

SGI™ OpenGL Vizserver™
User's Guide

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Introduction

Welcome to OpenGL Vizserver!

With OpenGL Vizserver, you can interact with images and three-dimensional models utilizing the capabilities of a remote Silicon Graphics Onyx2 InfiniteReality server. OpenGL Vizserver transmits rendered images over a high-speed data pipe, running OpenGL applications with large RGB datasets at up to 30 Hz. Using your local workstation, you can take advantage of an Onyx2 InfiniteReality server without leaving your desk.

This user's guide consists of one chapter, "Running OpenGL Vizserver." This chapter provides step-by-step instructions for starting OpenGL Vizserver and interacting with images and three-dimensional models.

Running OpenGL Vizserver

This chapter provides step-by-step instructions for running OpenGL Vizserver. The following topics are covered:

- “Connecting to a Remote Server” on page 2
- “Configuring an Active Session” on page 7
- “Starting an Application” on page 10
- “Interacting with a Rendered Image” on page 11
- “Stopping an Active Session” on page 12
- “Logging Out” on page 13

OpenGL Vizserver displays a graphical user interface (GUI) on your local workstation’s monitor. You use OpenGL Vizserver GUI windows to communicate with a remote server and configure each active session.

Connecting to a Remote Server

The remote host server is an Onyx2 InfiniteReality system with one or more graphics subsystems. OpenGL applications installed on the server perform all image rendering. The server compresses a rendered image and transmits it to your local workstation for viewing.

To connect to the remote host server, follow these steps:

1. Click the Vizserver icon on your desktop, as shown in Figure 1-1.



Figure 1-1 OpenGL Vizserver Icon

The Main window appears, as shown in the example in Figure 1-2.

The **Host name** field is blank.

The **Status** field indicates that you are currently disconnected from the remote host server.

Note: You can also type `vizserver` in a command line window to display the Main window.



Figure 1-2 Main Window

2. Type the name of any available host server in the **Host name** field.
3. Click the **Log in** button.

The Login window appears (if authentication is required), as shown in the example in Figure 1-3.

In some cases, OpenGL Vizserver automatically logs you in, and you do not have to enter a user ID and password.



Figure 1-3 Login Window

4. Log in to the remote host server by entering your user name, password, and any other required information, then click the **OK** button.

In the Main window, the **Status** field indicates that you are connecting to the remote host server, as shown in the example in Figure 1-4. Then the **Status** field confirms that you are connected, the **Start Session** and **Log out** buttons are activated, and the **Log in** button is deactivated, as shown in Figure 1-5.



Figure 1-4 Main Window (connecting to server)



Figure 1-5 Main Window (after logging in)

Starting an Active Session

You start an active session by clicking the **Start Session** button in the Main window. The **Status** field indicates that the session is starting, as shown in Figure 1-6. Then the Status field confirms that the session is active, as shown in Figure 1-7.



Figure 1-6 Main Window (session starting)



Figure 1-7 Main Window (session active)

Then the Console window appears at the lower left corner of your screen. This window identifies the current host, as shown in the example in Figure 1-8.

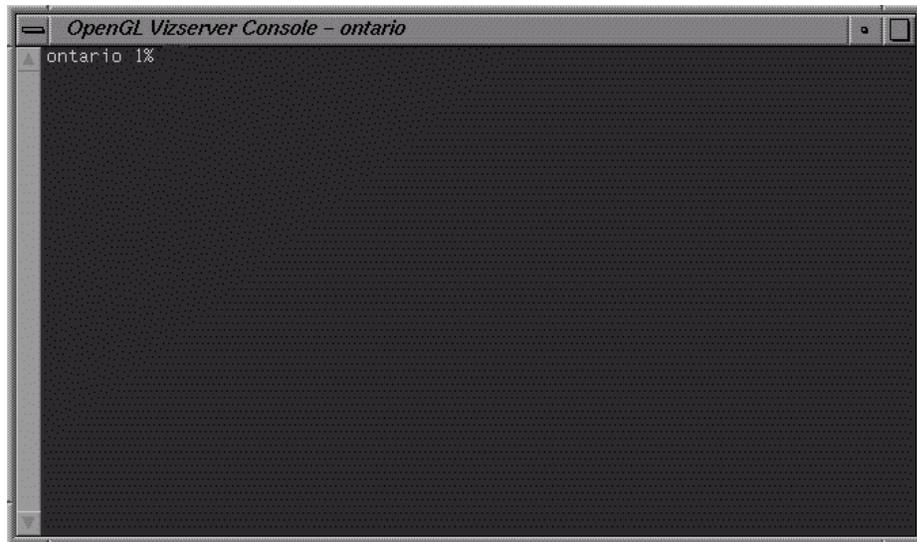


Figure 1-8 Console Window

Configuring an Active Session

After you start an active session, the Session Start window appears. In this window, you can choose a configuration and a network interface, and set the initial compression rate, as shown in the example in Figure 1-9. When this window appears, the displayed compression defaults to the last selection you made during your last session.

There is currently no multiplexing, so only one user can connect to a server with a single pipe configured. Multiple users, each with an independent set of pipes, can connect to a server in a multiple pipe configuration. In the example below, a **one pipe** configuration is selected. This configuration allows a single user to access one graphics pipe on a server.

Note: Currently, OpenGL Vizserver does not support multiple active sessions.

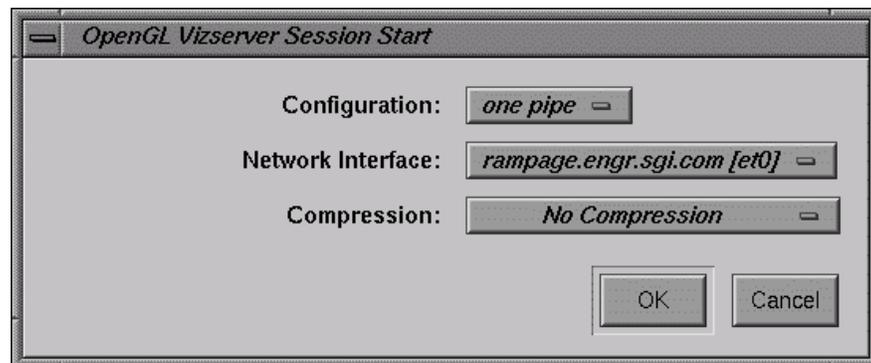


Figure 1-9 Session Start Window

1. Click the **Configuration** button, then choose a configuration in the drop-down menu.
2. Click the **Network Interface** button, then choose a network interface in the drop-down menu.

This specifies which network interface the server uses to transmit window updates. For example, users on multi-homed systems can specify the fast network interface.

3. Click the **Compression** button, then choose a compression rate in the drop-down menu.

When you set the compression rate, you reduce the amount of data that is required to transmit your image, trading off some image quality for greater interaction capability. Choose a compression rate that is consistent with the frame rate you want to achieve. OpenGL Vizserver compression runs globally, so all applications running under OpenGL use the selected compression scheme. If you run two applications simultaneously and you change the compression setting, both applications switch to the selected compression scheme.

You can choose one of three compression options: **CCC**, **ICC**, or **No Compression**.

- **CCC** (Color Cell Compression) sets an 8:1 compression ratio.
- **ICC** (Interpolated Cell Compression) sets a 4:1 compression ratio.
- **No Compression** turns off compression. In this mode, the server transmits an uncompressed image.

Note: CCC and ICC are fixed latency compression schemes. For this type of compression, only the size of the image must be known to calculate compression time (not the contents, as with JPEG).

4. Click the **OK** button in the Session Start window.

The Session Start window disappears, and then the Session Control window appears, as shown in Figure 1-10. The Main window remains on your screen.

In this window, you can reset the compression rate, redraw your image, and stop the active session.

After you start an application, your image appears in an application window (as described in the next section). Clicking the **Redraw Windows** button in the Session Control window redraws the image at the selected compression rate. You can reset the compression and redraw the image at any time.

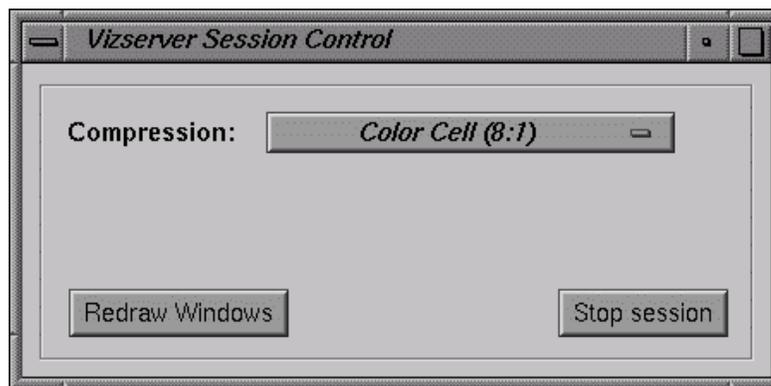


Figure 1-10 Session Control Window

Starting an Application

Start the desired application by typing commands in the Console window, as shown in the example in Figure 1-11.

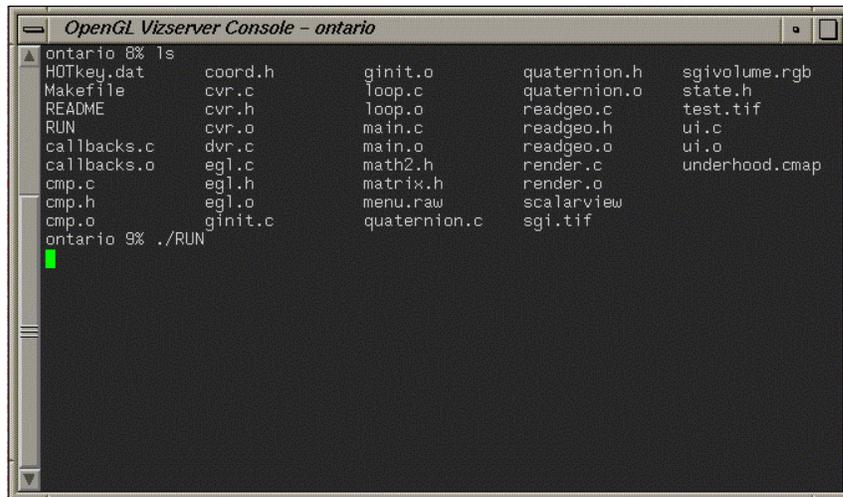


Figure 1-11 Starting an Application in the Console Window

Alternatively, you can start the desired application as follows:

1. Telnet or rlogin to the OpenGL Vizserver host machine.
2. Set the display environment to point to the client.
3. Start the desired application using the `vsx` command.

The application renders the image. Then the host server transmits it to your local workstation and displays it on your screen in the application window, as shown in the example in Figure 1-12.

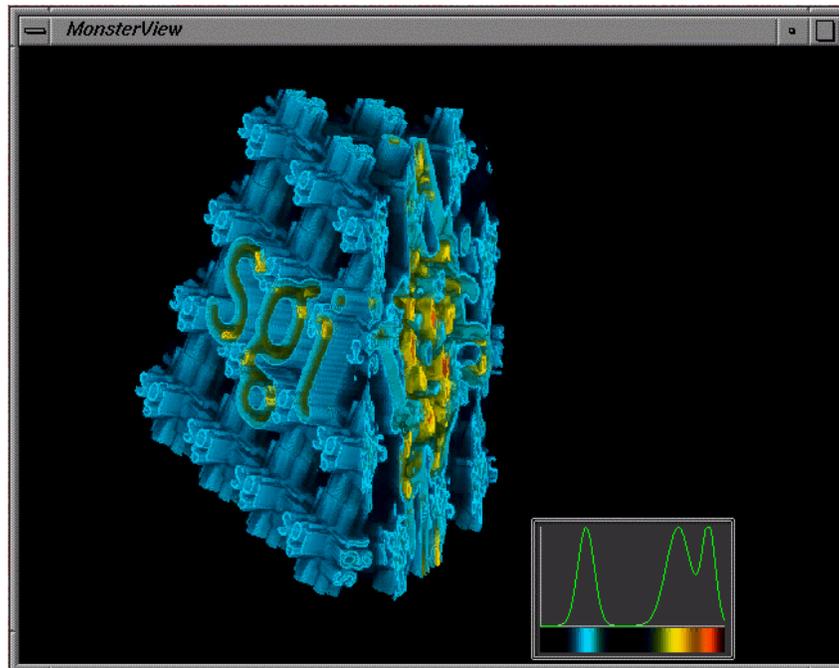


Figure 1-12 Displaying a Rendered Image in an Application Window

Interacting with a Rendered Image

Because OpenGL Vizserver provides an application-transparent service, your applications perform as if they are using the indirect rendering features of X11 and GLX. Interacting with one of your applications is the same as interacting with any other X-based application. The application is not aware that the OpenGL Vizserver system is rendering the image.

Stopping an Active Session

To stop an active session follow these steps:

1. Click the **Stop session** button in the Session Control window, shown in Figure 1-10.

You can stop a session at any time. If you close the Session Control window, it is the same as clicking the **Stop session** button.

A confirmation dialog box appears, as shown in Figure 1-13.

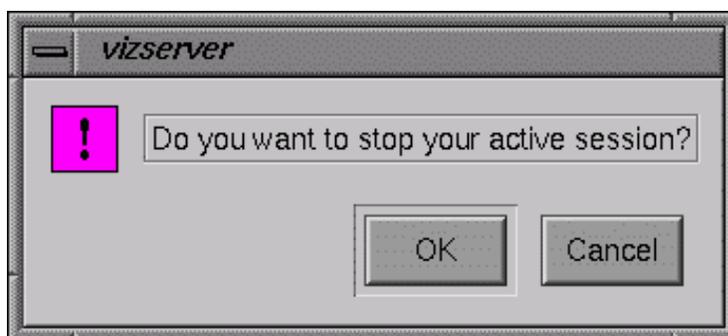


Figure 1-13 Stop Session Dialog Box

2. Click the **OK** button in the Stop Session dialog box.

Logging Out

If you want to log out, follow these steps:

1. Click the **Log out** button in the OpenGL Vizserver Main window, shown earlier in Figure 1-7.

A confirmation dialog box appears, as shown in Figure 1-14.

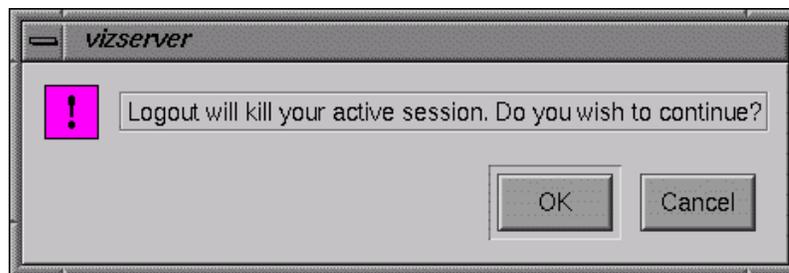


Figure 1-14 Log Out Dialog Box

2. Click the **OK** button in the Log Out dialog box.

A confirmation dialog box appears, as shown in Figure 1-15.

This dialog box also appears if you close the Main window.

When you log out, you terminate all active sessions, and the Main window returns to the pre-login state.

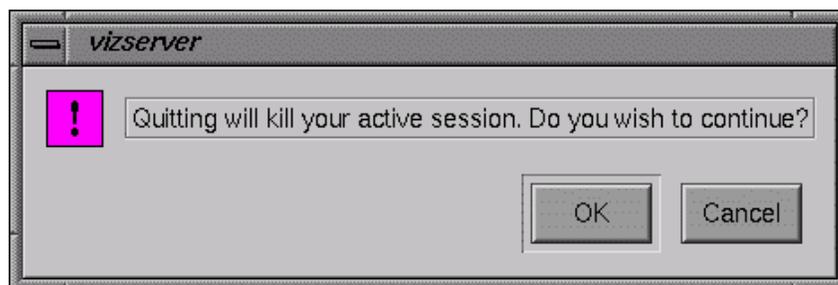


Figure 1-15 Quit Dialog Box

3. Click the **OK** button in the Quit dialog box to quit OpenGL Vizserver.

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