

Report Generator

For Use with MATLAB® and Simulink®

- Computation
- Visualization
- Programming
- Simulation

User's Guide

Version 2



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Report Generator User's Guide

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Getting Started

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Introduction to Report Generator

Learn how to generate a basic report

Introduction to the Report Generator
graphical user interface

What Is Report Generator?

Report Generator is a software package that can take any information from your MATLAB® workspace and export it to a document in the form of a report. The reports that you create with Report Generator can include figures, data, variables, and functions from your models or M-files, as well as snapshots of system graphics and figures.

Two Report Generator Packages

There are two Report Generator packages: MATLAB Report Generator and the Simulink® Report Generator. If you want to create reports for MATLAB M-files, you need the MATLAB Report Generator. If you want to create reports for Simulink or Stateflow® models, you need both MATLAB Report Generator *and* the Simulink Report Generator, which is built atop the MATLAB Report Generator and includes fixed-point components.

This manual documents both MATLAB Report Generator and Simulink Report Generator. This manual also documents fixed point components, which are included with Simulink Fixed Point.

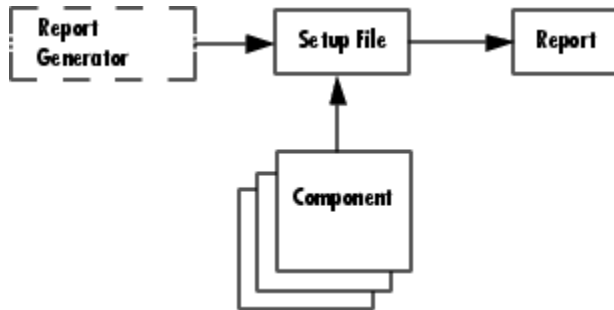
Multiple Report Formats

One of the key features of Report Generator is that you can create reports in the following documentation formats:

- Rich Text Format (RTF)
- Extensible Markup Language (XML)
- Hypertext Markup Language (HTML)

Report Generator Overview

The parts of Report Generator are shown in the following diagram.



Report Generator Part	Description
Report Generator	Includes Report Explorer, the graphical user interface (GUI) for Report Generator. Report Generator is shown as a dashed box because you can use Report Explorer or the MATLAB command line to generate reports and edit setup files.
Setup File	Specifies which components will be in the report, as well as component attributes and component relationships.
Components	Controls the report generation process and inserts information into a report with self-contained, modular elements, such as the Evaluate MATLAB Expression component or the Handle Graphics® Property Table component.
Stylesheet	Specifies parameters that control the display and formatting of the report. Available formats include HTML and RTF.
Report	Generated document that contains the information specified by the setup file.

Generating a Report

This section describes how to use Report Generator, demonstrates how to generate a report, and provides brief descriptions of the components used in the setup file. The following topics are included:

- “Opening Report Generator” on page 1-4
- “Generating the Report” on page 1-5
- “Component Descriptions” on page 1-8

Opening Report Generator

With Report Generator, you can generate reports, build setup files, and convert DocBook XML files. To access Report Generator, you can use the MATLAB command line or the Report Generator graphical user interface, which is Report Explorer.

Opening Report Generator from the MATLAB Command Line

To open Report Explorer, enter `report` at the MATLAB command line. You can also enter `setedit` and `rptconvert` with no arguments to open Report Generator.

Opening Report Generator from the MATLAB Desktop

You can open Report Explorer without going to the MATLAB command line.

- From the MATLAB desktop, click **Start > MATLAB > MATLAB Report Generator > Report Explorer**
- If you are using Simulink Report Generator, click **Start > Simulink > Simulink Report Generator > Report Explorer**.

Opening Report Generator from Simulink

In a Simulink model, you can open Report Generator directly by selecting **Tools > Report Generator**.

Generating the Report

To generate reports with Report Generator, you can use Report Explorer or the MATLAB command line. To decide which report generation method to use, see the table below.

If You...	Use
Know the setup file you want to use and you don't need to edit it	Command line
Want to generate a report from an existing setup file (or edit the setup file) but are not sure of the name of the file or if it is on your path	Report Explorer
Want to create a new report, or edit an existing setup file (for example, if you want to customize a standard setup file or edit one of your own setup files)	Report Explorer

Using the Command Line to Generate a Report

You can generate a report without opening the setup file, using the MATLAB command line. Issue the following command at the command line:

```
report SetupFileName
```

where *SetupFileName* is the name of your setup file. For example, if you type `report ch1-tutorial`, a report is generated.

To generate multiple reports, type the following statement at the MATLAB command line:

```
report ('<SetupFileName1>', '<SetupFileName2>', ...)
```

Report Generator creates the corresponding reports in the order specified by the input arguments.

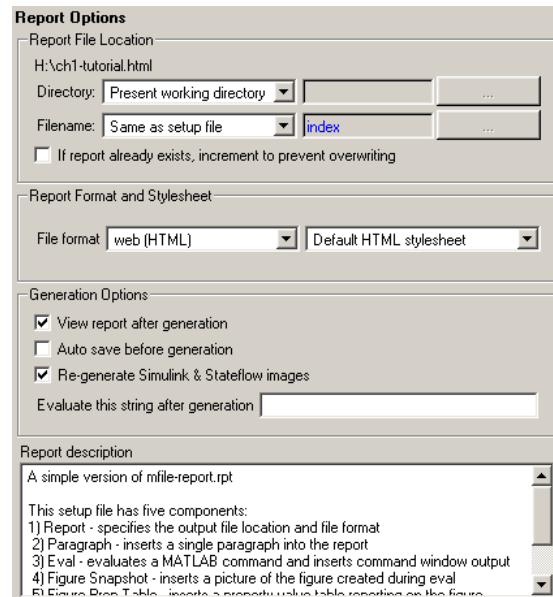
Note If you type report without any input argument, Report Explorer appears. Report Explorer lists all the setup files you have on your path.

Using Report Explorer to Generate a Report

You can also use Report Explorer to generate a report. The following procedure opens the setup file before generating a report.

- 1 In the Options panel, double-click `ch1-tutorial.rpt` to open the setup file.

The Properties panel displays the basic report options:



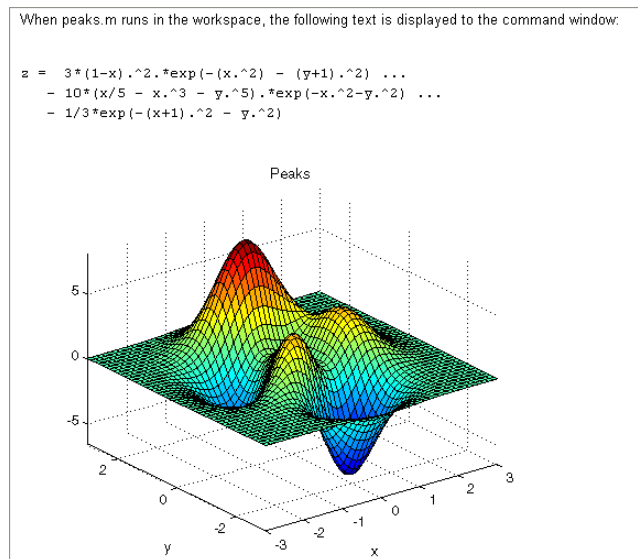
- 2 Click **Report**  in the toolbar. The report is generated.

By default, the `ch1-tutorial` report is generated in HTML. Many other generation options are available. For more information, see “Setting Report Output Options” on page 2-2.

While the report is generating, the following events occur:

- All options in Report Explorer become inactive.
- The Outline panel highlights each component as it is executing.
- Report Explorer shows the report generation status.

After report generation is complete, your Web browser opens to display your report:



If your report is not displayed, make sure that the **View report after generating** check box is selected in the Properties panel.

Alternative Methods to Generate Reports

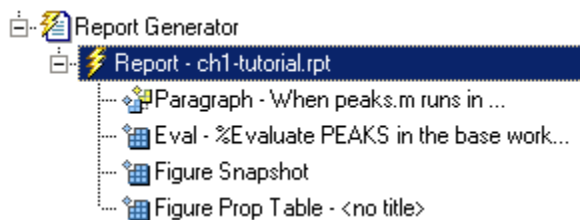
Report Generator gives you several options to initiate report generation. You can start report generation by

- Selecting the **File > Report**
- Selecting **Generate Report** in the Properties panel

- Selecting **Report** in Report Explorer toolbar
- Right-clicking a setup file in the Options panel

Component Descriptions

The components in the setup file determine the information contained in the generated report. For example, the ch1-tutorial setup file contains four components:



The following sections show the information each component in the outline inserts into the report:

- “Paragraph Component” on page 1-8
- “Evaluate MATLAB Expression Component” on page 1-8
- “Figure Snapshot Component” on page 1-9
- “Handle Graphics Property Table Component” on page 1-10

Paragraph Component

The first component in the setup file is a Paragraph component. The Paragraph component inserts the following paragraph in the report.

When peaks.m runs in the workspace, the following text is displayed to the Command Window:

Evaluate MATLAB Expression Component

The second component in the setup file is an Evaluate MATLAB Expression component. This is represented in the setup file by

Eval String-%Evaluate PEAKS in the base workspace.

This component evaluates the following M-code:

```
%Evaluate PEAKS in the base workspace.  
  
%Clears other open figures.  
close all  
  
%Creates the figure.  
peaks  
  
%Set the figure print size to 5x4 inches.  
set(gcf, ...  
    `PaperPosition',[1 1 5 4],...  
    `PaperUnits','inches');
```

and inserts the command-line output in the report.

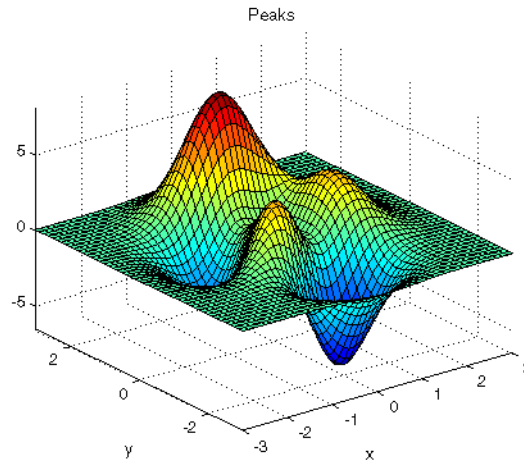
```
z = 3*(1-x).^2.*exp(-(x.^2) - (y+1) ...  
    - 10*(x/5 - x.^3 - y.^5).*exp(-x.^2-y.^2) ...  
    - 1/3*exp(-(x+1).^2 - y.^2)
```

Figure Snapshot Component

The third component in the setup file is the Handle Graphics Figure Snapshot component. The Handle Graphics Figure Snapshot component inserts a snapshot of the current figure into the report. Because the Evaluate MATLAB Expression component created the Peaks image, it is the current image and is inserted into the report.

When peaks.m runs in the workspace, the following text is displayed to the command window:

```
z = 3*(1-x).^2.*exp(-(x.^2) - (y+1).^2) ...  
- 10*(x/5 - x.^3 - y.^5).*exp(-x.^2-y.^2) ...  
- 1/3*exp(-(x+1).^2 - y.^2)
```



Handle Graphics Property Table Component

The fourth component in the setup file is the Handle Graphics Property Table component. The Handle Graphics Property Table component inserts a table of selected Handle Graphics figure property name/property value pairs for the Peaks image.

```
PaperPosition: (1.00, 1.00) 5.00 x 4.00 inches  
PaperOrientation: portrait
```

Using Report Explorer

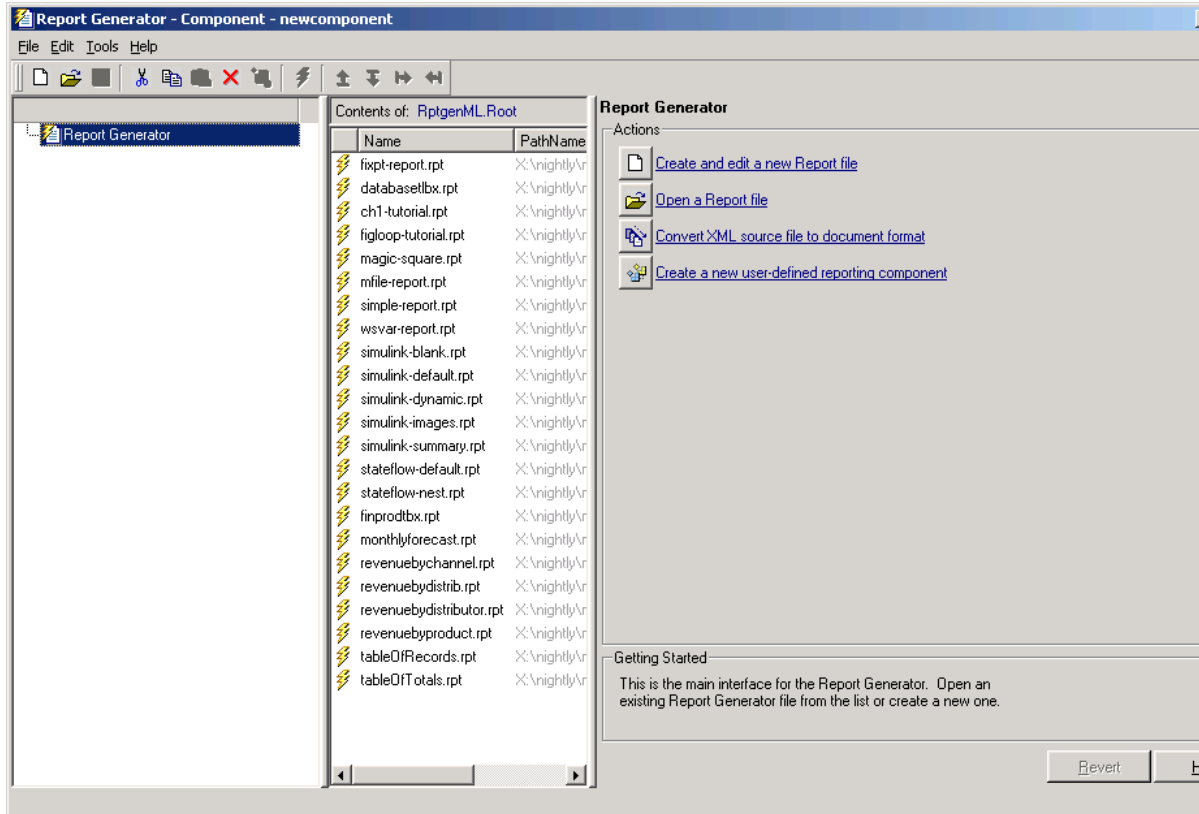
A report consists of information that is specified by the components in its setup file. You can think of the setup file as a container for components.

To build a setup file, you add components. For example, if you want to include a paragraph of text in a report, you add a **Paragraph component**.

Report Explorer serves as the primary graphical user interface (GUI) for Report Generator. With Report Explorer, you can

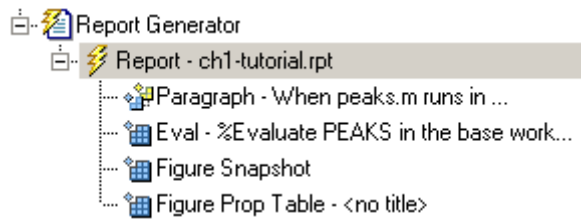
- Browse setup files and Report Generator components on the MATLAB path
- Create new setup files
- Open, modify, and delete existing setup files and components
- Generate reports

To start Report Explorer, select **Report Generator** from the MATLAB **Start** menu or enter `report` at the MATLAB command line. Report Explorer GUI features three panels:



- Outline panel (leftmost) Displays the structure of the setup file currently open in Report Explorer
- Options panel (center) Displays the options for the currently selected object in the Outline panel. For example, when a setup file is open, the Options panel displays the available components. When the Stylesheet Editor is open, the Options panel displays available stylesheets or available style parameters, depending on the selection in the Outline panel.
- Properties panel (rightmost) Displays properties for the currently selected object in Report Explorer

You use Report Explorer to select and organize the components that you want in the setup file. The outline of the current setup file is displayed in the Outline panel of Report Explorer. The outline contains all the components that will be included in the report. Child components are always shown indented under their parent component:



Note If you need help with a component, select the component in the Options panel or Outline panel and click **Help** in the Properties panel.

You can perform the following component operations with Report Explorer:

- “Creating New Setup Files” on page 1-14
- “Adding Components” on page 1-15
- “Moving Components” on page 1-16
- “Deleting Components” on page 1-16
- “Activating and Deactivating Components” on page 1-17
- “Cutting, Copying, and Pasting Components” on page 1-19
- “Using Variable Notation in Text Fields” on page 1-20
- “Using the Preferences Dialog Box” on page 1-22

Opening Setup Files

You use Report Explorer to open existing setup files. To open a setup file, follow these steps:

- 1 To open Report Explorer, enter report at the MATLAB command line.

- 2 In the Options panel, select a setup file.
- 3 In the Properties panel, click **Open**. The report opens.

Note If you do not have Report Generator for Simulink installed, you will not be able to edit or add Simulink or Stateflow components.


Alternate Methods for Opening Setup Files

You can also open setup files by

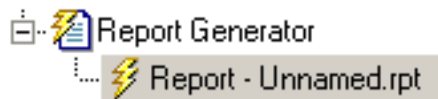
- Selecting the menu **File > Open Report**
- Double-clicking the setup file in the Options panel
- Typing `setedit <setup_filename>` at the MATLAB command line
- Typing **Ctrl+O** on your keyboard
- Selecting the **Tools > Report Generator** menu in Simulink
- Right-clicking the setup file in the Options panel **Open Report >**

Creating New Setup Files

You use Report Explorer to create a new setup file. In Report Generator, setup files are saved as *.RPT files. To create a new setup file, follow these steps:

- 1 Open Report Explorer.
- 2 Click **New**  in the toolbar.

A new setup file appears in the Outline panel:





Alternate Methods for Creating New Setup Files

You can also create new setup files by

- Selecting **File New**
- Right-clicking **Report Generator** in the Outline panel and selecting **New**
- Entering `setedit <newfilename>` at the MATLAB command line
- Typing **Ctrl+N** on your keyboard

Adding Components

When a setup file is open in Report Explorer, the Options panel displays the available components. To add a component to a setup file, select the component that you want to use from the Options panel.

The general classes of components, such as **Formatting**, **MATLAB**, and so on, are denoted by a folder icon, . Components for each class are listed below the class to which they belong and are denoted by the component icon, .

To add a component, follow these steps:

- 1 Create a new setup file in Report Explorer.
- 2 Select the **Chapter/Subsection** component in the Options panel and drop it in the Outline panel.





In the Outline panel, the component appears under the **Report** component:



As the tree view in the Outline panel indicates, components are arranged in hierarchical order. Report Generator begins at the top of the tree and proceeds until the bottom of the tree. Therefore, you will want to move components around in the tree.

Moving Components

You can move components in four directions: up, down, left, and right. Four buttons located in the toolbar let you move components around in the Outline panel.

Button	Purpose	Effect
	Move up	The selected component executes one step earlier in report generation.
	Move down	The selected component executes one step later in report generation.
	Move left	The selected component moves up one level in the component hierarchy.
	Move right	The selected component moves down one level in the component hierarchy to become a child of the component above.

Note You must be careful when you move components, especially when there are parent-child relationships involved. Some components cannot have children, and some components should not be children of other components.

Alternate Methods for Adding Components

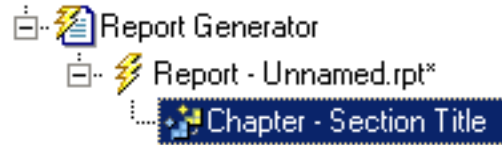
You can also add components by

- Clicking **Add component to current report** in the component's Properties panel
- Right-clicking the component in the Options panel and selecting **Add component to current report**
- Dragging the component from the Options panel to the Outline panel
- Double-clicking the component in the Options panel

Deleting Components

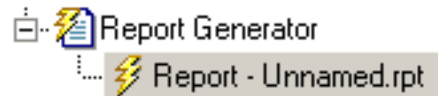
To delete a component, follow these steps:

- 1 In the Outline panel, select the component you want to delete.



- 2 Click **Delete**  in the toolbar.

The component disappears:



Alternate Methods for Deleting Components

You can also delete a component by

- Selecting **Edit > Delete**
- Pressing **Delete** on your keyboard
- Right-clicking in the Outline panel and selecting **Delete** from the shortcut menu

Note If you delete a component in your setup file that has children, all its children are also deleted.

You cannot delete the Report Generator root, which is always at the top of the tree structure in the Outline panel.

Activating and Deactivating Components

You can activate and deactivate individual components in a setup file. When active, the component and all its children are included in the generated


report. When inactive, the component and all its children are not included in the report.

You can activate and deactivate components for

- Evaluating a component's effect on a report
- Testing components to find an report generation error
- Generating multiple versions of a report without creating new setup files

The Outline panel represents active and inactive components with different icons:

Active component 

Inactive component 

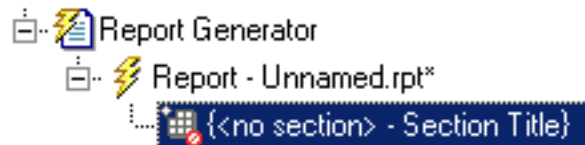
To activate a component, follow these steps:

- 1 Select the component to activate in the Outline panel.



- 2 Click **Activate/Deactivate Component**  in the toolbar.

The component becomes inactive, as the following figure shows:



Alternate Methods for Activating and Deactivating Components

You can also activate or deactivate a component by


- Selecting the **Edit > Activate/Deactivate Component** menu
- Right-clicking the component in the Outline panel and selecting **Activate/Deactivate Component** from the shortcut menu.

Note If you deactivate a component in your setup file that has children, all its children are deactivated as well.


Cutting, Copying, and Pasting Components

The Report Explorer interface provides the ability to cut, copy, and paste components in the Outline panel.


To copy a component, follow these steps:

- 1 Select the component to copy in the Outline panel.
- 2 Click Copy  in the toolbar.

To cut a component, follow these steps:

- 1 Select the component to cut in the Outline panel.
- 2 Click Cut  in the toolbar.

To paste a component, follow these steps:

- 1 Cut or copy a component that you want to paste.
- 2 Select the area in the outline in which you want to paste the component.
- 3 Click Paste  in the toolbar.

Alternate Methods for Cutting, Copying, and Pasting Components

You can also cut, copy, or paste a component by

- Selecting **Edit > Cut/Copy/Paste**
- Typing **Ctrl+C** to copy, **Ctrl+X** to cut, and **Ctrl+P** to paste
- Right-clicking the component in the Outline panel and selecting **Cut/Copy/Paste** from the shortcut menu.

Using Variable Notation in Text Fields

In Report Generator, you can use *variable notation* to display variables in generated reports. To use a variable in a text field, use %<varname> syntax.

For example, to display the variable myvar, you would express it as %<myvar>.

If a variable represents a large amount of text, Report Generator collapses the text automatically to conserve space in a generated report. To make sure that a variable's output is not collapsed, use double angle brackets in the variable notation, such as %<<myvar>>.

Sending Report Generator Objects to the MATLAB Workspace

The Report Explorer provides a tool that creates a handle in the MATLAB workspace to the currently selected object in Report Explorer. Once you have an object handle, you can manipulate the object at the MATLAB command line.

Once you create or open a setup file, you can send objects to the workspace.

- 1** Create a new setup file by selecting **File > New**.

A new setup file appears in the Outline panel.

- 2** Send the object to the MATLAB workspace.
 - a** Select the new setup file in the Outline panel.

- b** Right-click the setup file, and in the context menu that appears, select **Send to Workspace**.

The object handle is sent to the MATLAB workspace in the ans variable.

- 3** Assign the object handle to another variable. This step is necessary to avoid overwriting the handle when you send another object to the workspace. For example, type `rgobj = ans`.

After you select **Send to Workspace**, the setup file object handle appears at the MATLAB command line.

```
ans =

[RptgenML.CReport]
    SectionType: 'auto'
    DirectoryType: 'setfile'
    DirectoryName: ''
    FilenameType: 'setfile'
    FilenameName: 'index'
    isIncrementFilename: 0
    Format: 'html'
    Stylesheet: 'default-html'
    isView: 1
    isAutoSaveOnGenerate: 0
    isRegenerateImages: 1
    Description: 'A report'
    Language: 'auto'
    PostGenerateFcn: ''
    RptFileName: ''
```

You can assign the object handle to another variable.

```
>>rgobj = ans

rgobj =

[RptgenML.CReport]
    SectionType: 'auto'
    DirectoryType: 'setfile'
    DirectoryName: ''
```

```
        FilenameType: 'setfile'  
        FilenameName: 'index'  
isIncrementFilename: 0  
        Format: 'html'  
        Stylesheet: 'default-html'  
        isView: 1  
isAutoSaveOnGenerate: 0  
isRegenerateImages: 1  
        Description: 'A report'  
        Language: 'auto'  
PostGenerateFcn: ''  
RptFileName: ''
```

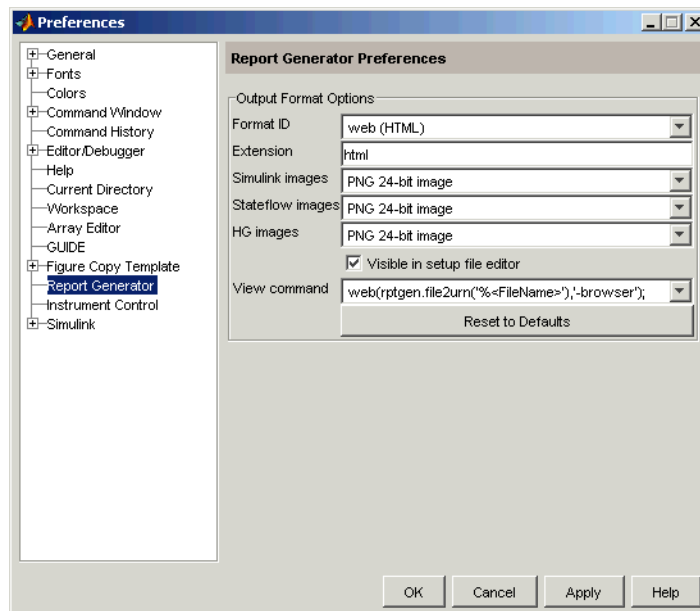
You can also modify the object properties from the command line.

```
>>rgobj.Format = 'rtf97'  
  
rgobj =  
  
[RptgenML.CReport]  
        SectionType: 'auto'  
        DirectoryType: 'setfile'  
        DirectoryName: ''  
        FilenameType: 'setfile'  
        FilenameName: 'index'  
isIncrementFilename: 0  
        Format: 'rtf97'  
        Stylesheet: 'default-fo'  
        isView: 1  
isAutoSaveOnGenerate: 0  
isRegenerateImages: 1  
        Description: 'A report'  
        Language: 'auto'  
PostGenerateFcn: ''  
RptFileName: ''
```

Using the Preferences Dialog Box

To change output format defaults, use the Report Generator Preferences dialog box. You can change default image file formats, report file extensions, and the MATLAB command used to display the generated report.

To open the dialog box, select the **File > Preferences** menu.



To modify the default file extension used in generated reports, follow these steps:

- 1 Select the desired format in the **Format ID** text box.
- 2 Edit the **Extension** field to your desired file extension. For example, you might prefer the .htm extension to .html.
- 3 Click **Apply**.

To change the default file format for Simulink, Stateflow, or Handle Graphics images, follow these steps:

- 1 Select the desired format in the **Format ID** text box.
- 2 Select the desired file format in the **Simulink images**, **Stateflow images**, or **HG images** text boxes.

3 Click **Apply**.

To make the format available to the **Format** text box in the **Preferences** dialog box, clear the **Visible in Report Explorer** check box.

To change the MATLAB command used to view the report, follow these steps:

1 Select the desired format in the **Format ID** text box.**2** Select the command to use in the **View command** text box.

- `edit('%<FileName>');` – Opens the report in a text editor
- `web(rptgen.file2urn('%<FileName>'), '-browser');` — Opens the report in the MATLAB Web browser
- `docview('%<FileName>', '-UpdateFields');` — Opens the report in an RTF editor
- `! "%<FileName>" &`

3 Click **Apply**.

MATLAB replaces `%<FileName>` with the full file path and name of the generated report.

Note Make sure that the editor or viewer specified in the **View Command** text box supports the applicable output file format.

To restore the default settings for an output format, select the format in the **Format ID** text box and click **Reset to Defaults**.

Generating Reports

Setting Report Output Options (p. 2-2)	Describes report generation options
Converting XML Documents (p. 2-8)	Demonstrates how to convert XML source files with Report Explorer
Creating Log Files (p. 2-12)	Shows how to create log files for report generation
Generating M-Code from Setup Files (p. 2-14)	Describes how to generate M-code versions of setup files
Working with Legacy Setup Files (p. 2-16)	Describes how to work with setup files created in a previous version of Report Generator
Troubleshooting (p. 2-19)	Dealing with problems when using Report Generator

Setting Report Output Options

Report Generator lets you control most aspects of report output. For more information, see the following sections:

- “Setting the Report File Directory” on page 2-2
- “Setting the Report Filename” on page 2-2
- “Setting the Report Format” on page 2-3
- “Viewing and Printing Your Report” on page 2-6
- “Autosaving the Setup File” on page 2-7
- “Regenerating Images” on page 2-7
- “Including a Report Description” on page 2-7

Setting the Report File Directory

Choose the appropriate directory for the report file according to the table below. Make sure you have write privileges for that directory.

Directory	Option
The same directory as the setup file	Same as setup file
The current working directory	Present working directory
Temporary directory	Temporary directory
Another directory	Custom. Specify a directory in the Custom text box (you can use the Browse button (...) to select from a list of directories).

You can use the %<VariableName> notation to specify a directory in the **Custom** text box. See “%<VariableName> Notation” on page 7-246 in the reference page for the Text component.

Setting the Report Filename

Choose the appropriate filename for the report file according to the table below.

Images are placed in a directory with the same name as the report file. For example, testreport.html images are placed in a directory named testreport_files.

Filename	Option
Your report is to have the same filename as the setup file.	Same as setup file (default)
Your report is to have a filename that is different from the setup file name.	Custom. Enter the name of the report in the text box.

You can use the %<VariableName> notation to specify a filename in the **Custom** text box. See “%<VariableName> Notation” on page 7-246 in the reference page for the Text component.

Setting the Report Format

You can choose the report output format in the **File Format** text box. You should choose the output format according to how you want to view the report. For example, if you want to use Microsoft Word, you should choose Rich Text Format.

Convert Source File

The Source File Converter transforms DocBook XML source files created by the Report Generator into a formatted document, such as HTML, RTF, or PDF.

—Conversion Options—

Source file:

File format: ▼

Stylesheet: ▼

View report when done converting

—File Preview—

Select a source file to convert

Each output format has a default stylesheet. Specify the stylesheet in the text box next to the **File Format** text box.

The table below shows which output format to use with different viewers or software as well as which stylesheets are available for use with each output format.

Viewer	Format	Purpose	Stylesheet Options
Adobe Acrobat Reader	Portable Document Format (PDF)	Produces a PDF that can be viewed with Acrobat Reader	
Web browser	Web (HTML) (default)	Use for publishing on the World Wide Web	Web (see “Web Stylesheets ” on page 2-5)
Word processor	Rich Text Format (RTF)	Compatible with most word-processing packages, including Microsoft Word	Print (see “RTF Stylesheets ” on page 2-6)

Note You can create and use customized styles, in addition to the built-in stylesheets. See Chapter 5, “Creating and Using Customized Styles”

Web Stylesheets

Web Stylesheet	Description
Default HTML stylesheet	HTML on a single page
Simulink book HTML stylesheet	HTML
Truth Table HTML stylesheet	HTML

RTF Stylesheets

RTF Stylesheet	Description
Standard Print	Displays title page, table of contents, list of titles
Unnumbered Chapters & Sections	Chapters and sections are not numbered.
Numbered Chapters & Sections	Chapters and sections are both numbered.
Compact Print	Minimizes white space to reduce page count
Compact Simple Print	Minimizes page count, suppresses title, table of contents, list of titles
Large Type Print	Uses 12 point font (slightly larger than Standard Print)
Simple Print	Suppresses title page, table of contents, list of titles
Very Large Type Print	Uses 24 point font and landscape paper orientation

Note Some Web and print stylesheets include an automatically generated list of titles. The list of titles includes a list of table titles and a list of figures with titles.

Viewing and Printing Your Report

To view your report after generation, you have the following options:

- To view the report automatically, use the **View report after generating** option in the **Generation Options** section in the Properties panel. When report generation is complete, the viewer associated with the report output format displays the report.
- To view the report from the MATLAB command line, use the `rptviewfile` command, such as `rptviewfile ch1-tutorial`.

- To view the report manually, browse to the location specified in the **Report File Location** section in the Properties panel and open the file.

If you want to print your report, select the print option from the viewer.

Autosaving the Setup File

To automatically save the setup file before you generate a report, select **Save setup file on generation**, which is located in the **Generation Options** section of the Properties panel.

Regenerating Images

By default, the **Regenerate Simulink and Stateflow Images** option in the **Generation Options** section of the Properties panel is not selected. Previously generated images are not regenerated each time you generate a report, which results in faster report generation. If you have made any changes that could affect the image, you should select this option.

Including a Report Description

Use the **Report Description** field in the Properties panel to make notes and comments on your setup file. This text appears in the Properties panel when you select a setup file in the Options panel.

Converting XML Documents

If you want to generate the same report in a different output file format without regenerating the report, you can use either the user interface (Report Explorer File Converter) or the command line (`rptconvert` command). The File Converter transforms a DocBook XML source file generated in Report Generator into a formatted document, such as HTML, RTF, or PDF.

Note Report Generator can convert only XML source files created by the latest version of Report Generator.

Converting XML Documents with Report Explorer

To open the **Convert** Properties panel, follow these steps:

- 1 In Report Explorer, select **Tools > Convert source file**.

The **Convert Source File** Properties panel appears.

Convert Source File

The Source File Converter transforms DocBook XML source files created by the Report Generator into a formatted document, such as HTML, RTF, or PDF.

Conversion Options

Source file:

File format:

Stylesheet:

View report when done converting

File Preview

Select a source file to convert

- 2 Click **Browse** and select your XML source file.
- 3 Select your output format and stylesheet as follows:
 - a In the **File format** text box, select an output format.
 - b In the **Stylesheet** text box, select a stylesheet. The stylesheet choice depends on the selected output format.
 - c Optionally, click **Edit** if you want to customize the stylesheet you have selected.

For more information about available formats and stylesheets, see “Setting the Report Format” on page 2-3.

For more information about editing stylesheets, see Chapter 5, “Creating and Using Customized Styles”

- 4 Use the check box to indicate whether or not you want to view the report after it has been converted.

5 To begin the conversion, click **Convert file**.

Editing XML Source Files

Before you send a source file to the converter you can edit it as text in the Report Explorer. To do so:

- 1 In the Outline panel, open the File Converter. One way to do this is to right-click **Report Generator** and select **Convert source file**.
- 2 In the Options panel, select the source file that you want to edit.
- 3 In the Properties panel, click **Edit as text**.
- 4 Use the MATLAB Editor to edit and save the text.

Converting XML Documents at the Command Line

To convert files outside Report Explorer interface, you can use `rptconvert` from the command line with varying levels of definition:

- `<ReportName>=rptconvert(' <DocBookFileName> ')`, where `<ReportName>` is the name of your report, and `DocBookFileName` is the name of the DocBook file (with or without the `.xml` extension). Report Generator uses the default format (HTML) and stylesheet (Single-Page Web).
- `<ReportName>=rptconvert(' <DocBookFileName> ',format)`; where the valid format arguments are
 - HTML
 - RTF95
 - RTF97
 - FOT (for XML)

Enter the format name in single quotation marks, for example, `'HTML'`. Report Generator uses the default stylesheet for the selected option.

- `<ReportName>=rptconvert(' <DocBookFileName> ',format,stylesheet)`;

For a discussion of valid stylesheet options for each output format, see “Setting the Report Format” on page 2-3. Type

rptconvert #STYLESHEETLIST for a list of valid stylesheet arguments.
Enclose the stylesheet name in single quotation marks.

Creating Log Files

In Report Generator, a log file describes a setup file, including its report generation settings and components. A log file can be used for many purposes, including

- As a debugging tool
- As a reference to a setup file
- To share information about a setup file through e-mail

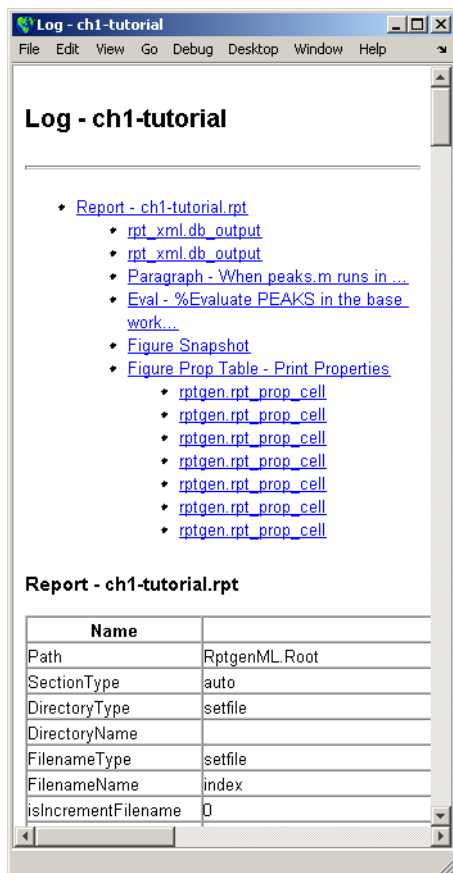
A log file includes the following:

- Setup file outline
- Components and their attributes
- Generation status messages currently displayed in the **Generation Status** tab
- All MATLAB licenses

To generate a log file, select **File > Log File**. An HTML version of the log file is saved in the same directory as the setup file and is named `<setupfilename>_log.html`. The log contains

- Setup file table
- Setup file table of contents
- Table of details for each component in the setup file
- Product version table

The following figure shows the MATLAB Web browser displaying part of the log file for the ch1 - tutorial setup file:



Generating M-Code from Setup Files

Using Report Generator, you can generate M-code versions of setup files in the form of an M-file (*.m). An M-file of a setup file is useful for a variety of purposes, including generating reports and modifying setup files programmatically.

To generate an M-file from Report Generator, a setup file must already be loaded. Select **File > Generate M-File**. After generation, the M-file opens in the MATLAB Editor. The M-file is saved in the same location as the setup file.

For example, the ch1-tutorial setup file generates the following M-code:

```
function [rptgenml_creport1] = buildch1_tutorial
%BUILDCH1_TUTORIAL
%% Create RptgenML.CReport
rptgenml_creport1 =
RptgenML.CReport(...'DirectoryType','pwd',... 'Format','html',...
'Stylesheet','default-html',... 'Description',['A simple version
of mfile-report.rpt',
char(10),' ',char(10),'This setup file has five components:',
char(10),'1) Report - specifies the output file location and file
format',char(10),'2) Paragraph - inserts a single paragraph into
the report',char(10),'3) Eval - evaluates a MATLAB command and
inserts command window output',char(10),'4) Figure Snapshot -
inserts a picture of the figure created during eval',char(10),'
5) Figure Prop Table - inserts a property-value table reporting
on the figure',char(10),' ',char(10),'This report is discussed in
detail in the first chapter of the Report Generator
documentation.'],... 'RptFileName',
'C:\WINNT\profiles\user\Desktop\ch1-tutorial.rpt');
%% Create rptgen.cfr_paragraph
rptgen_cfr_paragraph1 =
rptgen.cfr_paragraph('ParaTitle','', 'ParaText','When peaks.m
runs in the workspace, the following text is displayed to the
command window:');
setParent(rptgen_cfr_paragraph1,rptgenml_creport1);
%% Create rptgen.cml_eval
rptgen_cml_eval1 = rptgen.cml_eval(...'EvalString',['%Evaluate
PEAKS in the base workspace',char(10),' ',char(10),'%This clears
```



```
other open figures.',char(10),'close all',char(10),'',char(10),
'%This creates the figure.',char(10),'peaks',char(10),'',
char(10),
'%This sets the figure print size to 5x4 inches',char(10),
'set(gcf,...',char(10),'PaperPosition',[1 1 5 4],
...',char(10),'PaperUnits','inches');',...
'isCatch',false,...'CatchString','disp(['Error during eval: ',
lasterr])',... 'isInsertString',false);
setParent(rptgen_cml_eval1,rptgenml_creport1);
```

Working with Legacy Setup Files

Legacy setup files are files that you created in a previous version of Report Generator. You can use such legacy setup files in the latest version in either of two ways. You can load legacy setup files in Report Explorer, or you can use the previous versions of the Report Generator interfaces to work with legacy setup files.

- “Enabling the Legacy Report Generator Interfaces” on page 2-16
- “Using the Legacy Report Generator Interfaces” on page 2-17

Enabling the Legacy Report Generator Interfaces

You enable the previous versions of the Report Generator interfaces at the MATLAB command line. To enable the legacy interfaces, enter

```
RptgenML.v1mode(true)
```

at the MATLAB command line. MATLAB responds with

```
ans =
```

```
1
```

A logical 1 indicates that Version 1 mode is on. To turn Version 1 mode off, enter

```
RptgenML.v1mode(false)
```

at the MATLAB command line. MATLAB responds with

```
ans =
```

```
0
```

A logical 0 indicates that Version 1 mode is off.

Using the Legacy Report Generator Interfaces

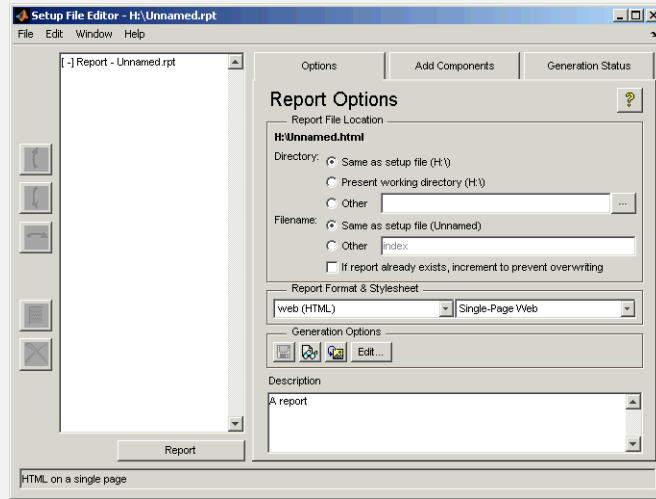
When Version 1 mode is enabled, you can use the previous versions of the Report Generator interfaces. The MATLAB functions related to Report Generator also load the old interfaces.

Keep the following points in mind when using the previous versions of Report Generator interfaces:

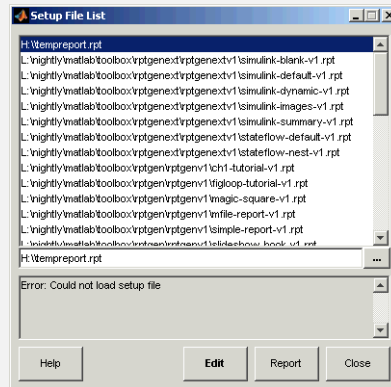
- You cannot use a setup file created in the latest version of Report Generator with the old interfaces. If you save a legacy setup file in the latest version of Report Generator, you will not be able to work with the same setup file in the old interface.
- You cannot use the old interfaces with the latest version. While the Setup File Editor can coexist with Report Explorer, we do not recommend it.

Report Generator Interfaces

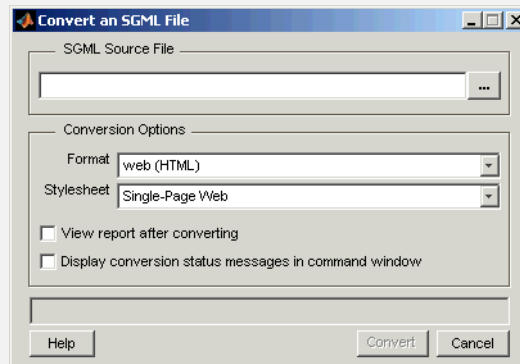
setedit



rptlist



rptconvert



Troubleshooting

This section contains information about how to deal with problems that you may have when using Report Generator.

Managing Report Generator Memory Usage

By default, MATLAB sets a limit of 64 MB on the amount of memory the Java Virtual Machine (JVM) can allocate. The memory used by Report Generator to build a document must fit within this 64 MB limit. If you are having trouble processing large reports, you might need to increase the amount of memory Report Generator can allocate.

Running MATLAB Without a Desktop

One way to increase the amount of JVM memory available to Report Generator is to run MATLAB with `-nodesktop` mode enabled.

Increasing the MATLAB JVM Memory Allocation Limit

You can also increase the amount of JVM memory available by increasing the MATLAB JVM memory allocation limit.

To increase this limit, create a file named `java.opts` and put it in your MATLAB startup directory. In this file, include the `-Xmx` option, specifying the amount of memory you want to give the JVM.

For example, to increase the JVM memory allocation limit to 128 MB, use the following syntax in the `java.opts` file:

```
-Xmx128m
```

Note To avoid virtual memory thrashing, never set the `-Xmx` option to more than 66% of the physical RAM available.

On UNIX systems, create the `java.opts` file in a directory where you intend to start MATLAB and move to that directory before starting MATLAB.

On Windows systems:

- 1 Create the `java.opts` file in a directory where you intend to start MATLAB.
- 2 Create a shortcut to MATLAB.
- 3 Right-click the shortcut and select **Properties**.
- 4 In the **Properties** dialog box, specify the name of the directory in which you created the `java.opts` file as the MATLAB startup directory.

Component Tutorials

Working with Looping Components
(p. 3-2)

Describes the use of looping
components

Working with Property Table
Components (p. 3-11)

Describes the use of property table
components

Working with Summary Table
Components (p. 3-23)

Describes the use of summary table
components

Working with Looping Components

A *looping component* runs its child components several times. Report Generator offers numerous looping components, including logical loops, Simulink loops, Stateflow loops, and Handle Graphics loops. Most loops share common characteristics. For that reason, this tutorial focuses on the Figure Loop component as representative of most looping components.

The Figure Loop component runs its child components several times, each time applying its child components to Handle Graphics figures. The `figloop-tutorial` setup file generates a report that documents multiple Handle Graphics figures.

The `figloop-tutorial` setup file contains a Figure Loop component as well as other components, including

- Title Page
- Chapter/Subsection
- Evaluate MATLAB Expression
- Import File
- Summary Table
- Handle Graphics Name
- Handle Graphics Linking Anchor
- Figure Snapshot
- Handle Graphics Property Table

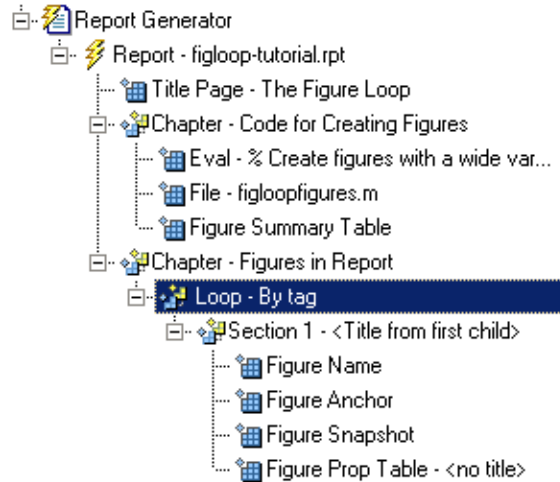
Note For more information about property table components, see “Working with Property Table Components” on page 3-11.

Opening the Setup File

To use the figure loop tutorial and edit the setup file, type the following at the command line:


```
setedit figloop-tutorial
```

The setup file for the figure loop tutorial appears in Report Explorer.



Creating Handle Graphics Figures

There are three important Handle Graphics concepts you need to be familiar with before proceeding with the rest of this tutorial:

- Invisible figures
- HandleVisibility parameter
- Tags

For more information on Handle Graphics concepts, see the MATLAB Handle Graphics documentation.

Invisible Figures

When you type `figloopfigures`, Figures 1, 3, and 5 appear, but Figures 2 and 4 do not. Figures 2 and 4 are invisible (`visible='off'`), so you can only see three figures. An invisible figure does not appear on screen; it exists, but it is hidden.

HandleVisibility Parameter

Figures An Application on page 3-6 and An Invisible Application on page 3-7 have `HandleVisibility='off'`. `HandleVisibility` is a parameter of a Handle Graphics figure, and it determines whether the handles in your figure are visible. The figure can be found because it is a child of root. For more information on `HandleVisibility`, see the Using MATLAB Graphics documentation.

To list all figures in your workspace that have `HandleVisibility='on'`, type `get(0, 'children')` at the command line. The results show that Figures Peaks Data on page 3-6, Membrane Data on page 3-6 and An Application on page 3-6 have `HandleVisibility='on'`.

```
ans =  
    5  
    1  
    2
```

Note that most figures have `HandleVisibility='on'`. To turn `HandleVisibility` off, you have to specify `HandleVisibility='off'` with the following:

```
set(handle, 'HandleVisibility', 'off')
```

Tags

A Handle Graphics figure can have a tag. A tag is a Handle Graphics figure parameter. A tag does not appear in a figure; it is an identifier that you specify.

If you want to see what tag, if any, a figure has, type `get(<handle>, 'tag')`. The handle of a figure is the figure number; enter the figure number for `<handle>`. For example, to see whether Membrane Data on page 3-6 has a tag, type `get(1, 'tag')`, and MATLAB outputs the following response:

```
ans =  
    membrane
```

This means that Figure Membrane Data on page 3-6 has a tag called `membrane`. Every figure in this tutorial has a tag. However, by default, figures have empty tags.

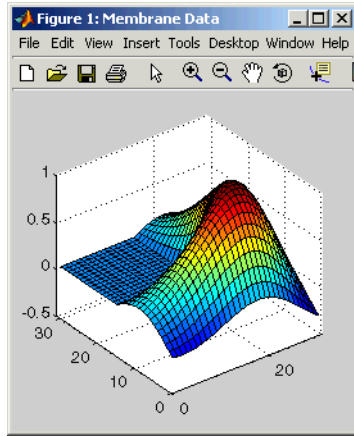
Figure Summary

The following table shows visibility (figure is visible if `visible='on'` and invisible if `visible='off'`), `HandleVisibility`, and tags for the figures in the tutorial.

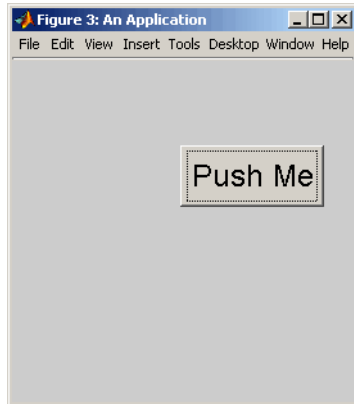
Name	Visible	HandleVisibility	Tag
Membrane Data	on	on	membrane
Invisible Membrane Data	off	on	membrane
An Application	on	off	app
An Invisible Application	off	off	app
Peaks Data	on	on	peaks

To create the Handle Graphics figures, type `figloopfigures` at the MATLAB command line. Figures Membrane Data on page 3-6, An Application on page 3-6, and Peaks Data on page 3-6 appear on the screen, but Invisible Membrane Data on page 3-7 and An Invisible Application on page 3-7 do not because they are invisible.

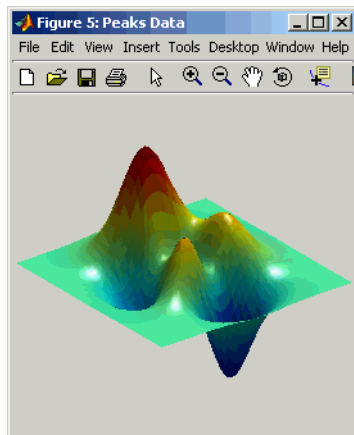
Following are Figures Membrane Data on page 3-6 (membrane), An Application on page 3-6 (app), and Peaks Data on page 3-6 (peaks).



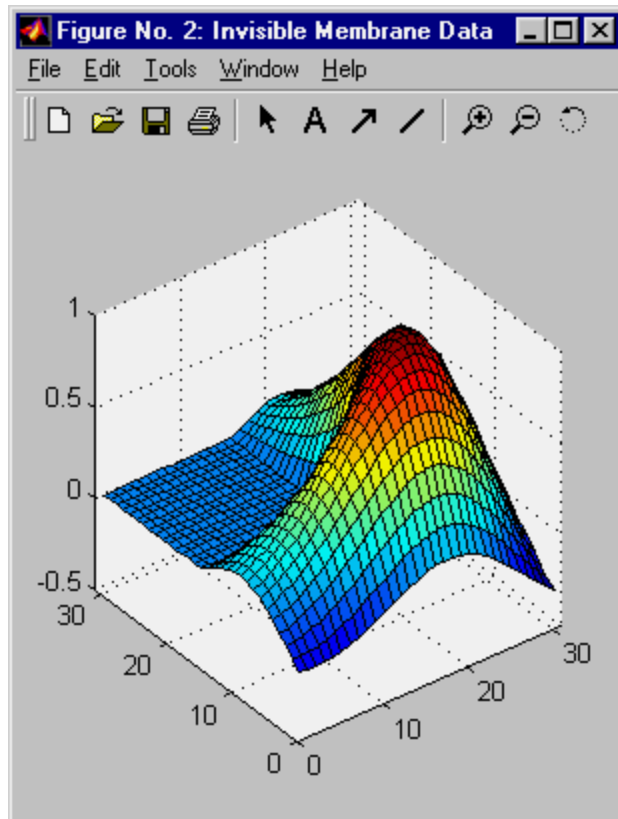
Membrane Data



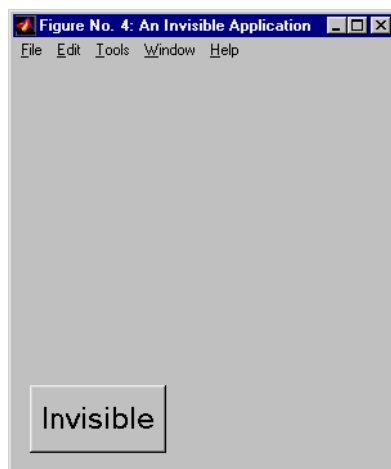
An Application



Peaks Data



Invisible Membrane Data

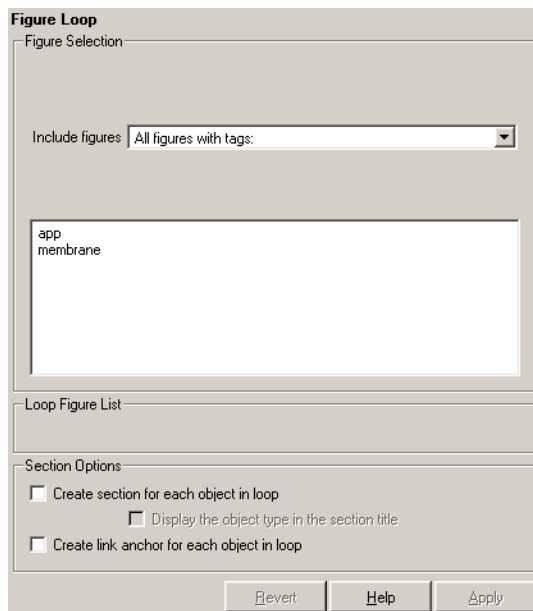


An Invisible Application

Before you continue with the rest of the tutorial, it is important that you understand some important Handle Graphics concepts, such as invisible

Editing the Figure Loop Component

Select the Figure Loop component in the Outline panel. The Properties panel for the Figure Loop component appears.



Looping on the Current Figure


To include a snapshot of the current figure in the report, you must first select a figure. Select the Peaks Data on page 3-6 window to make the figure current.

To include only the current figure in the report, select `Current figure only` from the `Include figures` list. Click **Report**  to generate a report.


Note When you choose `Current figure only`, "current figure" refers to the figure that is current when the report is generated. This might not be the same figure you selected as the current figure in Report Explorer before report generation. For example, if the report generation process creates figures in your report, then the last figure created with `HandleVisibility = 'on'` is the current figure.

Looping on All Visible Figures

To include snapshots of all visible figures in your report, select `Visible figures` in the `Include figures` list. This option inserts a snapshot and property table for all figures that are currently open and visible.

With `HandleVisibility='on'`. The `Data figures only (Exclude applications)` option is selected by default and excludes figures with `HandleVisibility = 'off'` from the loop. Click **Report**  to generate a report. Notice that the report contains the figures "Membrane Data" and "Peaks Data."

With `HandleVisibility='on' or 'off'`. Now clear the `Data figures only` option. Figures with `HandleVisibility = 'on'` (Membrane Data on page 3-6 and Peaks Data on page 3-6) and `HandleVisibility = 'off'` (An Application on page 3-6) are now included in the loop.

Click **Report**  to generate a report. Notice that the report now contains Membrane Data on page 3-6, An Application on page 3-6, and Peaks Data on page 3-6.

Looping on Figures with Certain Tags

To include figures with certain tags, select the `All figures with tags` option. When you select a tag, all figures with that tag are included, regardless of whether the figure is visible or whether `HandleVisibility` is `'on'` or `'off'`.

For a brief discussion of Handle Graphics tags, see "Tags" on page 3-4.

Modifying Section Options

The Figure Loop component provides controls for section options. In a Report Generator loop, a section refers to a space in the generated report in which information is displayed, including text, images, tables, and so on. Using the options available in the **Section Options** pane, you can alter how the sections generated by the loop are displayed in the report.

Create a Section for Each Object in Loop. To enable the loop to create a section for each object in the loop, select this option. This option is useful when a loop does not contain a child Chapter/Subsection component that organizes the loop results. When selected, the loop automatically creates an individual section for each object found in the loop and uses the object title as the section title.

In the `figloop-tutorial` setup file, this option is not needed because the Figure Loop component has a child Chapter/Subsection component that already organizes the loop results.

Display the Object Type in the Section Title. To include the object type in the section title, select this option. When selected, the section titles in the generated report are prefaced by object types. For example, in a report generated from the `figloop-tutorial` setup file without this option selected, the list of figures produced by the loop would look like

```
Membrane Data
Invisible Membrane Data
An Application
An Invisible Application
```

With the option enabled, the list of figures would look like

```
Figure - Membrane Data
Figure - Invisible Membrane Data
Figure - An Application
Figure - An Invisible Application
```

Create link anchor for each object in loop. To create a hyperlink to the object in the generated report, select this option.

Working with Property Table Components

Property table components display property name/property value pairs in a table. Report Generator offers numerous property table components, including the MATLAB Property Table component, the Simulink Property Table component, the Stateflow Property Table component, and so on.

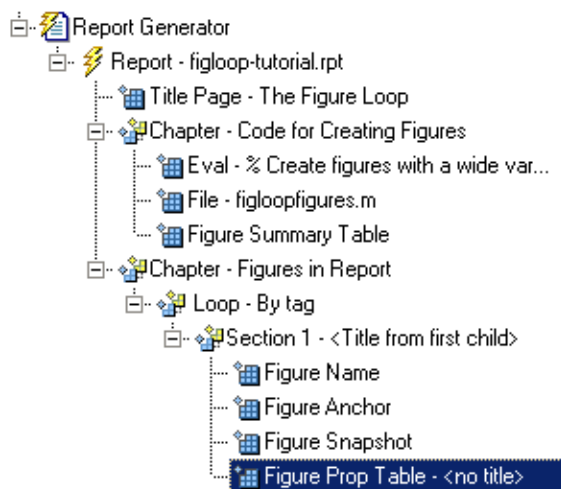
Report Generator property table components share common characteristics. For that reason, this tutorial uses the Handle Graphics Property Table component as a representative of all property table components.

Opening the Setup File

To use the figure loop tutorial and edit the setup file, type the following at the command line:

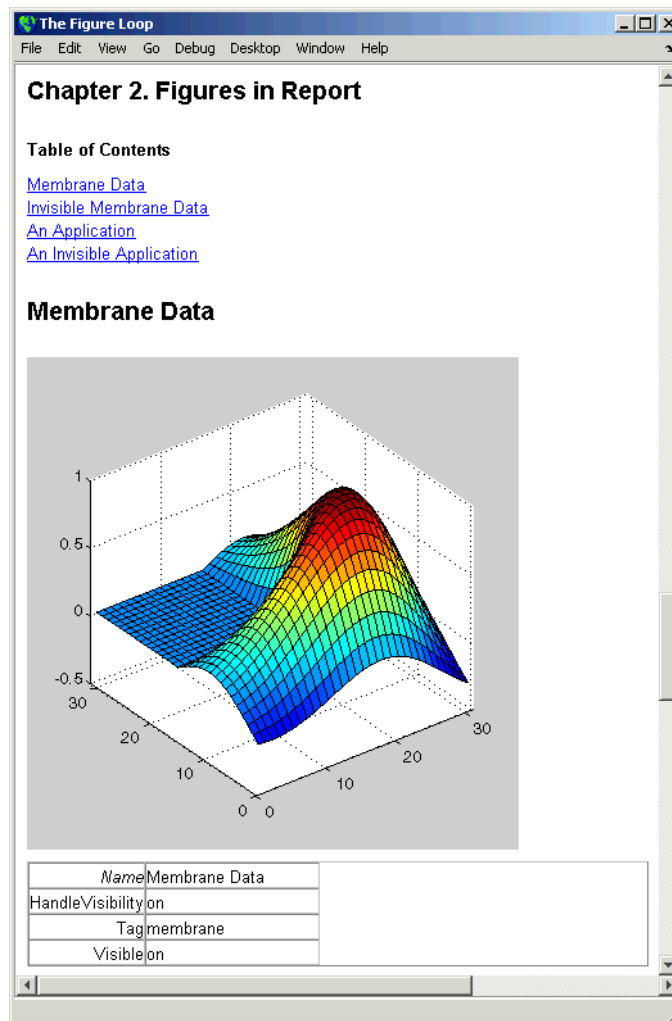
```
setedit figloop-tutorial
```

The figure loop tutorial setup file appears in Report Explorer.

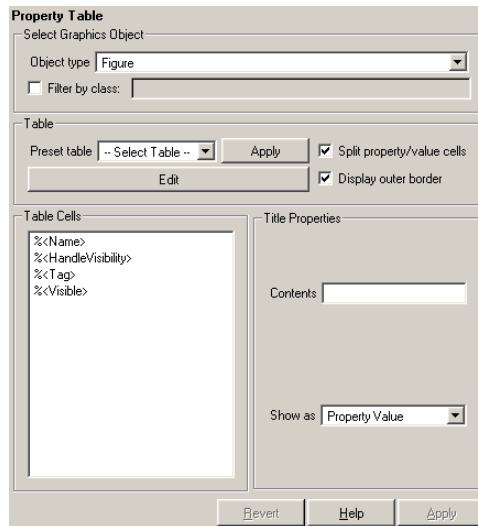


Examining the Property Table Output

The Handle Graphics Property Table component displays property name/property value pairs in a table for Handle Graphics figures, axes, or plots. The property table appears below the graphic display.



Property pages for all property table components are similar in form. The following figure shows the Properties panel for the Handle Graphics Figure Property Table component:



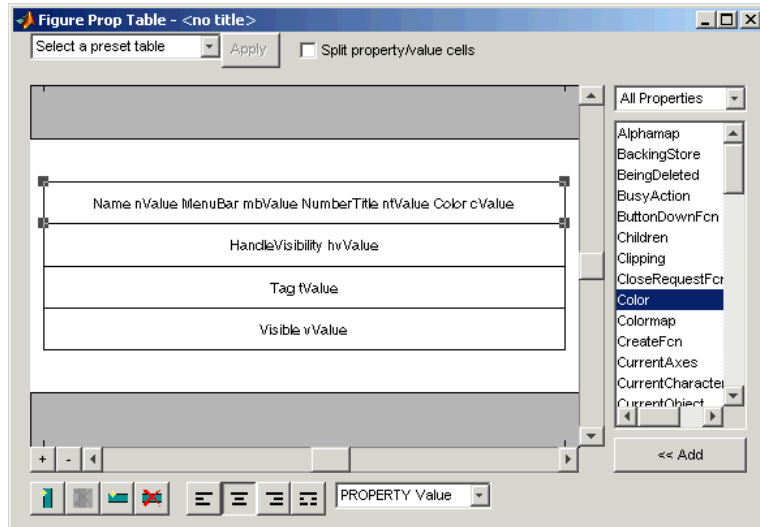
Click **Edit** to modify most table settings.

Displaying Property Name/Property Value Pairs

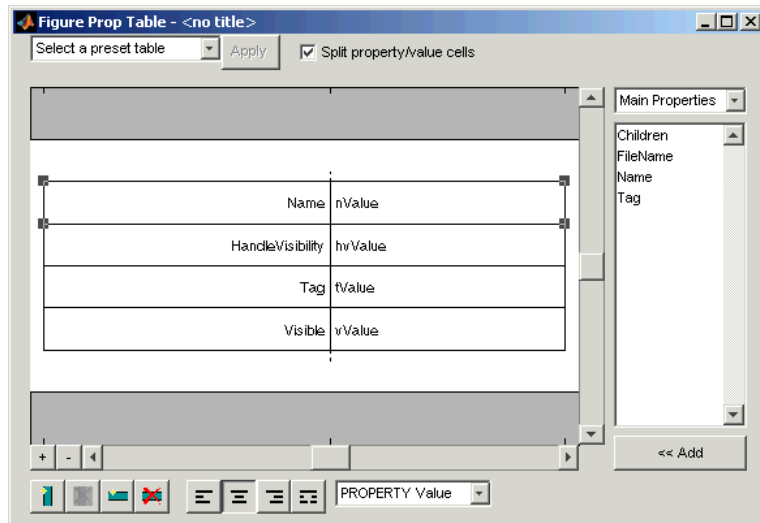
The following sections discuss property name/property value pair display options.

Split Property/Value Cells

In the Handle Graphics Property Table component's Properties panel, click **Edit**, and a dialog box appears. To have the property name and property value appear together in one cell, clear the **Split property/value cells** check box. This is nonsplit mode. In nonsplit mode, you can have more than one property name/property value pair per cell and you can also have additional text.



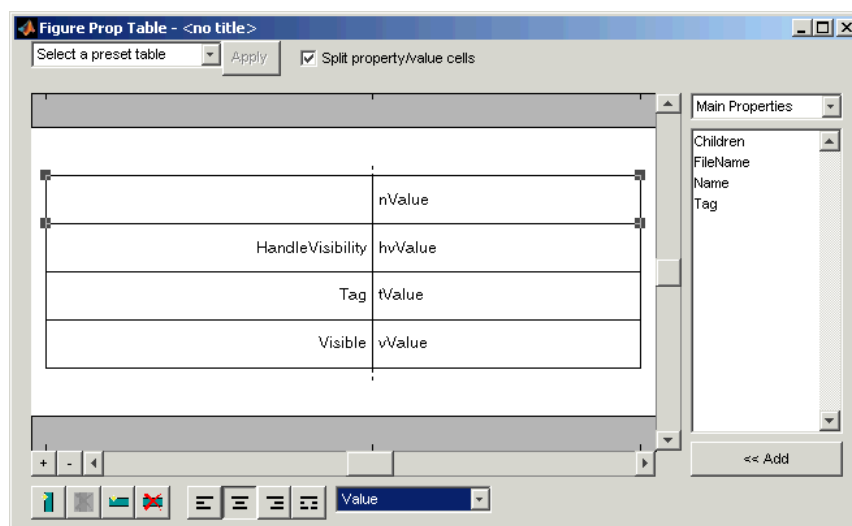
To have the property name and property value appear in adjacent horizontal cells in the table, select the **Split property/value cells** check box. In this case, the table is in split mode and there can be only one property name/property value pair in a cell.



If you have more than one property in a cell, then only the first pair is displayed in the report; all subsequent pairs are ignored.

Display Options

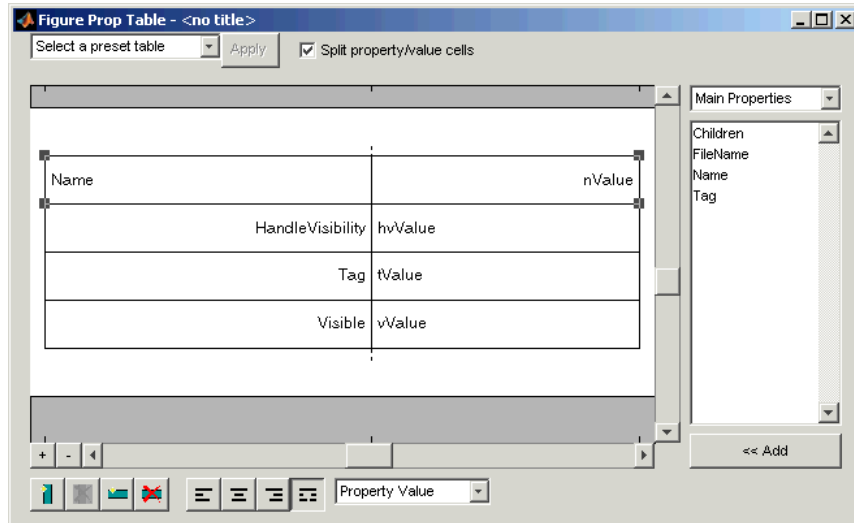
Each table cell in the report can display a property name/property value pair in several ways. To select how a property name/property value pair is displayed in a table cell in the report, select that field in the table and choose Value in the **Display As** text box.



Note that in the selected table row, only the value is displayed.

Alignment Options

Use justification buttons to specify the way that text in a cell appears in the report. There are four justification buttons, which appear in the toolbar below the figure:

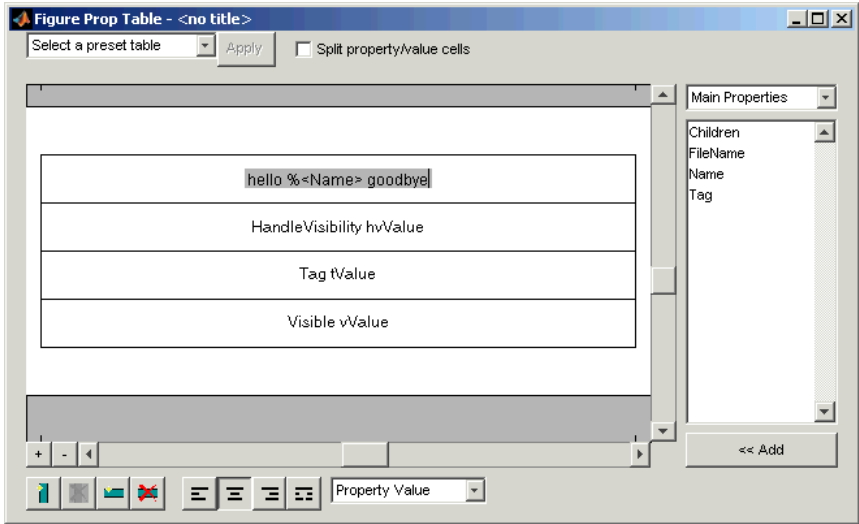


Note that the selected table row is double justified.

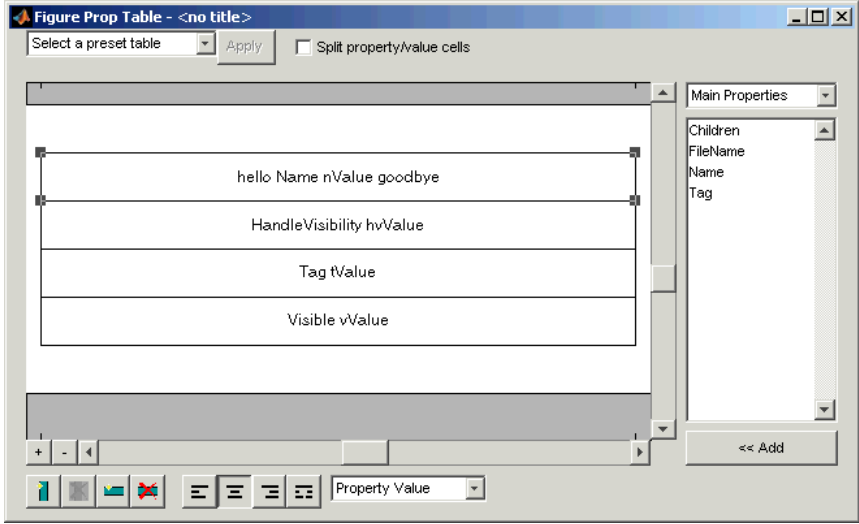
You can also right-click a table row and change justification options in the context menu that appears.

Putting Text into a Table Cell

You can type text in a table cell in the table dialog box. For the text to be visible, the table must be in nonsplit mode. To enter text in a cell, double-click the table cell. A gray box appears with the label for the cell property.



If you type text outside the angle brackets, the text appears as text in the report. If you type text inside the table brackets, the text must be a valid property name. If you type an invalid property name, then that property name appears in the report without a property value.



Editing the Table Title

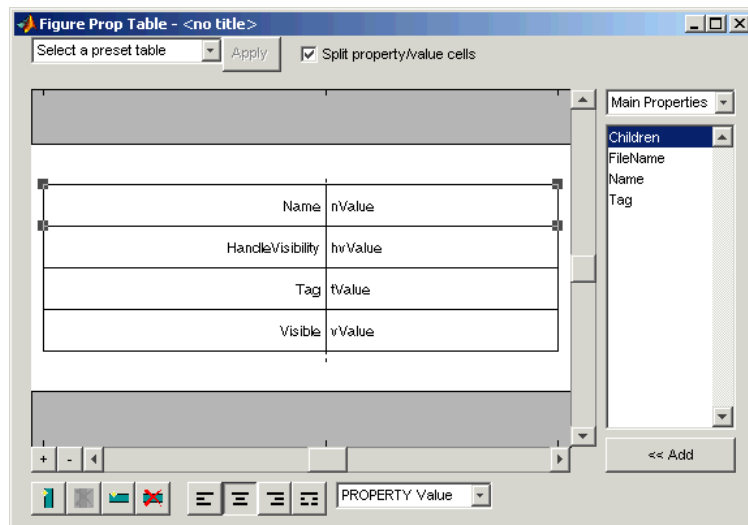
The table has a title that you can edit. The title of a table is the same as the value of the %<Name> property. The title of the table can contain properties and text. The title is always in nonsplit mode. To modify the title, modify the %<Name> entry.

If the table has a title, it appears in the list of tables in the generated report. Some stylesheets offer a list of tables. For a list of stylesheets that offer this option, see “Setting the Report Format” on page 2-3

To enter a property, follow the steps described in “Adding, Replacing, and Deleting Properties in a Table” on page 3-18.


Adding, Replacing, and Deleting Properties in a Table

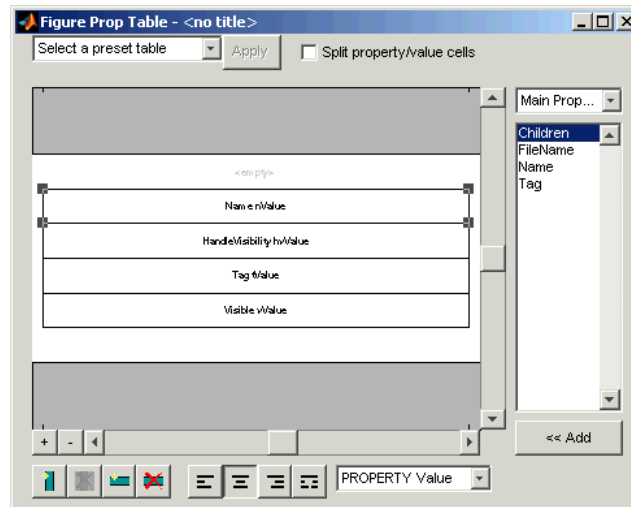
To add, replace, or delete properties in a table, use the table editor dialog box. Click **Edit** in the Property Table Component’s Properties panel. The following figure shows the table editor for a Handle Graphics Property Table component:



Adding a Property

To add a Handle Graphics property to a table cell in the table editor, follow these steps:

- 1 Start the table editor.
- 2 Add a new, blank table row to the current table.
 - a Select a table row directly below the location where you want to add a new property.
 - b Click Add Row Above Current Cell . A blank table row appears.
- 3 Add the property to the new table row.
 - a Select the new table row.
 - b In the Properties Type menu, select the property type that you want. In the Properties menu, select the property that you want to add.



- c Click **Add** or double-click the property name. The property appears in the table row.

If you know the name of the property, you can also type the property name in the cell. For more information, see “Putting Text into a Table Cell” on page

3-16. For information about adding new table rows, see “Adding, Replacing, and Deleting Properties in a Table” on page 3-18.

Replacing or Deleting Properties

In nonsplit mode, you can replace a property in a table cell in the Setup File Editor by following the instructions in “Putting Text into a Table Cell” on page 3-16. You can delete a property by backspacing over it.

To replace a Handle Graphics property in a cell when the table is in split mode, follow the instructions in “Adding a Property” on page 3-19. You cannot use these steps to delete a Handle Graphics property in a cell when the table is in nonsplit mode, because such cells can have more than one property name/property value pair.





Displaying or Hiding Table and Cell Borders

You can toggle the table and cell borders on and off in the Property Table by using the context menu.

To toggle a cell border on and off, place your cursor in the desired cell and right-click to invoke the context menu. Choose **Cell borders** and then select **Top**, **Bottom**, **Right**, or **Left** to toggle the desired border on or off.

Adding and Deleting Columns and Rows

To add or delete a column or row, select a cell, and then click one of the buttons described in the following table.

Button	Action
	Add column (added to the left of the selected column)
	Delete selected column
	Add row (added above the selected row)
	Delete selected row



You cannot delete a row or column when it is the only row or column in the table.

Resizing Columns

To resize the column width, click and drag the vertical border between cells.

Zooming and Scrolling

While you are editing the table in the setup file, you can zoom in and out of the table with the zoom buttons, located to the left of the horizontal scroll bar.

Button	Action
	Zoom in
	Zoom out

You can scroll vertically and horizontally with the corresponding scroll bars around the table.

Selecting a Table

You can select a preset table to display property name/property value pairs, or you can create a custom table.

Preset Tables

A preset table is a table that is already formatted and set up. You can select a preset table in the preset table drop box in the upper left corner of the Properties panel. To apply a preset table, select the table and click **Apply**.

Custom Tables

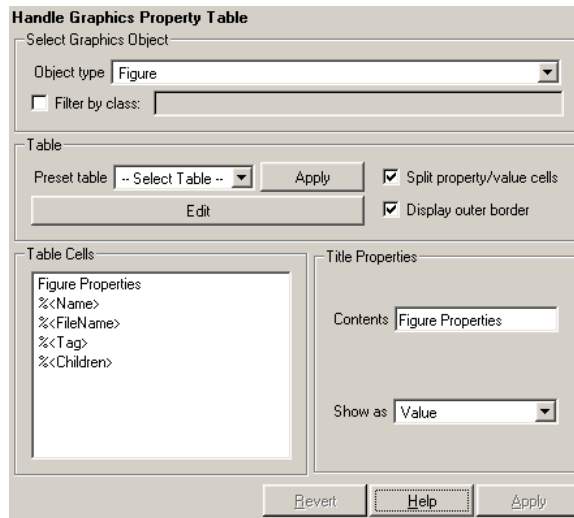
To create a custom table, you can select a preset table and modify that table to fit your needs. You might want to start with the **Blank 4x4** preset table. You can add and delete rows and you can add properties.

Note You cannot save a custom table as a preset table. If you create a table and then select a preset table, all your changes are lost.

Selecting Object Types

Property and summary table components offer multiple object types on which to report. For example, the Handle Graphics Property table lets you report on a figure, an axes object, or a Handle Graphics object.

To select a different object type, use the **Object type** list in the component's Properties panel.



The Handle Graphics Summary Table component offers the same object type options. Deciding which object type to select depends on the object that you want to include in the generated report. The Simulink Property Table and Simulink Summary Table components include: block, model, signal, and system object types.

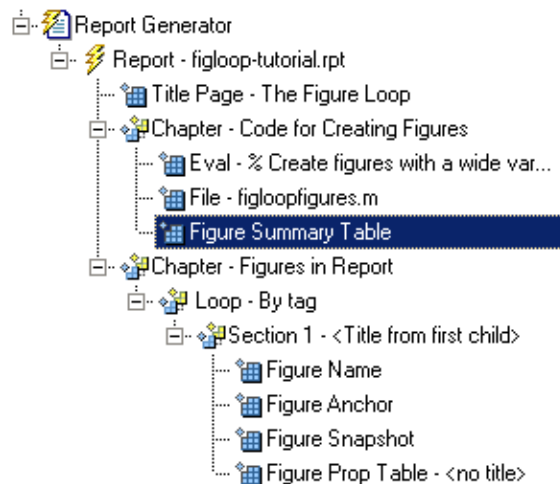
Working with Summary Table Components

Summary table components insert tables containing the details on the selected object into generated reports. The generated tables contain one object per table row, and each object property is a table column. Report Generator offers numerous summary table components, including the Handle Graphics Summary Table component, Simulink Summary Table component, and the Stateflow Summary Table component.

Report Generator summary table components share common characteristics. For that reason, this tutorial uses the Handle Graphics Summary Table component as a representative of all summary table components.

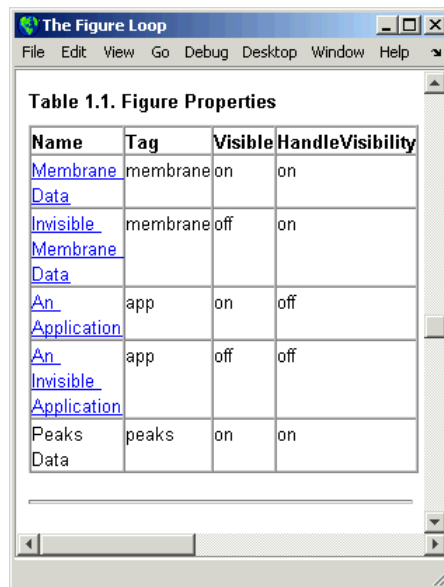
A summary table can contain many properties. For example, the `simulink-summary` setup file contains multiple Simulink Summary Table components that report on Simulink blocks in the `f14` model and their properties.

Like the other sections in the chapter, this tutorial uses the `figloop-tutorial` setup file.



Examining the Report Output and the Setup File

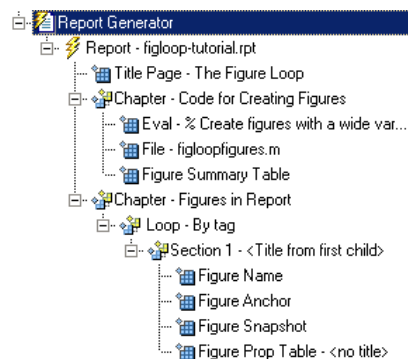
In the generated report, summary table components generate tables that contain the specified properties for the selected object. The following figure shows the summary table produced by the `figloop-tutorial` setup file.



The screenshot shows a window titled "The Figure Loop" with a menu bar (File, Edit, View, Go, Debug, Desktop, Window, Help). The main content area displays a table titled "Table 1.1. Figure Properties". The table has four columns: Name, Tag, Visible, and HandleVisibility. The rows contain the following data:

Name	Tag	Visible	HandleVisibility
Membrane Data	membrane	on	on
Invisible Membrane Data	membrane	off	on
An Application	app	on	off
An Invisible Application	app	off	off
Peaks Data	peaks	on	on

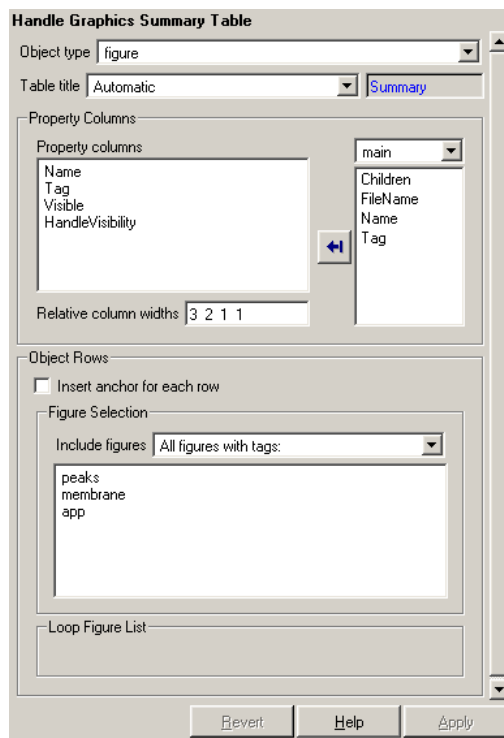
In the `figloop-tutorial` setup file, the Handle Graphics Summary Table component is the child of a Chapter/Subsection component.



Selecting an Object Type

You can select different Handle Graphics object types for the summary table, including blocks, signals, systems, and models, with the **Object type** list in the component's Properties panel. The `figloop-tutorial` setup file contains one Handle Graphics Summary Table component, and it reports on figure objects.

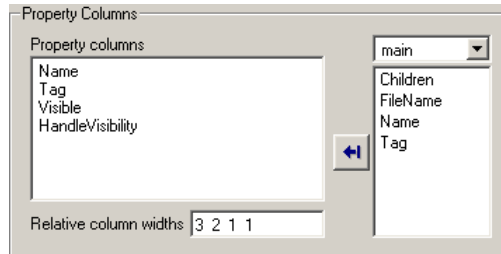
The properties available to add to the table depend on the selection in the **Object type** list.




Adding and Removing Properties

In the **Property Columns** pane, you select the object properties to be displayed in the generated report. Depending on the object type, you can select any object property to add to the summary table.

To add a property to the summary table, select the property category from the property category box to the right of the **Property columns** field. As you select different property categories, notice that the field below the box changes to display the category's properties. The following figure shows **main** as the category selected.



To add a property to the table, select the category from the property category box, select a property in the properties list, and click **Add** . The property should appear in the **Property columns** field.

To remove a property from the table, select the property in the **Property columns** field and press **Delete**. The property name should disappear from the **Property columns** field.

Note After making a change in Report Explorer interface, you must click **Apply** for the changes to take effect.

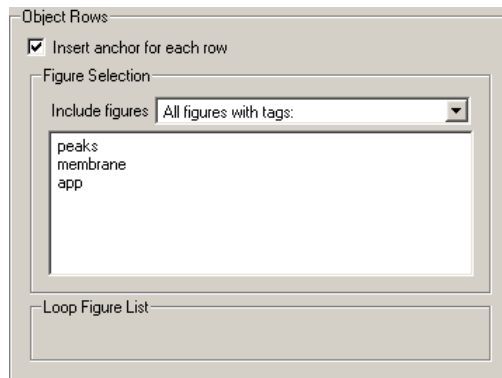
You can also specify your own properties by entering the name manually in the **Property columns** field. You must use proper Report Generator variable notation. For more information, see “Using Variable Notation in Text Fields” on page 1-20.

Setting Relative Column Widths

Using the **Relative column widths** field, you apply a relative column width to the summary table columns in the generated report. Column width is entered as a relative ratio. If omitted, column widths are determined automatically.

Setting Object Row Options

In the **Object Rows** pane, you configure options for the table rows, including anchor, filtering, and sorting options. Selecting the **Insert anchor for each row** option places an anchor in each table row in the generated report.



Using the **Include figures** list, you specify what objects are reported on in the summary table. For example, in the `figloop-tutorial` setup file, the summary table components report on figure objects. If you select **All Figures with tags**, Report Generator reports on all figure objects that match the tags specified. If you select **Current figure only**, Report Generator only reports on the selected figure. If you select **Visible figures**, Report Generator only reports on visible figure objects.

Building Custom Components

Creating Components (p. 4-2)	Provides overview of the steps to take in creating new components
Starting the Component Creator (p. 4-3)	Shows several alternative ways to start the Component Creator
Defining a Component (p. 4-7)	Discusses the location and display of components
Editing Generated Files (p. 4-16)	Describes required and optional M-file editing
Component Creation Examples (p. 4-24)	Provides two examples of component creation and use

Creating Components

Components are self-contained, modular elements that control the report generation process and insert elements into a report. A component is a MATLAB object (in the object-oriented programming sense).

Why Create Your Own?

In most cases, the components provided with Report Generator should be more than adequate to meet your needs. However, you may want to create your own components if you want to generate a report that cannot be easily created by components included with Report Generator. For example, you can create a component that inserts a corporate logo into your report, or you can create a component that plots data.

What's Involved in Creating Components

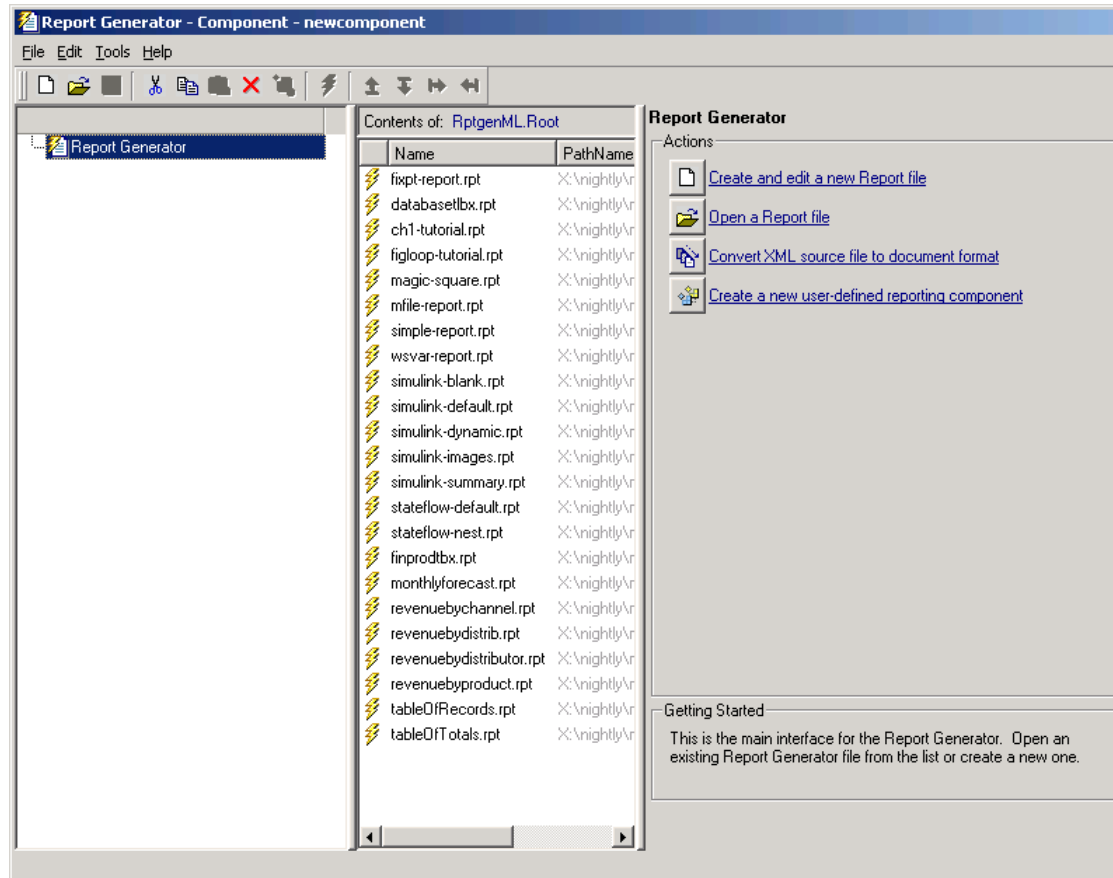
You can create custom components with the Component Creator, a tool for creating new components. The Component Creator creates a "skeleton" object, i.e., it sets up the raw structure of the component. It does not create all of the executable M-code.

There are two main steps to creating and running a component:

- Use the Component Creator to create the M-files that form the framework of the component. See “Component Description” on page 4-10.
- Edit `execute.m` to make the component executable. (This is an M-file that is generated when you create a component.) See “Editing Generated Files” on page 4-16.

Starting the Component Creator

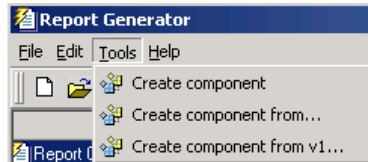
To begin the component creation process, click on the **Create a new user-defined reporting component** link in Report Explorer Properties panel.



Two alternative methods to begin component creation are

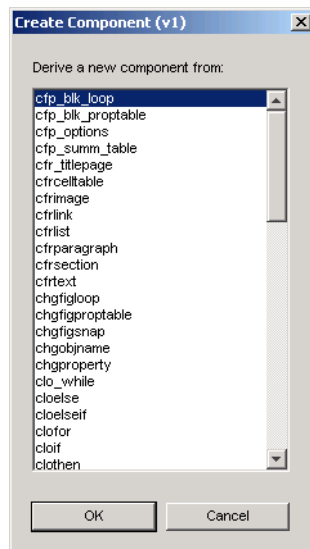
- Type compwiz at the command line.

- Select one of the component creation choices available on the **Tools** menu of Report Explorer. The **Tools** menu provides options for creating a new component, deriving a component by modifying an existing Version 2 component, or deriving a component by modifying an existing Version 1 component.



Modifying an Existing Component

If you want to derive a component from an existing Version 1 or Version 2 component, Report Explorer lists components from which you can choose a component to modify. The lists of components are similar to the ones shown below.

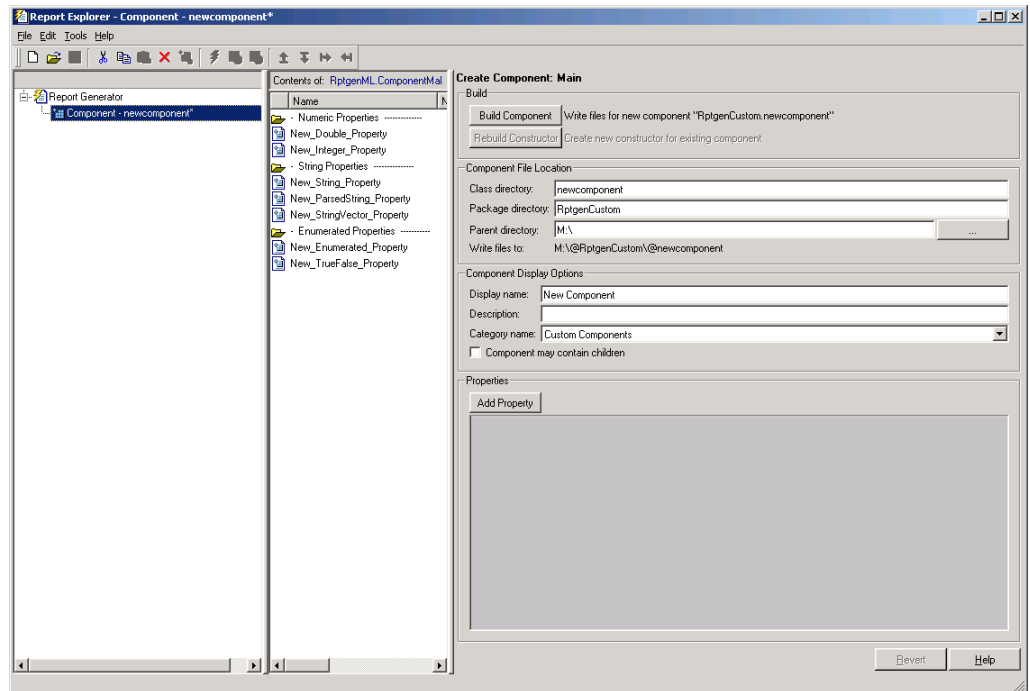


Double-click on the name of any component appearing in either of these lists. The Component Creator GUI is displayed, showing the values and properties

previously determined for this component. (See “Creating a New Component” on page 4-5 for details about the layout of the Component Creator GUI.)

Creating a New Component

If you choose to create a new component, the Component Creator GUI is displayed.



The Component Creator is a three-panel GUI displayed within the framework of Report Explorer.

Outline panel	Displays the structure of the component you are creating.
Options panel	Lists example properties that you can add to a component.
Properties panel	Specifies the behavior of component properties.

When you create a component, you also create several M-files, including `execute.m`. The default `execute.m` file for a new component inserts an empty space into the report. Therefore, you must edit `execute.m` to run the component properly.

Defining a Component

When you create a component, you have to decide

- Where to put the directory that contains all the files for the component
- What class name to give the component
- What name will identify the component when it is displayed in Report Explorer
- What description to give the component in Report Explorer
- Whether the component can have child components

You enter this information in the Properties panel of the Component Creator.

The **Component File Location** and **Component Display Options** panes of the Properties panel allow you to indicate the location where you want to store a new component and how it is to be displayed.

The screenshot shows the 'Create Component: Main' dialog box. It has two main sections: 'Component File Location' and 'Component Display Options'.

Component File Location:

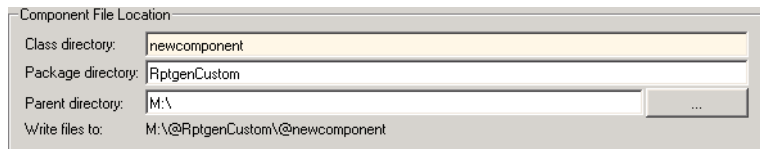
- Class directory: newcomponent
- Package directory: RptgenCustom
- Parent directory: M:\
- Write files to: M:\@RptgenCustom\@newcomponent

Component Display Options:

- Display name: New Component
- Description: A new component
- Category name: Custom Components
- Component may contain children

Component File Location Data

You indicate the location where you want to store your component in the **Component File Location** pane of the Properties panel. When the component is built, the information in this pane creates the directory structure `<parent>/@package_name/@class_name` and stores the component files here.



Component File Location

Class directory: newcomponent

Package directory: RptgenCustom

Parent directory: M:\

Write files to: M:\@RptgenCustom\@newcomponent

Class Directory Field

Assign a class name to your component. This name is used to create a subdirectory under the package directory field. (See “Package Directory Field” on page 4-8 below.) The build process places the component’s files in this class directory. The class directory must be unique for each component in the package. By convention, component class names begin with an upper or lower case letter *c*.

Package Directory Field

The set of files created during the build process (see “Building or Rebuilding a Component” on page 4-14) are stored in a directory under the name you enter in this field. The directory is located as a subdirectory of the specified package root directory.

Parent Directory Field

When you create a component, a set of files is created for the component. These files are located in the class directory you designated in the **Class directory** field. The class directory is in turn a subdirectory of the package directory, which itself is a subdirectory of the directory that you specify in the **Parent directory** field.

You specify the parent directory when you create a package for the first time.

You should choose a parent directory that is on the MATLAB path. Otherwise, it may be difficult for MATLAB to find your component.

Component Display Options

You indicate how you want your component to appear in Report Explorer by entering data in the **Component Display Options** pane of the Properties panel.



Component Display Options

Display name: New Component

Description: A new component

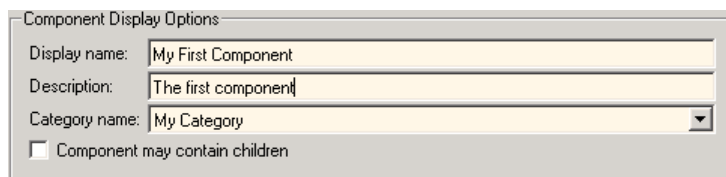
Category name: Custom Components

Component may contain children

Display Name

You need to specify a display name for your component. This component name is added to the list of components for its associated category. (See “Category Name” on page 4-9 below.) Component categories and component display names appear in the Options panel of Report Explorer.

Here is an example of creating a component called My First Component under a category called My Category.



Component Display Options

Display name: My First Component

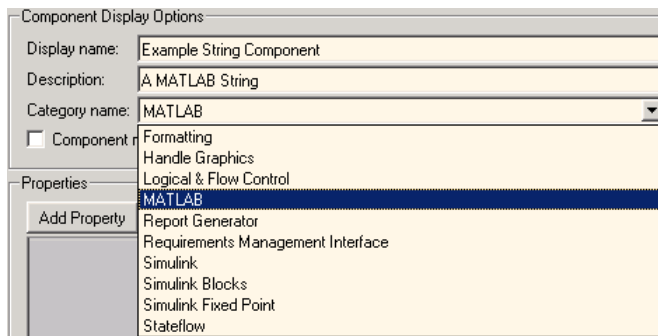
Description: The first component

Category name: My Category

Component may contain children

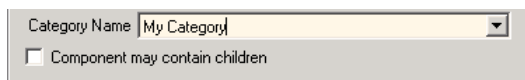
Category Name

When you create a component, you have to decide the category of components to which it will belong. This is the category under which the new component is displayed in the Options panel of Report Explorer. The available choices are shown in the **Category name** list.

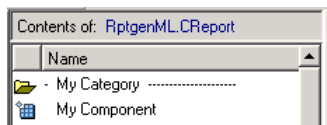


The **Category name** selection menu shows all available component categories such as Formatting, Handle Graphics, etc. To select an existing component category, click on that component category on the menu.

To create a new component category, type the name for the category directly into the **Category name** field.



This category name is added to the list of category names shown in the Options panel of Report Explorer. For example, here is a picture of the Options panel with a new category, My Category. The category contains a single new component called My Component.



Component Description

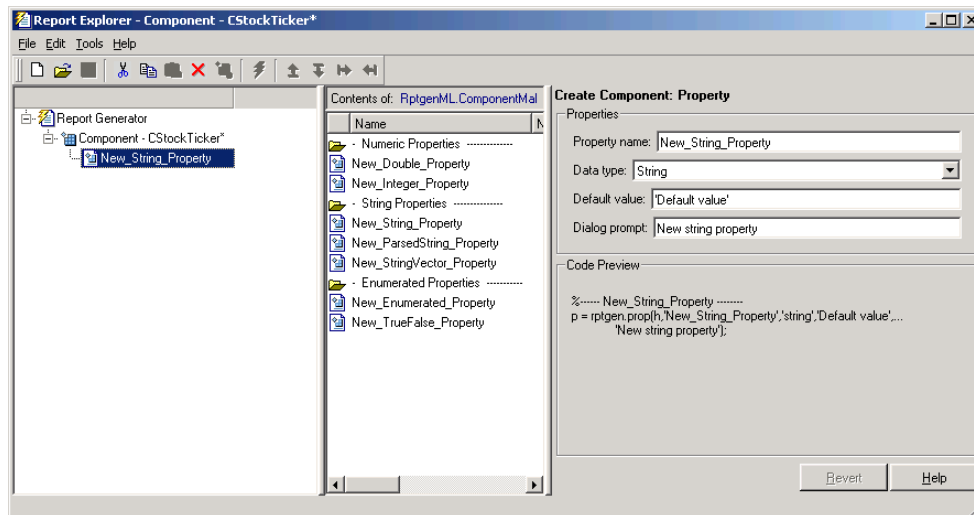
The description of the component can be anything you want. You should keep the description to one or two sentences. The description appears when you click on the component name or category name in Report Explorer **Options** panel.

Child Components

If you select the **Component may contain children** check box, your component can have child components. Child components appear indented under the component in Report Explorer hierarchy. During execution, the component will usually run all child components and include their output in the report. (The actual behavior of child components is controlled by your entries in the `execute.m` file.)

Specifying Component Properties

Component properties determine how a component behaves and what information it inserts into a report. If you double-click on a property name for a component shown in the Outline panel, the Properties panel displays the current values for the property. For example, the next figure displays the property values for `New_String_Property`.



By editing the values in the text fields, you can modify the information shown in this GUI to create new component properties that control the behavior of your component in ways that you specify.

Choose a Property Name

Edit the default **Property name** appropriately to create a name for your new property. A property name must be a valid MATLAB variable name (e.g., no spaces, etc.). Property names must be unique within a component.

Specify the Data Type

The data type is the type of data that is used by the attribute. For more information, see "Data Types" in the MATLAB documentation.

The Data type list contains the following options:

- Double
- Enumeration
- Integer
- String
- String Vector
- %<Parsed String> This data type allows you to include the value of a variable in the MATLAB workspace in a component. (See “%<VariableName> Notation” on page 7-246 for a discussion and example of the specification and use of this data type.)
- True/False

Specify the Default Value

Edit the **Default value** field to set a default value for the property. The default value needs to be compatible with the data type. For instance, if the data type is a MATLAB string, the default value must be enclosed in single quotes (' '). If incompatibilities exist between the default value and the data type, the component may fail to build.

Specify the Dialog Prompt

This text appears next to the widget on the component's dialog. It provides the user with an indication of what the property does and what kind of effect it has on execution.

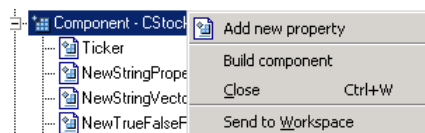
Note When the component is built, a colon is appended to your entry in the **Dialog prompt** field. Your entry is displayed in the Properties panel with the colon appended.

Adding Properties to a Component

The Component Creator provides several additional ways to add properties to a component, using properties from the properties library. Each library property provides an appropriate default value that you can modify to suit your individual requirements.

- **Add new property** context menu (Outline panel).

Right-click on the component name.



- **Add property** context menu (Options panel).

Right-click on the property name.



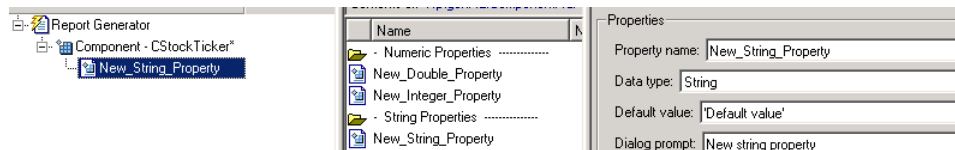
- **Drag and drop from Options panel.**

Left-click on the name of a property in the Options panel and drag it on top of the name of a component in the Outline panel.



- **Double-click on property name in the Options panel.**

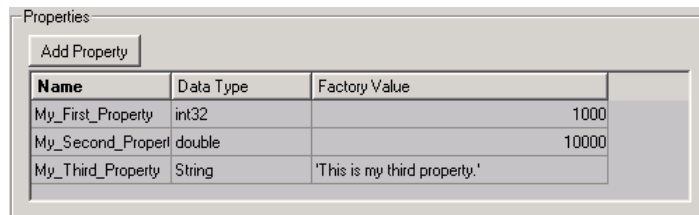
The property is added to the component and property values are displayed in the Properties panel.



- **Add Property** button (Property panel)

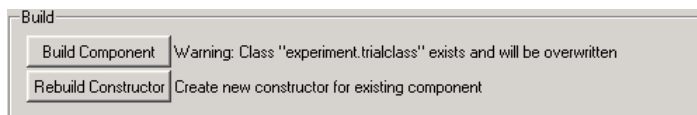
The **Properties** pane within the Property panel allows you to add new properties to a component. Click **Add Property**  to add an additional property.

This pane additionally provides a display of the properties and values assigned to the currently selected component.

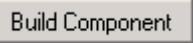


Building or Rebuilding a Component

The **Build** pane of the Properties panel allows you to build a new component or rebuild an existing one.



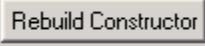
Build Component Button

After you have entered all data required for defining your category and component, click **Build Component**  to complete the process. The Build process creates all the files needed to define the component and stores them where indicated by the entries in the **Location** pane. Any existing files in this location will be overwritten.

Rebuild Constructor Button

Use this option when adding, removing, or changing properties of an existing component. This button becomes active only after you have previously created a component with the **Build Component** button. To activate **Rebuild Constructor**, set the **Package name** and **Class name** fields in the **Location** pane to the existing values for a defined component. If you select **Create component from** on the **Tools** menu and select one of the component choices presented to you, the fields are filled-in automatically and the button becomes active.

In the other fields enter your changes to the component and **Rebuild**

Constructor  to make your changes effective. User-editable files in this location will not be overwritten.

Removing a Component

To remove a built component, find the class directory (`<root>/@package_name/@class_name`). If this is the only component in the package, you can delete the entire package. If there are other components you want to preserve, delete the class directory. Also, edit `<root>/@package_name/rptcomps2.xml` to remove the XML element that registers the component. It may also be necessary to remove the component's category.

Editing Generated Files

Building a component creates several M-files in your MATLAB workspace. The MATLAB editor initially displays the three most significant files. You *must* edit `execute.m` to make the component perform as you expect. Editing of the other M-files is optional. The table below describes the significant M-files that you can edit for specific purposes.

Edit This M-File	To Complete This Task
<code>execute.m</code>	Specify the report output format and content.
<code>getDialogSchema.m</code>	Modify the characteristics of the properties dialog for a created component.
<code>getOutlineString.m</code>	Change the string that describes the component in the hierarchy. This string is initially entered in the Display name field of the Properties pane on the Create Component: Main panel.

Editing the `execute.m` File

The `execute.m` M-file is called during report generation to produce the component's contribution to the report. After you have built the file during component creation, you must edit it to specify the explicit format and content of your output.

The generic form of the `execute` command is

```
out = execute(thisComp, parentDoc)
```

where:

- `thisComp` is the name of Report Generator component being run.
- `parentDoc` is a handle to the current document being generated.
- `out` is a Document Object Model (DOM) node or string to be added to the report. (For more help with manipulating DOM nodes, see `xmlwrite`.)

Within the file one or more default lines of code shows each component property. Property values control how the component behaves during

execution. Property values should not be changed or set during execution. Here is an example of a component property line within an `execute.m` file.

```
pstring = thisComp.NewStringProperty; % New string property;
```

Four additional blocks of commented code show how to create these basic documentation elements:

- “Create a Table” on page 4-17
- “Create a List” on page 4-18
- “Create Text” on page 4-18
- “Create Figures” on page 4-18

You edit this code and add any needed additional code to the file to specify your output content. After you have processed your data, this code returns the component’s formatted output.

See the following sections for more details.

Create a Table

To create a table, replace the `Source` property value below with the name of your cell array or structure. (Type `help(rptgen.cfr_table)` at the MATLAB command line for additional information.)

```
out = execute(rptgen.cfr_table(...  
    'Source', tableSrc,...  
    'numHeaderRows',1,...  
    'TableTitle','Example Title'),...  
    parentDoc);
```

Note For an example of an `execute.m` file that has been edited to produce tabular output, see “Editing `execute.m`” on page 4-26.

Create a List

To create a list, replace the Source property value below with the name of your cell vector. (Type `help(rptgen.cfr_list)` at the MATLAB command line for additional information.)

```
out = execute(rptgen.cfr_list(...
    'Source', listSrc,...
    'ListStyle','orderedlist',...
    'ListTitle','Example List'),...
    parentDoc);
```

Create Text

To create text, replace the ParaText property value below with your text string. (Type `help(rptgen.cfr_paragraph)` at the MATLAB command line for additional information.)

```
out = execute(rptgen.cfr_paragraph(...
    'ParaText', paraSrc,...
    parentDoc);
```

Create Figures

To create figures, set the FigureHandle property value with your figure. (Type `help(rptgen_hg.chg_fig_snap)` at the MATLAB command line for additional information.)

```
figSrc = gcf;
out = execute(rptgen_hg.chg_fig_snap(...
    'FigureHandle', figSrc,...
    'Title', '',...
    'isResizeFigure', 'manual',...
    'PrintSize', [6 4],...
    'PrintUnits', 'inches'),...
    parentDoc);
```

Child Components

An additional block of code shows how to run child components. The first line calls the `execute.m` method for all child components. The second line appends the result of the child runs to the document.

```
childOut = thisComp.runChildren(parentDoc);
out = parentDoc.createDocumentFragment(out, childOut);
```

Changing the Outline String

The `getOutlineString` M-file returns the string used in Report Explorer hierarchy. The generic form of the `getOutlineString` command

```
olstring = getOutlineString(thisComp)
```

returns a single-line string that displays important information about the component, where:

- `thisComp` is the component being described.
- `olstring` is the descriptive string.

This string is displayed in the hierarchy of Report Explorer.

By default `getoutlinestring` returns the display name of the component. The string should be fewer than 32 characters long.

Customizing the String

You can customize the string to show additional information about the component, such as the state of its properties. The `truncatestring` function converts any data type into a single line string. The second argument is the return value if the data is empty. The third argument is the maximum allowed size of the resulting string.

```
cInfo = '';
pstring = rptgen.truncateString(thisComp.string, '<empty>', 16);
```

The string typically uses a dash (-) as a separator between the name and additional component information.

```
if ~isempty(cInfo)
```

```
        olstring = [olstring, '-', cInfo];  
    end
```

Editing the Dialog Schema

The `getDialogSchema` M-file returns all information necessary to create a properties dialog display. The format of the `getDialogSchema` command is

```
dlgstruct = getDialogSchema(thisComp, name)
```

where:

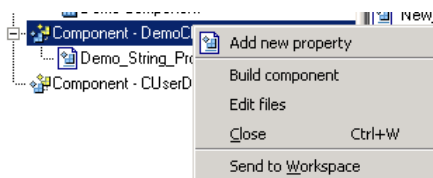
- `thisComp` is an instance of the component being edited
- `name` is a string that can be passed to `getDialogSchema` to build a specific type of panel. Normally, `name` is empty in Report Explorer.

The `getDialogSchema` file provides a comprehensive, extensively documented template with which you can modify most aspects of dialog layout, including creation and placement of widgets, organization of widgets into panels, and creation of the top-level display within which the panels reside.

Note Advanced MATLAB users are cautioned against modifying fields not explicitly mentioned in this file. These fields are undocumented and subject to change in future releases.

Editing Additional Files

There is an additional set of editable files that does not initially appear in the MATLAB editor. To access these files, right-click on component in the Outline panel and select **Edit files** from the menu.



The contents of the MATLAB editor now expand to include the additional files listed in the table below.

M-file	Purpose
getParentable.m	Indicate whether or not a component can contain children.
getDescription.m	Edit to change a component description.
getName.m	Edit to change display name.
getType.m	Edit to change category name.
rptcomps2.xml	Change entries in the registry. Must remain consistent with entries in getName.m and getType.m.
viewHelp.m	Open file in Help viewer.
_help.html	Help file viewer

getParentable.m

This file indicates whether or not a component can contain children. It returns the value true or false. You can modify the value within the code

```
p = false;
```

if the requirement for child components has changed.

getDescription.m

The description within this file corresponds to the entry you made in the **Description** field in the Component Creator. The following example shows the display for

```
compDesc = 'A demonstration component';
```



Edit the compDesc string to change the component description.

getName.m

The name within this file corresponds to the entry you made in the **Display name** field in the Component Creator. The following example shows the display for

```
compName = 'Cemo Component';
```



Edit the compName string to change the display name.

getType.m

The name within this file corresponds to the entry you made in the **Category name** field in the Component Creator. The following example shows the display for

```
compCategory = 'Custom Components';
```



Edit the compCategory string to change the category name.

rptcomps2.xml

This file registers components with Report Explorer and helps to build the list of available components. Information in this file must be consistent with the values entered in the `getName.m` and `getType.m` files. If you have changed values in either of these files, you must change the respective values in the `rptcomps2.xml` file accordingly. The Report Explorer will display the modified information after you have restarted MATLAB.

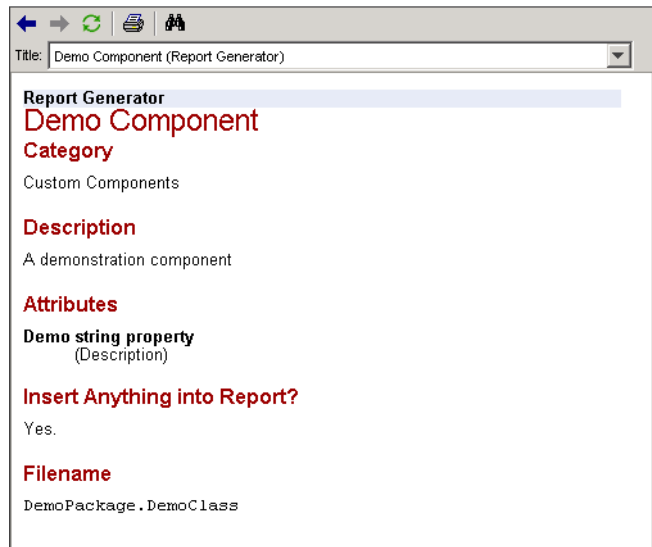
viewHelp.m

This file displays a help file for the component within the MATLAB Help browser. To display the help file, highlight the name of the component in Report Explorer and click **Help**.

help.html

This file works in conjunction with `viewHelp.m` to display help information for a designated component.

Here is an example of a help file display for a user-created component.



Component Creation Examples

This section provides two examples showing the creation and use of component properties:

- The first example, “Creating and Using Component Properties” on page 4-24, provides an example of developing a component that fetches stock market data and displays the result in tabular format.
- The second example, “A Report Displaying Two Tickers” on page 4-29, expands upon the first example, showing the use of multiple properties within a component.

Creating and Using Component Properties

To illustrate the creation and use of component properties, you will create a component named `Equity Values` that displays a table of stock market information in a report. To obtain the desired result, you will

- Give this component a string property named `Ticker`.
- Build the component.
- Edit the generated `execute.m` file.
- Display the final output.

Note This example requires the Datafeed Toolbox.

Step 1: Create a Component

Start by creating a component named `Equity Values` in the class directory named `CStockTicker`. The remainder of the component information is arbitrary.

Step 2: Create a Property

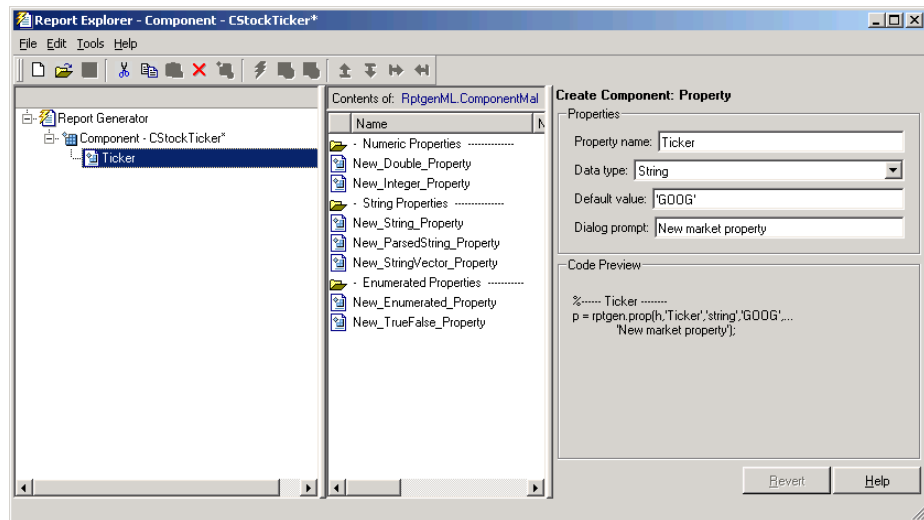
Now give the component one string property named `Ticker`. Start by double-clicking on **New String Property** in the Options panel of the Component Creator. This adds a property to the component you are

constructing. Then edit **Property name** appropriately. A property name must be a valid MATLAB variable name (e.g., no spaces, etc.).

Specify the Data Type. The data type is the type of data that is used by the attribute. Your Ticker property is a string value, so there is no need to change the default.

Specify the Default Value. Edit the **Default value** field to set a default value for the property. Since for this example you will obtain ticker values for the security Google, set the **Default value** to 'GOOG'. (Note that since this is a MATLAB expression, the single quotes are required to make this a string value.)

The GUI with these property values entered appears below. Note that in the **Code Preview** pane the code has been modified to reflect the settings you entered above.



Step 3: Build the Component

Click **Build** on the Component Creator GUI to create the new component. The Equity Values component is now displayed among the choices in Report Explorer Options panel.



Step 4: Initialize the New Component

Building a component creates a number of M-files. Among the created files is `execute.m`, which runs the component when the report is generated. The default `execute.m` file created by the Component Creator inserts nothing into the report. You must edit `execute.m` to make the component perform as you expect. You can optionally edit other generated files, such as `getOutlineString.m` and `getDialogSchema.m` to provide further customization of your output.

Editing `execute.m`. When you create a component, Report Generator creates an `@<compfilename>` directory; in this example the created directory is `@CStockTicker`. In this directory, open the `execute.m` file, which runs the component when the report is generated. This method inserts into the report the information that the component creates when the report is generated.

In this example you want the component to obtain information about Google and produce output for your report in tabular format. An edited version of an `execute.m` file that accomplishes this appears below. The MATLAB `datestr` function converts the date and time information obtained from Yahoo into a more user-friendly format.

```
function out=execute(thisComp,parentDoc,varargin)

stockQuote = fetch(yahoo, thisComp.Ticker);
stockQuote.Date = datestr(stockQuote.Date,1);
stockQuote.Time = datestr(stockQuote.Time,13);
out = execute(rptgen.cfr_table(...
    'Source', stockQuote,...
    'numHeaderRows', 0,...
    'TableTitle', 'Stock Market Pricing Data'),...
parentDoc);
```

Here's an example of the report output produced using this version of `execute.m`.

Table 1. Stock Market Pricing Data

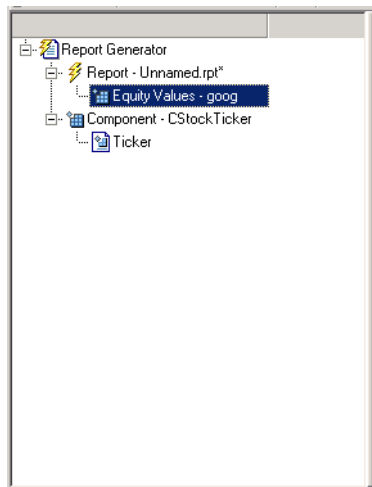
Symbol	GOOG
Last	185.25
Date	15-Nov-2004
Time	15:20:00
Change	3.25
Open	180.45
High	188.32
Low	178.75
Volume	10651060

Editing getOutlineString.m. The following version of `getOutlineString.m` has been edited to append the symbol for the security to the display name.

```
function olstring=getOutlineString(thisComp)

    olstring = [getName(thisComp),' - ',thisComp.Ticker];
```

The figure below shows the result of this file modification.



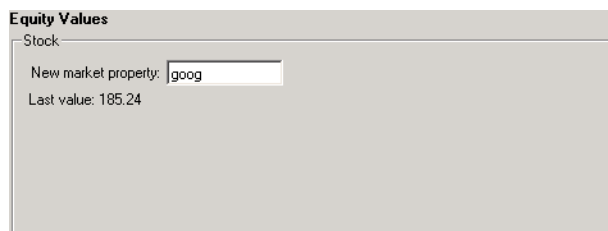
Editing getDialogSchema.m. You can modify the `getDialogSchema.m` file to change the appearance of the properties display in numerous ways. The edited version that follows displays the last quoted price for the security as part of the properties display. Some additional edits to improve the appearance of the graphical output have also been made.

```
function dlgStruct = getDialogSchema(thisComp, name)

try
    currQuote = fetch(yahoo, thisComp.Ticker);
    quoteStr = sprintf('Last value: %g', currQuote.Last);
catch
    quoteStr = sprintf('Warning: "%s" is not a valid symbol.',...
        thisComp.Ticker);
end

dlgStruct = thisComp.dlgMain(name,...
    thisComp.dlgContainer({
        thisComp.dlgWidget('Ticker',...
            'DialogRefresh',true,...
            'RowSpan',[1 1], 'ColSpan',[1 1]);
        thisComp.dlgText(quoteStr,...
            'RowSpan',[2 2], 'ColSpan',[1 1]);
    }, 'Stock',...
    'LayoutGrid',[3 2],...
    'RowStretch',[0 0 1],...
    'ColStretch',[0 1]));
```

Here is the resulting display from the changes made above.

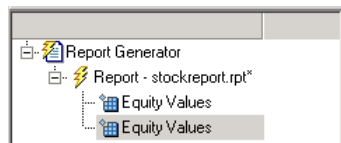


If you enter an unrecognized value into the **New market property** field, a warning message is displayed.

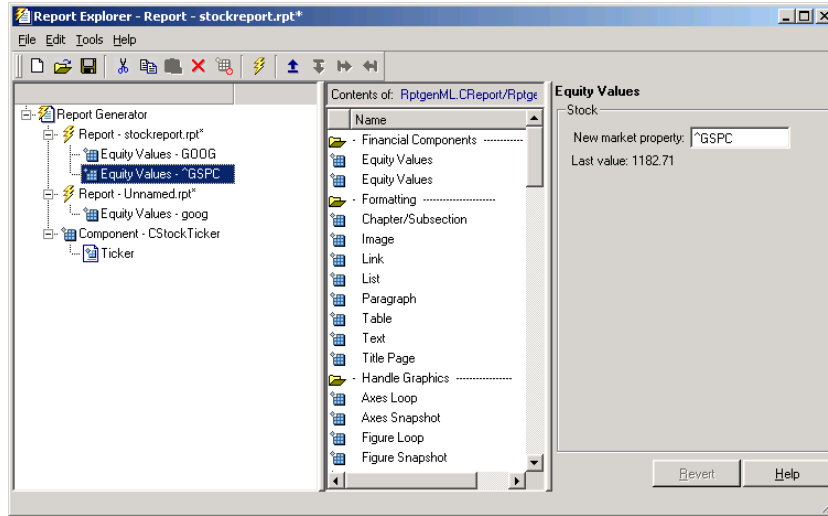


A Report Displaying Two Tickers

Create a new report and save it as `stockreport.rpt`. Add two of your custom components to the report.



Change the ticker property of the second component to `' ^GSPC '` (S&P 500 index) by editing the entry in the **New marker property** field.



Run the report. The report provides two tables of data, one for Google and another for the S&P 500 index. The report showing the resulting tables is displayed below.

Table 1. Stock Market Pricing Data

Symbol	GOOG
Last	185.25
Date	15-Nov-2004
Time	15:20:00
Change	3.25
Open	180.45
High	188.32
Low	178.75
Volume	10651060

Table 2. Stock Market Pricing Data

Symbol	^GSPC
Last	1183.13
Date	15-Nov-2004
Time	15:35:00
Change	-1.04
Open	1183.81
High	1184.48
Low	1179.85
Volume	1503245440

Creating and Using Customized Styles

Stylesheets: An Overview (p. 5-2)

Introduction to customizing stylesheets

Understanding the Stylesheet Graphical User Interface (p. 5-10)

Elements of the graphical user interface

Editing Style Data Items (p. 5-17)

Details about editing data properties of styles you want to customize

Making Some Specific Stylesheet Changes (p. 5-34)

Procedures for several specific examples of stylesheet changes

Stylesheet Reference Information (p. 5-41)

Tables listing built-in stylesheet properties and categories of built-in styles that can be edited

Stylesheets: An Overview

A stylesheet specifies the formatting and display of a document. Report Generator uses stylesheets to control settings for documents of the following kinds:

HTML	Uses stylesheets for either single or multiple-page documents
PDF	Uses Formatting Object (FO) stylesheet
RTF	Uses Document Style Semantics and Specification Language (DSSSL) stylesheet

How Do Stylesheets Fit into the Report Generator Process?

Whenever Report Generator creates a report, it first generates a DocBook XML source file, which it then converts to the formatted document. This conversion process uses a stylesheet. If you want to generate the same report in a different format, you can convert the XML document using a different or modified stylesheet.

When Do You Need to Edit a Stylesheet?

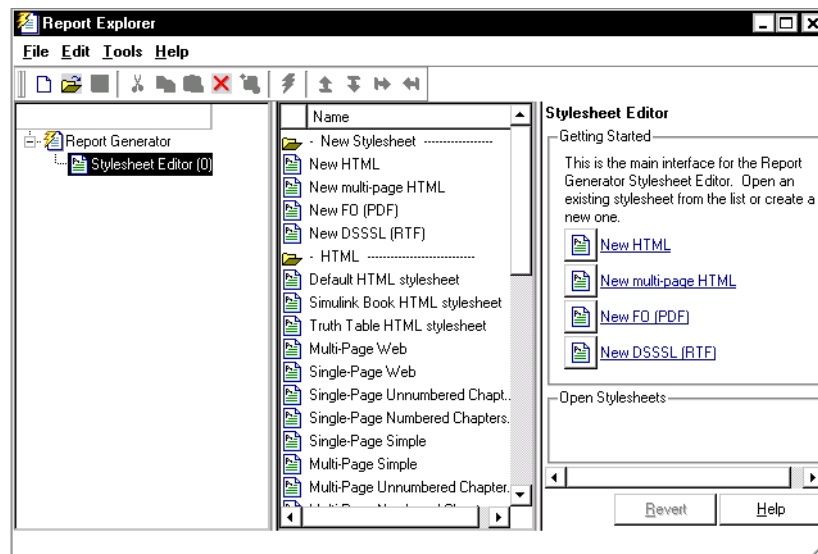
In many cases, the stylesheets provided with the Report Generator are adequate to meet your needs. Nonetheless, you may want to modify the built-in styles to meet special requirements.

For example, suppose your company requires a certain size font for the title of any reports that are part of the company database, and this specification is not part of the built-in stylesheet that otherwise matches your requirements. In this case, you can edit the stylesheet you are using to match this special requirement. You can also create a new stylesheet.

Working with Stylesheets

Follow these steps to edit and use a built-in Report Generator stylesheet:

- 1 Open the Stylesheet Editor, which appears as shown:



- 2 Double-click the stylesheet you want to work on, or click one of the links in the Properties panel to create a new stylesheet.
- 3 Give the stylesheet a name and description.
- 4 “Editing Stylesheet Properties” on page 5-4 You can edit XML directly using advanced edit mode.
- 5 Save the stylesheet.
- 6 Use the stylesheet to convert a report.
- 7 Close the Stylesheet Editor.

You may also want to

- Delete a stylesheet

- Create a new stylesheet

Opening the Stylesheet Editor

To begin the stylesheet editing process, open the Stylesheet Editor in any of the following ways:

- From the menu bar in Report Explorer, select **Tools > Edit stylesheet**.
- From the Outline panel of Report Explorer, right-click **Report Generator** and select **Edit stylesheet**.
- From the Outline panel of Report Explorer, right-click a report (if one is displayed) and select **Edit stylesheet**.
- From the Properties panel in Report Explorer, click **Create or modify document conversion stylesheet**.
- At the command line in MATLAB, type `rpteditstyle`.

Editing Stylesheet Properties

To edit properties of an existing stylesheet,

- 1 Open the stylesheet for editing in any of the following ways:
 - Drag a stylesheet from the Options panel to the Stylesheet Editor.
 - Select the stylesheet from the list displayed in the Options panel and click **Edit stylesheet** in the Properties panel.
 - Double-click the name of the stylesheet.

The Properties panel now contains editable fields and a list of the customizations in the selected stylesheet.

- 2 Add to or change the text in the property fields.

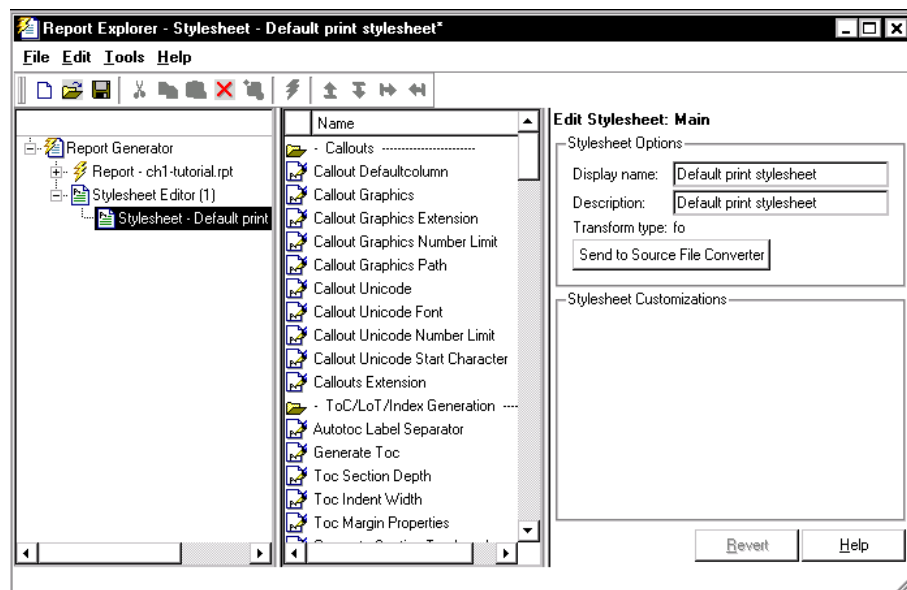
After you edit the properties for the stylesheet, you may want to “Editing Style Data Items” on page 5-17 for the styles you want to customize.

See “Editing Style Data Items” on page 5-17 for more information about editing data items.

Sample Stylesheet Properties

In the following illustration,

- The **ch1-tutorial.rpt** report is open in the Report Generator and is displayed in the Outline panel.
- The Stylesheet Editor is open and is displayed in the Outline panel.
- The default print stylesheet is of type fo and is open in the Stylesheet Editor and contains customizations.
- The Options panel lists all styles that are available for the current stylesheet.
- The Properties panel contains
 - Editable fields describing the selected stylesheet
 - A list of any customizations in the selected stylesheet
 - Transform type
 - A **Send to Source File Converter** button



Saving a Stylesheet

To save a stylesheet,

- 1 In the Outline panel, select the stylesheet that you want to save.
- 2 Do one of the following:
 - Select **File > Save** from the menu bar.
 - Select **File > Save As** from the menu bar.
 - Right-click and select **Save** from the shortcut menu.
 - Right-click and select **Save As** from the shortcut menu.

If you choose **Save**, the Stylesheet Editor saves the file with the current filename in its current location. You cannot overwrite the built-in stylesheets; instead use **Save as** and give the stylesheet a new name.

If the file has not yet been saved, the Stylesheet Editor prompts you for a filename and a location for the file.

Note By convention, files containing Report Generator stylesheets have `.rgs` as their filename extension.

Typically you should choose a location that is in your MATLAB path, and the filename must be unique in the MATLAB path. If the file is not saved to your MATLAB path, the stylesheet does not appear in the Report Explorer.

If you choose **Save As**, the Stylesheet Editor prompts you for a filename and location.

You must save a stylesheet before you can use it for converting a source file or associating with a report.

Using Unique Filenames. Report Generator identifies stylesheets internally by filename without any path information. Thus, stylesheet filenames must be unique across all paths. Repeated filenames may cause certain stylesheets to be ignored upon generation.

For example, if you have a stylesheet `~/project1/largetype.rgs`, you cannot also have a stylesheet `~/project2/largetype.rgs`. If you try to save a file with a duplicate filename, Report Generator prompts you to change the filename.

Converting a Report Using a New Stylesheet

Use a modified or newly created stylesheet just as you would use a built-in stylesheet. Keep in mind that you do not need to generate a new report to make the changes in styles; you can skip the generation step and go directly to the conversion step.

For example, click **Edit** in the **Convert Source File** area of Report Explorer if you want to edit a stylesheet before converting the report.

You can also use a customized stylesheet for conversion by clicking **Send to File Converter** in the Stylesheet Editor, as shown:

Edit Stylesheet: Main

—Stylesheet Options—

Display name:	Default print stylesheet
Description:	Default print stylesheet
Transform type:	fo
<input type="button" value="Send to Source File Converter"/>	

See “Converting XML Documents with Report Explorer” on page 2-8 for information about converting XML file source files that are generated by Report Generator.

Closing the Stylesheet Editor

Close the Stylesheet Editor in either of the following ways:

- Right-click the **Stylesheet Editor** in the Outline panel and select **Close**.
- Select **Stylesheet Editor** in the Outline panel and press **Ctrl+W**.

Deleting a Stylesheet

To delete a stylesheet that you created,

- 1 Select the Stylesheet Editor in the Outline panel.
- 2 Select the stylesheet to delete from the Stylesheet Editor Options panel.
- 3 Click **Delete stylesheet** in the stylesheet's Properties panel.

Note You cannot delete the built-in stylesheets.

Deletions or renaming of stylesheets from the file system may not appear in the Options panel until you restart MATLAB.

Deleting a Customized Style

To delete a customized data item,

- 1 Right-click the customized data item in the Outline panel.
- 2 Select **Delete**.

Creating a New Stylesheet

To create a new stylesheet,

- 1 Open the Stylesheet Editor.
- 2 In the Properties panel do any of the following:
 - Click **New HTML** to create a new stylesheet for HTML reports.
 - Click **New multi-page HTML** to create a new stylesheet for HTML reports with more than one page.
 - Click **New FO (PDF)** to create a new stylesheet for PDF reports.
 - Click **New DSSSL (RTF)** to create a new stylesheet for RTF reports.

The new stylesheet appears in the Outline panel.

- 3 In the Properties panel, modify the properties for the stylesheet as needed.
- 4 Add styles to the new stylesheet:

- a** Drag the style you want to add from the Options panel to the stylesheet in the Outline panel.
 - b** In the Properties panel, edit the data items for the selected style.
- 5** Save the stylesheet.

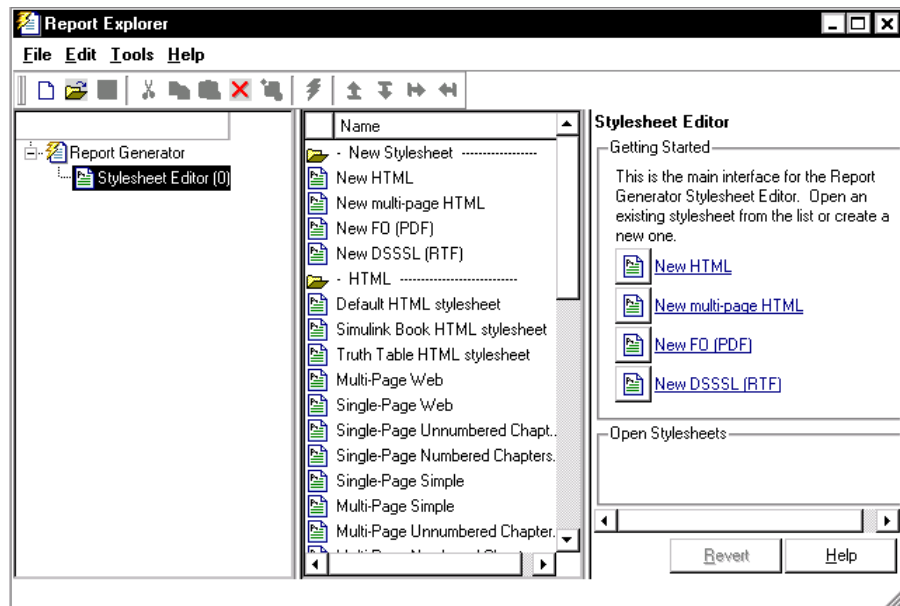
Understanding the Stylesheet Graphical User Interface

This section covers the following topics:

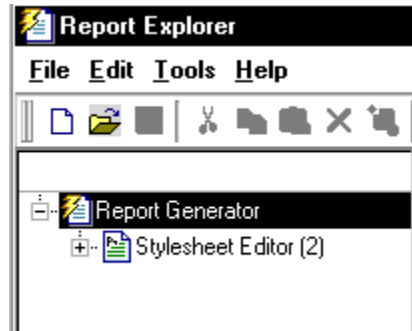
- “Stylesheet Editor ” on page 5-10
- “Main Stylesheet Properties” on page 5-13
- “Data Properties Panel” on page 5-14

Stylesheet Editor

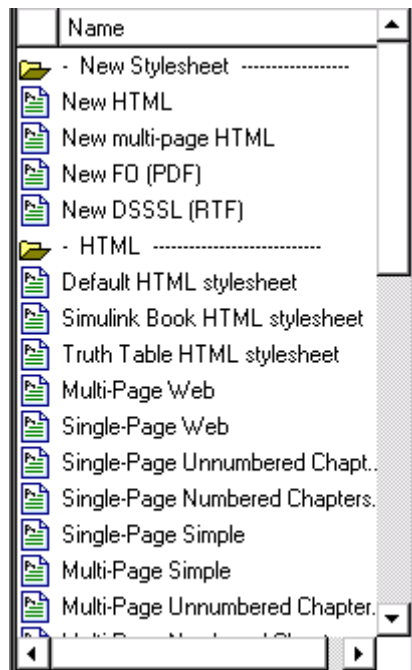
When you start the Stylesheet Editor, Report Explorer opens as shown.



- The Report Generator in the Outline panel contains the Stylesheet Editor.



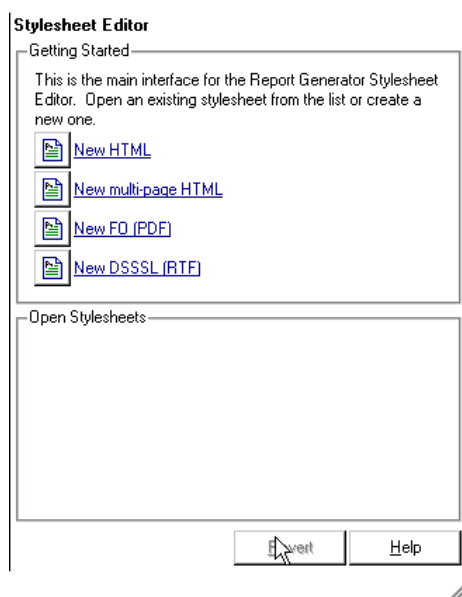
- The Options panel lists the available stylesheets.



Note By default, the folders in the Options panel are open. You might want to close them to see all categories at once. Whenever you are in the Options panel, double-click a folder to close it.

Alternatively, you can right-click each folder and select the **Hide/show category** menu item.

The Properties panel shows the Stylesheet Editor (which is currently selected in the Outline panel).



From the Stylesheet Editor, you can perform the tasks shown in the following table.

Task	Panel to Use	Action
Create a new stylesheet.	Properties	Click the link that corresponds to the kind of stylesheet you want to create.
Open a custom stylesheet that has already been created.	Properties	Click the name of the stylesheet, which should appear in the Open Stylesheets area.
Select a stylesheet to use when converting an XML source file.	Option	Select a stylesheet.
View a list of customized styles in a stylesheet.	Outline	Expand any open stylesheet.
View a list of styles in a stylesheet.	Outline or Options	Double-click the stylesheet.
View a list of stylesheets available for editing in each category.	Options	Double-click the folder that corresponds to the kind of output you want (that is, HTML, PDF, or RTF).
View stylesheets that are currently open.	Outline	Expand the Stylesheet Editor.

Main Stylesheet Properties

When you open a stylesheet, Report Explorer displays the following information:

- The Outline panel shows the name of the current stylesheet and any customized styles that it contains.
- The Options panel shows folders containing all the style data items available for the current stylesheet.

- The Properties panel displays **Stylesheet Editor: Main** and shows the properties of the stylesheet, such as name and description, and customizations, if any, that belong to the stylesheet.

From the **Stylesheet Editor: Main** you can perform the following tasks.

Task	Panel to Use	Action
Change the name or description of the current stylesheet.	Properties	Edit the text in the Display Name or Description field
Convert an XML source file using the current stylesheet.	Properties	Click Send to Source File Converter in the Properties panel.
Edit style data that is already customized.	Properties	Click the style data item, which appears in the Stylesheet Customizations area.
Open a style data item for editing or viewing.	Options	Double-click the data item that you want to edit.
View a list of style data that is already customized.	Outline	Expand the stylesheet.

Data Properties Panel

When you open a style data item, Report Explorer appears as follows.

- The Outline panel shows the name of the current style data item inside its stylesheet.
- The Options panel shows a list of all available stylesheet data items.
- The Properties panel displays **Stylesheet Editor: Data** and shows the following.
 - The value of the data item is in a pane labeled **Value** or **Value (XML)**, depending on the current edit mode for the data item.

- To the right of the value is the **Edit as** toggle button. You can edit the value using simple or advanced edit mode.
- The **Preview** pane contains a fragment of the stylesheet that specifies the data item. You cannot edit this pane.
- The **Help** pane contains information about the data item. You cannot edit this information.

Simple and Advanced Edit Modes

You edit values for most data items in PDF and HTML stylesheets in either *simple edit mode* or *advanced edit mode*. You edit values for RTF stylesheets only in simple edit mode.

Simple edit mode means that you are editing a simple string that corresponds to the data in the stylesheet. This string appears in the field to the right of the **Value** label. For some values you can use a drop-down list to change the value instead of typing in text.

Advanced edit mode means that you are editing the XML code directly. To switch from simple to advanced edit mode, click **Edit as XML**.

The user interface is set to simple edit mode when the data item is displayed in a pane labeled **Value** and to advanced edit mode when the data item is displayed in a pane labeled **Value (XML)**.

Note To modify content for headers and footers you edit stylesheet cells, which do not appear in either simple or advanced mode. See “Stylesheet Cells” on page 5-28 for more information.

Working with Data Items in the Stylesheet Editor

Use the Properties panel to modify the values for each data item that you want to customize. You use different methods of editing the stylesheet according to the kind of data item you are editing.

Stylesheet Editing Methods

Type of Data	How to Edit	For More Details
Attribute sets	Type text in the Inherit Attribute sets field.	See “Attribute Sets” on page 5-25.
Boolean values	Use simple or advanced edit mode according to whether you want to edit a string (simple) or edit the XML directly (advanced).	See “Boolean and Enumerated Values” on page 5-18.
Enumerated values		
Strings		See “Strings” on page 5-20.
Title Placement Properties	Use drop-down menus to indicate whether title should go before or after the figure or table.	See “Title Placement Properties” on page 5-25.
TOC Generation Properties	Use check boxes to indicate which components of the document should have which level of TOC.	See “TOC Generation Properties” on page 5-24.
XML Expressions	Use simple or advanced edit mode according to whether you want to edit a string (simple) or edit the XML directly (advanced).	See “XML Expressions” on page 5-21.
Stylesheet cells	Use templates to specify XML code that defines the content for a header or footer.	See “What Is A Stylesheet Cell?” on page 5-29 and “Using Templates to Add Content to Headers and Footers” on page 5-32

Editing Style Data Items

The styles that the file converter uses for a report are specified in a stylesheet as values for data items such as parameters and attributes. The data items are of several types. Each type requires a different way of editing.

See “Working with Data Items in the Stylesheet Editor” on page 5-16 for an overview of editing data items.

See the following sections for details about working with each particular type of data item.

- “Boolean and Enumerated Values” on page 5-18
- “Strings” on page 5-20
- “XML Expressions” on page 5-21
- “TOC Generation Properties” on page 5-24
- “Title Placement Properties” on page 5-25
- “Attribute Sets” on page 5-25
- “Attributes” on page 5-26
- “Cell Groups ” on page 5-28
- “Stylesheet Cells” on page 5-28

Note See the **Help** area at the bottom of the Properties panel for a description of a specific data item that you are editing.

Boolean and Enumerated Values

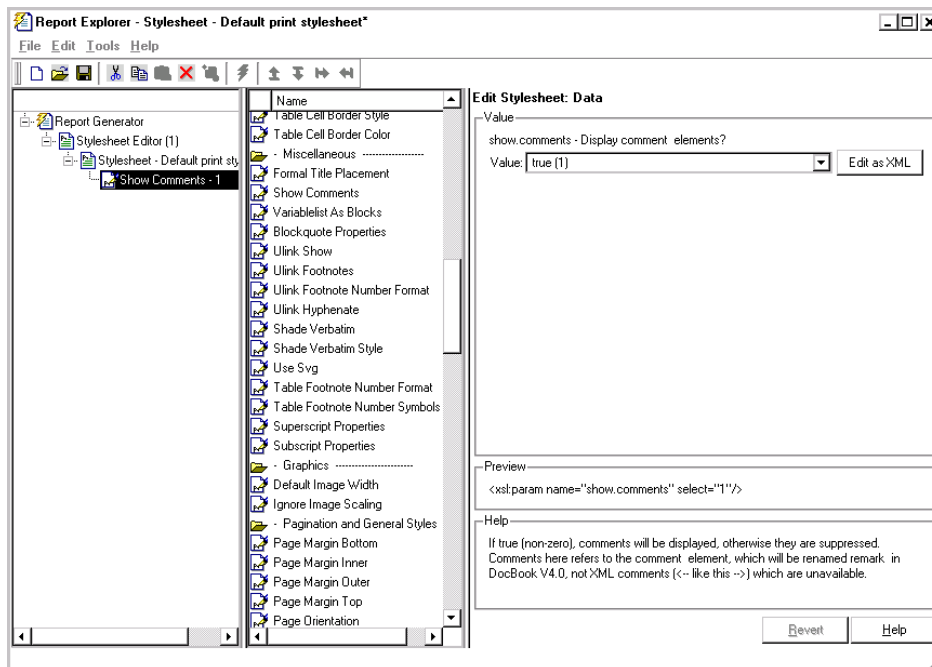
For most stylesheets, you can use either simple or advanced edit mode to edit data items of Boolean type and to edit data items that have finite enumerated values.

To use simple edit mode, set the Properties panel to display the string value in a pane labeled **Value**.

Note If the pane is labeled **Value (XML)** you are in advanced mode. Click **Edit as String** to switch to simple edit mode.

To use advanced edit mode, click **Edit as XML**. In advanced mode, the Properties panel displays the data item as **Value (XML)**.

Here is an example of the Properties panel for a data item in the **Default print stylesheet**, namely the **Show Comments** data item.



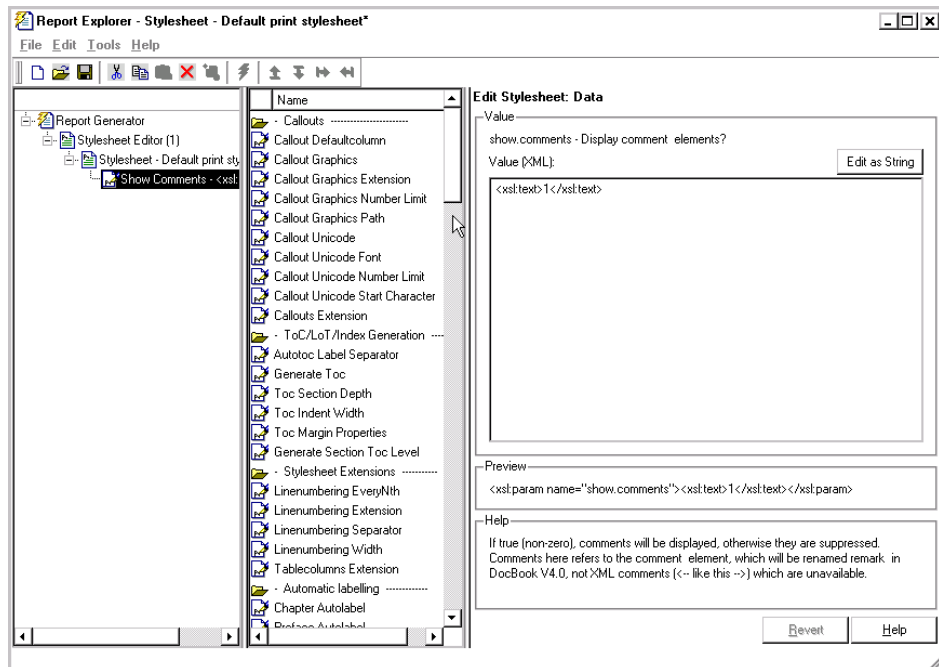
As shown in this example, the value of the data item is of type Boolean and the current value is specified as **true(1)**. The Properties panel is set to simple edit mode.

To change this value, use the drop-down menu for the value field and click a different value. In this case, the only other possible value is **false(2)**.

For more complex editing, click **Edit as XML**.

Note You cannot use advanced edit mode for any data items in RTF stylesheets.

In advanced edit mode, the Properties panel for this data item appears as shown:



Strings

For the values of some data items, the Stylesheet Editor displays text in the **Value** field. This text is not an XML expression, and you can edit it freely in the **Value** field. The text does not have to be specified as an XML expression, but you have the option of typing XML characters.

If you prefer to edit the XML directly, use advanced edit mode as follows:

- 1 Click **Edit as XML**.
- 2 Edit the XML in the **Value (XML)** pane.

Note You cannot edit data items for RTF stylesheets as XML.

XML Expressions


If you want to make complex changes to a stylesheet, consider using advanced edit mode, that is, edit XML expressions directly in the **Value (XML)** pane. If this pane is not displayed, click **Edit as XML** to switch to advanced edit mode.

When you edit XML expressions, you must make sure that you type valid XML in the **Value (XML)** pane. Any values that are not legal generate an error. The error appears at the top of the Property panel.

Here is an example of the display for XML that is missing a right-angle bracket:

Edit Stylesheet: Data

Error

 org.xml.sax.SAXParseException: The end-tag for element type "xsl:text" must end with a '>' delimiter.

Value

font-size

Value (XML):

Edit as String

```
<xsl:value-of select="$body.font.master * 1.44"/>
<xsl:text>pt</xsl:text
```

Preview

```
<xsl:attribute name="font-size"><xsl:value-of
select="$body.font.master * 1.44"/>
<xsl:text>pt</xsl:text</xsl:attribute>
```

Parent Attribute-Set Help

The properties of level-3 section titles.

Revert

Help

Note If you get an error, you can fix the problem in the **Value (XML)** pane and try again. The Stylesheet Editor does not allow you to use illegal XML code in the report generation process.

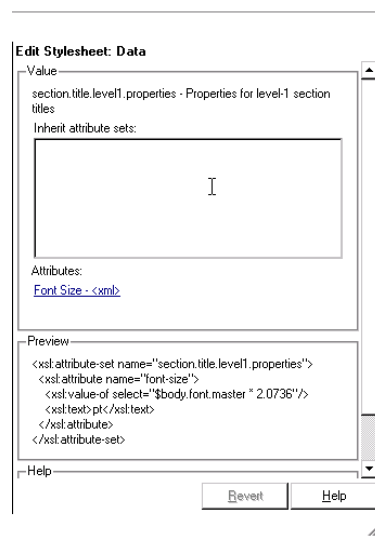
Editing Font Size as a Derived Value in XML

You might want to edit in XML directly if you need to change conditional values or values derived from others.

To see an example of values derived from others,

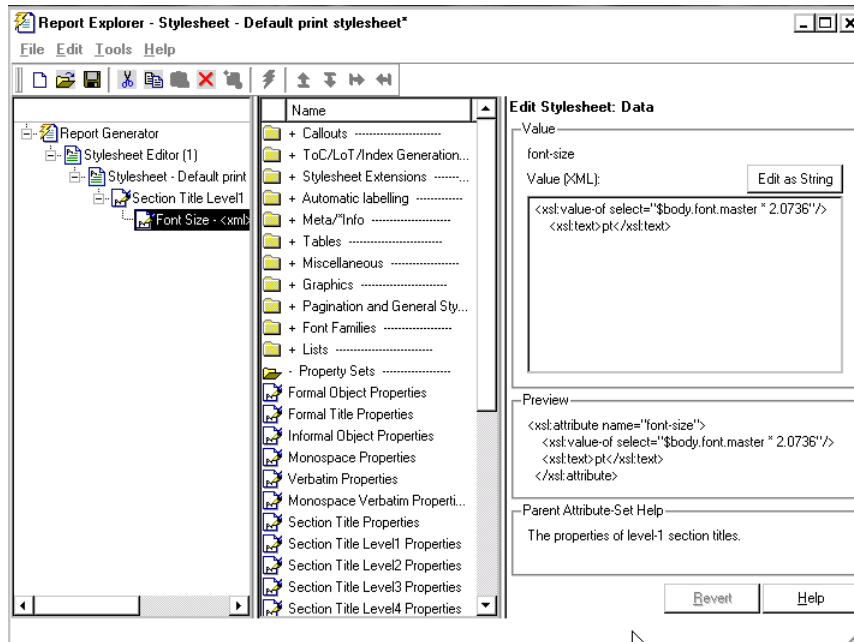
- 1 Open the default print stylesheet for PDF documents.
- 2 In the Options panel, select and expand the **Property Sets** folder.
- 3 In the Options panel, double-click the **Section Title Level1 Properties** data item.

The Properties panel appears as shown:



- 4 In the **Attributes** area of the Properties panel, click **Font size - <xml>**.

The Report Explorer appears as shown:



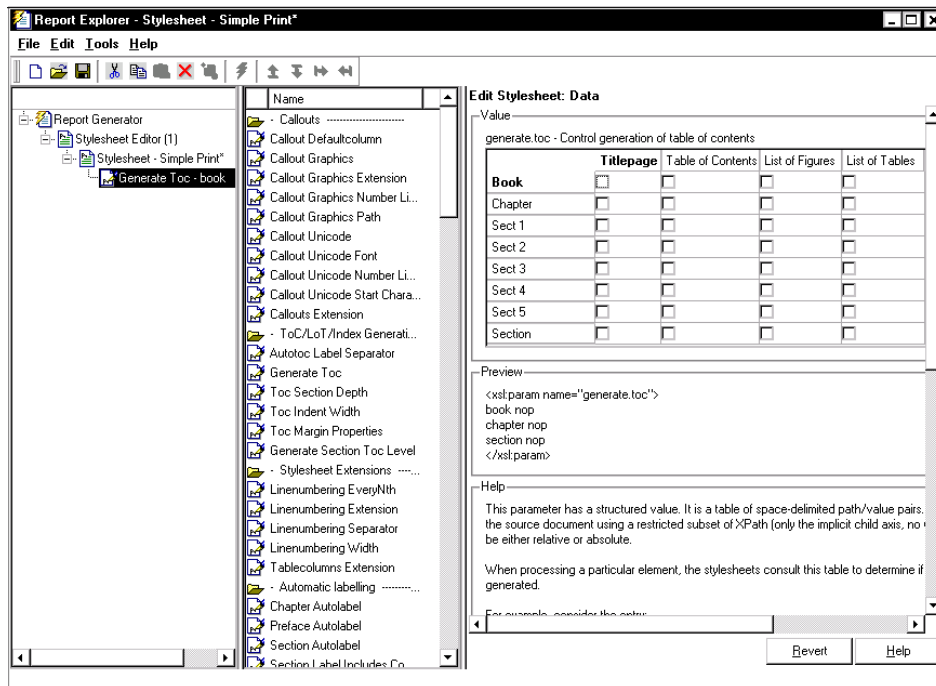
Notice that the value is specified as a product of **\$body.font.master** and **2.0736**. To change the font size to a larger size, you could change the multiplication factor to **3.0736**.

Note The value for the **\$body.font.master** data item is specified in the **Body Font Master** property, which is in the **Pagination and General Style** category in the Options panel. The default value is 10. Changing this value causes the derived values to change accordingly.

TOC Generation Properties

To change values for generation of the table of contents (TOC) you use simple edit mode and select the values you want from a matrix of check boxes.

Here is an illustration of the Report Explorer ready for editing the values for the **Generate Toc** data item, which belongs to the **Simple Print** stylesheet.



Title Placement Properties

The **Title Placement** data items are in the **Miscellaneous** category. They control the position of titles for figures and tables. You can edit the values for these items in simple edit mode.

When you select one of these data items for editing, the Property panel shows the possible values in a drop-down menu. Use the menu to indicate whether you want the title to go before or after the figure or the table.

Attribute Sets

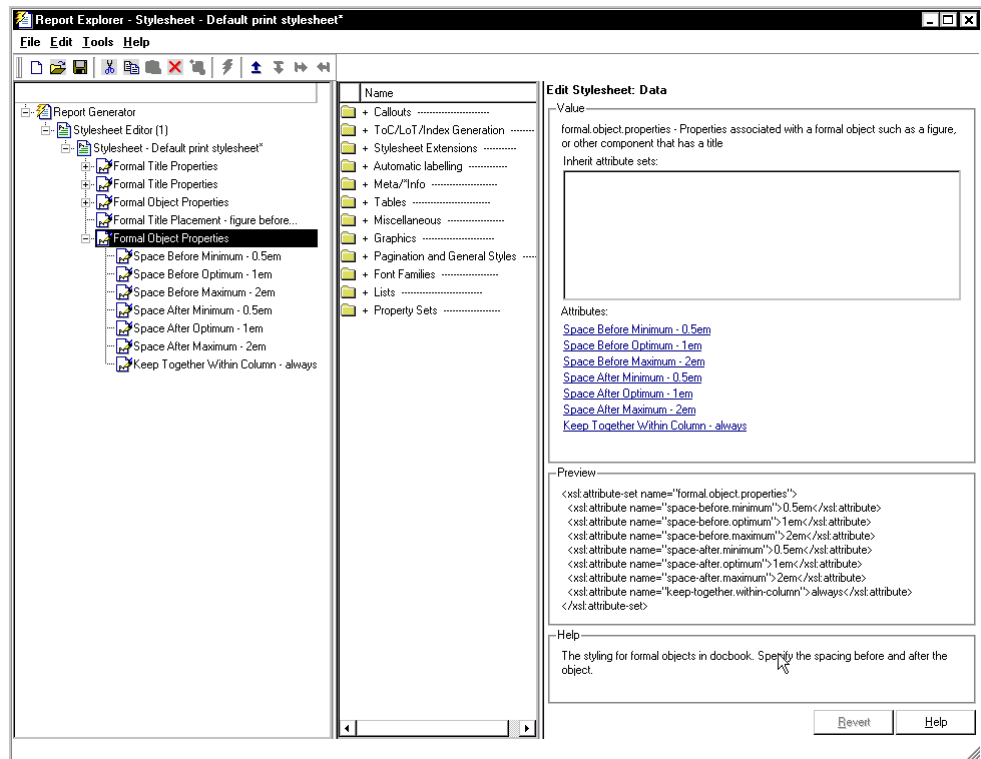
An attribute set is a group of attributes. When you select an attribute set in the Outline panel, the Property panel lists the attributes that belong to the set.

To edit an attribute, expand the attribute set in the Outline panel and select the attribute.

To edit the attribute set, type text in the **Inherit attribute sets** area of the Property panel.

An example of an attribute set is **Formal Object Properties**, a data item in the **Property Sets** category of the default print stylesheet for PDF documents.

Here is an example of the Report Explorer showing the **Formal Object Properties** attribute set in the Properties panel.



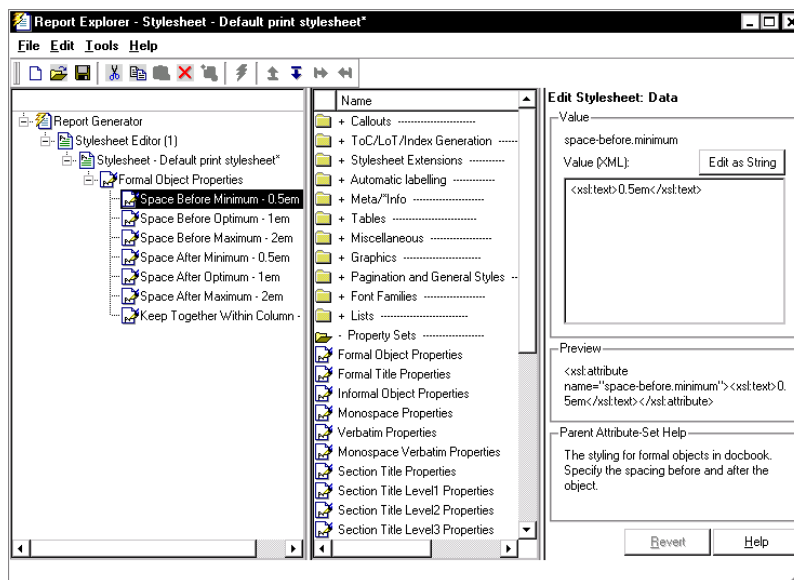
Attributes

An attribute is a data item that specifies information for an XML element. An attribute must be a child of an Attribute Set.

You can edit the values for attributes in either simple or advanced edit mode.

Note The information in the Help area of the Property panel for an attribute describes the set to which the attribute belongs.

An example of an attribute is the **Space Before Minimum** attribute in the attribute set **Formal Object Properties**. The Report Explorer appears as shown.



Varpair Values

All the data items in RTF stylesheets are represented as varpair data items, which are name/value pairs of information. RTF stylesheets are the only type of Report Generator stylesheets that have varpair data.

You can edit varpair data items only as strings or as Boolean values. Boolean values are represented as true (#t) and false (#f).

You cannot edit RTF stylesheet data items as XML.

Note Because the varpair data is sometimes represented in the stylesheet as DSSSL rather than XML, the code that is displayed in the **Preview** pane of the Properties panel looks different from the code associated with other kinds of stylesheets supported by Report Generator.

Cell Groups

There are two cell groups: **Header Content** and **Footer Content**, which are available for PDF reports. A *cell group* contains one or more stylesheet cells. A *stylesheet cell* is a set of values that determine the content of a particular portion of the header or footer for a page.

The Properties panel for each of cell group lists the current stylesheet cell definitions for the group in a two-column list called **Conditional cell values**. The first column displays the name of a condition and the second column displays the content and default value to be used if a specified condition is met.

For instance, Page sequence - Blank is the name of a stylesheet cell. It specifies the content for a blank page; by default the content is set to empty. Similarly, Cell - Right Side specifies the content for the right side of the header on every page.

There are many combinations of conditions and values that you can use to customize the content of headers and footers. Report Generator provides several predefined conditions that are frequently used. These predefined cells are listed in the Properties panel for Header Content and for Footer Content cell groups.

See “Stylesheet Cells” on page 5-28 for more information about stylesheet cells and how the File Converter works with them.

Stylesheet Cells

This section covers the following topics:

- “What Is A Stylesheet Cell?” on page 5-29
- “Specifying Content for Headers and Footers” on page 5-31

- “Using Templates to Add Content to Headers and Footers” on page 5-32
- “Note on the Relationship Between Properties and Cells for Headers and Footers” on page 5-33

What Is A Stylesheet Cell?

For purposes of specifying the content for headers and footers, Report Generator defines a page to include six possible locations, or cells. These positions correspond to the left, right, and center of the header and the left, right, and center of the footer.

Conditions and Their Values. A stylesheet cell contains a condition and content. For example, say you want the right side of the top of all pages to have a page number. In this case you could define a basic stylesheet cell in the Header Content cell group to have a condition set to **right** and content set to be the current page number. To view this example:

- 1 Open the stylesheet editor for a PDF stylesheet.
- 2 Double-click **Header Content** in the Options panel.
- 3 Click **Position - Right** in the Properties panel.

For **Position - Right**, the XML code for the condition and content appear as shown:

Edit Stylesheet: Cell

Value

If this condition is true, use this value for the current header/footer cell location.

Condition:

Value (<ML>:

Append template:

As you can see, the XML code for the condition is

```
$position='right'
```

In this example the code for content is empty. Select a template and click **Append** to add the content that you need for your particular report.

See “Using Templates to Add Content to Headers and Footers” on page 5-32 for more information about templates.

Complex Conditions. You can specify more complex conditions. Complex conditions typically specify not only the position on the page but other settings, such as whether the content should appear on a titlepage (The condition of being on a titlepage belongs to the \$pageclass condition.)

You can use standard logical operators (such as = , != , and, or) to specify a complex condition. You can also use nested expressions (characters between parentheses are an expression within an expression).

For instance, you can specify that the center position of the header should be empty if a title page is being generated, but that the center should contain the company logo if a body page is being generated. This specification corresponds to a default stylesheet cell named Body page Center, which is defined as follows:

```
($sequence='odd' or $sequence='even') and  
$position='center' and  
$pageclass != 'titlepage'
```

This expression indicates a condition where the page is either odd or even, the position must be the center (of the header or footer), and the page is not a titlepage.

See “Adding a Company Logo to Headers in a PDF Report” on page 5-37 for an example of how to make this particular customization.

When the File Converter processes a page it evaluates the settings that are relevant to each of the six cells on the page and adds content accordingly. If there are no conditions in effect for a cell, the File Converter uses the default values as defined in the cell group.

The possible conditions and their values as coded in XML are shown in the following table.

Name of Condition	Possible Values for the Condition	Sample XML Code
\$position	right center left	\$position='right' \$position='center' \$position='left'
\$sequence	odd even first blank	\$sequence=odd \$sequence=even \$sequence=first \$sequence=blank
\$double-sided	0 1	\$double-sided=0 \$double-sided=1
\$pageclass	\$titlepage \$lot \$body	\$pageclass=\$titlepage \$pageclass=\$lot \$pageclass=\$body

Specifying Content for Headers and Footers

Use the Properties panel for a stylesheet cell to specify content according to conditions.

The Properties panel for a stylesheet cell displays the following areas:

Label	Definition	Description
Condition	Condition that must be satisfied for the content to be used.	This is a drop-down list of frequently used and predefined conditions. They are listed by their display names. Click Edit to view or change the XML code that goes with the name. See “What Is A Stylesheet Cell?” on page 5-29 for more information about the concept of a stylesheet cell.

Label	Definition	Description
Value(XML)	Content to be used if the condition is met.	This is an editable field where you modify or create the XML code that specifies the content.
Append Template	Name of the template you want to use to add content.	To help you specify the values for a stylesheet cell, the Stylesheet Editor provides templates that contain some or all of the XML code needed to add some kinds of content. See “Using Templates to Add Content to Headers and Footers” on page 5-32 for more information about this feature.

Using Templates to Add Content to Headers and Footers

To specify content without using a template, type XML code directly into the **Value (XML)** text box.

To use a template to specify content:

- 1** In the **Append template** drop-down list, select the kind of content you want to add.
- 2** Click **Append**.

The Properties panel displays the XML code for the default content of that kind. You can edit the XML to change the default.

There are templates available for adding text, author names, page numbers, titles for chapters and sections, chapter numbering, draft information, comments, and graphics.

For example, to specify text as the content:

- 1** Select **Text** from the **Append template** drop-down list
- 2** Click **Append**.
- 3** Edit the value for `xsl:text`.

The default content is `Confidential`.

Note Templates used by the File Converter are Extensible Style Language Transformations (XSLT), which is a language for transforming XML documents into other XML documents. For more information about XSLT, see the website for the World Wide Web Consortium (W3C).

Note on the Relationship Between Properties and Cells for Headers and Footers

- “Modifying Fonts and Other Properties” on page 5-33
- “Inserting Graphics Files” on page 5-33

Modifying Fonts and Other Properties. You cannot use stylesheet cells to modify the font family or other such properties of headers and footers. To specify the style of the content in headers and footers, use **Header Content Properties** and **Footer Content Properties**, which are attribute sets.

Each of these attribute sets is a pagination style data item for PDF stylesheets. You modify an attribute in the set, such as the Font Family attribute in Header Content Properties, by selecting the attribute in the Outline panel.

Inserting Graphics Files. When you add content in the form of a graphics file, you must specify not only the name of the file in the stylesheet cell that belongs to **Header Content** or **Footer Content**; you must also edit other pagination properties to allow room for the graphic to appear where you specify. Typically you can do this by selecting and editing the values of the Region Before Extent and Region After Extent data items, which are in the **Pagination and General Styles** folder of the **Options** pane for PDF formatting.

See “Adding a Company Logo to Headers in a PDF Report” on page 5-37 for an example of adding a graphic.

Note Only bitmap images (.bmp files) are supported by the Stylesheet Editor as image content in headers and footers.

Making Some Specific Stylesheet Changes

This section provides the following extended examples:

- “Making Changes in Font Size, Page Orientation, and Paper Type” on page 5-34
- “Adding a Company Logo to Headers in a PDF Report” on page 5-37

See also “Editing Font Size as a Derived Value in XML” on page 5-23 for another short example.

Making Changes in Font Size, Page Orientation, and Paper Type

This example shows how to

- Generate an XML source file without converting it to a report
- Make the section headers larger in a report
- Change the page orientation to landscape
- Change the paper type to A4 (a popular paper size in Europe)

For this example you create a new stylesheet by editing an existing stylesheet. The purpose of creating the new stylesheet is to change the appearance of **wsvar-report**, a demo that is provided with the Report Generator.

1 Generate a source file for the report.

For this example, you convert the same report several times. If you start by generating the report to XML without any formatting, you can use the source file more than once without regenerating the report.

a. From the command line, issue the following command:

```
setedit wsvar-report
```

b. In the **Report Format and Stylesheet** panel, change the format to **DocBook (no transform)**.

c. Select **File > Report** to generate the report.

Report Generator creates an XML source file without converting it to a standard documentation format. The XML source file appears in the MATLAB editor when the report is created.

- 2 Convert the report to see how it looks.
 - a. Select **Tools > Convert Source File** to open the File Converter.
 - b. From the **Source file** drop-down menu, select **wsvar-report.xml**.
 - c. From the **Format** drop-down menu select **PDF**.
 - d. From the **Stylesheet** drop-down menu, select **Unnumbered Chapters and Sections**.
 - e. Click **Convert File**.

Report Generator converts the XML source file for wsvar-report to a PDF and opens the PDF in your viewer for PDF files.

- 3 Change the specification for the section headers to make the headers more prominent.
 - a. In the File Converter, click **Edit**.

Report Generator opens the Stylesheet Editor displaying the settings associated with the **Unnumbered Chapters and Sections** stylesheet.

- b. In the Properties panel, change the name of the stylesheet to Custom Large Section Headers.
- c. Type in the description as No chapter and section numbering, larger section titles.
- d. In the Outline panel, select the **Custom Large Section Headers** stylesheet (or any of its children), if not already selected.
- e. In the Options panel, select **Section Title Level 1 Properties**.
- f. In the Properties panel, click **Add to current stylesheet**.

The **Section Title Level 1 Properties** data item appears in the Outline panel as a child of the custom stylesheet. Because this data item is an attribute set, it has child members (that is, attributes) displayed as well.

- g. In the Outline panel, select **Font Size**, a data item that is one of the attributes in the set.

The Properties panel displays an XML expression specifying a font size as a multiple of the Body Font Size attribute.

- h. Click **Edit as string**.

The Stylesheet Editor converts the XML expression to a simple string, which is displayed in a pane labeled **Value**.

- i. Type in the value as 18pt.

This change in the stylesheet causes the size of the font to be absolutely 18 points, rather than a multiple of the body font size attribute.

- j. Select **File > Save** to save the stylesheet.

Report Generator prompts you for a filename because it does not allow you to overwrite built-in stylesheets.

- k. Save the stylesheet to a directory on your MATLAB path with the name `customheader.rgs`.

The `customheader.rgs` stylesheet appears as an available stylesheet in the Options panel of the Stylesheet Editor. It also appears as an option in the File Converter.

- 4 Use the new stylesheet to convert the current XML source file.
 - a. In the **Stylesheet Editor: Main** Properties panel, click **Send to File Converter**

The File Converter appears with `customheader.rgs` stylesheet selected.

- b. Click **Convert file**.
- 5 Change additional specifications (page orientation and paper type).
 - a. On the File Converter Properties panel, click **Edit**.
 - b. In the Options panel, double-click the **Page Orientation** data item.
 - c. In the Properties panel, use the drop-down menu to change the value of the data item to **landscape**.

- d. In the Options panel, double-click **Paper Type**, which is also in the **Pagination and General Styles** folder.
 - e. In the Properties panel, use the drop-down menu to select **A4**.
 - f. Save the stylesheet.
- 6** Convert `wsvar-report.xml` using the Custom Large Section Headers stylesheet.

The PDF shows a horizontally oriented page with slightly different dimensions.

Adding a Company Logo to Headers in a PDF Report

This example shows how to edit the default header content for a PDF stylesheet so that body pages will have an image in the center. The report that is used in the example is `mfile-report.rpt`, a sample report that documents the `peaks.m` file.

The image to be used for the content can be any bitmap image you choose. You must know the size of the image so that you can allow enough room for it in the header. The image used here is named `sample_logo.bmp`. It is 50x44 pixels, which is about an inch on each side when printed on paper. It looks like this:



Note Keep in mind that only bitmap images (`.bmp` files) are supported by the Stylesheet Editor as image content in headers and footers.

Here are the steps to include `sample_logo.bmp` in the center of the header for each body page in a PDF version of `mfile-report.rpt`; that is, exclude the image only from the titlepage and from the first page in each chapter.

- 1** Open `mfile-report.rpt` by typing the following at the MATLAB command prompt:

```
setedit mfile-report
```

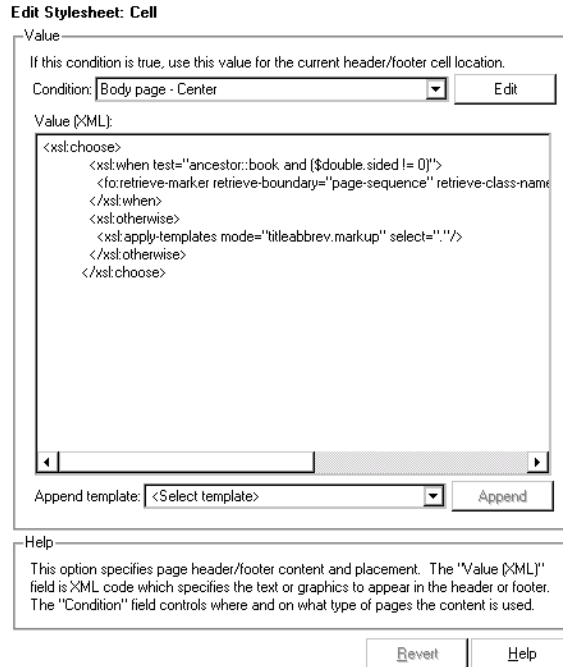
2 Create a new stylesheet:

- a. Open the Stylesheet Editor and double-click it in the Outline panel.
- b. Click **New FO (PDF)** in the Properties panel.
- c. Type Logo stylesheet for PDF as the **Display name** and Company logo in center of header as **Description**.
- d. Click **File > Save** and save the file as logo_stylesheet.rgs in your MATLAB path.

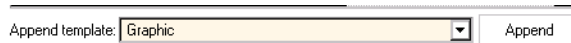
3 Open the cell group for editing:

- a. Scroll through the Options panel to the **Pagination and General** folder.
- b. Double-click **Header Content** in the Options panel.
- c. Click **Body – page Center** from the list of cells in the Properties panel.

The Properties panel appears as shown:



- d. Select and delete all of the text currently in the **Value (XML)** area.
- e. Select **Graphic** from the **Append template** drop-down menu, and click **Append**:



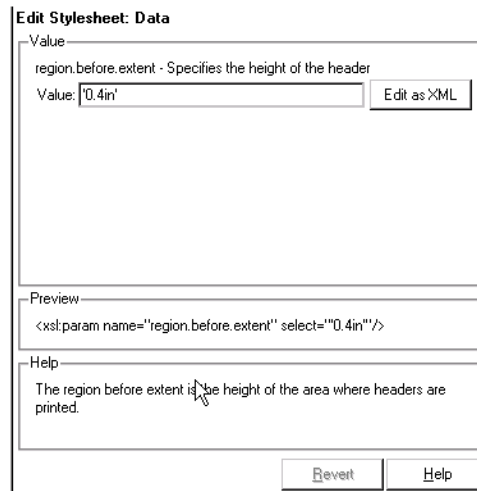
The Properties panel shows the XML code that tells the File Converter to include the graphic. You must edit this code to specify the name of the file and the space needed for it in the header. By default, the name of the graphic is `logo.bmp`, as shown:


```
<xsl:with-param name='filename'>./logo.bmp<!--Enter your graphic name here-->
```

- 4 Add the name of your bitmap file to replace `logo.bmp` where it appears in the **Value(XML)** code.
- 5 Click **File > Save**.

- 6 Make sure that the amount of room available in the header is at least as large as the icon image file. You can set this with the parameter `region.before.extent` as follows:
 - a. In the Options panel, double-click **Region Before Extent**, which is in the **Pagination and General Styles** folder.

By default the value for the height of the header is 0.4 inches, as shown:



- b. Type the value as 1.0in to replace 0.4in.
 - c. Click **File > Save**.
- 7 Generate the report with the new styles:
 - a. Select **mfile-report.rpt** in the Outline panel.
 - b. Set the drop-down menus in the **Report Format and Stylesheet** text box of the Properties panel to specify Logo stylesheet for PDF and Acrobat (PDF)
 - c. Click **Report** on the toolbar, which appears as .

Stylesheet Reference Information

See the following table for a list of the properties for a Report Generator stylesheet.

Stylesheet Properties

Name	Description
Description	An explanation of the features that distinguish the stylesheet. This is an editable field.
Display name	The name that you want to display in the Options panel. This is not the same as the name of the .rgs file that you specify to store the stylesheet. This is an editable field.
Transform type	The process that Report Generator uses to generate reports that use this particular stylesheet. The types are <ul style="list-style-type: none">• FO (Formatting Object) for PDF reports• HTML• DSSSL (Document Style Semantics and Specification Language) for RTF reports This is not an editable field.

Categories of Stylesheets Within Each Type

The categories for the styles that you can edit for each kind of stylesheet are listed in the following tables:

- Categories of Editable Styles in PDF (FO) Stylesheets on page 5-43
- Categories of Editable Styles in HTML Stylesheets on page 5-44
- Categories of Editable Styles in RTF (DSSSL) Stylesheets on page 5-45

Categories of Editable Styles in PDF (FO) Stylesheets

Category	Description of Data Items in the Category
Automatic labelling	Options for enumeration of parts of the report, such as chapters and sections.
Callouts	Options and specifications related to callouts, such as defaults, use of graphics, size, path, fonts, characters, and extensions.
Font Families	Specification of defaults for body text, copyright, quotes, symbols, dingbats, monospace, sans serif, and titles.
Graphics	Specification of default width and options related to scaling attributes.
Lists	Specification of spacing related to lists and list items.
Meta/*Info	Options related to year ranges.
Miscellaneous	Options and specifications for placement of titles, comments, variable lists, block quotations, ulinks, hyphenations of URLs, verbatim environment display, use of SVG, table footnote numbers, superscript, and subscript.
Pagination and General Styles	Specifications of page orientation, margins, double-sided, paper type, alignment, hyphenation, line height, columns, master font, draft mode, watermark, blank pages, rules for headers and footers, and content of headers and footers.
Properties	Specification and options related to figure titles, monospace properties, verbatim text, section titles, and levels of sections.
Stylesheet Extensions	Line numbering and table columns extensions.

Categories of Editable Styles in PDF (FO) Stylesheets (Continued)

Category	Description of Data Items in the Category
Table of Contents (TOC)/List of Tables (LOT)/Index Generation	Specifications for layout of TOC, depth of sections, indentation, and margins.
Tables	Specifications for size of tables and their borders.

Categories of Editable Styles in HTML Stylesheets

Category of Style	Description of Data Items in the Category
Automatic labeling	Options for enumeration of parts of the report, such as chapters and sections.
Callouts	Options and specifications related to callouts, such as defaults, use of graphics, size, path, fonts, characters, and extensions.
Chunking	Options related to using an explicit TOC for chunking, depth of section chunks, navigational graphics, and display of titles in headers and footers.
Extensions	Line numbering, graphic size, and table columns extensions.
Graphics	Specification of default width and depth, use of HTML embed for SVG, viewports, and options related to scaling attributes.
HTML	Specifications related to dynamically served HTML, base and head elements, type of stylesheet, css, propagation of styles, longdesc, validation, cleanup, draft mode, watermark, and generation of abstract.
Linking	Specification of Mailto URL and target for ulinks
Meta/*Info	Options related to year ranges.

Categories of Editable Styles in HTML Stylesheets (Continued)

Category of Style	Description of Data Items in the Category
Miscellaneous	Options and specifications for comments, verbatim environment pixels, em space, use of SVG, and table footnote numbers.
Table of Contents (TOC)/List of Tables (LOT)/Index Generation	Specifications for layout of TOC, depth of sections, indentation, and margins.
Tables	Specifications for size of tables, table cell spacing and padding, and borders.
XSLT Processing	Options related to header and footer navigation and rules.

Categories of Editable Styles in RTF (DSSSL) Stylesheets

Category of Style	Description of Data Items in the Category
Admonitions	Options and path for admonition graphics.
Backends	Options for Tex, MIF, and RTF back end usage.
Bibliographies	Options related to checking citations; suppressing, enumerating, and using titles of entries.
Fonts	Specifications for font family and size to use for some elements.
Footnotes	Options for ulinks as footnotes and page location.
Graphics	Specifications for file extensions, filenames, and loading library database.
Indents	Specifications for hanging indents, first paragraphs, and start of blocks.
Labelling	Enumeration of sections and other elements.

Categories of Editable Styles in RTF (DSSSL) Stylesheets (Continued)

Category of Style	Description of Data Items in the Category
Miscellaneous	Options for floating formal objects, punctuation for run-in heads and honorifics, bold for first use of term, minimum leading between lines, and automatic hyphenation.
OLinks	Using an extension for finding outline information.
Object Rules	Specifications for placement and width of rules.
Paper/Page Characteristics	Specifications for paper type; page numbers; width of pages, margins, and columns; heading-levels; sides; and writing mode (such as left-to-right).
Quadding	Specifications for justifying paragraphs.
RefEntries and Functions	Options related to generation and display of reference entries and synopses for functions.
Running heads	Options for generating and displaying running heads of chapters.
Table of Contents (TOC)/List of Tables (LOT)	Options to produce or display TOC for sets, books, parts, references, articles. Options to display TOC on title page.
Tables	Specification of width in simple list.
Titlepages	Options to produce and display title pages for sets, books, parts, references, articles. Options for author's name and ordering elements.
VariableLists	Options and specifications for term length and formatting.
Verbatim Environment	Specifications for width, enumeration, size, indentation, line frequency, and callouts.
Vertical Spacing	Specifications for space between lines and paragraphs.

Components — Categorical List

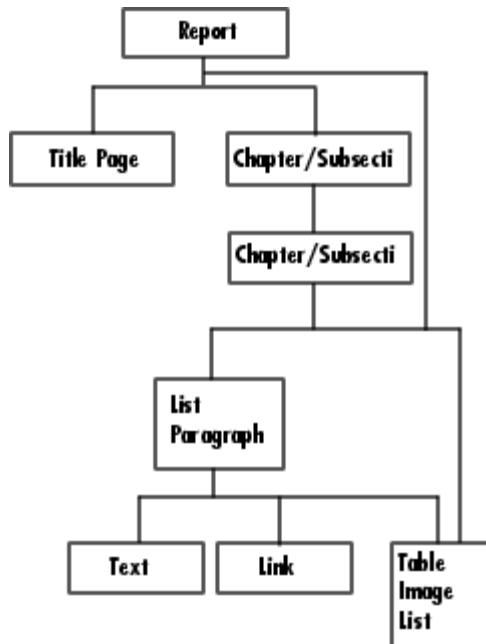
Report Generator offers a variety of components, including formatting, MATLAB, and logic components. Depending on the other MathWorks applications you have installed, you can also use Simulink, Stateflow, and Simulink Fixed Point Blockset components in your setup files.

For more information on Report Generator components, see the following sections:

- “Formatting Components” on page 6-2
- “Report Generator Components” on page 6-5
- “Logic and Flow Control Components” on page 6-7
- “Handle Graphics Components” on page 6-10
- “MATLAB Components” on page 6-13
- “Simulink Components” on page 6-15
- “Simulink Blocks Components” on page 6-19
- “Stateflow Components” on page 6-20
- “Simulink Fixed Point Blockset Components” on page 6-23

Formatting Components

You can use Formatting components to insert documentation elements in your report. Formatting components must have the following parent/child relationships.



The following table describes the Formatting components.

Component	Description
Chapter/Subsection	<p>Groups portions of the report into sections. The following rules apply to the Chapter/Subsection component:</p> <ul style="list-style-type: none"> • Children of the Chapter/Subsection component are placed inside the section created by this component. • The Chapter/Subsection component can nest inside another Chapter/Subsection component.
Image	<p>Inserts an image into the report. The Image component can have the Chapter/Subsection or Paragraph component as its parent.</p>
Link	<p>Inserts a link or anchor into the report. The Link component should have the Paragraph component as its parent. If you select Anchor in the Link Type list, then the Link component can also have the Chapter/Subsection component as its parent.</p>
List	<p>Inserts a bulleted or numbered list into the report. The List component must have the Chapter/Subsection or Paragraph component as its parent.</p>
Paragraph	<p>Inserts a paragraph into the report. The Paragraph component must have the Chapter/Subsection component as its parent. The Paragraph component can have child components, or it can have text. Text must be entered in the Paragraph Text parameter field.</p>

Component	Description
Table	Converts an array into a table in the report. The Table component can have either the Chapter/Subsection or Paragraph component as its parent and cannot have children.
Text	Inserts text into the report. In general, the Text component should have the Paragraph component as its parent.
Title Page	Inserts a title page at the beginning of the report. The Title Page component should have the Report component as its parent and should be the first component that inserts information into the report. This component cannot have any children. If your report contains a title page, it should also contain Chapter/Subsection components.

Report Generator Components

Report Generator components are general "utility" components. The following table describes the Report Generator components.

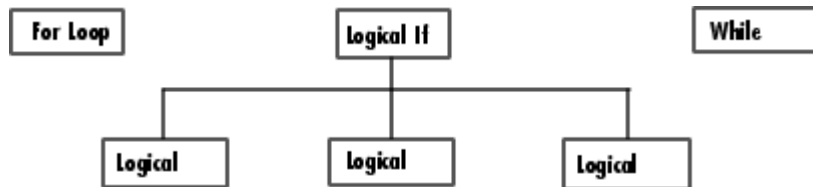
Component	Description
Comment	Inserts a comment into the DocBook source file created by the report generation process. The comment is not visible in the generated report, but you can edit the DocBook source file to make the component appear in the report.
Empty Component	Does not insert anything into the report and can have any component as a child. It can be used to group components so that the components can be moved or activated/deactivated together, or it can create a blank space in a list.
Import File	Imports plain text, DocBook XML, HTML, or RTF documents into the report.
Nest Setup File	<p>Inserts a setup file at the point where the Nest Setup File component is listed in the current setup file. The Nest Setup File component allows one setup file (.rpt) to run inside another.</p> <p>The components of the inserted setup file enter the current setup file at the level of the Nest Setup File component. Thus, the inserted components have the same parent component as the Nest Setup File component. You must make sure that the inserted components can have this parent component.</p>

Component	Description
Stop Report Generation	Halts report generation. The Stop Report Generation component acts like the Stop button during report generation, and can be used to halt report generation under specified conditions.
Time/Date Stamp	Inserts the time and date of report generation. The Time/Date Stamp component behaves like a Text component; it must be inside a paragraph or title.

Logic and Flow Control Components

Logical and Flow Control components execute conditionally, enabling you to decide when a child component executes or how many times a child component executes.

Logical and Flow Control components have the following parent/child relationships.



The following table describes the Logical and Flow Control components.

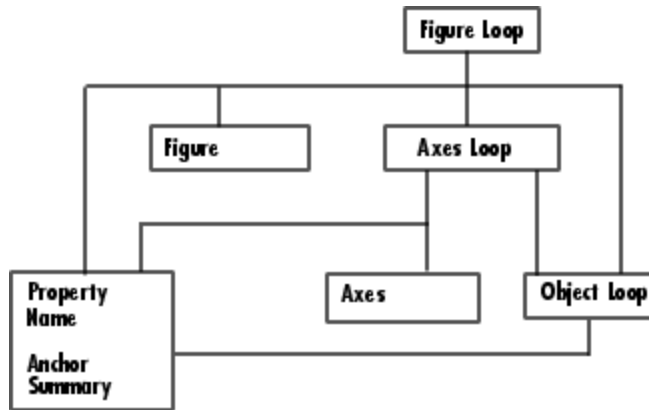
Component	Description
For Loop	This component runs its child components iteratively. The For Loop component must have at least one child. The purpose of this component is to run its children several times. If it does not have any children, then this component does not add anything to the report.
Logical Else	When the parent if condition is false, only the children of the else component run.
Logical Elseif	When the parent if condition is false, the process checks all the elseif statements in order, and the children of the first true elseif statement run.
Logical If	if statement for report generation. When the if statement results in true, the component runs its child components.
Logical Then	When the parent if condition is true, only the children of the then component run.
While Loop	This component loops while a workspace expression is true. This component runs its child components until its conditional string is true. The number of repetitions can be limited to prevent infinite loops. Like the For Loop component, the While Loop component must have at least one child. If it does not have any children, then this component does not add anything to the report.

You can use the Logical components, including Logical If, Logical Then, Logical Else, and Logical Elseif, in the following ways.

Component Used	Appearance in the Outline	How the Components Execute
Logical If	if	When the if condition is true, this component runs its children.
Logical If Logical Then Logical Else	if then else	<ul style="list-style-type: none"> • When the if condition is true, only the children of the then component run, and the process exits the if family. • When the if condition is false, only the children of the else component run.
Logical If Logical Then Logical Elseif Logical Else	if then elseif elseif . . . else	<ul style="list-style-type: none"> • When the if condition is true, only the children of the then component run, and the process exits the if family. • When the if condition is false, the process checks all the elseif statements in order, and the children of the first true elseif statement run. The process then exits the if family. • If none of the elseif statements is true, the process runs the children of the else statement. <p>Note that only one of the conditional statements (then, else, elseif) actually executes.</p>

Handle Graphics Components

Handle Graphics components report on Handle Graphics figures. The following figure shows the Handle Graphics component hierarchy.



The following table describes the Handle Graphics components.

Component	Description
Axes Loop	Runs its child components for all axes objects for the current figure.
Axes Snapshot	Inserts an image of the current axes into the generated report.
Figure Loop	Runs its children for each Handle Graphics figure that you select. If a Handle Graphics component does not have the Figure Loop component as its parent, then it operates on the current figure.
Figure Snapshot	Inserts an image of a figure window into your report. The Handle Graphics Figure Snapshot component behaves like the Image component and expects the Figure Loop component as its parent.
Handle Graphics Linking Anchor	Designates a location to which other links point. This component should have a looping component as its parent.
Handle Graphics Object Loop	Runs its child components for each Handle Graphics object in the current figure or axes.
Handle Graphics Name	Inserts the name of a Handle Graphics object into your report. The Handle Graphics Name component behaves like the Text component and expects the Figure Loop component as its parent.
Handle Graphics Property Table	Creates and inserts a property name/property value table for Handle Graphics figures, axes, or other objects. The Handle Graphics Property Table component behaves like the Table component and expects the Figure Loop component, Axes Loop component, or Object Loop component as its parent.

Component	Description
Handle Graphics Parameter	Inserts a single property name/property value pair from a Handle Graphics figure, axes, or any other Handle Graphics object into your report.
Handle Graphics Summary Table	Inserts a table that summarizes many Handle Graphics objects' properties. You can specify the object properties to be included in the report.

This is an example of how Handle Graphics components can be used in a setup file.

```

Report
  Figure Loop
    Chapter/Subsection
    Name
    Anchor
    Property Table
    Summary Table
    Axes Loop
      Chapter/Subsection
      Name
      Anchor
      Axes Snapshot
      Property Table
      Summary Table
    Object Loop
      Chapter/Subsection
      Name
      Anchor
      Property Table
      Summary Table
  
```

MATLAB Components

You can use MATLAB components to interact with the workspace. The following table describes the MATLAB components.

Component	Description
Evaluate MATLAB Expression	Evaluates a specified MATLAB expression. The result of the evaluation and/or MATLAB expression (M-code) can appear in the report.
Insert Variable	Inserts a specified variable into the report.
MATLAB/Toolbox Version Number	Creates a table that shows the version number, release number, and/or release date of any MathWorks software you are currently using.
MATLAB Property Table	Creates a table that includes variables from the MATLAB workspace. The MATLAB Property Table component behaves like the Table component.
Variable Table	Creates a table that includes all variables in the MATLAB workspace. The Variable Table component behaves like the Table component.

Requirements Management Interface Component

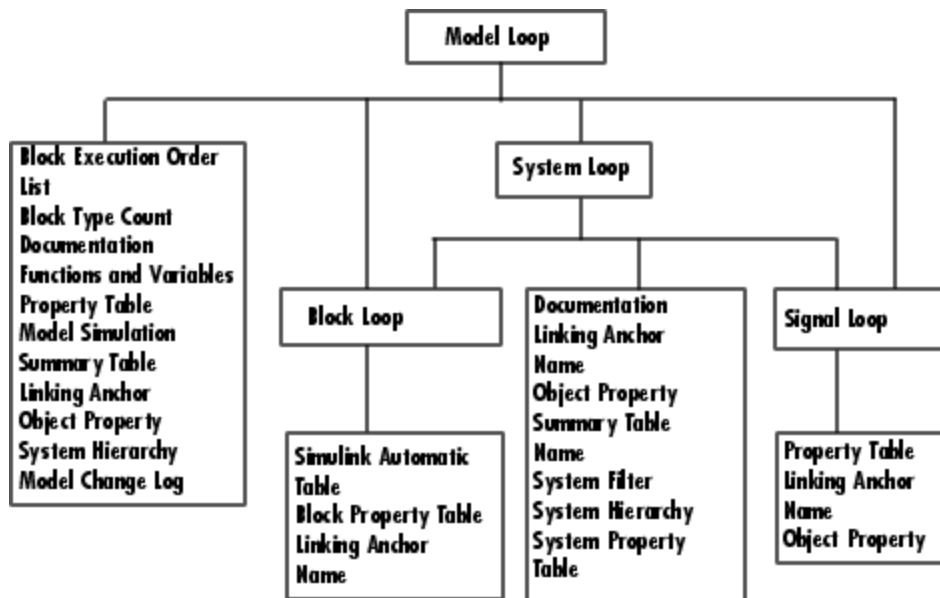
You can use the Requirements Management Interface component to include information about requirements in your report.

Component	Description
Requirements Table	Creates a table that contains information from Simulink Verification and Validation.

Simulink Components

You can use Simulink components to include information on Simulink models in your report. Simulink components can report on four levels of a Simulink model: model, system, block, and signal.

Simulink components have the following parent/child relationships.



The following table describes the Simulink components.

Component	Description
Block Execution Order List	Creates and inserts a list or table of all blocks in the model (displayed in order of their execution sequence) into the report. The Block Execution Order List component should have the Model Loop component as its parent. If you place this component inside the System Loop component, you will get the same list over and over again.
Block Loop	Specifies the blocks to be included in the report. The Block Loop component can have the Model Loop, System Loop, or Signal Loop component as its parent.
Block Type Count	Counts the number of each block type in a model or system. The Simulink Block Type Count component can have either the Model Loop or the System Loop as its parent.
Model Change Log	Constructs a model history table that displays information about each logged revision to a model. This component must be executed before the Model Simulation component.
Model Loop	Runs its child components for all selected Simulink models and systems. The Model Loop component can run its child components for a specific model, all models, or the current model.
Model Simulation	Simulates the current Simulink model. The Model Simulation component expects the Model Loop component as its parent.
Signal Loop	Runs its child components for each signal in its parent loop. The Signal Loop component can have the Model Loop, System Loop, or Block Loop component as its parent.
Simulink Automatic Table	Creates a two-column property name/property value table.

Component	Description
Simulink Dialog Snapshot	Takes snapshots of Simulink editor dialogs
Simulink Functions and Variables	Inserts a table listing all workspace variables and functions used by the blocks that are reported on in the current model. The Simulink Functions and Variables component expects the Model Loop component, System Loop component, or Block Loop component as its parent.
Simulink Library Information	Inserts a table listing all blocks, libraries, reference blocks, and link status for the current model.
Simulink Linking Anchor	Acts like a link in a paragraph or title. This component can have any Simulink looping component as its parent.
Simulink Name	Inserts the name of the current system, model, block, or signal, according to the option you specify. The Simulink Name component can have any Simulink looping component as its parent. This component behaves like the Text component.
Simulink Property	Inserts a single property name/property value pair for a Simulink object as text. The Simulink Property component can have any Simulink looping component as its parent.
Simulink Property Table	Inserts a property name/property value table for the model, system, block, or signal specified by the Model Loop component. The Simulink Property Table component has the Model Loop component as its parent.

Component	Description
Simulink Summary Table	Inserts a table that lists several Simulink objects and their properties. The Simulink Summary Table component can have the Model Loop as its parent if you are creating the table for systems, blocks, or signals. If you are creating the table for blocks and signals, then the System Loop component can be its parent.
System Filter	Runs its children only if certain conditions are met by the current system. The System Filter component expects the System Loop component as its parent.
System Hierarchy	Inserts a list of the names of parent and child systems in the current system; child systems are shown indented under the parent systems. The System Hierarchy component can have either the Model Loop or System Loop component as its parent.
System Loop	Runs its child components for each system defined in the Model Loop component. The System Loop component must have the Model Loop component as its parent.
System Snapshot	Inserts a picture of the current system into the report. The current system is defined by the System Loop component. The System Snapshot component should have the System Loop component as its parent.

Simulink Blocks Components

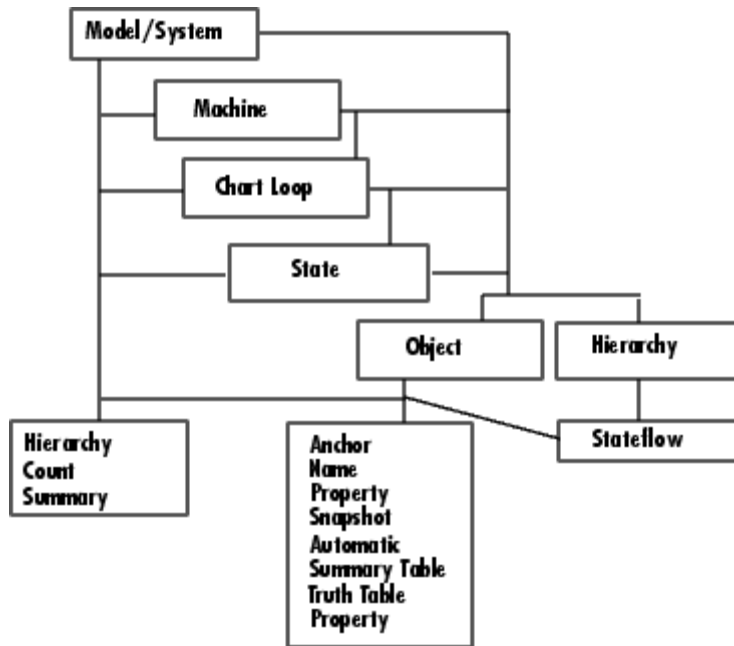
You can use the Simulink Blocks components to include information in the generated report about specific Simulink block types. Simulink Blocks components can be used in model, system, or block loops to report on block types in context.

The following table describes the Simulink Blocks components.

Component	Description
Bus	Creates a list of all signals exiting from a Bus Selector block. The list can contain only those signals leaving from the reported block or it can be hierarchical and display downstream buses and signals.
Documentation	Inserts text extracted from doc blocks in Simulink models. The Documentation component can have the Model Loop, the System Loop, or the Block Loop as its parent.
Look-Up Table	Reports on lookup table blocks; it inserts a figure and/or table into the report. The table contains input and output numeric values, and the figure is a plot of the values.
Scope Snapshot	Inserts a snapshot of all scope blocks and XY plots in your report. The Scope Snapshot component can have any Simulink looping component as its parent.
To Workspace Plot	Captures a plot created in the MATLAB workspace. This component inserts a figure and/or table into the report. The table contains input and output numeric values and the figure is a plot of the values.

Stateflow Components

You can use Stateflow components to include information on Stateflow models in your report. The following figure shows the parent/child relationships of Stateflow components.



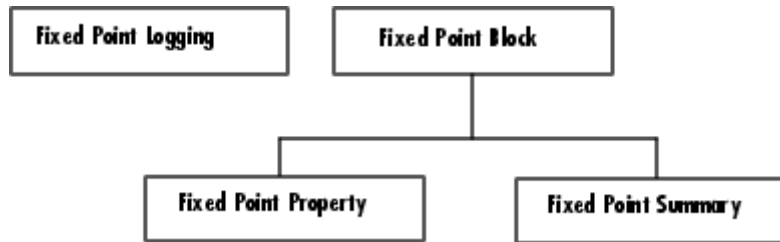
The following table describes the Stateflow components.

Component	Description
Chart Loop	Runs its children for each Stateflow chart that you choose. The Chart Loop component can have the Simulink Model Loop, System Loop, Signal Loop, or Block Loop component as its parent.
Machine Loop	Runs its child components for all selected Stateflow machines. The Machine Loop component can run its child components for a specific machine, all machines, or the current machine.
Stateflow Count	Counts the number of Stateflow objects in the current system. See the Stateflow documentation for a description of Stateflow objects.
Stateflow Dialog Snapshot	Takes snapshots of Stateflow editor dialogs.
Stateflow Filter	Runs its children only if the current object type (set by the parent State Loop) matches the component's object type. The Stateflow Filter component must have the Stateflow Loop component as its parent.
State Loop	Runs its children for each Stateflow object defined by its parent component. The State Loop component must have the Model Loop, System Loop, Signal Loop, Block Loop, Chart Loop, or Machine Loop component as its parent.
Stateflow Automatic Table	Inserts a table that contains the properties of a Stateflow object.
Stateflow Hierarchy Loop	Runs its child components on the entire Stateflow object hierarchy from the current point down.

Component	Description
Stateflow Linking Anchor	Acts like a link. This component must have the State Loop, Chart Loop, or Stateflow Filter component as its parent.
Stateflow Name	Inserts the name of the Stateflow object specified by its parent component into the report. This component must have the State Loop, Chart Loop, or Stateflow Filter component as its parent.
Stateflow Hierarchy	Inserts a tree representation into a generated report that describes the Stateflow object hierarchy.
Stateflow Object Loop	Runs its child components for each terminal Stateflow object. The component inserts a list of object types.
Stateflow Property	Inserts a table, text, or paragraph that contains details of the selected Stateflow object property.
Stateflow Property Table	Inserts a property name/property value table for a Stateflow object into the report. The Stateflow Property Table component must have the Stateflow Filter component as its parent.
Stateflow Snapshot	Inserts an image of a Stateflow object into the report. The Stateflow Snapshot component is only valid for certain object types.
Stateflow Summary Table	Shows properties or parameters of the selected Stateflow objects in a table. The Stateflow Summary Table component can have the Chart Loop or any Simulink looping component (Model Loop, System Loop, Block Loop, State Loop, or Signal Loop) as its parent.
Truth Table	Inserts a table. The component must have the State Loop component as its parent.

Simulink Fixed Point Blockset Components

You can use Simulink Fixed Point Blockset components to include information on Simulink Fixed Point blocks in your report. The following figure shows the parent/child relationships of the Simulink Fixed Point Blockset components.



The following table describes the Simulink Fixed Point Blockset components.

Component	Description
Fixed Point Block Loop	Runs its children for the Simulink model, system, or signal defined by its parent component. For example, if the Fixed Point Block Loop is parented by the Simulink Model Loop, it runs its children for all fixed-point blocks in the Simulink model. The Fixed Point Block Loop component can have either the Simulink Model Loop, System Loop, or Signal Loop component as its parent.
Fixed Point Logging Options	Sets fixed-point options similar to those set in the Fixed Point Settings interface. You can use this component before a Model Simulation component in order to control how the model behaves during simulation.
Fixed Point Property Table	Inserts a property name/property value table for a fixed-point block. The Fixed Point Property Table component must have the Fixed Point Block Loop component as its parent.
Fixed Point Summary Table	Shows properties or parameters of the selected fixed-point blocks in a table. The Fixed Point Summary Table component must have the Fixed Point Block Loop as its parent.

Components — Alphabetical List

Annotation Loop

Category Simulink

Description A Simulink annotation is a text area that you can edit directly in the block diagram. You typically use an annotation to display quick information about a subsystem.

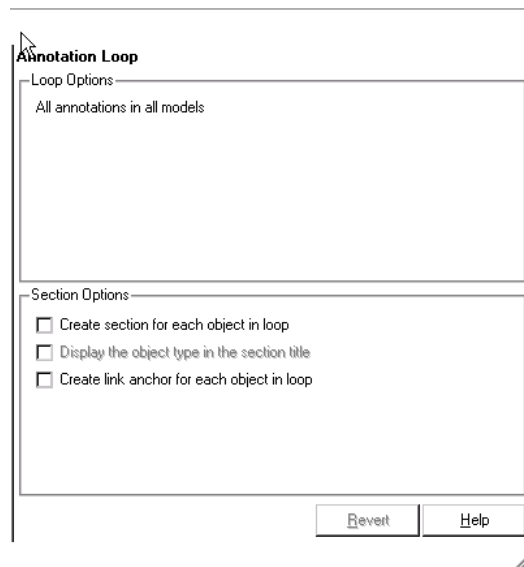
The Annotation Loop component runs its child components multiple times for each Simulink annotation in the current context.

If the Annotation Loop is nested inside a Model Loop, it reports on all annotations inside the reported portion of the reported model.

If the Annotation Loop is nested inside a System Loop, it reports on all annotations inside the current system.

Annotation Loop components nested inside a Block or Signal Loop component do nothing.

Attributes The following figure shows the **Annotations Loop Properties** panel:



Loop Options

The Loop Options pane displays information about the current context.

All child components of the Annotation Loop consider their context to be annotations when the report is running.

For example, the following components report on the looped annotation

- Simulink Automatic Table
- Simulink Linking Anchor
- Simulink Name
- Simulink Property
- Simulink Property Table

You can also show annotation objects in reports by using a summary table component. The summary table components create a single table with each reported annotation on a single row of the table.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

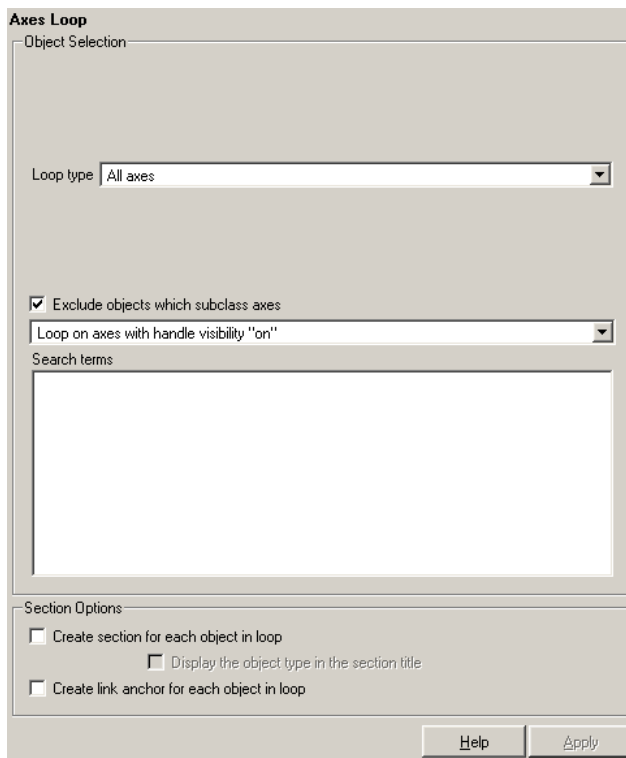
Select this option to create a hyperlink to the object in the generated report.

Axes Loop

Category Handle Graphics

Description The Axes Loop component runs its child components for all axes objects in the MATLAB workspace. For more information about working with looping components, see “Working with Looping Components” on page 3-2.

Attributes The following figure shows the **Axes Loop** Properties panel:



Object Selection

Loop type
To loop on all axes objects, select **All axes**. To loop on the selected axes object, select **Current axes**.

Exclude objects which subclass axes

Select this option to exclude objects such as legends and color bars.

Loop Menu

To loop only on visible axes objects, select Loop on axes with handle visibility "on". To loop on all axes objects, select Loop on all axes.

Search terms

Enter search terms for the loop. For example, to search for Tag and My Data, enter "Tag", "My Data".

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

Insert Anything into Report?

Yes, inserts a section if the **Create section for each object in loop** option is selected.

Filename

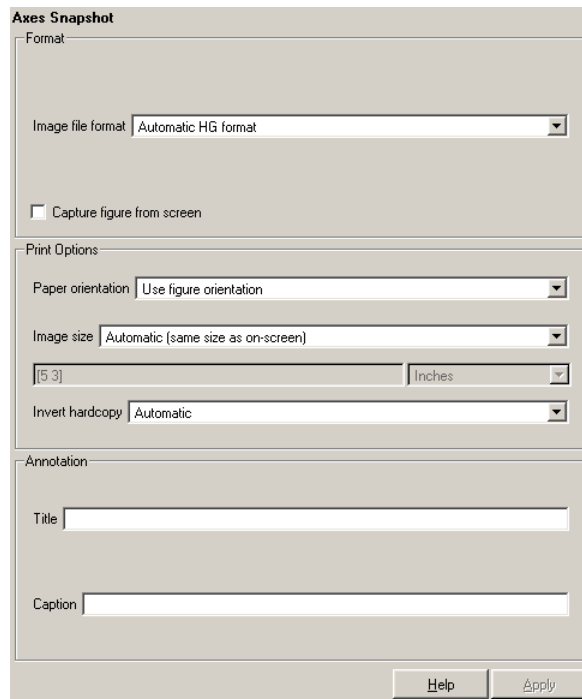
rptgen_hg.chg_ax_loop

Axes Snapshot

Category Handle Graphics

Description The Axes Snapshot component inserts an image of the selected axes objects in MATLAB into the generated report.

Attributes The following figure shows the **Axes Snapshot** Properties panel:



Format Image file format

Choose the image file format (e.g., JPEG, TIFF, etc.) from this list. Select Automatic HG Format to automatically choose the format best suited for the output format that you chose in the Report component. Otherwise, choose an image format that your output viewer can read. Automatic HG Format is the default option. The options include

- Automatic HG Format (uses the Handle Graphics file format selected in the **Preferences** dialog box)
- Adobe Illustrator
- Bitmap (16m-color)
- Bitmap (256-color)
- Black and white encapsulated PostScript
- Black and white encapsulated PostScript (TIFF)
- Black and white encapsulated PostScript2
- Black and white encapsulated PostScript2 (TIFF)
- Black and white PostScript
- Black and white PostScript2
- Color encapsulated PostScript
- Color encapsulated PostScript (TIFF)
- Color encapsulated PostScript2
- Color encapsulated PostScript2 (TIFF)
- Color PostScript
- Color PostScript2
- JPEG high quality image
- JPEG medium quality image
- JPEG low quality image
- PNG 24-bit image
- TIFF - compressed
- TIFF - uncompressed
- Windows metafile

Axes Snapshot

Print Options

Capture figure from screen

Select this option to capture the figure for the generated report directly from the screen. This option executes faster, but is not applicable for all formats. Also, the image to be captured might be obscured by other windows on the screen.

Paper orientation

You can choose Landscape, Portrait, or Rotated as your paper orientation, or you can choose the Use figure orientation option. For information about paper orientation, see the reference page for the orient command.

Image size

Select Use figure PaperPositionMode setting to use the PaperPositionMode property of the Handle Graphics figure to set the image size in the report. See the orient command for information about paper position mode.

Select the Automatic (same size as onscreen) option if you want the image in your report to be the same size as the image on the screen.

Select the Custom option to choose a custom image size. If you choose this option, specify the image size in the **Size** field and **Units** list.

- **Size:** Enter the size of the Handle Graphics figure snapshot in the form [w h] (width height). This field is active only if you choose Custom in the **Image size** list box.
- **Units:** Enter the units for the size of the Handle Graphics figure snapshot. This field is active only if you choose Set image size in the **Custom** list box.

Invert hardcopy

Handle Graphics figures have an InvertHardcopy property. This parameter inverts colors for printing; i.e., it changes dark colors to light colors and vice versa.

Select one of the following options:

- **Automatic** — Select this option to automatically change dark axes colors to a light axes color. If the axes color is a light color, then it is not inverted.
- **Invert** — Select this option to change dark axes colors to light axes colors and vice versa.
- **Don't invert** — Select this option if you do not want to change the colors in the image displayed on the screen for printing.
- **Use figure's InvertHardcopy setting** — Select this option to use the InvertHardcopy property set in the Handle Graphics image.
- **Make figure background transparent** — Select this option to make the image background transparent.

Annotation

Title

Enter a title for the snapshot figure.

Caption

Enter a short text description for the snapshot figure.

Insert Anything into Report?

Yes. Image.

Filename

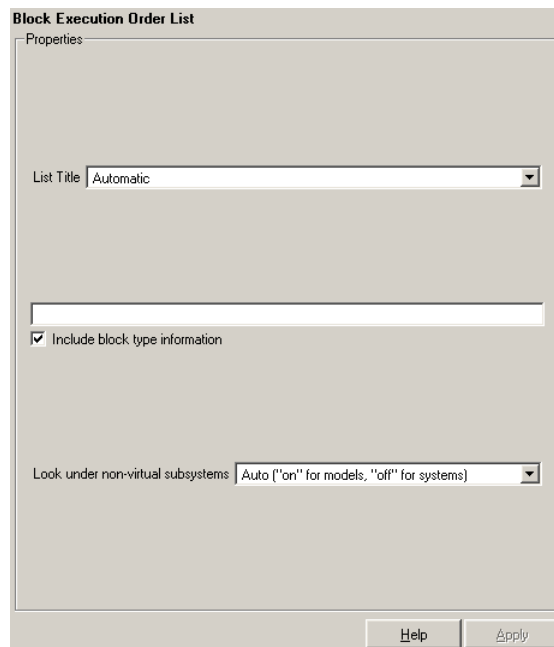
rptgen_hg.chg_ax_snap

Block Execution Order List

Category Simulink

Description The Block Execution Order List component creates a list or table of all nonvirtual blocks in the model, showing the order in which they are executed. See the Simulink documentation for a definition and a list of virtual and nonvirtual blocks.

Attributes The following figure shows the **Block Execution Order List** Properties panel:



List Title

To generate a title automatically, select **Automatic**. To enter a custom title, select **Custom**. Enter a title in this field if you want to have a title for the table or list. If you have a title for a table, it

is included in the List of Tables if the stylesheet you chose in the Report Options attribute page supports it.

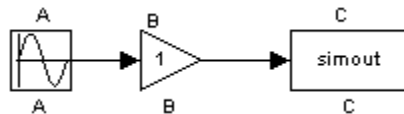
Include block type information

Select this option if you want to include each block's BlockType property in the list or table.

Look under nonvirtual subsystems

- On
- Off
- Automatic (On for models, Off for systems)

For example, the Simulink model Demo_System appears similar to the following figure:



Insert Anything into Report?

Yes. List.

Filename

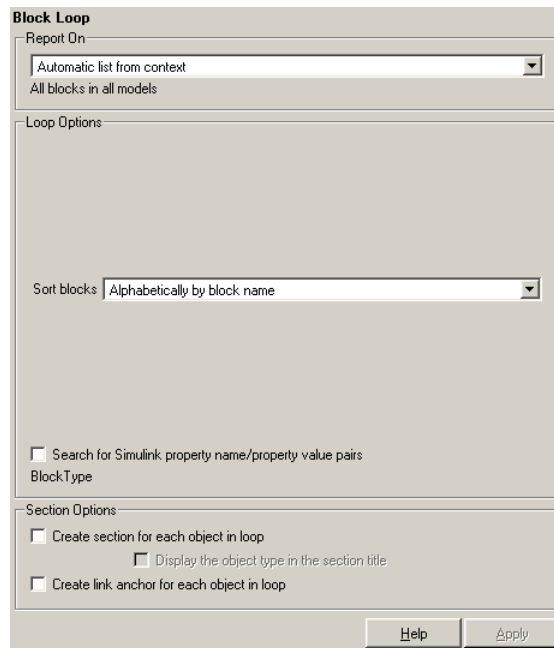
rptgen_sl.cs1_blk_sort_list

Block Loop

Category Simulink

Description The Block Loop component runs its child components for each block contained in the current system, model, or signal. For more information about working with looping components, see “Working with Looping Components” on page 3-2.

Attributes The following figure shows the **Block Loop** Properties panel:



Report On This pane describes what the Block Loop component is operating on.

Automatic list from context

Select this option to report on all blocks in the current context. The context is set by the Block Loop component’s parent component:

- If the parent component is the Model Loop, then selecting this option causes the Block Loop component to report on all blocks in the current model.
- If the parent component is a System Loop, then selecting this option causes the Block Loop component to report on all blocks in the current system.
- If the parent component is the Signal Loop, then selecting this option causes the Block Loop component to report on all blocks connected to the current signal.
- If the Block Loop does not have the Model Loop, System Loop, Signal Loop, or Block Loop component as its parent, then selecting this option causes the Block Loop component to report on all blocks in all models.

Custom - use block list

Select this option to report on a list of blocks that you specify and enter the block names in the corresponding field. You must use the full pathname when specifying blocks. If you want to sort the blocks in this list, select the `Sort blocks in list` option and then select a sorting option from the `Sort blocks` option (in the **Loop Options** section). Blocks are reported on in the order that they are sorted. If you do not select this option, blocks are reported on in the order that they are listed in the block list.

You can enter `%<VariableName>` if you want to insert the value of a variable from the MATLAB workspace. The `%<>` notation can be a string or cell array. See “`%<VariableName>` Notation” on page 7-246 in the Text component reference page for more details.

For example, if you want to report on the `theta dot` integrator block and the `theta` integrator block in the demo model `simppend`, you could enter the following in the block list.

```
simppend/theta dot
```

```
%<Z>
```

Block Loop

If you define Z in the workspace as the following,

```
Z={'simppend/theta'}
```

then the Report Generator reports on the following blocks.

```
simppend/theta dot
```

```
simppend/theta
```

Loop Options

You can choose block sorting options and reporting options in this pane.

Sort blocks

Use this option to select how the blocks are sorted:

- Select **Alphabetically by block name** to sort blocks alphabetically by their names.
- Select **Alphabetically by system name** to sort systems alphabetically.

In this option, the systems are sorted alphabetically, and blocks in each system are listed, but in no particular order.

- Select **Alphabetically by full Simulink path** to sort blocks alphabetically by Simulink path.
- Select **By block type** to sort blocks alphabetically by block type.
- Select **By block depth** to sort blocks by their depth in the model.
- Select **By traversal order** to sort blocks by traversal order.
- Select **By simulation order** to sort blocks by execution order.

Search for property name/property value pairs

Select this option to report only on Simulink blocks with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each block found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the block in the generated report.

Insert Anything into Report?

Yes, inserts section if the **Create section for each object in loop** option is selected.

Filename

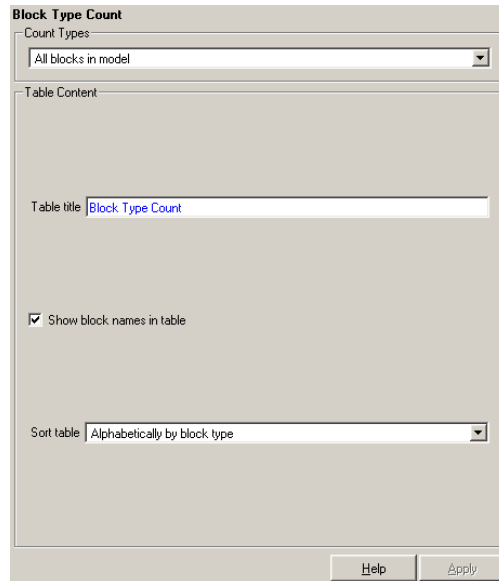
rptgen_sl.csl_blk_loop

Block Type Count

Category Simulink

Description The Block Type Count component counts the number of each block type in the current model or system. See the Simulink documentation for a description of block type.

Attributes The following figure shows the **Block Type Count** Properties panel:



Count Types

This pane describes where block types are being counted.

- If the Block Type Count component has the Model Loop as its parent, it reports all block types in the current model.
 - Use the All blocks in model option to count block types in the entire model.
 - Use the All blocks in reported systems option to count block types only in systems that are included in the report.

- If the Block Type Count component has the System Loop as its parent, it reports all block types in the current system.
- The Block Loop and the Signal Loop components are not valid parents for the Block Type Count component.

Table Content

Table title

Enter the title of the table in this field.

Show block names in table

Select this option to include a column that displays all block names in the table.

Sort table

To sort blocks alphabetically by block type, select **Alphabetically by block type**.

To sort by decreasing number of occurrences, select **By number of blocks**.

Insert Anything into Report?

Yes. Table.

Filename

rptgen_sl.csl_blk_count

Bus

Category

Simulink Blocks

Description

The Bus component creates a list of all signals exiting from a Bus Selector block. The list can contain only those signals leaving from the reported block or it can be hierarchical and display downstream buses and signals.

When working with the Bus component, keep the following points in mind:

- If the Bus component has the Model Loop as its parent, it includes all buses in the current model.
- If the Bus component has the System Loop as its parent, it includes all buses in the current system.
- If the Bus component has the Block Loop as its parent, it includes the current block if it is a bus.
- If the Bus component has the Signal Loop as its parent, it includes all buses connected to the current signal.
- If the Bus component does not have any of the Simulink looping components as its parent, it includes all buses in all open models.

Attributes

The following figure shows the **Bus** Properties panel:



Show Bus Hierarchy

Use this option to specify whether or not the list should display downstream buses in a hierarchical form.

Hierarchical list:

```
List Title
Bus Selector
signal3
signal2
signal4
Bus Selector1
signal3
Bus Selector2
signal2
signal1
```

```
Bus Selector3
signal2
signal1
```

Nonhierarchical list:

```
List Title
Bus Selector
signal3
signal2
signal4
List Title
Bus Selector1
signal3
List Title
Bus Selector2
signal2
signal1
List Title
Bus Selector3
signal2
signal1
```

Insert linking anchor for bus blocks

When this option is selected, the Report Generator inserts a linking anchor for each bus block. This designates the list item as the location to which other links for that block will point. (See the *Simulink Linking Anchor* or *Link* components for more help.) You should not use this option if you have already specified an anchor location for the bus block with an *Object Linking Anchor* component.

Insert linking anchor for signals

When this option is selected, the Report Generator inserts a linking anchor for each signal. This designates the list item as the location to which other links for that signal will point. (See the *Simulink Linking Anchor* or *Link* components for more help.) You should not use this option if you have already specified an

anchor location for the signal with an Object Linking Anchor component.

Title

Use this option to insert a title before each list. Note that this attribute supports the %<varname> notation.

**Insert
Anything
into
Report?**

Yes. List.

Filename

rptgen_sl.cs1_blk_bus

Chapter/Subsection

Category

Formatting

Description

The Chapter/Subsection component groups portions of the report into sections. Each section has a title and some content. The following rules apply to the Chapter/Subsection component:

- Children of the Chapter/Subsection component are placed inside the section created by this component.
- The Chapter/Subsection component takes paragraph-level children unless you select the **Get title from first child component** check box. In this case, a Chapter/Subsection component's first child must be a Text component.
- The Chapter/Subsection component can be the child of another Chapter/Subsection component.

Sections can be nested, and titles automatically become smaller inside subsections. There are seven levels of nesting possible.

```
Chapter
  Section 1
    Section 2
      Section 3
        Section 4
          Section 5
            Section 6
              No Section
```

Any Chapter/Subsection components beyond the sixth section do not create a titled section, although the child components of these sections do insert information into the report.

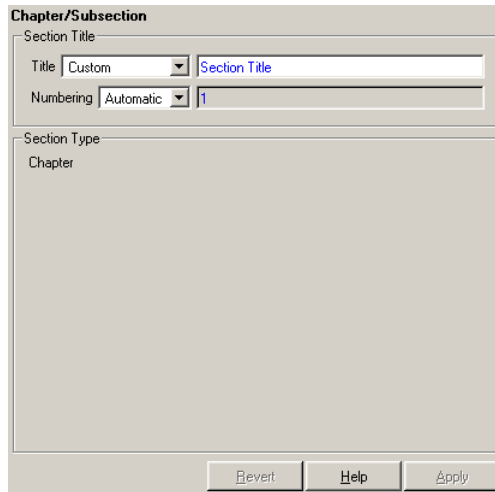
Chapter Numbering

By default, chapters are numbered and sections are not numbered. Chapter and section numbering are specified by the stylesheet you choose in the Report Options attribute page. See “Setting the Report

Format” on page 2-3 for chapter and section numbering options in Web and print stylesheets.

Attributes

The following figure shows the **Chapter/Subsection** Properties panel:



Section Title

Title

Choose a title for the display in the generated report. To generate a title automatically, select Automatic. To enter a title, select Custom.

Numbering

Choose a numbering style for the report. To number by context, select Automatic. To create your own numbering style, select Custom.

Section Type

The item in the **Section Type** pane shows you what level the selected section is residing in.

Chapter/Subsection

**Insert
Anything
into
Report?**

Yes. Chapter or section.

Filename

rptgen.cfr_section

Category Stateflow

Description The Chart Loop component runs its children for each Stateflow chart that you choose. The Chart Loop component can have the Model Loop, System Loop, Signal Loop, or Block Loop component as its parent.

Attributes The following figure shows the **Chart Loop** properties page.

The screenshot shows the 'Chart Loop' properties dialog box. It is divided into three main sections: 'Report On', 'Loop Options', and 'Section Options'.
- The 'Report On' section has a dropdown menu currently set to 'Automatic list from context', with 'All chart blocks in all models' as an alternative option.
- The 'Loop Options' section includes a 'Sort blocks' dropdown menu set to 'Alphabetically by block name'. Below this are three unchecked checkboxes: 'Search for Simulink property name/property value pairs' (with 'BlockType' listed below it), 'Search Stateflow:', and 'Tag MyTag'.
- The 'Section Options' section contains three unchecked checkboxes: 'Create section for each object in loop' (with a sub-option 'Display the object type in the section title' also unchecked), and 'Create link anchor for each object in loop'.
At the bottom of the dialog are three buttons: 'Revert', 'Help', and 'Apply'.

Report On Automatic list from context
Select this option to report on all charts in the current context. The context is set by the Chart Loop component's parent component:

- If the parent component is the Model Loop, then selecting this option causes the Chart Loop component to report on all reported Stateflow charts in the current model.

Chart Loop

- If the parent component is the System Loop, then selecting this option causes the Chart Loop component to report on all Stateflow charts in the current system.
- If the parent component is the Signal Loop, then selecting this option causes the Chart Loop component to report on all Stateflow charts connected to the current signal.
- If the parent component is the Machine Loop, then selecting this option causes the Chart Loop component to report on the current Simulink block if it is a Stateflow chart.
- If the Chart Loop does not have the Model Loop, System Loop, Signal Loop, or Block Loop component as its parent, then selecting this option causes the Chart Loop component to report on all Stateflow charts.

Custom - use chart list

Select this option to report on a list of Stateflow charts that you specify, and enter the chart names in the corresponding field. If you want to sort the charts in this list, select the **Sort charts in list** option and then select a sorting option from the **Sort charts** option (in the **Loop Options** section). Charts are reported on in the order that they are sorted. If you do not select this option, charts are reported on in the order that they are listed in the chart list.

You can enter %<VariableName> if you want to insert the value of a variable from the MATLAB workspace. The %<> notation can be a string or cell array. See “%<VariableName> Notation” on page 7-246 in the Text component reference page for more details and the Custom - use block list section in the Simulink Block Loop reference page for an example.

Loop Options

You can choose chart sorting options and reporting options in this pane.

Sort charts

Use this option to select how the blocks are sorted (this option is available if you select the Automatic list from context option in the **Report On** section or if you select Custom - use chart list and the Sort charts option):

- Select Alphabetically by block name to sort blocks alphabetically by name.
- Select Alphabetically by system name to sort systems alphabetically by name.
- In this option, the systems are sorted alphabetically, and blocks in each system are listed, but in no particular order.
- Select Alphabetically by full Simulink path to sort models alphabetically by their full path name.
- Select By block type to sort blocks alphabetically by block type.
- Select By depth to sort blocks by their depth in the model.
- Select By simulation order to sort blocks by execution order.

Search Stateflow

Select this option to report only on Stateflow charts with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Search for Simulink property name/property value pairs

Select this option to report only on Simulink blocks with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Section Options

Create section for each object in loop

Select this option to insert a section for each object found in the loop in the generated report.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Chart Loop

Create link anchor for each object in loop
Select this option to create a hyperlink to the object in the generated report.

**Insert
Anything
into
Report?**

Yes, inserts section if the **Create section for each object in loop** option is selected.

Filename

rptgen_sf.csf_chart_loop

Category Report Generator

Description The Comment component inserts a comment into the XML source file created by the report generation process. The comment is not visible in the generated report.

This component can have children. Child components insert their output into the XML source file, but this output appears inside comment tags and does not appear in the final report.

If you want the comment text to appear in the report, follow these steps:

- 1** Edit the XML source file (the XML source file has the same name as your report file, but has a .xml extension). Note that you must generate a report to create the XML source file.
- 2** Find the comment area in the XML source file by locating the comment tags `<- -` and `- ->`. Remove both of these tags.
- 3** Convert the XML source file using the `rptconvert` command (For more details on the `rptconvert` command, see “Converting XML Documents” on page 2-8).

Attributes The following figure shows the **Comment** Properties panel:

Comment

Comment

Properties

Comment text

Show comment in Generation Status window

Status message priority level 4) Standard messages

Help Apply

Comment text

Enter the comments that you want to include in the report.

Show comment in Generation Status window

Select this option if you want to display the comment in the **Generation Status** tab when the report is generating.

Status message priority level

This option is only available if you select the **Show comment in Generation Status window** option. Select the status message priority level that is displayed during report generation.

**Insert
Anything
into
Report?**

No, but this component inserts a comment into the XML source file, which can appear in the report.

Filename

rptgen.crg_comment

Documentation

Category Simulink Blocks

Description The Documentation component inserts text extracted from doc blocks in Simulink models. The Documentation component can have either the Model Loop, the System Loop, or the Block Loop component as its parent. If the report format is set to HTML, you can import HTML documentation. If the report format is set to RTF, you can import RTF documentation.

Attributes The following figure shows the **Documentation** Properties panel:



Import file as

Indicate what kind of format to use for imported file

- **Plain text (ignore line breaks):** Select this option to import plain text without any line breaks (no paragraphs).

In this example and subsequent examples, the following text is used as the input text.

```
This is the first row of imported text from the doc block.  
The second row follows a line break in the first row.
```

```
There is a blank line above the third row.
```

With the Plain text (ignore line breaks) option, the following is produced.

```
This is the first row of imported text from the doc block. The second row
```

- **Paragraphs defined by line breaks:** Select this option to import the text contained in paragraphs defined by line breaks (hard returns or carriage returns).

With the Paragraphs defined by line breaks option, the following is produced.

```
This is the first row of imported text from the doc block.  
The second row follows a line break in the first row.  
There is a blank line above the third row.
```

- **Paragraphs defined by empty rows:** Select this option to import text contained in paragraphs defined by empty rows (rows that do not contain text).

With the Paragraphs defined by empty rows option, the following is produced.

```
This is the first row of imported text from the doc block. The second row  
follows a line break in the first row.  
There is a blank line above the third row.
```

- **Text (retain line breaks):** Select this option to import plain text, including line breaks.

Documentation

With the Text (retain line breaks) option, the following is produced.

```
This is the first row of imported text from the doc block.  
    The second row follows a line break in the first row.  
There is a blank line above the third row.
```

- Fixed-width text (retain line breaks): Select this option to import fixed-width text (all letters have the same width or size) including line breaks. This option is best suited for importing M-files.

With the Fixed-width text (retain line breaks) option, the following is produced.

```
This is the first row of imported text from the doc block.  
    The second row follows a line break in the first row.
```

```
There is a blank line above the third row.
```

Insert linking anchor for blocks

Select this option to insert a linking anchor for each doc block. This designates the location to which other links for that block will point. (See the Simulink Linking Anchor or Link components for more help.) You should not use this option if you have already specified an anchor location for the doc block with an Object Linking Anchor component.

Insert Anything into Report?

Yes. Text, paragraph, or external RTF/HTML.

Filename

rptgen_sl.csl_blk_doc

Category Report Generator

Description The Empty Component does not insert anything into the report and can have any component as a child. You can use it to group components together so that the components can be moved or activated/deactivated easily, or to create a blank space in a list.

If the Report Generator does not recognize a component when loading a setup file, it replaces the unrecognized component with the Empty Component.

Attributes The following figure shows the **Empty Component** Properties panel:



**Insert
Anything
into
Report?**

No.

Empty Component

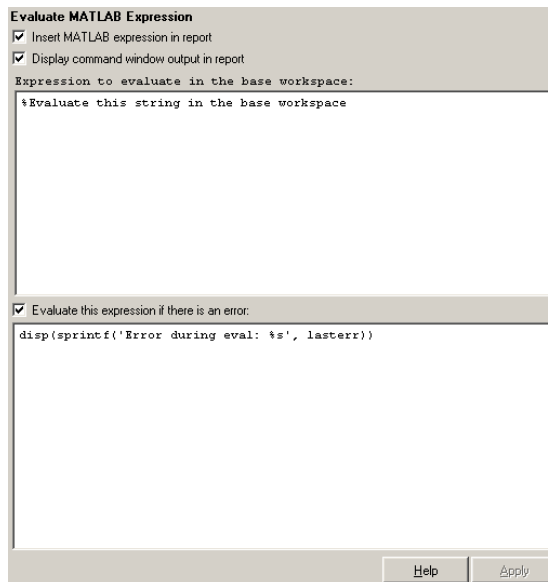
Filename rptgen.crg_empty

Evaluate MATLAB Expression

Category MATLAB

Description The Evaluate MATLAB Expression component evaluates a specified MATLAB expression in the workspace. The code and/or command line output can be inserted into the report.

Attributes The following figure shows the **Evaluate MATLAB Expression** Properties panel:



Insert MATLAB expression in report

Select this option if you want the MATLAB expression that is evaluated by this component to appear in the report.

Display command window output in report

Select this option if you want to include the command window output that results when the MATLAB expression is evaluated.

Evaluate MATLAB Expression

Expression to evaluate in the base workspace

Enter the expression that you want to evaluate in the MATLAB workspace.

Evaluate this expression if there is an error

Select this option if you want to evaluate another MATLAB expression if the evaluated expression produces an error. Enter the expression that should be evaluated in case of an error in this field.

Insert Anything into Report?

Inserts text if you select one of the following options:

- Insert MATLAB expression string in report
- Display command window output in report

Otherwise, this component does not insert anything into the report.

Filename

rptgen.cml_eval

Category Handle Graphics

Description The Figure Loop component applies each child component to graphics figures specified in the attribute page.

See “Working with Looping Components” on page 3-2 for a discussion of this component.

Attributes The following figure shows the **Figure Loop** Properties panel:

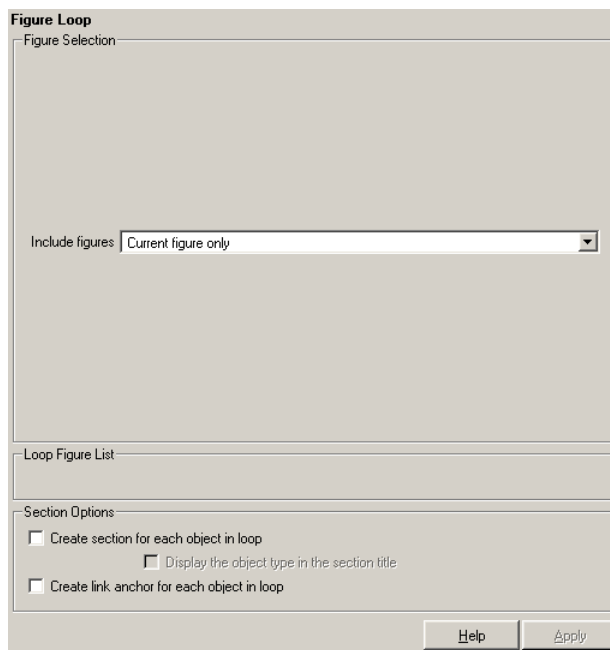


Figure Selection

You can choose to loop on

- The current figure
- All visible figures
- Figures with certain tags

Figure Loop

Include figures

To include only the current figure in the report, select the `Current figure only` option.

To loop on all visible figures, select the `Visible figures` option. This option executes child components for all figures that are currently open and visible. The `Data figures only` option is checked by default and excludes figures with `HandleVisibility = 'off'` from the loop.

To loop on figures with certain tags, select the `All figures with tags` option. When you are selecting a tag, all figures with that tag are included, regardless of whether the figure is visible or whether `HandleVisibility` is 'on' or 'off'. The tag list box (located under the `All figures with tags` option) shows the selected tags. To add a tag to the tag list box, select the tag from the list on the right and click **Add**. The tag list shows a list of tags for figures that are open. If you want to add a tag that does not appear in the tag list, you can type in the tag.

Loop Figure List

The **Loop Figure List** shows you the figures that would be looped on given the current set of figures.

Note If your setup file generates new figures or changes existing figures, then the figures in the **Loop Figure List** will not be the figures that are actually reported on.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

**Insert
Anything
into
Report?**

Yes, section, if the **Create section for each object in loop** option is selected.

Filename

rptgen_hg.chg_fig_loop

Figure Snapshot

Category Handle Graphics

Description The Figure Snapshot component inserts a snapshot of a Handle Graphics figure.

Attributes The following figure shows the **Figure Snapshot** Properties panel:

Figure Snapshot

Format

Image file format Automatic HG format

Capture figure from screen

Print Options

Paper orientation Use figure orientation

Image size Automatic (same size as on-screen)

[5 3] Inches

Invert hardcopy Automatic

Annotation

Title

Caption

Help Apply

Format Image file format

Choose the image file format (e.g., JPEG, TIFF, etc.) from this list. Select Automatic HG Format to automatically choose the format best suited for the output format that you chose in the Report component. Otherwise, choose an image format that your

output viewer can read. Automatic HG Format is the default option. The options include

- Automatic HG Format (uses the Handle Graphics file format selected in the **Preferences** dialog box)
- Adobe Illustrator
- Bitmap (16m-color)
- Bitmap (256-color)
- Black and white encapsulated PostScript
- Black and white encapsulated PostScript (TIFF)
- Black and white encapsulated PostScript2
- Black and white encapsulated PostScript2 (TIFF)
- Black and white PostScript
- Black and white PostScript2
- Color encapsulated PostScript
- Color encapsulated PostScript (TIFF)
- Color encapsulated PostScript2
- Color encapsulated PostScript2 (TIFF)
- Color PostScript
- Color PostScript2
- JPEG high quality image
- JPEG medium quality image
- JPEG low quality image
- PNG 24-bit image
- TIFF - compressed
- TIFF - uncompressed

Figure Snapshot

- Windows metafile

Capture picture from screen

Use the option to capture a figure from the screen.

Print Options

Use the attributes in this section to set printing parameters.

Paper orientation

You can choose Landscape, Portrait, or Rotated as your paper orientation, or you can choose the Use figure orientation option. See the orient command for information about paper orientation.

Image size

Select Use figure PaperPositionMode setting to use the PaperPositionMode property of the Handle Graphics figure to set the image size in the report. See the orient command for information about paper position mode.

Select the Automatic (same size as on screen) option if you want the image in your report to be the same size as the image on the screen.

Select the Custom option to choose a custom image size. If you choose this option, specify the image size in the **Size** field and **Units** list.

- **Size:** Enter the size of the Handle Graphics figure snapshot in the form wxh (width times height). This field is active only if you choose Custom in the **Image size** list box.
- **Units:** Enter the units for the size of the Handle Graphics figure snapshot. This field is active only if you choose Custom in the **Image size** list box.

Invert hardcopy

Handle Graphics figures have an InvertHardcopy property. This parameter inverts colors for printing; i.e., it changes dark colors to light colors and vice versa.

Select one of the following options:

- **Automatic** — Select this option to automatically change dark axes colors to a light axes color. If the axes color is a light color, then it will not be inverted.
- **Invert** — Select this option to change dark axes colors to light axes colors and vice versa.
- **Don't invert** — Select this option if you do not want to change the colors in the image displayed on the screen for printing.
- **Use figure's InvertHardcopy setting** — Select this option to use the InvertHardcopy property set in the Handle Graphics image.
- **Make figure background transparent** — Select this option to make the image background transparent.

Annotation

Title

Enter a title for the snapshot figure.

Caption

Enter a short text description for the snapshot figure.

Insert Anything into Report?

Yes. Image.

Filename

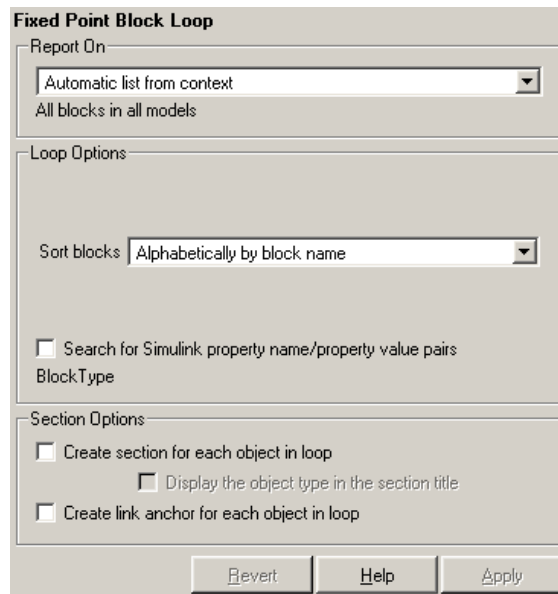
rptgen_hg.chg_fig_snap

Fixed Point Block Loop

Category Simulink Fixed Point Blockset

Description The Fixed Point Block Loop component runs its children for the Simulink model, system, or signal defined by its parent component. For example, if the Fixed Point Block Loop is parented by the Simulink Model Loop, it runs its children for all fixed-point blocks in the Simulink model. The Fixed Point Block Loop component can have the Simulink Model Loop, System Loop, or Signal Loop component as its parent.

Attributes The following figure shows the **Fixed Point Block Loop** Properties panel:



Report On Automatic list from context
Select this option to report on all fixed-point blocks in the current context. The context is set by the Fixed Point Block Loop component's parent component. For example, if the parent

component is the Simulink System Loop, then this component reports on all fixed-point blocks in the current system.

If the Fixed Point Block Loop component does not have a Simulink Model Loop, System Loop, Block Loop, or Signal Loop component as its parent, then selecting this option causes the component to report on all fixed-point blocks in all models.

Custom - use block list

Select this option to report on a list of blocks that you specify, and enter the block names in the corresponding field. If you want to sort the blocks in this list, select the `Sort blocks in list` option and then select a sorting option from the **Sort blocks** list (in the **Loop Options** section). Blocks are reported on in the order that they are sorted. If you do not select this option, blocks are reported on in the order that they are listed in the block list.

You can enter `%<VariableName>` if you want to insert the value of a variable from the MATLAB workspace. The `%<>` notation can be a string or cell array. See “`%<VariableName>` Notation” on page 7-246 in the Text component reference page for more details.

For example, if you want to report on the A2D block and the D2A block in the demo model `fxpdemo_feedback`, you could enter the following in the block list:

```
A2D
```

```
Z
```

If you define Z in the workspace as the following,

```
Z={ 'fxpdemo_feedback/D2A' }
```

then the Report Generator will report on the following blocks,

```
A2D
```

Fixed Point Block Loop

D2A

Loop Options

You can choose block sorting options and reporting options in this pane.

Sort blocks

Use this option to select how the blocks are sorted (this option is available if you select the `Automatic list` from context option in the `Report On` section or if you select `Custom - use block list` and the `Sort blocks` option):

- Select `Alphabetically by fixed point block name` to sort blocks alphabetically by their names.
- Select `Alphabetically by system name` to sort systems alphabetically.

In this option, the systems are sorted alphabetically, and blocks in each system are listed, but in no particular order.

- Select `By fixed point block type` to sort blocks alphabetically by block type.
- Select `By fixed point block depth` to sort blocks by their depth in the model.
- Select `By simulation order` to sort blocks by execution order.

Search for property name/property value pairs

Select this option to report only on fixed-point blocks with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

**Insert
Anything
into
Report?**

Yes, inserts section if the **Create section for each object in loop** option is selected.

Filename

rptgen_fp.cfp_blk_loop

Fixed Point Logging Options

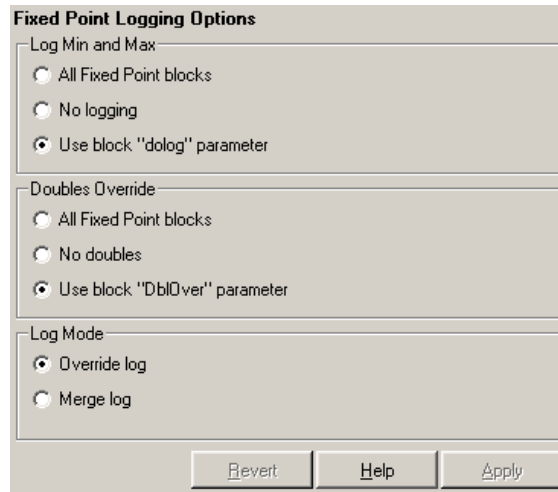
Category Simulink Fixed Point Blockset

Description The Fixed Point Logging Options component sets fixed-point options similar to those set in the Fixed Point Settings interface. You can set the following options with this component:

- Logging options
- Doubles override
- Log mode

You can use this component before a Model Simulation component in order to control how the model behaves during simulation.

Attributes The following figure shows the **Fixed Point Logging Options** Properties panel:



Log Min and Max

You can select logging minimum and maximum options in this section. If a fixed-point block is logged, minimum and maximum simulation

values are logged to the workspace. See the Simulink Fixed Point documentation for more information about logging simulation results.

All fixed point blocks

Select this option to log all fixed-point blocks.

No logging

Select this option if you do not want to any fixed-point block to be logged.

Use block "dolog" parameter

Select this option to use the fixed-point blocks' dolog parameters.

Doubles Override

You can select whether you want to override the fixed-point blocks' parameters and output data types with doubles, i.e, represent the parameters and outputs using double-precision floating-point numbers and perform all calculations with floating-point arithmetic. See the Simulink Fixed Point documentation for more information about overriding with doubles.

All fixed point blocks

Select this option to override the output data type with doubles.

No doubles

Select this option to have no output data types that are doubles.

Use block Db1Over parameter

Select this option to use the fixed-point blocks' Db1Over parameters.

Log Mode

Select how you want logs to be recorded in this section.

Override log

Select this option if you want all simulation logs to overwrite the previous simulation logs.

Merge log

Select this option if you want to append all simulation logs to the previous simulation logs.

Fixed Point Logging Options

**Insert
Anything
into
Report?**

No.

Filename

rptgen_fp.cfp_options

Category Simulink Fixed Point Blockset

Description The Fixed Point Property Table inserts a table that reports on fixed-point block property name/property value pairs.

Attributes The following figure shows the **Fixed Point Property Table Properties** panel:

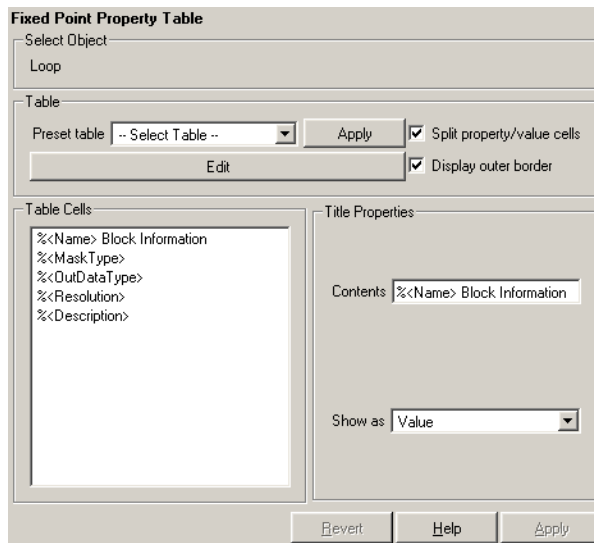


Table A preset table is a table that is already formatted and set up. You can select a preset table in the preset table list in the upper left corner of the attributes page. To apply a preset table, select the table and click **Apply**.

Preset table

Choose a type of table to display the object property table:

- Defaults
- Callbacks

Fixed Point Property Table

- Graphics
- Printing
- Blank 4x4

Split property/value cells

Select this option to split property name/property value pairs into separate cells. To have the property name and property value appear in adjacent horizontal cells in the table, select the **Split property/value cells** check box. In this case, the table is in split mode and there can be only one property name/property value pair in a cell. If you have more than one name/property pair in a cell, then only the first pair is displayed in the report. All subsequent pairs are ignored.

To have the property name and property value appear together in one cell, deselect the **Split property/value cells**. This is nonsplit mode. In nonsplit mode, you can have more than one property name/property value pair and you can also have text.

If you want to switch from nonsplit mode to split mode, make sure that you have only one property name/property value pair per table cell before you switch modes. If you have more than one property name/property value pair or any text, then only the first property name/property value pair appears in the report; subsequent pairs and text are omitted.

Display outer border

Select this option to display the outer border of the table in the generated report.

Table Cells

Use this field to select table properties to modify. The selection in this pane affects the available fields in the **Cell Properties** pane.

Title Properties

Contents

Use this field to modify the contents of the table cell selected in the **Table Cells** pane.

Show as

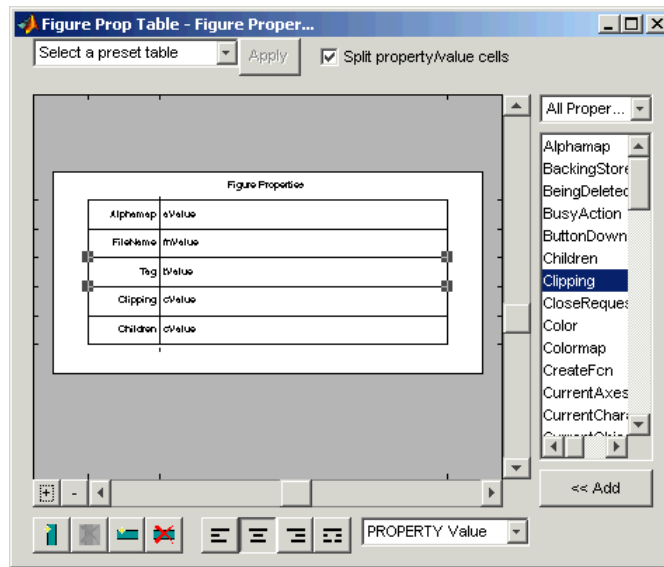
Choose the format for the contents of the table cell:

- Value
- Property Value
- PROPERTY Value
- Property: Value
- PROPERTY: Value
- Property - Value
- PROPERTY - Value

Creating Custom Tables

To create a custom table, you can first select a preset table and then edit it. You might want to start with the Blank 4x4 preset table. You can add and delete rows and you can add properties. To open the **Edit Table** dialog box, click **Edit**. The dialog box appears:

Fixed Point Property Table



For more information about using this dialog box to create custom property tables, see “Working with Property Table Components” on page 3-11.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_fp.cfp_prop_table

Fixed Point Summary Table

Category Simulink Fixed Point Blockset

Description The Fixed Point Summary Table component shows properties or parameters of the selected fixed-point blocks in a table.

Attributes The following figure shows the **Fixed Point Summary Table Properties** panel:

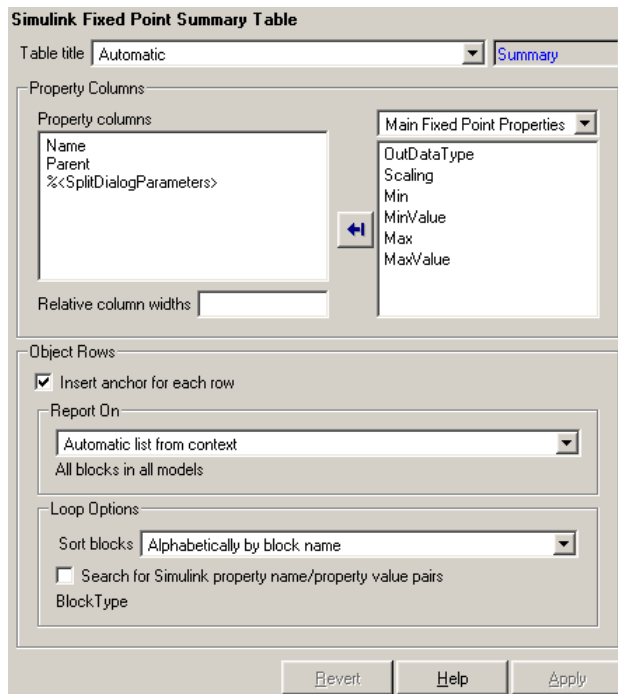


Table title

Choose a title for the summary table in the generated report:


- **Automatic** — Select this option to generate a title automatically from the parameter.
- **Custom** — Select this option to enter a title manually.

Fixed Point Summary Table

Property Columns

Property columns

This figure displays the object properties to be included in the summary table in the generated report. To add a property, select the appropriate property level in the menu. Next, in the contextual list below the menu, select the property that you want

to add and click **Add** . To delete a property, select the property name and press the **Delete** key.

Relative column widths

Use this option to enter relative column widths for the summary table in the generated report. Entered widths should be in percentages.

Object Rows

Insert anchor for each row

Select this option to insert an anchor for each row in the summary table.

Report On

Use this option to select the blocks that are reported on.

- Automatic list from context — Select this option to report on all blocks in the current context.
- Custom -- use block list — Select this option to report on a list of blocks that you specify, and enter the block names in the corresponding field. You must use the full pathname when specifying blocks.

Loop Options

Sort blocks

Use this option to select how the blocks are sorted:

- Select Alphabetically by block name to sort blocks alphabetically by their names.
- Select Alphabetically by system name to sort systems alphabetically.

In this option, the systems are sorted alphabetically, and blocks in each system are listed, but in no particular order.

Fixed Point Summary Table

- Select `Alphabetically by full Simulink path` to sort blocks alphabetically by Simulink path.
- Select `By block type` to sort blocks alphabetically by block type.
- Select `By block depth` to sort blocks by their depth in the model.
- Select `By traversal order` to sort blocks by traversal order.
- Select `By simulation order` to sort blocks by execution order.

Search for Simulink property name/property value pairs

Select this option to report only on Simulink blocks with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_fp.cfp_summ_table

For Loop

Category

Logical and Flow

Description

The For Loop component iteratively executes its child components and must have at least one child component to execute properly. This component functions like the for loop in MATLAB, except that instead of executing a statement, it executes its child components while one of the following loops is active:

```
for varname=x:y:z
for varname=[a b c ...]
```

where varname must be a string that is valid as a variable name. x, y, z can be scalar numbers or workspace expressions that are evaluated in the workspace as scalar numbers. If any one of these is a string that cannot be evaluated as a scalar number, then the For Loop does not execute.

For example, if red is a workspace variable, the following is a valid for statement.

```
for i=1:1:length(red)
```

length(red) is 3, which is a scalar number.

Attributes

The following figure shows the **For Loop** Properties panel:

For Loop

Loop Type

Loop type: Incremented indices

Start: 1

Increment: 1

End: 5

Workspace Variable

Show index value in base workspace

Variable name: RPTGEN_LOOP

Remove variable from workspace when done

Help Apply

Loop Type

In this section you can choose the loop type to be incremented indices or a vector of indices. See the MATLAB documentation for more details on the for loop and indices.

Incremented indices

Choose this option to execute a for loop of the following form:

```
for varname=x:y:z
```

Enter the appropriate values in the following fields:

- **Start** corresponds to x in the for loop shown above.
- **Increment** corresponds to y in the for loop shown above.
- **End** corresponds to z in the for loop shown above.

For Loop

Vector of Indices

Choose this option to execute a for loop of the following form:

```
for varname=[a b c ...]
```

Enter the appropriate values in the **Vector** field in the form a
b c ...

Workspace Variable

Show index value in base workspace

Use this option to place the loop index (the value of the for loop variable) in the workspace while other components are executing.

Variable name

Enter the variable name in this field. The variable name is varname in the for loop forms described above.

Remove variable from workspace when done

Use this option to remove the loop index from the workspace. This option is only available if you selected the **Show index value in base workspace** option.

Insert Anything into Report?

No.

Filename

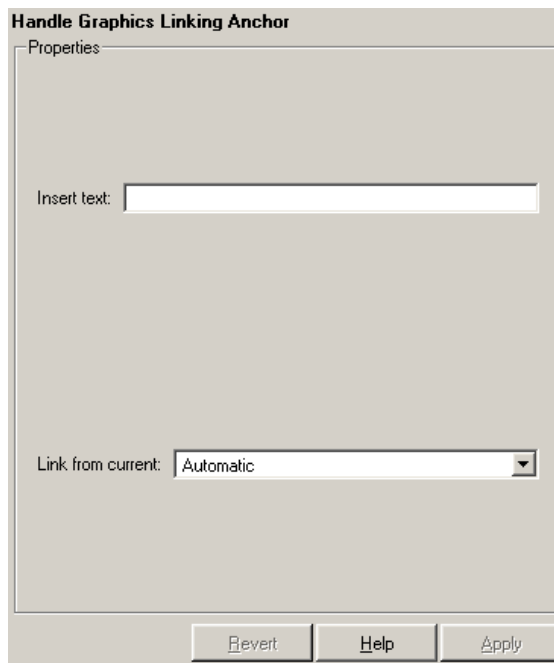
rptgen_lo.clo_for

Handle Graphics Linking Anchor

Category Handle Graphics

Description The Handle Graphics Linking Anchor component designates a location to which other links point. This component should have a looping component as its parent.

Attributes The following figure shows the **Handle Graphics Linking Anchor** Properties panel:



Insert text

If you want text to appear after the linking anchor, enter the text in this field.

Handle Graphics Linking Anchor

Link from current

This option sets the current model, system, block, or signal as the linking anchor:

- Select **Automatic** to automatically select the appropriate figure, axes, or object as a linking anchor. If the **Figure Loop** component is the parent component, then the linking anchor is set on the current figure. Similarly, if the **Object Loop** is the parent component, then the linking anchor is inserted for the current object.
- Select **Figure** to set the linking anchor to the current figure.
- Select **Axes** to set the linking anchor to the current axes.
- Select **Object** to set the linking anchor to the current object.

Insert Anything into Report?

Yes. Anchor.

Filename

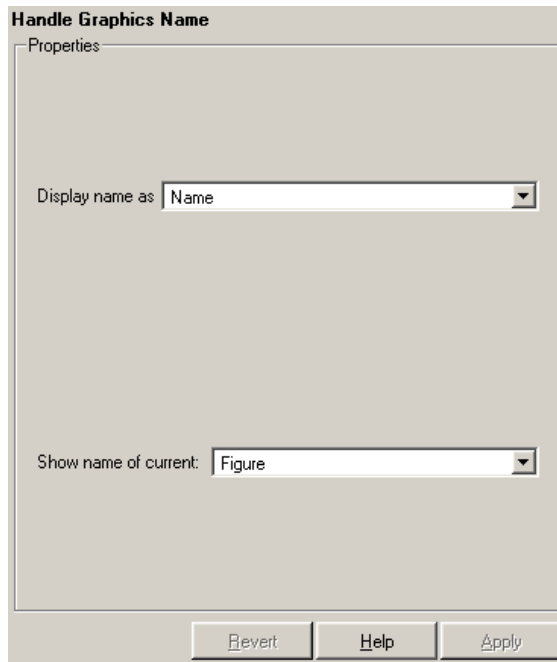
rptgen_hg.chg_obj_anchor

Category Handle Graphics

Description The Handle Graphics Name component inserts the name of a Handle Graphics object into the report as text.

You can use this component to create a section title based on the current figure. First, make sure that this component is the first child component of a Chapter/Subsection component, and select the **Get title from first child component** option in the Chapter/Subsection component.

Attributes The following figure shows the **Handle Graphics Name** Properties panel:



Handle Graphics Name

Display name as

Select **Figure** to show the name of the current Handle Graphics figure. The name of the current figure comes from the first nonempty figure parameter in the following order:

- Name
- Tag
- FileName
- Handle

Select **Axes** to show the name of the current axes. The name of the current axes comes from the first nonempty axes parameter in the following order:

- Title
- Xlabel
- Ylabel
- Zlabel
- Tag
- Handle

Select the **Other Object** option to take the name of the current object from the figure's `CurrentObject` parameter and its first nonempty figure parameter in the following order:

- uicontrol
 - String
 - Style
 - Handle
- uimenu
 - Label

- Accelerator
- Tag
- Handle
- uicontextmenu, image, light, line, patch, or surface
 - Tag
 - Handle
- text
 - String
 - Tag
 - Handle

See the MATLAB graphics documentation for more information.

Show name of current

Select one of the three options listed below **Name** (example: Name)

- Figure
- Axes
- Other Object

**Insert
Anything
into
Report?**

Yes. Text.

Filename

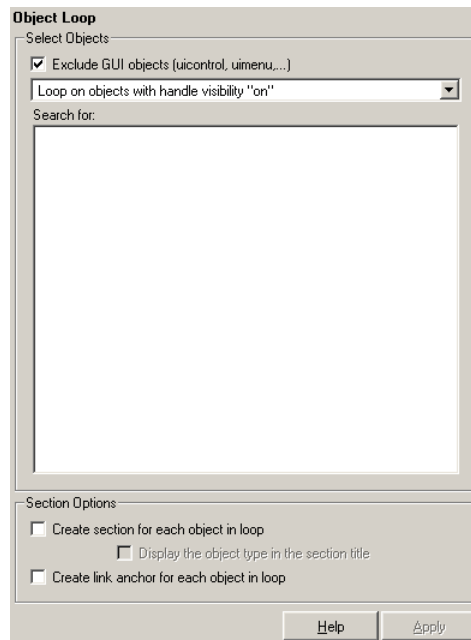
rptgen_hg.chg_obj_name

Handle Graphics Object Loop

Category Handle Graphics

Description The Handle Graphics Object Loop component runs its child components for each Handle Graphics object currently open in the MATLAB workspace. The component inserts a table into the generated report.

Attributes The following figure shows the **Handle Graphics Object Loop** Properties panel:



Select Objects Exclude GUI objects (uicontrol, uimenu, ...)
Select this option to exclude GUI objects, such as uicontrol and uimenu, from the loop.

Loop list
Use this list to select the loop level for Handle Graphics objects:

Handle Graphics Object Loop

- Loop on objects with handle visibility "on"
- Loop on all objects

Search for

Enter search terms in this field. Separate search terms with a space.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

Insert Anything into Report?

Yes, section, if the Create section for each object in loop option is selected.

Filename

rptgen_hg.chg_obj_loop

Handle Graphics Parameter

Category Handle Graphics

Description The Handle Graphics Parameter component inserts a single property name/property value pair from a Handle Graphics figure, axes, or other object.

Attributes The following figure shows the **Handle Graphics Parameter** Properties panel:

Handle Graphics Parameter

Property Selection

Get property from current: Figure

Figure property: Name

Display Options

Title Automatic

Size limit 32

Display as: Auto table/paragraph

Ignore if value is empty

Help Apply

Property Selection

Get property from current

Select a Handle Graphics object to report on:

- Select Figure to insert a figure's property name/property value pair.

- Select Axes to insert an axes' property name/property value pair.
- Select Object to insert an object's property name/property value pair.

Figure property

Choose the type of property you want to include from the list in this section. All shows every parameter for the current object. Select the property you want to include in the report from the list box in this section.

Display Options

Title

Choose a title for the display in the generated report. To generate a title automatically from the parameter, select Automatic. To enter a title, select Custom. To specify no title, select None.

Size limit

Use this size to limit the width of the display in the generated report. Units are in pixels. When creating a table, the size limit is the hypotenuse of the table width and height [$\sqrt{w^2+h^2}$]. When creating text, the size limit is the number of characters squared. If the size limit is exceeded, the variable is rendered in condensed form, such as [64x64 double]. Setting a size limit of zero will ignore the size limit and always display the variable, no matter how large.

Display as

Choose a display style from the menu:

- Auto table/paragraph — Displays as a table or paragraph based on the information.
- Inline text — Displays as inline, which fits in line with the surrounding text.
- Paragraph — Displays as a text paragraph.
- Table — Displays as a table.

Handle Graphics Parameter

Ignore if value is empty
Select this option to exclude empty parameters in the generated report.

**Insert
Anything
into
Report?**

Yes. Text.

Filename

rptgen_hg.chg_property

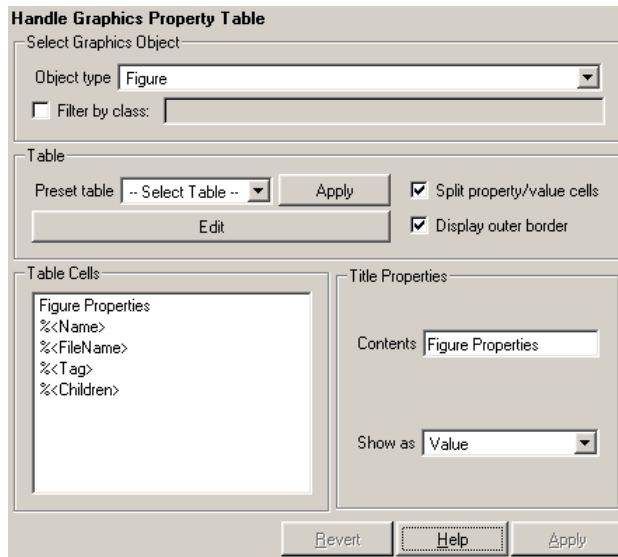
Handle Graphics Property Table

Category Handle Graphics

Description The Handle Graphics Property Table component inserts a table that reports on property name/property value pairs.

See “Working with Property Table Components” on page 3-11 for a tutorial on the Handle Graphics Property Table component.

Attributes The following figure shows the **Handle Graphics Property Table Properties** panel:



Select Graphics Object

Object type

Choose the object type for the generated report:

- Figure
- Axes
- Object

Handle Graphics Property Table

Filter by class

Select this option to filter the object by the specified class or classes. This option enables you to select a specific class for the table. For example, when selecting type Object, you can filter by class line. If the object is type surface, it does not generate a property table.

Table

A preset table is a table that is already formatted and set up. You can select a preset table in the preset table list in the upper left corner of the attributes page. To apply a preset table, select the table and click **Apply**.

Preset table

Choose a type of table to display the object property table:

- Defaults
- Callbacks
- Graphics
- Printing
- Blank 4x4

Split property/value cells

Select this option to split property name/property value pairs into separate cells. To have the property name and property value appear in adjacent horizontal cells in the table, select the **Split property/value cells** check box. In this case, the table is in split mode and there can be only one property name/property value pair in a cell. If you have more than one name/property pair in a cell, then only the first pair is displayed in the report. All subsequent pairs are ignored.

To have the property name and property value appear together in one cell, deselect the **Split property/value cells**. This is nonsplit mode. In nonsplit mode, you can have more than one property name/property value pair and you can also have text.

If you want to switch from nonsplit mode to split mode, make sure that you have only one property name/property value pair per table cell before you switch modes. If you have more than one property name/property value pair or any text, then only the first property name/property value pair appears in the report; subsequent pairs and text are omitted.

Display outer border

Select this option to display the outer border of the table in the generated report.

Table Cells

Use this pane to select table properties to modify. The selection in this pane affects the available fields in the **Title Properties** pane.

Title Properties

The visible options in the **Title Properties** pane depend on the object selected in the **Table Cells** pane. If **Figure Properties** is selected, only the **Contents** and **Show** options are displayed. If any other object is selected in the **Table Cells** pane, the **Alignment**, **Lower border**, and **Right border** options are displayed.

Contents

Use this field to modify the contents of the table cell selected in the **Table Cells** pane.

Alignment

Choose the alignment of the contents of the selected table cell in the **Table Cells** pane:

- Left
- Center
- Right
- Double justified

Show as

Choose the format for the contents of the table cell:

- Value

Handle Graphics Property Table

- Property Value
- PROPERTY Value
- Property: Value
- PROPERTY: Value
- Property - Value
- PROPERTY - Value

Lower border

Select this option to display the lower border of the table in the generated report.

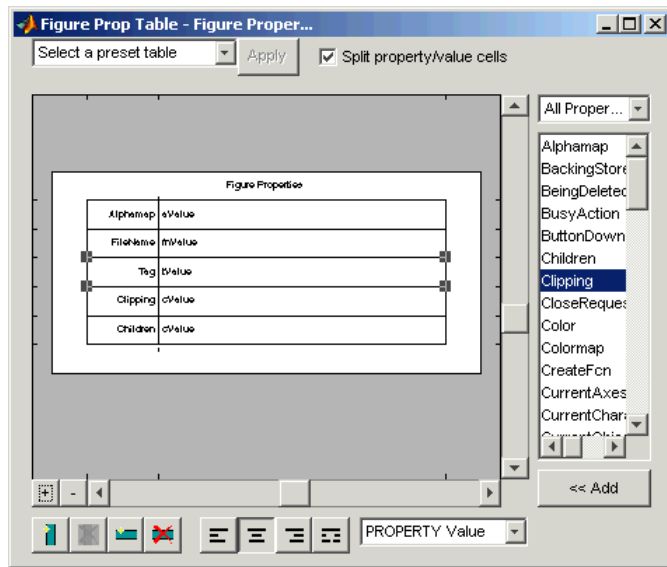
Right border

Select this option to display the right border of the table in the generated report.

Creating Custom Tables

To create a custom table, you can first select a preset table and then edit it. You might want to start with the Blank 4x4 preset table. You can add and delete rows and you can add properties. To open the **Edit Table** dialog box, click **Edit**. The dialog box appears, as the following figure shows:

Handle Graphics Property Table



For more information about using this dialog box to create custom property tables, see “Working with Property Table Components” on page 3-11.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_hg.chg_prop_table

Handle Graphics Summary Table

Category Handle Graphics

Description The Handle Graphics Summary Table component inserts a table that summarizes Handle Graphics object properties. Each row in the table represents an object, and each column in the table represents a property. You can specify the object properties to be included in the report.

Attributes The following figure shows the **Handle Graphics Summary Table Properties** panel:

Handle Graphics Summary Table

Object type: figure

Table title: Automatic [Summary](#)

Property Columns

Property columns: name, children

main

Children
FileName
Name
Tag

Relative column widths: []

Object Rows

Insert anchor for each row

Figure Selection

Include figures: Visible figures

Data figures only (Exclude applications)

Loop Figure List

Revert Help Apply

Object type

Choose the object type to display in the generated report:

Handle Graphics Summary Table

- figure
- axes
- object

The available options in the **Select Objects** pane depend on your selection in the **Object type** menu.

Table title


Choose a title for the summary table in the generated report:

- Automatic – Select this option to generate a title automatically from the parameter.
- Custom – Select this option to enter a title manually.

Property Columns

Property columns

This figure displays the object properties to be included in the summary table in the generated report. To add a property, select the appropriate property level in the menu. Next, in the contextual list below the menu, select the property that you want

to add and click **Add** . To delete a property, select the property name and press the **Delete** key.

Relative column widths

Use this option to enter relative column widths for the summary table in the generated report. Entered widths should be in percentages.

Object Rows

Insert anchor for each row

Select this option to insert an anchor for each row in the summary table.

Object Selection

The options displayed in the **Object Selection** pane depend on the object type selected in the **Object type** list. If figure is selected in **Object type**, the following options are displayed:

Handle Graphics Summary Table

Include figures

To include only the current figure in the report, select the `Current figure only` option.

To loop on all visible figures, select the `Visible figures` option. This option executes child components for all figures that are currently open and visible. The `Data figures only` option is checked by default and excludes figures with `HandleVisibility = 'off'` from the loop.

To loop on figures with certain tags, select the `All figures with tags` option. When you are selecting a tag, all figures with that tag are included, regardless of whether the figure is visible or whether `HandleVisibility` is 'on' or 'off'. The tag list box (located under the `All figures with tags` option) shows the selected tags. To add a tag to the tag list box, type in the tag.

Loop Figure List

The **Loop Figure List** shows you the figures that would be looped on given the current set of figures.

If axes is selected in **Object type**, the following options are displayed:

Loop type

To loop on all axes objects, select `All axes`. To loop on the selected axes object, select `Current axes`.

Exclude objects which subclass axes

Select this option to exclude objects such as legends and color bars.

Loop Menu

To loop only on visible axes objects, select `Loop on axes with handle visibility "on"`. To loop on all axes objects, select `Loop on all axes`.

Search terms

Enter search terms for the loop. For example, to search for Tag and My Data, enter "Tag", "My Data".

Handle Graphics Summary Table

If object is selected in **Object type**, the following options are displayed:

Exclude GUI objects (uicontrol, uimenu, ...)

Select this option to exclude GUI objects, such as uicontrol and uimenu, from the loop.

Loop menu

Use this menu to select the loop level for Handle Graphics objects:

- Loop on objects with handle visibility "on"
- Loop on all objects

Search for

Enter search terms in this field. Separate search terms with a space.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_hg.chg_summ_table

Image

Category

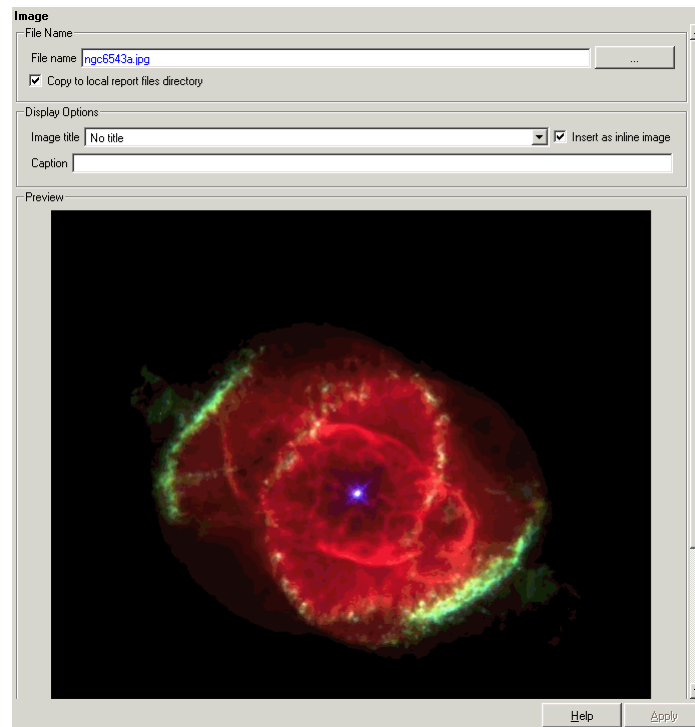
Formatting

Description

The Image component inserts an image from an external file into the report. The Image component can have the Chapter/Subsection or Paragraph component as its parent. If the Paragraph component is its parent, then the **Insert as inline image** check box must be checked.

Attributes

The following figure shows the **Image Properties** panel:



File Name

File name

Enter the image filename in this field or use the browse button (...) to find the file that contains the image.

Make sure that the image is in a format that your viewer can read. Your viewer depends on the report format you selected in the Report Options page in Report Explorer. For a discussion on report format options, see “Setting Report Output Options” on page 2-2

You can use the %<VariableName> notation. See “%<VariableName> Notation” on page 7-246 in the Text component reference.

Copy to local report files directory

Select this option to save a copy of the image to a local report files directory.

Display Options

Image Title

Choose a title option in this section:

- **No title:** Select this option if you do not want an image title.
- **Title:** Select this option and type the image title in the corresponding field if you want an image title that is not the same as the image file name.
- **Title from filename:** Select this option if you want the image title to be the same as the image filename.

Insert as inline image

Select this option if you want to insert an inline image in a paragraph. This option is available only when the image does not have a title, i.e., if you select the **No title** option in the **Image Title** option. To make this a valid option, the Image component must have the Paragraph component as its parent and Text components as its peers.

For example, if the following components are included in a setup file,

```
paragraph
  text - "This is an example of an inline image."
```

Image

```
text - "This is an example."  
image - *image.jpg*  
text - "This is an example of an inline image."
```

and you select the **Insert as inline image** option, the report would contain the following paragraph:

```
This is an example of an inline image. This  
is an example. *image.jpg* This is  
an example of an inline image.
```

If you do not select the **Insert as inline image** option, then the report would contain the following paragraph (notice that the image is not inline).

```
This is an example of an inline image. This  
is an example.  
*image.jpg*  
This is an example of an inline image.
```

Caption

Enter a short text description for the image.

Preview

The **Preview** pane shows the image that you specify in the **Image file name** field. You cannot preview PostScript images or images with formats that are not supported by the `imread` function, such as `.gif`.

If you click the image in the **Preview** pane, it is displayed in full size on the screen.

Insert Anything into Report?

Yes. Image.

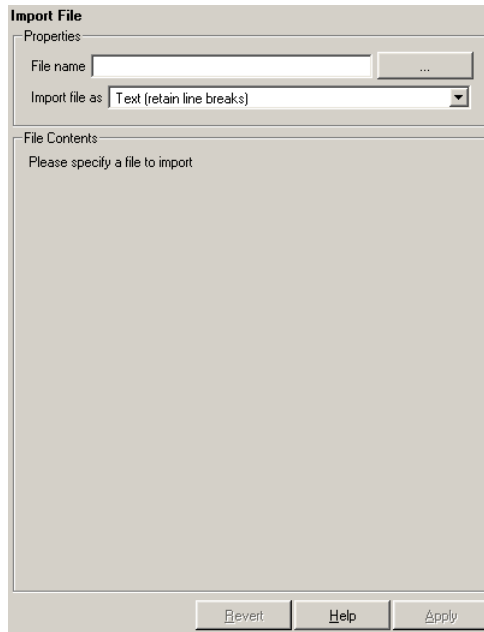
Filename

rptgen.cfr_image

Category Report Generator

Description The Import File component imports an ASCII text file.

Attributes The following figure shows the **Import File** Properties panel:



File name

Enter the name of the file to import in the text field in this section or use the browse button (...) to find the file. This component executes only if you enter a valid filename in this field.

Import file as

Indicate what kind of format to use for imported file

- **Plain text (ignore line breaks):** Select this option to import the file as plain text without any line breaks (no paragraphs). If

Import File

you select this option, the Import File component acts like the Text component and should have the Paragraph component as its parent.

In this example and subsequent examples, the following text is used as the input file.

```
This is the first row of text from the imported file.  
  The second row follows a line break in the first row.
```

```
There is a blank line above the third row.
```

With the Plain text (ignore line breaks) option, the following is produced.

```
This is the first row of text from the imported file.  
The second row follows a line break in the first row.
```

```
There is a blank line above the third row.
```

- Paragraphs defined by line breaks: Select this option to import the file as text contained in paragraphs defined by line breaks (hard returns or carriage returns).

With the Paragraphs defined by line breaks option, the following is produced.

```
This is the first row of text from the imported file.  
The second row follows a line break in the first row.
```

```
There is a blank line above the third row.
```

- Paragraphs defined by empty rows: Select this option to import the file as text contained in paragraphs defined by empty rows (rows that do not contain text).

With the Paragraphs defined by empty rows option, the following is produced.

```
This is the first row of text from the imported file.
```

The second row follows a line break in the first row.

There is a blank line above the third row.

- **Text (retain line breaks):** Select this option to import the file as plain text, including line breaks.

With the Text (retain line breaks) option, the following is produced.

This is the first row of text from the imported file.

The second row follows a line break in the first row.

There is a blank line above the third row.

- **Fixed-width text (retain line breaks):** Select this option to import the file as fixed-width text (all letters have the same width or size) including line breaks. This option is best suited for importing M-files.

With the Fixed-width text (retain line breaks) option, the following is produced.

This is the first row of text from the imported file.

The second row follows a line break in the first row.

There is a blank line above the third row.

- **DocBook XML:** Select this option if the inserted text file is in an XML source file. The format of the inserted XML file is not changed.
- **Formatted Text (RTF/HTML):** Select this option if the inserted text file is in an RTF or HTML source file. The format of the inserted RTF or HTML source file is not changed.
- **Syntax highlighted M-code:** Select this option if the inserted text file is an M-file containing highlighted M-code.

Import File

This **File Contents** field displays the first few lines of the file to be imported.

Insert Anything into Report?

Yes. Inserts text if you select one of the following options:

- Plain text (ignore line breaks)
- Text (retain line breaks)
- Fixed-width text (retain line breaks)

Inserts paragraphs if you select one of the following options:

- Paragraphs defined by line breaks
- Paragraphs defined by empty rows

Inserts the contents of the XML file if you select the DocBook XML option. This can include text, paragraphs, tables, etc.

Inserts the contents of the RTF or HTML file if you select the Formatted text (RTF/HTML) option. This can include text, paragraphs, tables, etc.

Filename

rptgen.crg_import_file

Category MATLAB

Description The Insert Variable component takes one of the following variables and inserts its value (and name, if you choose to do so) into the report:

- A variable from the MATLAB workspace
- A variable from a MAT-file
- A global variable

Attributes The following figure shows the **Insert Variable** Properties panel:

Insert Variable

Source

Variable name

Variable location Base workspace

Warning: Variable name is empty

Display Options

Title Automatic

Size limit 32

Display as: Auto table/paragraph

Ignore if value is empty

Help Apply

Source Variable name
Enter the name of the variable in this field.

Insert Variable

You can use %<VariableName> to insert the value of a variable from the MATLAB workspace. For example, if you enter the following expression in this field,

```
%<my_variable>
```

and you have the following in your MATLAB workspace:

```
my_variable='velocity'  
velocity=50
```

then your report will contain the following:

```
50
```

If you enter %<velocity> in this field, and your MATLAB workspace contains the same information, then your report will also contain 50.

Variable location

Select one of the following options:

Base Workspace – This option gets a variable from the MATLAB workspace.

MAT File – This option gets a variable from a binary file with a .mat extension.

Global variable – This option gets a global variable.

Display Options

Title

Choose a title for the display in the generated report. To generate a title automatically from the parameter, select *Automatic*. To enter a title, select *Custom*. To specify no title, select *None*.

Size limit

Use this size to limit the width of the display in the generated report. Units are in pixels. When creating a table, the size limit is

the hypotenuse of the table width and height [$\sqrt{w^2+h^2}$]. When creating text, the size limit is the number of characters squared. If the size limit is exceeded, the variable renders in condensed form, such as [64x64 double]. Setting a size limit of zero will ignore the size limit and always display the variable, no matter how large.

Display as

Choose a display style from the menu:

- Auto table/paragraph — Displays as a table or paragraph based on the information.
- Inline text — Displays as inline, which fits in line with the surrounding text.
- Paragraph — Displays as a text paragraph.
- Table — Displays as a table.

Ignore if value is empty

Select this option to exclude empty parameters in the generated report.

**Insert
Anything
into
Report?**

Yes. Text.

Filename

rptgen.cml_variable

Link

Category

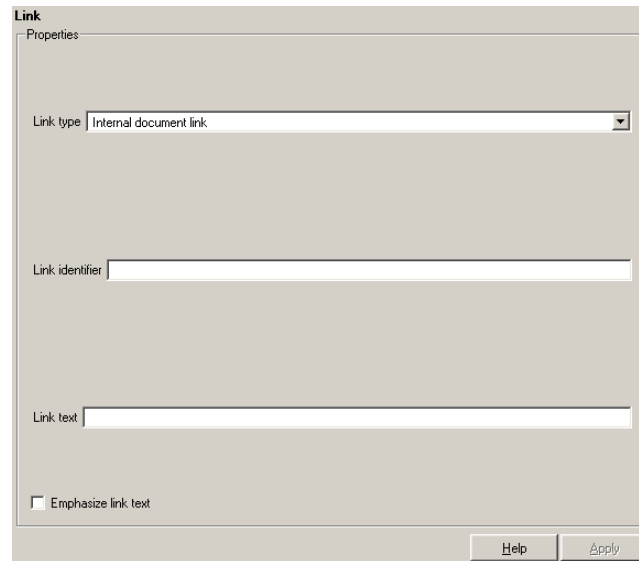
Formatting

Description

The Link component inserts linking anchors or pointers into the report.

Attributes

The following figure shows the **Link** Properties panel:



The screenshot shows a dialog box titled "Link" with a "Properties" section. Inside the "Properties" section, there is a "Link type" dropdown menu currently set to "Internal document link". Below this is a "Link identifier" text input field, followed by a "Link text" text input field. At the bottom left of the "Properties" section is a checkbox labeled "Emphasize link text" which is currently unchecked. At the bottom right of the dialog box are two buttons: "Help" and "Apply".

Link type

Select the type of link to insert into the report:

- **Linking Anchor:** An anchor is the object to which something links; i.e., links "link" to an anchor.
- **Internal Document Link:** A link takes you to the location in your report (specified by an anchor) to which it points when you click it.
- **URL (external) Link:** A URL link is a link to a Web site. It takes you to the location on the Web to which your link points when you click it.

Link identifier

The link identifier options are context sensitive and change depending on the link type selected above. The **Link identifier** field marks the location to which the link points. The link is not visible in the report.

Link text

Enter text to use in the link.

Emphasize link text

Select this option to italicize the link text.

Yes. Text or anchor.

Insert Anything into Report?

Filename

rptgen.cfr_link

List

Category Formatting

Description The List component creates a bulleted or numbered list from a cell array or from child components.

Attributes The following figure shows the **List** Properties panel:

The screenshot shows the 'List' Properties panel. It is divided into two main sections: 'List Content' and 'List Formatting'.
In the 'List Content' section, there is a text input field labeled 'Create list from workspace cell array' and another labeled 'List title'.
In the 'List Formatting' section, there are three dropdown menus: 'List style' (set to 'Bulleted list'), 'Numbering style' (set to '1,2,3,4...'), and 'Show only current list value (a)'.
At the bottom right of the panel are 'Help' and 'Apply' buttons.

List Content

Create list from workspace cell array

Enter the name of the 1-by-n or n-by-1 cell array from which the list will be created in this field. This option is not available when this component has child components, because the list is then automatically generated from the child components.

List title

Enter the title of the list in this field.

List Formatting

List style

Select either **Bulleted list** or **Numbered list**. If you choose **Numbered list**, then you can select numbering options in the **Numbering style** field.

Numbering style

Select a numbering style in this pull-down menu if you selected **Numbered List** for the **List style**. The options are

- 1,2,3,4,...
- a,b,c,d,...
- A,B,C,D,...
- i,ii,iii,iv,...
- I,II,III,IV,...

Show parent number in nested list (1.1.a)

Select this option to show all level numbers in a nested list. You can create a nested list by putting one cell array inside another or by nesting one List component inside another. If you choose this option, your list will have this type of appearance (the actual appearance depends on the option chosen in the **Numbering style** field).

1. Example
2. Example
 - 2.1. Example
 - 2.2. Example
 - 2.2.a. Example
 - 2.2.b. Example
3. Example

Note that this option is not available if you select the **Show only current list value (a)** option.

Show only current list value (a)

Select this option to show only the current list value. If you choose this option, the list shown above will have this type of

List

appearance (the actual appearance depends on the option chosen in the **Numbering style** field).

1. Example
2. Example
 1. Example
 2. Example
 1. Example
 2. Example
3. Example

Note that this option is not available if you select the **Show parent number in nested list (1.1.a)** option.

Continue numbering from previous list

Select this option to continue list numbering from a previous list.

Note that this option is not available if you select the **Always start at 1** option.

Always start at 1

Select this option to always start list numbering at 1. Note that this option is not available if you select the **Continue numbering from previous list** option.

Example1: Creating a Nested List

You can create a nested list by putting one cell array inside another or by nesting one List component inside another.

For example, if you have the following setup file, with one List component nested inside another List component,

```
[ - ] Report - Unnamed.rpt
  [ - ] Bulleted list from child components
    [ ] Text - sky
    [ ] Table - varname
    [ ] Image - test.jpg
    [ ] Text - grass
  [ - ] Bulleted list from child components
```



```
[ ] Text - clouds
[ ] Text - sun
[-] Paragraph - information
```

then the report would contain the following bulleted lists:

- sky
- Table from variable - varname
- Snapshot of image - test.jpg
- grass
 - clouds
 - sun
- information

Example 2: Creating the Same List with Child Components and a Cell Array

Setup file with child components:

```
[-] Report - Unnamed.rpt
  [-] Bulleted list from child components
    [ ] Text - red
    [ ] Text - green
    [ ] Text - blue
```

Setup file calling a cell array:

```
[-] Report - Unnamed.rpt
  [-] Bulleted list from cell array called colors
```

Cell array:

```
colors={'red','green','blue'}
```

List

Using either of these two setup files, the report contains the following bulleted list:

- red
- green
- blue

**Insert
Anything
into
Report?**

Yes. List.

Filename

rptgen.cfr_list

Category Logical and Flow

Description The Logical Else component acts as an else when it is the child of the Logical If component. There are two ways to use this component:

```
if
  then
  else
```

or

```
if
  then
  elseif
  elseif
  .
  .
  .
  else
```

Attributes The following figure shows the **Logical Else** Properties panel:

Logical Else



If component has no children, insert text

When the Logical Else component has no child components, the string in this field is inserted into your report. In this case, this component acts like the Text component.

**Insert
Anything
into
Report?**

Depends on whether `if` or `elseif` statement is true.

Filename

`rptgen_lo.clo_else`

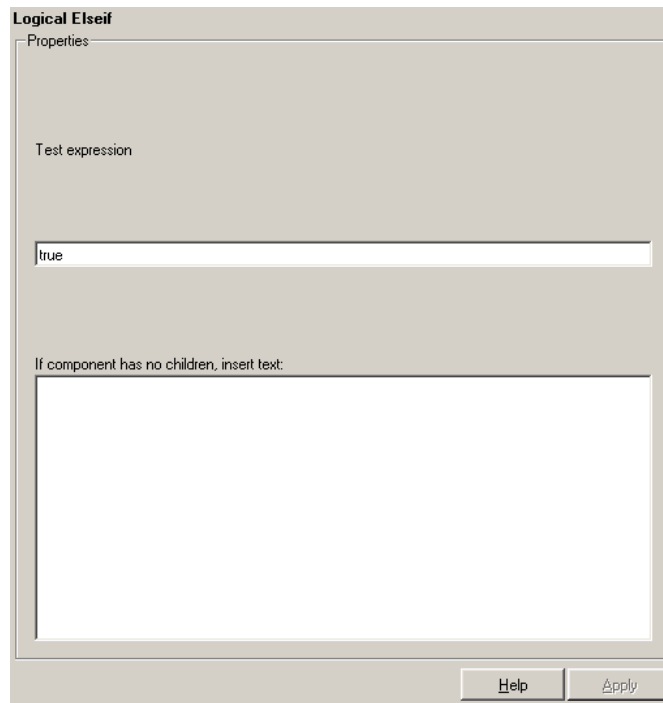
Category Logical and Flow

Description The Logical Elseif component acts as an `elseif` when it is the child of the Logical If component. You must use this component in this format:

```
if
  then
  elseif
  elseif
  .
  .
  .
  else
```

Attributes The following figure shows the **Logical Elseif** Properties panel:

Logical Elseif



Test expression

Enter a MATLAB expression to evaluate.

If component has no children, insert text

When the Logical Elseif component has no child components, the string in this field is inserted into the report. In this case, this component acts like the Text component.

Insert Anything into Report?

Yes, only when parent if statement is false.

Filename rptgen_lo.clo_else_if

Logical If

Category

Logical and Flow

Description

The Logical If component acts as a logical if; it can have the Logical Then, Logical Elseif, and Logical Else components as its child components. This component executes its child components when the given workspace expression is true. It displays a specified string when it has no child components. There are three ways to use this component:

```
if
  then
```

or

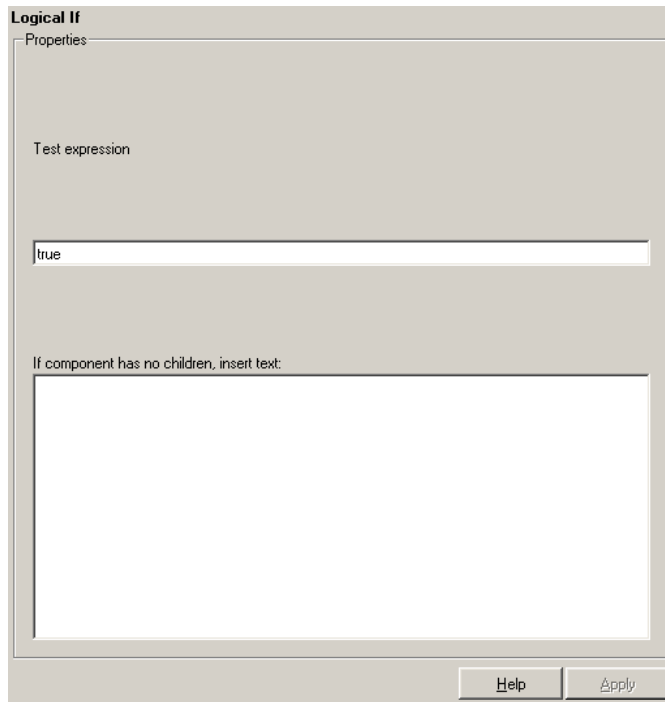
```
if
  then
  else
```

or

```
if
  then
  elseif
  elseif
  .
  .
  .
  else
```

Attributes

The following figure shows the **Logical If** Properties panel:



Test expression

Enter a MATLAB expression to evaluate.

If component has no children, insert text

When the Logical If component has no child components, the string in this field is inserted into your report.

Depends on attributes.

Insert Anything into Report?

Filename

rptgen_lo.clo_if

Logical Then

Category

Logical and Flow

Description

The Logical Then component acts as a then when it is the child of the Logical If component. There are three ways to use this component:

```
if
  then
```

or

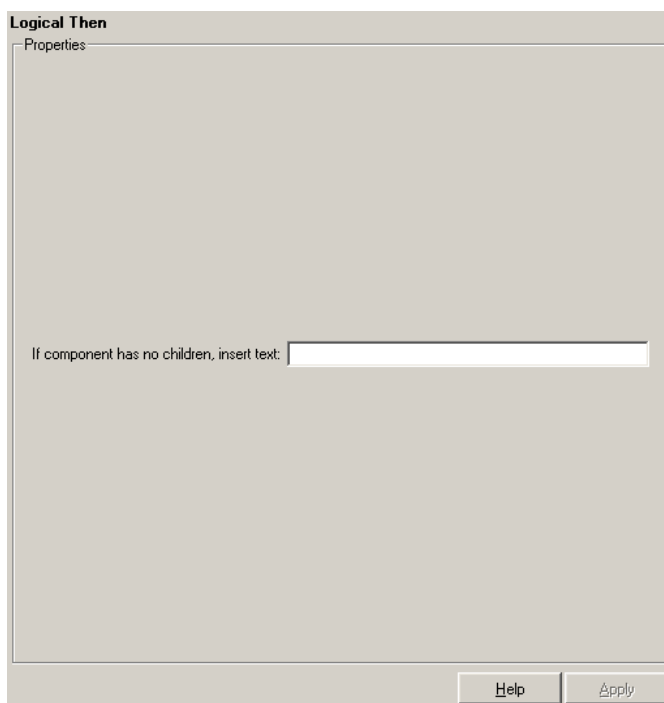
```
if
  then
  else
```

or

```
if
  then
  elseif
  elseif
  .
  .
  .
  else
```

Attributes

The following figure shows the **Logical Then** Properties panel:



If component has no children, insert text

When the Logical Then component has no child components, the string in this field is inserted into your report. In this case, this component acts like the Text component.

**Insert
Anything
into
Report?**

Yes, only when parent if statement is true.

Filename

rptgen_lo.clo_then

Look-Up Table

Category Simulink Blocks

Description The Look-Up Table component reports on the following lookup table blocks: Look-Up Table, Look-Up Table (2-D), Look-Up Table (n-D), and Prelook-Up Index Search.

This component inserts a figure and/or table into the report; the table contains input and output numeric values, and the figure is a plot of the values.

Attributes The following figure shows the **Look-Up Table** Properties panel:

The screenshot shows the 'Look-Up Table' properties panel with the following sections and controls:

- Look-Up Table Options:**
 - Plot 1-D data (Dropdown: Line plot)
 - Create table for 1-D data
 - Plot 2-D data (Dropdown: Surface plot)
 - Create table for 2-D data
 - Create table for N-D data
- Print Options:**
 - Image file format: Automatic HG format
 - Paper orientation: Use figure orientation
 - Image size: [5 3] (Dropdown: Inches)
 - Invert hardcopy: Automatic
- Annotation:**
 - Title: No title
 - Caption: No caption

Buttons at the bottom: Revert, Help, Apply.

Look-Up Table Options

This pane allows you to specify the types of Look-Up Table blocks that are included in the report and how they are displayed. If none of the check boxes in this pane are selected, the component does not insert anything into the report.

These options display the lookup tables, depending on what the component is operating on:

- If the Look-Up Table has the Model Loop as its parent, it includes all lookup tables in the current model.
- If the Look-Up Table has the System Loop as its parent, it includes all lookup tables in the current system.
- If the Look-Up Table has the Block Loop as its parent, it includes the current block if it is a look-up table.
- If the Look-Up Table has the Signal Loop as its parent, it includes all lookup tables connected to the current signal.
- If the Look-Up Table does not have any of the Simulink looping components as its parent, it includes all lookup tables in all open models.

Plot 1-D data

Select this option to plot data from a Look-Up Table block and choose the plot type (Line plot or Bar plot) from the corresponding list. See the MATLAB graphics documentation for more information on line plots and bar plots. The input data is shown on the horizontal or x -axis and the output data is shown on the vertical or y -axis.

Create table for 1-D data

Select this option to create a table that contains numeric data values from the Look-Up Table block.

Plot 2-D data

Select this check box to include a plot of 2-D Look-Up Table blocks. You can specify whether the data appears as a surface plot or a line plot. The line plot is best for small data sets and the surface plot is most appropriate for larger tables. See the MATLAB

Look-Up Table

graphics documentation for more information on surface plots and line plots.

Create table for 2-D data

Select this option to create a table that contains numeric data values from the Look-Up Table (2-D) block.

Create table for N-D data

Select this option to create a table that contains numeric data values from the Look-Up Table (n-D) block. Note that this is a 2-D slice through the N-D data.

Print Options

Image file format

Choose the image file format (e.g., JPEG, TIFF, etc.) from this list. Select Automatic HG Format to automatically choose the format best suited for the output format that you chose in the Report component. Otherwise, choose an image format that your output viewer can read. Automatic HG Format is the default option.

The options include

- Automatic SL Format (Uses the Simulink file format selected in the **Preferences** dialog box)
- Adobe Illustrator
- Bitmap (16m-color)
- Bitmap (256-color)
- Black and white encapsulated PostScript
- Black and white encapsulated PostScript (TIFF)
- Black and white encapsulated PostScript2
- Black and white encapsulated PostScript2 (TIFF)
- Black and white PostScript
- Black and white PostScript2
- Color encapsulated PostScript
- Color encapsulated PostScript (TIFF)

- Color encapsulated PostScript2
- Color encapsulated PostScript2 (TIFF)
- Color PostScript
- Color PostScript2
- JPEG high quality image
- JPEG medium quality image
- JPEG low quality image
- PNG 24-bit image
- TIFF - compressed
- TIFF - uncompressed
- Windows metafile

Paper orientation

You can choose Landscape, Portrait, or Rotated as your paper orientation, or you can choose the Use figure orientation option. See the orient command for information about paper orientation.

Image size

Select Use figure PaperPositionMode setting to use the PaperPositionMode property of the Handle Graphics figure to set the image size in the report. See the orient command for information about paper position mode.

Select the Automatic (same size as on screen) option if you want the image in your report to be the same size as the image on the screen.

Select the Custom option to choose a custom image size. If you choose this option, specify the image size in the **Size** field and **Units** list.

Look-Up Table

- **Size:** Enter the size of the Handle Graphics figure snapshot in the form $w \times h$ (width times height). This field is active only if you choose Custom in the **Image size** list box.
- **Units:** Enter the units for the size of the Handle Graphics figure snapshot. This field is active only if you choose Custom in the **Image size** list box.

Invert hardcopy

Handle Graphics figures have an `InvertHardcopy` property. This parameter inverts colors for printing; i.e., it changes dark colors to light colors and vice versa.

Select one of the following options:

- **Automatic** — Select this option to automatically change dark axes colors to a light axes color. If the axes color is a light color, then it is not inverted.
- **Invert** – Select this option to change dark axes colors to light axes colors and vice versa.
- **Don't invert**— Select this option if you do not want to change the colors in the image displayed on the screen for printing.
- **Use figure's `InvertHardcopy` setting** — Select this option to use the `InvertHardcopy` property set in the Handle Graphics image.
- **Make figure background transparent** – Select this option to make the image background transparent.

Annotation

Title

Enter a title for the snapshot figure.

Caption

Enter a short text description for the snapshot figure.

**Insert
Anything
into
Report?**

Yes. Figure and/or table.

Filename

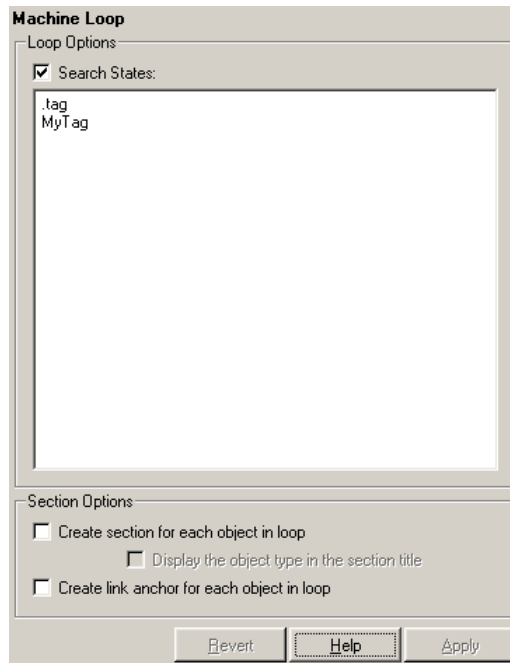
rptgen_sl.cs1_blk_lookup

Machine Loop

Category Stateflow

Description The Machine Loop component runs its child components for all selected Stateflow machines. The Machine Loop component is context sensitive of its parent component. If no parent, the Machine Loop runs its child components for all machines. If a model is its parent, it runs its child components for all machines in the model.

Attributes The following figure shows the **Machine Loop** Properties panel:



Loop Options

Search States

Select this option to search states that you specify in the field that appears below the check box.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

Insert Anything into Report?

Yes, section, if the **Create Section for each object in loop** option is selected.

Filename

rptgen_sf.csf_machine_loop

MATLAB Property Table

Category

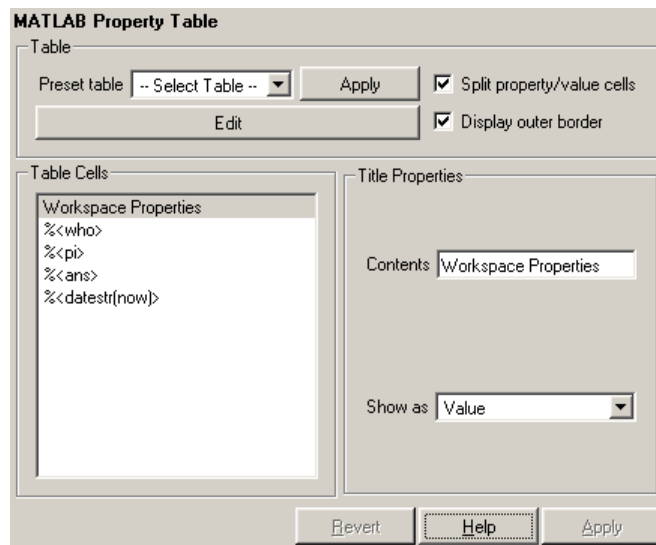
MATLAB

Description

The MATLAB Property Table inserts a table that reports on MATLAB object property name/property value pairs.

Attributes

The following figure shows the **MATLAB Property Table** Properties panel:



Table

A preset table is a table that is already formatted and set up. You can select a preset table in the preset table list in the upper left corner of the attributes page. To apply a preset table, select the table and click **Apply**.

Preset table

Choose a type of table to display the object property table:

- **Defaults**
- **Callbacks**

- **Graphics**
- **Printing**
- **Blank 4x4**

Split property/value cells

Select this option to split property name/property value pairs into separate cells. To have the property name and property value appear in adjacent cells, select the **Split property/value cells** check box. In this case, the table is in split mode and there can be only one property name/property value pair in a cell. If you have more than one name/property pair in a cell, then only the first pair is displayed in the report. All subsequent pairs are ignored.

To have the property name and property value appear together in one cell, deselect the **Split property/value cells**. This is nonsplit mode. In nonsplit mode, you can have more than one property name/property value pair and you can also have text.

If you want to switch from nonsplit mode to split mode, make sure that you have only one property name/property value pair per table cell before you switch modes.

Display outer border

Select this option to display the outer border of the table in the generated report.

Table Cells

Use this field to select table properties to modify. The selection in this pane affects the available fields in the **Cell Properties** pane.

Title Properties

The visible options in the **Title Properties** pane depend on the object selected in the **Table Cells** pane. If **Workspace Properties** is selected, only the **Contents** and **Show** options are displayed. If any other object is selected in the **Table Cells** pane, the **Alignment**, **Lower border**, and **Right border** options are displayed.

MATLAB Property Table

Contents

Use this field to modify the contents of the table cell selected in the **Table Cells** pane.

Alignment

Choose the alignment of the contents of the selected table cell in the **Table Cells** field:

- Left
- Center
- Right
- Double justified

Show as

Choose the format for the contents of the table cell:

- Value
- Property Value
- PROPERTY Value
- Property: Value
- PROPERTY: Value
- Property - Value
- PROPERTY - Value

Lower border

Select this option to display the lower border of the table in the generated report.

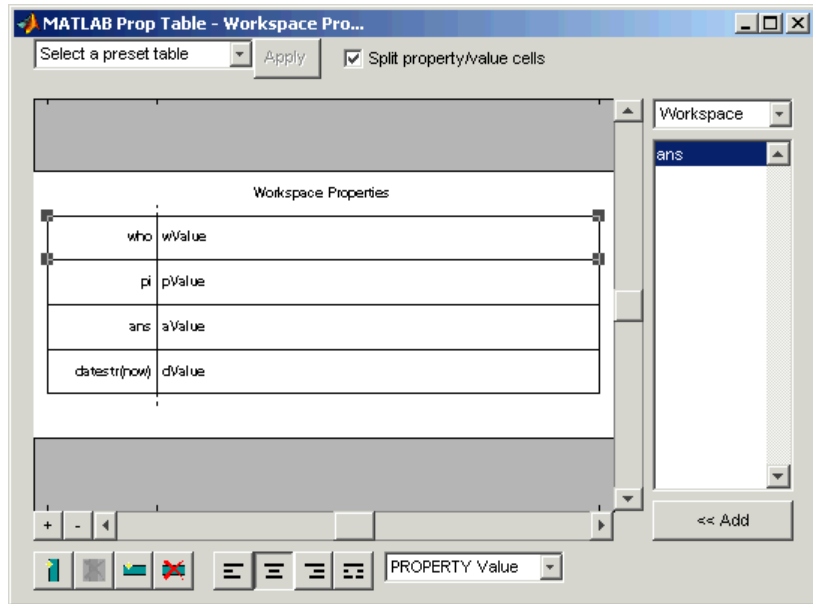
Right border

Select this option to display the right border of the table in the generated report.

Creating Custom Tables

To create a custom table, you can first select a preset table and then edit it. You might want to start with the Blank 4x4 preset table. You

can add and delete rows and you can add properties. To open the **Edit Table** dialog box, click **Edit**. The dialog box appears:



For more information about using this dialog box to create custom property tables, see “Working with Property Table Components” on page 3-11.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen.cml_prop_table

MATLAB/Toolbox Version Number

Category MATLAB

Description The MATLAB/Toolbox Version Number component creates and inserts a table that shows the version number, release number, and/or release date of any MathWorks software you are currently using. You can get a list of all your toolboxes by typing `ver` at the command line.

Attributes The following figure shows the **MATLAB/Toolbox Version Number** Properties panel:

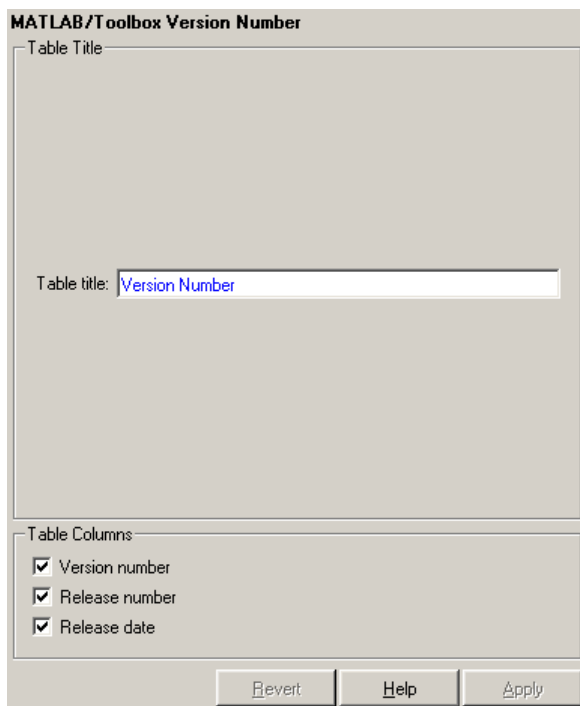


Table Title Table title
Enter the title of the table in this field.

MATLAB/Toolbox Version Number

Table Columns

Version number

Select this option to include the version number of any MathWorks software you are currently using.

Release number

Select this option to include the release number of any MathWorks software you are currently using.

Release date

Select this option to include the release date of any MathWorks software you are currently using.

Insert Anything into Report?

Yes. Table.

Filename

rptgen.cm1_ver

Model Change Log

Category

Simulink

Description

The Model Change Log component uses a reported model's ModifiedHistory parameter to construct a model history table that displays information about each logged revision to the model. This model history table can contain information about any of the following:

- Author of each change
- Model version of the change
- Time and date of the change
- Description of the change

To see the model revision history parameters, select **Model Properties** from the model's **File** menu, which displays the **Block Diagram Properties** dialog box. The **Model Properties** tab in this dialog box contains the model revision history parameters.

The **Options** tab in the **Block Diagram Properties** dialog box controls how the version number is incremented. The **History** tab controls history updates and lets you edit the ModifiedHistory string. You must select the Prompt For Comments When Save option from the **Modified History Update** list in order to save your revisions. This component does not run if the model's ModifiedHistory parameter is empty or if you edit the parameter in such a way that the Report Generator cannot parse it; in these cases, the Comment component cannot produce the table.

For more information on the **Block Diagram Properties** dialog box and model history, see the Simulink documentation.

Note that if your model has a long revision history, you might want to limit the number of revisions reported.

The Model Change Log component should run before the Model Simulation component.

Attributes

The following figure shows the **Model Change Log** Properties panel:

The screenshot shows a configuration window titled "Model Change Log". It is divided into three sections: "Table Columns", "Table Rows", and "Table Display".

- Table Columns:** Contains four checkboxes: "Author name" (unchecked), "Version" (unchecked), "Date changed" (checked), and "Description of change" (checked).
- Table Rows:** Contains two checkboxes: "Limit displayed revisions to:" (unchecked) with a text input field containing "12", and "Show revisions since date:" (unchecked) with a text input field containing the expression "%<datestr(now-14)>".
- Table Display:** Contains a "Table title" label and a text input field containing "Model History".

At the bottom right of the dialog are two buttons: "Help" and "Apply".

Table Columns

You can choose the information displayed in the model revision table in this section.

Author name

Select this option if you want to include the name of the person responsible for the revision of the model.

Version

Select this option if you want to include the version number of the model.

Model Change Log

Table Rows

Date changed

Select this option if you want to include the date on which the model was revised.

Description of change

Select this option if you want to include a description of the revision to the model.

Limit displayed revisions to

Select this option to limit the number of revisions that is displayed in the report. Enter the number in the corresponding text field.

Show revisions since date

Select this option to limit the number of revisions that is displayed in the report by date. Enter the date in the corresponding text field. The `%<varname>` notation is legal. For example, `%<datestr(now-14)>` returns the revisions for the last two weeks.

Table Display

You can choose how the model revision history table is displayed in this section.

Table title

Enter the title of the table in this field.

Example

This is an example of a report generated from a setup file with the Model Change Log component.

Table 0. Model History

Ver	Name	Date	Description
1.8	Engineer7	Fri May 07 09:13:50 1999	Changed Sample Time to 8.
1.7	Engineer3	Thu May 06 16:35:31 1999	Changed the sine wave amplitude to 5.
1.6	Engineer6	Thu May 06 16:34:31 1999	Changed the Gain to 10.
1.5	Engineer2	Thu May 06 16:33:08 1999	Changed Sample Time to 5.
1.4	Engineer8	Thu May 06 16:31:59 1999	Changed the Gain to 3.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_sl.cs1_md1_changelog

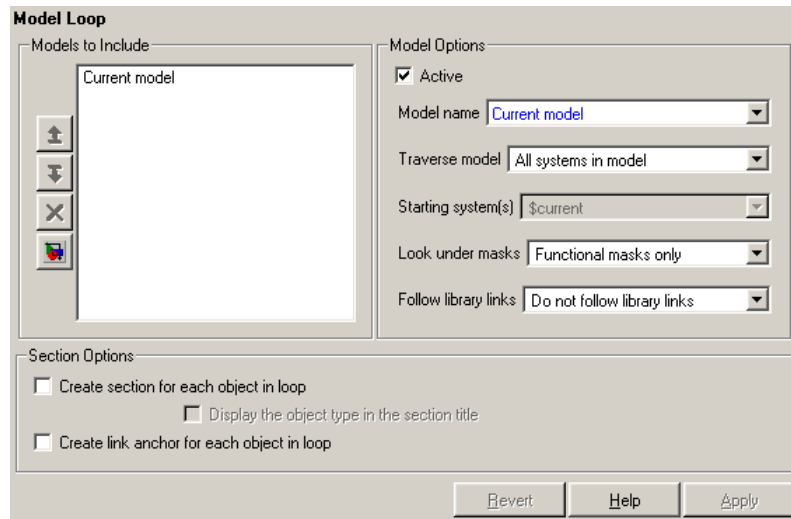
Model Loop

Category Simulink

Description The Model Loop component runs its child components for all selected Simulink models and systems. The Model Loop component can run its child components for a specific model, such as the demo model F14, or it can run its child components for all models or the current model.

Because Simulink components are context sensitive, they should be children of the Model Loop (although the Model Loop does not have to be the immediate parent of some Simulink components).





Attributes The following figure shows the **Model Loop** attribute panel:



Models to Include

The **Models to Include** field contains a list of reported models. To add another model to the list, click **Add New Model to List**. The following

table shows the button you should use to move a model up or down in the list, or to add or delete a model.

Button	Action
	Move a model up in the list.
	Move a model down in the list.
	Remove a model from the list.
	Add a model to the list.

Model Options

Active

Select this option to include the active model. If not selected, the model will be omitted. This option provides a way of temporarily deactivating a model.

Model name

Choose a model name:

- Enter the model name. The `&<varname>` notation is allowed.
- Current model
- All models

The selection in the **Model name** option affects the available options for the **Traverse model** option.

Traverse model

Choose system to traverse:

- All systems in model
- Selected system(s) only
- Selected system(s) and ancestors

Model Loop

- Selected system(s) and children

The options available in the **Traverse model** list are affected by the selection in the **Model name** list.

Starting system(s)

Select the system in which to start the loop. The available options in the **Starting system(s)** list are affected by the selection in the **Traverse model** list. For example, if All systems in model is selected in the **Traverse model** list, the **Starting system(s)** list is not relevant.

Look under masks

Simulink systems can have masks. The masks can be functional or graphical. Choose how to handle masks:

- No masks
- All masks
- Functional masks only
- Graphical masks only

See the Simulink documentation for more information about masks.

Follow library links

Simulink blocks and systems can be linked to a library. Choose the library links to include:

- Do not follow library links
- Include library links
- Include unique library links

See the Simulink documentation for more information about library links.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

Insert Anything into Report?

Yes, if the **Create section for each object in loop** option is selected.

Filename

rptgen_sl.csl_md1_loop

Model Simulation

Category Simulink

Description The Model Simulation component runs the current model using the simulation parameters specified in the attributes page. This component should have the Model Loop component as its parent.

Attributes The following figure shows the **Model Simulation** Properties panel:

Model Simulation

I/O Parameters

Use model's workspace I/O variable names

Time

States

Output

Timespan

Use model's timespan values

Start

Stop

Simulation Parameters

Simulation Parameters

I/O Parameters

Use model's workspace I/O variable names
Select this option to use the names of the variables specified in the **Simulation Parameters** dialog box. For a description of these variables, see the Simulink documentation.

The following options are available if you do not select the Use model's workspace I/O variable names option:

- **Time** — Enter a new variable name for the Time parameter in this field.
- **States** — Enter a new variable name for the States parameter in this field.
- **Output** — Enter a new variable name for the Output parameter in this field.

Timespan

Use model's timespan values

Select this option to use the model's Start time and Stop time values specified in the **Solver** tab in the **Simulation Parameters** dialog box. For a description of these variables, see the Simulink documentation.

The following options are available if you do not select the **Use model's timespan values** option:

- **Start** — Enter a new simulation starting time in this field.
- **Stop** — Enter a new simulation ending time in this field.

Note If your model's stop time is set to `inf` (infinity) in Simulink or on this component's attribute page, then the Report Generator terminates the model simulation after 60 seconds to prevent the report from generating for an infinite amount of time.

Insert Anything into Report?

No.

Model Simulation

Filename rptgen_sl.csl_md1_sim

Category Report Generator

Description The Nest Setup File component runs another setup file at the point where the Nest Setup File component is listed in the current setup file. The Nest Setup File component allows one setup file (.rpt) to run inside another.

The components of the inserted setup file enter the current setup file at the level of the Nest Setup File component. Thus, the inserted components have the same parent component as the Nest Setup File component. Make sure that the inserted components can have this parent component.

Attributes The following figure shows the **Nest Setup File** Properties panel:

Nest Setup File

Nest Setup File

Properties

...

Inline nested report in this report

Insert link to external report

Recursion limit

Nest all reports with specified file name

Help Apply

Setup file to run

Enter the name of the setup file to import and run in this field or use the browse button (...) to find the file. This component executes only if you enter a valid filename in this field.

Inline nested report in this report

Select this option to insert the nested report at the place in the original report where this component is located.

Insert link to external report

Select this option to create two separate reports, one with the original setup file and one with the nested setup file.

Recursion limit

If you want to nest a setup file inside itself, you can set a recursion limit in this field. The recursion limit sets a limit on the number of times the setup file can run itself.

Nest all reports with specified file name

Select this option to nest all reports with the same name as specified in the **Setup file to run** option.

Example

In the example shown below, the setup file R2.rpt is nested in R1.rpt.

```
[ - ] Report - R1.rpt                [ - ] Report - R2.rpt
[   ] Chapter                        [   ] 1
    [ - ] B                           [   ] 2
        [   ] Nest Setfile - R2.rpt   [ - ] Chapter
            [   ] C                       [   ] 4
                [   ] D                   [   ] 5
```

The report executes as if the original setup file looked like this.

```
[ - ] Report - R1.rpt
    [   ] Chapter
        [ - ] B
            [   ] 1
            [   ] 2
        [ - ] Section 1
            [   ] 4
            [   ] 5
        [   ] C
    [   ] D
```

Components that determine their behavior from their parents, such as Chapter/Subsection, are affected by components in the parent setup file (as shown above). See the Chapter/Subsection reference page for more details on the Chapter/Subsection component.

Nest Setup File

**Insert
Anything
into
Report?**

Yes, if the nested setup file produces visible output.

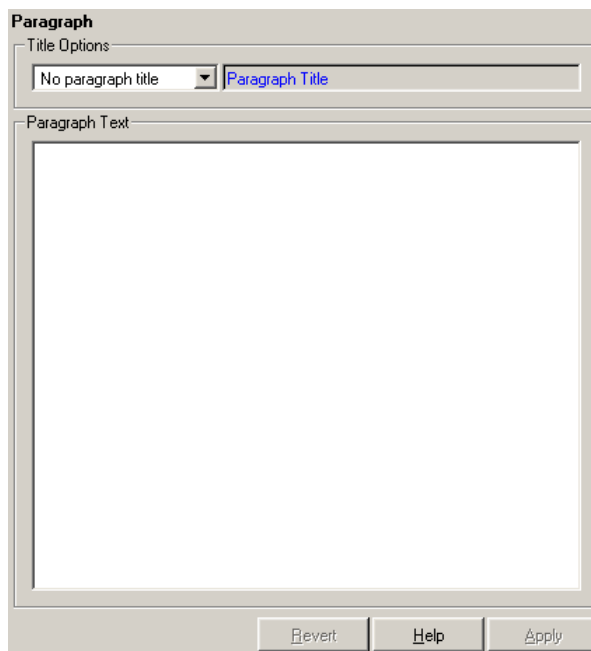
Filename

rptgen.crg_nest_set

Category Formatting

Description The Paragraph component inserts a paragraph into the report. The paragraph text is taken from a child text component or from text that you enter in the **Paragraph Text** field.

Attributes The following figure shows the **Paragraph** Properties panel:



Title Options

No paragraph title

Select this option if you do not want the paragraph to have a title.

Get title from first child component

Select this option if you want the title of the paragraph to be taken from the first child component. The first child component should be a Text component.

Paragraph

Specify title

Select this option and enter the title of the paragraph in this field if you do not want the title to come from the first child component.

Paragraph Text

Enter paragraph text in this field. If the Paragraph component has child components, then the paragraph content is taken from the child components. Otherwise, the Paragraph component inserts text from this field.

If the Paragraph component does not have any child components and you do not enter any text in this field, then the Paragraph component does not insert anything into the report.

Note that you can use the %<VariableName> notation in this field if you want to insert the value of a variable from the MATLAB workspace. See “%<VariableName> Notation” on page 7-246 in the Text component reference page

Insert Anything into Report?

Yes. Can be text, an image, etc.; depends on child components.

Filename

rptgen.cfr_paragraph

Category Requirements Management Interface

Description The Requirements Table component creates a table that contains information from the Requirements Management Interface. Objects can have multiple requirements. Each requirement is a row in the table.

Attributes The following figure shows the **Requirements Table** Properties panel:

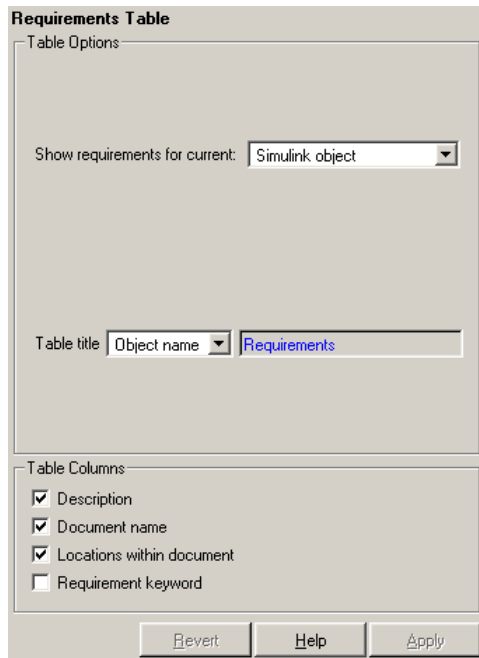


Table Options

Show requirements for current
Select the object type to display.

- Simulink object
- Stateflow object

Requirements Table

Table Columns

Table title

Select a title for the table.

- No title
- Object name
- Custom

Description

Select this option to include the requirement's description in the table.

Document name

Select this option to include the requirement's document name in the table.

Locations within document

Select this option to include the requirement's locations within the document in the table.

Requirement keyword

Select this option to include the requirement's requirement keyword in the table.

Insert Anything into Report?

Yes. Table.

Filename

RptgenRMI.CReqTable

Category

Simulink Blocks

Description

The Scope Snapshot component inserts images of Simulink scopes and XY graphs. If the model has not been simulated, scopes are empty. For more information, see [Model Simulation](#).

Like other components, the Scope Snapshot component must conform to the Report Generator component hierarchy. When building setup files with the Scope Snapshot component, keep the following points in mind:

- If the Scope Snapshot has the Model Loop as its parent or if it does not have any Simulink looping component as its parent, it includes all XY graphs and scopes in the current model.
- If the Scope Snapshot has the System Loop as its parent, it includes all XY graphs and scopes in the current system.
- If the Scope Snapshot has the Block Loop as its parent, it includes the current block if it is an XY graph or scope.
- If the Scope Snapshot has the Signal Loop as its parent, it includes all XY graphs and scopes connected to the current signal.
- If the Scope Snapshot does not have any of the Simulink looping components as its parent, it includes all XY graphs and scopes in all open models.

Attributes

The following figure shows the **Scope Snapshot** Properties panel:

Scope Snapshot

Scope Snapshot

Scope Options

Report on closed scopes Autoscale time axis

Print Options

Image file format: Automatic HG format

Paper orientation: Use figure orientation

Image size: [5 3] Inches

Invert hardcopy: Automatic

Annotation

Title: Block name

Caption: No caption

Revert Help Apply

Scope Options

Report on closed scopes

Select this option to take a snapshot of all scopes in context. This option forces closed scopes to open when the report is generating.

Autoscale time axis

Select this option to scale the Simulink scope's time axis to include the entire log.

Print Options

Image file format

Choose the image file format (e.g., JPEG, TIFF, etc.) from this list. Select Automatic HG Format to automatically choose the format best suited for the output format that you chose in the Report component. Otherwise, choose an image format that your output

viewer can read. Automatic HG Format is the default option.
The options include

- Automatic HG Format (Uses the Simulink file format selected in the **Preferences** dialog box)
- Adobe Illustrator
- Bitmap (16m-color)
- Bitmap (256-color)
- Black and white encapsulated PostScript
- Black and white encapsulated PostScript (TIFF)
- Black and white encapsulated PostScript2
- Black and white encapsulated PostScript2 (TIFF)
- Black and white PostScript
- Black and white PostScript2
- Color encapsulated PostScript
- Color encapsulated PostScript (TIFF)
- Color encapsulated PostScript2
- Color encapsulated PostScript2 (TIFF)
- Color PostScript
- Color PostScript2
- JPEG high quality image
- JPEG medium quality image
- JPEG low quality image
- PNG 24-bit image
- TIFF - compressed
- TIFF - uncompressed

Scope Snapshot

- Windows metafile

Paper orientation

You can choose Landscape, Portrait, or Rotated as your paper orientation, or you can choose the Use figure orientation option. See the orient command for information about paper orientation.

Image size

Enter the size of the Handle Graphics figure snapshot in the form [w h] (width/height). In the units text box, select Inches, Centimeters, Points, or Normalized.

Invert hardcopy

Handle Graphics figures have an InvertHardcopy property. This parameter inverts colors for printing; i.e., it changes dark colors to light colors and vice versa.

Select one of the following options:

- Automatic — Select this option to automatically change dark axes colors to a light axes color. If the axes color is a light color, then it is not inverted.
- Invert — Select this option to change dark axes colors to light axes colors and vice versa.
- Don't invert — Select this option if you do not want to change the colors in the image displayed on the screen for printing.
- Use figure's InvertHardcopy setting — Select this option to use the InvertHardcopy property set in the Handle Graphics image.
- Make figure background transparent — Select this option to make the image background transparent.

Annotation

Title

Select or enter a title for the snapshot figure.

- Block name — Use the block name as the title.

- Full Simulink path name — Use the Simulink pathname as the title.
- Custom — Enter a custom title.

Caption

Select or enter a short text description for the snapshot figure.

- No caption
- Automatic (use block description) — Use the Simulink block's description as the caption.
- Custom — Enter a short text description for the snapshot figure.

Insert Anything into Report?

Yes. Image.

Filename

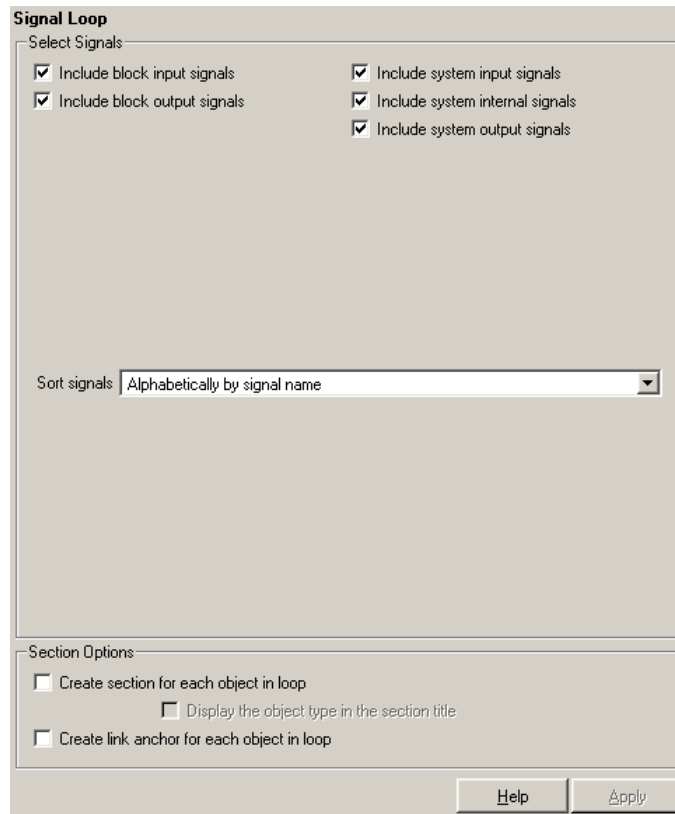
rptgen_sl.csl_blk_scope

Signal Loop

Category Simulink

Description The Signal Loop component runs its child components for each signal contained in the current system, model, or block.

Attributes The following figure shows the **Signal Loop** Properties panel:



Select Signals

Include block input signals

Select this option to loop on signals that feed into blocks. This option is valid when the Signal Loop component has a Block Loop component as its parent.

Include block output signals

Select this option to loop on signals that leave the block. This option is valid when the Signal Loop component has a Block Loop component as its parent.

Include system input signals

Select this option to loop on signals coming from inports. This option is valid when the Signal Loop component has a System Loop component as its parent.

Include system internal signals

Select this option to loop on system internal signals. This option is valid when the Signal Loop component has a System Loop component as its parent.

Include system output signals

Select this option to loop on signals going to outports. This option is valid when the Signal Loop component has a System Loop component as its parent.

Sort signals

Use this section to select how the signals are sorted:

- Select **Alphabetically by signal name** to sort signals alphabetically by name.
- Select **Alphabetically by signal name (exclude empty)** to sort signals alphabetically by name as long as the signals have names.
- Select **Alphabetically by system name** to sort by parent systems. In this option, the systems are sorted alphabetically, and signals in each system are listed, but in no particular order.
- Select **By signal depth** to sort signals by their depth in the model.

Signal Loop

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

When using the Signal Loop component, keep the following points in mind:

- If the Signal Loop has the Model Loop as its parent, it loops on all signals in the current model.
- If the Signal loop has the System Loop as its parent, it loops on all signals in the current system. You can choose not to report on the following types of signals by deselecting the corresponding option:
 - System input signals
 - System output signals
 - System internal signals
- If the Signal Loop has another Signal Loop as a parent, it loops on the current signal.
- If the Signal Loop has the Block Loop as a parent, it loops on all signals connected to the current block. You can choose not to report on the following types of signals by deselecting the corresponding option:
 - Block input signals
 - Block output signals
- If the Signal Loop does not have the Model Loop, System Loop, Signal Loop, or Block Loop as its parent, it loops on all signals in all

models. You can choose not to report on the following types of signals by deselecting the corresponding option:

- Block input signals
- Block output signals
- System input signals
- System output signals
- System internal signals

Insert Anything into Report?

Yes, section, if the **Create section for each object in loop** option is selected.

Filename

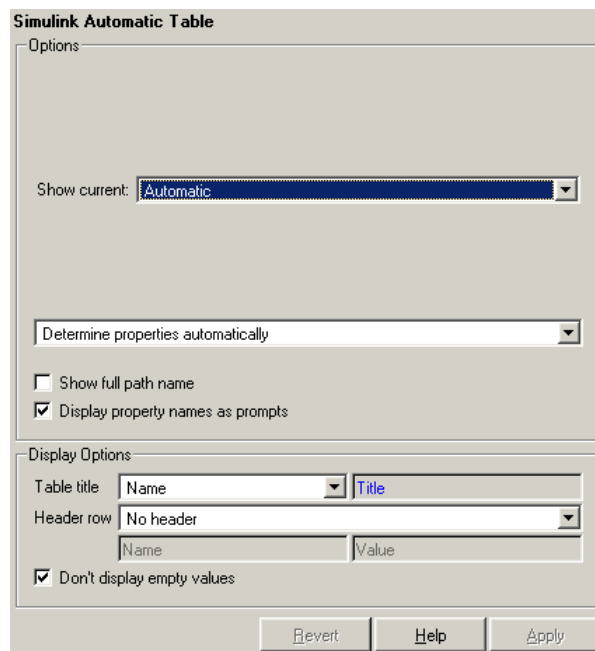
rptgen_sl.csl_sig_loop

Simulink Automatic Table

Category Simulink

Description The Simulink Automatic Table component inserts a two-column table that contains details for the selected model, system, signal, or block into a generated report.

Attributes The following figure shows the **Simulink Automatic Table** Properties panel:



Options Show current

Choose the Simulink feature to include in the generated report:

- Automatic — Uses context of parent loop.
- Model
- System

- Block
- Signal

Properties list

Choose whether to select the properties manually or automatically:

- Determine properties automatically — Uses blocks and dialog properties.
- Show properties — Enter properties manually.

Show full path name

Select this option to show the full file pathname for the selected Simulink model.

Display property names as prompts

Select this option to show property names as prompts in the generated report. The report includes the dialog string instead of the underlying code property.

Display Options

Table title

Choose a title for the display in the generated report. To generate a title automatically from the parameter, select Name, which uses the object name as the title. To enter a title, select Custom. To specify no title, select No title.

Header row

Use this option to select a header row for the table in the generated report. To include no header row, select No header. To include a header row with columns for name and object type, select Type and Name. When selected, this option creates a header row for the table with object name and type. To include a custom header, select Custom.

Don't display if value is empty

Select this option to exclude empty parameters in the generated report.

Simulink Automatic Table

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_sl.cs1_auto_table

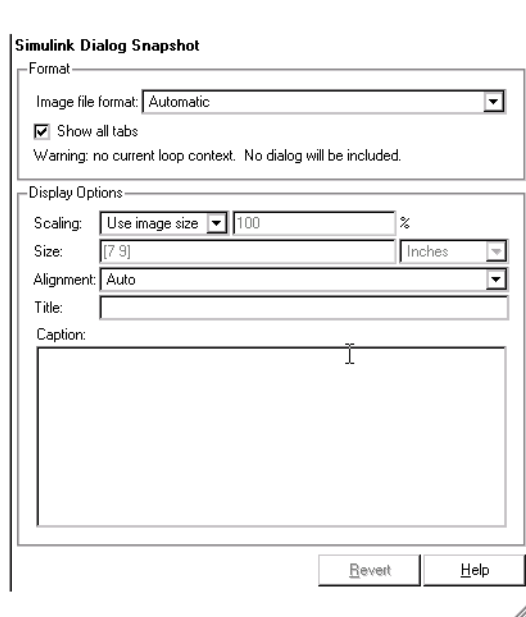
Category

The Simulink Dialog Snapshot component takes snapshots of Simulink editor dialogs. You can display the current settings associated with an object or document the appearance of your custom mask dialogs.

The Dialog Snapshot component reports on the current reported Simulink object by context. If it is the child of a Block Loop, the current reported Block's dialog is documented. If it is the child of a System Loop, the current reported System's dialog is documented.

Attributes

The following figure shows the **Simulink Dialog Snapshot** Properties panel:



Format

Image file format

Choose the format for the snapshot image file. The **automatic** format chooses BMP format for PDF files and PNG for other formats.

Simulink Dialog Snapshot

Display Options

Show all tabs

Select this check box if you want to automatically generate images for all the tabs for the dialog. If the check box is not selected, Report Generator creates an image of only the first tab.

Scaling

Select **Fixed size** to specify the number and type of units.

Select **Zoom** to specify the percentage, the maximum size, and the units of measure.

Select **Use image size** if you want the image in your report to be the same size as the image on the screen.

Size

Enter the exact size of the snapshot in the form w h (width height) and press **Enter**. This field is active only if you choose **Fixed size** in the **Scaling** drop-down list.

Max size

Enter the maximum size of the snapshot in the form w h (width height) and press **Enter**. This field is active only if you choose **Zoom** in the **Scaling** drop-down list.

Units

Enter the units for the size of the snapshot. This field is active only if you choose **Zoom** or **Fixed size** in the **Image size** list box.

Alignment

Values are **Auto**, **Right**, **Left**, and **Center**.

Title

Type the text you want to appear above the snapshot.

Caption

Type the text you want to appear below the snapshot.

**Insert
Anything
into
Report?**

Yes. Snapshot.

Filename

rptgen_sl.CDialogSnapshot

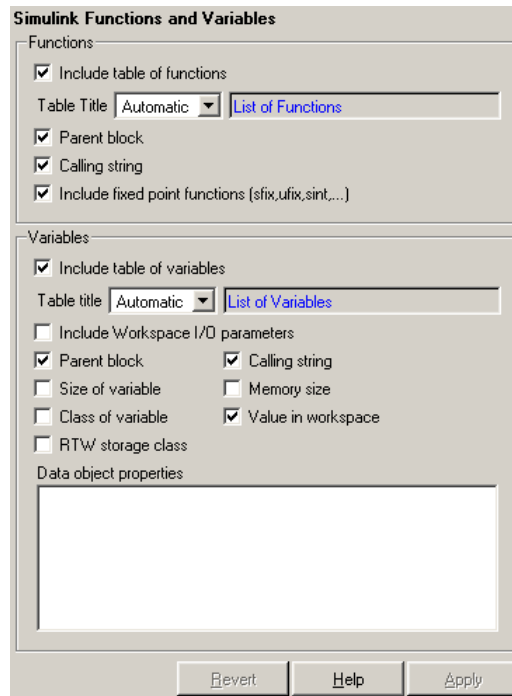
Simulink Functions and Variables

Category Simulink

Description The Simulink Functions and Variables component creates a table that shows all workspace variables and MATLAB functions used by reported blocks in a Simulink model. The current model and systems in which the blocks appear are specified in the Model Loop component.

For example, a Simulink Gain block might have a string `cos(x)` instead of a number. Simulink looks for a variable `x` in the workspace and uses the `cos` function.

Attributes The following figure shows the **Simulink Functions and Variables Properties** panel:



Functions

Include table of functions

Select this option to include a table of Simulink functions in the generated report.

Table Title

Choose a title for the table in the generated report:

- **Automatic** — Select this option to generate a title automatically from the parameter.
- **Custom** — Select this option to enter a title manually.

Parent block

Select this option to include a column in the table that includes the name of the block, which contains the reported variable.

Calling string

Select this option to include the M-code that calls the reported variable.

Include fixed point functions (sfix,ufix,sint,...)

Select this option to include fixed-point functions. If you use any fixed-point functions in your model and want those functions to appear in the generated report, select this option.

Variables

Include table of variables

Select this option to include a table of Simulink variables in the generated report.

Table title

Choose a title for the table in the generated report:

- **Automatic** — Select this option to generate a title automatically from the parameter.
- **Custom** — Select this option to enter a title manually.

Include Workspace I/O parameters

Select this option to report on variables that contain parameters with time vectors and state matrices. These parameters are set in the **Workspace I/O** pane in the **Simulation Parameters** dialog box in a Simulink model.

Simulink Functions and Variables

In the following table, if any of the entries in the first column are on, the component looks for the variable listed in the second column in the workspace. If the component finds the variable, it includes it in the report.

LoadExternalInput	ExternalInput
SaveTime	TimeSaveName
SaveState	StateSaveName
SaveOutput	OutputSaveName
LoadInitialState	InitialState
SaveFinalState	FinalStateName

Parent block

Select this option to include the name of the block that contains the reported variable.

Calling string

Select this option to include the M-code that calls the reported variable.

Size of variable

Select this option to include the size of the reported variable.

Memory size

Select this option to include the amount of memory in bytes that the reported variable needs.

Class of variable

Select this option to include the variable class to which the reported variable belongs.

Value in workspace

Select this option to include the actual value of the reported variable. Note that very large arrays might be displayed as [MxN CLASS]. For example, if you have a 300-by-200 double array, it appears in the report as [300x200 DOUBLE].

RTW storage class

Select this option to include the storage class of the reported variable. The title of this column is **Storage Class**.

This option looks at the model's `TunableVars` property to see if any of the model variables specify their storage class. If the storage class is specified, then the model variables table displays `TunableVarsStorageClass` and `TunableVarsTypeQualifier` in a table column. The column entries are `TunableVarsStorageClass` (`TunableVarsTypeQualifier`) if `TunableVarsTypeQualifier` is not empty. If `TunableVarsTypeQualifier` is empty, the column entry is `TunableVarsStorageClass`.

The values for `TunableVarsStorageClass` are

- Exported Global
- Auto
- ImportedExtern
- ImportedExtern Pointer

Data object properties

Enter data object properties to report on.

Simulink Functions and Variables

Example

This is an example of a table created by the Model Variables component. This property table reports on the variables in the Controller in the F14 demo model.

Variable Name	Parent Blocks	Calling String	Value
Ka	f14/Controller/Gain3	Ka	0.677
Kf	f14/Controller/Gain	Kf	-1.746
Ki	f14/Controller/Proportional plus integral compensator	[Ki]	-3.864
Kq	f14/Controller/Gain2	Kq	0.8156

Insert Anything into Report?

Yes. Table.

Filename

rptgen_sl.csl_obj_fun_var

Simulink Library Information

Category Simulink

Description The Simulink Library Information component inserts a table that lists any library links in the current model, system, or block.

Attributes The following figure shows the **Simulink Library Information** Properties panel:

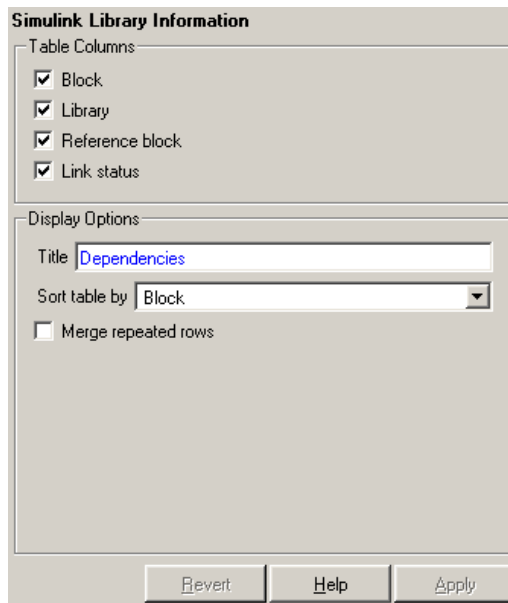


Table Columns

Block

Select this option to include the Simulink block name in the generated table.

Library

Select this option to include the Simulink library root name in the generated table.

Simulink Library Information

Display Options

Reference block

Select this option to include the Simulink reference block name in the generated table.

Link status

Select this option to include the link status in the generated table.

Title

Enter a title for the display in the generated report.

Sort table by

To sort the table by block name, select **Block**. To sort the table by library name, select **Library**. To sort the table by reference block name, select **Reference Block**. To sort the table by link status, select **Link Status**.

Merge repeated rows

Select this option to merge sorted rows in the generated table.

Example

If you select the **Merge repeated rows** option, the generated table will collapse identical rows into one. For example, the following table, which is sorted on the Reference Block column, is generated from the `aero_guidance` model without the option selected:

Block	Library	Reference Block	Status
Equations of Motion (Body Axes)	aerospace	Equations of Motion (Body Axes)	resolved
Incidence & Airspeed	aerospace	Incidence & Airspeed	resolved
Fin Actuator	aerospace	2nd Order Non-linear Actuator	resolved

Simulink Library Information

Block	Library	Reference Block	Status
3DoF Animation	aerospace	3DoF Animation	resolved
Atmosphere	aerospace	Atmosphere model	resolved
Cm	simulink	Interpolation (n-D) using PreLookup	resolved
Cx	simulink	Interpolation (n-D) using PreLookup	resolved
Cz	simulink	Interpolation (n-D) using PreLookup	resolved
Kg	simulink	Interpolation (n-D) using PreLookup	resolved
Ki	simulink	Interpolation (n-D) using PreLookup	resolved
Alpha Index	simulink	PreLookup Index Search	resolved
Mach Index	simulink	PreLookup Index Search	resolved
Mach Index	simulink	PreLookup Index Search	resolved
Alpha Index	simulink	PreLookup Index Search	resolved

With the **Merge repeated rows** option selected, the generated table collapses rows in the Block column so that each row in the Reference Block column is unique:

Simulink Library Information

Block	Library	Reference Block	Status
Equations of Motion (Body Axes)	aerospace	Equations of Motion (Body Axes)	resolved
Incidence & Airspeed	aerospace	Incidence & Airspeed	resolved
Fin Actuator	aerospace	2nd Order Non-linear Actuator	resolved
3DoF Animation	aerospace	3DoF Animation	resolved
Atmosphere	aerospace	Atmosphere model	resolved
Cm	simulink	Interpolation (n-D) using PreLookup	resolved
Cx			
Cz			
Kg			
Ki			
Alpha Index	simulink	PreLookup Index Search	resolved
Mach Index			
Mach Index Alpha Index			

Insert Anything Into Report?

Yes. Table.

Simulink Library Information

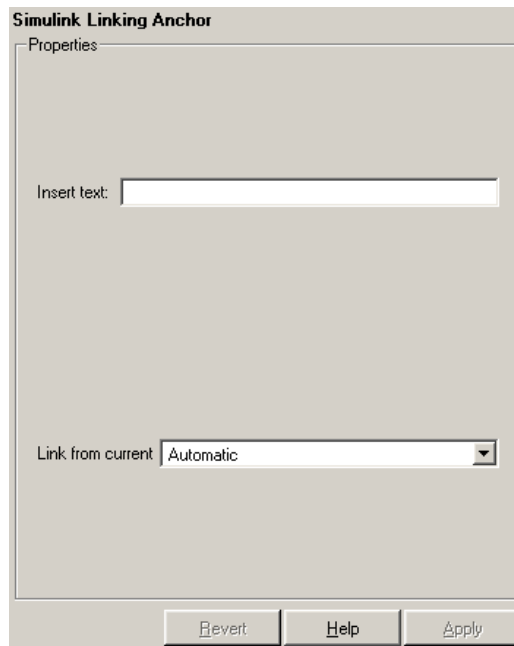
Filename rptgen_sl.CLibinfo

Simulink Linking Anchor

Category Simulink

Description The Simulink Linking Anchor component designates a location to which other links point. This component should have the Model Loop, System Loop, Block Loop, or Signal Loop component as its parent.

Attributes The following figure shows the **Simulink Linking Anchor** Properties panel:



Insert text

If you want text to appear after the linking anchor, enter the text in this field.

Link from current

This option sets the current model, system, block, or signal as the linking anchor:

- Select **Automatic** to select the appropriate model, system, block, or signal as a linking anchor automatically. If the **Model Loop** component is the parent component, then the linking anchor is set on the current model. Similarly, if the **System Loop**, **Block Loop**, or **Signal Loop** is the parent component, then the linking anchor is inserted for the current system, block, or signal, respectively.
- Select **Model** to set the linking anchor to the current model.
- Select **System** to set the linking anchor to the current system.
- Select **Block** to set the linking anchor to the current block.
- Select **Signal** to set the linking anchor to the current signal.

Note You should not use the Simulink Linking Anchor component to create an anchor for an object that has anchor created elsewhere, such as a loop component or summary table component. Each object should have only one anchor per report. See the Simulink Summary Table component reference page.

Insert Anything into Report?

Yes. A link, and possibly text, depending on attribute choices.

Filename

rptgen_sl.cs1_obj_anchor

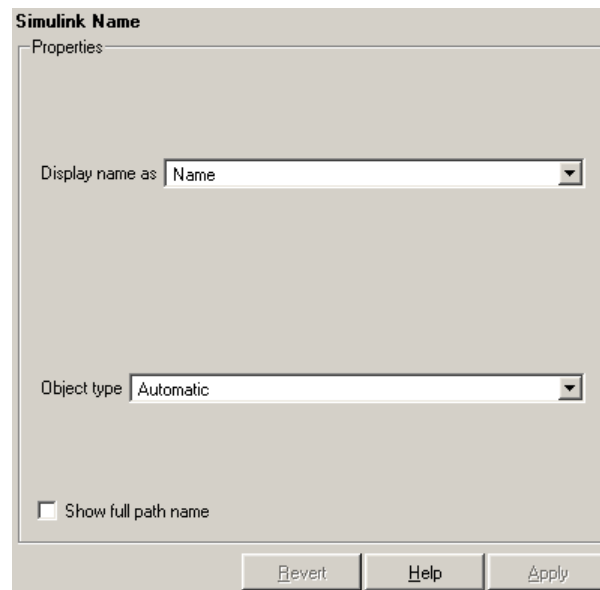
Simulink Name

Category Simulink

Description The Simulink Name component inserts the name of a Simulink model, system, block, or signal into the report.

You can use this component as the first child component of a Chapter/Subsection component, which allows the current Simulink model, system block, or signal name to be the chapter or section title.

Attributes The following figure shows the **Simulink Name** Properties panel:



Display name as

Select one of the options listed below to display the Simulink object name in the report:

- Name — E.g., f14
- Type Name — E.g., Model f14

- Type - Name — E.g., Model - f14
- Type: Name — E.g., Model: f14

Object types

- Select **Automatic** to automatically select the appropriate model, system, block, or signal name as the Simulink object name to include in the report. If the Model Loop component is the immediate parent component, then the object name is the current model name. Similarly, if the System Loop, Block Loop, or Signal Loop is the parent component, then the object name is the name of the current system, block, or signal, respectively.
- Select **Model** to include the current model name in the report.
- Select **System** to include the current system name in the report.
- Select **Block** to include the current block name in the report.
- Select **Signal** to include the current signal name in the report. If the signal name is empty, then the signal <handle> is included in the report. The signal handle is a unique numerical identifier to that signal.

Show full path name

Select this option to show the full pathname for a system or block. For example, if you choose this option for a block, the Simulink block name appears as <Model Name>/<System Name>/<Block Name>. Note that this option is not available for models and signals.

Insert Anything into Report?

Yes. Text.

Filename

rptgen_sl.cs1_obj_name

Simulink Property

Category Simulink

Description The Simulink Property component inserts a single property name/property value pair for the current Simulink model, system, block, or signal.

Attributes The following figure shows the **Simulink Property** Properties panel:

The screenshot shows the 'Simulink Property' dialog box. It is divided into two main sections: 'Simulink Object and Parameter' and 'Display Options'.
In the 'Simulink Object and Parameter' section, there is a dropdown menu for 'Object type' set to 'System' and a text input field for 'System parameter name' containing the text 'Name'.
In the 'Display Options' section, there is a dropdown menu for 'Title' set to 'Automatic', a text input field for 'Size limit' containing the value '32', and a dropdown menu for 'Display as' set to 'Auto table/paragraph'. There is also an unchecked checkbox labeled 'Ignore if value is empty'.
At the bottom of the dialog, there are three buttons: 'Revert', 'Help', and 'Apply'.

Simulink Object and Parameter

Object type

Choose the Simulink object type to include in the report:

- System
- Model
- Block
- Signal

System parameter name

Enter a Simulink parameter name to include in the generated report. If Model is selected in **Object type**, this option appears as **Model parameter name**. If Block is selected in **Object type**, this option appears as **Block parameter name**. If Signal is selected in **Object type**, this option appears as **Signal parameter name**.

Display Options

Title

Choose a title for the display in the generated report. To use the parameter name as the title, select Automatic. To enter a title, select Custom. To specify no title, select None.

Size limit

Use this size to limit the width of the display in the generated report. Units are in pixels. When creating a table, the size limit is the hypotenuse of the table width and height [$\sqrt{w^2+h^2}$]. When creating text, the size limit is the number of characters squared. If the size limit is exceeded, the variable is rendered in condensed form, such as [64x64 double]. Setting a size limit of zero will ignore the size limit and always display the variable, no matter how large.

Display as

Choose a display style from the menu:

- Auto table/paragraph — Displays as a table or paragraph based on the information.

Simulink Property

- **Inline text** — Displays as inline, which fits in line with the surrounding text.
- **Paragraph** — Displays as a text paragraph.
- **Table** — Displays as a table.

Ignore if value is empty

Select this option to exclude the parameter from the generated report if the parameter is empty.

**Insert
Anything
into
Report?**

Yes. Text.

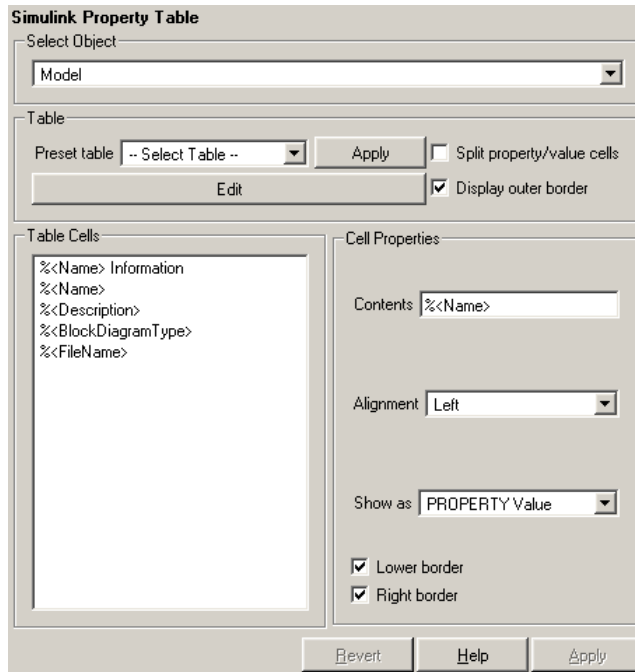
Filename

rptgen_sl.cs1_property

Category Simulink

Description The Simulink Property Table component inserts a table that reports on model-level property name/property value pairs.

Attributes The following figure shows the **Simulink Property Table** Properties panel:



Select Object

Choose the object for the property table in the generated report:

- Model
- System
- Block

Simulink Property Table

- Signal

For more information about selecting object types in property table components, see “Selecting Object Types” on page 3-22.

Table

A preset table is a table that is already formatted and set up. You can select a preset table in the preset table list in the upper left corner of the attributes page. To apply a preset table, select the table and click **Apply**.

Preset table

Choose a type of table to display the object property table:

- Defaults
- Callbacks
- Graphics
- Printing
- Blank 4x4

Split property/value cells

Select this option to split property name/property value pairs into separate cells. To have the property name and property value appear in adjacent horizontal cells in the table, select the **Split property/value cells** check box. In this case, the table is in split mode and there can be only one property name/property value pair in a cell. If you have more than one name/property pair in a cell, then only the first pair is displayed in the report. All subsequent pairs are ignored.

To have the property name and property value appear together in one cell, deselect **Split property/value cells**. This is nonsplit mode. In nonsplit mode, you can have more than one property name/property value pair and you can also have text.

If you want to switch from nonsplit mode to split mode, make sure that you only have one property name/property value pair

per table cell before you switch modes. If you have more than one property name/property value pair or any text, then only the first property name/property value pair appears in the report; subsequent pairs and text are omitted.

Display outer border

Select this option to display the outer border of the table in the generated report.

Table Cells

Use this field to select table properties to modify. The selection in this pane affects the available fields in the **Cell Properties** pane.

Cell Properties

The visible options in the **Cell Properties** pane depend on the object selected in the **Table Cells** pane. If %<Name> Information is selected, only the **Contents** and **Show** options are displayed. If any other object is selected in the **Table Cells** pane, the **Alignment**, **Lower border**, and **Right border** options display.

Contents

Use this field to modify the contents of the table cell selected in the **Table Cells** pane.

Alignment

Choose the alignment of the contents of the selected table cell in the **Table Cells** pane:

- Left
- Center
- Right
- Double justified

Show as

Choose the format for the contents of the table cell:

- Value
- Property Value

Simulink Property Table

- PROPERTY Value
- Property: Value
- PROPERTY: Value
- Property - Value
- PROPERTY - Value

Lower border

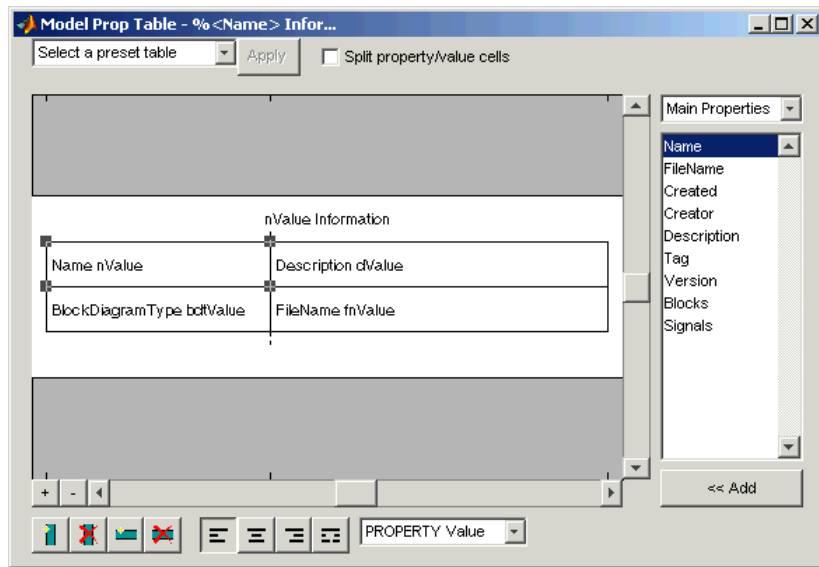
Select this option to display the lower border of the table in the generated report.

Right border

Select this option to display the right border of the table in the generated report.

Creating Custom Tables

To create a custom table, you can first select a preset table and then edit it. You might want to start with the Blank 4x4 preset table. You can add and delete rows and you can add properties. To open the **Edit Table** dialog box, click **Edit**. The dialog box appears:



For more information about using this dialog box to create custom property tables, see “Working with Property Table Components” on page 3-11.

Note that if you do not have Real-Time Workshop®, Summary (req RTW) is not listed in this list, because summary properties require Real-Time Workshop. If you are using a setup file that contains a summary property, then the property name appears in the report, but the property value does not.

Example

The table below is an example of a model property table. It is the **Simulation Parameters** preset table. This property table is reporting the F14 demo model.

<i>Solver</i> ode45	<i>ZeroCross</i> on	<i>StartTime</i> 0.0
		<i>StopTime</i> 60
<i>RelTol</i> 1e-4	<i>AbsTol</i> 1e-6	<i>Refine</i> 1

Simulink Property Table

<i>InitialStep</i> auto	<i>FixedStep</i> auto	<i>MaxStep</i> auto
<i>LimitMaxRows</i> off	<i>MaxRows</i> 1000	<i>Decimation</i> 1

**Insert
Anything
into
Report?**

Yes. Table.

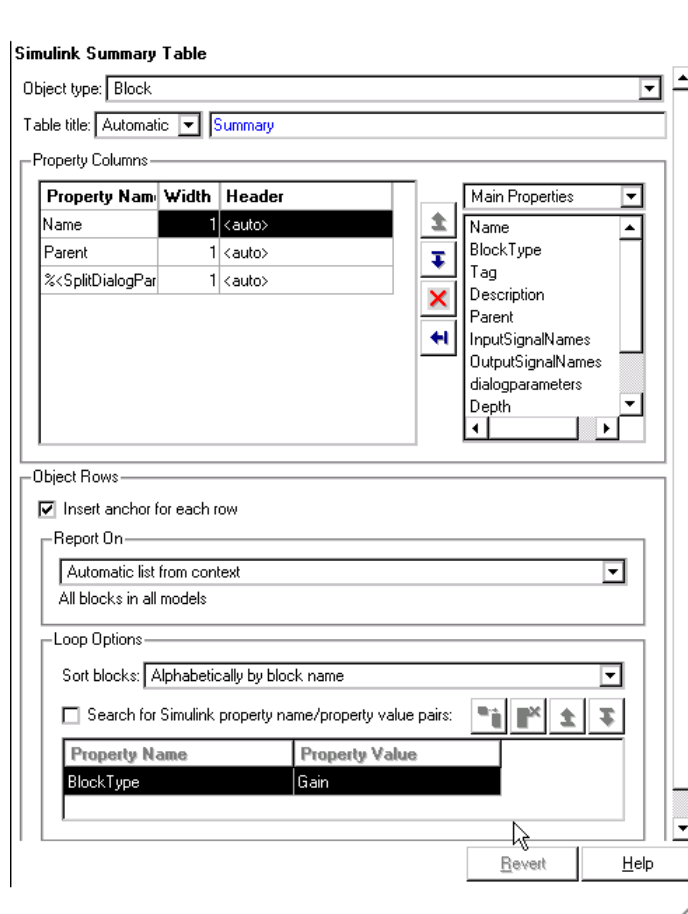
Filename

rptgen_sl.cs1_prop_table

Simulink Summary Table

Category	Simulink
Description	The Simulink Summary Table component shows properties or parameters of the selected Simulink models, systems, blocks, or signals in a table.
Attributes	The following figure shows the Simulink Summary Table Properties panel for a Block object:

Simulink Summary Table



Object type

Choose the object type to display in the generated report:

- Model
- System
- Signal

- Block

The menu item selected in this menu affects the options available in the **Property Columns** pane.

Table title

Choose a title for the summary table in the generated report:

- Automatic — Select this option to generate a title automatically from the parameter.
- Custom — Select this option to enter a title manually.

Property Columns

The list in the left of the Property Columns pane displays the object properties to be included in the summary table in the generated report. To add a property, select the appropriate property level in the text box on the left. Next, in the the text box on the right, select the property

that you want to add and click **Add** .

To delete a property, select the property name and press the **Delete** key.

Note The %<SplitDialogParameters> property is a unique property that you can specify for Simulink summary tables where the object type is **Block**. This property of the Simulink Summary Table component generates multiple summary tables, grouped by block type. Each summary table group contains the dialog parameters for that block. Dialog parameters are the specific properties used by that block type and are usually visible on the block's editing dialog.

Relative column widths

Use this option to enter relative column widths for the summary table in the generated report. Entered widths should be in percentages.

Simulink Summary Table

Object Rows

Insert anchor for each row
Select this option to insert an anchor for each row in the summary table.

Report On

Automatic list from context
Select this option to report on all blocks in the current context. The context is set by the parent of the Simulink Summary Table component.

Custom - use block list
Select this option to report on a list of blocks that you specify, and enter the block names in the corresponding field. You must use the full pathname when specifying blocks. If you want to sort the blocks in this list, select the **Sort blocks in list** option and then select a sorting option from the **Sort blocks** list (in the **Loop Options** section). Blocks are reported on in the order that they are sorted. If you do not select this option, blocks are reported on in the order that they are listed in the block list.

You can enter %<VariableName> if you want to insert the value of a variable from the MATLAB workspace. The %<> notation can be a string or cell array. See “%<VariableName> Notation” on page 7-246 in the Text component reference page for more details.

For example, if you want to report on the `theta dot` integrator block and the `theta` integrator block in the demo model `simppend`, you could enter the following in the block list.

```
simppend/theta dot
```

```
%<Z>
```

If you define `Z` in the workspace as the following,

```
Z={'simppend/theta'}
```

then the Report Generator reports on the following blocks:

```
simppend/theta dot
```

```
simppend/theta
```

Loop Options

You can choose block sorting options and reporting options in this pane.

Sort blocks

Use this option to select how the blocks are sorted:

- Select **Alphabetically by block name** to sort blocks alphabetically by their names.
- Select **Alphabetically by system name** to sort systems alphabetically.

In this option, the systems are sorted alphabetically, and blocks in each system are listed, but in no particular order.

- Select **Alphabetically by full Simulink path** to sort blocks alphabetically by Simulink path.
- Select **By block type** to sort blocks alphabetically by block type.
- Select **By block depth** to sort blocks by their depth in the model.
- Select **By traversal order** to sort blocks by traversal order.
- Select **By simulation order** to sort blocks by execution order.

Search for Simulink property name/property value pairs

- Select this option to report only on Simulink blocks with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Simulink Summary Table

Example

If you are reporting on the demo model F14, and you choose the following options, then the summary table shown below is generated:

- Sort on systems by system depth.
- Name and blocks are the system parameters to be included in the table.

Name	Blocks
f14	u, Actuator Model, Aircraft Dynamics Model, Angle of Attack, Controller, Dryden Wind Gust Models, Gain, Gain1, Gain2, Gain5, More Info, More Info1, Nz pilot calculation, Pilot, Pilot G force Scope, Stick Input, Sum, Sum1, alpha (rad), Nz Pilot (g)
Aircraft Dynamics Model	Elevator Deflection d (deg), Vertical Gust wGust (ft/sec), Rotary Gust qGust (rad/sec), Gain3, Gain4, Gain5, Gain6, Sum1, Sum2, Transfer Fcn.1, Transfer Fcn.2, Vertical Velocity w (ft/sec), Pitch Rate q (rad/sec)
Controller	Stick Input (in), alpha (rad), q (rad/sec), Alpha-sensor Low-pass Filter, Gain, Gain2, Gain3, Pitch Rate Lead Filter, Proportional plus integral compensator, Stick Prefilter, Sum, Sum1, Sum2, Elevator Command (deg)
Dryden Wind Gust Models	Band-Limited White Noise, Q-gust model, W-gust model, Wg, Qg
More Info	
More Info1	
Nz pilot calculation	w, q, Constant, Derivative, Derivative1, Gain1, Gain2, Product, Sum1, Pilot g force (g)

Simulink Summary Table

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_sl.cs1_summ_table

State Loop

Category

Stateflow

Description

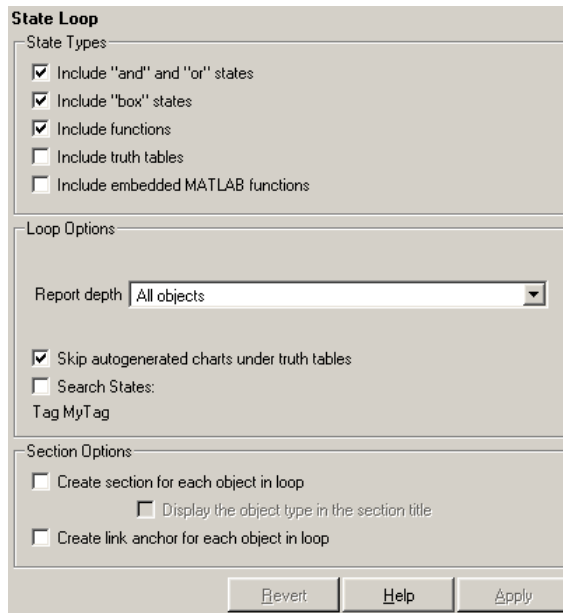
The State Loop component runs its children for all states in its context. For example, if a State Loop component is parented by a Model Loop component, the State Loop component's context is the Model Loop. If the State Loop has no context, it loops on all states in all open models.

When using the State Loop component, keep the following points in mind:

- If the State Loop has the Model Loop as its parent, it includes all states in the models.
- If the State Loop has the System Loop as its parent, it includes all states in the systems.
- If the State Loop has the Machine Loop as its parent, it includes all states in the machines.
- If the State Loop has the Chart Loop as its parent, it includes all states in the charts.
- If the State Loop has another State Loop as its parent, it includes all states in the current state. Use this context with a shallow loop.

Attributes

The following figure shows the **State Loop** Properties panel:



State Types

Include "and" and "or" states

Select this option to include AND and OR states in the loop.

Include "box" states

Select this option to include "box" states in the loop.

Include functions

Select this option to include "function" states in the loop.

Include truth tables

Select this option to include truth tables in the loop.

Include embedded MATLAB functions

Select this option to include Embedded MATLAB functions in the loop.

State Loop

Loop Options

Report depth

Select the level on which to loop:

- All objects
- Local children only

Skip autogenerated charts under truth table

Select this option to keep autogenerated state objects under truth tables from being displayed in the report.

Search states

Select this option to indicate specific states to include in the loop.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

Insert Anything into Report?

Yes, section, if the **Create section for each object in loop** option is selected.

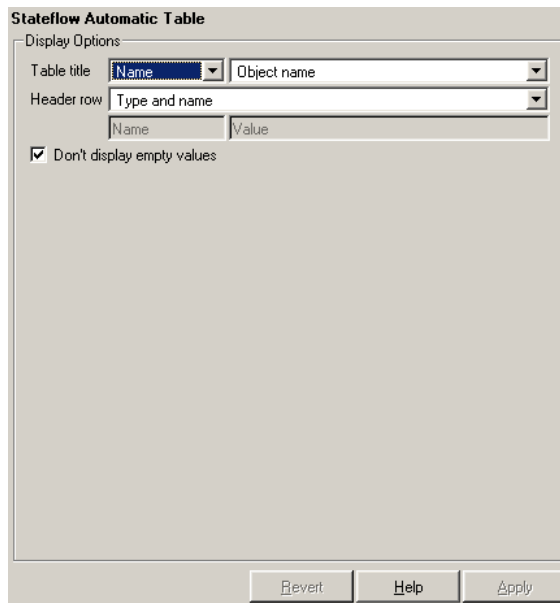
Filename

rptgen_sf.csf_state_loop

Category Stateflow

Description The Stateflow Automatic Table component inserts a table that contains the properties of the current Stateflow object as set in a Machine Loop component, State Loop component, Chart Loop component, or Object Loop component.

Attributes The following figure shows the **Stateflow Automatic Table Properties** panel:



Display Options

Table title

Use this option to select a title for the table in the generated report. To include no title, select No title. To use a name as the title, select Name. To include a custom title, select Custom.

If Name is selected, select one of the following options:

Stateflow Automatic Table

- Object name
- Object name with Stateflow path
- Object name with Simulink and Stateflow path

Header row

Use this option to select a header row for the table in the generated report. To include no header row, select `No header`. To include a header row with columns for name and object type, select `Type and Name`. When selected, this option creates a header row for the table with object name and type. To include a custom header, select `Custom`.

Don't display empty values

Select this option to exclude empty values from the generated report.

Insert Anything into Report?

Yes. Table.

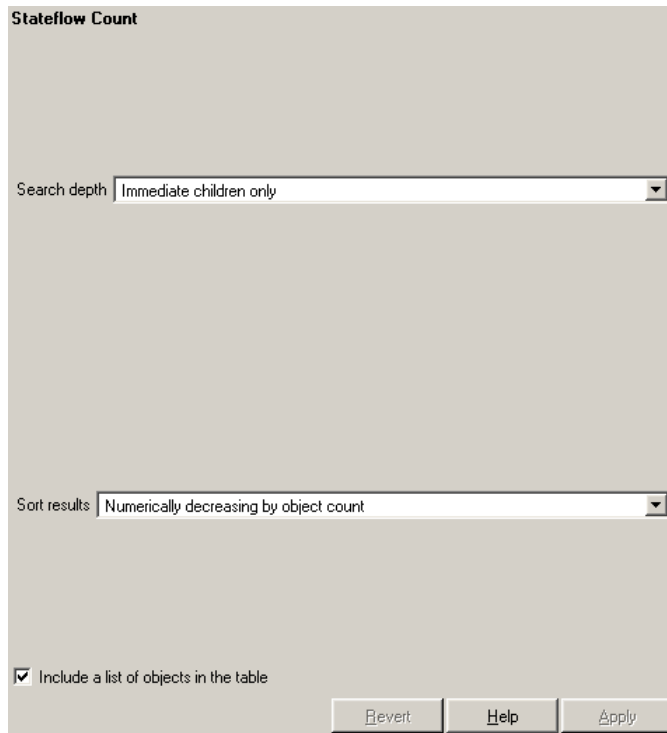
Filename

rptgen_sf.csf_auto_table

Category Stateflow

Description The Stateflow Count component counts the number of Stateflow objects in the current context, such as system, model, signal, and so on. See the Stateflow documentation for a description of Stateflow objects.

Attributes The following figure shows the **Stateflow Count** Properties panel:



Search depth

Choose the search depth for the count:

- **All descendants** — Searches all children of the Stateflow object.

Stateflow Count

- Immediate children only — Searches only children one level below the Stateflow object.

Sort results

Choose the sort method for the count results:

- Numerically decreasing by object count
- Alphabetically increasing by object type

Include a list of objects in table

Select this option to insert a column containing the counted objects.

Insert Anything into Report?

Yes. Table.

Filename

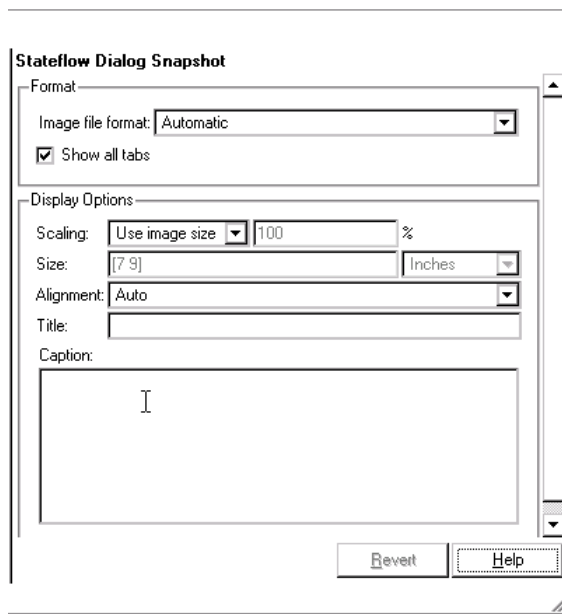
rptgen_sf.csf_count

Category Stateflow

Description The Stateflow Dialog Snapshot component takes snapshots of Stateflow editor dialogs. You can display the current settings associated with an object or document the appearance of your custom mask dialogs.

The Stateflow Dialog Snapshot component reports on the current reported Stateflow object. If the component is the child of a State Loop, for example, the current reported State's dialog is documented.

Attributes The following figure shows the **Stateflow Dialog Snapshot** Properties panel:



Format **Image file format**
Choose the format for the snapshot image file. The **automatic** format chooses BMP format for PDF files and PNG for other formats.

Stateflow Dialog Snapshot

Display Options

Show all tabs

Select this check box if you want to automatically generate images for all the tabs for the dialog. If the check box is not selected, Report Generator creates an image of only the first tab.

Scaling

Select **Fixed size** to specify the number and type of units.

Select **Zoom** to specify the percentage, the maximum size, and the units of measure.

Select **Use image size** if you want the image in your report to be the same size as the image on the screen.

Size

Enter the exact size of the snapshot in the form w h (width height) and press **Enter**. This field is active only if you choose **Fixed size** in the **Scaling** drop-down list.

Max size

Enter the maximum size of the snapshot in the form w h (width height) and press **Enter**. This field is active only if you choose **Zoom** in the **Scaling** drop-down list.

Units

Enter the units for the size of the snapshot. This field is active only if you choose **Zoom** or **Fixed size** in the **Image size** list box.

Alignment

Values are **Auto**, **Right**, **Left**, and **Center**.

Title

Type the text you want to appear above the snapshot.

Caption

Type the text you want to appear below the snapshot.

**Insert
Anything
into
Report?**

Yes. Snapshot.

Filename

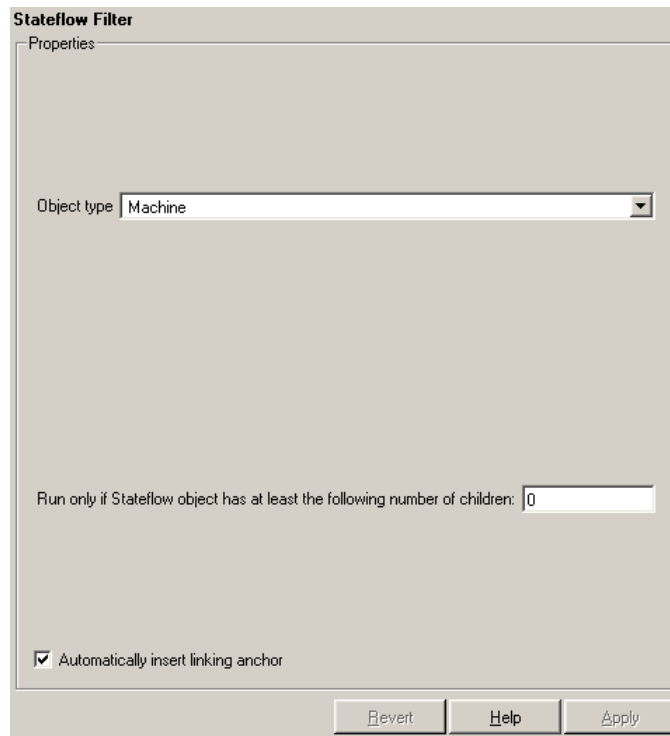
rptgen_sl.CDialogSnapshot

Stateflow Filter

Category Stateflow

Description The Stateflow Filter component is a filter that runs its children only if the current object type (set by the parent Stateflow Hierarchy Loop component) matches the selected object type. The Stateflow Filter component must have the Stateflow Loop component as its parent.

Attributes The following figure shows the **Stateflow Filter** Properties panel:



Object type

Choose the Stateflow object type to include in the report. The current object type (set by the parent State Loop) must match

this selected object type in order for the current object to be included in the report.

Run only if Stateflow object has at least the following number of Stateflow children

Use this option to limit the number of Stateflow objects that is reported on. If you enter a number in this field, a Stateflow object is not included in the report unless it has at least that number of children.

Automatically insert linking anchor

Select this option to insert a linking anchor before the reported object. If an anchor for this object already exists (inserted by the Stateflow Linking Anchor component), a second anchor is not created.

**Insert
Anything
into
Report?**

No.

Filename

rptgen_sf.csf_obj_filter

Stateflow Hierarchy

Category Stateflow

Description The Stateflow Hierarchy component inserts a tree representation that describes the Stateflow object's hierarchy.

Attributes The following figure shows the **Stateflow Hierarchy** Properties panel:

Stateflow Hierarchy

Tree Objects

Construct tree from: Current object

Emphasize current object in tree

Show number of parents: 10

Show siblings

Show children to depth: 5

Children

Show junctions: Non-redundant

Show transitions: Labeled or non-redundant

Skip autogenerated charts under truth tables

List Formatting

List style: Bulleted list

Numbering style: 1,2,3,4,...

Show only current list value (a)

Revert Help Apply

Tree Options

Construct tree from

Select the object to use for the tree representation.

- Current object
- Root of current object – Starts from the top of the hierarchy.

Emphasize current object in tree

Select this option to highlight the current object in the tree representation.

Show number of parents

Enter the number of parents to allow in the tree representation.

Show siblings

Select this option to display siblings in the tree representation.

Show children to depth

Enter the depth of children to display for each object in the tree representation.

Children

Show junctions

Select the level of junction detail to display in the generated report.

- All
- Non-redundant
- None

Show transitions

Select the level of transition detail to display in the generated report.

- All
- Labeled or non-redundant
- Non-redundant
- Labeled
- None

Skip autogenerated charts under truth tables

Select this option to not include autogenerated charts beneath truth tables.

Stateflow Hierarchy

List Formatting

List style

Select either **Bulleted list** or **Numbered list**. If you choose **Numbered list**, then you can select numbering options in the **Numbering style** section.

Numbering style

Select a numbering style from the menu.

- 1,2,3,4...
- a,b,c,d...
- A,B,C,D...
- i,ii,iii,iv...
- I,II,III,IV...

To show the parent number in each list entry, select **Show parent number in nested list (1.1.a)**. To show only the current number or letter, select **Show only current list value (a)**.

Insert Anything into Report?

Yes. Tree.

Filename

rptgen_sf.csf_hier

Category Stateflow

Description The Stateflow Hierarchy Loop component runs its child components on the Stateflow object hierarchy.

Attributes The following figure shows the **Stateflow Hierarchy Loop** Properties panel:

Stateflow Hierarchy Loop

Loop Options

Minimum legible font size

Skip autogenerated charts under truth tables

Search Stateflow:
tag MyTag

Section Options

Create section for each object in loop
 Display the object type in the section title

Create link anchor for each object in loop

Loop Options

Minimum legible font size

Enter the minimum font size to use in the report. The default font size, 8, is the smallest recommended font size.

Skip autogenerated charts under truth tables

Select this option to exclude autogenerated charts under truth tables in the report.

Stateflow Hierarchy Loop

Search Stateflow

Select this option to report only on Stateflow charts with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the object in the generated report.

Insert Anything into Report?

No.

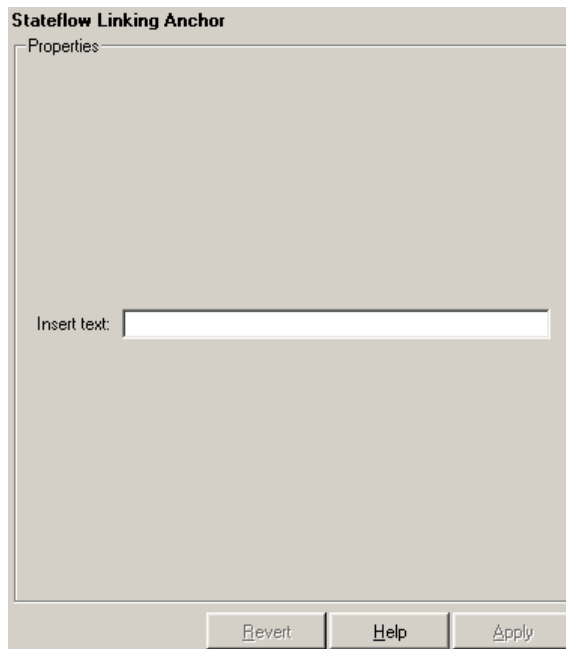
Filename

rptgen_sf.csf_hier_loop

Category Stateflow

Description The Stateflow Linking Anchor component designates a location to which other links point. The linking anchor is set to the current object, which is defined by the parent component. This component must have the Chart Loop, State Loop, Machine Loop, Terminal Loop, or Stateflow Filter component as its parent.

Attributes The following figure shows the **Stateflow Linking Anchor** Properties panel:



Insert text

If you want text to appear after the linking anchor, enter the text in this field.

Stateflow Linking Anchor

Note You should not use the Stateflow Linking Anchor component to create an anchor for an object that is anchored in the object summary table. See the Simulink Summary Table component reference page.

Insert Anything into Report?

Yes. A link, and possibly text, depending on attribute choices.

Filename

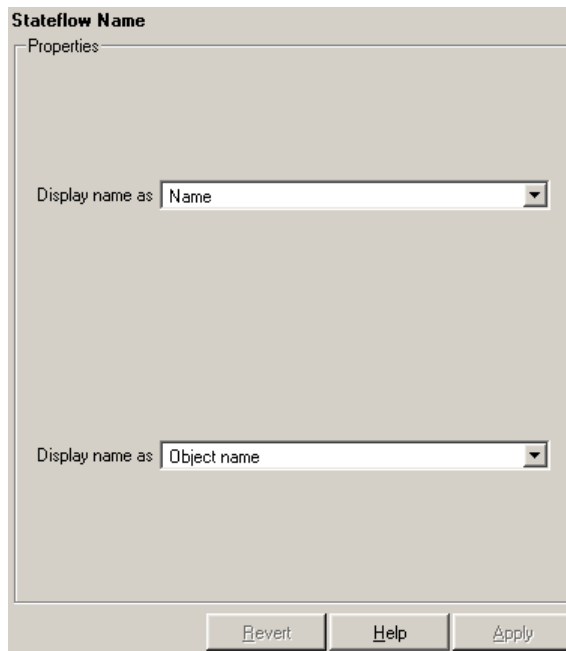
rptgen_sf.csf_obj_anchor

Category Stateflow

Description The Stateflow Name component inserts the name of the Stateflow object specified by its parent component into the report. This component must have the State Loop, Chart Loop, or Stateflow Filter component as its parent.

You can use this component as the first child component of a Chapter/Subsection component, which allows the current Stateflow object name to be the chapter or section title.

Attributes The following figure shows the **Stateflow Name** Properties panel:



Display name as

Select one of the options listed below to display the Stateflow object name in the report:

Stateflow Name

- Name — E.g., Object
- Type Name — E.g., Object <ObjectName>
- Type - Name — E.g., Object - <ObjectName>
- Type: Name — E.g., Object: <ObjectName>

Display name as

Select one of the options listed below to display the Stateflow object name in the report:

- Object name
- Object name with Stateflow path
- Object name with Simulink and Stateflow path

**Insert
Anything
into
Report?**

Yes. Text.

Filename

rptgen_sf.csf_obj_name

Category Stateflow

Description The Stateflow Object Loop component runs its child components for each Stateflow object. The component inserts a table into the generated report.

Attributes The following figure shows the **Stateflow Object Loop** Properties panel:

Object Loop

Object Types

- Report on "Data" objects
- Report on "Event" objects
- Report on "Transition" objects
- Report on "Junction" objects
- Report on "Target" objects
- Report on "Note" objects

Loop Options

Report depth: Local children only

- Skip autogenerated charts under truth tables
- Remove objects which do not contain more information than a snapshot
- Search Stateflow: tag MyTag

Section Options

- Create section for each object in loop
 - Display the object type in the section title
- Create link anchor for each object in loop

Help Apply

Object Types

Report on "Data" objects

Select this option to include Stateflow data objects in the loop.

Report on "Event" objects

Select this option to include Stateflow event objects in the loop.

Stateflow Object Loop

Report on "Transition" objects

Select this option to include Stateflow transition objects in the loop.

Report on "Junction" objects

Select this option to include Stateflow junction objects in the loop.

Report on "Target" objects

Select this option to include Stateflow target objects in the loop.

Report on Note objects

Select this option to include Stateflow note objects in the loop.

Loop Options

Report depth

Select the level on which to loop.

- All objects — Reports on all Stateflow objects.
- Local children only — Reports only on children one level down.

Skip autogenerated charts under truth tables

Select this option to exclude autogenerated charts under truth tables from the report.

Remove objects which do not contain more information than a snapshot

Select this option to exclude objects that only contain a snapshot. Other information can include a document link or a description.

Search Stateflow

Select this option to report only on Stateflow charts with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Section Options

Create section for each object in loop

Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title

Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop

Select this option to create a hyperlink to the Stateflow object in the generated report.

**Insert
Anything
into
Report?**

Yes, section, if the **Create section for each object in loop** option is selected.

Filename

rptgen_sf.csf_obj_loop

Stateflow Property

Category Stateflow

Description The Stateflow Property component inserts a table, text, or paragraph that contains details of the selected Stateflow object property.

Attributes The following figure shows the **Stateflow Property** Properties panel:

Stateflow Property

Property to Display

Property name

Display Options

Title

Size limit

Display as:

Ignore if value is empty

Property to Display

Property name
Enter the Stateflow property name to display.

Display Options

Title
Choose a title for the display in the generated report. To use the parameter name as the title, select **Automatic**. To enter a title, select **Custom**. To specify no title, select **None**.

Size limit

Use this size to limit the width of the display in the generated report. Units are in pixels. When creating a table, the size limit is the hypotenuse of the table width and height [$\sqrt{w^2+h^2}$]. When creating text, the size limit is the number of characters squared. If the size limit is exceeded, the variable is rendered in condensed form, such as [64x64 double]. Setting a size limit of zero will ignore the size limit and always display the variable, no matter how large.

Display as

Choose a display style from the menu:

- `Auto table/paragraph` — Displays as a table or paragraph based on the information.
- `Inline text` — Displays as inline, which fits in line with the surrounding text.
- `Paragraph` — Displays as a text paragraph.
- `Table` — Displays as a table.

Ignore if value is empty

Select this option to exclude empty parameters in the generated report.

Insert Anything into Report?

Yes. Text, paragraph, or table.

Filename

rptgen_sf.csf_property

Stateflow Property Table

Category Stateflow

Description The Stateflow Property Table component inserts a property-value table for a Stateflow object into the report. This object is defined by the Stateflow Filter component, which must be the parent of the Stateflow Property Table. For more information about working with property table components, see “Working with Property Table Components” on page 3-11.

Attributes The following figure shows the **Stateflow Property Table Properties** panel:

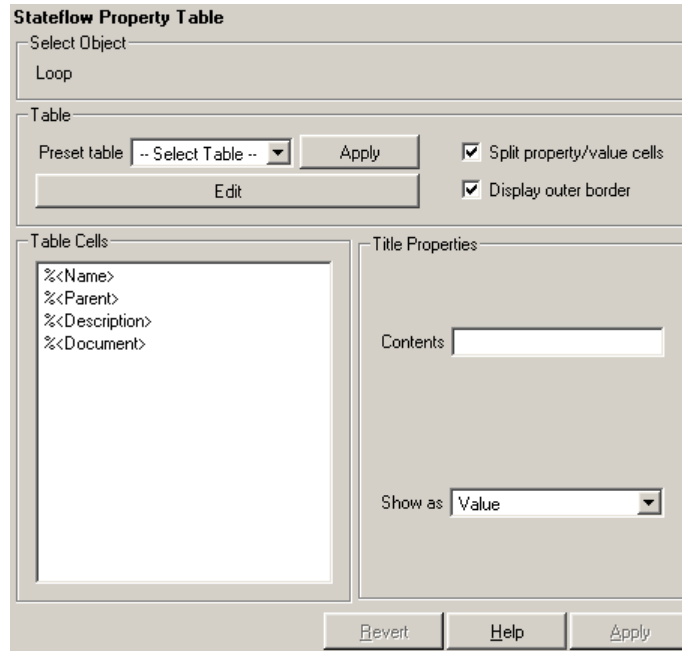


Table A preset table is a table that is already formatted and set up. You can select a preset table in the preset table list in the upper left corner of

the attributes page. To apply a preset table, select the table and click **Apply**.

Preset table

Choose a type of table to display the object property table:

- Defaults
- Callbacks
- Graphics
- Printing
- Blank 4x4

Split property/value cells

Select this option to split property name/property value pairs into separate cells. To have the property name and property value appear in adjacent horizontal cells in the table, select the **Split property/value cells** check box. In this case, the table is in split mode and there can be only one property name/property value pair in a cell. If you have more than one name/property pair in a cell, then only the first pair is displayed in the report. All subsequent pairs are ignored.

To have the property name and property value appear together in one cell, deselect the **Split property/value cells**. This is nonsplit mode. In nonsplit mode, you can have more than one property name/property value pair and you can also have text.

If you want to switch from nonsplit mode to split mode, make sure that you have only one property name/property value pair per table cell before you switch modes. If you have more than one property name/property value pair or any text, then only the first property name/property value pair appears in the report; subsequent pairs and text are omitted.

Stateflow Property Table

Title Properties

Display outer border

Select this option to display the outer border of the table in the generated report.

Table Cells

Use this field to select table properties to modify. The selection in this pane affects the available fields in the **Cell Properties** pane.

The visible options in the **Title Properties** pane depend on the object selected in the **Table Cells** pane. If %<Name> is selected, only the **Contents** and **Show** options is displayed. If any other object is selected in the **Table Cells** pane, the **Alignment**, **Lower border**, and **Right border** options is displayed.

Contents

Use this field to modify the contents of the table cell selected in the **Table Cells** pane.

Alignment

Choose the alignment of the contents of the selected table cell in the **Table Cells** pane:

- Left
- Center
- Right
- Double justified

Show as

Choose the format for the contents of the table cell:

- Value
- Property Value
- PROPERTY Value
- Property: Value
- PROPERTY: Value

Stateflow Property Table

- Property - Value
- PROPERTY - Value

Lower border

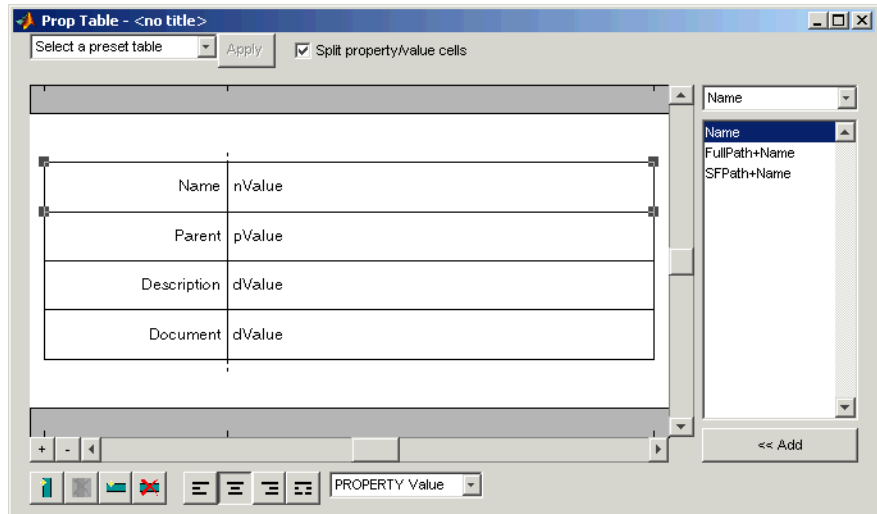
Select this option to display the lower border of the table in the generated report.

Right border

Select this option to display the right border of the table in the generated report.

Creating Custom Tables

To create a custom table, you can first select a preset table and then edit it. You might want to start with the Blank 4x4 preset table. You can add and delete rows and you can add properties. To open the **Edit Table** dialog box, click **Edit**. The dialog box appears:



For more information about using this dialog box to create custom property tables, see “Working with Property Table Components” on page 3-11.

Stateflow Property Table

Note that available properties and preset tables depend on the Stateflow Filter parent component.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

rptgen_sf.csf_prop_table

Category

Stateflow

Description

The Stateflow Snapshot component inserts a snapshot of a Stateflow object (defined by the Stateflow Filter component) into the report. The Stateflow Snapshot component must have the Stateflow Filter component as its parent.

This component only executes if the selected object in the Stateflow Filter component is a graphical object. The following are graphical Stateflow objects:

- Chart
- State
- Transition
- Frame

Attributes

The following figure shows the **Stateflow Snapshot** Properties panel:

Stateflow Snapshot

Stateflow Snapshot

Image

Image file format: Automatic SF format

Shrink image to minimum font size set in Stateflow Loop

Maximum size: [500 300] Points

Properties

Include callouts to describe visible objects

Insert anchors for transitions and junctions: None

Run only if Stateflow object has at least the following number of children: 0

Image title: No title

Revert Help Apply

Image

Image file format

Choose the image file format (e.g., JPEG, TIFF, etc.) from this list. Select Automatic SF Format to automatically choose the format best suited for the output format that you chose in the Report component. Otherwise, choose an image format that your output viewer can read. Automatic SF Format is the default option. The options include

- Automatic SF Format (uses the Handle Graphics file format selected in the **Preferences** dialog box)
- Adobe Illustrator
- Bitmap (16m-color)
- Bitmap (256-color)

- Black and white encapsulated PostScript
- Black and white encapsulated PostScript (TIFF)
- Black and white encapsulated PostScript2
- Black and white encapsulated PostScript2 (TIFF)
- Black and white PostScript
- Black and white PostScript2
- Color encapsulated PostScript
- Color encapsulated PostScript (TIFF)
- Color encapsulated PostScript2
- Color encapsulated PostScript2 (TIFF)
- Color PostScript
- Color PostScript2
- JPEG high quality image
- JPEG medium quality image
- JPEG low quality image
- PNG 24-bit image
- TIFF - compressed
- TIFF - uncompressed
- Windows metafile

Size menu

Choose the aspect ratio for the snapshot in the generated report:

- Custom (maintain aspect ratio)
- Shrink image to minimum font size set in Stateflow Loop

Stateflow Snapshot

Maximum size

Enter the maximum size for the snapshot in the generated report in the selected units. Use [width height] format. In the units text box, select Inches, Centimeters, Points, or Normalized.

Properties

Include callouts to describe visible objects

Select this option to display descriptive callouts for visible objects.

Insert anchors for transitions and junctions

Select this option to insert anchors for transitions and junctions into the report.

- None
- Redundant children only
- All

Run only if Stateflow object has at least the following number of children

To run this component only when the current Stateflow object has at least a certain number of children, enter that number in this field. The current Stateflow object is specified by the Stateflow Filter component. This option is not active unless the selected object in the Stateflow Filter (the parent component) is a graphical object.

This option lets you decrease the size of the report by excluding certain images. You might want to use this option when you have a large model.

Image title

Choose No title, Object name, Object name (full Stateflow path), Object name (full Simulink and Stateflow path), or Custom to specify whether or not you want a title for the image. The default is no title. If you choose **Custom**, then you need to type in the title you want to appear.

**Insert
Anything
into
Report?**

Yes. Image.

Filename

rptgen_sf.csf_obj_snap

Stateflow Summary Table

Category

Stateflow

Description

The Stateflow Summary Table component shows properties or parameters of the selected Stateflow objects in a table. The Stateflow Summary Table component can have the following parents:

- Any Stateflow looping component, except Terminal Loop
- Any Simulink looping component (Model Loop, System Loop, Block Loop, or Signal Loop)

Attributes

The following figure shows the **Stateflow Summary Table** Properties panel:

Stateflow Summary Table

The screenshot shows the 'Stateflow Summary Table' dialog box. It has a title bar and several sections:

- Object type:** A dropdown menu currently set to 'Chart'.
- Table title:** A dropdown menu set to 'Automatic' and a text field containing 'Summary'.
- Property Columns:** A section with a 'Property columns' list box containing 'Name', a 'Name' dropdown menu with options 'Name', 'FullPath+Name', and 'SFPPath+Name', and a 'Relative column widths' text field.
- Object Rows:** A section with an unchecked checkbox 'Insert anchor for each row', a 'Report On:' dropdown menu set to 'Automatic list from context', and the text 'All chart blocks in all models'.
- Loop Options:** A section with a 'Sort blocks:' dropdown menu set to 'Alphabetically by block name', and three unchecked checkboxes: 'Search for Simulink property name/property value pairs', 'BlockType', and 'Search Stateflow:'. Below these is the text 'Tag MyTag'.

At the bottom of the dialog are three buttons: 'Revert', 'Help', and 'Apply'.

Object type

Choose the object type to display in the generated report. The menu item selected in this menu affects the options available in the **Property Columns** pane.

Table title

Choose a title for the summary table in the generated report:

- **Automatic** — Select this option to generate a title automatically from the parameter.
- **Custom** — Select this option to enter a title manually.

Stateflow Summary Table

Property Columns

Property columns

This figure displays the object properties to be included in the summary table in the generated report. To add a property, select the appropriate property level in the text box. Next, in the contextual list below the text box, select the property that you

want to add and click **Add** . To delete a property, select the property name and press the **Delete** key.

Relative column widths

Use this option to enter relative column widths for the summary table in the generated report. Entered widths should be in percentages.

Object Rows

Insert anchor for each row

Select this option to insert an anchor for each row in the summary table.

Report On

Automatic list from context

Select this option to report on all blocks in the current context. The context is set by the Stateflow Summary Table component's parent component.

Custom - use block list

Select this option to report on a list of blocks that you specify and enter the block names in the corresponding field. You must use the full pathname when specifying blocks. If you want to sort the blocks in this list, select the **Sort blocks in list** option and then select a sorting option from the **Sort blocks** list (in the **Loop Options** section). Blocks are reported on in the order that they are sorted. If you do not select this option, blocks are reported on in the order that they are listed in the block list.

You can enter %<VariableName> if you want to insert the value of a variable from the MATLAB workspace. The %<> notation can be a string or cell array. See “%<VariableName> Notation” on page 7-246 in the Text component reference page for more details.

For example, if you want to report on the `theta dot` integrator block and the `theta` integrator block in the demo model `simppend`, you could enter the following in the block list.

```
simppend/theta dot
```

```
%<Z>
```

If you define `Z` in the workspace as the following,

```
Z={'simppend/theta'}
```

then the Report Generator reports on the following blocks:

```
simppend/theta dot
```

```
simppend/theta
```

Loop Options

You can choose block sorting options and reporting options in this pane.

Sort blocks

Use this option to select how the blocks are sorted:

- Select **Alphabetically by block name** to sort blocks alphabetically by their names.
- Select **Alphabetically by system name** to sort systems alphabetically.

In this option, the systems are sorted alphabetically, and blocks in each system are listed, but in no particular order.

- Select **Alphabetically by full Simulink path** to sort blocks alphabetically by Simulink path.
- Select **By block type** to sort blocks alphabetically by block type.

Stateflow Summary Table

- Select By `block depth` to sort blocks by their depth in the model.
- Select By `traversal order` to sort blocks by traversal order.
- Select By `simulation order` to sort blocks by execution order.

Search for Simulink property name/property value pairs

Select this option to report only on Simulink blocks with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Search Stateflow

Select this option to report only on Stateflow charts with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

**Insert
Anything
into
Report?**

Yes. Table.

Filename

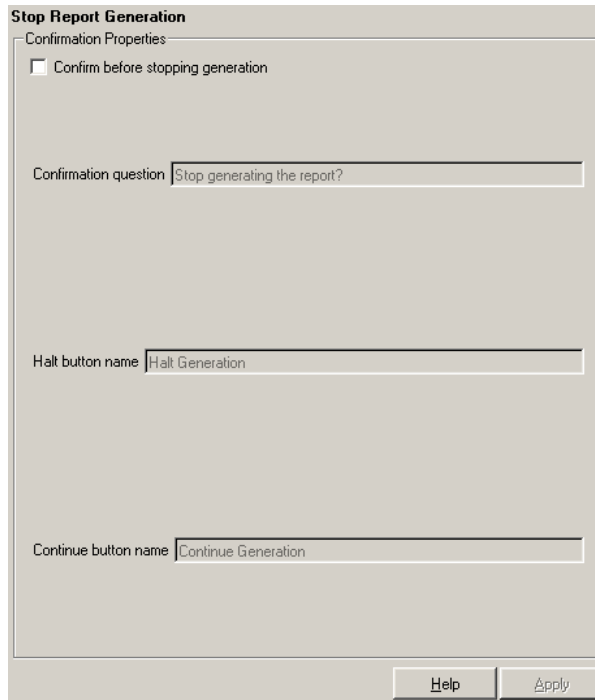
`rptgen_sf.csf_summ_table`

Category Report Generator

Description The Stop Report Generation component halts report generation. This component acts like **Stop** during report generation.

You can use this component inside an if/then statement by using Logical and Flow Control components to halt the report generation process under a certain condition. Note that when report generation is halted, the XML source file is produced, but not converted.

Attributes The following figure shows the **Stop Report Generation Properties** panel:



The screenshot shows a dialog box titled "Stop Report Generation" with a sub-section "Confirmation Properties". It contains a checkbox "Confirm before stopping generation" which is unchecked. Below it is a text field for "Confirmation question" containing "Stop generating the report?". Further down is a text field for "Halt button name" containing "Halt Generation". At the bottom is a text field for "Continue button name" containing "Continue Generation". At the very bottom right are "Help" and "Apply" buttons.

Stop Report Generation

Confirmation Properties

Confirm before stopping generation
Select this option to generate a confirmation dialog box before stopping report generation.

Confirmation question
Enter a confirmation question for the prompt.

Halt button name
Enter a name for the button that stops report generation.

Continue button name
Enter a name for the button that continues report generation.

Example

The setup file in this example creates a simple report that takes a snapshot of the current figure. If there is no current figure, the report generation automatically halts.

```
[ - ] Report - figure-report.rpt
[ - ] if (isempty(get(0,'CurrentFigure')))
[   ] Stop Generation
[ - ] Figure Loop - current
[ - ] Chapter - <Title from SubComponent1>
[   ] Figure Name
[   ] Graphics Figure Snapshot
[   ] Figure Prop Table - Figure Properties
```

Insert Anything into Report?

No.

Filename

rptgen.crg_halt_gen

Category Simulink

Description The System Filter component runs child components only if the current systems meets the conditions specified in the attribute page.

Attributes The following figure shows the **System Filter** Properties panel:

The screenshot shows the 'System Filter' Properties panel. It features three main configuration options:

- Report only if system has at least N blocks:** A text input field containing the value '0'.
- Report only if system has at least N subsystems:** A text input field containing the value '0'.
- Report only if system mask type is:** A dropdown menu currently set to 'either masked or unmasked'.

At the bottom right of the panel, there are two buttons: 'Help' and 'Apply'.

Report only if system has at least N blocks

Enter a number to execute child components only if there are at least the specified number of blocks in the system. Note that if you enter 0, then there is no filtering; child components are executed regardless of the number of blocks in the system.

System Filter

Report only if system has at least N subsystems

Enter a number to execute child components only if there are at least the specified number of subsystems in the system. Note that if you enter 0, then there is no filtering; child components are executed regardless of the number of subsystems in the system.

Report only if system mask type is

Choose what masks to include in the generated report:

- Either masked or unmasked
- Masked
- Unmasked

**Insert
Anything
into
Report?**

No.

Filename

rptgen_sf.csf_obj_filter

Category Simulink

Description The System Hierarchy component creates a nested list that shows the hierarchy of the system specified in the attribute page. The list can display all systems in a model or it can show the parents and children of the current system.

Attributes The following figure shows the **System Hierarchy** Properties panel:

System Hierarchy

Starting System

Build list from: Current system

Emphasize current system

Display Systems

Show number of parents: 1

Display peers of current system

Show children to depth: 1

List Formatting

List style: Bulleted list

Numbering style: 1,2,3,4...

Show only current list value (a)

Revert Help Apply

Starting System

Build list from

Select the system or model from which the list will be built.

- Current system
- Current model

System Hierarchy

Display Systems

- Emphasize current system
Select this option to highlight the current system or model in the generated report.
- Show number of parents
Enter the number of parents to list.
- Display peers of current system
Select this option to show the current system's peers in the generated report.
- Show children to depth
Enter the depth of children to list.

List Formatting

- List style
Select either **Bulleted list** or **Numbered list**. If you choose **Numbered list**, then you can select numbering options in the **Numbering style** section.
- Numbering style
Select a numbering style in this drop-down menu if you selected **Numbered List** for the **List style**. The options are
- 1,2,3,4,...
 - a,b,c,d,...
 - A,B,C,D,...
 - i,ii,iii,iv,...
 - I,II,III,IV,...

Insert Anything into Report?

Yes. List.

Filename

rptgen_sl.cs1_sys_list

Category Simulink

Description The System Loop component runs its child components for each system defined by the Model Loop. The System Loop component must have the Model Loop component as its parent.

Attributes The following figure shows the **System Loop** Properties panel:

The screenshot shows the 'System Loop' Properties panel. It is divided into three main sections: 'Report On', 'Loop Options', and 'Section Options'.
- The 'Report On' section contains a 'Loop on Systems' dropdown menu with the value 'Select systems automatically'. Below it, the text 'All systems in all models' is displayed.
- The 'Loop Options' section contains a 'Sort Systems' dropdown menu with the value 'Alphabetically by system name'.
- The 'Section Options' section contains three checkboxes: 'Create section for each object in loop', 'Display the object type in the section title', and 'Create link anchor for each object in loop'.
At the bottom right of the panel are two buttons: 'Help' and 'Apply'.

System Loop

Report On Loop on Systems

Select systems automatically

Select the `Select systems automatically` option to report on all systems in the current context. The context is set by the System Loop component's parent component:

- If the parent component is the `Model Loop`, then selecting this option causes the System Loop component to report on systems in the current model.
- If the parent component is another System Loop, then selecting this option causes the System Loop component to report on the current system.
- If the parent component is the `Signal Loop`, then selecting this option causes the System Loop component to report on the current signal's parent system.
- If the parent component is the `Block Loop`, then selecting this option causes the System Loop component to report on the current block's parent system.
- If the System Loop does not have the `Model Loop`, `System Loop`, `Signal Loop`, or `Block Loop` component as its parent, then selecting this option causes the System Loop component to report on all systems in all models.

Custom - use system list

Select this option to report on a list of systems that you specify, and enter the system names in the corresponding field. You must use the full pathname when specifying systems. If you want to sort the systems in this list, select the **Sort systems in list** option and then select a sorting option from the **Sort Systems** option (in the **Loop Options** section). Systems are reported on in the order that they are sorted. If you do not select this option, systems are reported on in the order that they are listed in the block list.

You can enter `%<VariableName>` if you want to insert the value of a variable from the MATLAB workspace. The `%<>` notation can

be a string or cell array. See “%<VariableName> Notation” on page 7-246 in the Text component reference page for more details.

For example, if you want to report on the Controller system and the Nz pilot calculation system in the demo model f14, you could enter the following in the block list:

```
f14/Nz pilot calculation
```

```
%<Z>
```

If you define Z in the workspace as the following,

```
Z={'f14/Controller'}
```

then the Report Generator reports on the following systems.

```
f14/Nz pilot calculation
```

```
f14/Controller
```

Loop Options

Sort Systems

Use this section to select how the systems are sorted:

- **Select By number of blocks in system** to sort systems by the number of blocks in the system. The list shows systems by decreasing number of blocks; i.e., the system with the largest number of blocks is listed first.
- **Select Alphabetically by system name** to sort systems alphabetically by name.
- **Select By traversal order** to sort systems in the order they are traversed.
- **Select By system depth** to sort systems by their depth in the model.

System Loop

Search for Simulink property name/property value pairs
Select this option to report only on Simulink blocks with certain property name/property value pairs. Enter the property name and the property value in the appropriate fields.

Section Options

Create section for each object in loop
Select this option to insert a section in the generated report for each object found in the loop.

Display the object type in the section title
Select this option to insert the object type automatically into the section title in the generated report.

Create link anchor for each object in loop
Select this option to create a hyperlink to the object in the generated report.

Insert Anything into Report?

Yes, section, if the **Create section for each object in loop** option is selected.

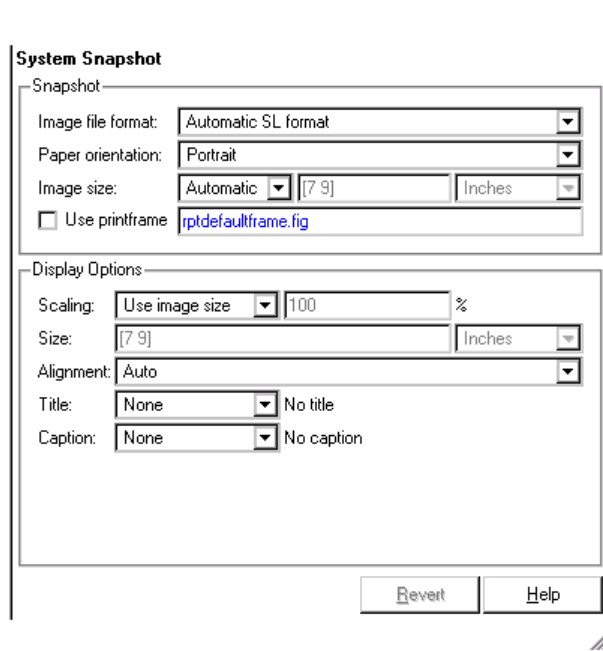
Filename

rptgen_sl.cs1_sys_loop

Category Simulink

Description The System Snapshot component inserts a snapshot of the current system in your report.

Attributes The following figure shows the **System Snapshot** Properties panel:



Snapshot

Image file format

Choose the image file format (e.g., JPEG, TIFF, etc.) from this list. Select Automatic SL Format to automatically choose the format best suited for the output format that you chose in the Report component. Otherwise, choose an image format that your output viewer can read. Automatic SL Format is the default option. The options include

System Snapshot

- Automatic SL Format (uses the Handle Graphics file format selected in the **Preferences** dialog box)
- Adobe Illustrator
- Bitmap (16m-color)
- Bitmap (256-color)
- Black and white encapsulated PostScript
- Black and white encapsulated PostScript (TIFF)
- Black and white encapsulated PostScript2
- Black and white encapsulated PostScript2 (TIFF)
- Black and white PostScript
- Black and white PostScript2
- Color encapsulated PostScript
- Color encapsulated PostScript (TIFF)
- Color encapsulated PostScript2
- Color encapsulated PostScript2 (TIFF)
- Color PostScript
- Color PostScript2
- JPEG high quality image
- JPEG medium quality image
- JPEG low quality image
- PNG 24-bit image
- TIFF - compressed
- TIFF - uncompressed
- Windows metafile

Paper orientation

You can choose `Largest dimension vertical`, `Landscape`, `Portrait`, or `Use system orientation` as the paper orientation.

The `Use system orientation` option uses the `PaperOrientation` parameter in Simulink, which you can set as `Landscape`, `Portrait`, or `Rotated`.

Image Size

Select `Automatic` to automatically scale the image to output dimensions. Select `Custom` to specify image size. The default for this field is `Automatic`. Note that if `Use printframe` is selected, the `Custom` option is deactivated and the image is automatically scaled to the print frame size.

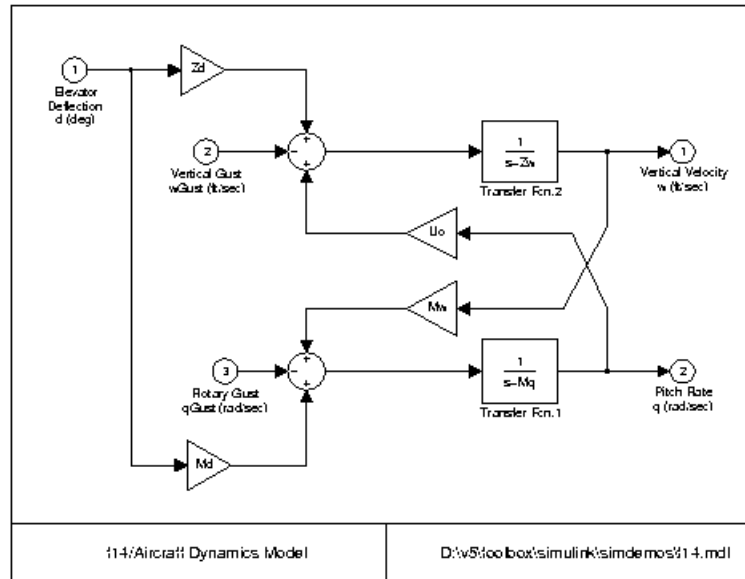
Use printframe

Choose this option to print a frame around the image. You can use the default Report Generator frame, `rptdefaultframe.fig`, or you can use the Frame Editor to build a custom frame.

To build a custom frame, type `frameedit` at the command line to invoke the Print Frame Editor. For help with the Print Frame Editor, select `Print Frame Editor Help` from the **Help** menu. See `frameedit` in the Simulink reference pages for a discussion of the `frameedit` command.

The default Report Generator frame is five inches wide and four inches high. It includes the name of the system and the model directory. This frame is optimized for use with a portrait paper orientation. The Aircraft Dynamics Model in the `f14` Simulink demo model is shown below with the default Report Generator frame option.

System Snapshot



Display Options

Scaling

Select **Fixed size** to specify the number and type of units.

Select **Zoom** to specify the percentage, the maximum size, and the units of measure.

Select **Use image size** if you want the image in your report to be the same size as the image on the screen.

Size

Enter the exact size of the snapshot in the form $w \ h$ (width height) and press **Enter**. This field is active only if you choose **Fixed size** in the **Scaling** drop-down list.

Max size

Enter the maximum size of the snapshot in the form $w \ h$ (width height) and press **Enter**. This field is active only if you choose **Zoom** in the **Scaling** drop-down list.

Units

Enter the units for the size of the snapshot. This field is active only if you choose **Zoom** or **Fixed size** in the **Image size** list box.

Alignment

Values are **Auto**, **Right**, **Left**, and **Center**.

Image title

Choose **No title**, **System name**, **System name (full path)**, or **Custom** to specify whether or not you want a title for the image. The default is no title. If you choose **Custom**, then you need to type in the title you want to appear.

Caption

Choose **None**, **Description (use system description)**, or **Custom** to specify whether or not you want a caption for the image. The default is no caption. If you choose **Custom**, then you need to type in the caption you want to appear.

**Insert
Anything
into
Report?**

Yes. Image.

Filename

rptgen_sl.cs1_sys_snap

Table

Category Formatting

Description The Table component converts a rectangular cell array into a table and inserts the table into the report.

Attributes The following figure shows the **Table** Properties panel.

The screenshot shows the 'Table' Properties panel with the following sections:

- Table Content:** A text field for 'Workspace variable name' and a checked checkbox for 'Collapse large cells to a simple description'.
- Formatting Options:** A text field for 'Table title', a dropdown menu for 'Cell alignment' (set to 'Left'), a text field for 'Column widths', and two checked checkboxes: 'Table grid lines' and 'Table spans page width'.
- Header/Footer Options:** A text field for 'Number of header rows' (set to '1') and a dropdown menu for 'No footer' with a text field for '1'.

Buttons for 'Help' and 'Apply' are located at the bottom right of the panel.

Table Content Workspace variable name
Enter the workspace variable name with which to construct the table.

Collapse large cells to a single description
Select this option to consolidate large cells into one description.

Formatting Options

Table title

Enter the title of your table. If you have a title for a table, it is included in the list of tables if the stylesheet you chose in the Report Options attribute page supports it. To find stylesheets that have a list of tables, see “Setting the Report Format” on page 2-3

Cell alignment

Select a cell alignment option (left, center, right, or double justified).

Column widths

Input a vector with m elements where m equals the number of columns in the table. Column sizing is relative and normalized to page width. For example, if you have a 2-by-3 cell array and input the following into the **Column widths** field,

```
[ 1 2 3 ]
```

then the report output format for the cell array would be the second column is twice the width of the first column and the third column is three times the width of the first column. Note that if the vector is greater than the number of columns in the table, then the vector is truncated so that the number of elements equals the number of columns. If m is less than the number of columns in the table, then the vector is padded with 1's so that the number of elements equals the number of columns.

Table grid lines

Select this option if you want to have grid lines in your table. Grid lines create borders between the fields.

Table spans page width

Select this option if you want the table to have the same width as the page on which it appears.

Table

Header/Footer Options Designating a row as a header or footer row causes the contents of the row to be displayed in boldface.

Number of header rows

Enter the number of header rows (from the top): 0 = none, 1 = 1 row from the top, 2 = two rows from the top, etc.

Footer list

If you do not want a footer, select `No footer`. If you want to select a footer that is different from your header, select `Last N rows of cell array are footer` and enter the number of footer rows (from the bottom) in the corresponding field: 0 = none, 1 = one row from the bottom, 2 = two rows from the bottom, etc.

Example

For example, if you have the following cell array in the MATLAB workspace,

```
{'foo', 'bar'; [3], [5]}
```

then the resulting cell table has the following appearance.

foo	bar
3	5

Note that the table has no headers or footers and no title. The table does have grid lines.

Insert Anything into Report?

Yes. Table.

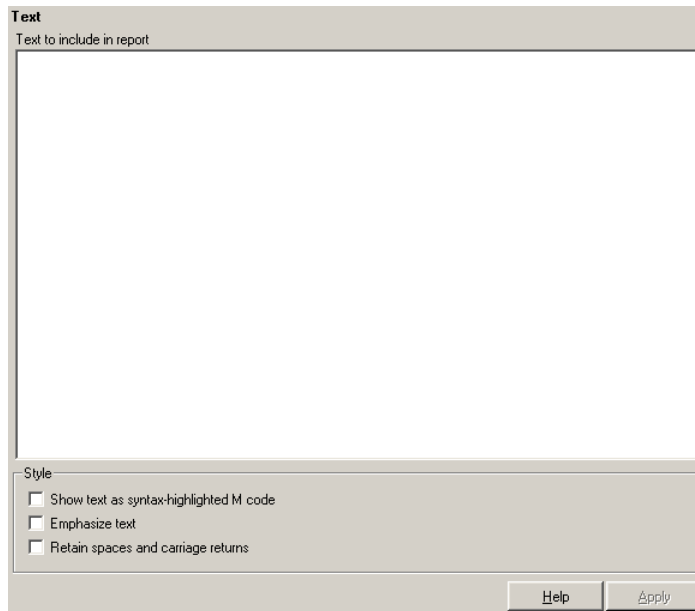
Filename

rptgen.cfr_table

Category Formatting

Description The Text component formats text and inserts it into your report. The text component should have the Paragraph component as its parent.

Attributes The following figure shows the **Text** Properties panel:



Text to include in report

Enter the text you want to include in your report in this field.

Show text as syntax-highlighted M-code

Select this option to display text as highlighted M-code.

Emphasize text

If you want to have the text appear italicized in the report, select this option.

Retain spaces and carriage returns

If you want to keep spaces and carriage returns in your text, select this option. If you do not select this option, the text still inserts one space any time you have one or more spaces; it does not keep any carriage returns.

%<VariableName> Notation

You can enter %<VariableName> in this field (and in any field where the text appears blue) to include the value of a variable from the base MATLAB workspace. You cannot enter more than one variable in the %<>. If you enter an invalid variable name, then the report will contain %<VariableName> instead of the value of the variable.

Example 1

If you enter the following,

```
I have a %<ObjName> and it has %<NumLeaves> leaves. The word
'%<ObjName>' has %<size(ObjName)> letters.
```

and if ObjName='plant' and NumLeaves=3 in the MATLAB workspace, then the report contains the following.

```
I have a plant and it has 3 leaves. The word 'plant' has 5 letters.
```

Example 2

If you enter the following,

```
%<help('peaks')>
```

then the report contains the text that you get when you type help peaks at the command line.

**Insert
Anything
into
Report?**

Yes. Text.

Filename

rptgen.cfr_text

Time/Date Stamp

Category Report Generator

Description The Time/Date Stamp component inserts the time and date of the report generation into your report as text. It must have the Paragraph or Chapter/Subsection component as its parent.

Attributes The following figure shows the **Time/Date Stamp** Properties panel:

Time/Date Stamp

Prefix

Include text before stamp

Time Stamp Properties

Include current time in stamp

Time display Time separator

Include seconds in time stamp

Date Stamp Properties

Include current date in stamp

Date order Month display

Date separator Year display

Preview

Created 2:09 pm 14 December 2003

Help Apply

Prefix Include text before stamp
Select this option to include text before the time/date stamp, and enter the text in the corresponding field.

Time Stamp Properties

Include current time in stamp

Select this option to insert the current time in the time/date stamp.

Time display

Use this option to select the appearance of the time display. The following options are available:

- 12-hour
- 24-hour

Time Separator

Use this option to select a separation marker between hours, minutes, and seconds. The following options are available for the separator:

- Blank space () - E.g., Hour Minute Second
- Colon (:) - E.g., Hour:Minute:Second
- Period (.) - E.g., Hour.Minute.Second
- None () - E.g., HourMinuteSecond

Include seconds in time stamp

Select this option to display seconds in the time/date stamp.

Date Stamp Properties

Include current date in stamp

Select this option to insert the current date in the time/date stamp.

Date order

Use this option to select the order in which the day, month, and year should appear. The following options are available for this order:

- Day Month Year
- Month Day Year
- Year Month Day

Time/Date Stamp

Date separator

Use this option to select a separation marker between day, month, and year. The following options are available for the separator:

- Blank space () — E.g., Day Month Year
- Colon (:) — E.g., Day:Month:Year
- Slash (/) — E.g., Day/Month/Year
- Period (.) — E.g., Day.Month.Year
- None () — E.g., DayMonthYear

Month display

Use this option to select the appearance of the month display. The following options are available for the display:

- Long (December)
- Short (Dec)
- Numeric (12)

Year display

Use this option to select the appearance of the year display. The following options are available for the display:

- Long (1998)
- Short (98)

Preview

This pane displays the time/date stamp as it will appear in the report.

Insert Anything into Report?

Yes. Text.

Filename

rptgen.crg_tds

Category Formatting

Description The Title Page component creates and inserts a title page at the beginning of the report. The Title Page component can be used as a child component to a Chapter/Subsection component, or it can be used alone in a setup file.

Attributes The following figure shows the **Title Page** Properties panel:

The screenshot shows the 'Title Page' properties panel with the following sections:

- Title:** Two text input fields labeled 'Title' and 'Subtitle'.
- Options:** A section containing:
 - An 'Image file name' text input field.
 - A 'Custom author:' dropdown menu with 'dgolden' selected.
 - A checked checkbox 'Include report creation date' with a date/time dropdown showing '21-Jun-2004 16:09:12'.
 - A checked checkbox 'Include copyright holder and date' with two empty text input fields.
- Abstract:** A large empty text area.
- Legal notice:** A large empty text area.

At the bottom of the panel are three buttons: 'Revert', 'Help', and 'Apply'.

All the text fields in this attribute page can contain the %<VariableName> notation. See “%<VariableName> Notation” on page 7-246 in the Text component reference page.

Title Page

Title

Title

Enter the title of the report in this field. The title will appear in a large font.

Subtitle

Enter the subtitle in this field. The subtitle will appear under the title, in a smaller font than the title.

Options

Image file name

Enter the filename for an image you want to appear on the title page. The image will appear under the subtitle.

Author

Enter the author in this field. The author will appear under the subtitle, in a smaller font than the subtitle.

Include report creation date

Select this option if you want to include the report creation date, and choose the date format in the corresponding list.

Include copyright holder and date

Select this option to include copyright holder and year information.

Abstract

Enter the abstract for the report in this field. This is optional.

Legal notice

Enter the legal notice for the report in this field. This is optional.

Insert Anything into Report?

Yes. Title page.

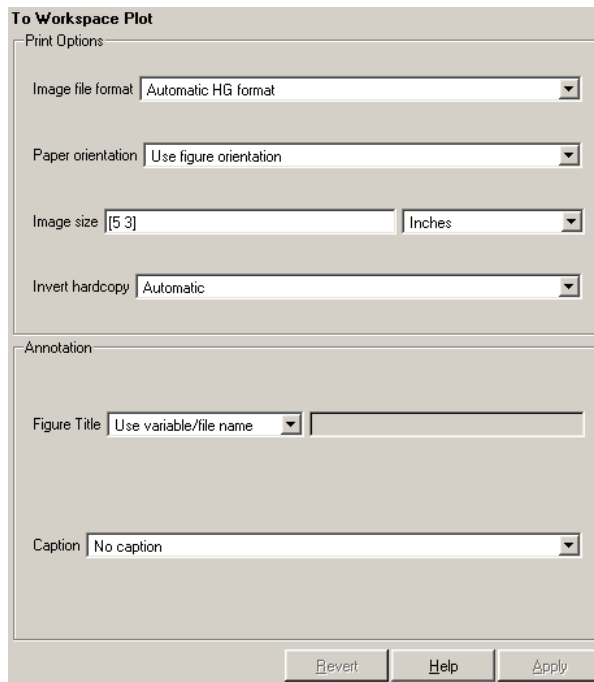
Filename

rptgen.cfr_titlepage

Category Simulink Blocks

Description The To Workspace Plot component captures a plot figure created in the MATLAB workspace. This component inserts a figure and/or table into the report; the table contains input and output numeric values, and the figure is a plot of the values.

Attributes The following figure shows the **To Workspace Plot** Properties panel:



Print Options

Image file format

Choose the image file format (e.g., JPEG, TIFF, etc.) from this list. Select Automatic HG Format to automatically choose the format best suited for the output format that you chose in the Report component. Otherwise, choose an image format that your output

To Workspace Plot

viewer can read. Automatic HG Format is the default option.
The options include

- Automatic HG Format (Uses the Simulink file format selected in the **Preferences** dialog box)
- Adobe Illustrator
- Bitmap (16m-color)
- Bitmap (256-color)
- Black and white encapsulated PostScript
- Black and white encapsulated PostScript (TIFF)
- Black and white encapsulated PostScript2
- Black and white encapsulated PostScript2 (TIFF)
- Black and white PostScript
- Black and white PostScript2
- Color encapsulated PostScript
- Color encapsulated PostScript (TIFF)
- Color encapsulated PostScript2
- Color encapsulated PostScript2 (TIFF)
- Color PostScript
- Color PostScript2
- JPEG high quality image
- JPEG medium quality image
- JPEG low quality image
- PNG 24-bit image
- TIFF - compressed
- TIFF - uncompressed

- Windows metafile

Paper orientation

You can choose Landscape, Portrait, or Rotated as your paper orientation, or you can choose the Use figure orientation option. See the orient command for information about paper orientation.

Image size

Select Use figure PaperPositionMode setting to use the PaperPositionMode property of the Handle Graphics figure to set the image size in the report. See the orient command for information about paper position mode.

Select the Automatic (same size as on screen) option if you want the image in your report to be the same size as the image on the screen.

Select the Custom option to choose a custom image size. If you choose this option, specify the image size in the size and unit fields.

- Size: Enter the size of the Handle Graphics figure snapshot in the form wxh (width times height). This field is active only if you choose **Custom** in the **Image size** list box.
- Units: Enter the units for the size of the Handle Graphics figure snapshot. This field is active only if you choose **Set image size** in the **Custom** list box.

Invert hardcopy

Handle Graphics figures have an InvertHardcopy property. This parameter inverts colors for printing; i.e., it changes dark colors to light colors and vice versa.

Select one of the following options:

- Automatic — Select this option to automatically change dark axes colors to a light axes color. If the axes color is a light color, then it is not inverted.

To Workspace Plot

- **Invert** — Select this option to change dark axes colors to light axes colors and vice versa.
- **Don't invert** — Select this option if you do not want to change the colors in the image displayed on the screen for printing.
- **Use figure's InvertHardcopy setting.** — Select this option to use the InvertHardcopy property set in the Handle Graphics image.
- **Make figure background transparent.** Select this option to make the image background transparent.

Annotation

Figure Title

Choose a title option in this section:

- **No title:** Select this option if you do not want an image title.
- **Use block name:** Select this option to use the selected block name as the plot title.
- **Use variable/file name:** Select this option to use the selected variable or file name as the plot title.
- **Custom:** Select this option and enter your own title.

Caption

Enter a short text description for the snapshot figure.

Insert Anything into Report?

Yes. Figure.

Filename

rptgen_sl.cs1_blk_toworkspace

Category	Stateflow
Description	<p>The Truth Table component reports on the truth tables in Simulink and Stateflow models. The component displays both the condition table and the action table. This component is context sensitive.</p> <p>If the Truth Table component has the Simulink Model Loop as its parent, then it reports on all truth tables in the current model.</p> <p>If it has the Simulink System Loop as its parent, then it reports on all truth tables in the current system.</p> <p>If it has the Simulink Block Loop as its parent, then it reports on all truth tables in the current block.</p> <p>If it has the Simulink Signal Loop as its parent, then it reports on all truth tables in the current signal.</p> <p>If it has a Stateflow component, such as Stateflow Filter, Machine Loop, or State Loop, as its parent, then it reports on all truth tables in the current object type specified by the Stateflow component.</p>
Attributes	The following figure shows the Truth Table Properties panel:

Truth Table

The screenshot shows a dialog box titled "Truth Table" with three main sections: "Title", "Condition Table", and "Action Table".

- Title:** A dropdown menu is set to "No title" and a text field contains "Truth Table".
- Condition Table:** Four checkboxes are present: "Show header" (unchecked), "Show number" (unchecked), "Show condition" (unchecked), and "Show description" (checked). Below these is a text field labeled "Wrap if column count >" with the value "20".
- Action Table:** Four checkboxes are present: "Show header" (unchecked), "Show number" (unchecked), "Show action" (checked), and "Show description" (unchecked).

At the bottom right, there are "Help" and "Apply" buttons.

Title

Title

Choose the title for the truth table:

- No title
- Use Stateflow name
- Custom

Condition Table

Specify the display of the condition table:

Show header

Select this option to display the column headers in the table.

Show number

Select this option to display the condition number column in the table.

Show condition

Select this option to display the condition column in the table.

Show description

Select this option to display the description column in the table.

Wrap if column count

Select this option to specify how many table columns to display before creating a table continuation. Note that if the number specified is higher than the number of columns that can be displayed on the page, then some columns are not displayed in the report.

Action Table

Show header

Select this option to display the column headers in the table.

Show number

Select this option to display the condition number column in the table.

Show condition

Select this option to display the condition column in the table.

Show description

Select this option to display the description column in the table.

Note If **Show description** is not selected, then no action table is displayed in the report.

Insert Anything into Report?

Yes. Table.

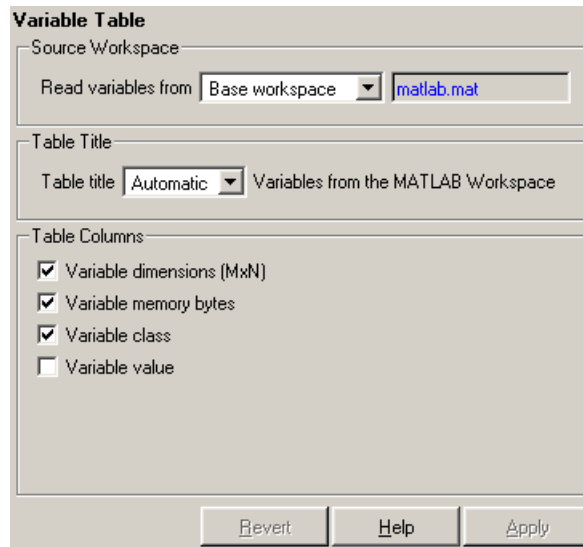
Truth Table

Filename	rptgen_sf.csf_truthtable
-----------------	--------------------------

Category MATLAB

Description The Variable Table component creates and inserts a table that includes all variables in the MATLAB workspace. You can find all the variables in the MATLAB workspace by typing `whos` at the command line.

Attributes The following figure shows the **Variable Table** Properties panel:



**Source
Workspace**

Read variables from
Select one of the following options:

- **Base workspace** — Select this option to read variables from the MATLAB workspace.
- **MAT-file** — Select this option to read variables from a binary file with a `.mat` extension. You can use the `%<VariableName>` notation. See “`%<VariableName>` Notation” on page 7-246 in the Text component reference.

Variable Table

Table Title

Table title

Select one of the following options for the table title:

- **Automatic (Variables from MATLAB workspace)**— Select this option if you want the table title to be a variable name from the MATLAB workspace.
- **Custom** — Select this option and enter the title in this field if you want a custom title for the variable table.

If you have a title for a table, it is included in the list of tables if the stylesheet you chose in the Report Options attribute page supports it. See “Setting the Report Format” on page 2-3 to find stylesheets that have a list of tables.

Columns in table

Select information to be contained in table columns:

- **Variable size (MxN)** – Select this option to include the size of the variable.
- **Variable memory bytes** – Select this option to include the number of bytes of memory occupied by the variable.
- **Variable class** – Select this option to include the variable class.
- **Variable value** – Select this option to include the value of the variable. Note that large variable arrays are collapsed to [MxN CLASS]. For example, if you have a 300-by-200 double array, it appears in the report as [300x200 DOUBLE].

Example

This is an example of a variable table that includes size, memory bytes, and value information in the table columns.

Name	Size	Bytes	Value
aCell	1x2	238	{ [1 2 3 4] Speed (kph) }
aNumber	1x1	8	1
aString	1x11	22	Speed (kph)
aStructure	1x1	302	[struct w/ fields. Inputs, Outputs]
aVector	1x4	32	[1 2 3 4]

**Insert
Anything
into
Report?**

Yes. Table.

Filename

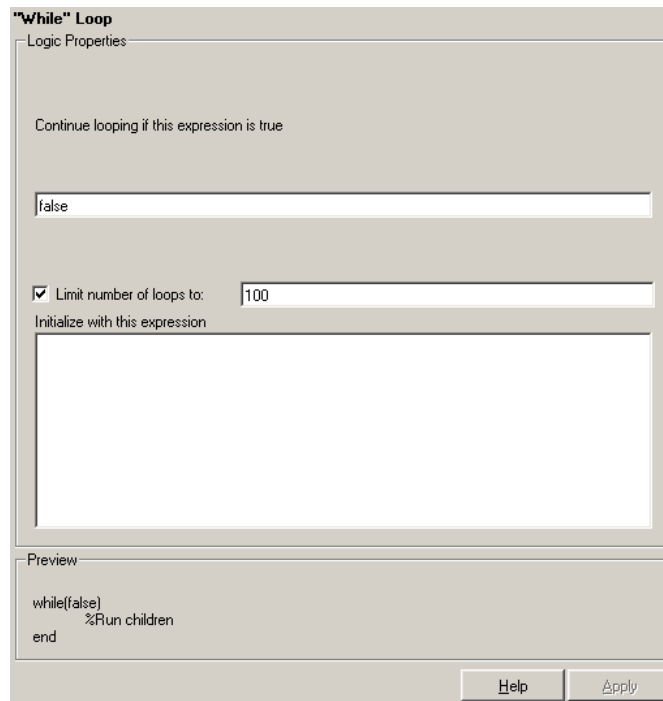
rptgen.cm1_whos

While Loop

Category Logical and flow

Description The While Loop component iteratively executes its child components while the string specified in the attributes page is true. You can limit the number of repetitions to prevent infinite loops. The While Loop component must have at least one child component; the purpose of this component is to run its children several times. If it does not have any children, this component does not add anything to the report.

Attributes The following figure shows the **While Loop** Properties panel:



Logic Properties

Continue looping if this expression is true

Enter the string to be evaluated in this field. This string should be a valid MATLAB expression that evaluates to 1 or 0 (true or false) in the workspace. For example, if $a = 1$, $b = 2$, and $c = 3$ in the MATLAB workspace, and you enter the following at the command line,

```
d=(a>b/c)
```

then MATLAB returns the following:

```
d = 1
```

Because 1 is greater than b/c ($2/3$), this expression is true, and evaluates to 1.

Limit number of loops to

Use this option to prevent infinite loops. Use the left and right arrows to increase or decrease the number of loops.

Initialize with this expression

Enter a valid MATLAB expression to initialize the loop.

Insert Anything into Report?

Yes, as long as it has a child component.

Filename

rptgen_lo.clo_while

Examples

Use this list to find examples in the documentation.

Looping Components Example

“Working with Looping Components” on page 3-2

Property Table Components Example

“Working with Property Table Components” on page 3-11

Summary Table Components Example

“Working with Summary Table Components” on page 3-23

Using Components

“Creating and Using Component Properties” on page 4-24

“A Report Displaying Two Tickers” on page 4-29

Editing Font Size As a Derived Value in XML

“Editing Font Size as a Derived Value in XML” on page 5-23

Procedures for Some Specific Stylesheet Changes

“Making Some Specific Stylesheet Changes” on page 5-34

Making Changes in Font Size, Page Orientation, and Paper Type

“Making Changes in Font Size, Page Orientation, and Paper Type” on page 5-34

Adding a Company Logo to a Report

“Adding a Company Logo to Headers in a PDF Report” on page 5-37

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