# AI Terminal User Guide

Version 2.0

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Vizrt advises customers to use an AV solution that allows for custom exclusions and granular performance tuning to prevent unnecessary interference with our products. If interference is encountered:

- **Real-Time Scanning:** Keep it enabled, but exclude any performance-sensitive operations involving Vizrt-specific folders, files, and processes. For example:
    - C:\Program Files\[Product Name]
    - C:\ProgramData\[Product Name]
    - Any custom directory where [Product Name] stores data, and any specific process related to [Product Name].

- **Risk Acknowledgment:** Excluding certain folders/processes may improve performance, but also create an attack vector.
- **Scan Scheduling:** Run full system scans during off-peak hours.
- **False Positives:** If behavior-based detection flags a false positive, mark that executable as a trusted application.

**Technical Support**

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**Created on**

2026/03/23

# Contents

# 1   Introduction

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

## 1.1   Related Documents

- Viz Engine Administrator Guide

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

- www.vizrt.com
- Vizrt Documentation Center
- Vizrt Training Center
- Vizrt Forum

## 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.

## 1.3   System Overview
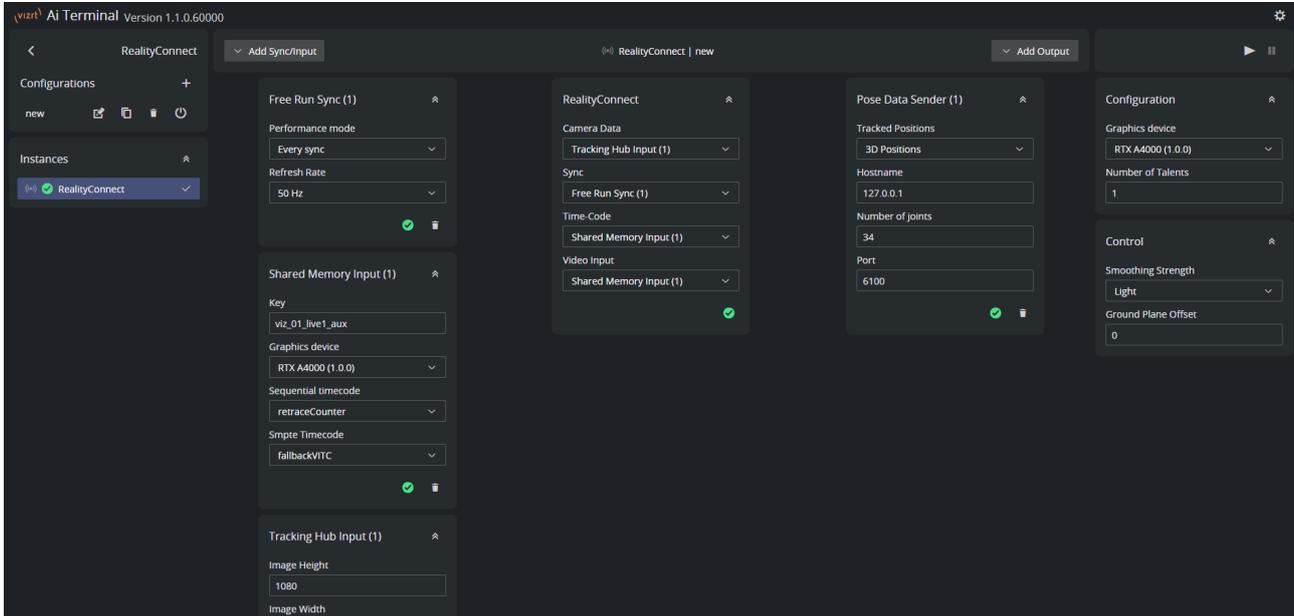


AI Terminal is a generic control application for Viz AI features among Vizrt products and solutions. This version supports integrations with Viz Engine (via shared memory and UDP command interface), Viz Virtual Studio (via Tracking Hub), and NDI.

## 1.4    System Requirements

### 1.4.1    General

| OS | Windows 10 (64-bit) |
|---|---|
| | Windows 11 |
| **Browser** | 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 (1.6 or later)
- NDI (5.0 or later)

### 1.4.4    Other Software

- CodeMeter (8.40a or later)
- Microsoft Visual C++ 2017-2026 Redistributable

# 2   Installation

## 2.1   Branded Installer

1. Double click *Viz_AI_Tools-\*.exe*.
2. Select **Requirements**, **AI Terminal**, and all additional tools you want to have installed.
3. Click **INSTALL** and follow the instructions.
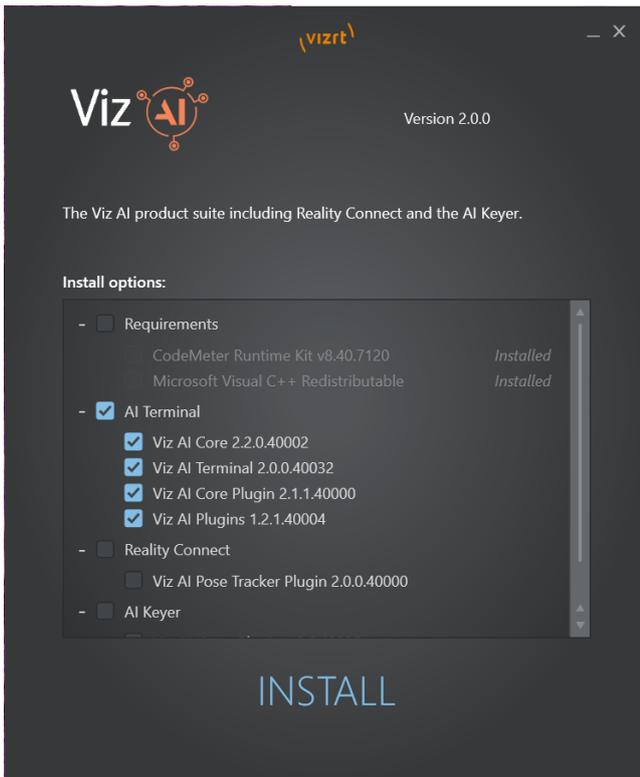
# 3   Settings

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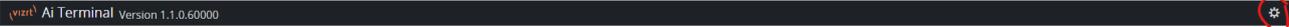


## 3.1   Sections

### 3.1.1   General
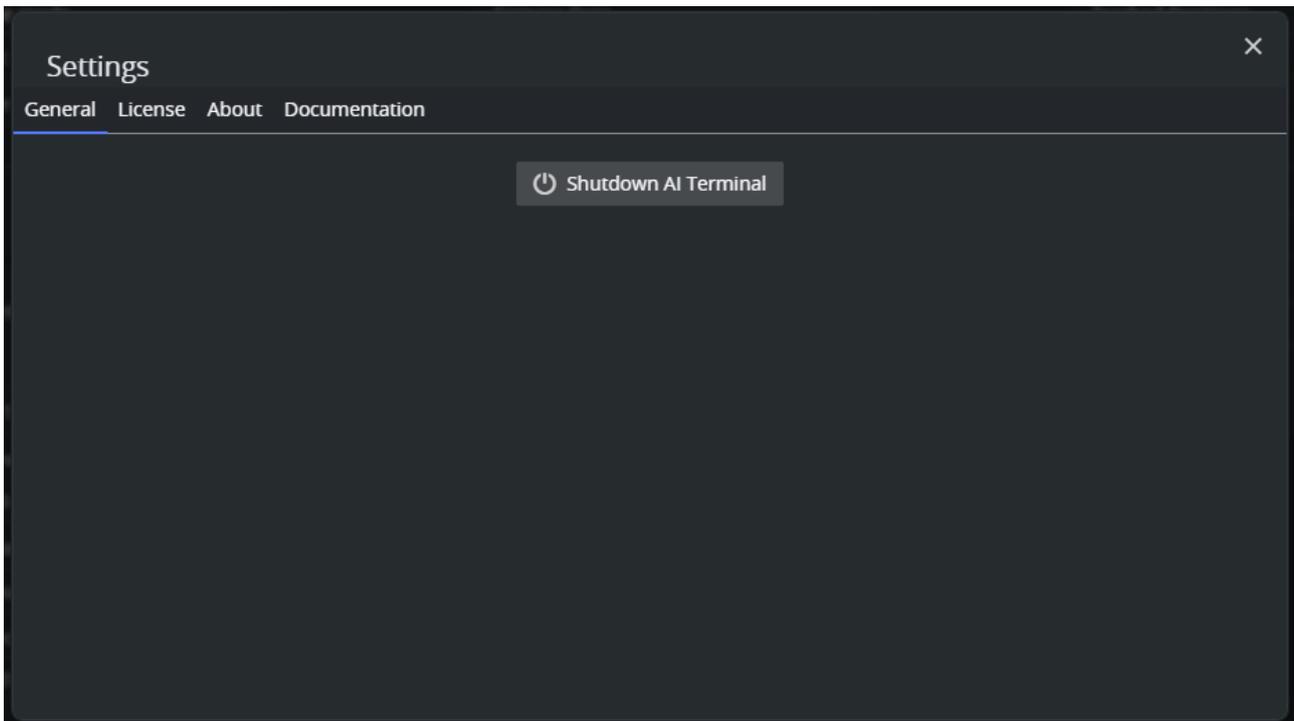


The general section contains a button to shutdown the AI terminal application. This also shutdowns all AI tools.

### 3.1.2   License
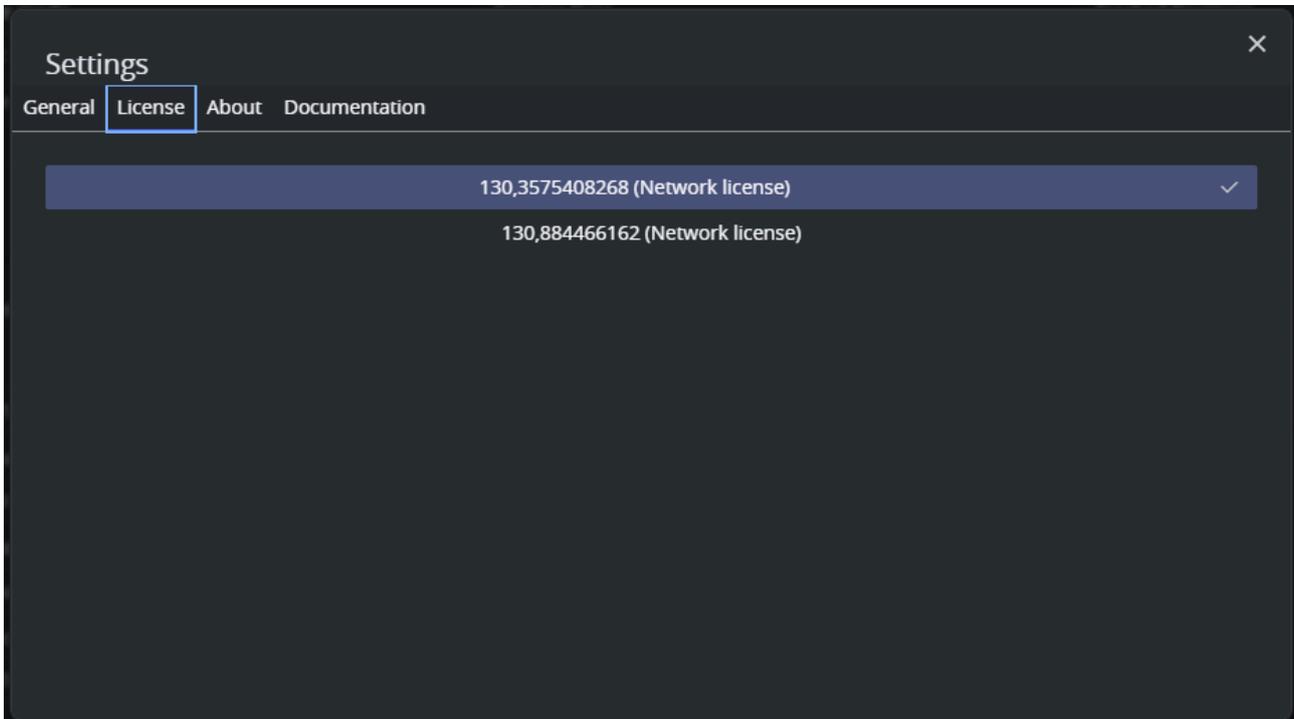


When entering the license section, the available license containers are loaded. This might take a few seconds. Select which license container is used to acquire the Viz AI feature licenses. The license is only acquired when a tool is created.

### 3.1.3   About



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

### 3.1.4  Documentation
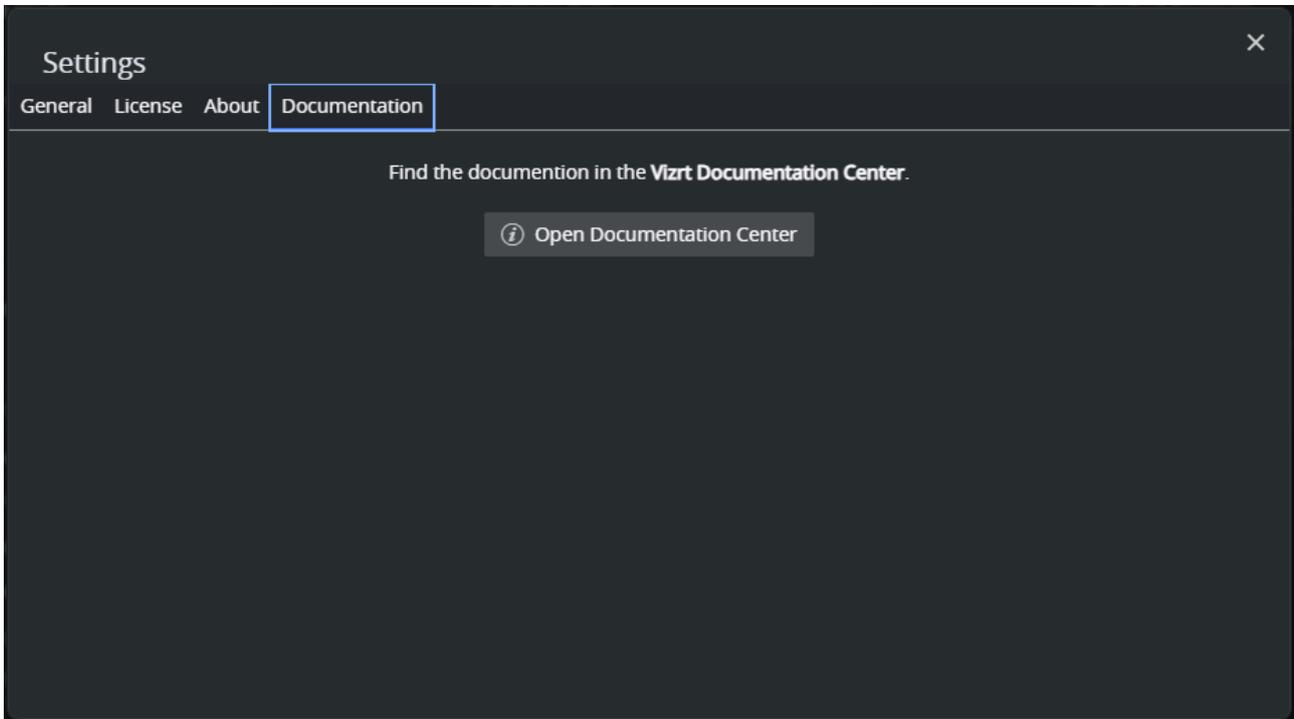


The documentation section contains a link to the Vizrt Documentation Center.

# 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
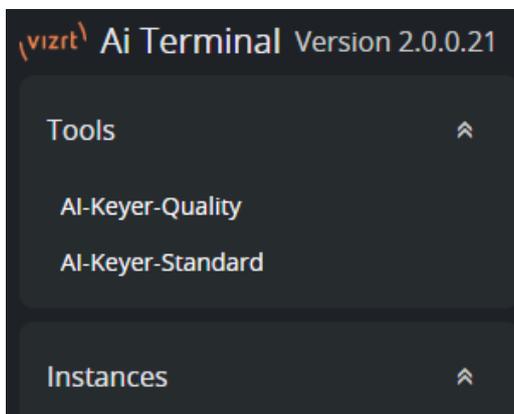


The installed Viz AI tools are listed in the top-left section of the AI Terminal.

## 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.
- Create a new configuration with the  button.
- Launch with an existing configuration using the power on/off  switch.
- The  button reveals more options to rename, duplicate, or delete a configuration.
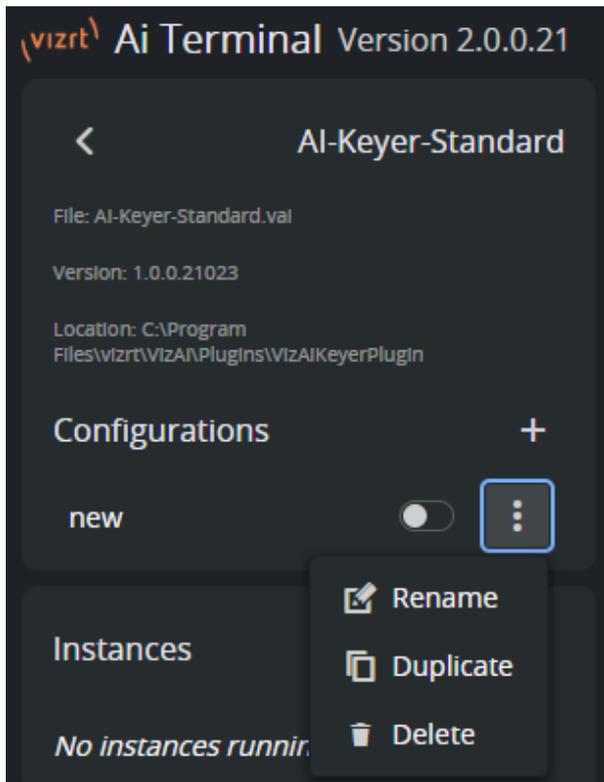
Once started, a new instance pops up below. The instance starts with a console window. Close the newly created window or toggle off the power on/off ⬤▭ switch to terminate the tool.

---

## 4.3   Tool Configuration

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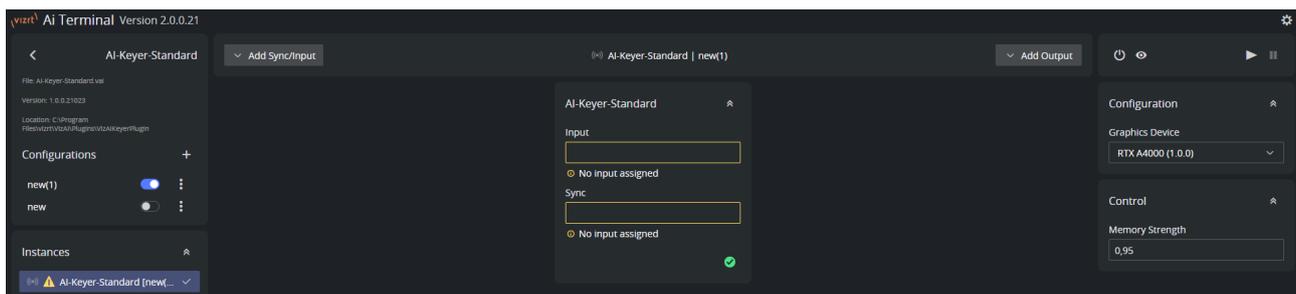


The tool configuration view contains the following:

- 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:
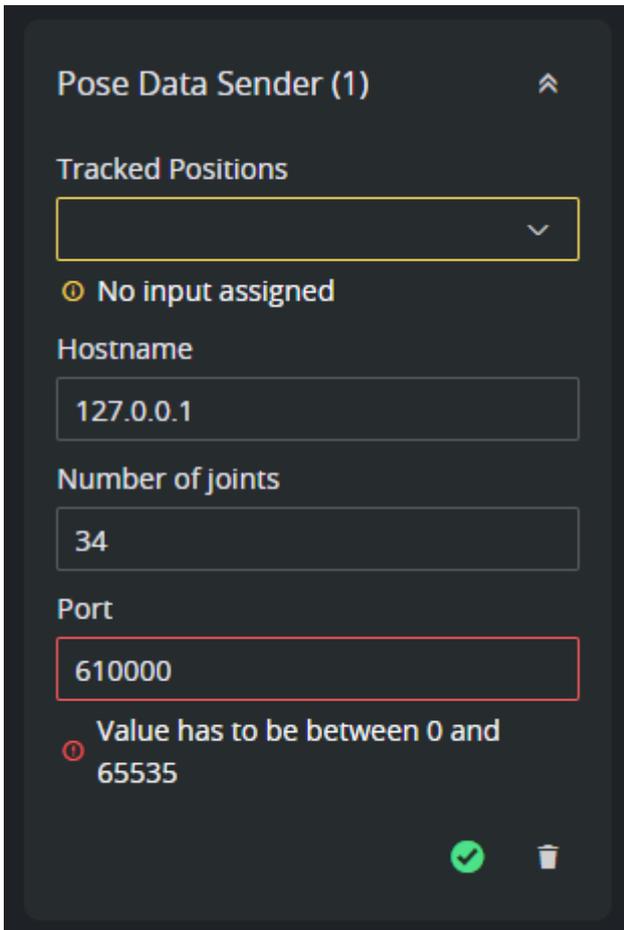


## 4.4    Run and Pause a Tool

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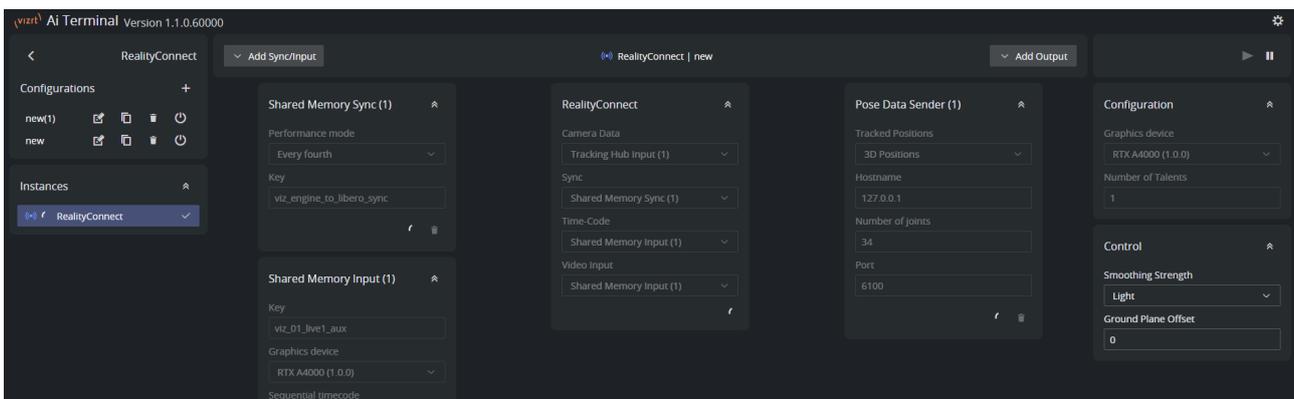


After initialization, which is indicated by spinning wheels, icons indicate the running state for each of the elements. On hover, a tooltip text gives more information about what is causing the error or warning. To change

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.
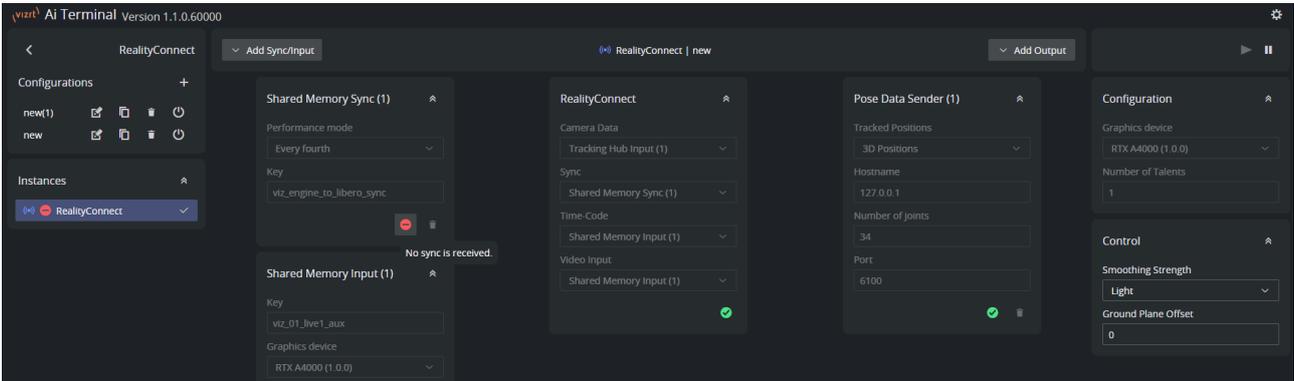


If everything runs as expected, all icons turn into green check marks.
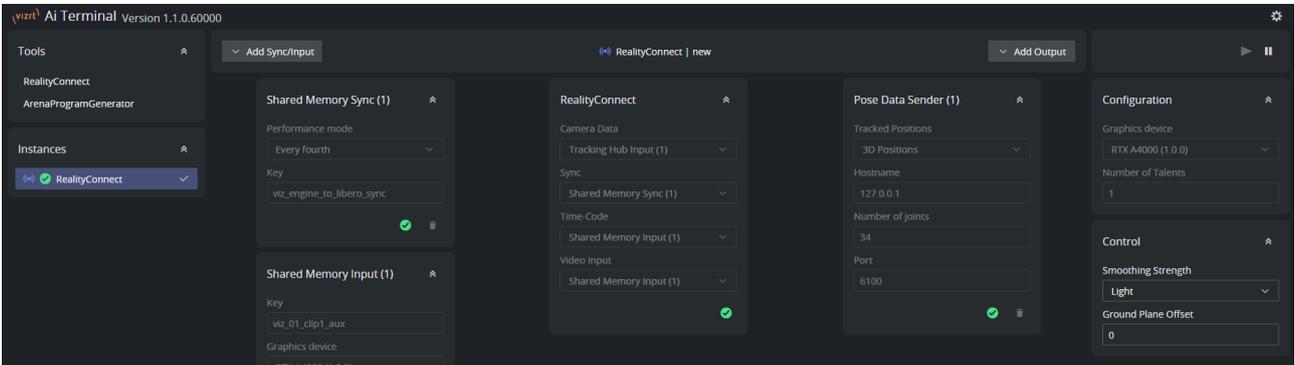


> **Note:** The configuration is automatically stored per tool and configuration and is restored when starting a new instance.

> **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. | • Try another configuration.<br>• 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. |

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Tool failed to setup. Revisit the tool's configuration parameters. | <ul><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><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 Synchronization adapter (for example, *every second*).</li></ul> |

# 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.

| ⌄ Add Sync/Input | ((•)) RealityConnect \| new | ⌄ Add Output |
|---|---|---|
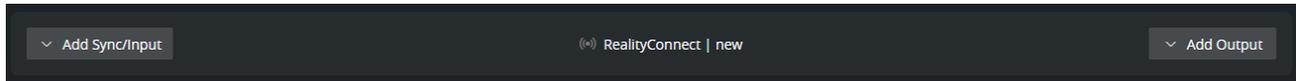
This section contains information on the following:

- Synchronization
- Input
- Output

> **ⓘ**   **Note:** Plug-ins 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 | 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).<br><br>Check that the Viz Engine SHM Sync Master Mode is set to either *Master* or *UE Master.*<br><br>When integrated with Viz Engine using NDI as input, make sure the NDI source is valid. |

## 5.1.3    Viz Engine Sync

A Viz Engine sync is used to synchronize the AI tool with a Viz Engine using the *SHM Sync Master Mode* key. This adapter polls a Viz Engine to verify that the SHM Sync Master Mode is set to either *Master* or *UE Master* and retrieves the key for synchronization.

Parameters

| Name | Type | Explanation |
|---|---|---|
| General Communication Port | Number | Specifies the port to communicate with the Viz Engine. |
| Performance Mode | Selection | Selects whether every, every second or every fourth sync is processed. |

Errors and Warnings

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Setup has failed. Check that the Viz Engine is running and accessible under the specified port. | Check that the Viz Engine is running and accessible via the configured port. |
| Error | No sync is received. | Check that the Viz Engine SHM Sync Master Mode is set to either *Master* or *UE Master* and that a non empty SHM key is configured.<br><br>When using NDI as input within the Viz Engine, make sure the NDI source is valid. |

## 5.2   Input

- Shared Memory Input
- NDI Input
- Socket Receiver
- Sync Count Relayer Input
- Timecode Input
- Tracking Hub Input
- Viz Engine 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:<br>- RGBA (8-bit, SDR, or 16-bit HDR). |
| Audio | Experimental |
| 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 and assign it to the same tool. |
| Error | No input is received. Make sure the specified key is correct. | Check that the specified shared memory key matches the key which is setup in the integrated application (for example, Viz Engine).<br><br>Check that the selected graphics device matches the device which is used in the integrated application (for example, Viz Engine). |
| 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 | - |
| Number | Count that goes up whenever a new image is read. |

Errors and Warnings

| Severity | Text | Potential Fixes |
|---|---|---|
| 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 | Initialization has failed. Revisit this inputs' configuration. | Check that the specified port is free. |

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | No input is received. | Check whether a connection was made from the other end. |

## 5.2.4    Sync Count Relayer 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. |
| Set Timecode Offset | Specifies an offset to apply to the internal timecode. |

Data

| Type | Comments |
|---|---|
| Sequential Timecode | - |

| Type | Comments |
|---|---|
| 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 | 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   Viz Engine Input

A shared memory input is used to integrate with Viz Engine using the *SHM Sync Master Mode* key. It receives video frames via shared memory (SMURF). This input requires a Viz Engine Sync Input assigned to the same tool.

Parameters

| Name | Type | Explanation |
|------|------|-------------|
| Video Input Channel | Text | Specifies the live channel to read the video from via shared memory. |
| Graphics Device | Selection | Specifies the graphics device for texture sharing. |
| General Communication Port | Number | Specifies the port to communicate with the Viz Engine. |
| Sequential Timecode | Selection | Specifies which sequential timecode to read. |
| SMPTE Timecode | Selection | Specifies which SMPTE timecode to read. |

Data

| Type | Comments |
|------|----------|
| Image | Supported formats:<br>• RGBA (8-bit, SDR, or 16-bit HDR). |
| Audio | Experimental |
| 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 the Viz Engine is running and accessible, and that a Viz Engine Sync is created and assigned to the same tool. | Create a Viz Engine Sync and assign it to the same tool.<br><br>Check that the Viz Engine is running and accessible via the configured port. |
| Error | No input is received. Make sure the selected input channel holds valid data. | Check that the configured input channel holds valid data (for example, by displaying it within the Viz Engine).<br><br>Check that the selected graphics device matches the device which is used in the integrated application (for example, Viz Engine). |
| Error | Input did not contain all required data. | Check that the input contains all assigned data formatted as specified in the table above. |

## 5.2.8 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 | Failed to initialize. Make sure the webcam is not used in another application. | Check that the webcam is connected to the computer and accessible by the *Camera* app pre-installed on most Windows systems. The webcam might be already in use by another application. Close this other application. |
| Error | No input is received. | Restart the tool. |

## 5.3   Output

### 5.3.1   Shared Memory Output

A shared memory output is used to integrate with applications that can receive video frame via shared memory (SMURF), for example Viz Engine.

This output 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 used for texture sharing. |
| Sequential Timecode Name | Text | Specifies the name of the sequential timecode. |
| SMPTE Timecode Name | Text | Specifies the name of the SMPTE timecode. |

Data

| Type | Comments |
|---|---|
| Video | Supported formats:<br>• RGBA (8-bit, SDR, or 16-bit HDR). |
| Audio | Experimental |
| Sequential Timecode | - |
| SMPTE Timecode | - |

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 | Failed to write output. | Check that there is no other application that is writing to the same shared memory key.<br><br>Make sure the assigned image conforms with this output module's requirements. |

## 5.3.2   NDI Output

Use this output to integrate with other application capable of reading NDI.

Parameters

| Name | Type | Explanation |
|---|---|---|
| NDI Output | Text | Specifies the name of the NDI output. |

Data

| Type | Comments |
|---|---|
| Video | Supported formats:<br><br>• RGBA / RGBX (8-bit, SDR). |
| Sequential Timecode | - |

Errors and Warnings

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Initialization has failed. Revisit this outputs' configuration. | Check that there is no other NDI signal generated on this computer with the same name. |

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Failed to write output. | Check that there is no other NDI signal generated on this computer with the same name.<br><br>Make sure the assigned image conforms with this output module's requirements. |

### 5.3.3    Pose Data Sender

Use this sender to communicate detected pose data to the *Pose Data Receiver Viz Engine Plugin* (distributed with the Reality Connect tool).

Parameters

| Name | Type | Explanation |
|---|---|---|
| Hostname | Text | Specifies the host address of the Viz Engine. |
| Number of joints | Number | Specifies the number of joints contained in the pose. |
| Port | Number | Specifies the communication port of the Viz Engine. |

Data

| Type | Comments |
|---|---|
| Tracked Positions | List of 3D points (with size *N* x *34*) where *N* is the number of tracked persons. |

Errors and Warnings

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Initialization has failed. Revisit this outputs' configuration. | Check that the Viz Engine is running and has the same communication port configured as specified here. |

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Failed to write output. | Check that the Viz Engine is running and has the same communication port configured as specified here.<br><br>Check that the Viz Engine is configured with a valid UDP port (search the Viz Engine config for *smm_udp_service*).<br><br>Make sure the assigned point list contains a multiple of 34 points. |

## 5.3.4   Socket Sender

Use this output to send data via TCP or UDP over network.

Parameters

| Name | Type | Explanation |
|---|---|---|
| Hostname | Text | Specifies the host address to connect to. |
| Port | Number | Specifies the port number on which to connect. |
| Socket Type | Selection | Specifies the network protocol (TCP or UDP). |

Data

| Type | Comments |
|---|---|
| Binary Data | - |

Errors and Warnings

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Failed to write output. | Check that the specified network address is reachable on the specified network port and protocol. |

## 5.3.5   Viz Engine Output

A Viz Engine output is used to integrate to a Viz Engine that can receive video frame via shared memory (SMURF).

This output requires a Viz Engine Sync created and assigned to the same tool.

Parameters

| Name | Type | Explanation |
| --- | --- | --- |
| Video Output Channel | Text | Specifies the SHM - SMURF channel to write to via shared memory. |
| Graphics Device | Selection | Specifies the graphics device used for texture sharing. |
| General Communication Port | Number | Specifies the port to communicate with the Viz Engine. |
| Sequential Timecode Name | Text | Specifies the name of the sequential timecode. |
| SMPTE Timecode Name | Text | Specifies the name of the SMPTE timecode. |

Data

| Type | Comments |
| --- | --- |
| Video | Supported formats:<br>• RGBA (8-bit, SDR, or 16-bit HDR). |
| Audio | Experimental |
| Sequential Timecode | - |
| SMPTE Timecode | - |

Errors and Warnings

| Severity | Text | Potential Fixes |
|---|---|---|
| Error | Setup has failed. Check that the Viz Engine is running and accessible, and that a Viz Engine Sync is created and assigned to the same tool. | Create a Viz Engine Sync and assign it to the same tool.<br><br>Check that the Viz Engine is running and accessible via the configured port. |
| Error | Failed to write output. | Check that there is no other application that is writing to the same shared memory key.<br><br>Make sure the assigned image conforms with this output module's requirements. |