



# Viz Engine Release Notes

Version 5.0



# Viz Engine



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### **Created on**

2023/06/19

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# 1 Viz Engine 5.0.1

**Release Date:** 2022-12-19

These are the release notes for Viz Engine version 5.0.1. This document describes the user-visible changes that have been made to the software since release 5.0.0.

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

## 1.1 Driver Versions

These are the recommended driver versions for various hardware components:

Vendor	Driver Version
Nvidia Ampere, Turing, Volta, Pascal and Maxwell GPUs	516.59
Nvidia Kepler GPUs	473.47 (419.17 for older boards)
Matrox Topology based boards	10.3.101.750
Bluefish	<a href="#">6.5.1.22</a>
Bluefish Supernova Firmware	162
AJA	<a href="#">16.1.0.3</a> Firmware 2021/06/23
Codemeter Runtime Kit	<a href="#">7.40.4490</a>
AV PCL/PCI Plura Timecode Reader	<a href="#">5.34</a>

### 1.1.1 Matrox Drivers

- For Matrox video cards, driver version 10.3.101.750 is required. This version is mandatory. Pre-Release versions are not supported.
- Uninstall previous versions of Matrox DSXUtils prior to installing this driver.
- Use *DSX-TopologyUtils.exe* for driver setup.
- Install drivers 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.

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## 1.2 New Features

Summary	Key
<a href="#">Change Video Connector Notification Callback to display changed values only</a>	VIZENG-28241
<a href="#">Combine ControlText (ClassicText) and new ControlText (Text) plugin together</a>	VIZENG-28084
<a href="#">Make write to read delay of the output node configurable (5.0.1)</a>	VIZENG-28329
<a href="#">Renamed Viz Engine Renderer Text</a>	VIZENG-28080
<a href="#">UE: Editor license sharing</a>	VIZENG-28018
<a href="#">UE: Precision Keyer quality and stability improvements - UE Render Graph</a>	VIZENG-28002
<a href="#">UE: Remove Scene Capture from Precision Keyer</a>	VIZENG-28157
<a href="#">UE: Renamed Keyer to Precision Keyer</a>	VIZENG-28079
<a href="#">UE: improved texture sharing</a>	VIZENG-28187

9 issues

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## 1.3 Fixed Issues

Summary	Key
<a href="#">Performance drop when using text geometry with Tfx plugins and font effects</a>	VIZENG-28288
<a href="#">Action keyframes in channel only directors get ignored</a>	VIZENG-28245

Summary	Key
Classic scene in Back layer is still visible when using a Viz Engine Renderer scene	VIZENG-28219
Command on GFX port potentially ignored when superchannel port receives a command simultaneously	VIZENG-28217
Foreground clip does not affect alpha anymore (Arena Image-Based)	VIZENG-28215
Wrong text wrapping with spaces	VIZENG-28214
TextFX Alpha does not work when Text rendering mode set to Geometry	VIZENG-28205
UE: wrong texture sent when precision keyer is enabled and disabled	VIZENG-28202
Tone mapping animations deleted after scene save and reload	VIZENG-28163
UE: Trio aborts scene import when "Bind with Unreal Engine" inside the Control Object is active	VIZENG-28141
Text bounding box is not updated by some changes	VIZENG-28139
UE: Compositor - Fixed Double Outlines	VIZENG-28125
Viz Engine running out of audio samples at application start	VIZENG-28113
STAGE*TIMELINE LOCK returns inversed value	VIZENG-28103
DVE Video and Audio Delay is 1 field off	VIZENG-28096
Delay section in configuration profiles not taken into consideration	VIZENG-28091

Summary	Key
UE: Can't modify multiple Control Objects at once using Viz Arc	VIZENG-28090
Image in Superchannels in Viz Engine Pipeline ignores alpha channel	VIZENG-28078
Classic scene isn't visible in Front or Back layer when running in Engine mode without a main scene	VIZENG-28050
Viz Engine program failure after loading timeout with specific VS scene	VIZENG-28047
UE: Delay between Viz and Unreal graphics when using camera zoom	VIZENG-28009
Matrox topology isn't created after system reboot	VIZENG-28000
Stop point on frame 0 gets ignored in Artist mode	VIZENG-27987
UE: Program failure when loading a Vizrt Texture by location	VIZENG-27982
Fixed live icon updates in scene tree	VIZENG-27976
Viz Engine Renderer: OpenGL error when modifying sampler can lead to stripes on RazorText	VIZENG-27932
Startup parameter -o doesn't work with scene path anymore	VIZENG-27909
Scene Tree: copy container itself flattens structure	VIZENG-27846
Razor Font rendering broken on some machines	VIZENG-27752

29 issues



## 1.4 Known Issues

Summary	Key
AJA IO: Embedded Audio only available if SDI Input enabled	VIZENG-275 15
AJA/ Bluefish: Switching frequency results in output frame buffer issue	VIZENG-262 44
Add DEBUG_TRANSITION command to superchannel	VIZENG-282 49
Add IsSceneinScene property to scene.script	VIZENG-279 37
Add IsSubScene into VSL	VIZENG-286 95
Always create new Matrox topology during startup	VIZENG-281 37
Clip in Stage ignores pause	VIZENG-244 82
Command for Genlock status	VIZENG-238 08
Console does not accept @ character on German Keyboard layouts	VIZENG-291 88
Consolidation of logging settings and configuration	VIZENG-284 52
EXR images with DXT compression are not supported	VIZENG-225 84
Execution logic is not applied to a template created from Transition Logic scene	VIZENG-217 55
GFX Video Output not working	VIZENG-256 87

Summary	Key
GH Sync: support main/replication setup	VIZENG-283 44
ImageEditor to handle 16bit images	VIZENG-251 68
Improve VizEngine startup time	VIZENG-240 17
Improve edge processing in Precision Keyer	VIZENG-254 99
Improve ringbuffer size configuration	VIZENG-285 45
Manual channels in ControlObject cannot be set when using subscene instead of merged geometries - 5.1.0 Regression	VIZENG-286 88
No cursor shown in Trio local preview for Viz Engine scene	VIZENG-278 32
Playback of audio clips without extension in VML Player	VIZENG-290 01
Precision Keyer signal output on preview channel	VIZENG-250 22
Preview Feature not working in Viz Engine Renderer Pipeline	VIZENG-254 20
Renderer: Support precision keyer in multilayer sequence	VIZENG-288 62
Scrub Clip in Superchannel	VIZENG-261 99
Stage: Startkeyframe gets set wrong when hitting keyframe button	VIZENG-213 85
TFxRotate: Underline is rotated in 3D while razor text is in 2D	VIZENG-292 40

Summary	Key
Texture Slot plugin with "luminance+alpha" does not do automatic "swizzling"	VIZENG-293 54
Texture matrix scaling applied after rotation	VIZENG-289 75
Used lens distortion parameters not in sync with main scene	VIZENG-269 64
VDF DATA GET is missing information from GFX channels	VIZENG-290 36
VW: Adaptive VSync	VIZENG-283 37
VizEngine SMURF input occasionally shows an old frame	VIZENG-289 87
Wrong compositing with background image and keyed scene elements	VIZENG-262 22

### 34 issues

- Subchannel in Superchannels do not change their priority for transition animations. This can affect switcher scenes.

**⚠ Important:** On x.mio5 systems in 1080i with active Fast Texture mode the following flag needs to be set: `Matrox0.VideoOut1.NodeFrameDelay = 1`. This flag is only visible once the verbose mode has been set in the configuration file. This increases the delay by one frame (four frames instead of three frames).

**⚠ Note:** Large scenes could have a slightly increased load time in this version to avoid possible failover issues.

## 1.5 Changes

### 1.5.1 Upcoming Changes

- Nvidia Kepler GPUs will be deprecated (Nvidia isn't supporting Kepler boards in newer driver versions anymore).

- Bluefish Supernova boards will be deprecated in Viz Engine 5.1.

## 1.5.2 Changes: Renderer


- Texture Slot plug-in only allows access to emissive and base color due limited shader size on some GPUs.
- Text wrapping behavior changed to prevent spaces at the beginning of new lines for both horizontal and vertical text direction. This could cause a noticeable difference in the text layout depending on the used text and text box size.

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## 2 Viz Engine 5.0.0

**Release Date:** 2022-09-27

These are the release notes for Viz Engine version 5.0.0. This document describes the user-visible changes that have been made to the software since release 4.4.1.

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

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## 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 Ampere, Turing, Volta, Pascal and Maxwell GPUs	516.59
Nvidia Kepler GPUs	473.47 (419.17 for older boards)
Matrox Topology based boards	10.3.100.679
Bluefish	6.5.1.22
Bluefish Supernova Firmware	162
AJA	16.1.0.3 Firmware 2021/06/23
Codemeter Runtime Kit	7.40.4490
AV PCL/PCI Plura Timecode Reader	5.34

### 2.2.1 Nvidia Drivers

**Information:** Please refer to [https://nvidia.custhelp.com/app/answers/detail/a\\_id/4777/~/nvidia-dch/standard-display-drivers-for-windows-10-faq](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 516.59 is recommended for Quadro GPUs with Ampere, Turing, Volta, Pascal or Maxwell Technology cards. Kepler GPUs are still supported with driver version 473.47. Boards that do not support this version of the driver, should use rev. 419.17.

**Important:** Due to necessary upgrades in the driver, GPUDirect is no longer supported with the older drivers 473.47 and 419.17 when used together with a Matrox video board.

**Information:** Some GPUs (like M6000) disable GPUDirect support if the wrong Nvidia driver is used!

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 10.3.100.679 is required. This version is mandatory. Pre-Release versions are not supported.
- Matrox drivers with *\_EV.exe* extension are suitable for Windows 10/Server 2016 systems with secure boot.
- Uninstall previous versions of Matrox DSXUtils prior to installing this driver.
- Either *DSX-TopologyUtils.exe* or *DSX-TopologyUtils\_EV.exe* must be used.
- Install drivers 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.
- 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.
- For scenes utilizing the new Precision Keyer (Virtual Sets) it is recommended to use the new Video IO mode V4 pipeline. Talent Reflection, Holdout Matte and Precision-keyed assets within the scene tree do not work properly when using the v3\_io.

 **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

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## 2.4 Virtual Environments

The following GPUs are currently supported (Kepler are only supported in Classic Render Pipeline):  
The listed driver version is the one the system has been tested with.

The following GPUs are supported in virtualized environments:

GPU					
A10G (511.65)	NVidia RTX6000 (462.31)	Nvidia Tesla V100 (425.31)	NVidia T4 Tensor Core (471.68)	NVidia M40 (377.35 only)	NVidia K2 (370.28 only) VDGA <sup>(1)</sup>
A40 (462. 31) <sup>(2)</sup>				NVidia M60 (462.31)	NVidia K2 (370.28 only) VGPU (K280Q, K260Q) <sup>(1)</sup>
					NVidia K520 (370.35 only) <sup>(1)</sup>
<p>(1) Classic Render Pipeline only. (2) Tested on A40-8Q.</p>					

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"> <li>Amazon EC2 G5 Instances</li> <li>Amazon EC2 G4 Instances</li> <li>Amazon EC2 G3 Instances</li> <li>Amazon EC2 P3 Instances</li> </ul>		
Microsoft Azure		
<ul style="list-style-type: none"> <li>Standard_NCv3 Series</li> <li>Standard NV Series</li> </ul>		
fra.me/nutanix	not tested	
VMWare ESXi (6.0, 6.50, 7.02)		
Alibaba Cloud	not tested	

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

## 2.5 New Features

### 2.5.1 Key Features

Summary	Key
Switcherless workflow improvements	VIZENG-27254
VizEngine-5.0.0 - DSX.core dongleless license implementation	VIZENG-26932
Text Plugin API and TextFX Support	VIZENG-26851
Talent Improvements	VIZENG-26809
Security related improvements	VIZENG-26615
IO formats for Adaptive Graphics	VIZENG-26417

Summary	Key
Matrox X.mio5 12G Support	VIZENG-26003
HDR support in VML Clip Player	VIZENG-25945
New Unreal Engine 5 Integration	VIZENG-25809
Precision Keyer Refinement	VIZENG-25782
Engine in a switcher less control room - Stage 4	VIZENG-25708
New PBR import workflow	VIZENG-25555
NDI 5 / WAN Support	VIZENG-25544
GFX Channel SMURF output	VIZENG-25532
General Viz Engine Rendering and Performance Improvements	VIZENG-25525
Unreal Integration with New Rendering Capabilities	VIZENG-25524
Variable Font Support	VIZENG-25523
NDI support for Sports	VIZENG-25522
Update importers and 3rd party integrations	VIZENG-25521
Unified I/O Improvements for Sports	VIZENG-25520
UX improvements	VIZENG-25519
Simplify Video I/O - IO V3 Removal	VIZENG-25518
Extended Text Compatibility	VIZENG-25516
OEM Engine upgrades for SMURF integration	VIZENG-25515
Unreal Engine 5.0 support	VIZENG-25514

Summary	Key
IES Lighting	VIZENG-25512
Advanced Anti-Aliasing	VIZENG-25511
Multi-Ray SSR Reflections	VIZENG-25510
Display Referred Direct Mapping to HLG in Viz Engine Renderer	VIZENG-25507
Video I/O Enhancements & Fixes	VIZENG-25451
Support of new DNxHR capabilities in Matrox Clip Library	VIZENG-25177
Adaptive Scenedesign	VIZENG-25115
Further improve integration and functionality of VML based clip player	VIZENG-25091
Enhanced IP production capabilities	VIZENG-25030
Geometry instancing	VIZENG-24571
Superchannels Phase 2 / Improvements for Multiplay	VIZENG-23983
IP - NMOS IS-07 Alarms Support	VIZENG-21676

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## 2.5.2 New Features: Renderer

Summary	Key
Add IES Texture slot to RenderSystemLight	VIZENG-25690
Add Nvidia RTX A5500 support	VIZENG-26901
Add Substance import via .fbx	VIZENG-25701

Summary	Key
Add VSL and plugin API method to determinate if scene is currently rendered or not	VIZENG-25 128
Add asynchronous commands to EVENT_POOL which waits for a specific event and returns as soon as the event happens	VIZENG-25 575
Add geometry-aware scaling in BoxTransformation	VIZENG-26 747
Add license check for Adaptive Scene Design	VIZENG-27 091
Add option to specify log file path in CLOG	VIZENG-26 357
Adobe Photoshop PSD Import with layer structure	VIZENG-25 899
Allow lensdistortion for GFX Channels in DVE Mode when Using Viz Engine Renderer	VIZENG-27 802
Allow wildcards when registering for events in EVENT_POOL	VIZENG-25 788
Automatic Text Scaling in Text	VIZENG-27 545
Built-In Lights cannot be deactivated	VIZENG-25 351
Cache geometry instances based on hash value	VIZENG-26 748
Center Values for GFX Channels in relative mode should be clamped to -100 to 100%	VIZENG-22 483
Change command line arguments processing to IEEE Std 1003.1-201	VIZENG-27 160
Classic Renderer: expose compute shader functionality through the plugin API	VIZENG-26 429

Summary	Key
Color in Shaders animateable	VIZENG-26 706
Combine ControlText (ClassicText) and new ControlText (Text) plugin together	VIZENG-28 084
Commands to simulate mouse click and drag/release	VIZENG-26 622
Default AuxKey Config setting for ClipIn channels and GFX channels changed to consider Viz Engine instance ID	VIZENG-25 738
Expose event pool in plugin API	VIZENG-25 577
Expose logging in plugin API	VIZENG-26 009
Expose scene formats to VDF	VIZENG-27 261
Extend onLoaded events on superchannels to flag CUE or TAKE	VIZENG-26 848
Format support for Variable Fonts	VIZENG-26 702
GFX texture channels with higher resolution than output	VIZENG-25 804
GLTF importer	VIZENG-25 863
GLTF texture tiling	VIZENG-26 061
Grid picking for Viz Engine Renderer	VIZENG-25 592
Import IES files as images into Graphic Hub	VIZENG-25 642

Summary	Key
Improve GLTF Importer stability	VIZENG-25 985
Increase Graphic Hub default transfer buffer size	VIZENG-26 778
Introduce new transformation based on x/y/width/height, decouple TRANSFORMATION from container	VIZENG-26 279
Material Definition Parameter Access via Scripting	VIZENG-26 028
More underline customization for Text	VIZENG-26 220
Multilayer SSR	VIZENG-25 952
NMOS IS-07 sink for spdlog framework in Viz Engine	VIZENG-25 926
New command for cleanup of all scene editors: POOLS CLEAR_SCENE_EDITORS	VIZENG-26 337
New logging framework	VIZENG-25 720
Nvidia driver upgrade required to 516.59	VIZENG-27 489
One-shot command to toggle multiple armed Superchannels at once	VIZENG-25 576
Option to exclude clipchannel of superchannel usage for static audio routing workflows	VIZENG-27 263
PBR Material Definition not transparent when using media assets with alpha	VIZENG-24 278
Performance improvement by removing extra texture copies for LIVE, CLIP and GFX	VIZENG-26 298

Summary	Key
Plugin API to control Text on a per glyph basis	VIZENG-27 088
Plugin API, VSL: add uv pivot methods	VIZENG-26 767
Precision Keyer: Add a Matte Scene Debug View	VIZENG-26 135
Prevent Viz Engine Render scenes from being loaded in front or back layer	VIZENG-26 340
Provide a way to convert GEOM_TEXT into Text	VIZENG-26 195
Provide advanced visual guidance for Flexboxes	VIZENG-25 998
Provide auto complete in Viz Engine console	VIZENG-26 284
Remove "Free Memory Threshold"	VIZENG-25 661
Remove LENSFILE from parameter modes inside the config file	VIZENG-26 287
Renamed Viz Engine Renderer Text	VIZENG-28 080
Renderer: support GFX Channel lensdistortion flag	VIZENG-25 409
Replace EM/PX in Text's Command Interface with REL/ABS	VIZENG-26 378
Run VizEngine without Admin rights	VIZENG-26 228
SMURF output for GFX Channels	VIZENG-25 711



Summary	Key
Script plugin lock	VIZENG-27 210
Scroller plugin will not initialize when security policies are not configured	VIZENG-27 696
Select format for on-air output / default renderer in config file	VIZENG-27 096
Stochastic Screen Space reflections with Hierarchical Z-Buffer Tracing	VIZENG-25 618
Superchannel onLoaded event should contain info about loaded content	VIZENG-26 257
Support IES Light Profile file import	VIZENG-25 590
Support RTX A4000	VIZENG-25 867
Support Render time counters for Viz Engine Renderer too	VIZENG-26 205
Support THIS_SCENE for commands sent from scripts (GFX channel aware)	VIZENG-26 510
Support [] in field identifiers	VIZENG-27 683
Support scene referencing (owner IDs) for Superchannels, also if communication is on main port	VIZENG-25 578
Text drop shadows via TextLink plugin	VIZENG-26 569
Text: Add support for fonts with AppleUnicode character map	VIZENG-26 733
Text: Implement support for CPAL/COLR font color	VIZENG-25 442

Summary	Key
Text: Letter Spacing Support	VIZENG-25 823
Text: Text FX Rotate support	VIZENG-27 087
Text: TextFXArrange support	VIZENG-27 356
Text: offscreen rendering to texture	VIZENG-26 938
Text: support Italic and Bold effects	VIZENG-26 535
Text: underline rendering to match glyphs	VIZENG-23 339
TextureFit: Plugin to generate uv coordinates for material definition to fit a texture	VIZENG-26 650
Unreal Engine: Custom Texture Share in Engine	VIZENG-27 189
Unreal Engine: Implement "Aux Channel" for inputs	VIZENG-26 857
Unreal Engine: additional render sequences	VIZENG-27 576
Upgrade licenselib	VIZENG-25 565
Upgrade to Wibu Runtime 7.40	VIZENG-26 791
Viz Engine Render Pipeline: Shader Compile time improvements	VIZENG-27 223
Viz Engine Render Pipeline: Temporal AA for mask layer, CoC and Fog	VIZENG-25 824

Summary	Key
Viz Engine Render Pipeline: add MinSampleShading to Expert plugin	VIZENG-25 785
Viz Engine Renderer: Bones rendering	VIZENG-25 345
Viz Engine Renderer: DOF effect - calculate focal length based on FOV	VIZENG-26 084
Viz Engine Renderer: Distance Fog	VIZENG-25 914
Viz Engine Renderer: FXAA HDR	VIZENG-25 819
Viz Engine Renderer: Make GEOMETRY_QUAD Publicly Available	VIZENG-27 538
Viz Engine Renderer: Render Layer support	VIZENG-26 825
Viz Engine Renderer: Render-sequence to Handle HDR Color Space	VIZENG-27 191
Viz Engine Renderer: Substance Texture Renderer	VIZENG-25 728
Viz Engine Renderer: Temporal Supersampling / Anti-Aliasing	VIZENG-25 797
Viz Engine Renderer: add shading rate to UI	VIZENG-25 792
Viz Engine Renderer: material transparency	VIZENG-27 080
Viz Engine Renderer: normal map intensity	VIZENG-25 915
Viz Engine Renderer: re-enable parallel shader compilation	VIZENG-25 700

Summary	Key
Viz Engine Renderer: support IES light rendering	VIZENG-25 703
Viz Engine Renderer: support Title and Safe Area visualization	VIZENG-26 991
Viz Engine Renderer: support UV scaling and rotation pivots	VIZENG-26 439
Viz Engine Renderer: support WinMask plugin	VIZENG-26 589
Viz Engine Renderer: support exact picking of Razor Fonts	VIZENG-26 805
Viz Engine Renderer: support texture views and swizzle	VIZENG-26 753
Viz Engine Renderer: texture blend support	VIZENG-21 627
Weight rendering for bones in Viz Engine Renderer	VIZENG-25 980
Windows Server 2022 Support	VIZENG-27 015
Yantramanav font (Hindi) display issue - support overlapping glyphs in texture text mode	VIZENG-26 838

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### 2.5.3 New Features: Video IO

Summary	Key
Make write to read delay of the output node configurable (5.0.1)	VIZENG-2832 9

Summary	Key
Change Video Connector Notification Callback to display changed values only	VIZENG-2824 1
Change Location ID from eth0 to SFP A	VIZENG-2779 4
Don't try to unlock DSX.core if wrong driver is installed	VIZENG-2778 4
Support audio in NDI input used as genlock	VIZENG-2763 1
Add support for closed captions in clip player	VIZENG-2753 2
Support embedded NDI tracking data	VIZENG-2746 2
Allow fill-only NDI output	VIZENG-2738 5
VML clip player - advanced pending functionality (3-4 point loop)	VIZENG-2734 7
Add audio volume control for NDI inputs	VIZENG-2734 4
Use advanced NDI SDK	VIZENG-2727 1
VML Clip Player pending player support	VIZENG-2723 8
Viz Engine Renderer: Render-sequence to Handle HDR Color Space	VIZENG-2719 1
Unreal Engine: Custom Texture Share in Engine	VIZENG-2718 9
Implement new Matrox boards - DSX LE4/4/550F, X.mio3/4/100 with U55 and U44 upgrades	VIZENG-2717 5

Summary	Key
Improve in-to-out delay with UHD	VIZENG-27119
Add UHD to allowed output resolution list for DSX.core use cases	VIZENG-26934
Support replay and growing playlist in VML Clip Player	VIZENG-26922
Add timecode in VML Clip Player for SHM AUX	VIZENG-26918
Support SMURF inputs in NDI output mode (Software Tricaster)	VIZENG-26850
Allow 1 frame DVE delay for UHD inputs on X.Mio5	VIZENG-26721
Fix wrong return type in API call VIZ::eOutputFormat VIZ::get_output_format()	VIZENG-26516
Support audio delay for SMURF inputs	VIZENG-26365
Performance improvement by removing extra texture copies for LIVE, CLIP and GFX	VIZENG-26298
VML Clip Player: add support for growing and seekable inputs in compound input	VIZENG-26239
Support HAP codec	VIZENG-26211
Make 3G channels on X.mio5 12G available for downscaled preview	VIZENG-26204
Unify Audio Enable configuration for input channels	VIZENG-26182
Support of HD input/output for X.mio5 12G	VIZENG-26052

Summary	Key
Support of UHD for X.mio5 12G	VIZENG-2605 1
Add support for Bluefish Kronos K8	VIZENG-2603 6
Mechanical Bypass in Fast Texture Mode	VIZENG-2600 0
Add conformity check for group hints	VIZENG-2596 7
SHMLib/SMURF: Add texture sharing support for V210	VIZENG-2594 2
SHMLib/SMURF: Add texture sharing support for YUY2	VIZENG-2593 3
Support for Matrox Clip Player non broadcasting resolution	VIZENG-2593 2
Integrate NMOS IS-07 into Viz Engine	VIZENG-2577 0
Cleanup: Remove obsolete SHM-AVVC channels	VIZENG-2560 5
Cleanup: Remove obsolete software I/O mode Stryme	VIZENG-2559 4
Cleanup: Remove obsolete Libero AR implementation	VIZENG-2558 9
Cleanup: Remove obsolete software I/O mode for Libero Live Engine Integration	VIZENG-2558 8
RTP/UDP, SRT, RTSP, RTMP streaming inputs for new Video I/O mode	VIZENG-2531 4
Support NDI without Matrox dependency for sport products	VIZENG-2530 8

Summary	Key
Timecode insertion for SDI/IP/NDI input	VIZENG-2527 3
Support for Audio in Shared Memory	VIZENG-2527 2
Fallback to VML clip player if Matrox clip player (main) can not open a clip	VIZENG-2508 3
Optimize the Clip Watch Folder thread	VIZENG-2503 3
Optimize resource allocation in clip players	VIZENG-2444 4
ST2110 HD Preview Flow for UHD workflow	VIZENG-2378 8
Add support for DNxHR with Alpha reader and writer	VIZENG-2347 0

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## 2.6 Fixed Issues

### 2.6.1 Fixed Issues: Renderer

Summary	Key
Action keyframes in channel only directors get ignored	VIZENG-28 245
Command on GFX port potentially ignored when superchannel port receives a command simultaneously	VIZENG-28 217
Foreground clip does not affect alpha anymore (Arena Image-Based)	VIZENG-28 215



Summary	Key
Wrong text wrapping with spaces	VIZENG-28 214
Tone mapping animations deleted after scene save and reload	VIZENG-28 163
STAGE*TIMELINE LOCK returns inversed value	VIZENG-28 103
Image in Superchannels in Viz Engine Pipeline ignores alpha channel	VIZENG-28 078
Classic scene isn't visible in Front or Back layer when running in Engine mode without a main scene	VIZENG-28 050
Viz Engine program failure after loading timeout with specific VS scene	VIZENG-28 047
Stop point on frame 0 gets ignored in Artist mode	VIZENG-27 987
Fixed live icon updates in scene tree	VIZENG-27 976
Startup parameter -o doesn't work with scene path anymore	VIZENG-27 909
Scene Tree: copy container itself flattens structure	VIZENG-27 846
Viz Engine crashes when saving a specific scene	VIZENG-27 824
Map Scene with Mask Target crashes the engine on map refresh	VIZENG-27 823
Mattescene not in sync	VIZENG-27 687
Scene save breaks ONAIR preview when preview is send to an external application	VIZENG-27 346

Summary	Key
MOVE command does not support arguments containing control channels anymore	VIZENG-27 212
Console answer delayed when executing commands directly inside the console	VIZENG-27 066
Prevent potential crash when opening a corrupt scene	VIZENG-26 962
Clip and Live input jitter in 60M video wall configurations	VIZENG-26 957
Byte Order Mark within VSL script plugin files leads to compiling error	VIZENG-26 946
SNMP MIB file only gets updated during startup on Dualchannel systems	VIZENG-26 925
External control of subdirector with clip channel doesn't work	VIZENG-26 874
Input Video not showing with TransitionLogicUseMergedGeometries set to 0	VIZENG-26 846
Crash when accessing a not-yet loaded SCENE by its UUID	VIZENG-26 779
Precision Keyer: Processed Holdout Matte Area is Wrong if Output Resolution != Input Resolution	VIZENG-26 170
Incorrect ringbuffer delay in command feedback current Frame Number (FN)	VIZENG-26 056
Integer division compound assignment (\=) reported as invalid operator in script	VIZENG-26 021
Material applied to a Razor Font doesn't automatically get updated	VIZENG-26 018
Viz Engine Renderer: Video Assets are not Blended Correctly if One of the Assets is a Keyed Texture	VIZENG-25 833

Summary	Key
ControlText Field Identifier does not accept "_" (underscore) character	VIZENG-25 831
OBJ file import is much slower than in 3.x	VIZENG-25 786
Viz Engine crashes when export font	VIZENG-25 764
Viz Engine crashes when no Erizos plugins are installed	VIZENG-25 688
Engine crashes if a scene with ezJavascript plugins loaded and the plugins are not installed	VIZENG-24 591
Incomming commands are not always processed in the correct order if sent using VSL	VIZENG-18 256

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## 2.6.2 Fixed Issues: Video IO

Summary	Key
Classic scene in Back layer is still visible when using a Viz Engine Renderer scene	VIZENG-2821 9
Viz Engine running out of audio samples at application start	VIZENG-2811 3
DVE Video and Audio Delay is 1 field off	VIZENG-2809 6
Delay section in configuration profiles not taken into consideration	VIZENG-2809 1
Matrox topology isn't created after system reboot	VIZENG-2800 0

Summary	Key
Wrong luminance in X.mio5 2110 key	VIZENG-27730
New clip only plays after scene is receiving a continue	VIZENG-27325
Console is flooded with error messages if NDI out is enabled	VIZENG-27193
Clip and Live input jitter in 60M video wall configurations	VIZENG-26957
Input Video not showing with TransitionLogicUseMergedGeometries set to 0	VIZENG-26846
DVE effects are delayed with new IO implementation	VIZENG-26729
Issues with clip player watchfolder	VIZENG-26334
Random Clip Behavior with VML Player in Viz Engine Scene	VIZENG-26301
Clip with alpha flashes inside key signal with new IO before playback starts	VIZENG-26188
Different VML clip player behaviour in ActiveX/NLE use case	VIZENG-25989
No Placeholder for Unconfigured Assets in Viz Engine Renderer	VIZENG-25897
Keyed liveinput Flickers Occasionally, Unkeyed Texture Appears	VIZENG-25869
Clip player autorun setting broken	VIZENG-25852
1080p25 ProRes .mov clips don't work between Matrox driver 9.9.0.2306 and 10.1.102.24988	VIZENG-25767

Summary	Key
Bluefish requires GPU direct for 1080p output	VIZENG-2576 1
SMPTE 2022-6 does not work in latest 3.x and 4.x versions	VIZENG-2462 0
Preview command partially enables Program output channel	VIZENG-1887 6

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## 2.7 Changes

- Viz Vectar Plus Production Premium core license is no longer available.
- Command line argument syntax now conforms to IEEE Standard 1003.1-2016.

### 2.7.1 Upcoming Changes

- Nvidia Kepler GPUs will be deprecated (Nvidia isn't supporting Kepler boards in newer driver versions anymore).
- Bluefish Supernova boards will be deprecated in Viz Engine 5.1.

### 2.7.2 Changes: Renderer

### 2.7.3 Changes: VideoIO

- Removed IO V3 as an optional IO processing configuration.
- Added support for NDI 5.
- Configuration files for older X.mio boards have been removed and are no longer called *\*xmio3.cfg*.
- Disabled still preview on all Matrox cards by default for consistency. The previous default enabled it only on some SDI cards.
- Improved IO performance with Bluefish cards sufficiently to make GPU direct unnecessary.
- GPU direct is no longer supported with Bluefish cards.

## 2.7.4 Changes: Plug-ins

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## 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  $\geq 7.0$
- 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.

### 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**.
- Using GPU Direct can cause performance impacts. It is recommended to use `use_threaded_IO = 1` on videowall setups, however, some systems like older Supermicro installations require `use_threaded_IO` to be turned off. It is recommended to run some performance tests with this flag turned on or off.
- 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
<a href="#">Clip in Stage ignores pause</a>	VIZENG-24482
<a href="#">Command for Genlock status</a>	VIZENG-23808
<a href="#">Execution logic is not applied to a template created from Transition Logic scene</a>	VIZENG-21755
<a href="#">ImageEditor to handle 16bit images</a>	VIZENG-25168
<a href="#">Improve VizEngine startup time</a>	VIZENG-24017
<a href="#">Preview Feature not working in Viz Engine Renderer Pipeline</a>	VIZENG-25420
<a href="#">Scrub Clip in Superchannel</a>	VIZENG-26199

Summary	Key
<a href="#">Stage: Startkeyframe gets set wrong when hitting keyframe button</a>	VIZENG-21385

### 8 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 Viz 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 checkmark 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 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.

## 2.8.9 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.
- 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 .
- 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, autosensing 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. Use of GPU direct is not recommended (VIZENG-20700).
- Two Sample Interleave (2SI) clips played as DVE not supported.
- Cutting of Audio tracks should not be done at all, as this results in a crackling noise. Always use a crossfade 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).

### 2.8.10 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.
- Texture delay with PAL/NTSC, GPUDirect and Fast Texture Mode is five instead of four fields. Turn off GPUDirect for four fields delay (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).

### 2.8.11 X.mio5 Boards

- Standard Definition (PAL and NTSC) resolutions are not supported by X.mio5 boards according to the 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.

### 2.8.12 DSX.core

In case a pre-release of the Matrox-Driver (for example, 10.3.030.504) was installed, it is necessary to follow the procedure described below.

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*.

### 2.8.13 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.

### 2.8.14 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.
- Viz Trio/Viz Engine: Viz Engine might hang during shut down on devices with an Nvidia T500 when exiting Viz Trio.

### 2.8.15 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).

### 2.8.16 Adaptive Scene Design

- WindowMask Plugin prevents Flexbox labels from being picked.

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## 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, Windows Server 2016

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

## 2.9.1 Supported Systems

System
Lenovo P620
DELL R3930
DELL Precision R7920
HP Z8
HP Z4
HP Z840
HP Z440
HP ZBook 17G6
HPE DL380 Gen9

## 2.9.2 Supported GPUs

Ampere GPUs	Turing GPUs	Volta GPUs	Pascal GPUs	Maxwell GPUs	Kepler GPUs (1)
<b>RTX A6000</b>	<b>RTX 6000</b>	<b>GV100</b>	NVidia Quadro P6000	Nvidia Quadro M6000	Nvidia Quadro K6000
<b>RTX A5500</b>	<b>RTX 5000</b>		NVidia Quadro P5200	Nvidia Quadro M4000	Nvidia Quadro K5000
<b>RTX A5000</b>	<b>RTX 4000</b>		Nvidia Quadro P4200	Nvidia Quadro M2000	Nvidia Quadro K5200

Ampere GPUs	Turing GPUs	Volta GPUs	Pascal GPUs	Maxwell GPUs	Kepler GPUs (1)
<b>RTX A4500</b>	<b>RTX 3000</b>		Nvidia Quadro P4000		Nvidia Quadro K4000
<b>RTX A4000</b>	T1000		Nvidia Quadro P3200		Nvidia Quadro K4200
RTX A2000			Nvidia Quadro P2200		Nvidia Quadro K2000
			Nvidia Quadro P2000		Nvidia Quadro K2200
RTX A3000 (mobile)			Nvidia Quadro P1000		
RTX A2000 (mobile)					
RTX A1000 (mobile)					
<b>Orange</b> entries are recommended for rendering photo-realistic graphics on the Viz Engine Pipeline.					
(1) Kepler GPUs require an older driver version (473.47)					

### 2.9.3 Supported Video Boards

Video Board	Configuration
<b><i>Matrox Electronic Systems Ltd</i></b>	
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	Three IP Streams in, three IP Streams out (1080p60M)
Matrox X.mio3 Full Height	Various input/output configurations from 48 to 84

Video Board	Configuration
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
<b><i>BlueFish Technologies</i></b>	
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)
<b><i>AJA Video Systems, Inc.</i></b>	
AJA IO4K Plus	Two video inputs, two video outputs (fill & key)
AJA Kona IP <sup>(1)</sup> <sup>(2)</sup>	One IP Stream in, one IP Stream out
AJA Kona 4	Two video inputs, two video outputs (fill & key)
<sup>(1)</sup> Set to end of life by vendor <sup>(2)</sup> JPEG2000 license is end of life by vendor	

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

### 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](#)

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## 4 Installation And Support

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### 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.

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### 4.2 Support

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