



NVG1

NewTek-Vizrt IP Graphics Server

Quick Start Guide

NDI[™]

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1 INTRODUCTION AND SETUP



This chapter explains how to connect power, monitors and network connectivity to your NVG1 NewTek-Vizrt IP Graphics Server. It also reviews the licensing process. After completing this short section, you'll be all set to begin using your NVG1.

SECTION 1.1 WELCOME

Thank you for purchasing this NewTek™ product. As a company, NewTek is extremely proud of its record of innovation and commitments to excellence in design, manufacture, and superb product support. NewTek IP Series products are the most advanced live production tools available, and you will find them exceptionally powerful and versatile.

NewTek's innovative live production systems have repeatedly redefined broadcast workflows, providing new possibilities and economy. In particular, NewTek has been a leader in introducing integrated devices providing a complete set of tools related to program creation and broadcast, along with web streaming and social media publishing. This tradition continues in collaboration with Vizrt to bring you the NVG1 NewTek-Vizrt IP Graphics Server. Its implementation of NewTek's innovative NDI (Network Device Interface) protocol places your new system squarely in the forefront of IP technology solutions for the video broadcast and production industries.



SECTION 1.2 OVERVIEW

The NVG1 NewTek-Vizrt IP Graphics Server is a turn-key real-time CG and motion graphics platform that combines a powerful 1RU server with Vizrt's industry-leading Viz Trio™ character generator and Viz Engine™ compositing software. Built with IP workflows in mind, the NVG1 provides deep integration and connectivity with NewTek's IP Series and TriCaster line of live production systems via NewTek's NDI® (Network Device Interface) IP video protocol.

Key features include:

- Real-time 3D CG & motion graphics
- Multi-layered playout
- Single or dual channel configurations
- Smart templates with user options
- Ability to replace text, graphics & clips

- Change colors, textures, and looks on-the-fly
- Transition Logic
- Supports HD & 4K UHD
- Macro automation control
- Support for the full line of Vizrt workflow products
- Generic news & sports graphics package included
- Availability of custom graphics packages

SECTION 1.3 SETTING UP

Hint: NVG1's interface requires a monitor resolution setting of at least 1280x1024.

1. Connect an external computer monitor to the any of the display port connectors on the backplate (see Input/Output Connections).
2. Connect the *mouse* and *keyboard* to USB ports also on the backplate.
3. Connect the *power cord* to NVG1's backplate
4. Turn on the computer monitor.
5. Press the *Power* switch on NVG1's faceplate (located behind the drop-down door).

A word about UPS devices:

'Modified sine wave' UPS devices are popular due to low manufacturing costs. However, such units should generally be viewed as being of low quality and possibly inadequate to fully protect the system from abnormal power events.

For a modest added cost, consider a "pure sine wave" UPS. These units can be relied on to supply very clean power, eliminating potential problems, and are recommended for applications demanding high reliability.

At this point, the blue *Power LED ring* will illuminate, as the device boots up. (If this does not happen, check your connections and retry). Though not a requirement, we do strongly recommend that you connect NVG1 using an uninterruptable power supply (UPS), as for any 'mission critical' system.

Likewise, consider A/C "power conditioning", especially in situations where local power is unreliable or 'noisy'. Surge protection is especially important in some locales. Power conditioners can reduce wear on NVG1's power supplies and other electronics, and provide a further measure of protection from surges, spikes, lightning and high voltage.

SECTION 1.4 REAR CONNECTIONS

External computer accessories, network interfaces, and power are connected to the appropriate connectors on NVG1's backplate.



1. HDMI – monitor ports (Not Used)
2. Ethernet – network connections

3. USB – connect keyboard, mouse and other peripheral devices.
4. Motherboard audio connectors
5. GPU display port connectors
6. Power

SECTION 1.5 NETWORKING

Generally, simply connecting a suitable cable from one of the two Gigabit Ethernet ports on NVG1's backplate is all that is required to add it to a *local area network* (LAN). In some settings, additional steps may be required. You can access the system *Network and Sharing* control panel to accomplish more extensive configuration tasks. If further help connecting is required, please consult your system administrator.

All that is required to connect the NVG1 to your NewTek production system is running an Ethernet cable between the NVG1 and a switch or connector on the same network with the desired NewTek switcher.

SECTION 1.6 LICENSING

1.6.1 OVERVIEW

Your NVG1 comes with 90-day temporary Vizrt License when shipped from the factory. This License is comprised of a software license key that is paired to a Vizrt Hardlock Dongle housed inside of the NVG1 chassis. Without these items the Viz Engine software would not start. You may use the NVG1 with the temporary license during the installation and setup of the system.

When you are ready to begin normal operations, please contact NewTek Technical Support to fully register your system and begin your annual software support contract. At this point, you will also receive your permanent Vizrt software license.

To contact NewTek Technical Support, please submit at Support Request using the following link:

<http://New.Tk/help>

1.6.2 LICENSE KEY

The permanent license will be sent in an email that includes the 64-character License, a list of the Licensed Features, and the Hardlock Dongle ID associated with this License. The License and Dongle ID are tied together, and a License cannot be applied to another Dongle. Any updates or extensions to the Licensed Features will be done through the application of another License.

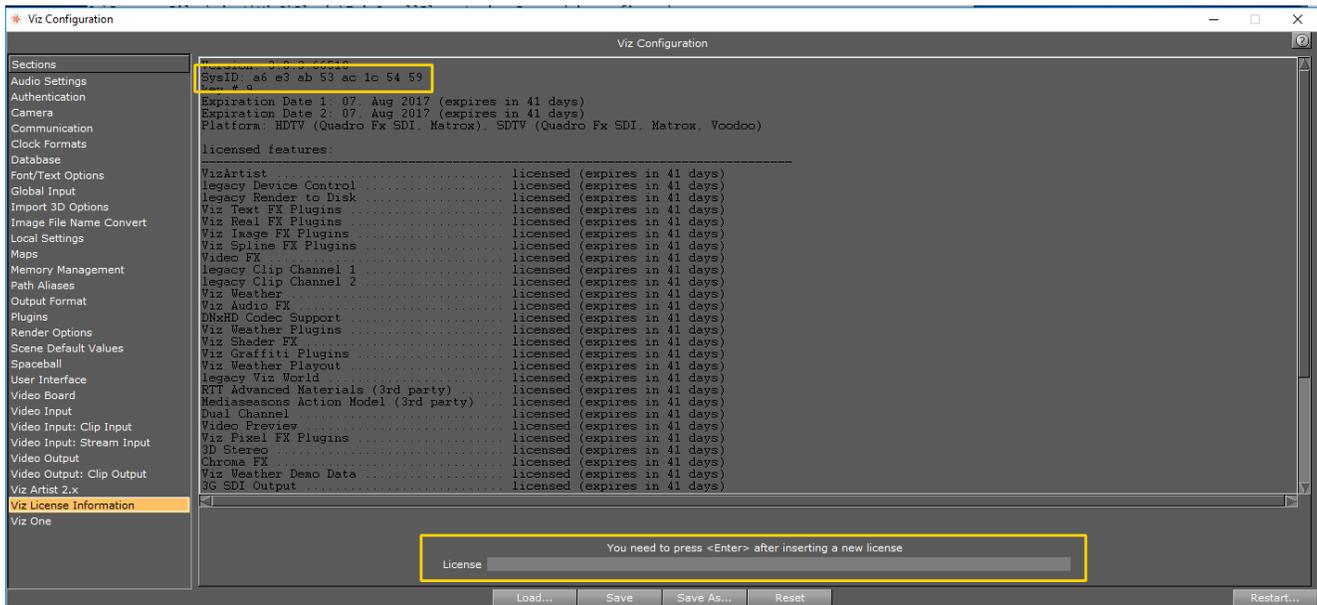
Example License

D4 99 B8 95 C3 BD BD 9B C3 EF B6 52 F9 D3 10 FA 9C 66 81 9B 76 BE 23 98 C3 67 C1 7E 30 24 BC 76

1.6.3 APPLYING A LICENSE

1. The Hardlock Dongle should already be installed inside the NVG1 chassis
2. Launch Viz Config for Trio Preview by double-clicking on the desktop shortcut

3. The Viz Config window will open



4. Select Viz License Information
5. Confirm the Sys ID on the window matches the Hardlock Dongle ID in the email
6. Copy the License from the License Information File
7. Paste the License into the License field and press Enter
8. Close the Viz Config window

1.6.4 LICENSE EXPIRATION

Licenses may be either temporary or permanent, depending on your needs. A temporary License must be renewed on a consistent basis at a specific interval (ie. A single month, or even year). When the expiration date is reached, the Viz Engine will no longer start, and instead will display the Viz License Check window. This renewal can be completed through a NewTek Tech Support representative or from Vizrt directly.

The NVG1 permanent license requires no such renewal, and will never expire.

2 GETTING STARTED

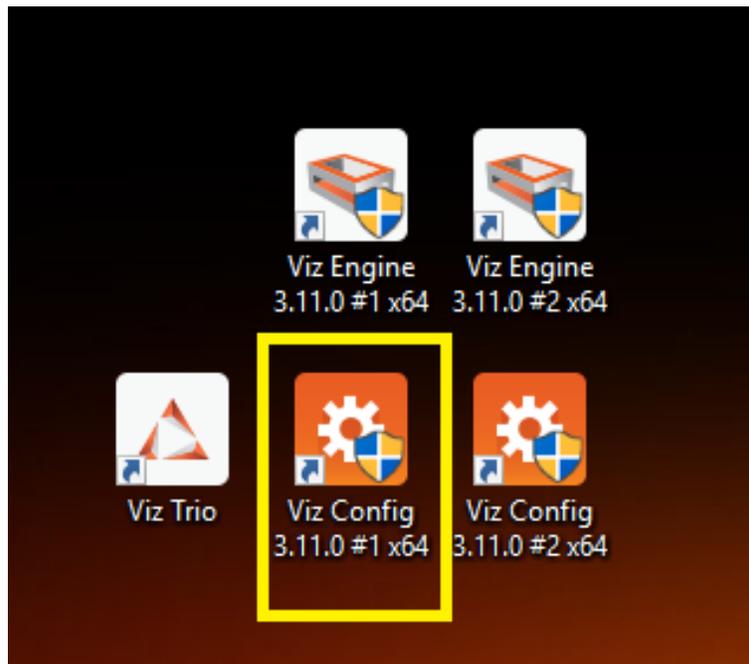


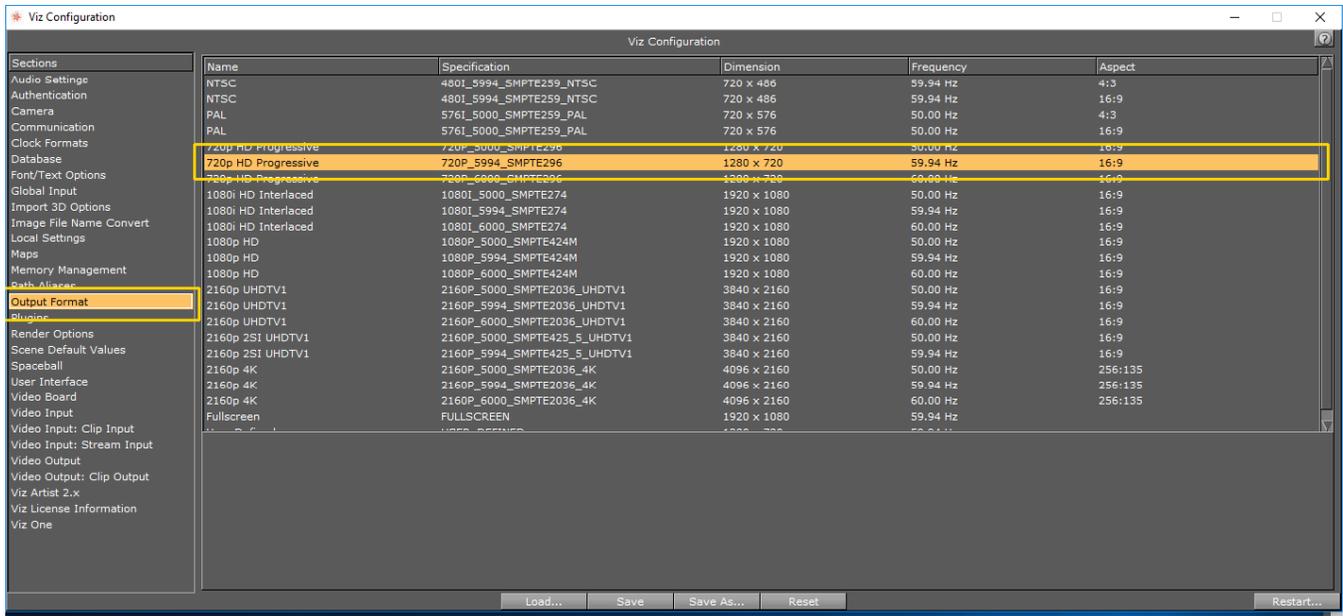
This chapter explains how to start the Vizrt software, load a project, and get an output on screen. After this section, the NVG1 is fully operational and ready to use either the installed generic graphics packages or other Vizrt projects from other sources, including custom graphics packages.

SECTION 2.1 VERIFY THE SYSTEM

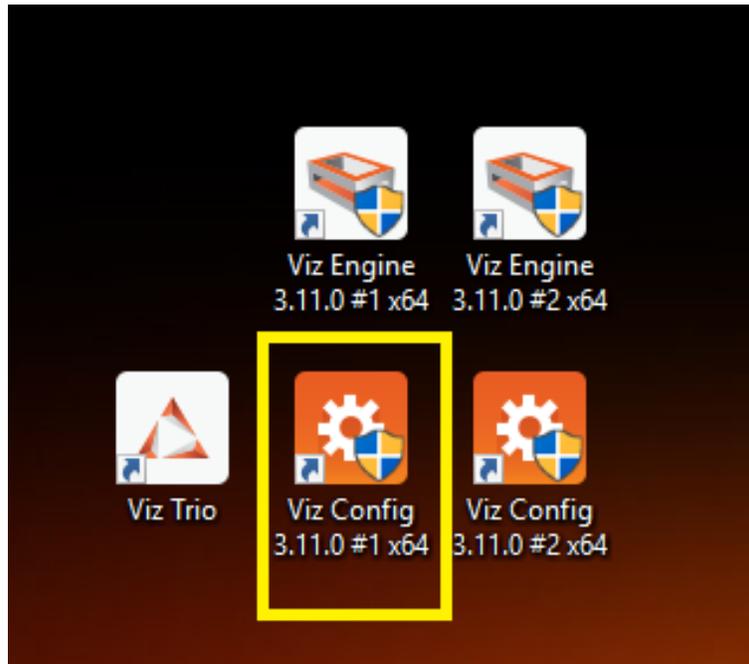
2.1.1 LAUNCHING THE VIZ ENGINE SOFTWARE

1. Make sure the system is turned on
2. If not, open the front panel of the chassis by flipping it down
3. Push the power button on the left with the blue LED ring
4. Once Windows boots up, you need to set the output format



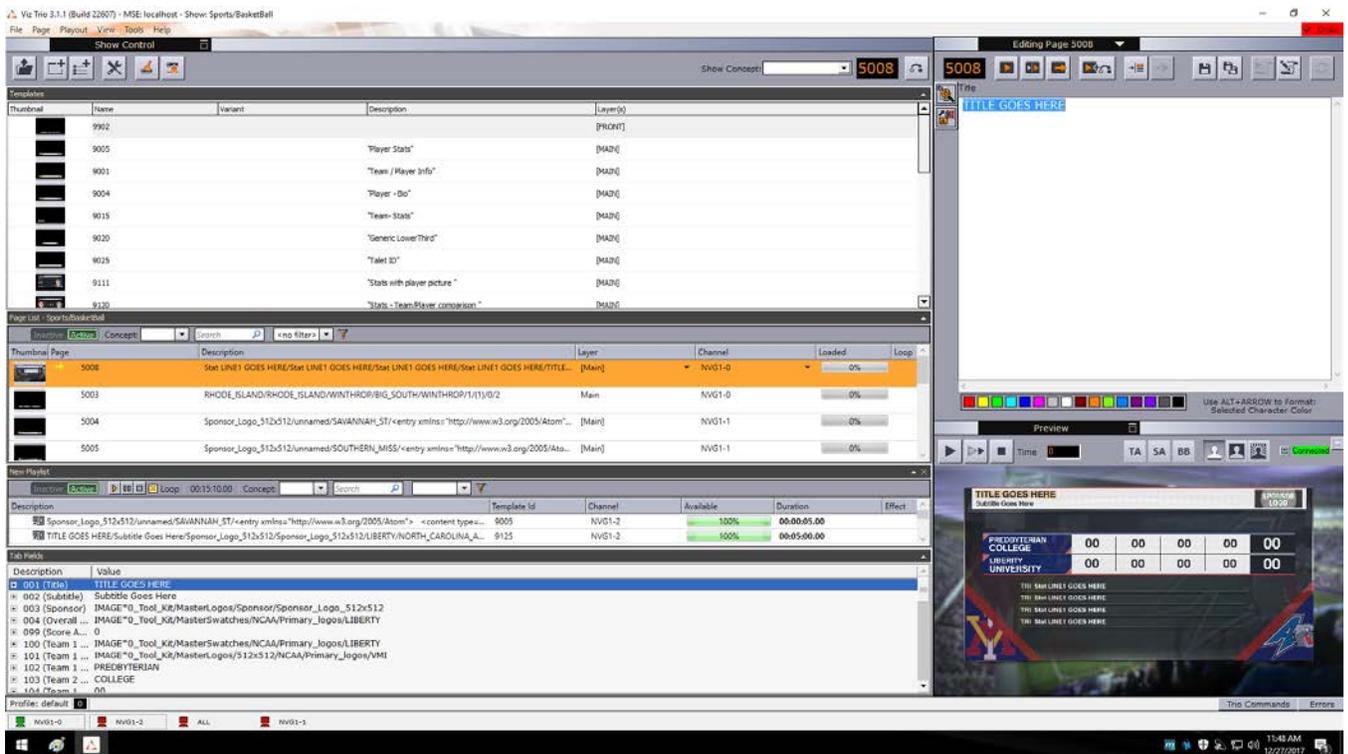
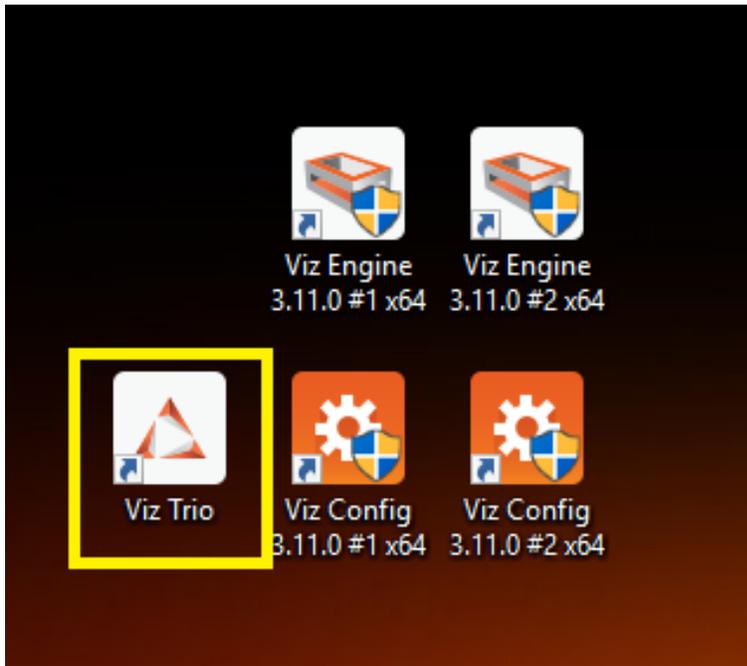


5. Select the Output Format section, and pick your desired resolution



6. Repeat the process for Viz Engine 1, and Viz Engine 2

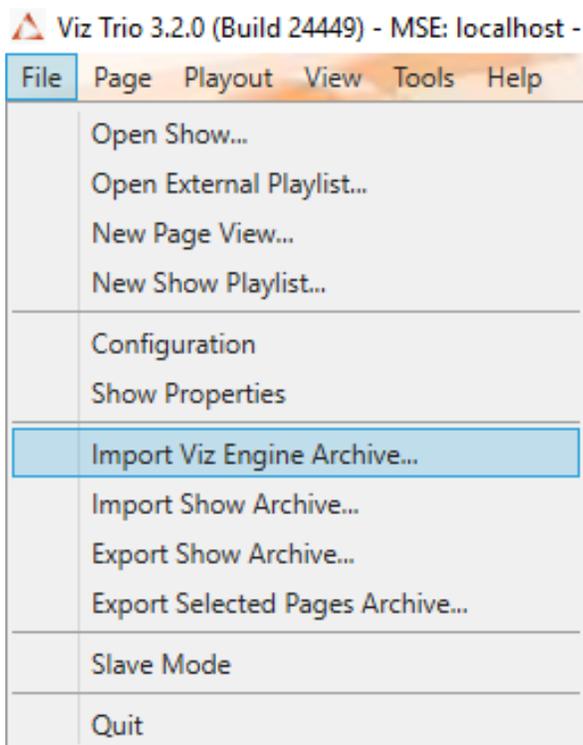
7. Double-click on the Viz Trio icon on the desktop, Trio will automatically start the preview channel



8. After Viz Trio launches return to the desktop and double click on Viz Engine 1 and Viz Engine 2 desktop icons.

9. The Viz Engine console windows will pop up, but they can be minimized

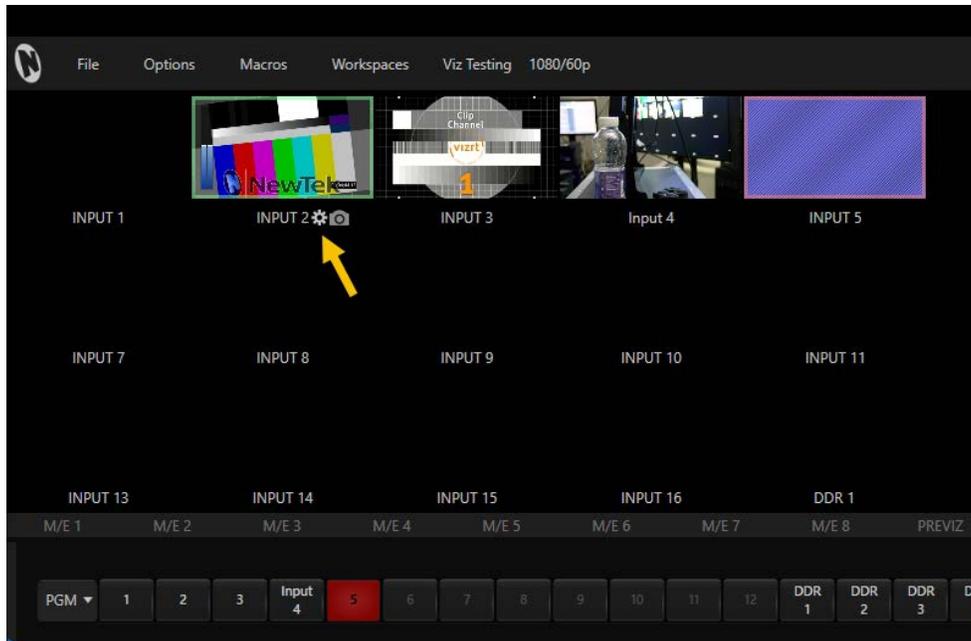
2.1.2 LOADING A VIZRT PROJECT



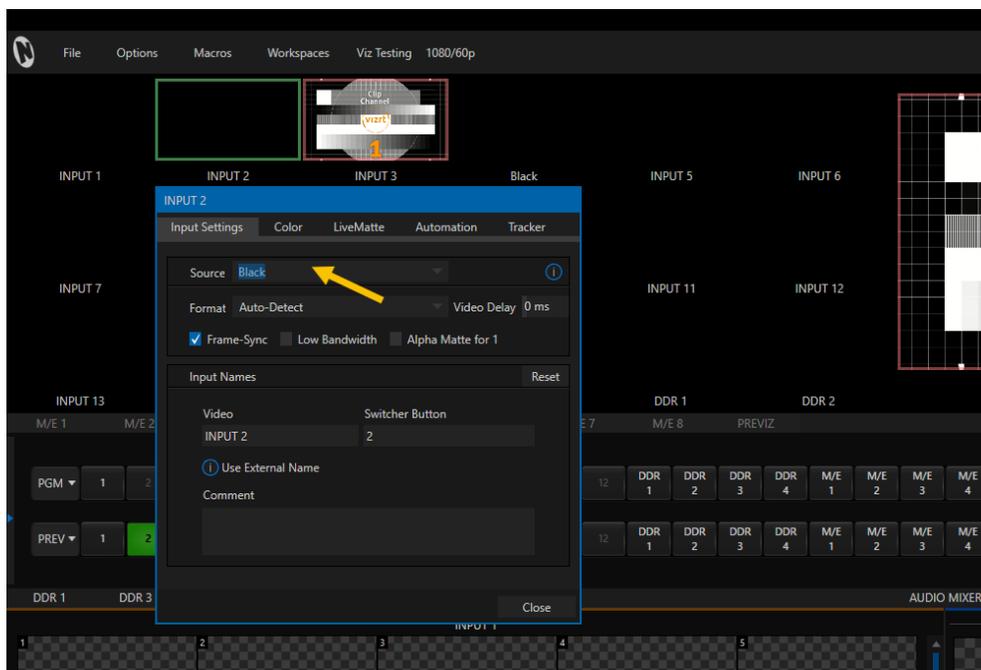
1. If you have a Viz Engine archive, go to File and select Import Viz Engine Archive.
2. Then select Open Show to open your Trio Show file.

2.1.3 CONNECTING TO A NEWTEK LIVE PRODUCTION SYSTEM

1. Once the NVG1 system and Viz Engine/Trio software are up and running, the graphics channels should appear on the network as NDI® sources
2. To see the Viz Engine outputs on a TriCaster or IP Series, you need to assign them to switcher inputs
3. Move your cursor on the NewTek live production system to a label on a multi-viewer input



4. Float your cursor over the gear icon and select it
5. On the Input Settings tab, click on the Source drop-down menu to view all the NDI sources on the network



6. Select the NDI source for Trio Preview, Viz Engine 1, or Viz Engine 2 (they will be labeled with the machine name of the NVG1 followed by -0, -1, and -2, if you have a dual channel system)
7. Repeat this process for the other channels

2.1.4 CHECKING THE OUTPUT

1. Punch up the switcher inputs assigned to the NVG1 outputs on the PGM bus of the NewTek live production system and recall graphics on Trio by clicking on them in the list and pressing the Play button above the Preview window in the Trio user interface

2.1.5 CHECKING CONTROL COMMANDS

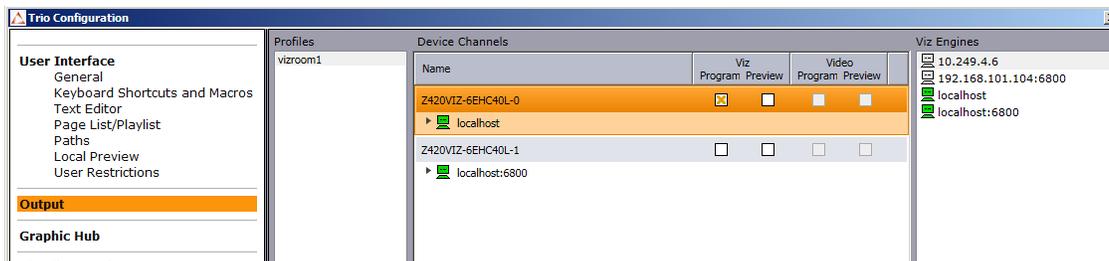
Control of Viz Trio via NewTek Macro triggers is common and useful for many production workflows. NewTek macros can embed the Viz Trio macro language. Through this function it is possible to script many of the operations that are normally done in the graphical user interface of Viz Trio.

Before sending commands, it is required to make certain the channel names are configured correctly.

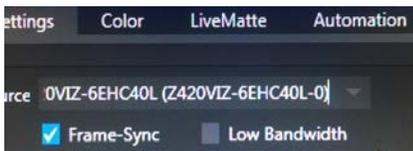
The Viz Trio channels must match the channel name of the NDI input. You can verify the names by looking in the bottom left corner of the Trio Interface.



If the names do not match, you can edit them by going to Trio 'File' menu and selecting 'Configuration'. In the window that appears, select 'Output' on the left side of the window. The channel(s) will be listed. Change any channel name by right clicking and choosing 'Edit Channel Name' from the context menu.



The correct channel name will be the hostname of the NVG1 followed by a '-1' or '-2' for the each of the Viz Engine NDI output channels. You can also see these names by going into the NewTek Switcher, opening the input configuration window and looking at the Source selection. The name between the parentheses will be the correct channel name.



Once channel names are configured, it is time to create macro commands. These commands will be configured on the TriCaster or VMC1.

Conceptually the commands flow from TriCaster or VMC1 via NDI to the Viz Engine generating the NDI source. The Viz Engine then forwards the command to Viz Trio, which in turn directs the Viz Engine accordingly.

The general syntax is:

Delay (Frames)	Shortcut	Value
60	net##	Command:[argument] {NDI channel name} action

Shortcut:net##

The net## shortcut is used to send a command to the matching input. The number with the net command will match the input number being used. For example, if the NVG1 is connected on input 12, the shortcut command will be 'net12'.

Value: Viz command

The value will be the Trio command along with any arguments required. The **[ch]** variable is necessary and should be typed into the macro value as [ch]. Viz engine will automatically swap this variable with the channel name. This name must match the same name in Viz Trio for successful command operation.

Common commands you may use are:

page:arm {page name} [ch]

Arm (load) a page into this channel. Replace {page name} with the correct page name/number.

page:fire [ch] take false

Performs a 'Direct Take' of the page that has been armed into this input.

page:fire [ch] out true

Performs an 'Out' on the page that has been armed into this input.

Page:fire [ch] continue true

Performs a 'Continue' on that page that has been armed into this input.

Other commands can be found in the Viz Trio User documentation under Macro Commands and Events.

SECTION 2.2 FULL VIZRT DOCUMENTATION LINKS

The full Viz Engine configuration and Viz Trio operational documentation may be downloaded from the links below:

Complete Engine Config documentation:

<http://docs.vizrt.com/viz-engine-3.8.html>

Complete Trio documentation:

<http://docs.vizrt.com/viz-trio-3.1.html>

APPENDIX A: NDI (NETWORK DEVICE INTERFACE)

For some, the first question may be “What is NDI®?” In a nutshell, NewTek’s Network Device Interface (NDI) technology is a new open standard for live production IP workflows over Ethernet networks. NDI allows systems and devices to identify and communicate with each other, and to encode, transmit, and receive high quality, low latency, frame-accurate video and audio over IP in real time.

NDI enabled-devices and software have the potential to greatly enhance your video production pipeline, by making video input and output available anywhere your network runs. NewTek’s live video production systems and a growing number of third party systems provide direct support for NDI, both for ingest and output. Although NVG1 provides many other useful features, it is purpose designed primarily to turn SDI sources into NDI signals.

For more extensive details on NDI, please visit <http://www.newtek.com/ndi.html>.

APPENDIX B: DIMENSIONS AND MOUNTING

NVG1 is designed for convenient mounting in a standard 19” rack (mounting rails are available separately from NewTek Sales). The unit comprises a 1 Rack Unit (RU) chassis supplied with ‘ears’ designed to permit mounting in standard 19” rack architecture.

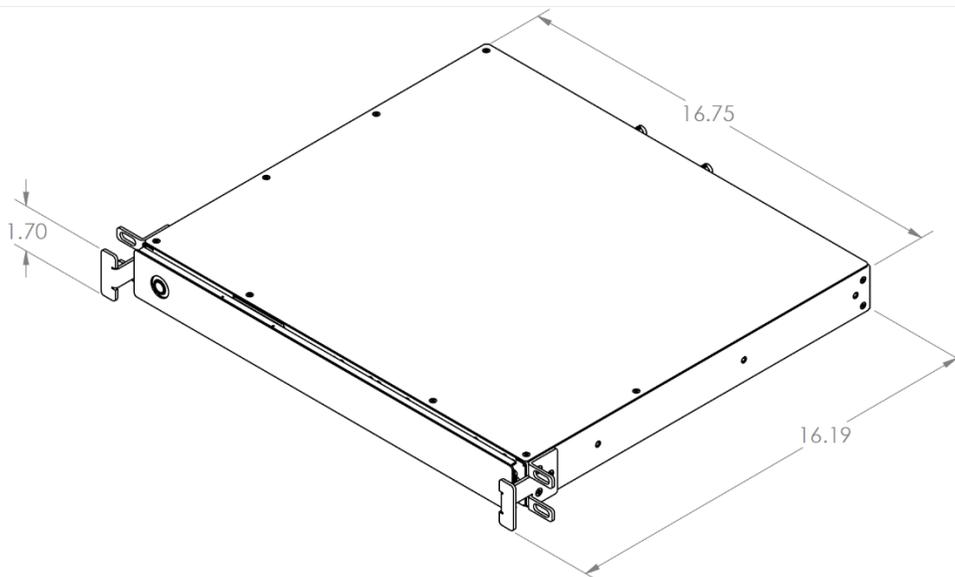


FIGURE 2-2

The units weigh nearly 14 pounds (6.35 KG). A shelf or rear support will distribute the load more evenly if rack-mounted. Good front and rear access is important for convenience in cabling should be considered.

In view of the top panel vents on the chassis, at least one RU should be allowed above these systems for ventilation and cooling. Please keep in mind that adequate cooling is a very important requirement for virtually all electronic and digital equipment, and this is true of NVG1 as well. We recommend allowing 1.5 to 2 inches of space on all sides for cool (i.e., comfortable 'room temperature') air to circulate around the chassis. Good ventilation at the front and rear panel is important, and ventilated space above the unit (1RU minimum is recommended).

When designing enclosures or mounting the unit, supplying good free air movement around the chassis as discussed above should be viewed as a critical design consideration. This is especially true in fixed installations where NVG1 will be installed inside furniture-style enclosures.

APPENDIX C: SOFTWARE SUPPORT & RENEWAL

Frontline NVG1 software support is provided by NewTek and backed by Vizrt's world-class technical support team. Software support is available for renewal annually from your local NewTek representative. In addition, the first year of NVG1 NewTek hardware warranty is included in the initial purchase price.

APPENDIX D: ENHANCED SUPPORT (PROTEK)

NewTek's optional ProTekSM service programs offer renewable (and transferable) coverage and enhanced support service features extending well beyond the standard warranty period. ProTekSM provides priority access to NewTek support channels in Year 1 and extends your NVG1 hardware warranty by an additional year. It may be bundled with Vizrt software support to provide the most complete protection.

Please see <http://www.newtek.com/protek.html> or your local authorized NewTek reseller for more details regarding ProTek plan options.

CREDITS

Acknowledgments: Tim Jenison, Jim Plant

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