Virtual Reality Toolbox Release Notes
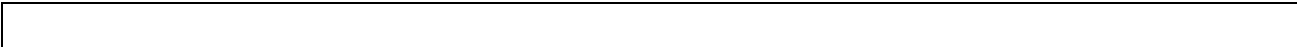
The "Virtual Reality Toolbox 3.0 Release Notes" on page 1-1 describe the changes introduced in the latest version of the Virtual Reality Toolbox. The following topics are discussed in these Release Notes:

- "New Features" on page 1-2
- "Platform Limitations for HP and IBM" on page 1-3
- "Upgrading from an Earlier Release" on page 1-4
- "Known Software and Documentation Problems" on page 1-5

If you are upgrading from a release earlier than Release 12.1, you should also see "Virtual Reality Toolbox 2.0 Release Notes" on page 2-1.

Printing the Release Notes

If you would like to print the Release Notes, you can link to a PDF version.

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Virtual Reality Toolbox 3.0 Release Notes

New Features

This section summarizes the new features and enhancements introduced in the Virtual Reality Toolbox 3.0.

For an overview of the Virtual Reality Toolbox, see "Introduction to the Virtual Reality Toolbox" on page 2-2.

Cross-Platform Support

The Virtual Reality Toolbox 3.0 is supported on both PC and UNIX platforms. See Supported Computer Platforms in the Virtual Reality Toolbox documentation for more information.

Virtual Reality Toolbox Viewer

The Virtual Reality Toolbox 3.0 now contains a VRML viewer. You can use this viewer on all supported operating systems. With the Virtual Reality Toolbox viewer, you can move between predefined viewpoints in a virtual scene. You can also control the navigation method, speed, and rendering of the virtual world. From the MATLAB interface, you can control the Virtual Reality Toolbox viewer better than other VRML-enabled Web browsers.

Improved Performance

The communication between the Virtual Reality Toolbox and VRML-enabled Web browsers is improved. You are now able to perform such tasks as controlling multiple objects in a virtual scene or setting multiple field values faster than before.

Improved MATLAB Interface

It is now easier to access and manipulate virtual world objects from the MATLAB command line. You can use dot notation to change object properties. Also, multiple field values are transferred between MATLAB and the Virtual Reality server in a form consistent with their VRML representation.

Platform Limitations for HP and IBM

The Virtual Reality Toolbox is not supported on HP and IBM platforms.

Upgrading from an Earlier Release

This section describes an upgrade issue involved in moving from the Virtual Reality Toolbox 2.0 to Version 3.0.

Customized V-Realm Object Libraries

If you are on a PC platform and you created your own object libraries in V-Realm while using the Virtual Reality Toolbox 2.0, deleting MATLAB deletes these custom libraries. You need to save these libraries before uninstalling the older version of MATLAB:

1 Save the contents of the `<MATLAB root>\toolbox\vr\vrealm` directory to another location on your system.

2 Uninstall the older version of MATLAB.

3 Install MATLAB 6.5 (Release 13).

4 Install V-Realm using the command

   `vrinstall -install editor`

5 Save the files from your old `vrealm` directory into the new `vrealm` directory.

MATLAB 6.5 should have the same directory structure as your previous version of MATLAB. If the directory structure is not identical, search your system for `vrbuild2.ini`. Edit the relative paths within this file to reflect the directory structure of MATLAB 6.5.

After you have moved your files into the new `vrealm` directory and customized your `vrbuild2.ini` file, do not reinstall the V-Realm editor. The command

   `vrinstall -install editor`

replaces the existing `vrbuild2.ini` file with the default template file.

Known Software and Documentation Problems

This section includes a link to a description of known software and documentation problems in Version 3.0.

If you are viewing these Release Notes in PDF form, please refer to the HTML form of the Release Notes, using either the Help browser or the MathWorks Web site and use the link provided.

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Virtual Reality Toolbox 2.0 Release Notes

Introduction to the Virtual Reality Toolbox

The Virtual Reality Toolbox extends the capabilities of MATLAB and Simulink into the world of virtual reality graphics. Using standard Virtual Reality Modeling Language (VRML) technology, you can create animated three-dimensional scenes that are driven from the MATLAB and Simulink environment.

Simulink Interface

You can observe a simulation of your dynamic system over time in a visually realistic three-dimensional model.

Most of the Virtual Reality Toolbox features can be implemented with Simulink blocks. Once you include these blocks in a Simulink diagram, they allow you to select the virtual world, which you connect to Simulink signals. The Virtual Reality Toolbox automatically scans the virtual world for available VRML nodes that can be driven by Simulink.

MATLAB Interface

The Virtual Reality Toolbox provides a flexible MATLAB interface to a virtual reality world.

Virtual Reality Modeling Language (VRML)

The Virtual Reality Modeling Language (VRML) is an ISO standard that is open, text-based, and uses a Web-oriented format. You use VRML to define a virtual world that you can display in a Web browser and connect to a Simulink model.

The Virtual Reality Toolbox uses many of the advanced features defined in the current VRML97 specification. The term VRML, in this chapter, always refers to VRML as defined in the VRML97 standard ISO/IEC 14772-1:1997. This format includes a description of three-dimensional scenes, sound, internal actions, and Web anchors.

VRML Viewing

If you install a VRML plug-in, you can view a virtual world in your preferred Web browser. For PC platforms, the Virtual Reality Toolbox includes the popular VRML plug-in, blaxxun Contact.

The Virtual Reality Toolbox connects MATLAB and Simulink with a VRML enabled browser to display a simulated process using the TCP/IP protocol. This allows you to watch a simulated virtual world not only on the computer where MATLAB and Simulink are running, but also on other computers connected through the Internet.

VRML Authoring

For PC platforms, the Virtual Reality Toolbox includes the leading VRML authoring tool, V-Realm Builder, by Ligos Corp. With the addition of this VRML authoring tool, the Virtual Reality Toolbox provides a complete authoring, development, and working environment for carrying out three-dimensional visual simulations.