



Viz Engine Release Notes

Version



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 5.1.1

Release Date: 2023-10-31

These are the release notes for Viz Engine version 5.1.1. This document describes the user-visible changes that have been made to the software since release 5.1.0.

1.1 Improvements: Renderer & Video IO

Summary	Key
DSX.Core Sync Timeout when NTP is not reachable	VIZENG-30002
Improved drop frame detection to avoid warnings like "Possibly unsupported framerate defined (2997, 50) for device name Clip"	VIZENG-30012
Prevent texture creation for each frame during transition with shader, if subchannel operations are applied	VIZENG-30038
RegisterPlugin is not documented; RegisterParameterLabel wrong description	VIZENG-30008
UE: Change Viz connecting messages to Verbose to avoid unnecessary flooding of the console	VIZENG-30040

5 issues

1.2 Fixed Issues: Renderer & Video IO

Summary	Key
Alpha from clip gets ignored in DVE on x.mio5 12G	VIZENG-30359
Allow Flicker Filter usage in 1080i formats	VIZENG-30352
Additional spaces in engine command response	VIZENG-30185
Linear Texture mapping issue in PBR and Phong	VIZENG-30183


Summary	Key
Texture Slot with Glow Mode and a black texture results in visual errors	VIZENG-30182
Live input frame drops on videowall	VIZENG-30166
Error in SDP file with HDR	VIZENG-30084
EZJavaScript plugin no longer works in Superchannels	VIZENG-30074
Video Wall: when using fov-add the resulting projection is not matching	VIZENG-30061
GFX Channels not drawn during Superchannel Transition	VIZENG-30059
X.mio5 D25 not working with DSK SDK 10.3.101.775	VIZENG-30044
Zoom modes do not work with superchannels as textures	VIZENG-30033
VML Clip Player: Minor Memory Leak Fix	VIZENG-29989
Old scenes created with stream inputs won't get loaded correctly with live inputs	VIZENG-29986
Incorrect timing for live inputs with low delay in video wall and mixed mode	VIZENG-29981
Potential file handle leak for undo/redo stack in Artist mode, can cause black icons	VIZENG-29877
Classic Renderer: Set of shadow casters different when loading scene multiple times	VIZENG-29850

17 issues

2 Viz Engine 5.1.0

Release Date: 2023-08-30

These are the release notes for Viz Engine version 5.1.0. This document describes the user-visible changes that have been made to the software since release 5.0.1.

 **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 plugin 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;"> <i>i</i> In case Unreal 5.2 must be used, 528.89 is mandatory. </div>
Nvidia Kepler GPUs	473.47 (419.17 for older boards)
Matrox Topology based boards	10.3.102.783
Bluefish	6.5.1.22
Bluefish Supernova Firmware	162
AJA	16.1.0.3 Firmware 2021/06/23
Codometer Runtime Kit	7.60.5609
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 10.3.102.783 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

- 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 as 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 correctly install them.

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	Key
Various Security Improvements and Tests	VIZENG-29012
UE 5 Workflow Improvements	VIZENG-28912
UE 5 Integration Video Wall Support	VIZENG-28162
Precision Keyer Enhancements	VIZENG-28061
Talent reflection/shadow based on pose estimation	VIZENG-28060
New Superchannel Transitions	VIZENG-28052
UX Improvements	VIZENG-28051
Viz Engine Renderer Enhancements	VIZENG-28049
Clip Player Pro Functionality	VIZENG-28044

Summary	Key
Fully replace Render Graph with Render Sequence	VIZENG-28043
UE 5 Compositing Improvements	VIZENG-28041
UE 5 Performance Improvements	VIZENG-28040
UE 5.1/5.2 Support	VIZENG-28039
Extended Adaptive Graphics Support	VIZENG-28035
Vendor libs security upgrades	VIZENG-28034
Native WebRTC support	VIZENG-27854
New Audio Pipeline	VIZENG-27845
Video I/O Enhancements & Fixes	VIZENG-27431
Hardware Accelerated Clip Decode	VIZENG-26930
Viz Engine Renderer video wall support	VIZENG-25757
Interactivity for Viz Engine Renderer	VIZENG-25756
Layer Compositing and Blending Effects	VIZENG-25526

22 issues

2.5.2 New Features: Renderer

Summary	Key
"Keep aspect" mode of GFX channel should consider format size	VIZENG-28898
3d container support for Flexbox	VIZENG-28423
Add "Rect" geometry	VIZENG-29645

Summary	Key
Add RTX A6000 Ada support	VIZENG-28558
Add commands to set/retrieve Plugin GUI Resource	VIZENG-28670
Add script and plugin API for PBR TextureGeneration modes	VIZENG-29033
Add subscene to scene overview	VIZENG-29143
Add tracepoint feature to vsI	VIZENG-27963
Add two-sided lighting support to Viz Engine Renderer	VIZENG-28641
Camera movement while moving Gizmos/Handles moves object	VIZENG-27594
Combine ControlText (ClassicText) and new ControlText (Text) plugin together	VIZENG-28920
Command for fetching a scene's ControlObject VDF data	VIZENG-28476
Create Material Definitions with Viz Script	VIZENG-27567
Create spacing/separator element for generated plugins	VIZENG-28312
Decal blend mode is missing in Texture Slot	VIZENG-28971
Font Variable and Font Effect saving functionality	VIZENG-27812
Format support for Superchannels	VIZENG-28762
Improve Razor texture mode safe padding calculation and blur effect	VIZENG-28539
Improve edge processing in Precision Keyer	VIZENG-25499
Improve error management and logging in network backend	VIZENG-28894
Include GH lookups in performance overview	VIZENG-28572
Increase DoF CoC scale limits	VIZENG-28428

Summary	Key
Integrate DLSS2 into viz engine	VIZENG-28555
LTC area lights	VIZENG-28841
New keying mode: Linear keying while considering trashmatte+holdout	VIZENG-27925
OnKeyDown callback not called by scene script in Viz Engine Renderer	VIZENG-25419
Plugin API for texture generation	VIZENG-28356
Reduce light icon size	VIZENG-28278
Renderer Pipeline: add support for snapping object to grid	VIZENG-26247
Renderer: Remove rendergraph implementation	VIZENG-28696
Renderer: Support Screen Percentage configuration for down/upscaled rendering	VIZENG-28463
Renderer: Support access to lens distortion texture	VIZENG-29965
Renderer: Support precision keyer in multilayer sequence	VIZENG-28862
Renderer: Temporal AA un-jitter overlays	VIZENG-25825
Renderer: advanced VS compositing	VIZENG-28359
Renderer: improve geometry pooling	VIZENG-28660
Renderer: move shading rate to material	VIZENG-29059
Renderer: premultiply alpha in expert + materials	VIZENG-25615
Renderer: support advanced blendmodes	VIZENG-27942
Renderer: support mouse input events	VIZENG-28750
Renderer: support phong emissive intensity > 1	VIZENG-28736

Summary	Key
Renderer: support plugin api to set textures on RenderSystemMaterialRuntime	VIZENG-28664
Rework watermark rendering	VIZENG-27805
Screen resolution aware performance drawing	VIZENG-28790
Scrub Clip in Superchannel	VIZENG-26199
Superchannels as texture	VIZENG-28508
Superchannels as texture: Support DVE transformations (position, scale, cropping, ...)	VIZENG-28568
Support BoxTransformation and Flexbox layouting across subscene boundaries	VIZENG-28447
Support Nvidia driver 528.89 for Ada GPUs and CVE fixes	VIZENG-29000
Support X/Y rotation on Linear TexGen	VIZENG-28320
Support nested Priority Plugins like Classic	VIZENG-28321
Text blur effect	VIZENG-28495
Text: Cubic UV coordinates	VIZENG-25741
Texture Blur	VIZENG-27591
Texture UV Generation option for PBR Material Definitions	VIZENG-28566
Texture matrix scaling applied after rotation	VIZENG-28975
Texture share for Superchannel texture target (Smurf, Unreal, NDI)	VIZENG-28978
TransitionShader for Superchannels	VIZENG-26896
UE: support undistortion of gfx channels	VIZENG-28148
UX improvement with bi-directional onscreen text editor	VIZENG-28046

Summary	Key
Undistorted media asset output via SMURF	VIZENG-28575
Upgrade Wibu Code Meter version to 7.60a	VIZENG-28564
VW: Projective Texture based Virtual Window	VIZENG-28569
Youtube autoplay in browser plugin	VIZENG-27917

64 issues

2.5.3 New Features: Video IO

Summary	Key
Remove speed limitations for interlace clip in VML	VIZENG-29771
Allow timed commands in video I/O mode SHM	VIZENG-28950
Improve performance of NDI sources discovery	VIZENG-28917
Add Hap1, Hap5, HapY support to VML clip player	VIZENG-28742
Implement CLIPTC feedback for VML Clip Player	VIZENG-28537
VML Clip Player: add support for chunked NDI recordings	VIZENG-28291
Improve Matrox output performance without GPU direct	VIZENG-28227
Optimize Audio Implementation using intrinsics	VIZENG-28212
Make write to read delay of the output node configurable	VIZENG-28174
Add Fill/Key input capability for ST 2110	VIZENG-28023
Detect NDI framedrops	VIZENG-27940
Clip player (VML) support when Software I/O mode is set to SHM Channels	VIZENG-27936

Summary	Key
H.265 support in clip player pro	VIZENG-27815
A command to return used clip player per clip channel	VIZENG-27671
NDI Fill/Key input support	VIZENG-27593
NDI output for GFX Channels	VIZENG-26750
Shared input node between Engine and Channel Recorder when Channel Recorder already using Connector	VIZENG-24506
System should start up with configured resolution, not NTSC	VIZENG-24268

18 issues

2.6 Fixed Issues

2.6.1 Fixed Issues: Renderer

Summary	Key
Stage-GUI: Fix units for progressive formats - Fields vs Frames	VIZENG-29891
Preview Engine crashes when loading specific scenes on Trio	VIZENG-29886
Action keyframe commands are getting ignored	VIZENG-29781
SoftClip doesn't play when using Scene in Scene TL	VIZENG-29714
Plugin can override/remove predefined events from the EventPool	VIZENG-29591
Incorrect shadows without shadow casting lights	VIZENG-29364
Texture Slot plugin with "luminance+alpha" does not do automatic "swizzling"	VIZENG-29354
Media type response header is text/plain for /api/v1/renderer/onair	VIZENG-29334

Summary	Key
command_feedback_port config flag ignored for command feedback sockets	VIZENG-29253
Missing manual entries of ControlObject in VDF data	VIZENG-29153
Texture Slot irregular behavior on Stage	VIZENG-29123
Can't access images via UUID when it is used in a material of an Engine scene	VIZENG-29113
container.findKeyframeOfObject() is not able to find keyframes of slot channels	VIZENG-29069
3rd party licenses are missing inside the Preview core	VIZENG-29065
Texture slot channel getting deleted when undoing object merges	VIZENG-29048
Sequence properties ControlChannel fail to load	VIZENG-29017
Prevent multiple connections to preview port	VIZENG-29003
VizEngine SMURF input occasionally shows an old frame	VIZENG-28987
Viz crashes when opening specific scripted scene	VIZENG-28861
VLC plugin might cause crash during cleanup	VIZENG-28743
Script incorrectly escapes " character	VIZENG-28630
Container multiselection changes transformations unintentionally	VIZENG-28573
Sub-scene TL skips in/out animation during NLE rendering	VIZENG-28516
Remove dysfunctional MVCP protocol implementation	VIZENG-28481
Error message about failed to load scene	VIZENG-28453
Scene Tree: copy container itself flattens structure	VIZENG-28431
Two renderer windows in Videowall mode when videowall not set to full screen	VIZENG-28305

Summary	Key
Invisible material colors alpha does not affect Key	VIZENG-28253
Scene in Scene RTT geometries don't respect lighting parameters of the scene	VIZENG-28177
Font effects in Viz Engine renderer lost after scene save or save as	VIZENG-28168
Content disappears after Merging Container as Geometry	VIZENG-28164
Font effects broken in Geometry mode	VIZENG-28106
Classic scene isn't visible in Front or Back layer when running in Engine mode	VIZENG-27910
Fix Scale To Image Functionality in Transformation Editor	VIZENG-27821

34 issues

2.6.2 Fixed Issues: Video IO

Summary	Key
Wrong Interlaced Fields using Matrox FastTexture Mode = ON	VIZENG-29817
Audio memory pre-allocation could lead to performance drops	VIZENG-29786
VizEngine SMURF output cannot handle audio with UHD resolutions	VIZENG-29280
Clip player is paused at the first frame of the clip	VIZENG-29261
VizEngine crashing with non-broadcast 1080p frequencies	VIZENG-29214
Videoout SMURF can flip field polarity	VIZENG-29189
Matrox Clipplayer leaking memory on playback of 25p material on interlaced systems	VIZENG-29014
Input Audio Delay Texture does not work for NDI and SMURF inputs	VIZENG-28996
VizEngine SMURF input occasionally shows an old frame	VIZENG-28987

Summary	Key
ProRes clips flash before playback	VIZENG-28831
Clip Player LOOP OFF in the command is ignored	VIZENG-28667
LUT file import fails when using LUT_3D_INPUT_RANGE	VIZENG-28646
Viz Engine running out of audio samples at application start	VIZENG-28552
AVC clip played via VML player only plays half the length	VIZENG-28461
Engine process doesn't close itself when NDI input is enabled	VIZENG-27906
Bluefish: Allow to disable audio processing of SDI inputs	VIZENG-26252
Fix SHM and NDI output when using full screen or a custom output format	VIZENG-24114

17 issues

2.7 Changes

2.7.1 Upcoming Changes

- Support for SMPTE ST 2022-6 will be removed in the next version.

2.7.2 Changes: Renderer

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

2.7.3 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
- Toggle plugin can not handle background loading of objects or scenes.
- Oversized snapshot requests (bigger than configured output resolution) in the Classic Render Pipeline aren't supported. Use the Viz Engine Render Pipeline instead.
- Redundancy flows causing sequence errors on X.mio3 IP. This will be addressed in a new Matrox driver version.

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 fullspeed 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

Summary	Key
AJA IO: Embedded Audio only available if SDI Input enabled	VIZENG-27515
AJA/ Bluefish: Switching frequency results in output frame buffer issue	VIZENG-26244
Add IsSceneinScene property to scene.script	VIZENG-27937
Execution logic is not applied to a template created from Transition Logic scene	VIZENG-21755
GFX Video Output not working	VIZENG-25687
GH Sync: support main/replication setup	VIZENG-28344
ImageEditor to handle 16bit images	VIZENG-25168
Improve VizEngine startup time	VIZENG-24017

Summary	Key
Improve ringbuffer size configuration	VIZENG-28545
No cursor shown in Trio local preview for Viz Engine scene	VIZENG-27832
Playback of audio clips without extension in VML Player	VIZENG-29001
Preview Feature not working in Viz Engine Renderer Pipeline	VIZENG-25420
Stage: Startkeyframe gets set wrong when hitting keyframe button	VIZENG-21385
Used lens distortion parameters not in sync with main scene	VIZENG-26964

14 issues

- 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

- Cause 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 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.

2.8.11 X.mio3 Boards

- If the Viz instance is closed unexpectedly, the X.mio3 topology might get 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 framegroup 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.
- GPUDirect is not supported in combination with AJA or Bluefish boards.

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 Plugin 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

System
HP Z4
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)						

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](#).