

Simulink® Control Design Release Notes

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The Chapter 2, “Simulink Control Design 1.1 Release Notes” discuss the following topics:

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The Chapter 3, “Simulink® Control Design 1.0 Release Notes” discuss the following topics:

- “Introduction to Simulink Control Design” on page 3-2

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

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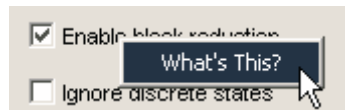
Simulink Control Design

1.2 Release Notes

New Features

Simulink Control Design 1.2 contains several new features including the following:

- Select from three different discretization methods for linearization of multirate and hybrid models
- View state space, transfer function, and zero-pole gain representations of linearized models within the Control and Estimation Tools Manager without exporting to the workspace. These linearized models appear in the linearization summary panel of the Control and Estimation Tools Manager.
- Use either truncated block names or full block names in the state space matrices of a linearized model, and within the LTI Viewer, to improve readability
- Access context sensitive help for the Linearization, Operating Point Search, and Linearization State Ordering Options window of the Control and Estimation Tools Manager. To access help on a field within the options window, right click on the option's label and select **What's this?** from the context menu. Help for the option will appear in this window.



- View a complete list of Simulink blocks indicating which blocks have pre-programmed analytic Jacobians for use with the block by block analytic linearization algorithm. This list is in the Individual Block Linearization Methods section of the Simulink Control Design documentation.

Major Bug Fixes

Simulink Control Design 1.2 includes important bug fixes made since Version 1.1. You can see a list of major Version 1.2 bug fixes the MathWorks website.

If you are viewing these Release Notes in PDF form on the MathWorks website, click the words “bug fixes” in the sentence above to see the notes about major fixes.

If you are upgrading from a version earlier than Version 1.1, you should also see Version 1.1 “Major Bug Fixes” on page 2-2.

Simulink Control Design

1.1 Release Notes

Major Bug Fixes

Simulink Control Design 1.1 includes several bug fixes made since Version 1.0. You can see a list of the particularly important Version 1.1 bug fixes.

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.

Simulink[®] Control Design 1.0 Release Notes

Introduction to Simulink Control Design

This section provides a brief overview of Simulink Control Design, which is being introduced in Release 14.

About Simulink Control Design

Simulink Control Design provides tools for the linearization of control systems and physical models in Simulink. A Graphical User Interface (GUI) simplifies the tasks of specifying operating conditions, linearizing the model, and analyzing the results. Linearized Simulink models often facilitate system analysis and compensator design. This is useful in many industries and applications, including

- Aerospace: flight control, guidance, navigation
- Automotive: cruise control, emissions control, transmission
- Equipment manufacturing: motors, disk drives, servos

Simulink Control Design improves upon previous Simulink linearization tools by providing more options for computing operating conditions, allowing open loop analysis without the removal of feedback loops, and including a linearization inspector and debugger. Linearization projects are easier to manage with the new Control and Estimation Tools Manager. Furthermore, Control System Toolbox features, such as the LTI Viewer, are integrated with the Control Designer to improve control system analysis and design.

Features

Key features of Simulink Control Design include the ability to

- Specify linearization input, output, and open loop analysis points using right-click menus
- Perform open loop analysis without deleting feedback loops
- Extract operating conditions from a simulation
- Compute operating conditions by optimization (trimming)
- Create output constraints for trim analysis

- Linearize individual blocks using context menus
- Inspect and debug results of the linearization
- Identify blocks in a model that contribute to a linearization
- Export results to the MATLAB workspace
- Manage linearization projects, compute operating conditions, and perform linearization with a Graphical User Interface (GUI)
- Use improved functions at the command line for linearization and trim analysis