OCULUS VR, INC

Configuring the Oculus Rift

SDK Version 0.3.2 Preview

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1 Oculus Configuration Utility Overview

The Oculus Configuration Utility is used to configure Oculus headsets and to generate device and user profiles. Profiles allow the user to tune and personalize the VR experience across all Oculus platform applications for added comfort, performance, and immersion. While a reasonable default experience is supplied by the Oculus SDK without any user customization, users are strongly encouraged to run the Oculus Configuration Utility to fine-tune their own personal experience.

2 Getting Started

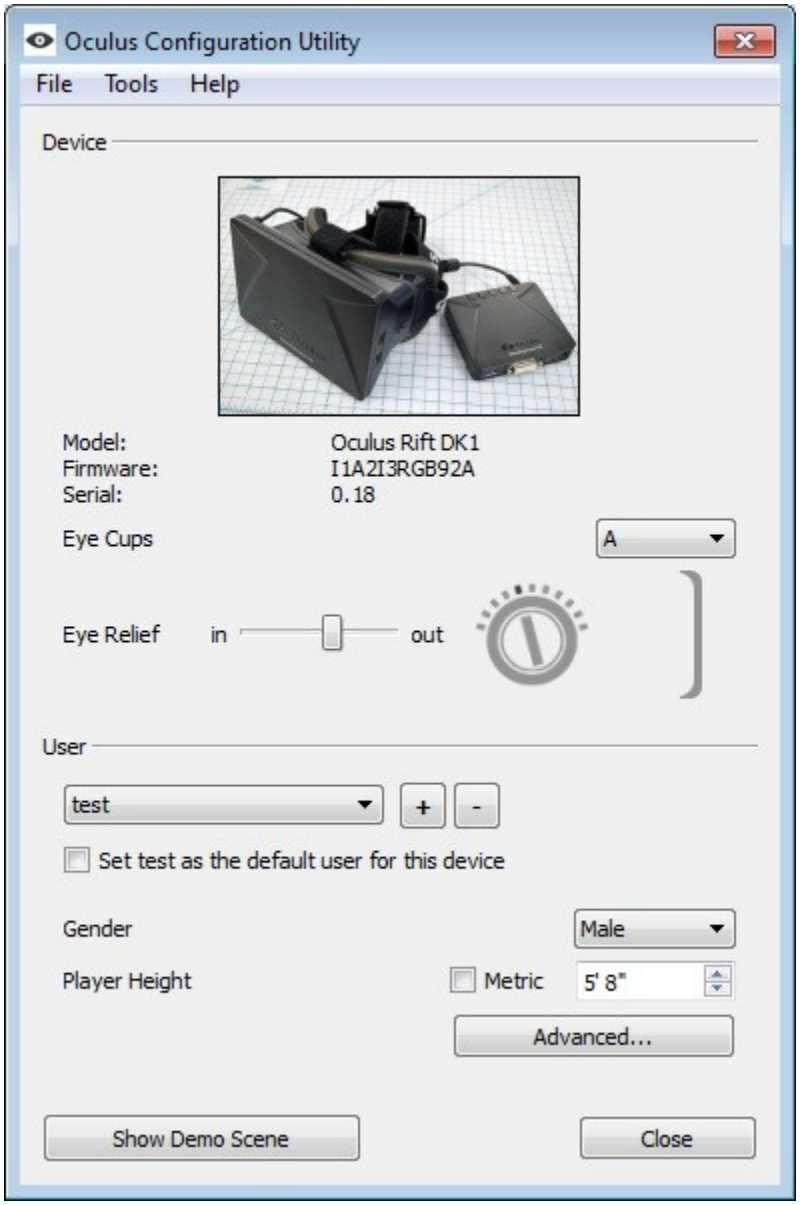

Figure 1: Oculus Configuration Utility

Figure 1 shows the start screen of the Oculus Configuration Utility. The top section contains Device settings, and the bottom section contains User settings. The first time you run the Oculus Configuration Utility, you should create a user profile. To create a user profile, click the **+** button and then type a user name.

Each device that you use can be tied to a specific user by default. To link the currently connected headset with the current user profile, select the **Set *user* as the default user for this device** check box. Oculus-enabled applications will automatically load and use this user profile when the specific headset is attached.

3 Device Settings

Device settings are part of each user profile. They describe a user's preferred hardware settings while wearing the headset. The following settings can be changed:

Eye Cups - These are the lenses that ship with the Oculus Rift. The lenses come in three different types (A, B, and C) which have different heights and focal lengths. The A cup is pre-installed at the factory and is designed for people with normal vision. Nearsighted users may find that the B or C cup offers a clearer image. The Oculus Configuration Utility should be set to the user preferred and installed eye cup.

Eye Relief - This is the distance between surface of the lens and the user's eye (cornea). The Rift headset has a dial on either side of it that can be used to lengthen or shorten this distance. Each user should experiment with this setting to find a distance that is comfortable. The Eye Relief slider in the Oculus Configuration Utility should be adjusted to match the dial setting on the hardware. The wheel and face-plate icons depict the right side of a headset that is facing right and the slider control can be used to turn the wheel.

4 User Settings

User settings describe physical characteristics that are used to model the user in VR. Carefully tuning these values will increase the comfort of the VR experience and can lead to a better sense of presence.

Gender - This is an optional parameter that can be set and is used to statistically adjust various body size parameters. Applications may also use this parameter to set the gender of the player avatar.

Player Height - This is the head height of the real life user. The height can be specified in either metric or standard units by selecting or clearing the **Metric** check box. Applications are encouraged to use this value to set the player avatar to the same height as the user's real body, which ultimately leads to a familiar sense of size and embodiment in VR.

5 Demo Scene

After you have configured your user profile, you can view these settings in a sample VR scene. Click **Show Demo Scene** and put on the headset. The scene consists of a single room with some familiar objects to give the user a sense of familiarity and scale. There are no controls. Simply look around and remove the headset when you are done. If you click **Close Demo Scene**, the demo will stop. Additionally, all of the user setting controls are active while viewing the demo. You can dynamically adjust height, eye relief, or any other settings and see the changes as they are applied.

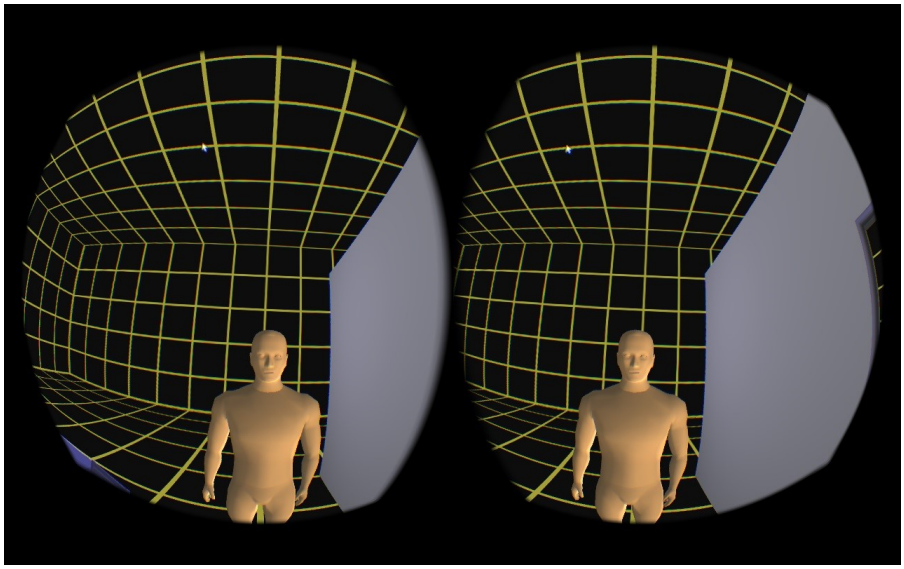

Figure 2: Demo Scene

6 Advanced Settings

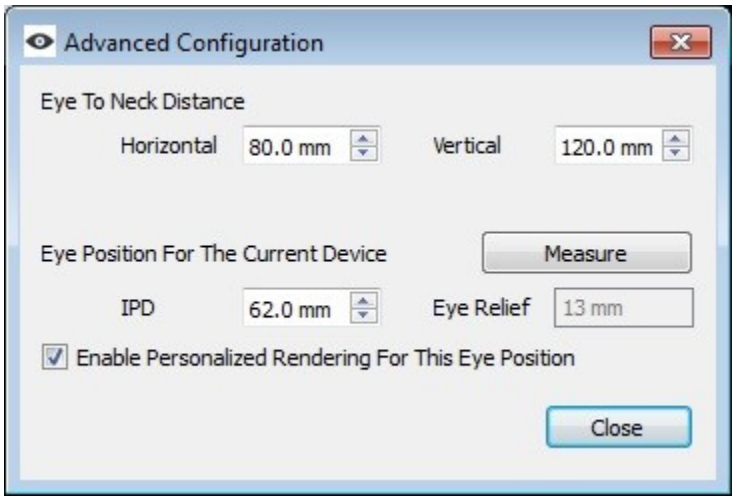

Figure 3: Advanced Settings

Advanced settings can greatly improve the quality of the VR experience, but they are a bit more subtle than the basic settings and require a deeper understanding and patience to set properly.

Eye To Neck Distance - The Oculus SDK implements a neck model to simulate positional movement of the eyes as you turn your head. For example, if you nod your head up and down the center of rotation of the eyes is not at a point on your nose but at a point in your spine called the neck pivot. The vector between the neck pivot and the center of your eyes is defined by a vertical and horizontal distance. The vertical distance is approximately the distance from the corner of your eye to the bottom of your jaw. The horizontal distance is approximately the distance from the corner of your eye to the middle of your ear. These can serve as decent starting points, but each person is different and you should experiment in VR with different lengths to find values that feel correct.

Eye Position - This is the position of each eye with respect to the lens. The position is defined along the x-axis (across the lens) as well as along the z-axis (away from the lens). Although internally each eye is specified independently, the Oculus Configuration Utility exposes these values in a composite manner. The interpupillary distance (IPD) is the lateral distance between the pupils of each eye. This value can be measured by an optometrist or by hand and set directly. The eye relief is the distance between the headset lens and the cornea. This distance is defined both by the facial structure of the user, as well as the eye relief dial on the side of the headset. Adjusting the Eye Relief control on the main window will change this value.

Measure - This is a visual tool that is used to estimate the exact position of each eye and auto-fill the IPD and Eye Relief values. It requires that the user put on the headset and move vertical green lines to find the edge of their visible field-of-view. It measures each eye independently and can even detect and handle asymmetries in eye position.

Personalized Rendering - Many of the profile settings are designed to modify aspects of the rendering and provide a personalized visual experience. You can disable this feature by clearing the **Enable Personalized Rendering** check box. When disabled, several of the profile settings will be ignored and a default generic rendering mode is used instead.