zView User Guide

Before You Begin

This *zView User Guide* describes how to set up and use zView to share and record zSpace sessions. This guide applies to zView version 4.0.

Audience

Read this guide if you need to set up zView or use it to share or record zSpace sessions.

Scope

This guide introduces you to zView, describes how to set up the hardware and software, and how to share and record zSpace sessions.

Prerequisites

- You should be familiar with zSpace applications.
- A second computer display (monitor) you can connect to the zSpace system.
- For Augmented Reality View you also need a webcam.

Document Organization

This guide is organized into the following chapters:

- Introduction
- Set Up zView
- Configure zView
- Share and Record zSpace Sessions

Related Documents

- The zSpace Support pages include zView setup and quick reference documents.
- The zSpace zView Releases page includes system requirements and release notes.
- The Developer Documentation page includes links to zView SDK documents.
- On YouTube Brain Snack: zView, in a nutshell provides an overview of how zView captures zSpace sessions.
- On YouTube Setting Up zView Kit (on zSpace 300) describes how to set up the zView kit and webcam.

Contents

Introduction

Use zView to share a zSpace session. Normally, only the person at the zSpace can see the application in stereoscopic 3D. zView projects the user's experience onto a screen or a second monitor. You can use zView to share the application in real time, record the zSpace session, or both.

Modes

zView provides two different modes:

- **Augmented Reality View** shows the application from a fixed viewpoint, without head tracking. This mode requires a camera.

- **Standard View** shows the application with head tracking. Use this view to demonstrate how the application adjusts the viewpoint as the user's head moves. This mode does not require a camera.

Requirements

zView has minimum requirements for Standard view, and additional requirements for Augmented Reality view.

Standard View requirements:

- zSpace System Software

- zSpace 200: Version 4.0 or later

- zSpace 300: Version 5.0 or later

- zView-enabled application

- A second display for the zView application window

Augmented Reality View additional requirements:

- A webcam that supports HD resolutions (1280x720 or 1920x1080) at 15 frames per second (FPS) or higher. zView works well using the Logitech C920 and Microsoft LifeCam Pro webcams.

- A zSpace camera mount or a tripod.

You can purchase a zView kit from zSpace that includes a webcam and a camera mount to attach the webcam to the zSpace display.

The zSpace application you want to view must be enabled for zView. All zSpace STEM applications are enabled and have zView controls embedded in them. If you are developing your own application, you can enable it using the zView Unity plug-in.

Compatible zSpace Applications

zView works with the following zSpace applications:

- Newton's Park
- Franklin's Lab
- Studio
- Euclid's Shapes
- Curie's Elements
- Leopoly
- Visible Body
- Cyber Science 3D
- CyberAnatomy

From Newton's Park, Franklin's Lab, Euclid's Shapes, Curie's Elements, and Studio you can run zView using built-in controls.

1. From the Home Control Bar on the left side of the application, select the **Start zView** icon.

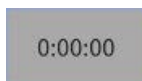   The **zView Control Bar** appears at the top of the application.

2. From the **zView Control Bar** you can:

    Toggle between **Share Screen** and **Pause Sharing**.

    Start and **Stop Recording**.

    View elapsed time while recording.

    Open zView Settings to choose between low, medium, and high quality video resolution.

Note: From the zSpace Experience only, you can use keyboard shortcuts to control zView from the application.

Z – **Start** zView

X – Toggle between **Augmented Reality View** and **Standard View**

C – **Pause** zView

**M** – Toggle between **Connect/Disconnect** zView from the application

3. To exit zView click the Home Control Bar **zView** icon again or close the zView window.

For other applications, refer to the application and documents for information about starting zView.

zView User Interface

You can start zView from the desktop icon or from the in-app zView icon on the Home Control Bar of some applications.

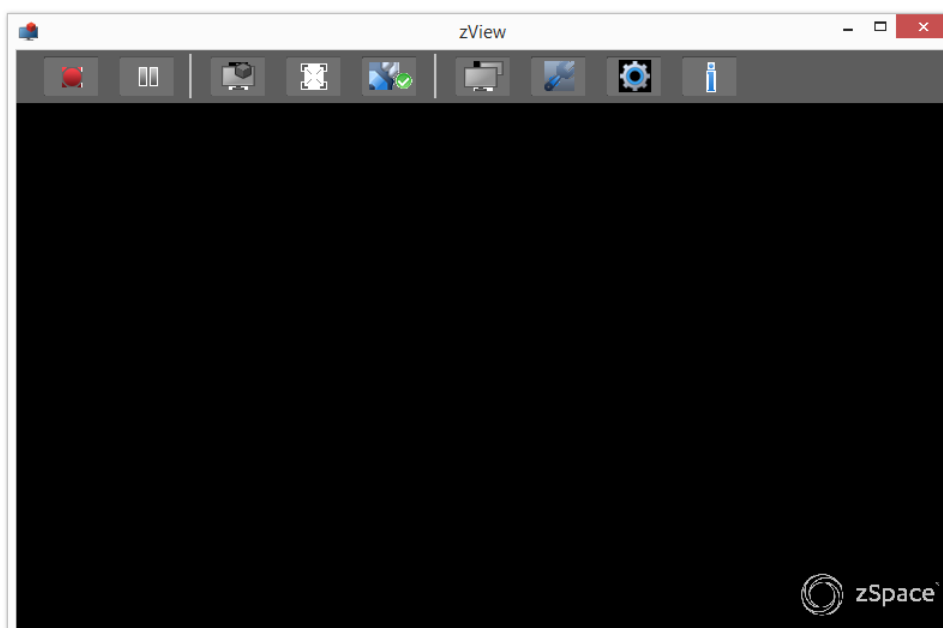Note: When using a zView-enabled application, start zView using the controls in the application.
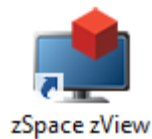
Desktop Icon   **In-App Icon**
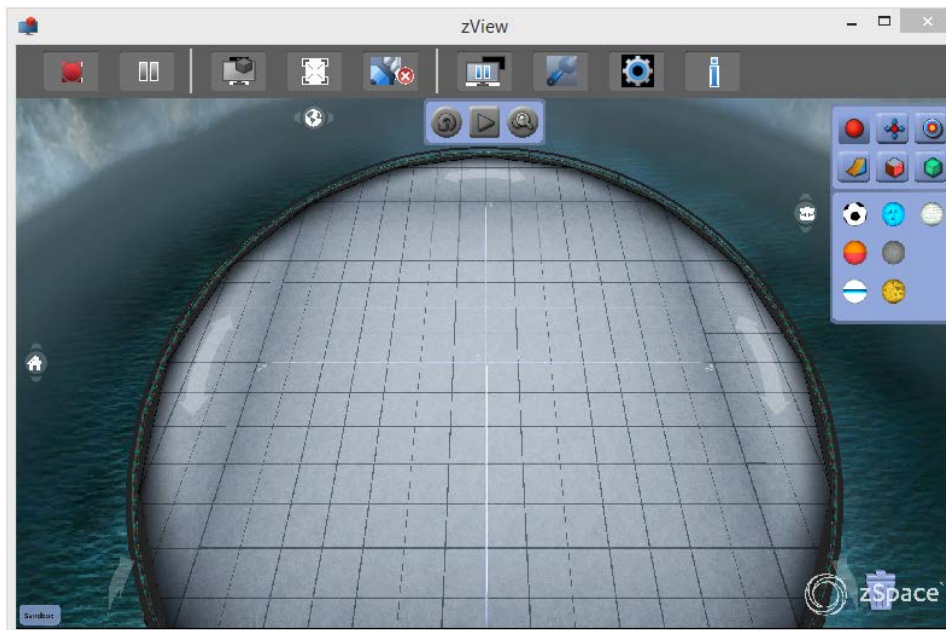
When started from the desktop icon, zView opens with a blank screen.

When started from inside a zSpace application, zView opens showing the application.

The zView Toolbar includes the following controls:

User Interface Controls

Share Screen

Click to share the zView feed with connected computers.

Pause Share Screen

Click to hide the shared zView feed.

Start Recording

Click to show start recording the current zSpace session.

Stop Recording

Click to stop recording. The system prompts you to save the video file when you stop recording.

Standard View

Click to switch the zView feed to standard 2D display. Use **Standard View** to demonstrate head tracking. This is the default mode if the webcam is not connected or set up.

Augmented Reality View

Click to switch the zView feed to **Augmented Reality** view. Use **Augmented Reality View** when talking to an audience while using zSpace. This is the default mode if the webcam is set up and connected.

Fullscreen

Click to toggle between running zView in full-screen mode or in a window. Use Fullscreen when projecting the recording onto a large screen, such as a television. You can also press **F11** to toggle the fullscreen view.

Connect

Click to connect to the current zSpace session. This feature does not work unless a compatible zSpace application is also running.

Disconnect

Click to disconnect from the current zSpace session.

Setup

Click to open the **USB Camera Setup** dialog box.

Settings

Click to show the **Adjust Overlay**, **Video Quality**, and **Language** options.

Info

Click to show the **About zView** dialog box.

Set Up zView

zView runs on the same hardware required for zSpace applications. You must attach a second monitor to use zView. You need a webcam to share and record zSpace sessions.

Connect a Second Display

You can connect the zSpace computer to a second monitor, a projection screen, or a TV.

1. Connect the second display using a DVI, HDMI, VGA, or DisplayPort connector as needed.

2. Open Windows Screen Resolution from **Control Panel > Display > Adjust Resolution** or right-click on the desktop and select **Screen Resolution**.

3. Make sure that the **Screen Resolution** dialog box shows two displays in the same left-to-right order as the displays are physically placed. For example, in the following figure, the zSpace display is to the right of the second display.
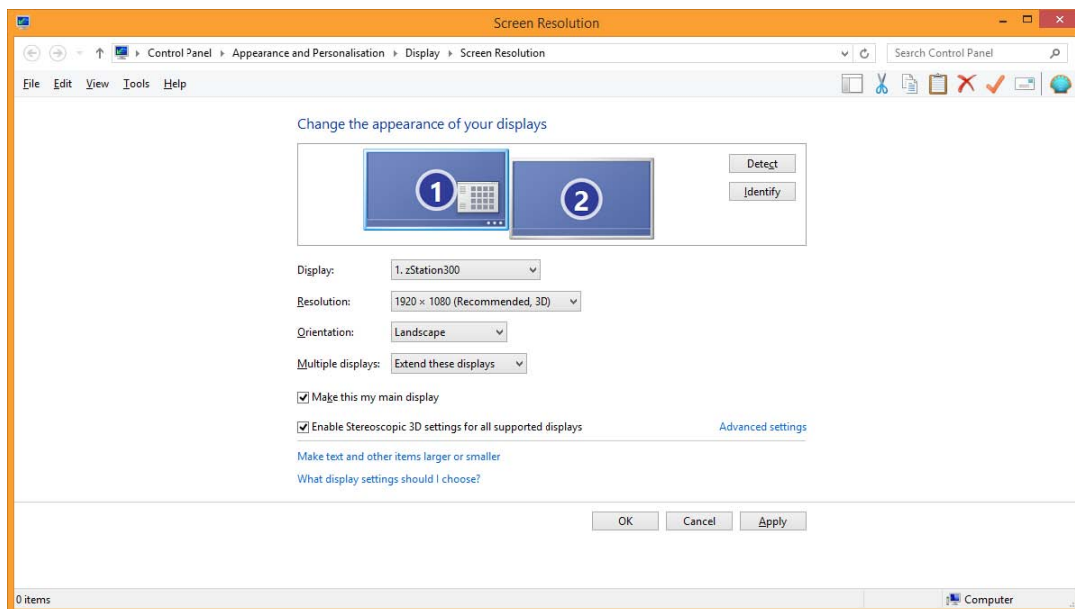
Note: When connecting a secondary display, Windows sometimes arbitrarily changes the resolution of your zSpace system to something other than 1920x1080. After connecting the second display, verify that the resolution of your zSpace is 1920x1080 to avoid display problems.

4. If the displays are not arranged correctly, click and drag the **zStation** display to the number **1** position.

5. Make sure **Multiple displays** is set to **Extend these displays**.

6. Click **Apply** to test the settings.

7. When the settings are correct, click **OK**.

For more information, see Display Configurations - Managing Multiple Displays at zSpace Support.

Set Up the Camera

If you are only using the Standard View, you can skip this section.

Refer to the documents for your system when setting up the tripod or camera and mounting kit.

Plug the webcam USB cable into your PC. On the zSpace 300, use the USB 2.0 port on the back of the zSpace.

Note: On many PCs, the webcam functions best in a USB 2.0 port instead of a USB 3.0 port. For information about identifying USB ports, see Identifying USB 3.0 Ports at zSpace Support.

Configure zView

When you start zView, if it does not appear on your secondary display, drag the zView window to that display.

- If you are using **Standard View**, you do not need to configure zView.

- If you are running zView in **Augmented Reality View**, which includes sharing the head-tracked experience, you must configure zView to work with your camera. You can configure zView from the **Setup** menu.

Augmented Reality View

Make adjustments to the camera position during Setup. This includes making sure that the camera captures the user's expression, if desired, and that lighting does not cause a glare on the zSpace. If you adjust the camera later, you must run Setup again.

Note: Make sure the camera is connected to the zSpace and facing the zSpace display.
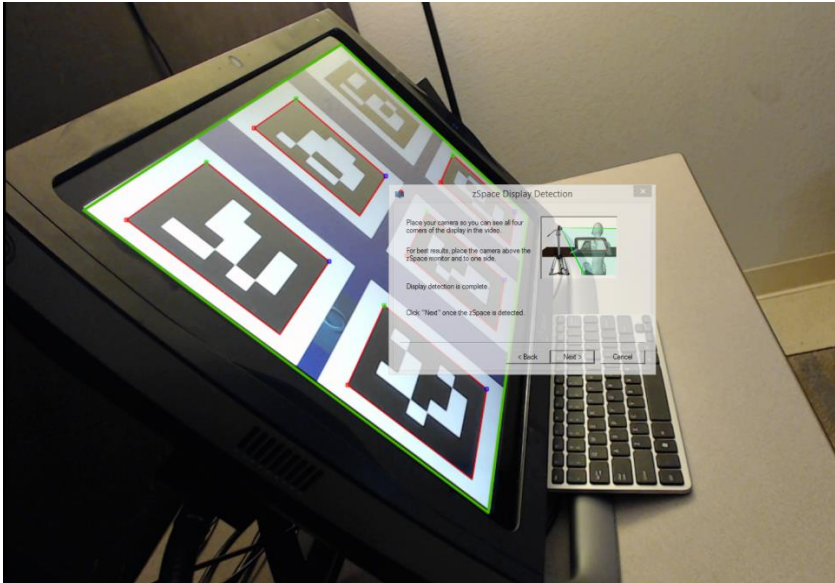
Follow these steps to run Setup:

1. Start zView.

2. Click **Setup** to start the configuration.

3. From the **USB Camera Setup** dialog box, make sure the camera is listed. Choose the recommended resolution.

4. Click **Next** to continue.

5. The **zView Display Detection** dialog box appears and is semi-transparent.

Six test patterns appear on the zSpace. Check the zView window. At least two markers must be outlined in red before you can continue. zView also outlines the zSpace screen in red.

6. For the best results, adjust the camera until zView detects all six markers and the outline turns green, then click **Next**.

Note: If zView cannot detect the display, make sure the camera view includes all four corners of the zSpace display. Next, try lowering or adjusting the lights to avoid glare on the camera and zSpace.

7. Click **Finish**.

Adjust the Overlay

You can adjust how the zView-enabled application displays in **Augmented Reality View**.

Complete the following steps:

1. Open a compatible application in zView.

2. When the application appears in the zView window, select **Tools > Show Display Bounds**. This makes it easier to check the fit of the zSpace display in zView.

3. In zView, select **Tools > Adjust Overlay**.

4. If the application does not fit in the zView window correctly, make the following adjustments:

   o To move the display right or left, enter a positive or negative number in the **X Offset** text box.

   o To move the display up or down, enter a positive or negative number in the **Y Offset** text box.

   o To adjust the size of the display, enter the percentage to scale the display as a decimal number in the **Scale** field.

   The following figure shows an overlay out of position.
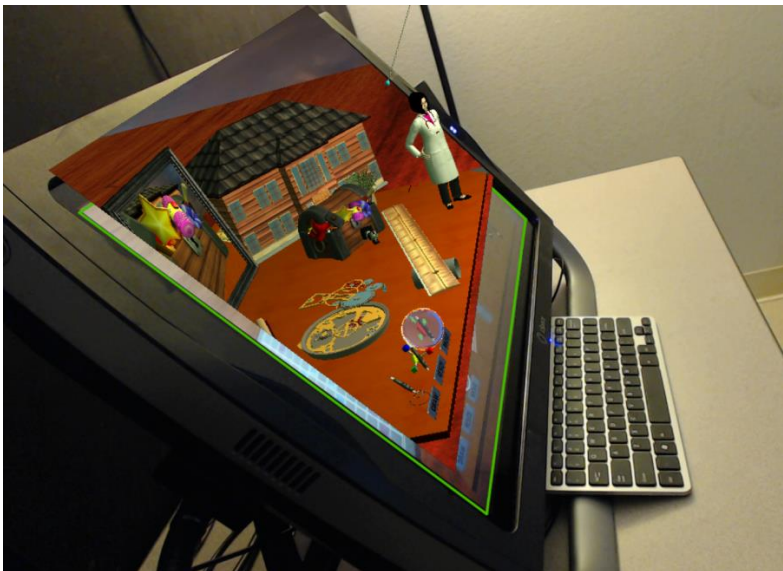
The following figure shows an overlay correctly adjusted.

5. When the overlay is correctly adjusted, hide the display bounds by clearing the **Tools > Show Display Bounds** menu option.

6. Click **OK**.

When you run zView again, the system prompts you to reuse the current settings or run the Setup Wizard again.

If the application you are running includes zView controls, the next time you run the application you can launch zView from within the application. However, if you move the camera you must repeat these configuration steps.

When you are done configuring zView, you can share or record a zSpace session. See the next section for more information.

Share and Record zSpace Sessions

When you are done configuring the system as described in Configure zView, you can share and record zSpace sessions.

Share a zSpace Session

Using zView, you can share a zSpace session in real time. To share a zSpace session, start zView then launch your zSpace application.

Tip: The zSpace STEM applications are integrated with zView. Once you complete configuration, you can start zView by clicking on the zView icon in the STEM application's Control Bar.

If needed, use the following steps to fine-tune the zSpace display in zView.

1. Make sure you can see your zSpace session in zView. Move the zView window from the zSpace display to your second monitor if necessary.

2. Choose **Standard View** or **Augmented Reality View** as described in Configure zView. You must have a webcam for **Augmented Reality View**.

3. Set zView to full-screen mode, if desired, using the toolbar button or by pressing **F11**. Full-screen mode is recommended if you are projecting onto a large screen.

4. For **Augmented Reality View** only, adjust the overlay as described in the Adjust the Overlay section.

5. When the zSpace display is correct, choose **Share Screen** from the toolbar.

Record a zSpace Session

Using zView, you can record a zSpace session. You can record in either **Standard View** or **Augmented Reality View**.

Tip: The zSpace STEM applications are integrated with zView. Once you complete configuration, you can start zView by clicking on the zView icon in the STEM application's Control Bar.

Record your session as follows:

1. Make sure you have turned off the display bounds by deselecting the **Tools > Show Display Bounds** menu option.

2. Select **Settings > Video Quality** from the toolbar to adjust the quality of your recording. A higher quality results in a larger video file.

3. To start recording, select the **Start** button from the toolbar. You can also use the keyboard shortcut **Ctrl R**.

    When you start recording the **Record** button is replaced by the **Stop** button.

4. You can select the **Pause** button from the toolbar to pause while recording.

5. To stop recording, select the **Stop** button. You can also use the keyboard shortcut **Ctrl T**.

6. By default the video is saved in the **Users\Public\Public Videos** folder. The system prompts you for a file name when you stop recording.

    Note: Choose Cancel to discard the video without saving.