



# AI Terminal User Guide

Version 1.1



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### **Created on**

2024/11/05

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# 1 Introduction

AI Terminal is an application to configure and control various Viz AI features and connect them with other Vizrt products and solutions.

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## 1.1 Related Documents

- [Viz Engine Administrator Guide](#)

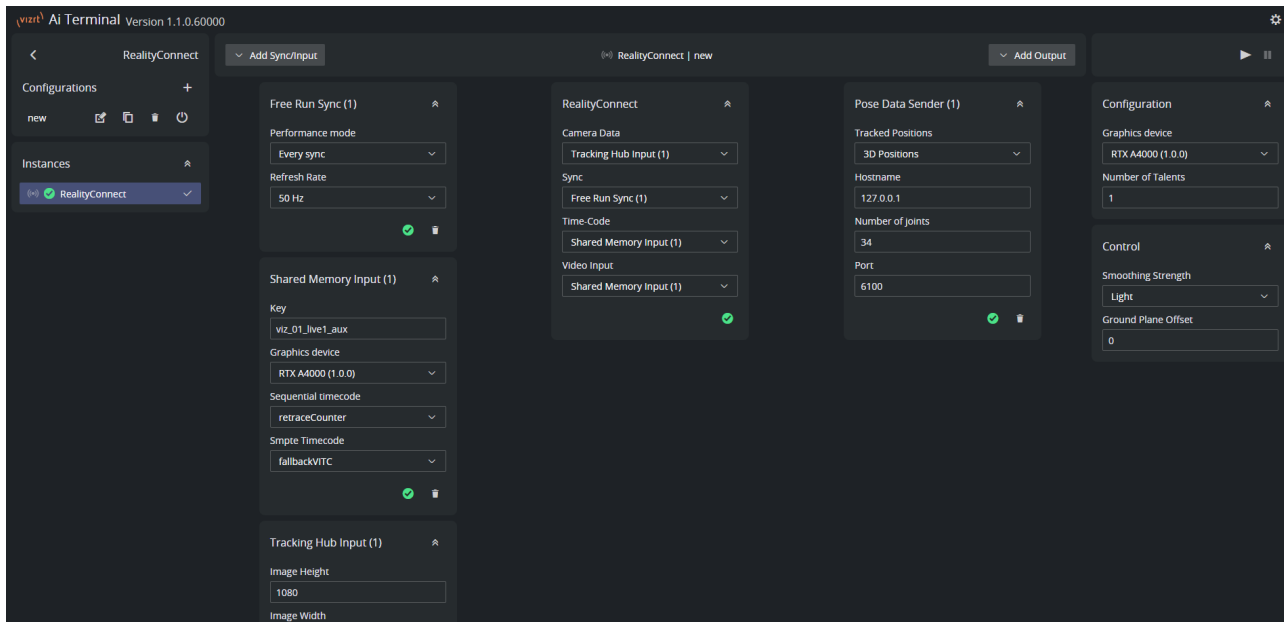
For more information about all of the Vizrt products, visit:

- [www.vizrt.com](http://www.vizrt.com)
  - [Vizrt Documentation Center](#)
  - [Vizrt Training Center](#)
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## 1.2 Feedback And Suggestions

We encourage feedback on our products and documentation. Please contact your local Vizrt customer support team at [www.vizrt.com](http://www.vizrt.com).

### 1.3 System Overview



AI Terminal is a generic control application for Viz AI features among Vizrt products and solutions. This version supports integrations with Viz Engine (via shared memory and UDP command interface), Viz Virtual Studio (via Tracking Hub), and NDI.



**NDI<sup>®</sup>**


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## 1.4 System Requirements

### 1.4.1 General

<b>OS</b>	Windows 10 (64-bit)
<b>Browser</b>	Google Chrome
	Firefox
	Microsoft Edge

### 1.4.2 Hardware

 **Note:** Hardware requirements are defined by each Viz AI feature and Vizrt product integration separately. Please refer to the [documentation](#) of these Vizrt products and AI features to find this information.

### 1.4.3 Integrations

- Viz Engine (5.1 or later)
- Viz Virtual Studio / Tracking Hub (1.7 or later)
- NDI (5.0 or later)

### 1.4.4 Other Software

- CodeMeter (7.40b or later)
- Microsoft Visual C++ 2015-2022 Redistributable

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## 2 Installation


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### 2.1 Vizrt AI

Launch *VizAiCore-\*.msi* and follow the instructions.

Launch *VizAiTerminal-\*.msi* and follow the instructions.

Launch *VizAiPlugins-\*.msi* and follow the instructions.

 **Note:** Restart potentially running instances of Viz Engine to load the installed Viz AI plug-ins.

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### 2.2 Other Software

#### 2.2.1 CodeMeter

Install *CodeMeter 7.40b* or newer.

#### 2.2.2 Microsoft Visual C++ 2015-2022 Redistributable

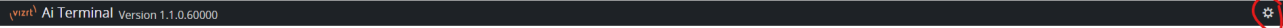
Install *Microsoft Visual C++ 2015-2022 Redistributable*. The download is available from [Microsoft](#).



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## 3 Settings

Open the settings by clicking the cogwheel icon on the top right of the AI Terminal window.

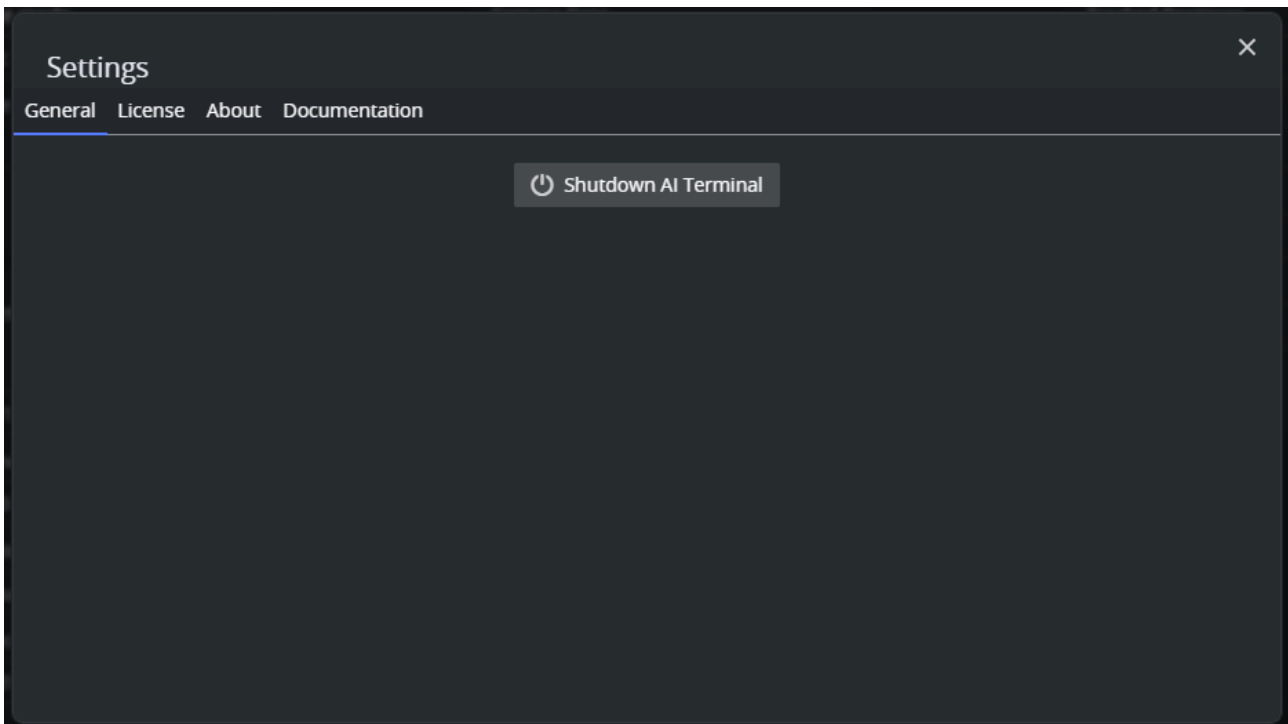


vizrt AI Terminal Version 1.1.0.60000

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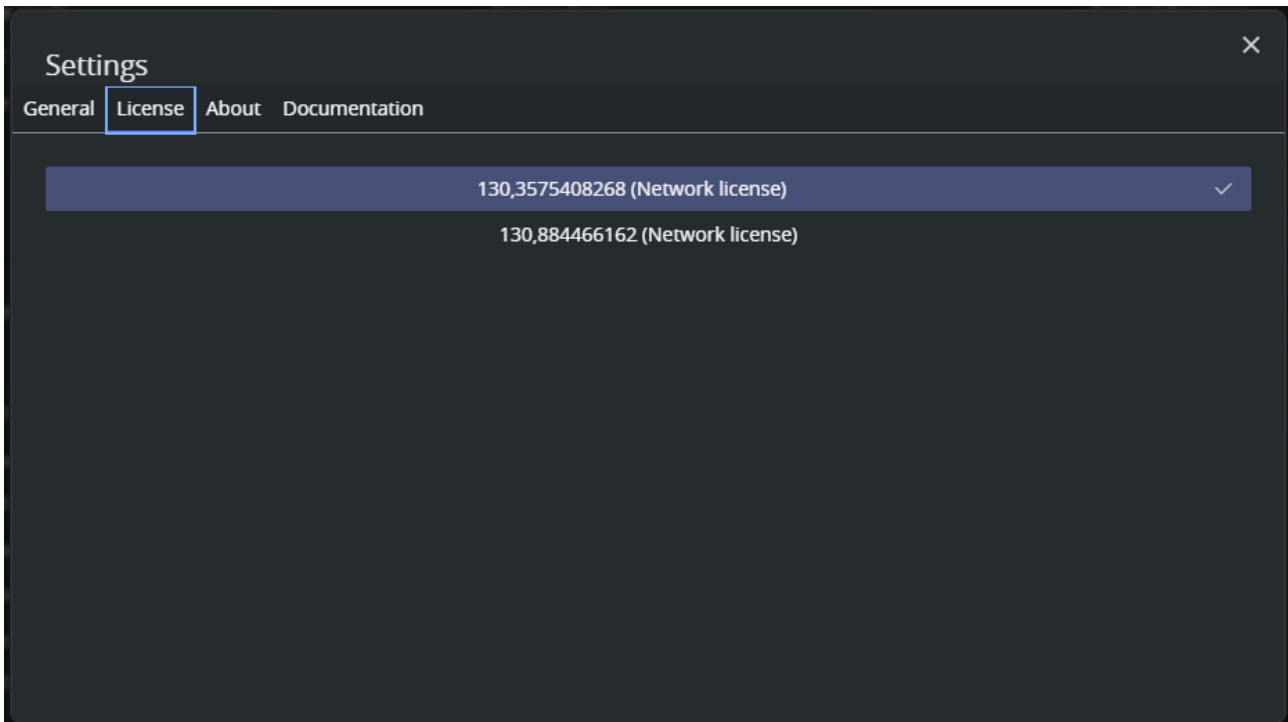
### 3.1 Sections

#### 3.1.1 General



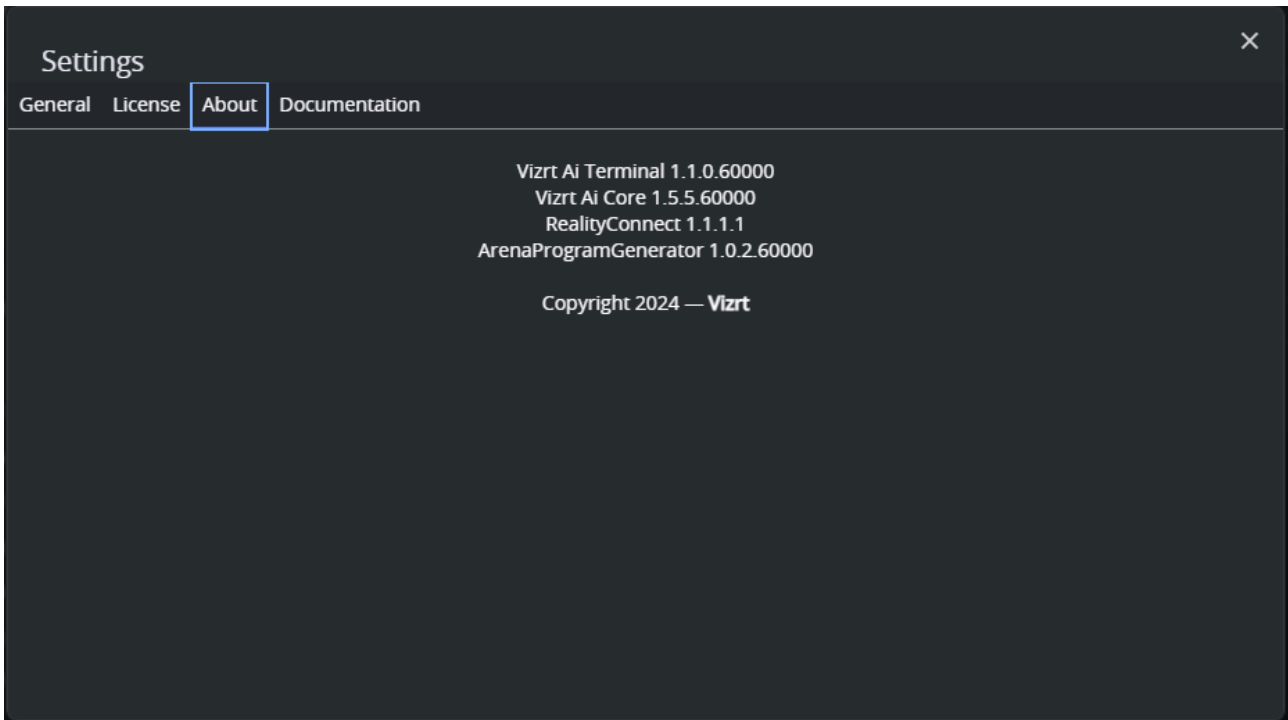
The general section contains a button to shutdown the AI terminal application. This also shutdowns all AI tools.

### 3.1.2 License



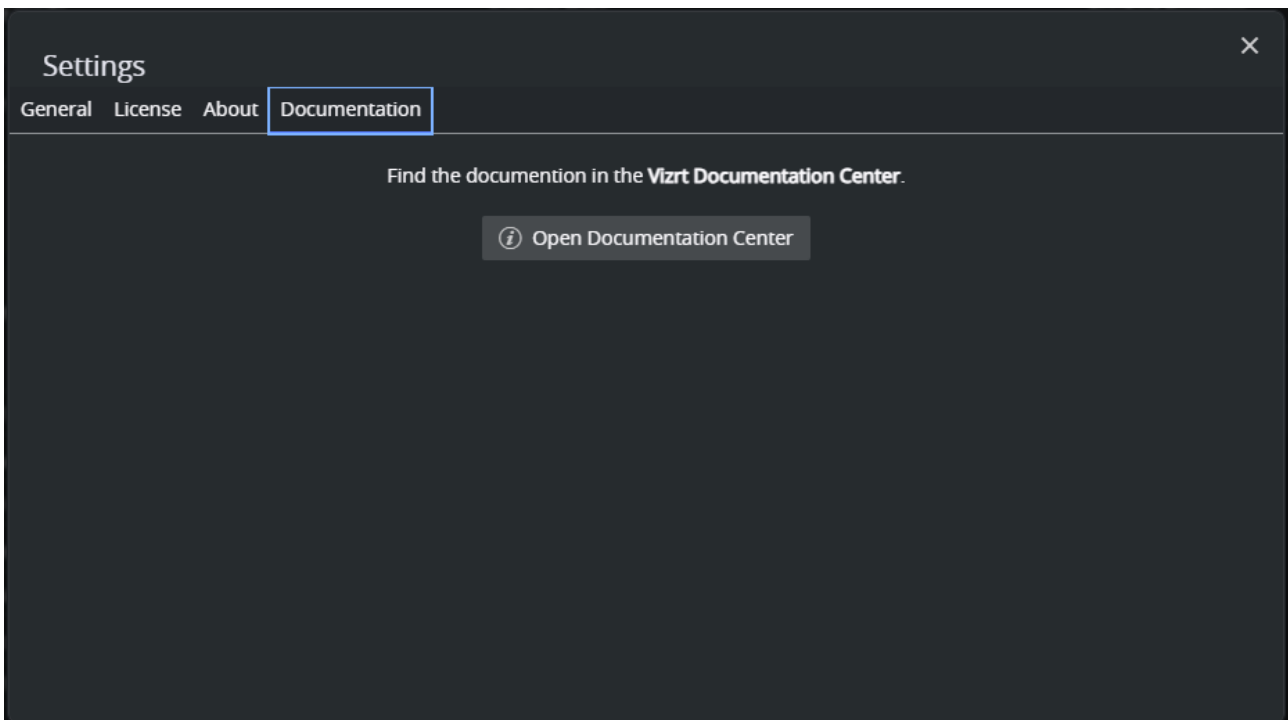
When entering the license section, the available license containers are loaded. This might take a few seconds. Select which license container is used to acquire the Viz AI feature licenses. The license is only acquired when a tool is created.

### 3.1.3 About



The about section has version information about the installed AI Terminal and Viz AI tools.

### 3.1.4 Documentation



The documentation section contains a link to the [Vizrt Documentation Center](#).

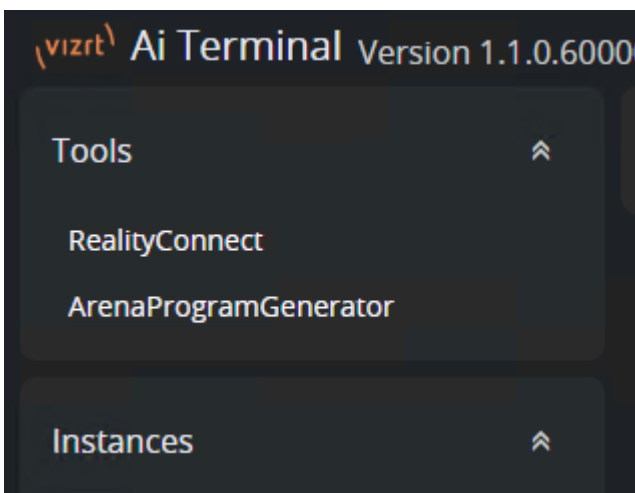
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## 4 Tool Setup

This section walks through the setup steps of a tool:

- [Installed Tools](#)
  - [Create and Terminate a Tool](#)
  - [Tool Configuration](#)
  - [Run and Pause a Tool](#)
  - [Errors and Warnings](#)
- 

### 4.1 Installed Tools









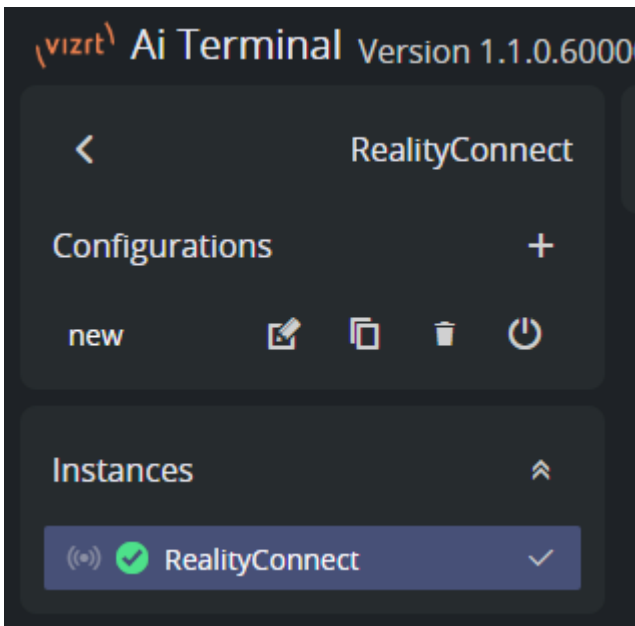
The installed Viz AI tools are listed in the top-left section of the AI Terminal.

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### 4.2 Create And Terminate A Tool

Click on a tool to open its configurations.

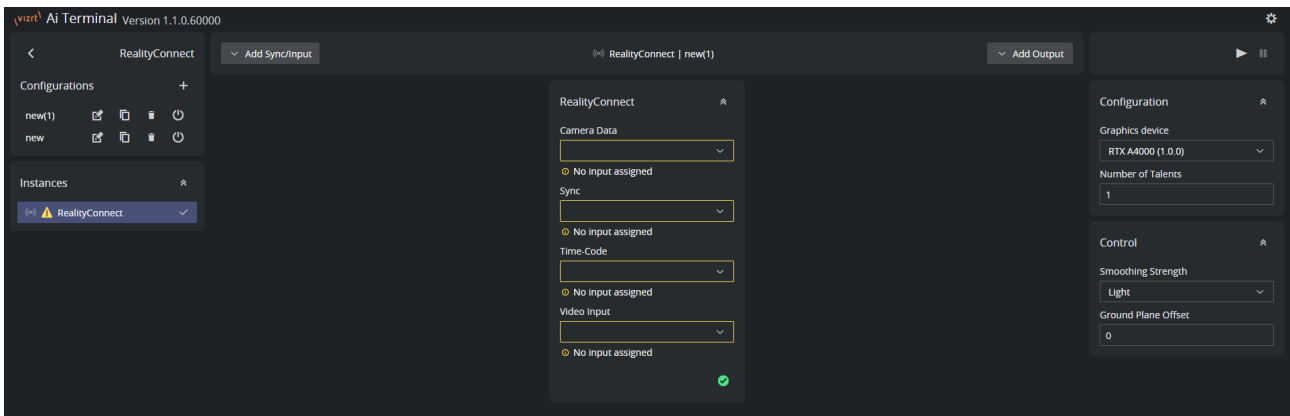
- Click the  button to go back to the list of installed tools.
- Click the  button to create a new configuration.
- Click the  button to rename a configuration.
- Click the  button to duplicate a configuration.
- Click the  button to delete a configuration.
- Click the  button to start the tool in this configuration.



Once started, a new instance pops up below. The instance starts with a console window. Close the newly created window to terminate the tool.

### 4.3 Tool Configuration

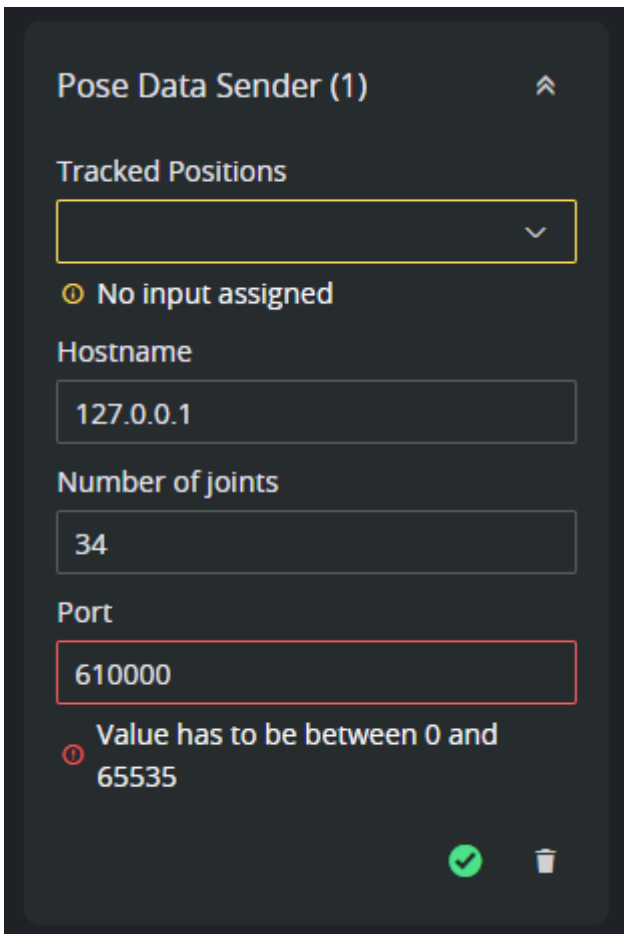
Select a tool instance and a view similar to the image bellow is shown:



The tool configuration view contains the following:

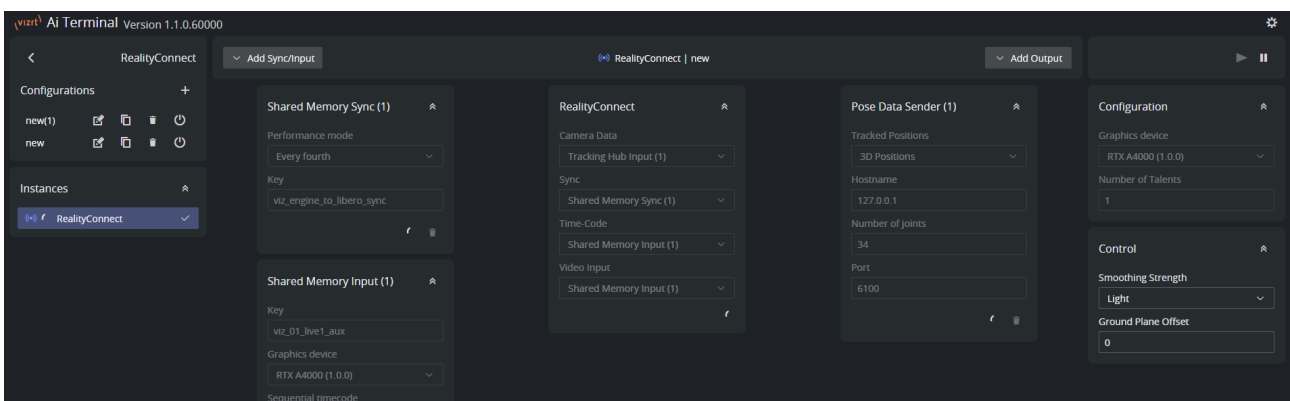
- If an error or warning is present, this is indicated with a corresponding icon in the instances list on the left.
- Find the configuration and control options in the right panel. The control options remain editable while the tool is running.
- Find the input and output configuration in the center panel. The input and output configuration is further documented in the [I/O Modules](#) chapter.
- Run and stop the tool with the play and pause buttons on the top of the right panel.

During the configuration, warnings and errors indicate if a parameter is not specified as expected:

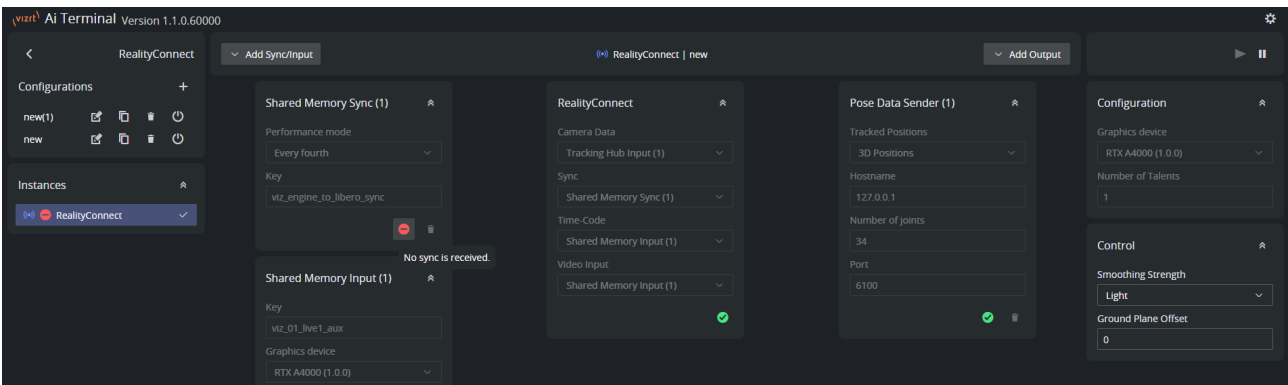


## 4.4 Run And Pause A Tool

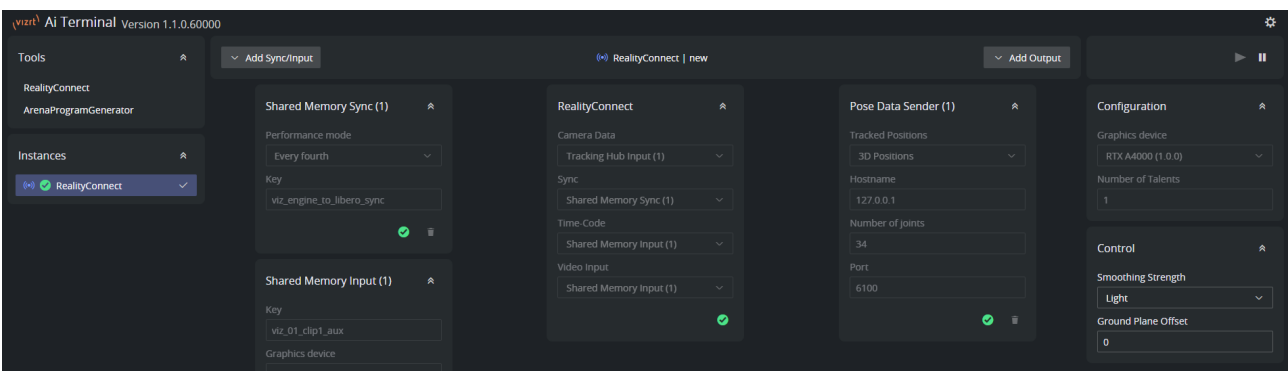
If no configuration errors are present, the tool is launched with the play button on the top of the right panel.



After initialization, which is indicated by spinning wheels, icons indicate the running state for each of the elements. On hover, a tooltip text gives more information about what is causing the error or warning. To change configuration, first pause the tool with the pause button on the top of the right panel and resume the tool after the configuration is changed.



If everything runs as expected, all icons turn into green check marks.



**Note:** The configuration is automatically stored per tool and configuration and is restored when starting a new instance.

**Note:** While running, only control parameters and actions are enabled. To change configuration, first pause the instance.

## 4.5 Errors And Warnings

**Note:** Errors and warnings of the input and output adapters are listed in the [I/O Modules](#) chapter.

Severity	Text	Potential Fixes
Error	Tool has failed processing. Revisit the tool's configuration parameters.	<ul style="list-style-type: none"> <li>Try another configuration.</li> <li>Likely, the tool can not deal with the format of one of the inputs. For example, the tool expects two images of the same dimension. Check the tool's documentation for further information.</li> </ul>



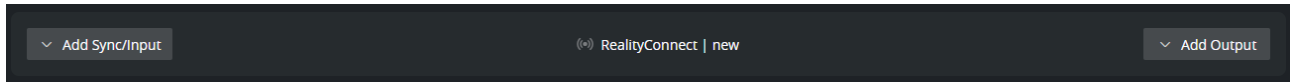
Severity	Text	Potential Fixes
Error	Tool failed to setup. Revisit the tool's configuration parameters.	<ul style="list-style-type: none"><li>• Try another configuration.</li><li>• There is likely an issue with the tool. Check that the tool is compatible with this version of the AI Terminal and check the tool's documentation for further information.</li></ul>
Warning	One or multiple frames were dropped. Consider to choose a different performance mode.	<ul style="list-style-type: none"><li>• If the tool offers different performance modes, choose one with higher performance versus quality.</li><li>• Distribute the load of your applications onto different graphics devices. The graphics device chosen for the Viz AI tool can be changed in the configuration panel.</li><li>• If not every frame needs to be processed, choose a different performance mode for the configured <a href="#">Synchronization</a> adapter (for example, <i>every second</i>).</li></ul>

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## 5 I/O Modules

Input and output adapters are created by clicking the corresponding buttons in the top bar of the input and output configuration panel.

Synchronization and input adapters are listed on the left while output adapters are listed on the right.



This section contains information on the following:

- [Synchronization](#)
- [Input](#)

**i** **Note:** This page covers the I/O modules as part of Viz AI Core 1.6. Other versions might have a different set of I/O modules.

**i** **Note:** Since Viz AI Core 1.1, plugins can implement their own I/O modules. Therefore, this page only covers the core I/O modules. Visit the documentation of the Viz AI tool to read about its specific I/O modules.

## 5.1 Synchronization

### 5.1.1 Free Run Sync

A free run sync is used in case there is no possibility to synchronize the AI tool with an external application.

#### Parameters

Name	Type	Explanation
Performance Mode	Selection	Selects whether every, every second or every fourth sync is processed.
Refresh Rate	Selection	Selects the frequency.

### 5.1.2 Shared Memory Sync

A shared memory sync is used to synchronize the AI tool with an application that provides a sync over shared memory such as the Viz Engine.

#### Parameters

Name	Type	Explanation
Performance Mode	Selection	Selects whether every, every second or every fourth sync is processed.
Key	Text	Specifies the shared memory key.

#### Errors and Warnings

Severity	Text	Potential Fixes
Error	Initialization has failed. Revisit this sync's configuration.	Restart the computer.
Error	No sync is received.	Check that the specified shared memory key matches the key which is setup in the integrated application (for example, Viz Engine).

## 5.2 Input

- [Shared Memory Input](#)
- [NDI Input](#)
- [Socket Receiver](#)
- [Sync Count Relay Input](#)
- [Timecode Input](#)
- [Tracking Hub Input](#)
- [Webcam](#)

### 5.2.1 Shared Memory Input

A shared memory input is used to integrate with applications that can send video frame via shared memory (SMURF), for example Viz Engine. This input requires a Shared Memory Sync created and assigned to the same tool.

#### Parameters

Name	Type	Explanation
Key	Text	Specifies the shared memory key.
Graphics Device	Selection	Specifies the graphics device for texture sharing.
Sequential Timecode	Selection	Specifies which sequential timecode to read.
SMPTE Timecode	Selection	Specifies which SMPTE timecode to read.

#### Data

Type	Comments
Image	Supported formats: <ul style="list-style-type: none"> <li>• RGBA (8-bit, SDR, or 16-bit HDR).</li> </ul>
Sequential Timecode	-
SMPTE Timecode	-
Number	Count that goes up whenever a new image is read.

## Errors and Warnings

Severity	Text	Potential Fixes
Error	Setup has failed. Check that a Shared Memory Sync is created and assigned to the same tool.	Create a Shared Memory Sync adapter and assign it to the same tool.
Error	Initialization has failed. Revisit this inputs' configuration.	Restart the computer.
Error	No input is received. Make sure the specified key is correct.	<p>Check that the specified shared memory key matches the key which is setup in the integrated application (for example, Viz Engine).</p> <p>Check that the selected graphics device matches the device which is used in the integrated application (for example, Viz Engine).</p>
Error	Input did not contain all required data.	Check that the input contains all assigned data formatted as specified in the table above.

## 5.2.2 NDI Input

Use this input to integrate an NDI source.

### Parameters

Name	Type	Explanation
NDI Source	Selection	Specifies the name of the NDI source.

### Data

Type	Comments
Image	All formats support by NDI are allowed, but are converted to RGBA / RGBX (8-bit, SDR).
Sequential Timecode	-

Type	Comments
Number	Count that goes up whenever a new image is read.

### Errors and Warnings

Severity	Text	Potential Fixes
Error	Setup has failed. Revisit this inputs' configuration.	Restart the computer.
Error	Could not connect to the specified NDI source. Make sure the NDI source exists.	Use the NDI Studio Monitor to verify that the specified NDI source exists.
Error	No input is received.	Use the NDI Studio Monitor to verify that the specified NDI source exists and provides a running video signal.
Error	Input did not contain all required data.	Check that the input contains all assigned data formatted as specified in the table above.

### 5.2.3 Socket Receiver

Use this input to integrate a TCP or UDP data stream over network.

#### Parameters

Name	Type	Explanation
Hostname	Text	Specifies the host interface to listen.
Port	Number	Specifies the network port to listen.
Socket Type	Selection	Specifies the network protocol (TCP or UDP).

#### Data

Type	Comments
Binary Data	-

## Errors and Warnings

Severity	Text	Potential Fixes
Error	Setup has failed. Revisit this inputs' configuration.	Restart the computer.
Error	Initialization has failed. Revisit this inputs' configuration.	Check that the specified port is free.
Error	No input is received.	Check whether a connection was made from the other end.

### 5.2.4 Sync Count Relay Input

This propagates the sync count from the active synchronization adapter.

#### Data

Type	Comments
Number	Count that goes up on each sync.

### 5.2.5 Timecode Input

Use this input to generate a running timecode.

#### Parameters

Name	Type	Explanation
Drop Frames	Toggle	Whether the generated timecode contains drop frames.
Frequency	Selection	Select the timecode frequency.

#### Actions

Name	Explanation
Set Timecode	Sets the current timecode to the specified one.

Name	Explanation
Set Timecode Offset	Specifies an offset to apply to the internal timecode.

#### Data

Type	Comments
Sequential Timecode	-
SMPTE Timecode	-
Text	The SMPTE timecode as text.
Number	Count that goes up whenever a new timecode is generated.

### 5.2.6 Tracking Hub Input

Use this input to integrate with a Tracking Hub.

#### Parameters

Name	Type	Explanation
Image Height	Number	Specifies the image width to interpret the data.
Image Width	Number	Specifies the image height to interpret the data.
Port	Number	Specifies the port to receive the tracking data.
Render Scale	Number	Specifies the render scale to interpret the data.

#### Data

Type	Comments
Camera Data	-



## Errors and Warnings

Severity	Text	Potential Fixes
Error	Setup has failed. Revisit this inputs' configuration.	Restart the computer.
Error	Initialization has failed. Could not bind to the specified port.	The specified port is already used by another application. Try another port and adapt the setting correspondingly in the Tracking Hub.
Error	No input is received. Verify the specified port and check corresponding settings on the Tracking Hub.	Check that the Tracking Hub is sending data to the specified port.

## 5.2.7 Webcam

Use this input to integrate with a webcam.

### Parameters

Name	Type	Explanation
Camera	Selection	Specifies which camera to use.

### Data

Type	Comments
Image	-

## Errors and Warnings

Severity	Text	Potential Fixes
Error	Setup has failed. Revisit this inputs' configuration.	Restart the computer.

Severity	Text	Potential Fixes
Error	Failed to initialize. Make sure the webcam is not used in another application.	<p>Check that the webcam is connected to the computer and accessible by the <i>Camera</i> app pre-installed on most Windows systems.</p> <p>The webcam might be already in use by another application. Close this other application.</p>
Error	No input is received.	Restart the tool.