains its release notes in a separate document starting from version 3.12.0.

2.1 Installer Notes

2.1.1 General

The Software ships with a bundle installer containing all necessary components. It is recommended to use the bundle installer when setup needs to be done manually.

- The Setup application (both MSI and Bundle installer) must be run in Administrator mode.
- Visual C++ Redistributable files are no longer part of the *.msi* setup file. These files are now installed with the bundle setup application (VIZENG-13210, VIZENG-12629, VIZENG-12701).
- The bundle setup application installs or upgrades Viz Artist together with its required Visual C++ Redistributable files (VIZENG-12936, VIZENG-13804).
- All files contained in the bundle setup application can be extracted using the `/dump` command line option. This creates a sub-folder where the files are extracted (VIZENG-13020).
- Multiple installations of Viz Engine are not supported.
- The installer automatically upgrades (replaces) any existing Viz Artist/Viz Engine 3.x installation. However, downgrading is currently not supported (VIZENG-7098).
- If Adobe After Effects is installed after Viz Engine, then the Viz installer needs to be executed again to install the AE plug-in (VIZENG-7876).
- The user account must have *SeCreateGlobalPrivilege* (SE_CREATE_GLOBAL_NAME) enabled.
- The configuration profiles shipped with Viz Engine guarantee a correct Audio/Video delay to have a proper lip-sync setup or a correct video wall installation. A manual configuration (for example, number of inputs, clips, etc.) is still necessary after applying these profiles (VIZENG-18861).
- To use Global Illumination in Viz Artist/Viz Engine, at least Direct X version 9 is required. An installer can be found here: <https://www.microsoft.com/en-us/download/details.aspx?id=8109> (VIZENG-19983).
- The Basic, Viz DataPool, Viz PixelFX, Viz Maps, Viz Extension and Viz Socialize plug-ins are released together with Viz Engine starting with version 4.0.0 and are included in the bundle installer. The basic plug-ins are installed by default.

2.1.2 Windows

- This software has been tested to run on Windows 10 (LTSC 1809), Windows 11 and Server 2019 and Server 2022.
- Windows transparency effects should be turned off (former known as Aero). In Windows 10 set **Show transparency in Windows** to `Off` in **Settings > Display** and **Transparency effects** to `Off` in **Settings > Personalization > Colors > More options**.
- Power management and hibernation mode must be turned off under Windows. You can execute `powercfg -h off` to remove `hiberfil.sys` from the hard disk.
- It is recommended to install the latest Windows Security Updates and Patches, except NVIDIA updates.
- Installations on Windows 10 are only supported on their respective supported hardware (see [Supported Systems](#)).
- Dot.NET framework 4.5 or higher is required (VIZENG-6036).
- The minimum Windows Installer version is now 5.0.0 (VIZENG-10146).

To run Viz Engine without Administrator privileges, you need to grant the following permissions:

- *SeIncreaseBasePriorityPrivilege*
- *SeCreateGlobalPrivilege*
- *SeCreatePagefilePrivilege*
- *SeIncreaseWorkingSetPrivilege*

2.1.3 UAC

- Viz Engine is UAC aware. Configuration files, profiles, log files, and additional files are stored in `%VIZ_PROGRAMDATA%`, which defaults to `%ProgramData%\Vizrt\VizEngine`. Temporary data is stored in `%VIZ_TEMPDATA%` which defaults to `%TMP%\Vizrt\VizEngine`. The default value can be changed in the command line of `viz.exe`.
- Existing Lens files are copied from `%ProgramFiles%` install folder to the new UAC aware `%ProgramData%` folder during installation (VIZENG-8757).
- Existing Viz configuration files are copied from `%ProgramFiles%` install folder to the new UAC aware `%ProgramData%` folder during installation (VIZENG-7472).

2.1.4 Cinema 4D

- Cinema 4D LiveLink Installation: The installer searches the following location first: `%ProgramFiles%\MAXON\CINEMA 4D R16\plugins` (VIZENG-7965).
- Cinema 4D LiveLink package can be installed any time later by using Viz Artist Installer in Repair mode. Its installation folder is not selectable anymore (VIZENG-8996).
- Cinema 4D R23 or newer: LiveLink plug-in is available at `%ProgramFiles%\Vizrt\VizEngine\CINEMA 4D LiveLink\R23` (VIZENG-25344).

2.2 Driver Versions

These are the recommended driver versions for various hardware components:

Vendor	Driver Version
NVIDIA Ada Lovelace	528.89
NVIDIA Ampere, Turing, Volta, Pascal and Maxwell GPUs	516.59 <div style="border: 1px solid #ccc; padding: 5px; margin-top: 5px;"> <p>i In case Unreal 5.2 must be used, 528.89 is mandatory.</p> </div>
NVIDIA Kepler GPUs	473.47 (419.17 for older boards)
Matrox Topology based boards	10.4.101.1285
Bluefish	6.5.1.22
Bluefish Supernova Firmware	162
AJA	16.1.0.3 Firmware 2021/06/23
Codemeter Runtime Kit	7.60d
AV PCL/PCI Plura Timecode Reader	5.34

2.2.1 NVIDIA Drivers

i **Information:** Please refer to https://nvidia.custhelp.com/app/answers/detail/a_id/4777/~/nvidia-dch/standard-display-drivers-for-windows-10-faq for information about the DCH and Standard driver versions and how to install a missing NVIDIA control panel.


NVIDIA driver 528.89 is recommended for GPUs with Ada Lovelance Technology. Ampere, Turing, Volta, Pascal or Maxwell Technology cards have been tested with 516.59 only.

A driver upgrade is not recommended in general.

Kepler GPUs are not recommended anymore, however they might still work using older driver version 473.47. Boards that do not support this version of the driver should use rev. 419.17.

NVIDIA driver configuration (Manage 3D settings):

Setting	
Vertical sync	Force Off (except Videowall and systems without video hardware)
Unified Back Buffer	Off
Power management mode	Prefer maximum performance
Antialiasing mode	Enhance the application setting
Antialiasing setting	4x (4xMS)
Profile	Workstation App - Dynamic Streaming profile (for systems with video hardware) 3D App - Video Editing (for systems without video hardware)

 **Important:** Viz Engine will not start if an outdated driver is used.

2.2.2 Matrox Drivers

- For Matrox video cards, driver version [10.4.101.1285](#) is required. This version is mandatory. Pre-release versions are not supported.
- Uninstall previous versions of Matrox DSXUtils prior to installing this driver.
- Install drivers (*DSX-TopologyUtils.exe*) only from a local drive.
- Reboot between uninstall and install of drivers, and another time after the installation has finished.
- The Vfw codecs are included in this driver, so uninstall previous versions of the Matrox Vfw codecs and do not install any Matrox Vfw codecs over the regular driver installation.

2.2.3 Other Drivers

- The latest firmware for Supernova and Supernova S+ is 162.
- The latest firmware for Neutron is 1i2o 35. There is no longer 1in1out firmware.
- The recommended firmware for AJA IO4K+ devices is 2021/06/23.
- The recommended driver version for Plura AV timecode reader cards is 5.34.

Please refer to the [Viz Engine Administrator Guide](#) for which drivers and driver settings to use.


Given that a supported Matrox device is installed, the following codecs are supported for post-rendering with MatroxFileWriter and the ClipOut channels:

- RLE (animation), playback only
- H.264

- Apple ProRes
 - HDV
 - XDCam
 - DVCPro
 - DNxHD (4849)
 - XAVC (UHD requires M264 board)
 - The `clog` command now includes all child processes. Upon abnormal end, all child processes are terminated before a restart is attempted (VIZENG-11361).
-

2.3 Upgrade Notes

- All plug-in installers are installed per-machine starting with 5.2.0. Uninstalling all previous per-user plug-in installations before upgrading is recommended to avoid duplicated installer entries.
- The configuration file for Viz Engine has a new naming scheme starting with version 4.0, and can be found at `%ProgramData%\Vizrt\VizEngine\VizEngine-{instance}.cfg`.
- Existing Viz 3 configuration files, Genlock and IP configuration settings are migrated automatically by Viz Engine.
- Viz Engine version 4.x and later no longer support Viz IO.
- GPU Direct is no longer needed.
- The old Shared Memory output is not supported on the Viz Engine Pipeline.
- Scenes using the BrowserCEF plug-in automatically migrate to use the new Browser plug-in.
- The command interface is not locale-aware. Therefore, special regional settings like a semicolon within float numbers will not work. You need to use a regular "."

 **Information:** Viz Engine is not forward-compatible. Opening scenes created in this version of Viz Engine might drop warnings when opening in previous versions.

2.3.1 Licensing Model

- The CodeMeter Runtime (installed with the bundle installer) is required to use the WIBU license system. Details can be found in the manual in section "WIBU-based Licensing System". Please refer to the [documentation](#) on how to apply a license container.
- Cloud-based installations require a license server; standalone cloud installations are not supported.

2.3.2 Other Upgrade Notes

- X.open dongles are no longer supported because of missing USB driver support for Windows 10.

- Viz Engine is not forward-compatible! A scene saved with this version might look different if you open it in a previous version. This affects scenes containing more than four streaming channels.
- Viz Engine does not support half-height rendering anymore.
- Lens distortion uses a slightly different norm since revision 54263. If you need older lens files, please use `use_lens_compatibility_mode = 1` in the config file.
- Viz Artist is now being started by the Viz Engine process and not by command file anymore. If you start `viz.exe` and `VizGui.exe` independently, the **Restart Current** option fails.

A 64-bit version of each codec must be installed to work with Softclip64. Most codecs come with an installation manual on how to install them correctly.

Softclip64 has been tested to work with the following 64-bit codecs:

- HuvYuff Version 2.1.1
- Lagarith Version 1.3.27
- Newtek SpeedHQ

2.4 Virtual Environments









The following GPUs are currently supported (Kepler are only supported in the Classic Render Pipeline):


The following GPUs have been tested in virtualized environments, the listed driver version is the one being used.

GPU			
A10G (528.89)	NVIDIA RTX6000 (462.31)	NVIDIA T4 Tensor Core (528.89)	NVIDIA M40 (377.35 only)
A40 (462.31) ⁽²⁾			NVIDIA M60 (528.89)
(1) Classic Render Pipeline only. (2) Tested on A40-8Q.			

Viz Engine has been tested to run in the following virtual environments:

	Viz Engine Render Pipeline	Classic Render Pipeline
Amazon Cloud (AWS)		

<ul style="list-style-type: none"> Amazon EC2 G5 Instances Amazon EC2 G4dn Instances Amazon EC2 G3 Instances 		
Microsoft Azure ⁽¹⁾		
<ul style="list-style-type: none"> Standard_NCv3 Series Standard NV Series 		
fra.me/nutanix ⁽¹⁾	not tested	
VMWare ESXi (6.0 ⁽¹⁾ , 6.50 ⁽¹⁾ , 7.02)		
Alibaba Cloud ⁽¹⁾	not tested	
(1) Tested with Engine 5.0.0 only		

 **Note:** Backup and Restore on Azure systems are currently not supported.

2.5 New Features

2.5.1 Key Features

Summary
Security: Upgrade Dependencies
Improvements & Fixes for Non-Matrox based Video Boards
VML Clip Player Improvements
UE 5 Compositing Improvements
Upgrade Matrox SDK 10.4

Summary
Enhanced Multiplay Support
Enhanced WebRTC Support
Unreal Engine 5.3 Support
Video Wall Color Correction
Clip Player Improvements
Viz Engine Renderer video wall support - Stage 2
New Audio Pipeline - Stage 2
Video I/O Enhancements & Fixes
UE 5 Workflow Improvements
Viz Engine Renderer Enhancements
Viz Engine Renderer Sports Sequences
UX Improvements

17 issues

2.5.2 New Features: General

Summary
Add functionality to set and retrieve plugin display name
Control merged geometry workflow on a per-scene basis
Don't process commands on Gfx/Superchannel ports in Artist mode
Enable Clip Player Pro for Preview Core

Summary
Expose color correction parameters for Inputs in Linear Mode
Feedback for shader compile status
Get Render Engine version via Scripting
Increase amount of media assets to 32 per type
Precision Keyer Saturation Control
Renderer: Support Live Virtual Presenter case
Scene View Rendering Support in Viz Engine Renderer
Superchannel: Allow usage of same LIVE input in texture mode
Support RTX 4000 Ada
Support Workspace update in subscenes
Support automatic update of Workspace when on-air
Upgrade Wibu Code Meter version to 7.60d
Visual indication of inactive media assets

17 issues

2.5.3 New Features: Renderer

Summary
Disallow geometry creation outside PLUGIN_NEW_GEOM
Editing image with internal editor does not get reflected until Viz Engine restart
Expose color correction parameters for Inputs in Linear Mode

Summary
Normal Map does not work on the sides of extruded text
Renderer: Add Alpha Mask support to materials
Renderer: Split Color correction from ToneMapping
Renderer: Support Live Virtual Presenter case
Renderer: add arena sequence compositing
Renderer: drop OutputDelay completely
Renderer: enable "arena image based" sequence
Renderer: improved setting non-preloaded textures on-air without framedrops
Renderer: make usage of MSAA optional (like lens distortion)
Renderer: support Outline option in Expert plugin
Renderer: support Wireframe mode in Scene Editor
Renderer: support texture matrix in shadow shader
Renderer: support transparent shadows
Scene View Rendering Support in Viz Engine Renderer
Show the last frame from Unreal in case it crashes
Substance/Texture renderer sharing across scenes
Support Unreal Engine 5.3
Support Workspace update in subscenes
Support automatic update of Workspace when on-air

Summary
Texture Slot support for Texture Renderer
TextureSlot: support premultiplied alpha setting
UE: Change Viz connecting messages to Verbose to avoid spamming the console when unnecessary
UE: Composite Soft Mask on Vizrt Precision/Replacement keyers
UE: add auto-capture settings to editor settings
UE: adding the functionality of changing the roughness of AR object reflected on the Composite Mesh.
UE: send back view + projection matrices with aux
Update DLSS render sequence node to use DLSS 3.5.0

30 issues

2.5.4 New Features: Video IO

Summary
Add SHM timeouts to the config
Increase amount of media assets to 32 per type
AV1: Optimised CPU Decode
Support different clock sources in software IO mode NDI
WebRTC output without matrox workflow
Asynchronous Output for SHM
Expose color correction parameters for Inputs in Linear Mode

Summary
WebRTC support without preview window enabled
Audio thread optimization on resampling
VML Clip Player: Extend support for additional RGB Pixel Forms
Extend support for YUV Planar pixel formats in Clip Player
Add Support for webp Image Format
Improved timing and stability of software IO mode NDI
VML Clip Player: Add Basic CPU Decode Support for AV1
Finer granularity for SHM timeout value(s)
Allow NDI output to be disabled with software IO mode NDI

16 issues

2.6 Fixed Issues

2.6.1 Fixed Issues: General

Summary
Fix behaviour change when assigning a container text to a scene shared memory variable
Control groups for subscenes not properly reused
Transition Logic: Only one animated instance created by Toggle in Subscene rendering mode
Automatic memory pool cleanup doesn't work anymore
script "findkeyframeOfObject" does not work in Subscene /Transition Logic

Summary
Viz Engine crash when setting Geometry.Text on a container
StringMap Size corruption
Scripting function "FindOrCreateChannelOfObject" for Position doesn't work anymore
Potential file handle leak for undo/redo stack in Artist mode, can cause black icons
onEnter/onLeave is not triggered for scripts in merged geometries / subscenes
Material color in scene tree does not change when changed by Datamaterial

11 issues

2.6.2 Fixed Issues: Renderer

Summary
Autofollow plugin gets ignored when Justifer plugin is on the same container
Behavior change in "Grab" update mode inside the Dynamic Scene plugin
UE: Cannot use SharedLicense when ComputerName is too long
Viz crash when using transition scenes
Renderer: gizmo cannot be selected when lens distortion is used
Loading scene crashes engine
TextureView triggers upload of already uploaded texture
Some issues with the rendering razor as texture feature
Title and Safe area are aren't displayed correctly in VizTrio
Invisible Material + Alpha interaction

Summary

Extruded underline not updated when cubic texture is disabled

11 issues

2.6.3 Fixed Issues: Video IO

Summary

Clip inside GFX channel doesn't play in Artist mode

VizEngine crashes with malformed HAP video

Fix behaviour change when assigning a container text to a scene shared memory variable

Bad quality with 25p clips on interlaced output systems

Matrox x.mio3 watchdog doesn't work properly

Engine audio crash after 12 hours

Selecting HAP clip in Multiplay causes short freeze of the renderer

Clip Player Pro problems with mixed resolutions

X.mio5 IP cannot create DVE node when associated audio tracks are set to 0

Audio Issues with ST2110 IPConfig.xml configuration

Redundancy flows causing sequence errors on x.mio3 IP

Alpha from clip gets ignored in DVE on X.mio5 12G

Viz communication map shows wrong values after an engine restart

Possible crash when opening ProRes clip with Matrox Clip Player

14 issues

2.7 Changes

 **Note:** Support for SMPTE ST 2022-6 has been removed.

2.7.1 Changes: Renderer

- NVIDIA Kepler GPUs were set as deprecated (NVIDIA isn't supporting Kepler boards in newer driver versions anymore).

2.7.2 Changes: VideoIO

- Improvements in the IO sequence made GPU direct obsolete. The setting was removed.
-

2.8 Known Issues

2.8.1 General

- Saving a new scene with references that do not exist anymore fails. Those references need to be removed manually to save the scene.
- Importing HDR images with special characters in its file name from a drive with 8dot3 disabled fails.
- Transition Logic scenes require to have `GeomAutoFree = 1` set in the Viz Config file. With inactive `GeomAutoFree`, system stability is not guaranteed.
- Interactive Applications within a GFX channel only work in DVE mode in Fullscreen or if the GFX channel has an offset in Fullscreen. Scaled GFX channels or plug-ins that rely on screen coordinates (Graffiti) are not supported.
- Bones and Skin live motion data tracking requires Tracking Hub 1.1.2 (released together with Viz Engine 3.11).
- Viz Engine REST interface does not start if a user is Non-Admin (VIZENG-23386).
- On Air output shows wrong field-of-view if `AuxRenderer` is enabled, PP in scene editor is disabled and Viz Engine is not in On Air mode.
- Viz One Browser clip preview might fail on Viz One Versions ≥ 7.0
- The Toggle plug-in can not handle the background loading of objects or scenes.
- Oversized snapshot requests (bigger than the configured output resolution) in the Classic Render Pipeline aren't supported. Use the Viz Engine Render Pipeline instead.

Summary

[AEEExport.aex is not copied to After Effects Plug-ins folder after a repair of the Viz Engine installation](#)

Summary
AJA IO: Embedded Audio only available if SDI Input enabled
AJA/ Bluefish: Switching frequency results in output frame buffer issue
Add IsSceneinScene property to scene.script
Add IsSubScene into VSL
Alpha support for WEBM with VP8/VP9 and MKV with VP8/VP9
Consolidation of logging settings and configuration
Default timed command bias is not correct
Engine stops clip playback after specific playback sequence
Execution logic is not applied to a template created from Transition Logic scene
GFX Video Output not working
GH Sync: support main/replication setup
ImageEditor to handle 16bit images
Improve VizEngine startup time
Improve ringbuffer size configuration
Maya 2024 doesn't support Viz Maya plugin
No cursor shown in Trio local preview for Viz Engine scene
Playback of audio clips without extension in VML Player
Preview Feature not working in Viz Engine Renderer Pipeline
Scene View: disable self draw

Summary
Stage: Startkeyframe gets set wrong when hitting keyframe button
Subscene TL containing scripts doesn't work with custom Ticker scene
Subscene TL creates duplicate container
Text: global config for default font style
Used lens distortion parameters not in sync with main scene
Wrong clip duration inside Multiplay GUI

26 issues

2.8.2 Installation

- Do not use the C4D Version 15R2 patch file(s) unless you are using this version. Otherwise, it prevents Cinema 4D R16 from starting up.
- When uninstalling Viz Engine, the installer might report that links could not be removed. Please check that none of the *desktop.ini* files of Windows have write protection. For example, Skype seems to change the permissions of some *desktop.ini* files with every update.

2.8.3 Windows 10

- Right-clicking on the Taskbar icon of Viz Engine starts a new instance. Starting an additional VizGui process is prevented on Windows 10.
- Error message "Windows Media Player Rich Preview Handler has stopped working while opening specific clips with Softclip x64". To fix open **Windows Explorer > Tools > Folder options > View tab**, and deselect *Show preview handlers* in the preview pane.

2.8.4 Videowall

- It might happen that Viz Engine is running at half speed on videowall, but goes back to full speed if another window comes into focus. If so, start `viz.exe -y -w`, instead of the regular videowall mode `viz.exe -n -w`.
- GFX channels with Alpha != 100% decrease render performance. On video wall setup, `gfx_channels_antialiased = 0` should be turned off in the Viz Configuration section **RENDER_OPTIONS**.
- Windows scaling can lead to unwanted side effects.

- The maximum resolution on videowall setups is limited to 16392px by 16392px.
- Enabling video output for audio setups is not recommended for performance reasons. It is recommended to grab the audio from one of the HDMI/DP outputs of the NVIDIA GPU and use an Audio embedder instead.

2.8.5 Configuration

- Specifying a path in the configuration file including the # character is not supported. Such paths are cut before the # character.

2.8.6 Viz Engine Render Pipeline

- The Browser plug-in is not supported on the Viz Engine Render Pipeline.
- Existing Scenes using Global Illumination might need a precompute again to enable debug views.
- Background loading of external images (filesystem, network locations, etc.) is not supported. Images from Graphic Hub should be used.
- Fonts using GEOM_TEXT may slightly differ between 4.2.0 and 4.3.0.
- Flexbox labels in Scene Editor do not support Unicode characters.

2.8.7 Classic Render Pipeline

- Scene Transitions within GFX channels or Superchannels are not supported.
- Soft Shadow intensity is currently not working together with Global Illumination.
- We recommend using a warmup scene showing all needed assets once. Under certain circumstances, video and clip surfaces can show up red the first time being used.
- Playing Audio clips on systems with no physical audio hardware available stops the renderer. You need to turn off audio in the configuration file.
- On some systems with hybrid graphics, like laptops, the dynamic swapping must be disabled in the BIOS and the stronger GPU must be assigned as default.
- Stencil-based shadows (Caster/Receiver) do not work on rotated geometry.
- When changing `curlAuthUnsafe = 1`, Viz One Browser does not work anymore.
- VGA Fullscreen Output is only active if offscreen rendering is turned off. Setting `offscreen=0` in section RENDER_OPTIONS enables fullscreen output.
- Blending cubemapped images are not supported.
- Cubemapping with Browser plug-in is not supported.
- Fonts need to be re-imported to use new Pathrendering or Razor fonts technology.
- Masks are not supported on Path rendered Fonts (VIZENG-13737).
- Do not send other commands than `IS_RENDERER_READY` and database connection commands before this command returns `1`, otherwise the renderer and video output might not be initialized.
- If you encounter stability issues with an NVIDIA driver or issues during driver installation, uninstall the old NVIDIA driver completely, delete the folder `C:\Program Files\NVIDIA`

Corporation\Installer2, install the new driver and select **Custom installation**, then check-mark the perform clean installation option and finish the installation.

- Enabling background loading might decrease the render performance by up to 15 frames per second. This is due to OpenGL requirements.
- M-Zone keyer only works with HD when rendering with full frames.
- Decreased render performance in HD since Viz Engine 3.5.0 when the ringing filter is activated. Before Viz Engine version 3.5.1 there was no ringing filter for HD. Turn off the ringing filter via configuration or scene-setting to get the same performance.
- Sporadic NVIDIA driver error The NVIDIA OpenGL driver lost connection with the display driver and is unable to continue. which in turn causes Viz Engine to freeze. Make sure that the driver profile **Workstation App > Dynamic Streaming** is selected. Always use the recommended NVIDIA driver for your GPU.
- Possible performance problems with scenes imported from Viz Engine 2.x. Check the following settings (applies to old 2.x scenes only):
 - Image Combining should be set to Multi Texturing in the Render options in the configuration (or flag `combine_with_multitex = 1` in the configuration file) to avoid inefficient image combining.
 - Set Key Render Mode to Single Pass in the rendering options in the configuration. The Key Render Mode can also be set on scene level. Available options are:
 - Config (inherit the setting from the configuration).
 - Single Pass (fill and key are rendered in a single pass).
 - Double Pass (fill and key are rendered in separate rendering passes).
 Key rendering results differ between these options for compatibility reasons.
- Use Single Pass scenes imported from Viz Engine 2.x and Double Pass for Viz Engine 3.x scenes.
- The configuration flag `exec_all_animations` in the section RENDER_OPTIONS should be set to `0` if it is not necessary to execute hidden animations.
- Turn off the VGA preview in On Air mode to avoid performance drops due to multiple rendering of the scene (applies only to video version of Viz Engine).
- Hide containers that are not required for the current animation.
- Re-import fonts directly with the Viz Engine.
- Grid picking currently only works for Cube and Cylinder geometry.
- The behavior of scripts with cyclic dependencies to other scripts is undefined. Avoid cyclic dependencies.
- Bad performance when using multiple dynamic scenes, even if they are set inactive. To avoid unnecessary updates, change the **Update mode** in **Dynamic Scenes** to *Auto* instead of *Always*.
- `CLR_LOAD` command can crash Viz if not used correctly. Required function signature: `static int pwzMethodName(String pwzArgument)`.
- Alpha setting for DVEs is not correctly supported when a scene is used nested using a GFX channel (VIZENG-10212).
- Glow plug-in drops performance when used on multiple containers and rendered within a GFX channel or viewport tile (VIZENG-11342).

- Scene transitions do not work when dynamic images from different folders are involved. Dynamic images always need to be stored directly in the root folder *dynamic* and references must point there. Dynamic images in a subfolder of the dynamic folder or any other folder are not found.
- Font option "lighted" has no effect on fonts rendered with type "vector" (VIZENG-18941)
- 16-bit PNG images are not rendered properly when imported with compression.

2.8.8 Unreal Integration

- Unreal Engine 5.x with Temporal Super Resolution (TSR) enabled can lead to flicker issues when used in combination with NVIDIA Driver 528.89. Changing to FXAA solves the issue.

2.8.9 Post Renderer

- Because of performance issues rendering fullscreen sequences in UHD is not supported.
- Ghosting effect in post-rendered interlaced video: Make sure that the Flicker Filter is set to 0 in the post-rendering options of the Video Render plug-in.
- Post-rendering does not work properly if `onair_no_videoout flag = 1` (Videowall mode).
- Post-rendering does not work properly if TriCaster integration is active and the output format is set to User Defined or Fullscreen.
- DVCPRO expects 720x480 in NTSC resolution. Please set the correct output width in AVIRenderer.
- The alpha channel cannot be rendered with Intel Indeo 5.10 codec. This codec is not supported.
- Viz Engine might crash if certain VFW codecs are used on non-Matrox installations in Post Render Mode.

2.8.10 Matrox

- Fast Texture Mode is only available for two instances.
- The configuration `ClipIn[n].UseV210` and `ClipIn1.ContainsAlpha` are mutually exclusive and should not be enabled at the same time.
- The overall delay is one field higher than in previous versions using IO3 This is caused by the required A/B buffer of IO 4.
- A program output channel needs to be defined. Pure preview or Cleanfeed is not supported.
- HDR output on UHD 2SI requires at least a Quadro P6000 GPU.
- HDR input support is currently for HLG only.
- Mixing different frame rates with clips processed by a M.264 board is not supported and causes jittering.
- Upgrading the FPGA can cause a PCI error during the boot process on certain systems. Unattended upgrading of the FPGA is not recommended.
- Watchdog is only supported in 50/60M and 60Hz frequencies.
- When using 3G formats (1080p/UHD) or the Zero-Frame-Delay Mixer, auto-sensing of the sync signal is not supported due to incompatible H-/V-phases, that are set in the process.

- Instead, either Tri-Level or Blackburst must be used together with correct H-/V-Phase. This might result in a missing key signal (VIZENG-11708).
- For dual channel systems, please perform the following steps after enabling the watchdog to ensure the correct state is written to the Matrox Board:
 - a. Start Channel 1.
 - b. Wait until channel has started up and topology has been written.
 - c. Start Channel 2.
 - d. Wait until channel has started up and topology has been written.
 - e. Exit channel 2.
 - f. Exit channel 1.
 - g. Start channel 1.
 - h. Wait until channel has started up and topology has been written.
 - i. Start channel 2.
- ClipOut channel does not work when Matrox0.VideoOut1.FrameBufferDelay is set to zero (VIZENG-16373).
- UHD Clip Playback with M264 S1/S2/S3 *alone* requires color conversion on the shader level. (VIZENG-20700).
- Two Sample Interleave (2SI) clips played as DVE are not supported.
- Cutting of Audio tracks should not be done at all, as this results in a crackling noise. Always use a cross-fade to change audio sources.
- Monitoring live, clip and genlock status via SNMP is not supported (SNMP was deprecated and is no longer supported by Microsoft).
- Certain M4V clips may cause Viz Engine to lock and flood the console with errors when being played in a loop.
- Running interlaced AVC-Intra 100 clips on M.264 boards may lead to instabilities when played non-stop over several hours.

2.8.11 X.mio3 Boards

- If the Viz instance is closed unexpectedly, the X.mio3 topology might become unusable. To reset the topology, enable ResetTopology in the config file, restart Viz, close it and start Viz again.
- X.mio3 IP boards should have an active signal connected to SFP A prior to booting the system.
- Turning on the Cleanfeed Feature increases the delay by one frame.
- It is not recommended to change the frame group of any input signal while Viz Engine is running.
- Only two DVE UHD inputs are supported at 50Hz. For 60M formats, only two texture inputs are supported.
- Animating UHD DVE scaling might result in jittering. You need to increase the VideoDelayDVE setting to 2 .
- Texture delay with PAL/NTSC, and Fast Texture Mode is five instead of four fields. (VIZENG-16955).
- When using watchdog together with a clean feed, the watchdog triggers on the clean feed connector rather than the program output (VIZENG-16589).

2.8.12 X.mio5 Boards

- Standard Definition (PAL and NTSC) resolutions are not supported by X.mio5 IP boards according to the SMPTE ST 2110 standard.
- Streampunk ledger RDS does not list the Matrox X.mio5 nodes. This is due to some old NMOS APIs that are partially deprecated.
- Riedel Explorer fails listing the X.mio5 nodes. Riedel Explorer automatically selects NMOS API Version 1.3 instead of 1.2. It is possible to select the used API version manually if you switch to static mode and/or enable version downgrade in the Riedel Explorer.

The X.mio5 board has been tested to support up to 12 Inputs (1080i 50 and 60M) on a 10GbE network.

2.8.13 DSX.core

After the installation of the DSX-core client version of the driver perform the following steps:

1. Unregister *mvfDsxCore.dll*.
 - a. Click **Start > Run** (or use the Windows command line: **Search > CMD > (Right click) Run as Administrator**)
 - b. Type `REGSVR32 /U "C:\Program Files\Matrox DSX-TopologyUtils\System64\mvfDsxCore.dll"` and press **ENTER**.
2. Shut down *X.info* in the task manager.
3. Delete *mvfDsxCore.dll* from the folder *C:\Program Files\Matrox DSX-TopologyUtils\System64*.
4. Start *X.info*.

2.8.14 Other Video Boards

- When Viz Engine is in On Air mode, there might be audio distortions using Bluefish cards (VIZENG-8853).
- Bluefish Supernova S+ cards can only be used in a Virtual Set Environment if the board is synced to Blackburst/Trilevel.

2.8.15 NVIDIA

- When the computer is running out of virtual page size and the user keeps ignoring the low memory warnings in the console, the NVIDIA driver may cause Viz Engine to crash.
- The NVIDIA driver doesn't recognize other GPUs under certain circumstances in combination with video wall mosaic installations. Remove and reinstall the driver.

2.8.16 Graphic Hub

- Communication with the Graphic Hub Server might fail if virtual network adapters are active. Please disable all virtual adapters or increase the timeout.

- If the connection to the naming server fails, please verify the communication port in the config file (Port 19396).

2.8.17 Adaptive Scene Design

- WindowMask plug-in prevents Flexbox labels from being picked.


2.8.18 Audio

- Unplugging a USB microphone from the machine while EAS is enabled freezes Viz Engine without the possibility to recover (VIZENG-29571).

2.9 Supported Hardware And Software

This software has been tested to run on:

- Windows 10 (LTSC 1809)
- Windows 10 (LTSC 21H2)
- Windows 11
- Windows Server 2022, Windows Server 2019

 **Note:** Only English language Operating System(s) are supported.

2.9.1 Supported Systems

System
Lenovo P620
Lenovo SR655
DELL R7920
HP Z8 G5 Fury
HP Z8
HP Z4 G5
HP Z4

System
HP ZCentral 4R

2.9.2 Supported GPUs

Ada Lovelace GPUs	Ampere GPUs	Turing GPUs	Volta GPUs	Pascal GPUs	Maxwell GPUs	Kepler GPUs (1)
RTX 6000 Ada	RTX A6000	RTX 6000	GV100	Quadro P6000	Quadro M6000	Quadro K6000
RTX 4000 Ada SFF	RTX A5500	RTX 5000		Quadro P5200	Quadro M4000	Quadro K5000
	RTX A5000	RTX 4000		Quadro P4200	Quadro M2000	Quadro K5200
	RTX A4500	RTX 3000		Quadro P4000		Quadro K4000
	RTX A4000	T1000		Quadro P3200		Quadro K4200
	RTX A2000			Quadro P2200		Quadro K2000
				Quadro P2000		Quadro K2200
	RTX A3000 (mobile)			Quadro P1000		
	RTX A2000 (mobile)					
	RTX A1000 (mobile)					

Orange entries are recommended for rendering photo-realistic graphics on the Viz Engine Pipeline.

Ada Lovelace GPUs	Ampere GPUs	Turing GPUs	Volta GPUs	Pascal GPUs	Maxwell GPUs	Kepler GPUs (1)
(1) Kepler GPUs require an older driver version (473.47). Supported on the Classic Render Pipeline for backward compatibility only.						

2.9.3 Supported Video Boards

Video Board	Configuration
<i>Matrox Electronic Systems Ltd</i>	
Matrox X.mio5 SDI	Up to four 12G SDI input with up to four SDI 12G SDI outputs variable configuration from 12in0out to 0in12out
Matrox X.mio5 IP	Up to 32 ST 2110 inputs and 32 ST 2110 outputs depending on used SFPs and resolution
Matrox X.mio3 Full Height	Various input/output configurations from 48 to 84
Matrox X.mio3 IP	Two IP Streams in, two IP Streams out
Matrox X.mio3 12G	Two 12G inputs, two 12G outputs
Matrox M.264 S1/S2/S3/S4	H.264 Encoder/Decoder board
Matrox DSX LE 4 /8	Various input/output configurations from 08 to 80
Matrox DSX LE 4 /4	Various input/output configurations from 04 to 40
Matrox DSX LE 4 IP	Various input/output configurations from 04 to 40
<i>BlueFish Technologies</i>	
Bluefish Epoch Neutron	Two video inputs, two video outputs (fill & key)
Bluefish Epoch 4K Supernova	Two video inputs, two video outputs (fill & key)
Bluefish Epoch Supernova S+	Two video inputs, two video outputs (fill & key)
Bluefish Kronos K8	Four video inputs, two video outputs (fill & key)

Video Board	Configuration
<i>AJA Video Systems, Inc.</i>	
AJA IO4K Plus	Two video inputs, two video outputs (fill & key)
AJA Kona 4	Two video inputs, two video outputs (fill & key)

Please refer to the [Viz Engine Administrator Guide](#) for which drivers and driver settings to use.

2.10 Build Information

Platform Toolset: Visual Studio 2019 (v142)

Windows SDK Version: 10.0.14393.0

3 Documentation

Documentation for Viz Engine, Viz Artist and Viz Plugins are available at the Vizrt Documentation Center:

- [Viz Artist User Guide](#)
- [Viz Engine Administrator Guide](#)
- [Viz Plugins User Guide](#)

4 Installation And Support

4.1 Installation

The installation wizard guides you through the installation process. Make sure to close any running Viz application prior to the installation. In order to run Viz Artist or Viz Engine independent of a database server, you need to install the Viz Graphic Hub database software locally.

4.2 Support

Support is available at the [Vizrt Support Portal](#).