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Genus GUI Guide for Legacy GUI

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Preface

About This Manual

This manual describes the Genus's Legacy Graphical User Interface (GUI) used to perform basic analysis and debugging tasks. For details on the new GUI, see ***Genus GUI Guide.***

The old GUI can be accessed by launching genus with the `-legacy_gui` option.

Additional References

The following sources are helpful references, but are not included with the product documentation:

- TclTutor, a computer aided instruction package for learning the Tcl language: http://www.msen.com/~clif/TclTutor.html.
- TCL Reference, *Tcl and the Tk Toolkit*, John K. Ousterhout, Addison-Wesley Publishing Company
- *Practical Programming in Tcl and Tk*, Brent Welch and Ken Jones
- IEEE Standard Hardware Description Language Based on the Verilog Hardware Description Language (IEEE Std.1364-1995)
- IEEE Standard Hardware Description Language Based on the Verilog Hardware Description Language (IEEE Std. 1364-2005)
- IEEE Standard for SystemVerilog--Unified Hardware Design, Specification, and Verification Language (IEEE STD 1800-2009)
- IEEE Standard VHDL Language Reference Manual (IEEE Std. 1076-1987)
- IEEE Standard VHDL Language Reference Manual (IEEE Std. 1076-1993)
- IEEE Standard VHDL Language Reference Manual (IEEE Std. 1076-2008)

Note: For information on purchasing IEEE specifications go to http://shop.ieee.org/store/ and click on *Publications & Standards.*

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- **Training Offerings—**Cadence offers the following training courses for Genus:
  - Genus Synthesis Solution
  - Basic Static Timing Analysis
  - Fundamentals of IEEE 1801 Low-Power Specification Format
  - Advanced Synthesis with Genus Synthesis Solution
  - Low-Power Synthesis Flow with Genus Synthesis Solution

  The courses listed above are available in North America. For further information on the training courses available in your region, visit Cadence Training or write to training_enroll@cadence.com.

  Note: The links in this section open in a new browser.
- **Video Library**

  Several videos are available on the support website: Genus: Video Library

For more information on the support offerings go to http://www.cadence.com/support

Supported User Interfaces

Genus supports the following user interfaces:

- **Unified User Interface.** Genus, Innovus and Tempus offer a fully unified Tcl scripting language and GUI environment. This unified user interface (also referred to as Stylus common UI) streamlines flow development and improves productivity of multi-tool users.

  When you start Genus, you will by default start with the Stylus common UI. You will see the following prompt:

  ```
  genus@root:>
  ```

- **Legacy User Interface.** Genus can also operate in legacy mode which supports RTL Compiler commands/attributes and scripting.

  To start Genus with legacy UI, you can

  - Start the tool with legacy UI as follows:

    ```
    %genus -legacy_ui -files script
    ....
    legacy_genus:/>
    ```

  - Switch to legacy UI if you started the tool with the default Stylus common UI.

    ```
    %genus
    genus@root:> set_db common_ui false
    legacy_genus:/>
    ```

This document provides information specific to the legacy user interface.

Messages

- You can get detailed information for each message issued in your current Genus run using the following command.

  ```
  genus@root:> report_messages
  ```

  The report also includes a summary of how many times each message was issued

- You can also get specific information about a message.

  For example, to get more information about the `TUI-613` message, you can type the following command in both user interfaces:

  ```
  prompt> vls -a TUI-613
  message:TUI/TUI-613 (message)
      Attributes:
        base_name = TUI-613
        count = 0
        escaped_name = TUI/TUI-613
        help = The user_speed_grade is only applicable to datapath subdesigns.
        id = 613
        name = TUI/TUI-613
        obj_type = message
        print_count = 0
        priority = 1
        screen_print_count = 0
        severity = Warning
        type = The attribute is not applicable to the object.
  ```

  You can also use the `help` command:

  ```
  genus@root:> help TUI-613
  Message:
    name:                   TUI/TUI-613
    severity:               Warning
    type:                   The attribute is not applicable to the object.
    help:                   The user_speed_grade is only applicable to datapath
  subdesigns.
  ```

If you do not get the details that you need or do not understand a message, either contact Cadence Customer Support to file a CCR or email the message ID you would like improved to synthesis_pubs@cadence.com.

Man Pages

In addition to the Command and Attribute References, you can also access information about the commands and attributes using the man pages in Genus. Man pages contain the same content as the Command and Attribute References.

To use the man pages from the UNIX shell:

1. Set your environment to view the correct directory:

   ```
   setenv MANPATH $CDN_SYNTH_ROOT/share/synth/man_common
   ```

2. Enter the name of the command or attribute that you want either in Genus or within the UNIX shell. For example:

   - `man check_dft_rules`
   - `man cell_leakage_power`

You can also use the `more` command, which behaves like its UNIX counterpart. If the output of a manpage is too small to be displayed completely on the screen, use the `more` command to break up the output. Use the spacebar to page forward, like the UNIX `more` command.

```
genus@root:> more man syn_map
```

Command-Line Help

You can get quick syntax help for commands and attributes at the Genus command-line prompt. There are also enhanced search capabilities so you can more easily search for the command or attribute that you need.

Note: The command syntax representation in this document does not necessarily match the information that you get when you type `help` *`command_name`*. In many cases, the order of the arguments is different. Furthermore, the syntax in this document includes all of the dependencies, where the help information does this only to a certain degree.

If you have any suggestions for improving the command-line help, please e-mail them to synthesis_pubs@cadence.com

Getting the Syntax for a Command

Type the `help` command followed by the command name.

For example:

```
genus@root:> help path_group
```

This returns the syntax for the `path_group` command.

Getting Attribute Help

Type the following:

```
genus@root:> help attribute_name
```

For example:

```
genus@root:> help max_transition
```

This returns the help for the `max_transition` attribute and shows on which object types the attribute can be specified.

Searching For Commands When You Are Unsure of the Name

You can use help to find a command if you only know part of its name, even as little as one letter.

- You can type a single letter and press `Tab` to get a list of all commands that start with that letter.

  For example:

  ```
  genus@root:> a<Tab>
  ```

  This returns the following commands:

  ```
  add_assign_buffer_options          add_clock_gates_obs
  add_clock_gates_test_connection    add_opcg_hold_mux
  add_tieoffs                        add_to_collection
  after                              alias
  all_clocks                         all_connected
  all_fanin                          all_fanout
  all_inputs                         all_instances
  all_outputs                        all_registers
  analyze_library_corners            analyze_scan_compressibility
  analyze_testability                append
  append_to_collection               applet
  apply                              apropos
  array                              assemble_design
  attribute_exists                   auto_execok
  auto_import                        auto_load
  auto_load_index                    auto_qualify
  ```

- You can type a sequence of letters and press `Tab` to get a list of all commands that start with those letters.

  For example:

  ```
  genus@root:> path_<Tab>
  ```

  This returns the following commands:

  ```
  path_group
  ```

Documentation Conventions

To aid the readers understanding a consistent formatting style has been used throughout this manual.

- UNIX commands are shown following the `unix>` string.
- Genus commands are shown following the `genus@root:>` string

Text Command Syntax

The list below defines the syntax conventions used for the Genus text interface commands.

`literal`	Non-italic words indicate keywords you enter literally. These keywords represent attributes, commands or command option names.
`arguments and options`	Words in italics indicate user-defined arguments or information for which you must substitute a name or a value.
|	Vertical bars (OR-bars) separate possible choices for a single argument.
[ ]	Brackets indicate optional arguments. When used with OR-bars, they enclose a list of choices from which you can choose one.
{ }	Braces indicate that a choice is required from the list of arguments separated by OR-bars. Choose one from the list. `{ argument1 | argument2 | argument3 }`
`{ }`	Braces, used in Tcl commands, indicate that the braces must be typed in.
...	Three dots (...) indicate that you can repeat the previous argument. If the three dots are used with brackets (that is, `[argument]...`), you can specify zero or more arguments. If the three dots are used without brackets (`argument...`), you must specify at least one argument.
#	The pound sign precedes comments in command files.

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Getting Started with GUI

Overview of the Genus GUI

The Genus Legacy GUI

- Is designed for synthesis users who want to use physical information to drive synthesis but are not interested in creating the physical details.
- Serves as an analysis tool to help you identify design problems, such as timing and power.

The Genus GUI provides the following features:

- Automatically loads preferences you have set and saved in the `~/.cadence/rc.gui` file.
- Automatically updates the GUI after using major commands.
- Lets you save screen captures of schematics, reports, and histograms in JPG, PNG, and PostScript format by clicking the *Save* button on the corresponding dialog box or report window.
- Provides a status bar showing a busy indicator, transient messages, persistent messages, and a progress bar, as shown Figure 1-1.
- Provides Logical, HDL, and Schematic, and Physical Viewer windows. See Chapter 2, "Using the Viewer Windows," for detailed information.
- Provides interactive GUI commands so that you can write your own scripts to interact with the GUI and to add features that are not part of the normal installation. See Chapter 3, "GUI Text," for more information.
- Selects and cross-probes objects under the cursor to the Logical, HDL, and Schematic and Physical Viewers. See Cross-Probing Objects Between the Viewers on page 24.
- To launch old GUI, use `-legacy_gui` option when launching Genus.

Note: To access the documentation of new GUI, see ***Genus GUI Guide***.

Starting the Genus GUI

When you start the tool, you start in GUI mode by default.

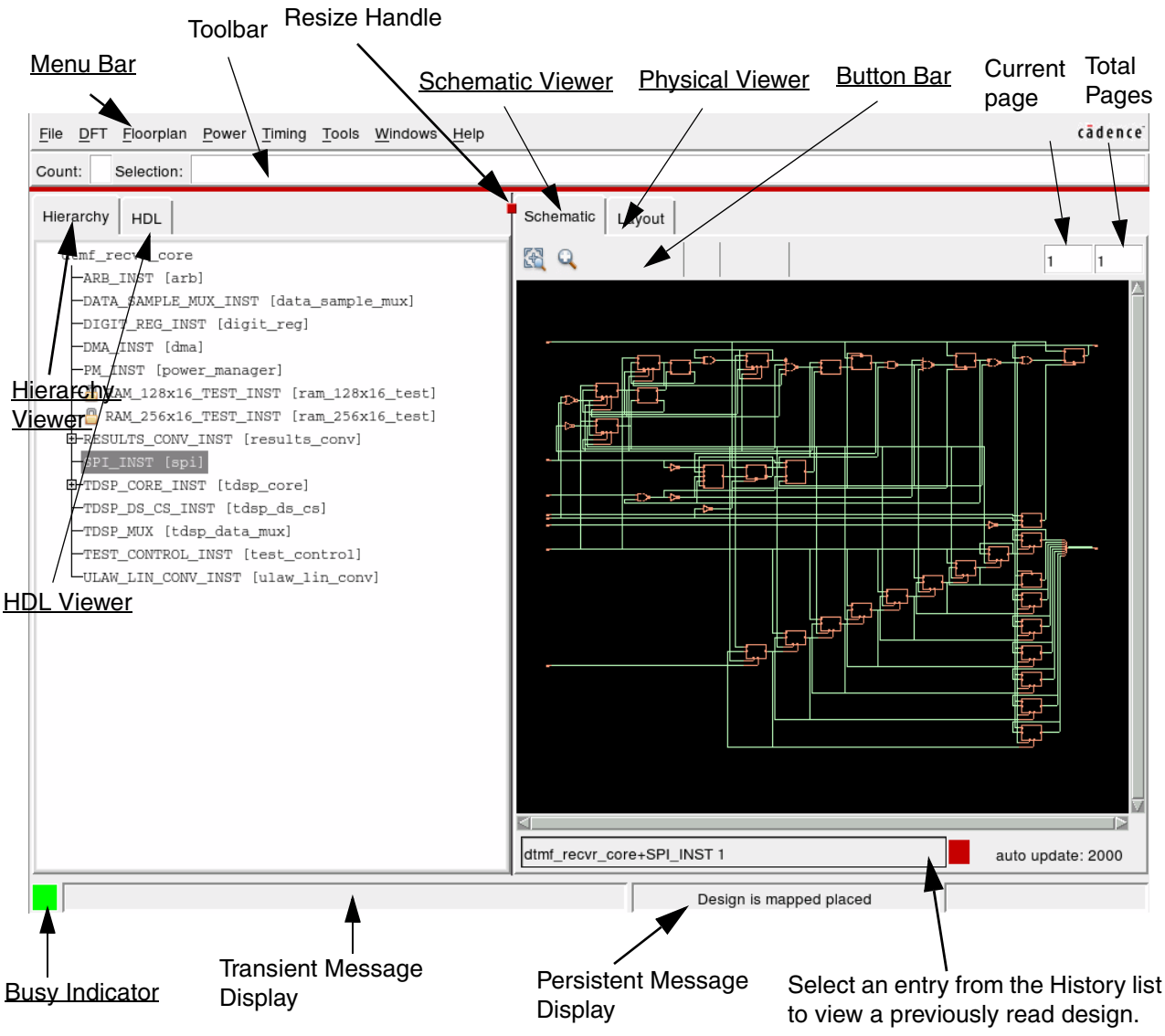
- To show the GUI, type the `gui_show` or the `gui_raise` command.
- To hide the GUI, type the `gui_hide` command.
- To exit if there is an error in your Tcl script file, type the `-abort_on_error` option. For example:

  ```
  genus -abort_on_error -f badfilename.tcl
  ```

  Otherwise, the GUI will not exit if there is an error in a Tcl script file. For more information on using Genus commands and options, see the *Command Reference*. See Chapter 3, "GUI Text", for a list of the GUI commands.

  The main GUI features are shown in Figure 1-1.

Figure 1-1 Genus GUI



Note: To disable the GUI mode, start the tool with the `-nogui` option. In this case the `gui_show` and `gui_raise` commands will have no effect. By default, GUI is enabled.

Busy Indicator

	Script is currently in execution.
	Script is in suspend mode. GUI can accept user inputs.
	All the commands in the script have been executed.

 *Tip*

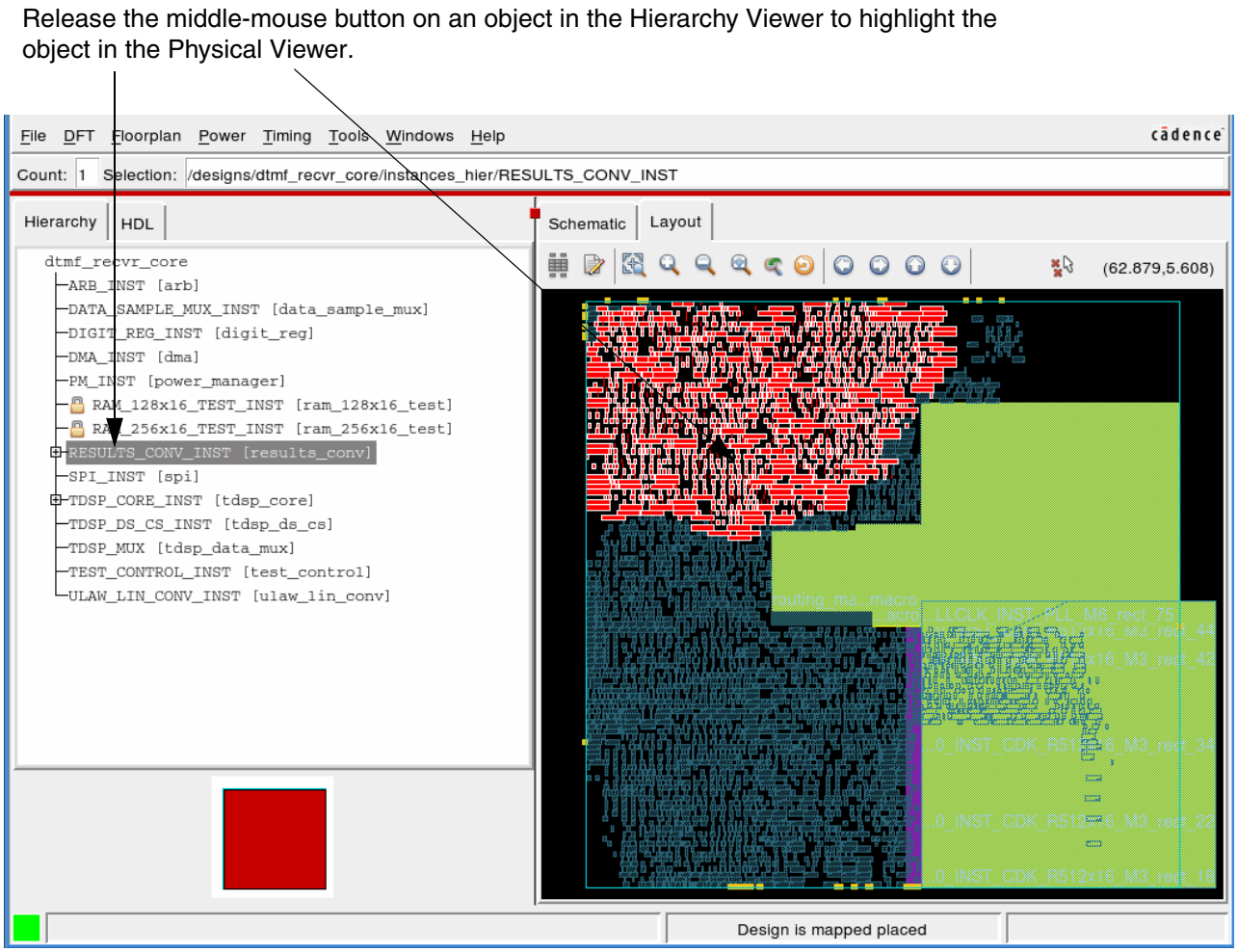
If the busy indicator remains on, use the `gui_reset` command to clear it.

Cross-Probing Objects Between the Viewers

Select and cross-probe objects under the cursor to the Logical, HDL, Schematic, and Physical Viewers by releasing the middle mouse button on the desired object in the Hierarchy Viewer or on an object in a DFT or Timing report.

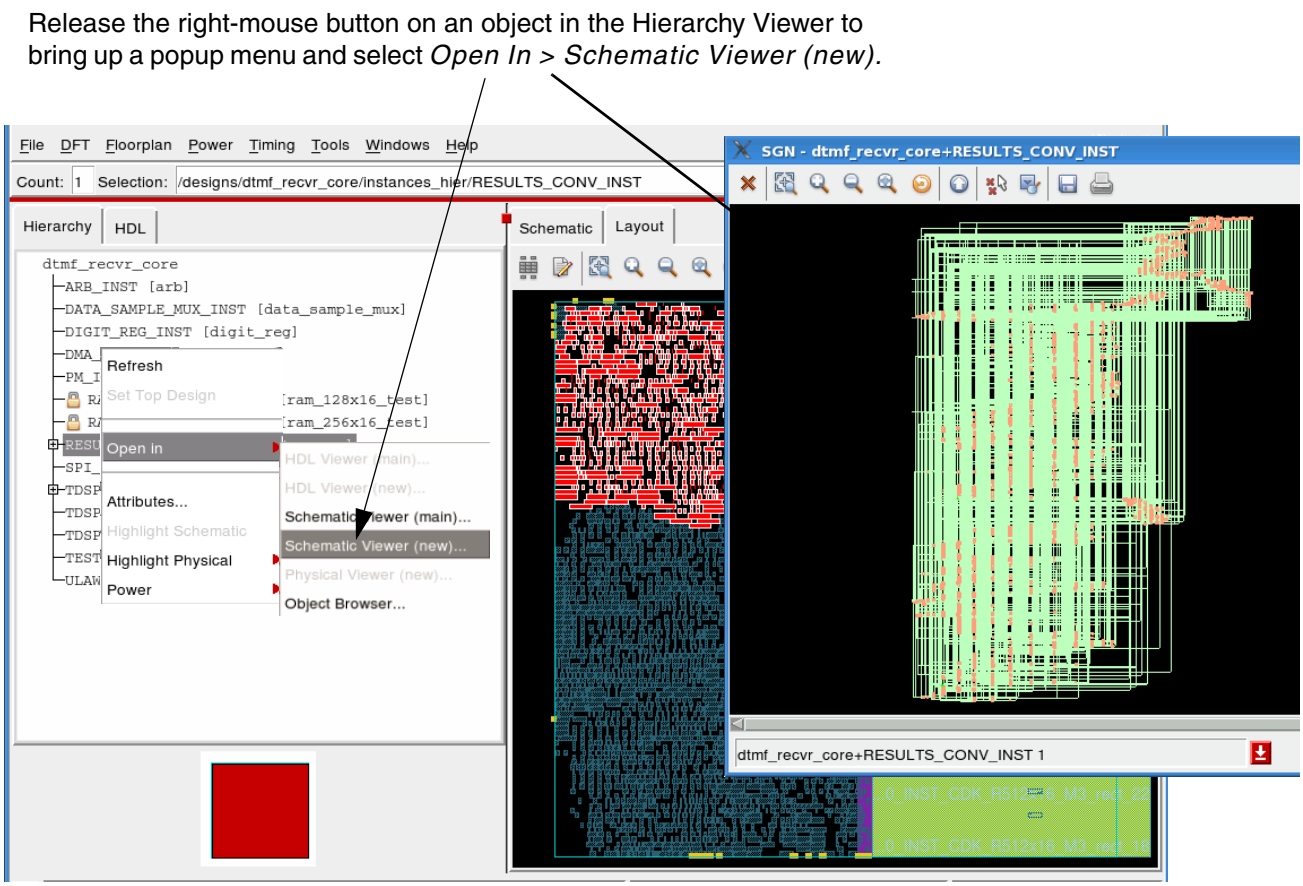
For example, as shown in Figure 1-2, when you release the middle-mouse button on an object in the Hierarchy Viewer, the object is highlighted in the Physical Viewer.

Figure 1-2 Cross-Probing Objects Between the Viewers



If you open a new Schematic Viewer by clicking the right mouse button on the object and selecting *Open In > Schematic Viewer (new)* as shown in Figure 1-3 on page 25, then you can also view and cross-probe objects from the Schematic Viewer.

Figure 1-3 Showing Object Selected in Hierarchy Viewer in Schematic Viewer



You can also cross-probe from the Hierarchy Viewer to the HDL Viewer. See Figure 2-1 on page 30 for more information.

For detailed information on the viewers, see Chapter 2, “Using the Viewer Windows.”

Displaying and Resizing the Viewers

- To display the Logical, Physical, HDL, or Schematic Viewer so it occupies the whole main screen window, instead of only a portion of the window, place the cursor in the browser and press `Control+m`.

  Repeatedly pressing `Control+m` toggles between the standard split-screen and the whole-screen display.

- Resize panes by selecting the resize handle, called out in Figure 1-1, with the left mouse button. When the cursor turns into an arrow **<->** press the left mouse button and drag the viewer pane either left or right.

For more information, see Using Key Sequences and Mouse Operations on page 28.

Using the Menu Bar, Button Bar, and Context Sensitive Menu

- The Menu bar is the horizontal menu across the top of the GUI. Each of the menu bar items has a drop-down menu with associated commands. See Chapter 3, “Using the Menu Bar.”
- The Button Bar is beneath the menu bar at the top of the Schematic Viewer and the Physical Viewer. It displays a collection of icons that represent frequently used commands. See Schematic Viewer Button Bar Commands on page 48 and Physical Viewer GUI Text Commands for more information.
- Context-sensitive pop-up menus are located in the Logical, Schematic, and Physical Viewers, in the *Object Browser*, and in the *Detailed Timing Report*. To view a context-sensitive menu, press the right mouse button in the browser window or a viewer to display the pop-up menu. See Hierarchy Viewer Commands on page 32 for more information.

The menu bar and browsers contain options and commands that have command line equivalents. For example, you can exit the GUI by typing a command, using the File menu, or by pressing key sequences.

Exiting the Genus GUI

- From the command line, type the `quit` or `exit` command
- From the menu bar, choose *File – Exit Tool* and click *Ok* when the Exit Tool dialog box displays.

  The *Exit GUI* command is equivalent to the `gui_hide` command, which hides the GUI from view but leaves the command line interface.Type the `gui_show` command to re-display the GUI. See Chapter 3, “GUI Text” in the *Command Reference* for more information.
- Press the `Control+c` key combination twice in succession to exit the tool immediately. See Using Key Sequences and Mouse Operations on page 28 for more information.

Getting Help

Getting Help for Messages and Commands

Help is available to explain Genus messages, commands, and attributes. See Messages on page 14, Command-Line Help on page 16 for detailed information.

Getting Online Help

Online help provides the full Genus documentation set, man pages, and balloon help. Access help by pressing the *Help* button on the menu bar. The functions of the *Help* button are described in Help Menu on page 133.

 *Tip*

Select *Balloon Help* under the *Help* menu to see object descriptions under the left mouse pointer.

If you have problems finding information, see Customer Support on page 12 for detailed information.

Using Key Sequences and Mouse Operations

Table 1-1 General Key Sequences

Key	Description
Control + m key	Toggles between a minimum and maximum window size of the viewer in which the key sequence is performed
Control + r key	Refreshes the view
i and Z key	Zooms in x2
`f` key	Performs a zoom fit.
`z` key	Zooms out x2
F5 key	Refreshes the screen
`w` key	Automatically sizes column widths of reports.
Return	Expands a selected object in the Object Browser

Table 1-2 Mouse Button Bindings Common to All Viewers

Mouse Button	Description
Left	■ Selects an object under the cursor in a viewer ■ Sorts and resizes the selected column in the title row of a report
Middle	Selects and cross-probes objects under the cursor to the HDL, Hierarchical, Physical, and Schematic Viewers.
Right	Selects a context sensitive menu for objects under the cursor

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Using the Viewer Windows

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  - Using the Hierarchy Viewer on page 30
  - Hierarchy Viewer Commands on page 32
- HDL Viewer
  - Using the HDL Viewer on page 37
- Schematic Viewer
  - Using the Schematic Viewer on page 39
  - Schematic Viewer Commands on page 40
  - Schematic Viewer Button Bar Commands on page 48
  - Key Sequences and Mouse Button Bindings in the Schematic Viewer on page 50
- Physical Viewer
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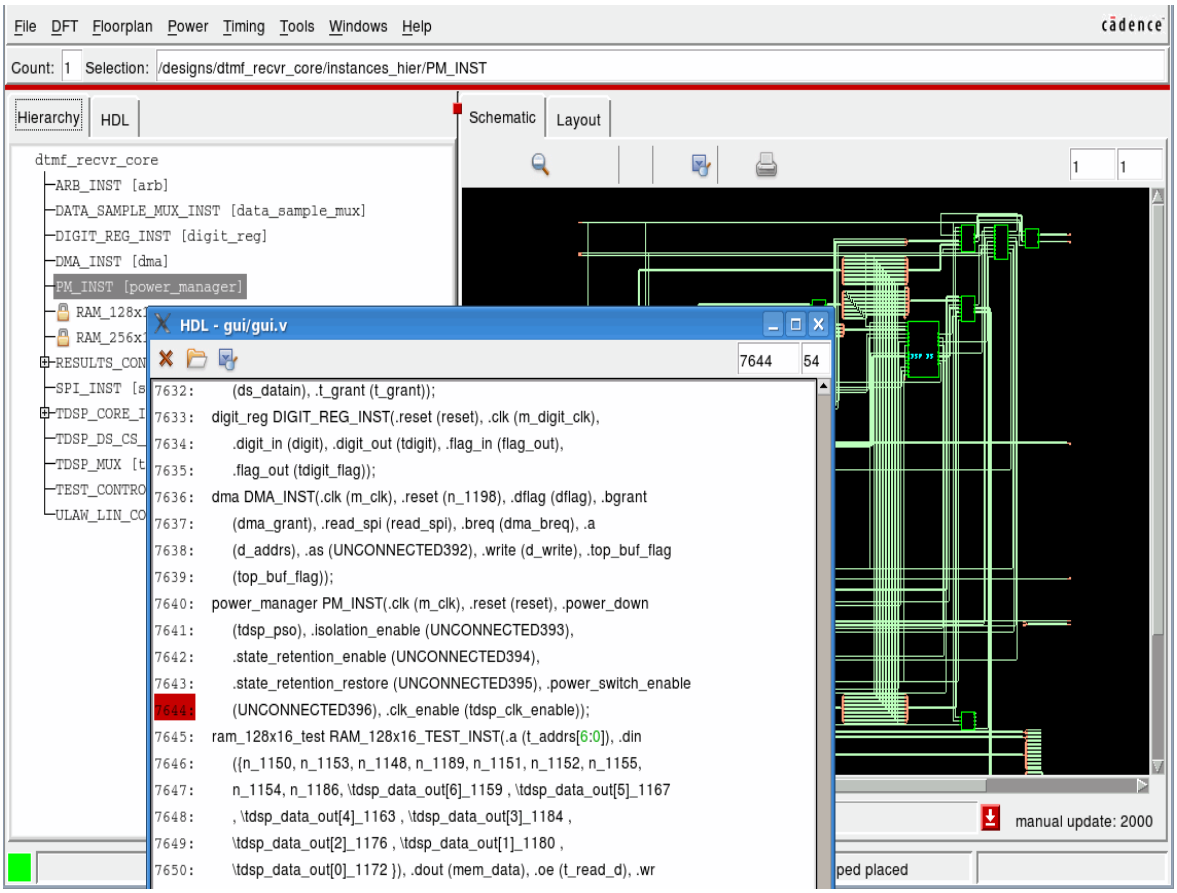
  - Physical Viewer Commands on page 52
  - Physical Viewer Button Bar Commands on page 70
  - Physical Viewer Floorplan Editor on page 74
  - Key Sequences and Mouse Button Bindings in the Physical Viewer

Using the Hierarchy Viewer

In the Hierarchy Viewer you can

- Display the instance hierarchy by clicking the left mouse button on the + sign next to an instance name.
- Use the context-sensitive menu, by right-clicking the mouse button on an object in the logical hierarchy display.
- Display instances in the Schematic Viewer and view the corresponding HDL in a *new* HDL Viewer by double-clicking the left or middle mouse button on an instance in the Hierarchy Viewer, and select *Open in ->HDL Viewer (new)* from the context-sensitive menu, as shown in Figure 2-1.

Figure 2-1 Cross-Probing From Hierarchy Viewer to HDL Viewer and Schematic Viewer



Double-click the left or middle mouse button on an instance in the Hierarchy Viewer to display instances in the Schematic Viewer and view the corresponding HDL in the HDL Viewer

- Annotate subdesign and attributes, as shown in Figure 2-2.

  Note: The Physical Viewer annotates physical instances. See Using the Physical Viewer on page 51 for more information.

- Control the selection of the design to report if multiple designs are present. Reports are generated for the top design. You can set any design as the top design through the context sensitive menu.

Hierarchy Viewer Commands

Refresh

Refreshes the hierarchy display.

Set Top Design

Sets the top design if multiple designs are present. This is useful for report generation when multiple designs are present.

Open in

Opens the selected object in the specified viewer.

Subcommands

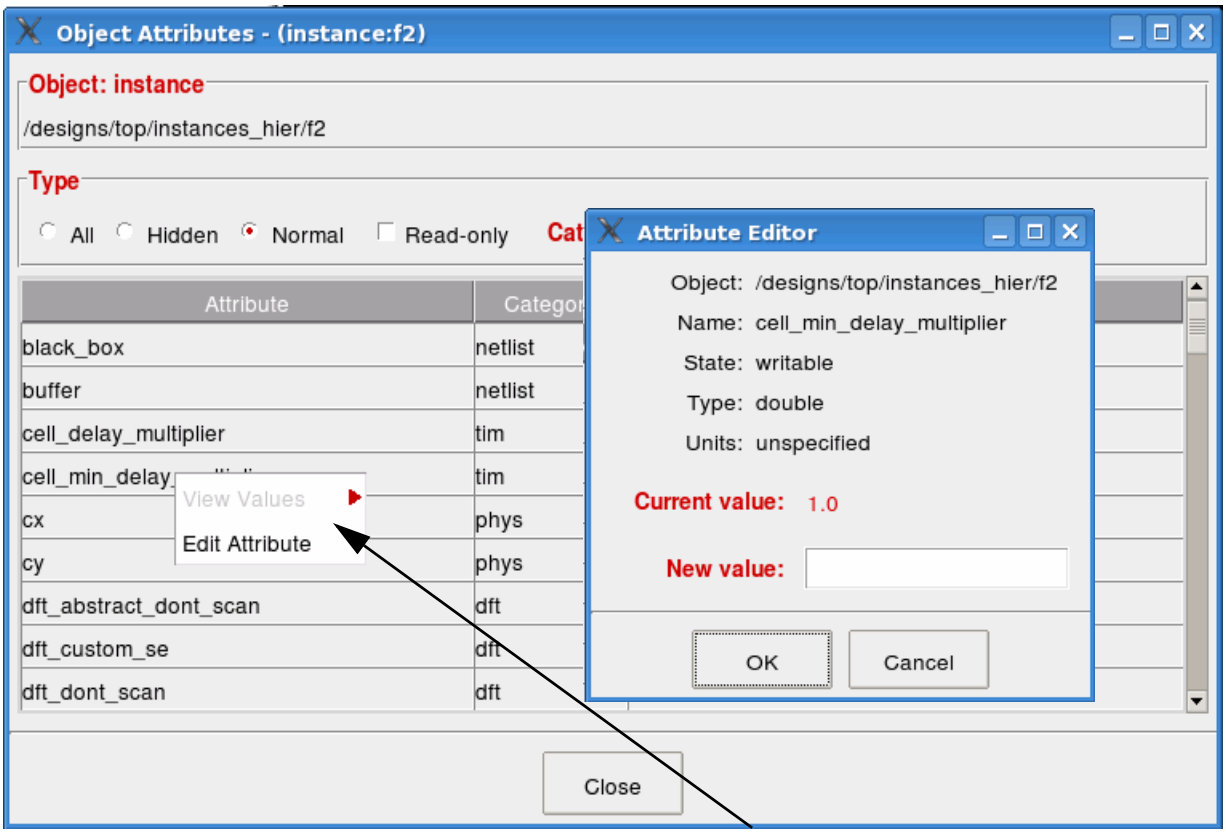
HDL Viewer (main)	Displays main HDL Viewer with data for the selected entry.
HDL Viewer (new)	Displays a new HDL Viewer with data for the selected entry.
Schematic Viewer (main)	Opens a schematic in the main window for the selected entry.
Schematic Viewer (new)	Opens a schematic in a new window for the selected entry.
Physical Viewer (new)	Opens a new physical viewer for the selected entry.
Object Browser	Opens an Object Browser for the selected entry.

Attributes

This opens the *Object Attributes* window. Press the right mouse button on an attribute name to display the *Edit Attribute* context-sensitive menu item. Release the right mouse button on the *Edit Attribute* menu item to display the *Attribute Editor.* Enter a new value and press OK.

Click the right mouse button on the Value column heading to display the attribute values.

Figure 2-2 Object Attributes Dialog Box



Press the right mouse button on an attribute name to display the *Edit Attribute* context-sensitive menu item. Release the right mouse button on the *Edit Attribute* menu item to display the *Attribute Editor*. Enter a new

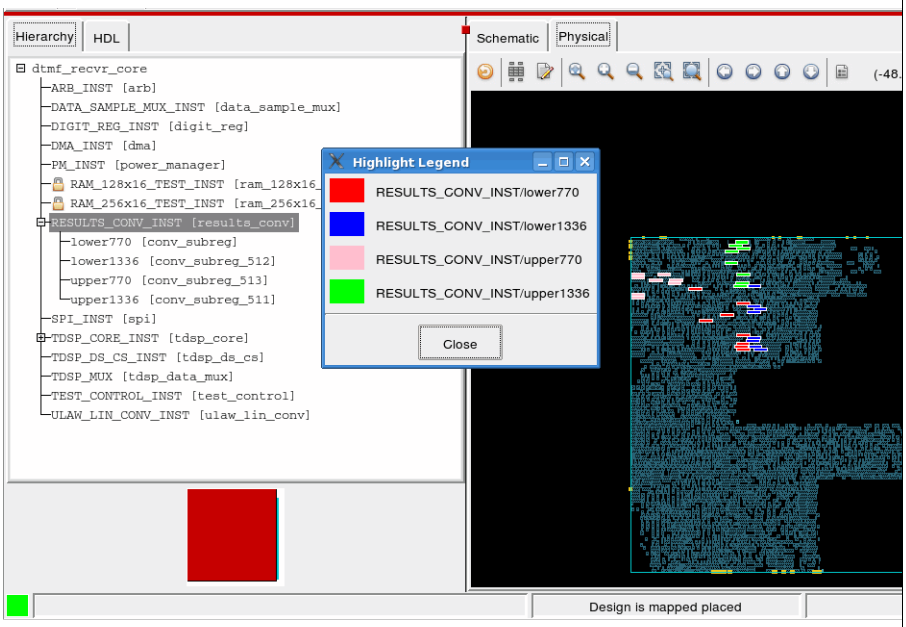
Highlight Schematic

Highlights the selected object in the Schematic Viewer.

Highlight Physical

Highlights the selected object in the Physical Viewer.

Subcommands

All instances	Highlights all leaf level instances for the selected entry.
Hierarchical Instances	Highlights all the leaf level instances for each hierarchical instance at depth one, with a different color, as shown in the image. 

Power

Displays power information.

Subcommands

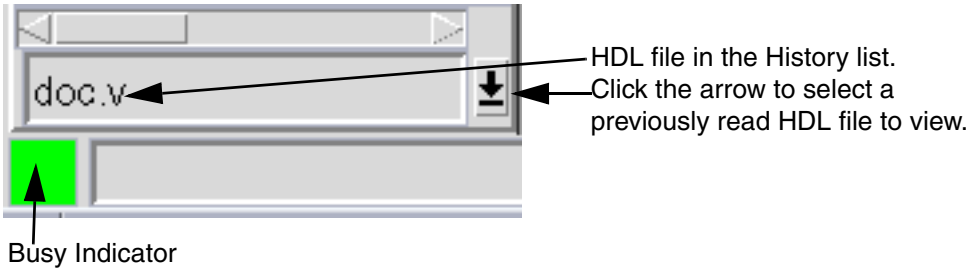
Power Attributes	Displays *Power Attributes* with all the attributes and values for a selected entry.
CPF Viewer	Brings up a text viewer to display the CPF associated with the selected entry, if the `cpf_info` attribute is set.
Instance Power Usage	Displays a pie chart for the selected instance.
Net Power Usage	Displays a pie chart for the selected net. To display the power usage for the whole design, select `Power > Report > Instance Power Usage` or `Net Power Usage` from the `Power` menu.
Toggle Rate Histogram	Generates a toggle rate histogram. The toggle rate histogram shows the number of nets for a specific toggle rate range. The probability range is controlled by the minimum and maximum values and the number of bars that you select. If you select a minimum value of 0, a maximum value of 1, and set the number o bars to 10, the toggle rate range is 0.1. Depending on the distribution, you can adjust these values to get a finer granularity in areas of interest. You can also get this information from the Hierarchy Viewer's context-sensitive menu.

Probability Histogram	Generates a probability histogram. The probability histogram shows the number of nets for a specific probability range. The probability range is controlled by the minimum and maximum values and the number of bars that you select. If you select a minimum value of 0, a maximum value of 1, and set the number o bars to 10, the probability range is 0.1. Depending on the distribution, you can adjust these values to get a finer granularity in areas of interest.  *Tip* The probability and net count are also displayed under the mouse pointer for each instance. You can also get this information from the Hierarchy Viewer's context-sensitive menu.

Using the HDL Viewer

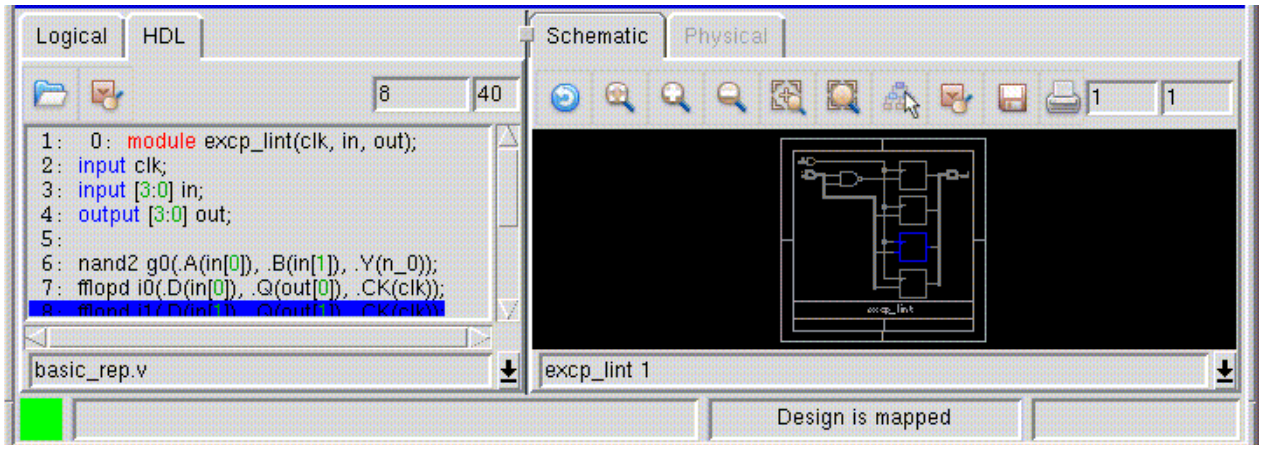
- Open an HDL file by clicking the *Open HDL File* Icon or by typing the `gui_hv_load_file` *`fname`* command from the command line. See HDL Viewer GUI Text Commands for more information.
- You can also open a previously read HDL file by selecting an entry from the History list above the Busy indicator, as shown in Figure 2-3,

Figure 2-3 HDL File History List



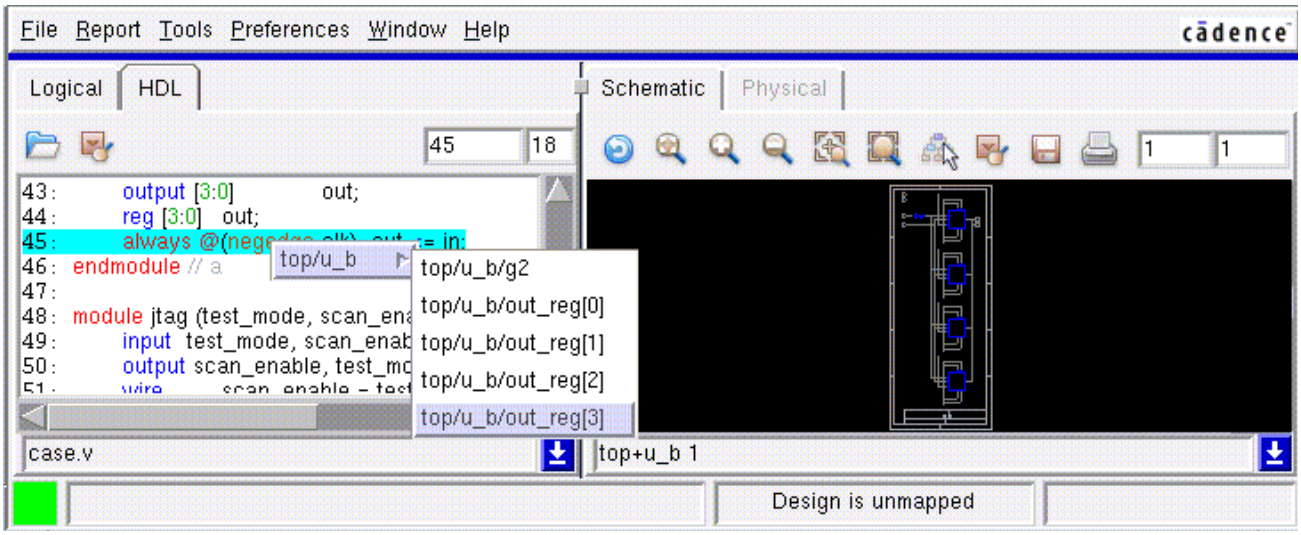
- View the file, row, and column information by right-clicking on an instance in the HDL Viewer. If *No file/row/column info* is displayed, then make sure the `hdl_track_filename_row_col` attribute is set to `true`.
- Cross probe from the HDL Viewer to the Schematic Viewer by pressing the middle mouse button on the selected line, as shown in Figure 2-4. See Using Key Sequences and Mouse Operations on page 28 for more information.

Figure 2-4 Cross-Probing From the HDL Viewer to the Schematic Viewer



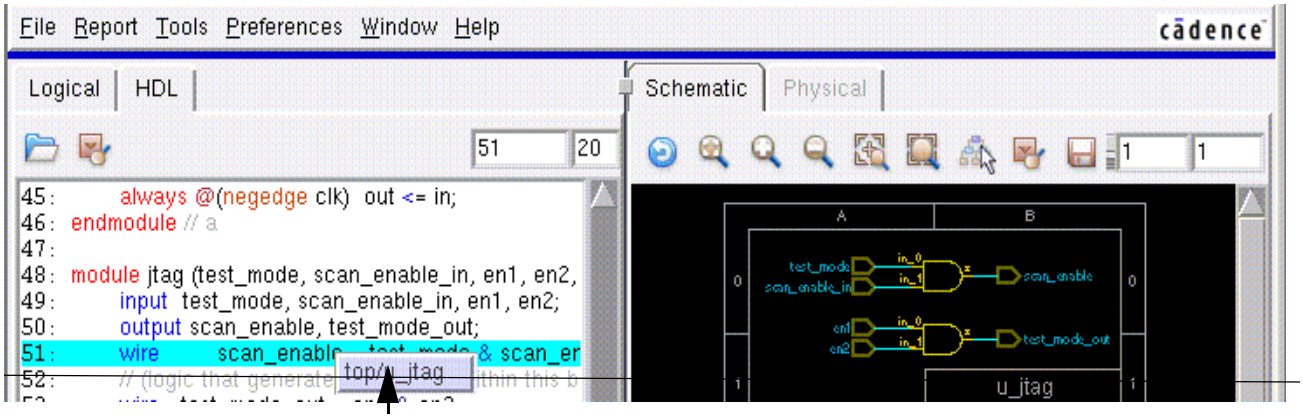
- View a cascading context-sensitive menu for leaf cells by pressing the *Shift* key and the right mouse button, as shown in Figure 2-5.

Figure 2-5 Viewing a Cascading Context-Sensitive Menu for Leaf Cells



- View the context-sensitive menu for parent instances by pressing the right mouse button on an instance in the HDL Viewer. For example, Figure 2-6 shows the parent instances for a select instance that are displayed in the Schematic Viewer.

Figure 2-6 Viewing Parent Instances



Press the right mouse button on an instance to view

Using the Schematic Viewer

In the Schematic Viewer you can

- Configure the display preferences in *File > Preferences > Schematic*.See Preferences on page 87 for detailed information.

  Note: If you have a large design, and the *Paging* preferences are set to *Fit Page* in *File > Preferences > Schematic... > Paging*, then it will take time to generate the schematic.

 *Tip*

To speed schematic generation, turn off *Balloon help* located in the Help menu, and *Info Balloon* located in *File > Preferences > Schematic > General.*

- Ascend into the hierarchy by pressing the left-mouse button and stroking from the lower right corner to the upper left corner.
- Descend into an instance by double-clicking the left mouse button on a hierarchical instance. See Using Key Sequences and Mouse Operations on page 28 for more information.
- Use the context-sensitive menu, by right-clicking the mouse button on an object in the Schematic Viewer.
- Use commands to interact with the Schematic Viewer. See Schematic Viewer Text Commands
- Press and release the middle mouse button in a report column to highlight the object in the Schematic Viewer.

Schematic Viewer Commands

The Schematic Viewer has different popup menus depending on the object type that is selected:

No Object Selected

When no object is selected, and you do a right click, you see the following options.

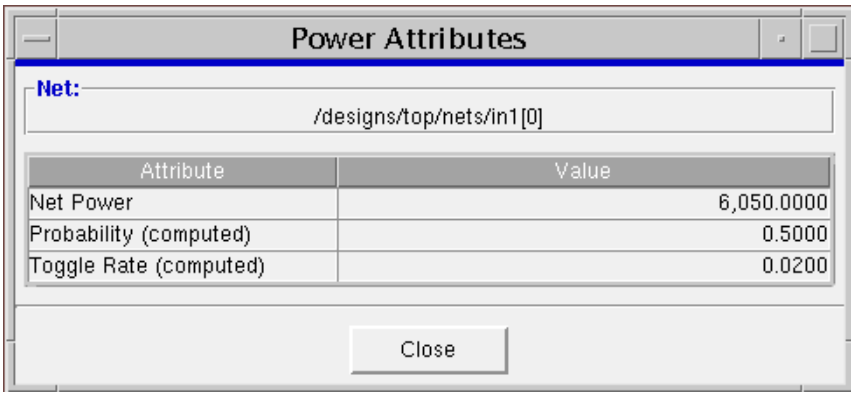
Subcommands

Deselect All	Deselects all selected objects and refreshes the display.
Grey Mode On	Turns grey mode on, making it easier to see the highlighted items.
Grey Mode Off	Turns grey mode off.

Net Selected

When net is selected, you can see the following options.

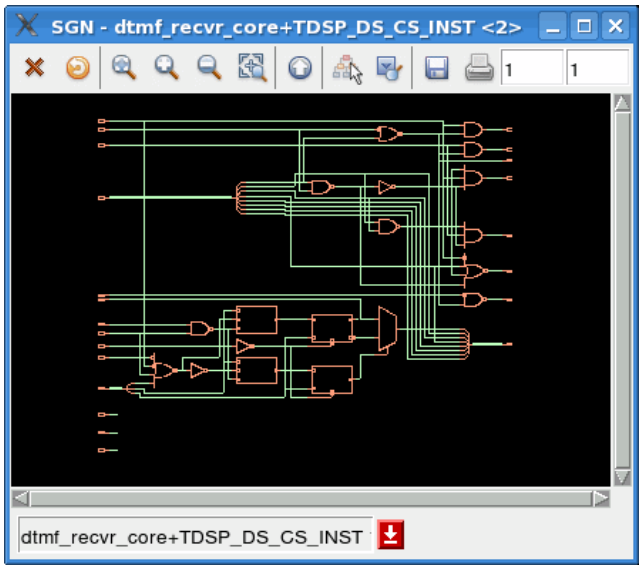
Subcommands

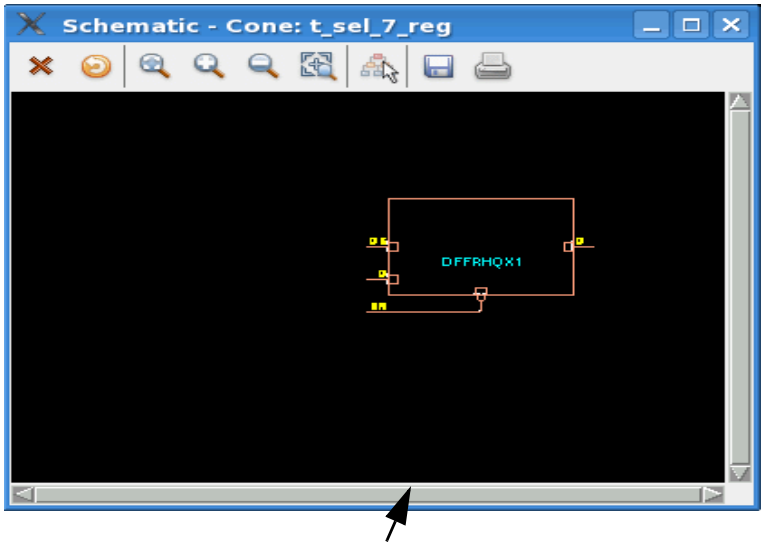
Attributes	Displays a pop-up, top-level window *Object Attributes*, to show all the attributes for a selected net (Figure 2-2).
Highlight	Highlights the selected net in one of the available colors.
Open in Object Browser	Opens the *Object Browser* that shows the net in the design hierarchy.
Power Attributes	Opens the *Power Attributes* (Figure 3-8) showing the net power, computed probability, and the computed toggle rate values. **Figure 2-7 Net Power Attributes** 

Instance Selected

The following options are available in the context sensitive menu on an instance.

Subcommands

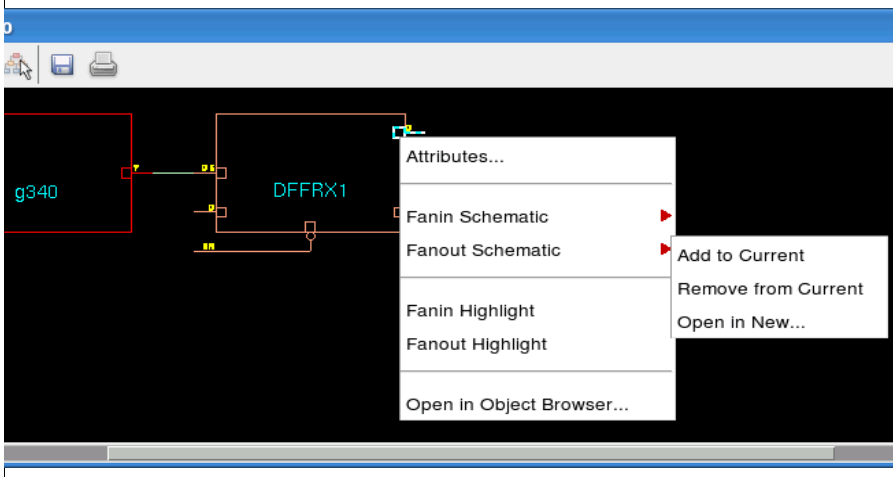
Attributes	Displays a pop-up, top-level window *Object Attributes,* to show all the attributes for a selected instance. See Figure 2-2.
Highlight	Highlights the selected instance in one of the available colors.
Open in	■ *HDL Viewer (new)* — Displays the selected instance's HDL description in a new HDL Viewer window. ■ *Schematic Viewer (new)* — Displays the selected instance in a new *Schematic Viewer.* Double-click the pins on the instance to incrementally add one level of fanin or fanout, depending on whether it is an input or output pin. Continue to double-click on pins to view more logic. Or, select *Add to Current* from the pin's context-sensitive menu. 

	■ *Schematic Viewer (cone)* —Opens the instance in a new schematic cone viewer to let you manually build up the logic cone. Use the pin context-sensitive menu to add or remove from the logic cone. Double-click on a pin to add one level of fanin or fanout logic, as shown in below.  Use the pin context-sensitive menu to add or remove from the logic cone. Double-click on a pin to add one level of fanin or fanout logic, as shown in ■ *Schematic Viewer (cone append)* — Incrementally appends the schematic with fan-in and fan-out information when you double-click on a pin or port. ■ *Object Browser* — Opens the *Object Browser* that shows the instance in the design hierarchy.
Report Timing From	Displays a *Detailed Timing Report* of the selected instance if the instance is sequential.
Power Attributes	Opens the *Power Attributes* showing the internal, leakage, and net power, as well as the computed probability and the computed toggle rate values.
CPF Viewer	Brings up a text viewer to display the CPF associated with the selected entry, if the `cpf_info` attribute is set.

Pin Selected

Command options for a selected pin.

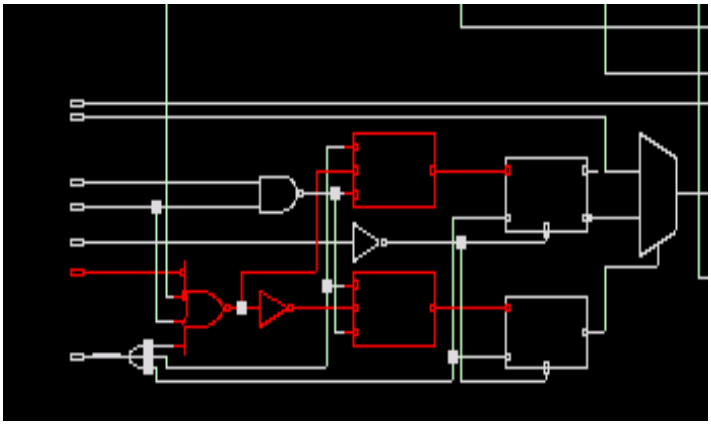
Subcommands

Attributes	Displays a pop-up, top-level window to show all the attributes for a selected pin.
Fanin Schematic	Displays the nets that fanin to the selected pin in a new Schematic Viewer.
Fanout Schematic	Displays the nets that the pin fanouts to in a new Schematic Viewer. To add or remove levels of fanin or fanout from the selected pin, right-click the mouse button on the pin in the new Schematic Viewer, select `Fanin Schematic` or `Fanout Schematic` from the context-sensitive menu, then select `Add to Current`, `Remove from Current`, or `Open in New`, as shown in Figure 3-10. Or double-click a pin to add a level. 
Fanin Highlight	Highlights the nets that fanin to the selected pin in the Schematic Viewer.
Fanout Highlight	Highlights the nets that fanout to the selected pin in the Schematic Viewer.
Open in Object Browser	Opens the Object Browser window that shows the pin in the design hierarchy.

Port Selected

The command options are shown when a port is selected.

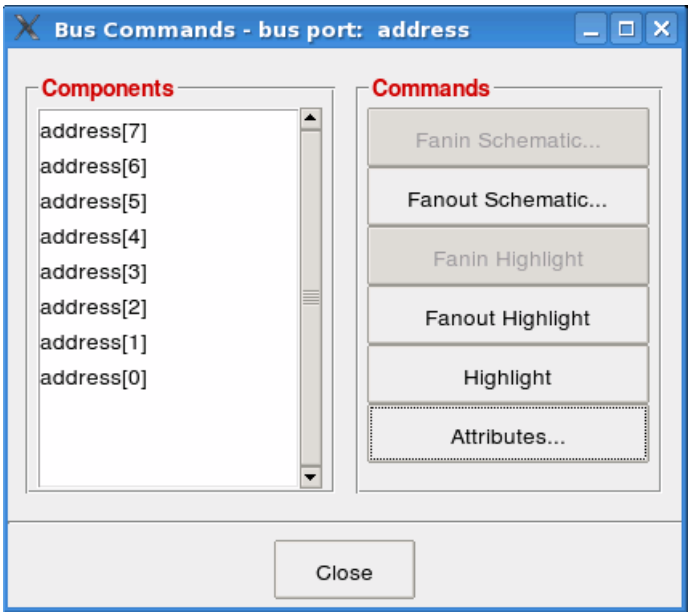
Subcommands

Attributes	Displays a pop-up, top-level window to show all the attributes for a selected port.
Fanin Schematic	Highlights the nets that fanin to the selected port in a new Schematic Viewer.
Fanout Schematic	Highlights the nets that the port fanouts to in a new Schematic Viewer.
Fanin Highlight	Highlights the selected port in the Schematic Viewer.
Fanout Highlight	Highlights the nets that the port fanouts to in the Schematic Viewer. 
Highlight	Highlights the selected port in one of the available colors.
Open in Object Browser	Opens the Object Browser that shows the port in the design hierarchy.

Bus Port Selected

The various command options for a context sensitive menu when a bus port is selected.

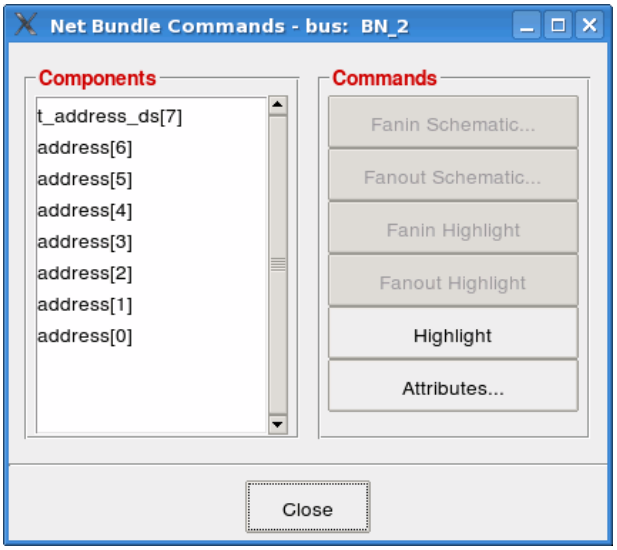
Subcommands

Bus Commands	Displays the Bus Commands -bus port: address dialog box, shown below, that lets you use the following commands for each address component: `Fanin/Fanout Schematic`, `Fanin/Fanout Highlight`, `Highlight`, `Attributes`.  *Fanin/Fanout Schematic* — Highlights the nets that fanin/fanout to the selected bus port. *Fanin/Fanout Highlight* — Highlights the selected bus port. *Highlight* — Highlights the selected port in one of the available colors. *Attributes* — Displays a pop-up, top-level window to show all the attributes for a selected port.
Highlight	Highlights the selected port in one of the available colors.

Net Bundle Selected

The various command options for a context sensitive menu when a net bundle is selected.

Subcommands

Net Bundle Commands	Displays the Net Bundle Commands, shown below, that lets you use the following commands for each address component: `Fanin/Fanout Schematic`, `Fanin/Fanout Highlight`, `Highlight`, `Attributes`.  *Fanin/Fanout Schematic* — Highlights the nets that fanin/fanout to the selected bus port. *Fanin/Fanout Highlight* — Highlights the selected net bundle. *Highlight* — Highlights the selected bundle in one of the available colors. *Attributes* — Displays a pop-up, top-level window to show all the attributes for a selected net bundle.

Schematic Viewer Button Bar Commands

Table 2-1 Schematic Viewer Button Bar Commands

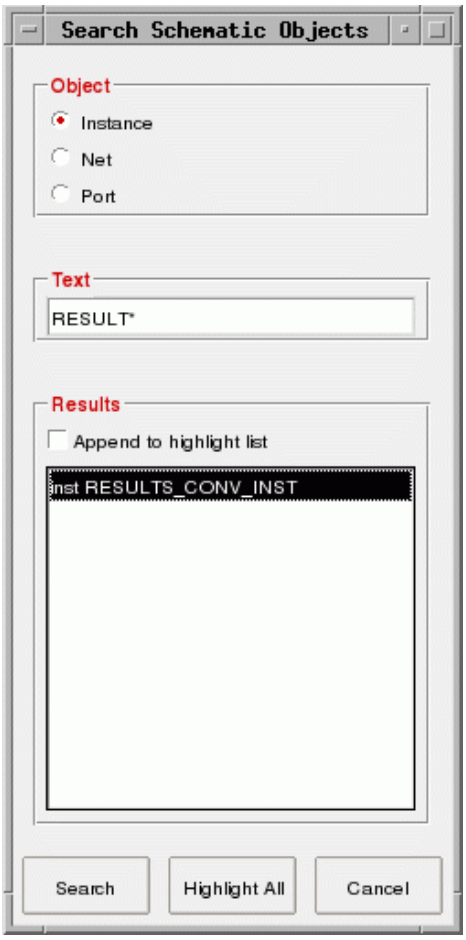
	Reloads the view.
	Zooms to fit the entire module for viewing. You can also press the `f` key to zoom fit the design. See Using Key Sequences and Mouse Operations on page 28 for more information.
	Zooms in on the design and magnifies the selected design area. You can also press the `i` key to zoom in on the design. See Using Key Sequences and Mouse Operations on page 28.
	Zooms out on the design. De-magnifies the selected area of the design. You can also press the `o` key to zoom out on the design. See Using Key Sequences and Mouse Operations on page 28.
	Zooms in on to a selected object in the Schematic Viewer.
	Moves up in the design hierarchy.
	Deselects all selected objects.
	Displays the *Search Objects* Dialog box, shown in Figure 2-8. ■ *Object* — Lets you select a *Port, Instance*, or *Net* object to search for. ■ *Text* — Searches for an object name that you type in. ■ *Results* — Appends the object name to a highlighted list. Double-click the left mouse button to highlight and center objects in the Schematic Viewer. Click the *Zoom To* icon to zoom into the bounding box around the highlighted object.
	Displays the *Save File* dialog box. Specify the directory and the desired *File Type* and press the *OK* button. You can also specify *Printing* preferences, such as page size, job size, coloring, scaling, and orientation under *Preferences – Schematic*. See Preferences on page 87.

Table 2-1 Schematic Viewer Button Bar Commands, *continued*

	Prints the current view or the full page (specified in *Preferences – Schematic – Printing – Scaling*) to a PostScript file. Specify the file location and name in the displayed dialog box. See Preferences on page 87 for setting other printing schematic preferences.

The Search Objects Dialog Box helps you search objects in a big design.

Figure 2-8 Search Objects Dialog Box



Double-click the left mouse button on the object name to highlight and center objects in the Schematic Viewer. Click the *Zoom To* icon in the Schematic Viewer to zoom into the bounding box around the highlighted object.

Key Sequences and Mouse Button Bindings in the Schematic Viewer

Table 2-2 Key Sequences

Key	Description
Control + m key	Toggles between a minimum and maximum window size
Control + r key	Refreshes the view
i and z key	Zooms in x2
f key	Performs a zoom fit.
o and Z key	Zooms out x2
F5 key	Refreshes the screen
Page Up or Prior key	Shows the previous page
Page Down or Next key	Shows the next page

Table 2-3 Mouse Button Bindings

Mouse Button	Description
Left	Selects an object under the cursor.
Double-click Left	Opens the hierarchical instance under the cursor.
Middle	Selects and cross-probes objects under the cursor to the HDL, Hierarchical and Physical Viewers.
Right	Selects a context sensitive menu for objects under the cursor.

Using the Physical Viewer

The Physical Viewer is automatically displayed when a Design Exchange Format (DEF) file is read into Genus.

In the Physical Viewer you can

- Configure display preferences in *File > Preferences > Layout.* See Preferences on page 87 for detailed information.
- Display physical locations of the instances.
- View a logical design in the physical realm.
- Display blockages, macros, ports, and rows.
- Use context-sensitive menus.
- Use commands to interact with the Physical Viewer. See Physical Viewer GUI Text Commands for detailed information.
- Press and release the middle mouse button on an object in the Hierarchy Viewer to highlight it in the Physical Viewer, as shown in Figure 1-2 on page 24.

  See Using Key Sequences and Mouse Operations on page 28 for more information.

Physical Viewer Commands

The Physical Viewer has two context-sensitive menus:

- Object-Selected on page 52
- Area-Selected on page 61

Object-Selected

- Deselect on page 53
- Redraw on page 53
- Grey Mode On on page 53
- Grey Mode Off on page 53
- Display Options on page 54
- Fitting on page 55
- Panning on page 56
- Zooming on page 56
- Connectivity Airlines on page 57
- Steiner Tree on page 57
- Attributes on page 58
- Power Attributes on page 59
- Execute Command on page 59
- Open in on page 60

Deselect

Deselects objects and refreshes the display of the Physical Viewer.

Subcommands

Deselect All	Deselects everything that was selected.
Deselect Airline	Deselects airlines created with the Connectivity Airlines command.
Deselect Highlight	Deselects all objects on the Object List created with the gui_pv_highlight command.
Deselect Selection	Deselects the item(s) selected with the left mouse button.

Redraw

Refreshes the screen with the top design information when multiple designs are present.

Grey Mode On

Turns the grey mode on, making it easier to see the highlighted items.

Grey Mode Off

Turns the grey mode off.

Display Options

Brings up the *Physical Display Options* form. This form controls visibility and selectability of the object types and gives detailed control over how and what to display for the listed object types.

For each object type, you can control the following:

Visible—Controls whether the object type is visible.

Selectable—Controls whether object type is selectable.

Name—Displays the name of the object type.

Outline—Shows the object type as an outline.

Filled—Shows the object type with a solid color.

Stipple—Shows the object type in a stippled way, which allows to see the macros and cells underneath

Fitting

Subcommands

Fit All	Sets the window to fit core and die.
Fit Core	Sets the window to core.
Fit Die	Sets the window to die.

Panning

Subcommands

Pan Left	Shifts the center of the design window to the right by half of the design window. This shift causes the image in the design window to move to the right.
Pan Right	Shifts the center of the design window to the left by half of the design window. This shift causes the image in the design window to move to the left.
Pan Up	Shifts the center of the design window down by half of the design window. This shift causes the image in the design window to move down.
Pan Down	Shifts the center of the design window up by half of the design window. This shift causes the image in the design window to move up.

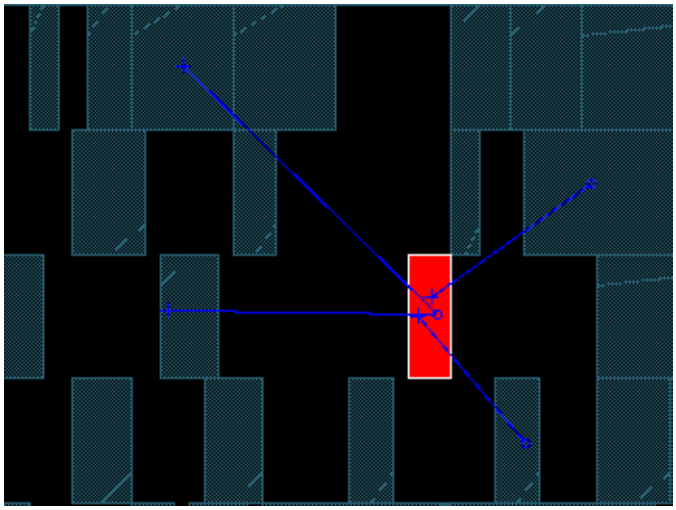
Zooming

Subcommands

Zoom Fit	Zooms to fit the whole design for viewing.
Zoom In	Zooms in with a factor of 2 on the design.
Zoom Out	Zooms out with a factor of 2 on the design.

Connectivity Airlines

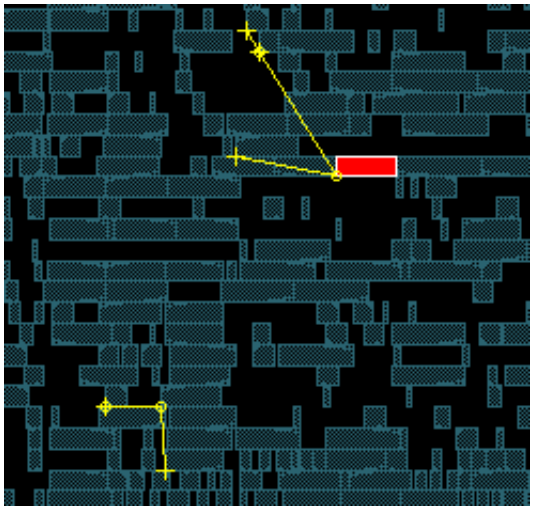
Shows the connectivity of a selected macro by showing airlines to the macros and ports it is connected to. Each time you select a different macro, the display is updated to show the connectivity airlines of the last selected macro.



Note: This command will be greyed out if no macro is selected.

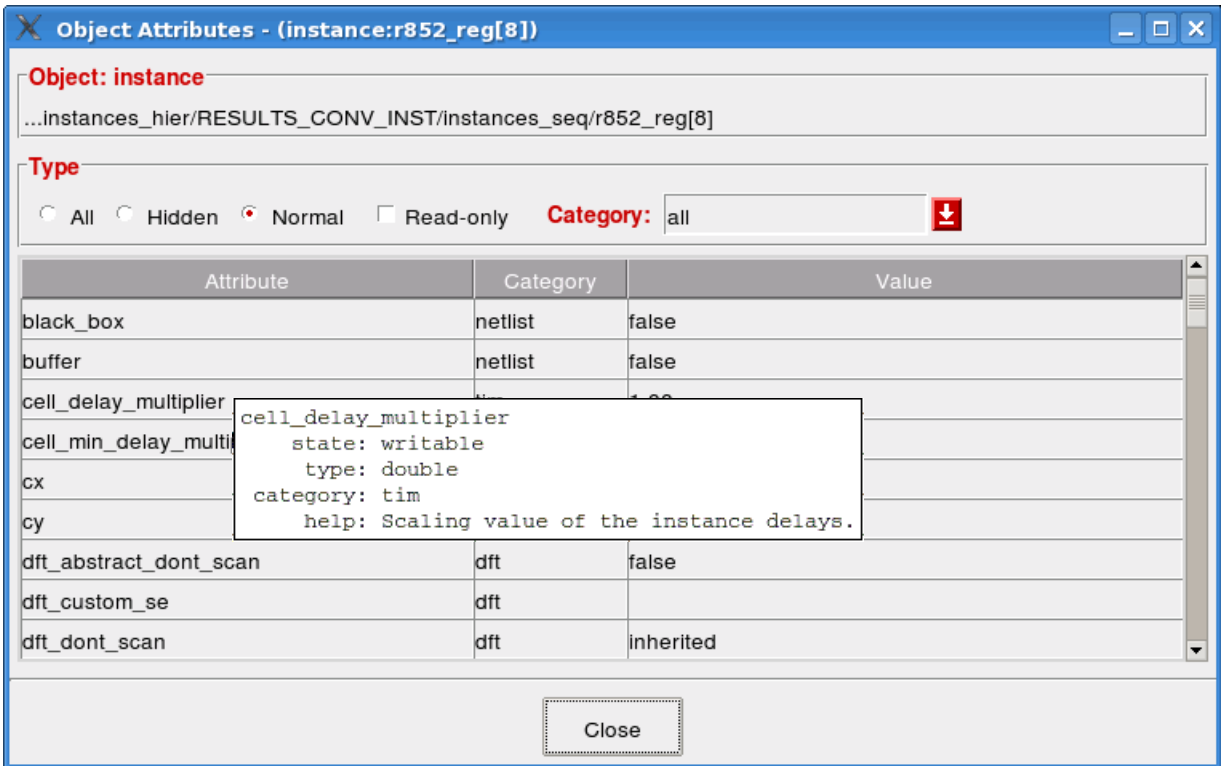
Steiner Tree

Shows the Steiner route for all output pins of a selected instance. Each time you select a different instance, the display is updated with the information of the latest Steiner Tree.



Attributes

Displays a *Object Attributes* form with all attributes for the selected object. For each attribute, you see the name, category, and the value. You can choose to display *All* (visible and hidden) attributes, just the *Hidden* attributes, the *Normal* (visible) attributes and you can choose to display only the *Read-only* attributes in each of those categories. You can also choose to select one specific *Category* or all categories.



If you move the mouse over an attribute name, a popup appears listing the following:

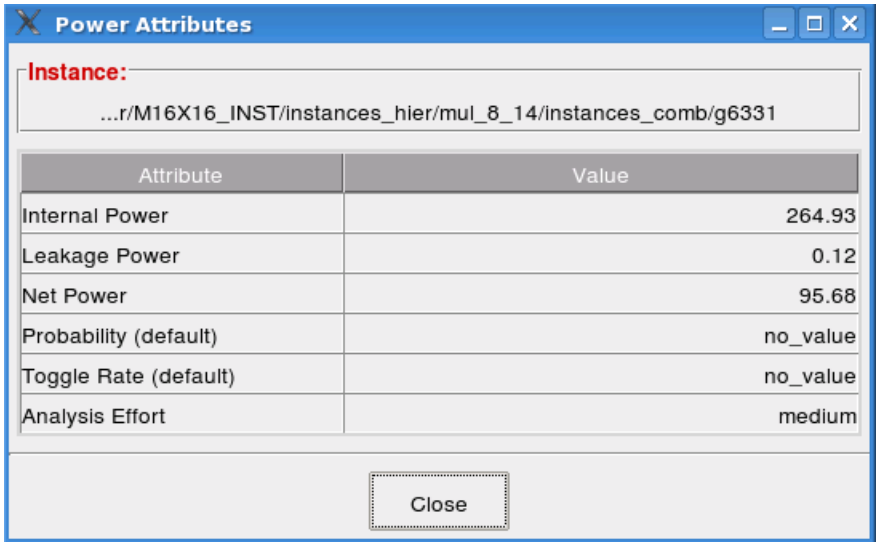
- Whether the attribute is read-write or read-only
- The data type
- The category
- A short help

If the attribute is writable, you can click the right mouse button in the *Value* column on a selected attribute to display a pop menu as shown in Figure 2-2 on page 33, which allows you to select the *Edit Attribute* command. This will display the *Attribute Editor* allowing you to change the attribute value.

Note: This command will be greyed out if no macro is selected.

Power Attributes

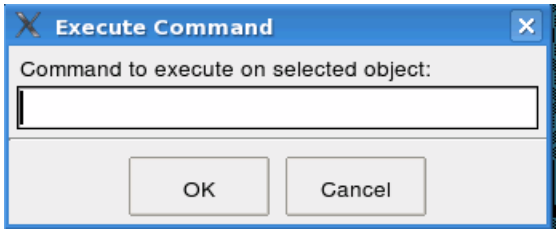
Displays a form with the *Power Attributes* including Internal Power, Leakage Power, Net Power, Probability, Toggle Rate, and Analysis Effort.



Note: This command will be greyed out if no macro is selected.

Execute Command

Executes the command typed into the entry field after appending the selected object's path to the end of the command.



Open in

Crossprobes the selected object in other viewers.

Note: This command will be greyed out if no macro is selected.

Subcommands

HDL Viewer (main)	Displays the HDL description of the selected instance in the main HDL Viewer window.
HDL Viewer (new)	Displays the HDL description of the selected instance in a new HDL Viewer window.
Schematic Viewer (main)	Displays the schematic of the selected instance in the main Schematic Viewer.
Schematic Viewer (new)	Displays the schematic of the selected instance in a new *Schematic Viewer.*
Object Browser	Opens the *Object Browser* that shows the selected instance in the design hierarchy.

Area-Selected

To select objects within an area, hold down the Shift key and the use the left mouse button to draw the area in which to select the objects.

Deselect

Refreshes the hierarchy display.

Subcommands

Deselect All	Deselects everything that was selected.
Deselect Airline	Deselects airlines created with the Connectivity Airlines command.
Deselect Highlight	Deselects all objects on the Object List created with the gui_pv_highlight command.
Deselect Selection	Deselects the item(s) selected with the left mouse button.

Redraw

Sets the top design if multiple designs are present. This is useful for reports and so on.

Grey Mode On

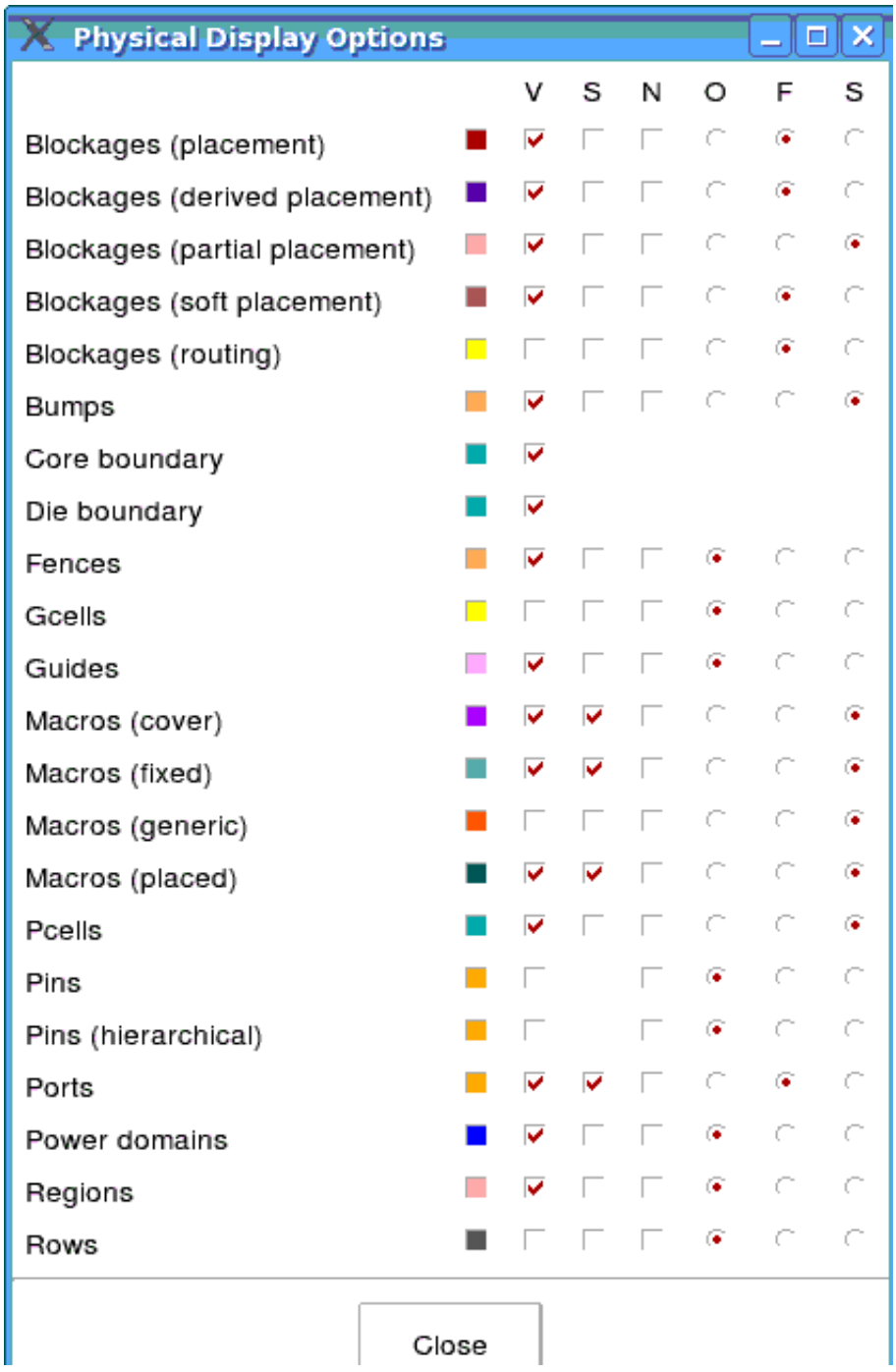
Turns the grey mode on, making it easier to see the highlighted items.

Grey Mode Off

Turns the grey mode off.

Display Options

Brings up the Physical Display Options form. This form gives you control over the visibility and selectability of the object types and gives detailed control over how and what to display of the listed object types



For each object type listed on the left you can control the following:

Visible—Controls whether the object type is visible.

Selectable—Controls whether object type is selectable.

Name—Displays the name of the object type.

Outline—Shows the object type as an outline.

Filled—Shows the object type with a solid color.

Stipple—Shows the object type in a stippled way, which allows to see the macros and cells underneath

Fitting

Subcommands

Fit All	Sets the window to fit core and die.
Fit Core	Sets the window to core.
Fit Die	Sets the window to die.

Panning

Subcommands

Pan Left	Shifts the center of the design window to the right by half of the design window. This shift causes the image in the design window to move to the right.
Pan Right	Shifts the center of the design window to the left by half of the design window. This shift causes the image in the design window to move to the left.
Pan Up	Shifts the center of the design window down by half of the design window. This shift causes the image in the design window to move down.
Pan Down	Shifts the center of the design window up by half of the design window. This shift causes the image in the design window to move up.

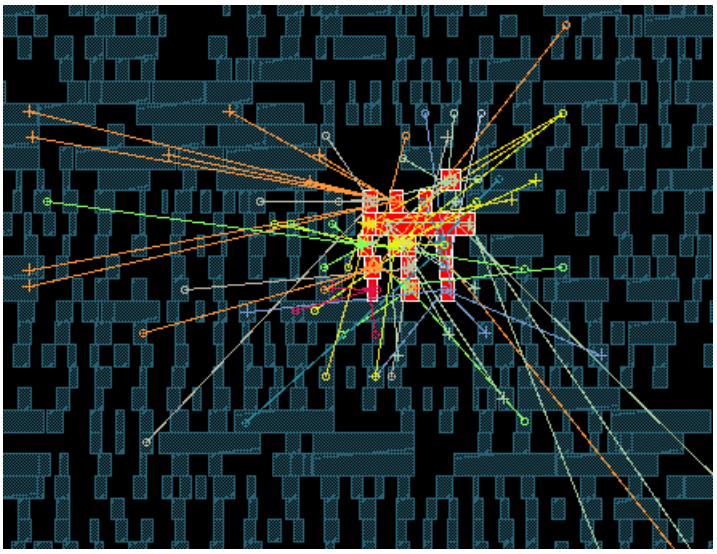
Zooming

Subcommands

Zoom Fit	Zooms to fit the whole design for viewing.
Zoom In	Zooms in with a factor of 2 on the design.
Zoom Out	Zooms out with a factor of 2 on the design.

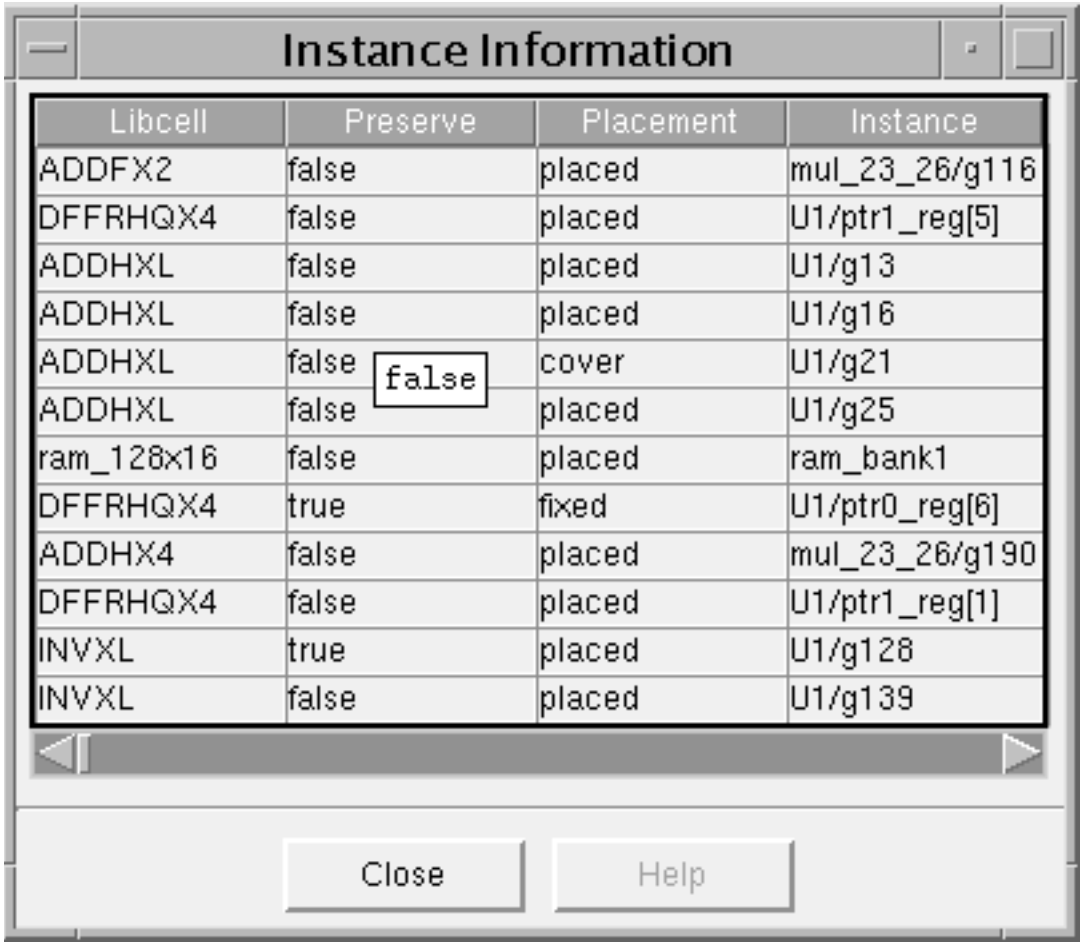
Connectivity Airlines

Shows the connectivity airlines for all the selected objects.



Instance Information

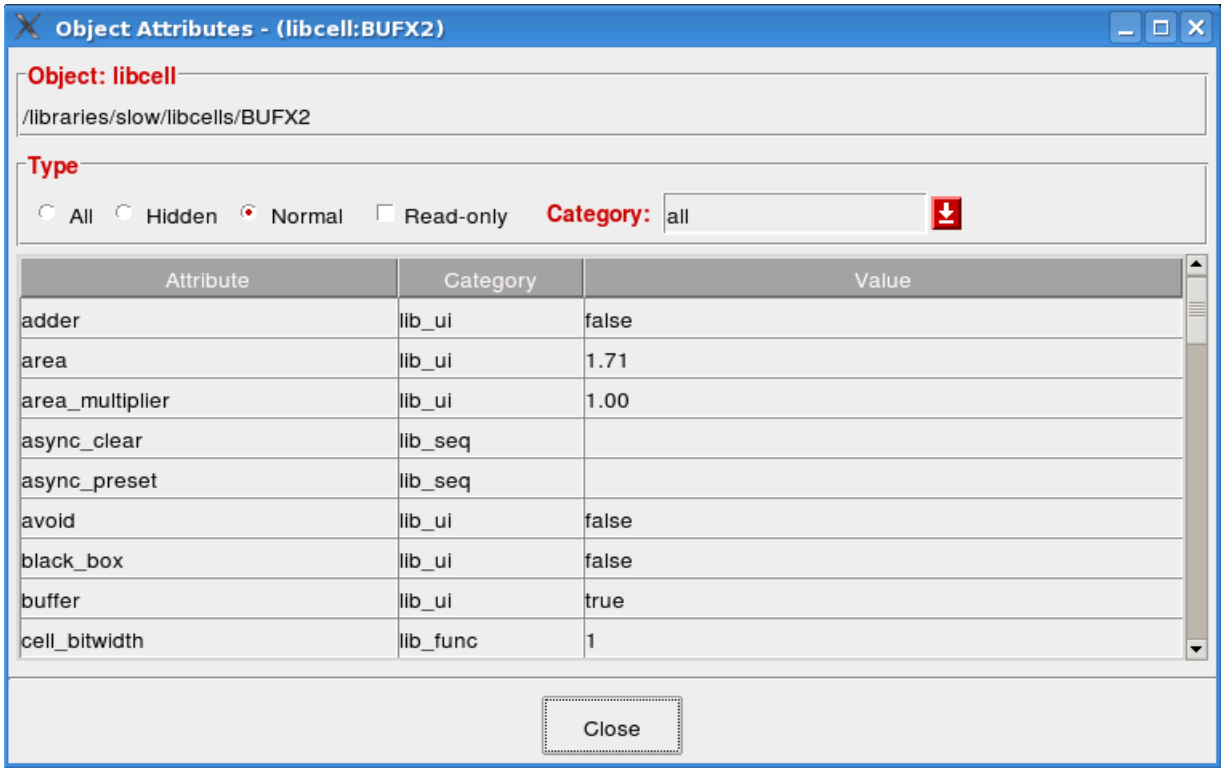
Displays the following information for all instances selected inside a rectangular area on the die.



- Libcell Name
- Whether the instance is preserved
- Whether the instanced is placed
- Instance name

If you double click with the left mouse button over the libcell name, you get a popup windows of the *Object Attributes*.

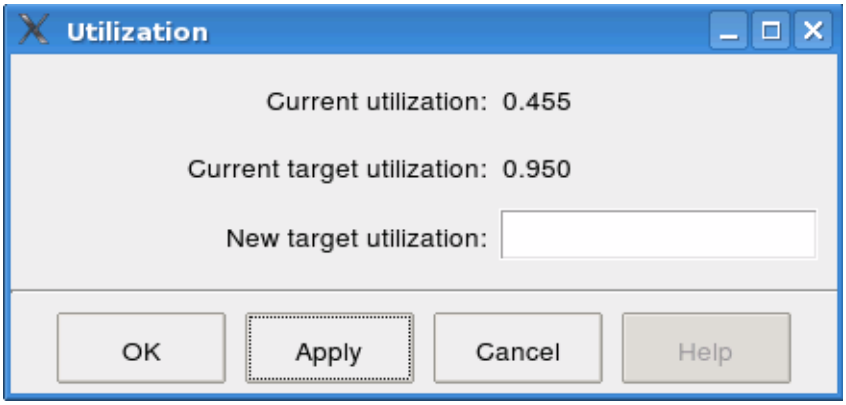
Attribute Viewer — Brings up the Attribute Viewer for the selected libcell:



Avoid Libcell — Sets the `avoid_libcells` attribute for that libcell to `true`.

Utilization

Displays the utilization information for an area selected on the die:



- Current utilization — The utilization is computed based on the area of instances inside a gcell and the total gcell area
- Current target utilization — This is the current target utilization for each gcell covered by the highlighted instances.
- New target utilization — This is a user supplied value for the future target utilization for each gcell covered by the highlighted instances.

Physical Viewer Button Bar Commands

Table 2-4 Physical Viewer Button Bar Commands

Icon	Description
	*Redraw* - Reloads the view.
	*Floorplan Mode* - Toggles the floorplan mode. In floorplan mode, the placed instances are hidden which prevents them from being selected.
	*Edit Mode* - Toggles the edit mode. When in edit mode, the icons right of the icon that toggles the display of the *Measure Grid* are replaced with buttons for edit commands. For more information on using the editor, see Physical Viewer Floorplan Editor.
	*Zoom Fit* - Zooms to fit the whole module for viewing.
	*Zoom In* - Zooms in on the design.
	*Zoom Out* - Zooms out on the design.
	*Zoom To* - Zooms in on objects in the Physical Viewer. If you press the right mouse button over this icon, a context-sensitive menu is displayed with the following options: ■ *Zoom to All*—Zooms in to the bounding box around selected and highlighted objects and displayed airlines. ■ *Zoom to Airline*—Zooms in to the bounding box around the airlines. ■ *Zoom to Highlight*—Zooms in to objects on the Object List created with the gui_pv_highlight command. ■ *Zoom to Selection*—Zooms in to the bounding box around all selected objects. Selecting the icon with the left mouse button, is the equivalent to *Zoom to All*.
	*Zoom Previous* - Zooms in on a previous view.
	*Pan Left* - Pans (moves) to the left of the design.

Table 2-4 Physical Viewer Button Bar Commands , *continued*

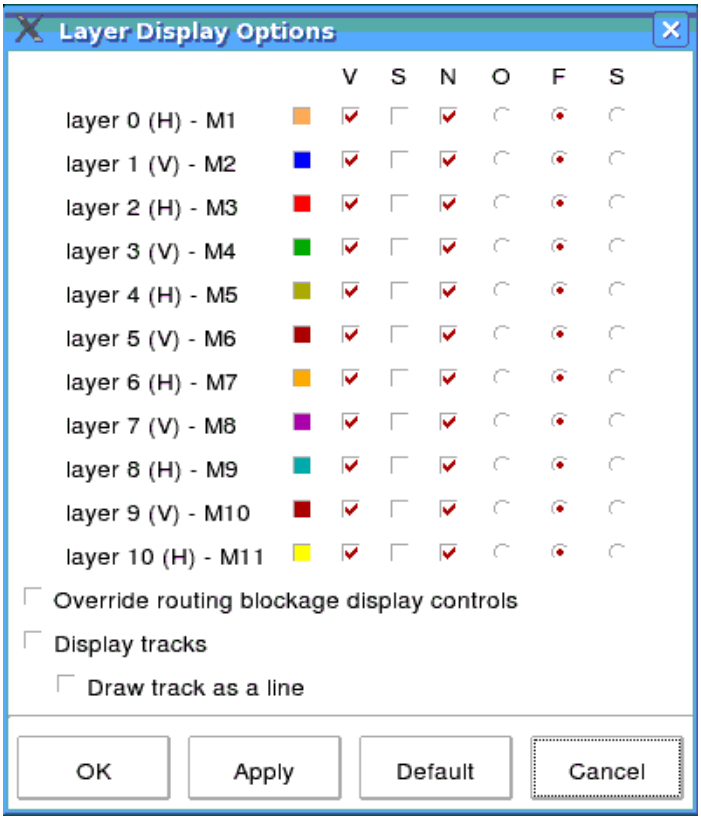
Icon	Description
	*Pan Right* — Pans to the right of the design.
	*Pan Up* — Pans up the design.
	*Pan Down* —Pans down the design.
	*Display Options* — Displays the *Physical Display Options* dialog box.
	*Layer Control* — Controls the display of different metal layers in the Physical Viewer.The following image shows the various options.  ❑ *Override routing blockage display controls* — Overrides the settings done in the *Physical Display Options > Blockages* ❑ *Display tracks* — Controls the display of tracks in the Physical Viewer.

Table 2-4 Physical Viewer Button Bar Commands , *continued*

Icon	Description
	*Deselect All* - Deselects objects. If you press the right mouse button over this icon, a context-sensitive menu is displayed with the following options: ■ *Deselect All*—Deselects the selected and highlighted objects and the displayed airlines. ■ *Deselect Airline*—Deselects the airlines created with the Connectivity Airlines command. ■ *Deselect Highlight*—Deselects the highlighted objects, that is, the objects on the Object List created with the gui_pv_highlight command. ■ *Deselect Selection*—Deselects all selected objects. Selecting the icon with the left mouse button, is the equivalent to *Deselect All*.
	*Measure Grid* - Toggles the display of the Measure Grid. The grid spacing is one micron.
	*Gcell Grid* - Toggles the display of the gcell grid.
	*Rows* - Toggles the display of the rows.
	*Special Nets* - Toggles the display of the Special Net routing. When you turn on the display of the Special Net routing, a form is displayed which allows you to toggle the display of special nets, layers, and special routing shapes (such as followpins, stripes, rings, and so on).
	*Congestion Map* - Toggles the display of the congestion map if congestion information is available.
	*Utilization Map* - Toggles the display of the utilization map.
	*Pin Density Map* - Toggles the pin density map. The pin density map overlays a color map showing pin density in gcells.
	*Save* - Displays the *Save File* dialog box. Specify the directory and the desired *File Type* and press the *OK* button. You can also specify *Printing* preferences, such as page size, job size, coloring, scaling, and orientation in *File > Preferences > Schematic*. See Preferences on page 87.

Table 2-4 Physical Viewer Button Bar Commands , *continued*

Icon	Description
	*Print* - Prints the current view or the full page (specified in *File > Preferences > Schematic > Printing > Scaling*) to a PostScript file. Specify file location and name in the displayed dialog box. You can also specify *Printing* preferences, such as page size, job size, coloring, scaling, and orientation under *File > Preferences > Schematic*. See Preferences on page 87.
	*Undo Last Edit* - Undoes the last edit. This is visible only in the *Edit Mode*.
	*Move Object* - Moves the selected instance, port, region, or blockage. This is visible only in the *Edit Mode*.
	*Delete Object* - Deletes the selected instance, port, region, or blockage. This is visible only in the *Edit Mode*.
	*Flip Horizonta*l - Flips the selected instance or port horizontally. This is visible only in the *Edit Mode*.
	*Flip Vertical* - Flips the selected instance or port vertically. This is visible only in the *Edit Mode*.
	*Rotate Right* - Rotates the selected instance or port clockwise (to the right) by 90 degrees. This is visible only in the *Edit Mode*.
	*Rotate Left* - Rotates the selected instance or port counterclockwise (to the left) over 90 degrees. This is visible only in the *Edit Mode*.

Physical Viewer Floorplan Editor

To enable floorplan edit mode, click the *Edit Mode* toggle button. This results in the following:

- The *Floorplan Mode* button is disabled.
- The edit action buttons appear on right side of toolbar.
- The display is reconfigured to only show cover and fixed instances (that is, placed instances are hidden).
  - Only fixed instances and ports can be edited (cover instances and ports are shown for reference but cannot be edited).
  - Placed instances and ports cannot be edited and are not displayed or selectable.
  - Regions and blockages can be edited.

➡ To move an object

a. Select the instance, port, region, or blockage to be moved.

b. Click the *Move Object* button to enable the move mode.

The Delete/Flip/Rotate buttons become hidden.

c. Move the selected object to the desired location.

d. Select the next object to be moved.

e. Move the selected object to the desired location using the left mouse button. When you release the left mouse button the new location is defined.

f. Repeat step d and step e until finished moving objects.

g. Toggle the *Move Object* button to disable the move mode.

➡ To delete an object

a. Select the instance, port, region, or blockage to be moved.

b. Click the *Delete Object* button.

Deleting an instance or port only sets the placement_status to *unplaced* and resets the location (the instance or port still exists in the netlist).

Deleting a region or blockage removes the object from the netlist (similar to doing 'rm' on a region or blockage object).

➡ To flip or rotate an object

a. Select the instance or port to be flipped or rotated.

b. Click the appropriate *Flip* or *Rotate* button

➡ To undo the last edit action, click the *Undo Last Edit* action.

When done editing click the *Edit Mode* toggle button to disable the edit mode.

Key Sequences and Mouse Button Bindings in the Physical Viewer

Table 2-5 Key Sequences

Key	Description
Left arrow key	Scrolls left about 3/4 of the screen (course move)
Right arrow key	Scrolls right about 3/4 of the screen (course move)
Up arrow key	Scrolls up about 3/4 of the screen (course move)
Down arrow key	Scrolls down about 3/4 of the screen (course move)
Shift + Left arrow key	Scrolls left about 1/10 of the screen (fine move)
Shift + Right arrow key	Scrolls right about 1/10 of the screen (fine move)
Shift + Up arrow key	Scrolls up about 1/10 of the screen (fine move)
Shift + Down arrow key	Scrolls down about 1/10 of the screen (fine move)
Control + m key	Toggles between a minimum and maximum window size
Control + r key	Refreshes the view
Control + w key	Displays the previous view
Control + minus key	Zooms out
Control + equal key	Zooms in
i and z key	Zooms in
`f` key	Performs a zoom fit. The window size is determined by the settings on the context-sensitive menu for Fitting.
`o` and `Z` key	Zooms out
F5 key	Refreshes the screen

3

Using the Menu Bar

File Menu

Check

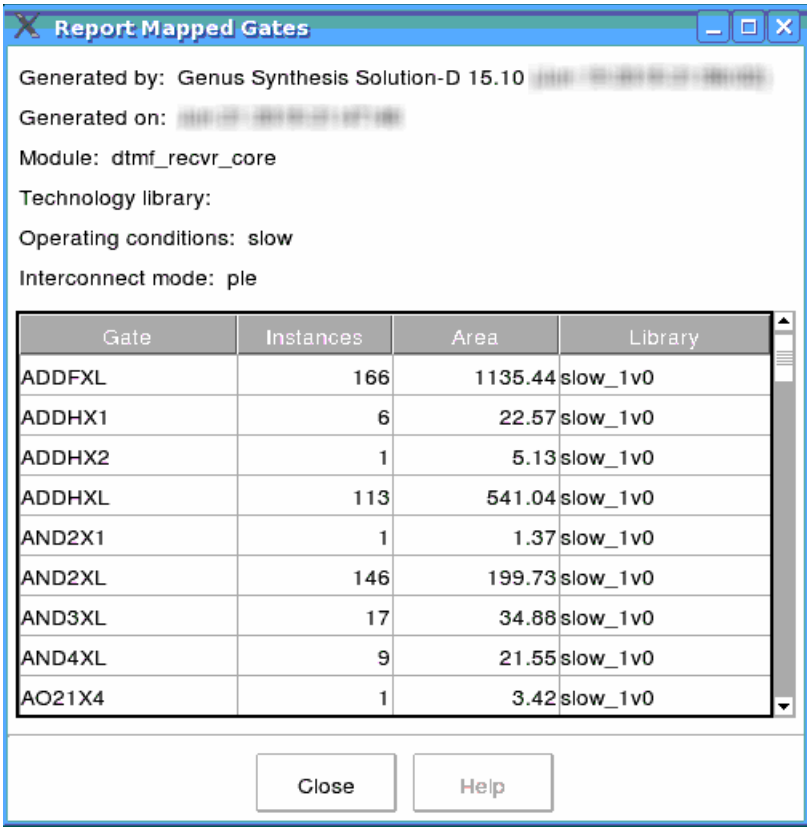
Design

This is equivalent to the `check_design` command and it reports information about the ports, pins, preserved instances and others in the given design.

Report

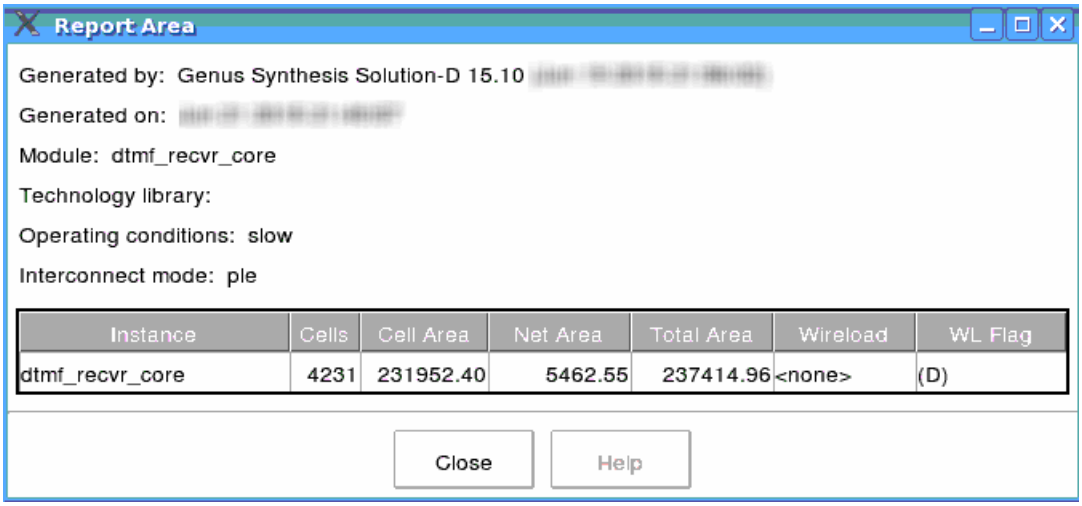
Summary

Generates a tabular report of the netlist gate count similar to the `Gate` section of the `report_gates` report.



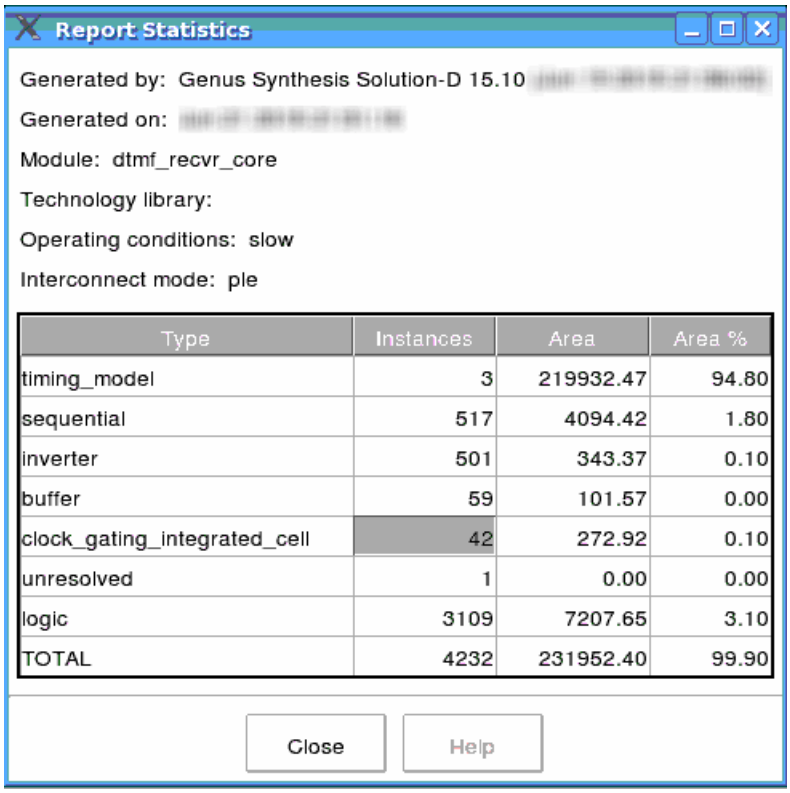
Gate Count

Displays the *Report Area* dialog box where you can select the desired *Depth* and *Minimum Count* to generate a tabular report of the netlist area similar to the command `report_area`. Click on a report column to view the instance in the Schematic, Hierarchy, and HDL Viewers.



Netlist Statistics

Generates a tabular report of netlist statistics similar to the `Instances` section of the `report_gates` command report.

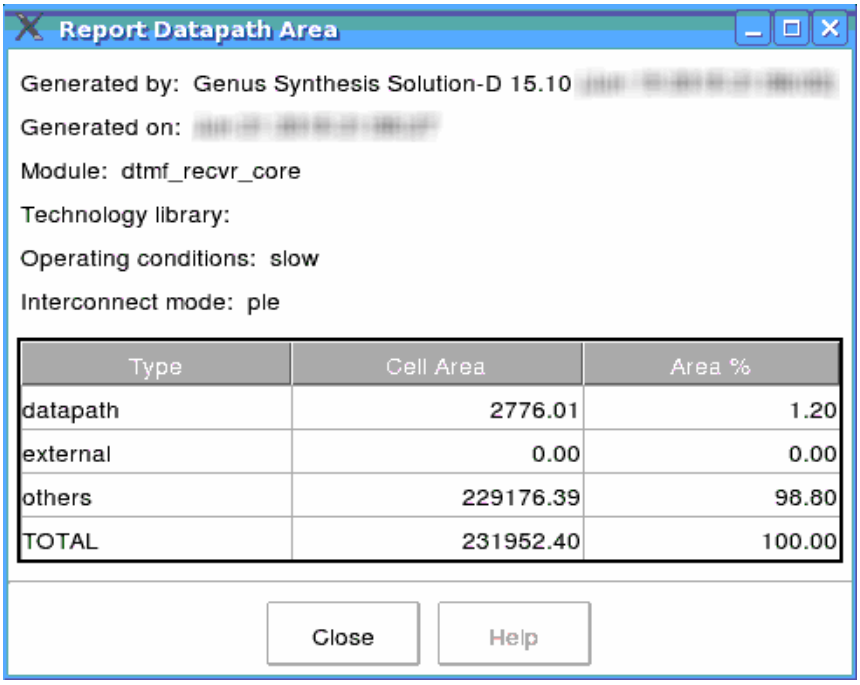


Type	Instances	Area	Area %
timing_model	3	219932.47	94.80
sequential	517	4094.42	1.80
inverter	501	343.37	0.10
buffer	59	101.57	0.00
clock_gating_integrated_cell	42	272.92	0.10
unresolved	1	0.00	0.00
logic	3109	7207.65	3.10
TOTAL	4232	231952.40	99.90

Datapath

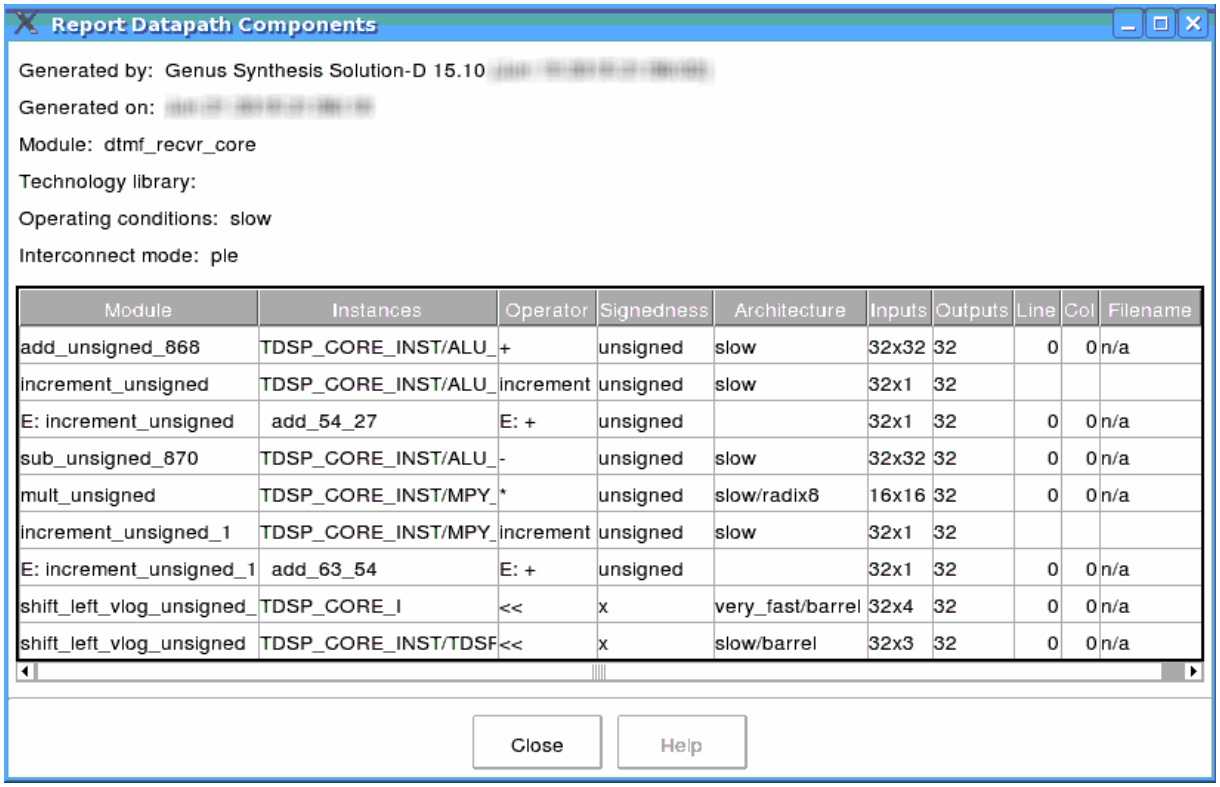
Area

Reports the total area and percentage information for datapath operators, muxes, and other components.



Components

Reports the modules, instances, operators, signedness, architecture, inputs, outputs, line number, column, and filename from the design similar to the command `report_dp`.



Module	Instances	Operator	Signedness	Architecture	Inputs	Outputs	Line	Col	Filename
add_unsigned_868	TDSP_CORE_INST/ALU_	+	unsigned	slow	32x32	32	0	0	n/a
increment_unsigned	TDSP_CORE_INST/ALU_	increment	unsigned	slow	32x1	32			
E: increment_unsigned	add_54_27	E: +	unsigned		32x1	32	0	0	n/a
sub_unsigned_870	TDSP_CORE_INST/ALU_	-	unsigned	slow	32x32	32	0	0	n/a
mult_unsigned	TDSP_CORE_INST/MPY_	*	unsigned	slow/radix8	16x16	32	0	0	n/a
increment_unsigned_1	TDSP_CORE_INST/MPY_	increment	unsigned	slow	32x1	32			
E: increment_unsigned_1	add_63_54	E: +	unsigned		32x1	32	0	0	n/a
shift_left_vlog_unsigned_	TDSP_CORE_I	<<	x	very_fast/barrel	32x4	32	0	0	n/a
shift_left_vlog_unsigned	TDSP_CORE_INST/TDSF	<<	x	slow/barrel	32x3	32	0	0	n/a

Report Datapath Components Fields and Options

Module	Displays the module name of the datapath operator or component.
Instances	Displays the instance name of the datapath operator or component.
Operator	Displays the type of the datapath operator.
Signedness	Displays the sign type of the datapath operator.
Architecture	Displays the selected architecture of the datapath operator. If there is `no_value` listed in the report, it means this is not a sub-architecture.
Inputs	Displays the bit-width of input operands of the datapath operator
Outputs	Displays the bit-width of output operands of the datapath operator
Line	Displays the line number in the RTL code where the operator is inferred
Col	Displays the column number in the RTL code where the operator is inferred.
Filename	Displays the file name of the RTL code that infers these operators

Muxes

Reports muxes present in the design that is equivalent to `report_dp -mux` command.

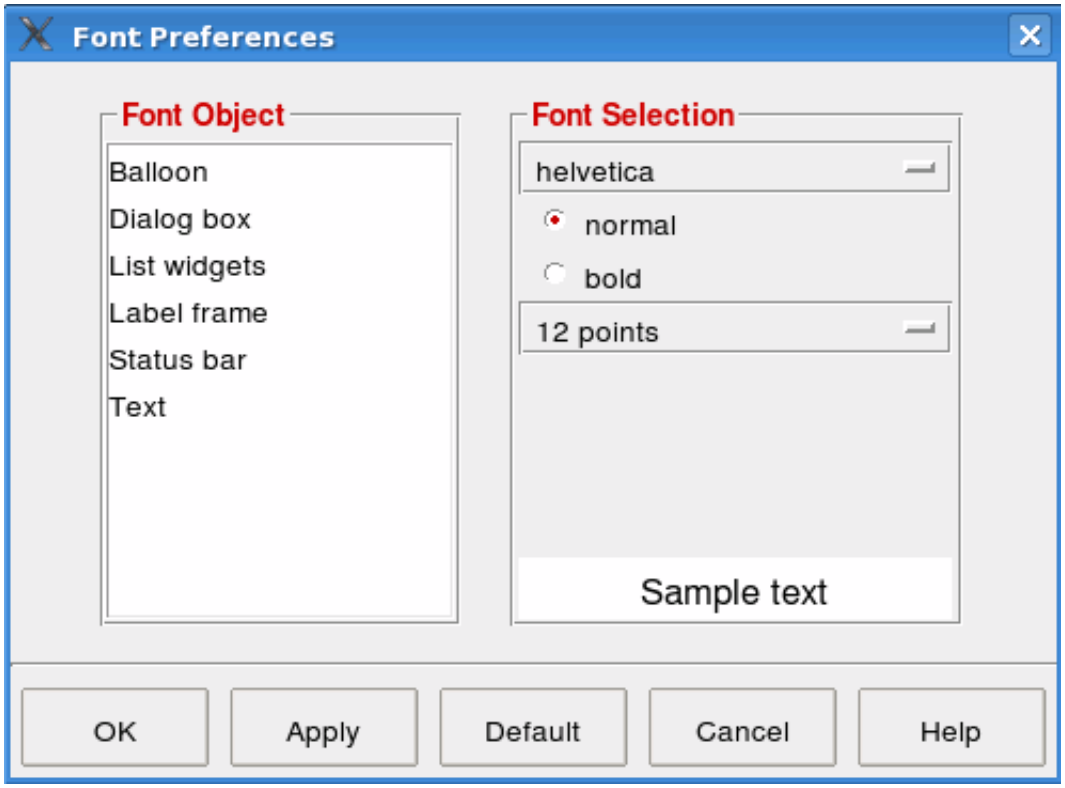
Report Datapath Muxes Fields and Options

Module	Displays the module name of the mux operator.
Instances	Displays the instance name of the mux partition.
Operator	Displays the operator type of the mux operator.
Signedness	Displays the sign type of the mux operator.
Architecture	Displays the selected architecture of the mux operator.
Inputs	Displays the bit-width of input operands of the mux operator
Outputs	Displays the bit-width of output operands of the mux operator
Line	Displays the line number in the RTL code where the mux is inferred
Col	Displays the column number in the RTL code where the operator is inferred.
Filename	Displays the file name of the RTL code that infers these operators.

Preferences

Fonts

Sets the font preferences.

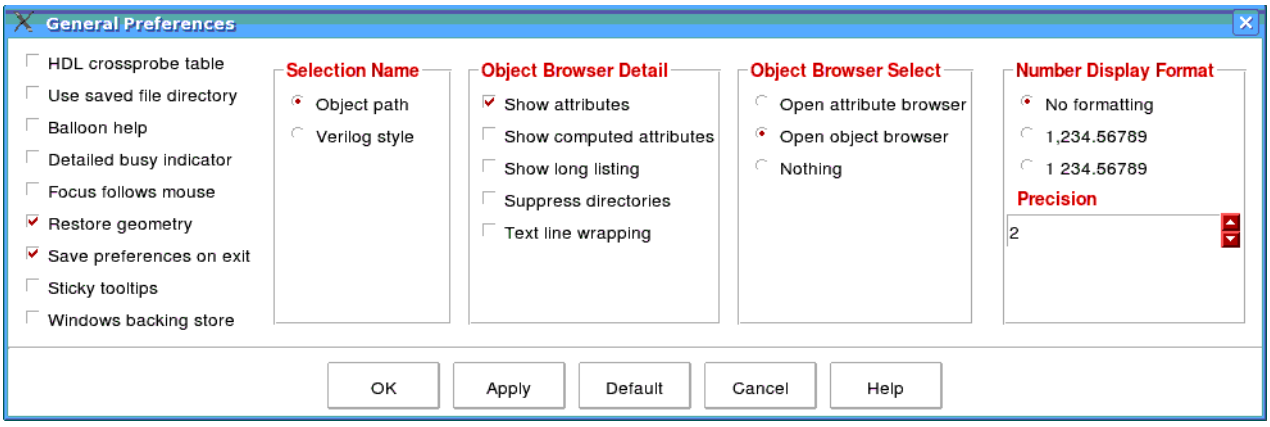


Font Preferences Fields and Options

Font Object	Displays the categories for which you can change the fonts. ■ Balloon—Affects balloon help ■ Dialog Box—Affects labels of fields, buttons on dialog boxes, menus, and the viewer names. ■ List widgets—Affects objects listed in the Hierarchy Viewer and Reports ■ Label frame—Affects titles of frames on dialog boxes ■ Status bar ■ Text—Affects the display of text in dialogs (for example, right side of the object browser)
Font Selection	Controls the font selection. ■ Select the font name from the pull-down menu. ■ Select the font weight: it can be *normal* or *bold*. ■ Select the font size from the pull-down menu.

General

Set general preferences that affect the GUI behavior.

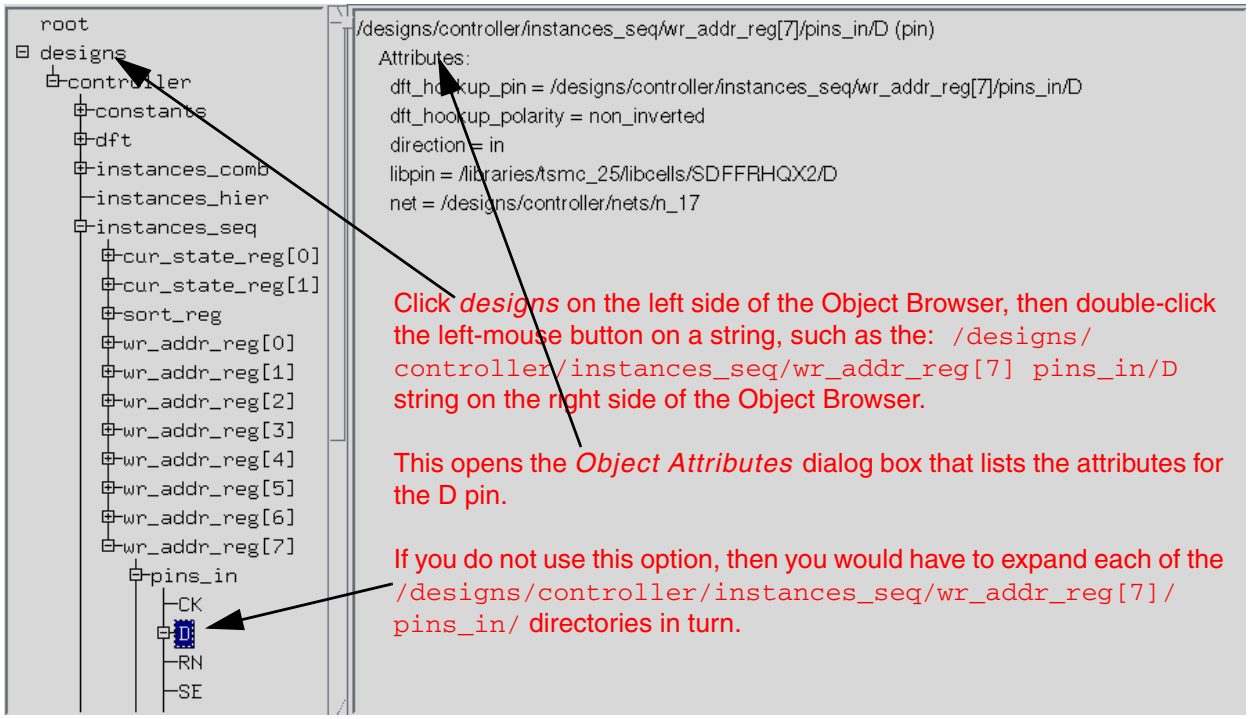


General Preferences Fields and Options

HDL crossprobe table	Updates the internal HDL table. This HDL table is enabled by the attribute `hdl_track_filename_row_col`
Use saved file directory	Uses the current working directory as the starting point when looking for files for Open HDL File dialog.
Balloon help	Displays balloon help under the mouse pointer. You can also select *Balloon help* from the *Help* menu.
Detailed busy indicator	Shows detailed message updates, such as for power, timing, net capacitance in the message displays next to the *busy indicator*, located on the bottom of the GUI. **Note:** Turn this off to speed GUI timing updates.
Focus follows mouse	Activates the window containing the mouse pointer. If this feature is disabled, then the implementation does not take effect until the next session.
Restore geometry	Restores the default GUI window size geometry. When you exit the GUI, the main window size and position are saved in the preferences file. If this option is enabled the next time you start the GUI the saved window size and position will be used.
Save preferences on exit	Saves the changed preferences.
S*ticky tooltips*	Displays the icon label while the mouse is positioned over the icon.
Windows backing store	Enables the X Windows backing store feature, which stores a copy of the image in a buffer and uses that buffer to refresh the image if it gets obscured.
Selection Name	Controls how the path of selected objects is displayed. ■ *Object Path*—Shows the full path for the selected object. For example: `/designs/foo/instances_hier/bar/instances_comb/g1` ■ *Verilog Style*—Removes netlist object names from the displayed path and applies to pins, ports, nets, and instances. For example, the previous object is shown as `g1`

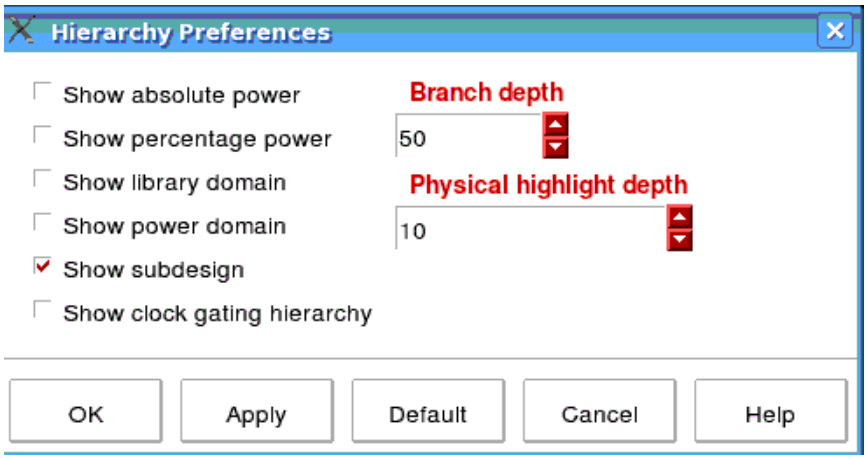
Object Browser Detail	Controls how the information in the Object Browser is displayed. ■ *Show Attributes* — Lists the attributes for the specified object whose values are different from the default values. ■ *Show Computed Attributes*— Lists all computed attributes. Computed attributes are potentially time consuming to process; therefore, they are not listed by default. ■ *Show Long Listing* — Lists the contents (long listing) of the directory. ■ *Suppress Directories* — Hides the directories below an object displayed in the Object Browser. ■ *Text Line Wrapping* — Wraps text to correspond to the size of the Object Browser.
Object Browser Select	Controls the behavior of double-clicking the left-mouse button over an object string on the right side of the Object Browser. ■ *Open Attribute Browser*— Opens an *Object Attributes* dialog box that lists the attributes for the selected object. ■ *Open Object Browser*— Opens an *Object Attributes* dialog box that lists the objects for the selected object string. For example: `/designs/controller/nets/clk`. ■ *Nothing* — Specifies that nothing happens when you double-click on a string on the right side of the Object Browser.
Number Display Format	Controls the formatting of numbers in reports.
Precision	Determines the number of digits to display to the right of the decimal point. Default is 2 decimals.

Example



Hierarchy

Controls the additional information that is shown in the Hierarchy Viewer. This information will be displayed next to the design and instance names.



Hierarchy Preferences Fields and Options

Show absolute power	Shows the absolute power for an instance. For example: (*98,494.8100nW).*
Show percentage power	Shows the percentage of power for an instance. For example: (*20.94%).*
Show library domain	Shows the library domain name.
Show power domain	Shows the power domain name.
Show subdesign	Shows the subdesign for an instance. For example: `[reg8].`
Show clock gating hierarchy	Shows the clock gating hierarchy for the design.
Branch Depth	Controls the number of entries that can appear in the Hierarchy Viewer tree.
Physical Highlight Depth	Controls the hierarchical instance count threshold

Layout

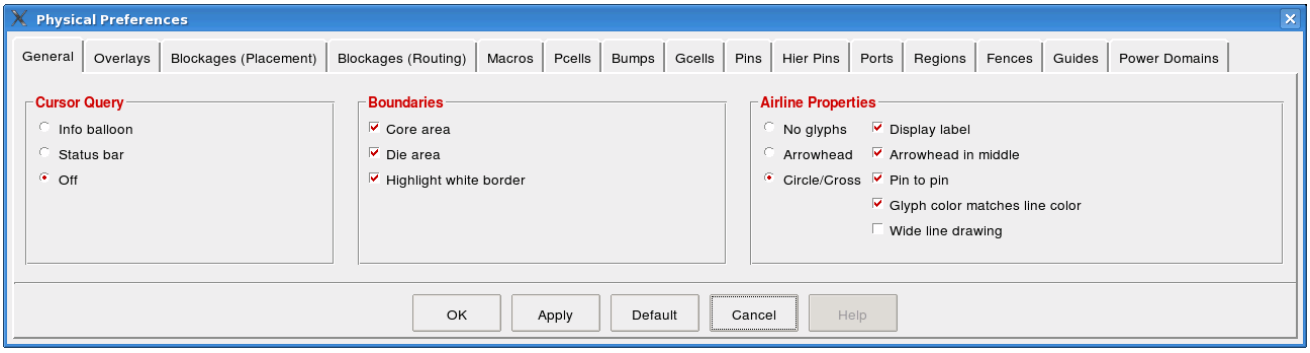
Controls the display of the physical view. Press the *Redraw* icon to see the effect of changed preferences.

The Physical Preferences has the following tabs:

- Physical Preferences — General Fields and Options
- Physical Preferences — Overlays Fields and Options
- Physical Preferences — Blockages (Placement) Fields and Options
- Physical Preferences — Blockages (Routing) Fields and Options
- Physical Preferences — Macros Fields and Options
- Physical Preferences — Pcells Fields and Options
- Physical Preferences — Bumps Fields and Options
- Physical Preferences — Gcells Fields and Options
- Physical Preferences — Pins Fields and Options
- Physical Preferences — Hier Pins Fields and Options
- Physical Preferences — Ports Fields and Options
- Physical Preferences — Regions Fields and Options
- Physical Preferences — Fences Fields and Options
- Physical Preferences — Guides Fields and Options
- Physical Preferences — Power Domains Fields and Options

Physical Preferences — General Fields and Options

Controls how information is displayed for an object under the mouse pointer.

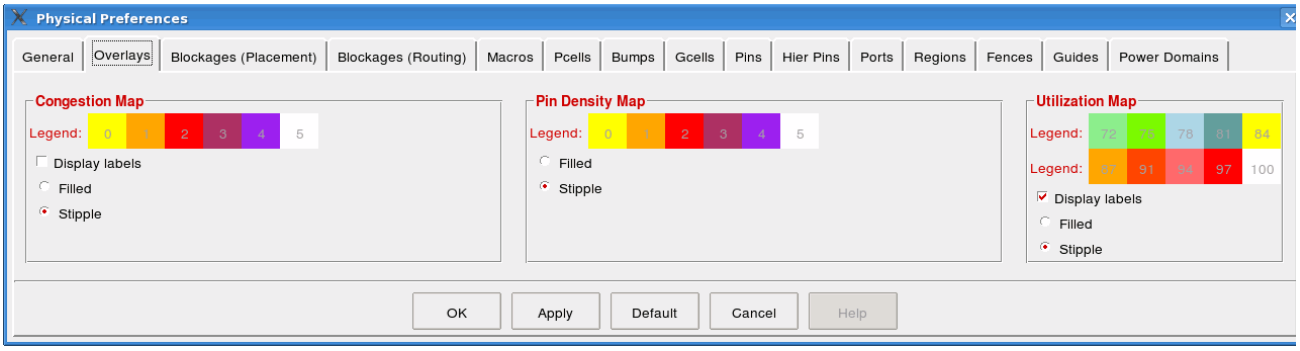


Cursor Query	Controls the location of information displayed for an object under the cursor. ■ *Info balloon* ■ *Status bar* ■ *Off*
Boundaries	Controls the display of the following areas: ■ *Core area* ■ *Die Area* ■ *Highlight White Border*
Airline Properties	Controls how airlines of a preselected instance, pin, net, or path are displayed. ■ *No glyphs* — Displays airlines without arrowheads, circle or cross at the endpoints. ■ *Arrowhead* — Displays endpoints of the airlines with an arrow symbol. ■ *Circle/Cross* — Displays airlines using a circle at the start of the airlines and a cross symbol at the endpoints of the airlines.

	■ *Display label* — Labels each airline with the number of net connections. ■ *Arrowhead in middle* — Displays the arrowhead in the middle of the airline, instead of at the endpoint. ■ *Pin to Pin* — Displays airlines from pin to pin. If this option is not selected, the endpoints of the airlines correspond to the centers of the instances. ■ *Glyph color matches line color* — Makes the glyph color match the line color. ■ *Wide line drawing* — Increases the airline width from one to two pixels. Default is one pixel.

Physical Preferences — Overlays Fields and Options

Controls how congestion, pin density, and utilization information is overlaid on top of the physical design.



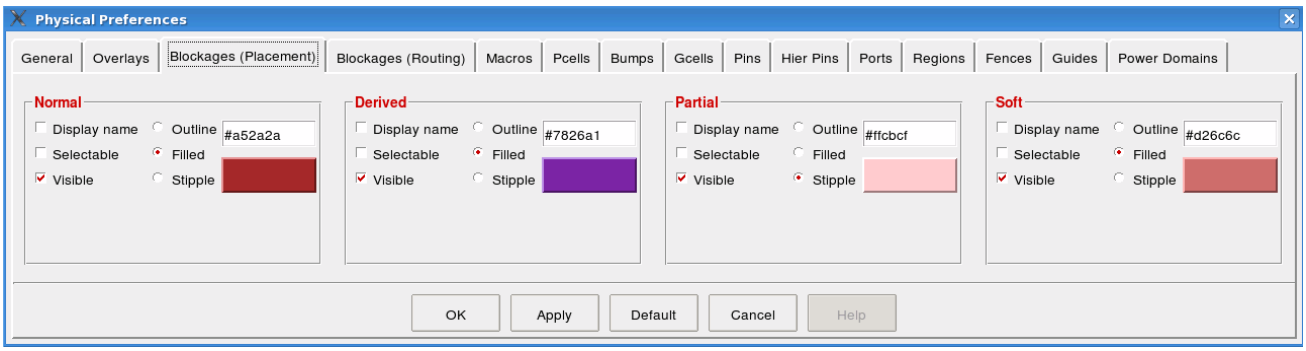
Congestion Map	Shows how congestion information is displayed. You toggle the congestion map with the *Congestion Map* icon. ■ *Legend* —Shows the colors for degrees of congestion ■ *Display Labels* —Controls whether the congestion percent is displayed in each grid cell. ■ *Filled* —Shows the congestion map with solid colors ■ *Stipple* —Shows the congestion map in a stippled way, which allows to see the macros and cells underneath.
Pin Density Map	Shows how pin density information is displayed. You toggle the pin density map with the *Pin Density Map* icon. ■ *Legend* —shows the colors for degrees of density ■ *Filled* —Shows the pin density map with solid colors ■ *Stipple* —Shows the pin density map in a stippled way, which allows to see the macros and cells underneath.

Utilization Map	Controls display of the utilization map. You toggle the congestion map with the *Utilization Map* icon. ■ *Legend* —shows the colors for degrees of congestion ■ *Display labels* —Controls whether the utilization percent is displayed in each grid cell. ■ *Filled* —Shows the utilization map with solid colors ■ *Stipple* —Shows the utilization map in a stippled way, which allows to see the macros and cells underneath.

Physical Preferences — Blockages (Placement) Fields and Options

Controls the display of the placement blockages. You can also toggle the display of blockages using the *Display Options* command on the pop-up menu in the Physical Viewer.

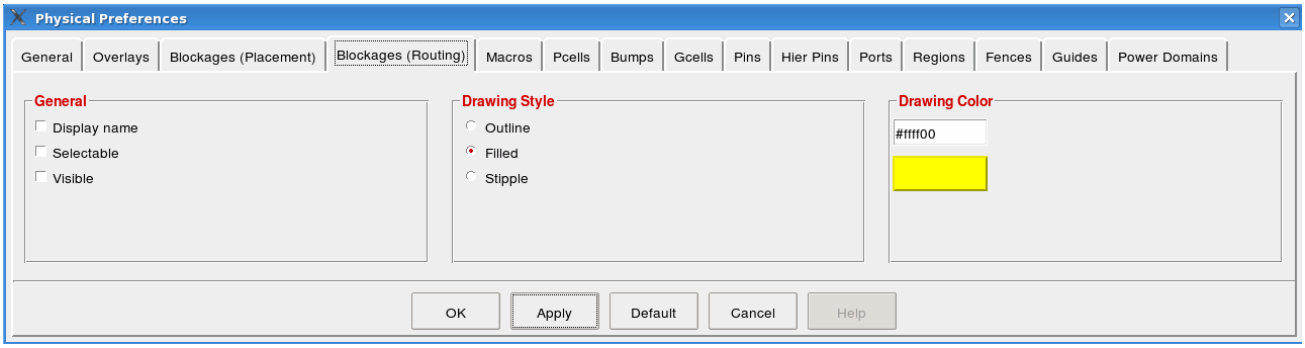
Normal placement blockages are regular placement blockages defined in DEF (placement or halo). The color swatches are selectable and can be used to control the blockage color.



Normal	Shows how the placement blockages are displayed. ■ *Display name* —Displays the name of the blockage. ■ *Selectable* —Controls whether blockages are selectable. ■ *Visible* —Controls whether blockages are visible. ■ *Outline* —Shows the outline of the blockage. ■ *Filled* —Shows the blockages with solid colors ■ *Stipple* —Shows the blockages in a stippled way, which allows to see the macros and cells underneath.
Derived	Derived internally for the tools internal placement use and are not represented in DEF.
Partial	Defined in DEF for partial placement.
Soft	Defined in DEF for soft placement or soft halo.

Physical Preferences — Blockages (Routing) Fields and Options

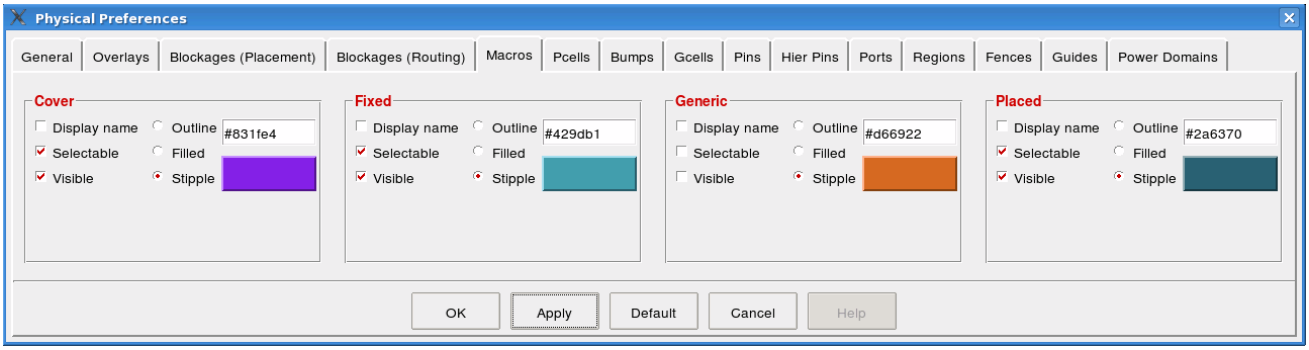
Controls the display of the routing blockages. You can also toggle the display of blockages using the *Display Options* command on the pop-up menu in the Physical Viewer.



General	Shows how the routing blockages are displayed. ■ *Display name* —Displays the name of the blockage ■ *Selectable* —Controls whether blockages are selectable. ■ *Visible* —Controls whether blockages are visible.
Drawing Style	Controls the display of the routing blockages. ■ *Outline* —Shows the outline of the blockage. ■ *Filled* —Shows the blockages with solid colors ■ *Stipple* —Shows the blockages in a stippled way, which allows to see the macros and cells underneath.
Drawing Color	Controls the colors of the blockages. To change a color, click on the color to bring up the *Color Selection* dialog box. Change the sliders till you get the desired color.

Physical Preferences — Macros Fields and Options

Controls how macros are displayed in the Physical Viewer. You can also toggle the display of macros using the *Display Options* command on the pop-up menu in the Physical Viewer.

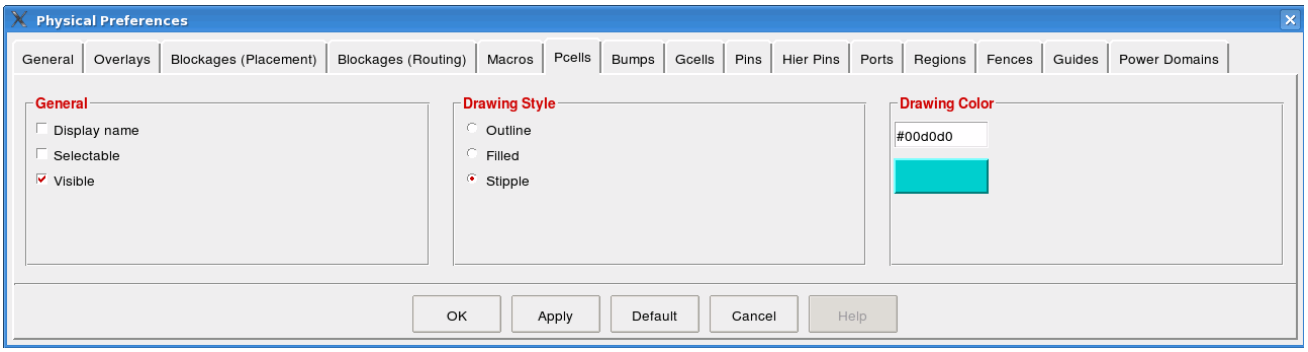


Cover	Macros defined in DEF with a placement status of COVER ■ *Display name*—Displays the names of the macros. ■ *Selectable*—Controls whether macros are selectable. ■ *Visible*—Controls whether macros are visible. ■ *Outline*—Shows the outline of the macros. ■ *Filled*—Shows the macros with solid colors ■ *Stipple*—Shows the macros in a stippled way, which allows to see the macros and cells underneath.
Fixed	Macros defined in DEF with a placement status of FIXED ■ *Display name*—Displays the names of the macros. ■ *Selectable*—Controls whether macros are selectable. ■ *Visible*—Controls whether macros are visible. ■ *Outline*—Shows the outline of the macros. ■ *Filled*—Shows the macros with solid colors ■ *Stipple*—Shows the macros in a stippled way, which allows to see the macros and cells underneath.

Generic	Macros that are unmapped logic in the tool and are NOT referenced in DEF. ■ *Display name*—Displays the names of the macros. ■ *Selectable*—Controls whether macros are selectable. ■ *Visible*—Controls whether macros are visible. ■ *Outline*—Shows the outline of the macros. ■ *Filled*—Shows the macros with solid colors ■ *Stipple*—Shows the macros in a stippled way, which allows to see the macros and cells underneath.
Placed	Macros defined in DEF with a placement status of PLACED ■ *Display name*—Displays the names of the macros. ■ *Selectable*—Controls whether macros are selectable. ■ *Visible*—Controls whether macros are visible. ■ *Outline*—Shows the outline of the macros. ■ *Filled*—Shows the macros with solid colors ■ *Stipple*—Shows the macros in a stippled way, which allows to see the macros and cells underneath.

Physical Preferences — Pcells Fields and Options

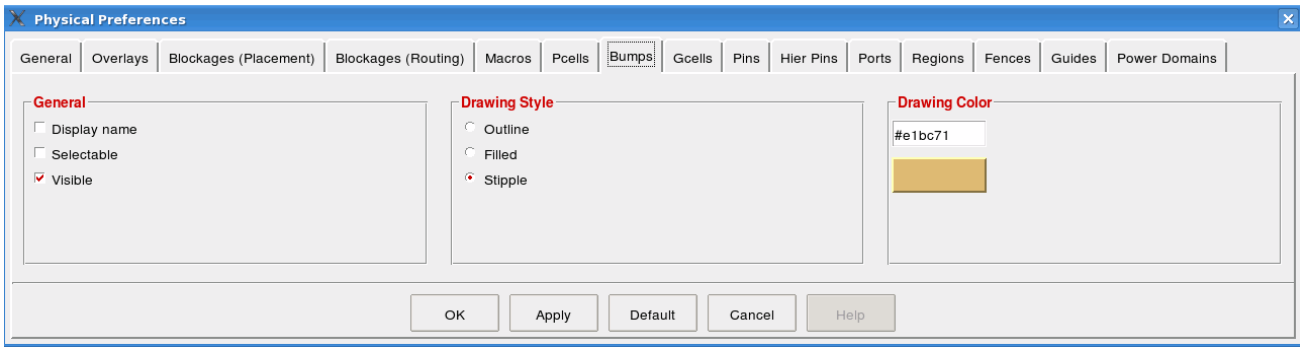
Controls how pcells (cells instantiated in the DEF COMPONENTS section but not instantiated in the netlist) are displayed in the Physical Viewer. You can also toggle the display of pcells using the *Display Options* command on the pop-up menu in the Physical Viewer.



General	Shows how pcells are displayed. ■ *Displayname*—Displays the names of the pcells. ■ *Selectable*—Controls whether pcells are selectable. ■ *Visible*—Controls whether pcells are visible.
Drawing Style	Controls display of the pcells. ■ *Outline*—Shows the outline of the pcells. ■ *Filled*—Shows the pcells with solid colors ■ *Stipple*—Shows the pcells in a stippled way.
Drawing Color	Displays pcells in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Bumps Fields and Options

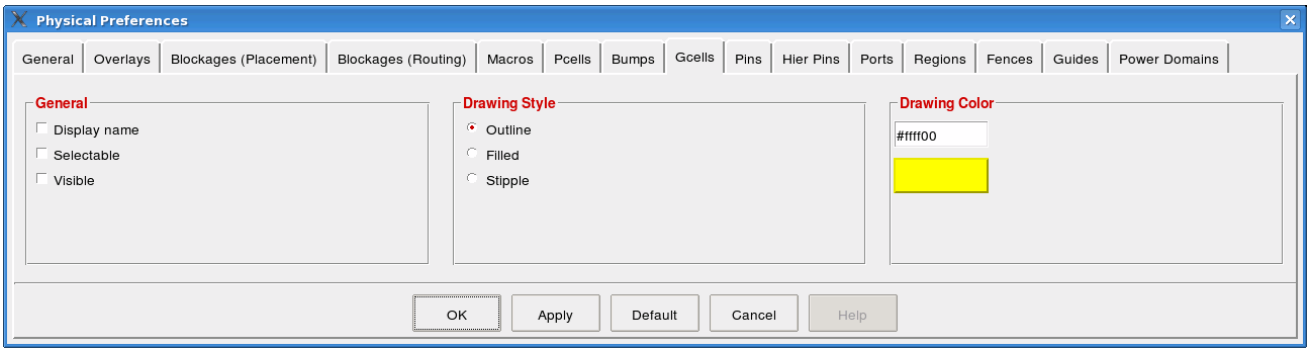
Controls how bumps (cells instantiated in the LEF COMPONENTS section as COVER BUMP, but not instantiated in the netlist) are displayed in the Physical Viewer. You can also toggle the display of bumps using the *Display Objects* command on the pop-up menu in the Physical Viewer



General	Shows how bumps are displayed. ■ *Display name*—Displays the names of the bumps. ■ *Selectable*—Controls whether bumps are selectable. ■ *Visible*—Controls whether bumps are visible.
Drawing Style	Controls display of the bumps. ■ *Outline*—Shows the outline of the bumps. ■ *Filled*—Shows the bumps with solid colors ■ *Stipple*—Shows the bumps in a stippled way.
Drawing Color	Displays bumps in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Gcells Fields and Options

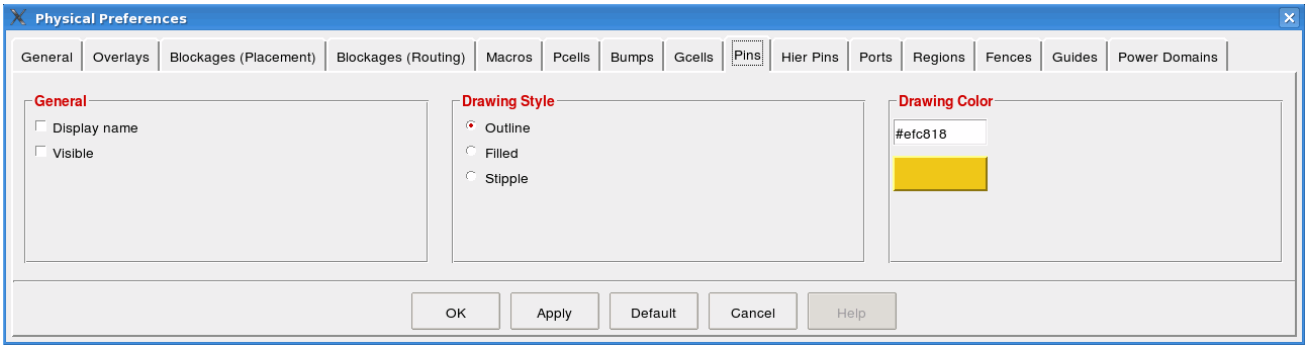
Controls how gcells (global routing cells) are displayed in the Physical Viewer. You can also toggle the display of gcells using the *Display Options* command on the pop-up menu in the Physical Viewer.



General	Shows how gcells are displayed. ■ *Display name*—Displays the names of the gcells. ■ *Selectable*—Controls whether gcells are selectable. ■ *Visible*—Controls whether gcells are visible.
Drawing Style	Controls display of the gcells. ■ *Outline*—Shows the outline of the gcells. ■ *Filled*—Shows the gcells with solid colors ■ *Stipple*—Shows the gcells in a stippled way.
Drawing Color	Displays gcells in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Pins Fields and Options

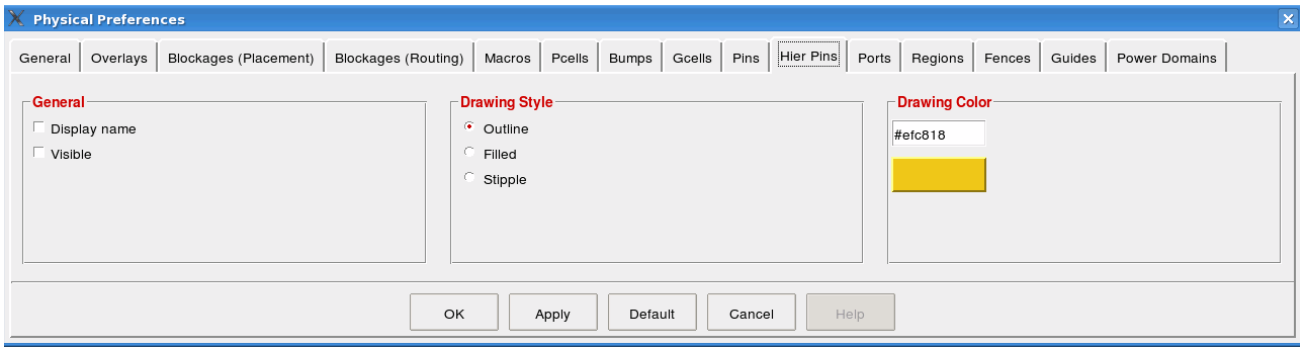
Controls how pins are displayed in the Physical Viewer. You can also toggle the display of pins using the *Display Options* command on the pop-up menu in the Physical Viewer.



General	Shows how pins are displayed. ■ *Display name*—Displays the names of the pins. ■ *Visible*—Controls whether pins are visible.
Drawing Style	Controls display of the pins. ■ *Outline*—Shows the outline of the pins. ■ *Filled*—Shows the pins with solid colors ■ *Stipple*—Shows the pins in a stippled way.
Drawing Color	Displays pins in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Hier Pins Fields and Options

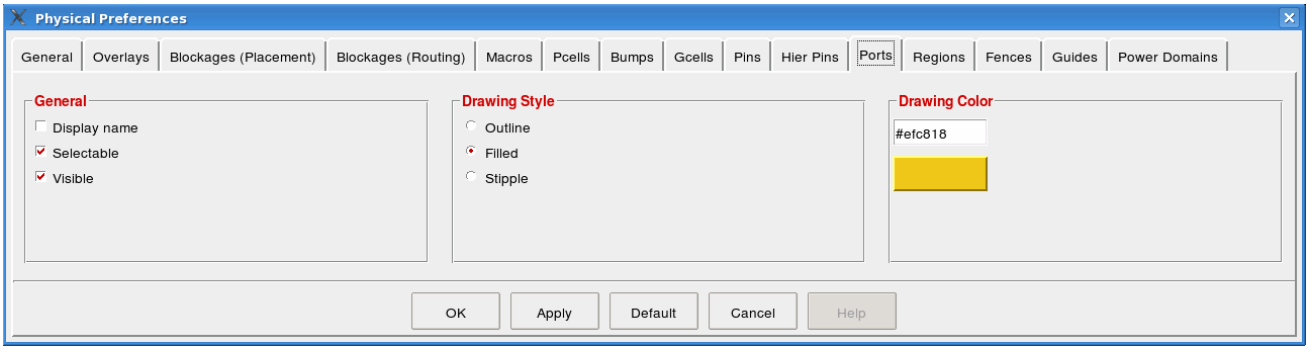
Controls how hierarchical pins are displayed in the Physical Viewer. You can also toggle the display of these pins using the *Display Options* command on the pop-up menu in the Physical Viewer.



General	Shows how ports are displayed. ■ *Display name*—Displays the names of the pins. ■ *Visible*—Controls whether pins are visible.
Drawing Style	Controls display of the ports. ■ *Outline*—Shows the outline of the pins. ■ *Filled*—Shows the pins with solid colors ■ *Stipple*—Shows the pins in a stippled way.
Drawing Color	Displays pins in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Ports Fields and Options

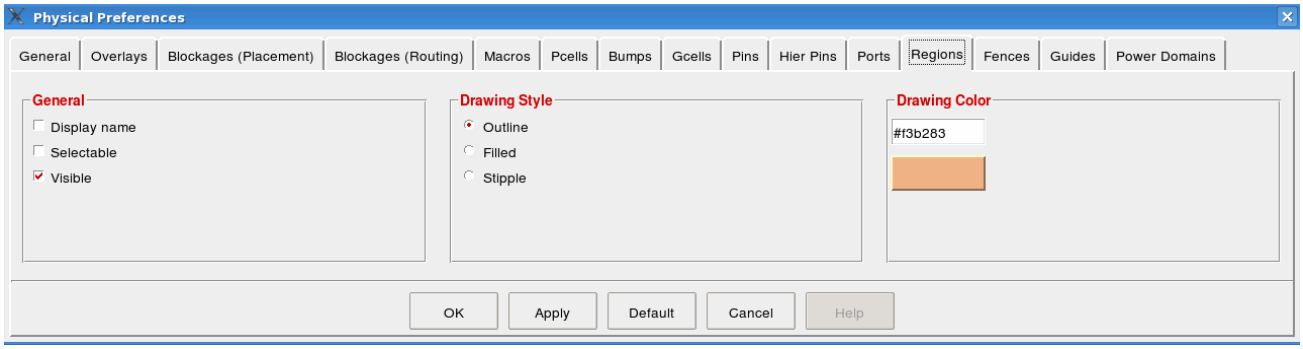
Controls how ports are displayed in the Physical Viewer. You can also toggle the display of ports using the *Display Options* command on the pop-up menu in the Physical Viewer.



General	Shows how ports are displayed. ■ *Display name*—Displays the names of the ports. ■ *Selectable*—Controls whether ports are selectable. ■ *Visible*—Controls whether ports are visible.
Drawing Style	Controls display of the ports. ■ *Outline*—Shows the outline of the ports. ■ *Filled*—Shows the ports with solid colors ■ *Stipple*—Shows the ports in a stippled way.
Drawing Color	Displays ports in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Regions Fields and Options

Controls how regions are displayed in the Physical Viewer. You can also toggle the display of regions using the *Display Options* command on the pop-up menu in the Physical Viewer.

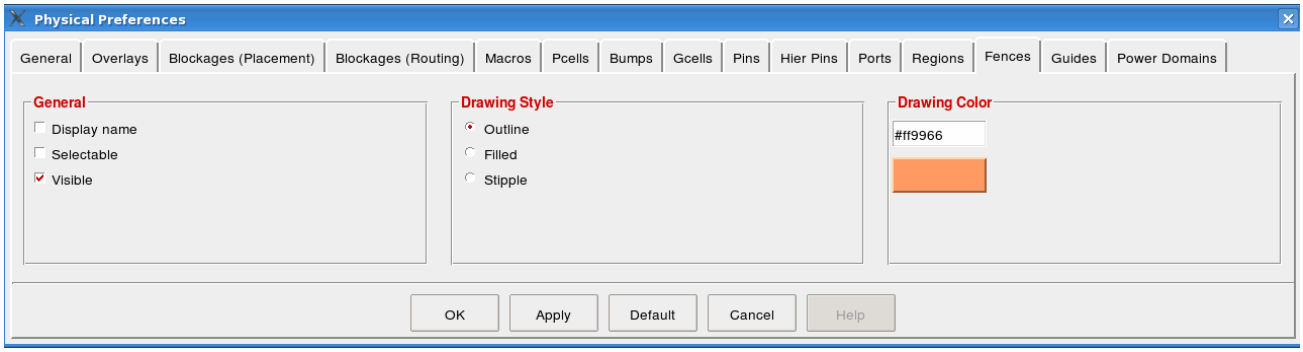


General	Shows how regions are displayed. ■ *Display name*—Displays the names of the regions. ■ *Selectable*—Controls whether regions are selectable. ■ *Visible*—Controls whether regions are visible.
Drawing Style	Controls display of the regions. ■ *Outline*—Shows the outline of the regions. ■ *Filled*—Shows the regions with solid colors ■ *Stipple*—Shows the regions in a stippled way.
Drawing Color	Displays regions in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Fences Fields and Options

Controls how fences are displayed in the Physical Viewer. You can also toggle the display of fences using the *Display Options* command on the pop-up menu in the Physical Viewer.

All instances assigned to this type of region (fence) must be exclusively placed inside the region boundaries.

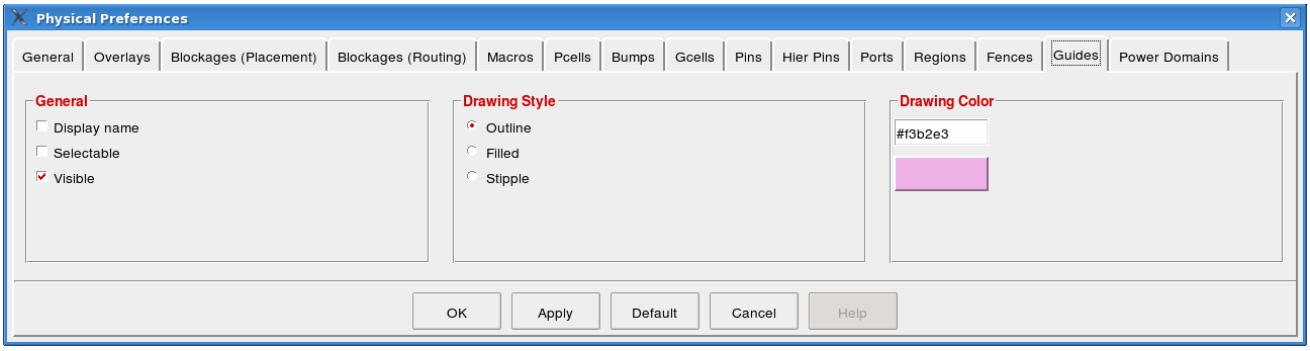


General	Shows how fences are displayed. ■ *Display name*—Displays the names of the fences. ■ *Selectable*—Controls whether fences are selectable. ■ *Visible*—Controls whether fences are visible.
Drawing Style	Controls display of the fences. ■ *Outline*—Shows the outline of the fences. ■ *Filled*—Shows the fences with solid colors ■ *Stipple*—Shows the fences in a stippled way.
Drawing Color	Displays fences in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Guides Fields and Options

Controls how guides are displayed in the Physical Viewer. You can also toggle the display of guides using the *Display Options* command on the pop-up menu in the Physical Viewer.

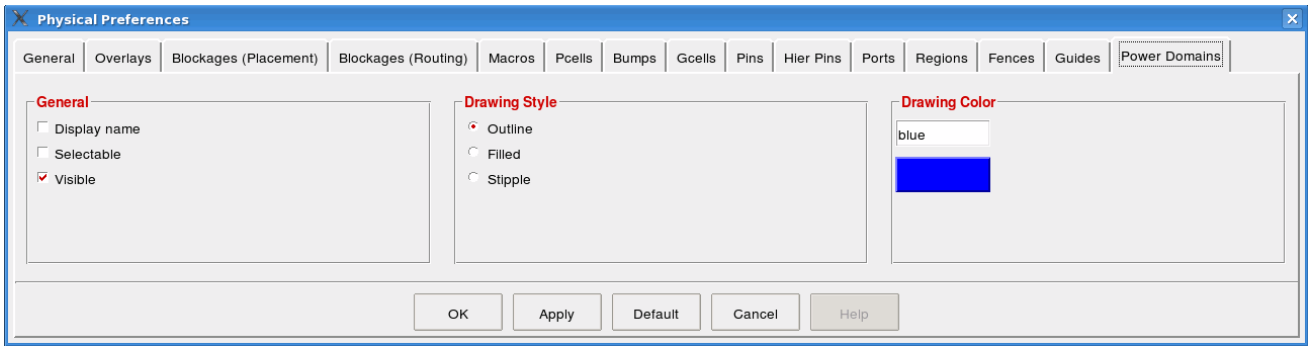
All instances assigned to this type of region (guide) should be placed inside this region; however, it is a preference, not a hard constraint. Other constraints, such as wire length and timing, can override this preference.



General	Shows how guides are displayed. ■ *Display name*—Displays the names of the guides. ■ *Selectable*—Controls whether guides are selectable. ■ *Visible*—Controls whether guides are visible.
Drawing Style	Controls display of the guides. ■ *Outline*—Shows the outline of the guides. ■ *Filled*—Shows the guides with solid colors ■ *Stipple*—Shows the guides in a stippled way.
Drawing Color	Displays guides in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Physical Preferences — Power Domains Fields and Options

Controls how power domains are displayed in the Physical Viewer. You can also toggle the display of power domains using the *Display Options* command on the pop-up menu in the Physical Viewer.



General	Shows how power domains are displayed. ■ *Display name*—Displays the names of the power domains. ■ *Selectable*—Controls whether power domains are selectable. ■ *Visible*—Controls whether power domains are visible.
Drawing Style	Controls display of the power domains. ■ *Outline*—Shows the outline of the power domains. ■ *Filled*—Shows the power domains with solid colors ■ *Stipple*—Shows the power domains in a stippled way.
Drawing Color	Displays power domains in the selected color. To change a color, click on the color to bring up the *Color Selection* dialog box. You can change the sliders till you get the desired color.

Printer

Configures printer preferences equivalent to the print command. Uses the `PRINTER` environment variable, if present.

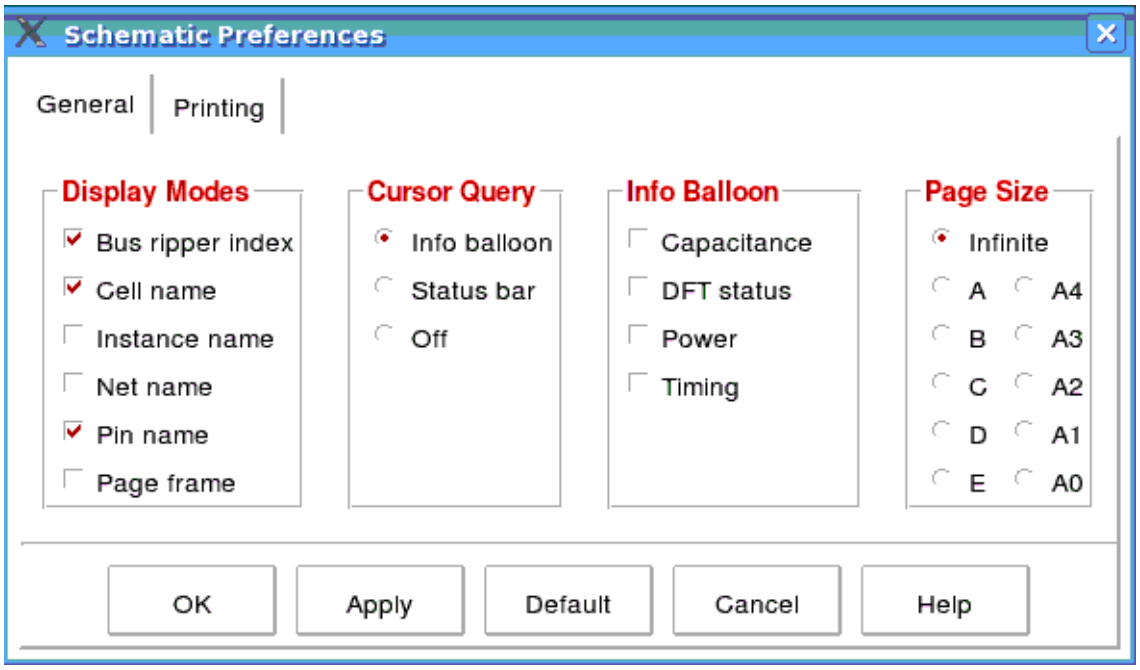
Schematic

Controls the display of the schematic. Press the *Redraw* icon to see the effect of changed preferences.

The Schematic Preferences has two tabs:

- Schematic – General Fields and Options
- Schematic – Printing Fields and Options

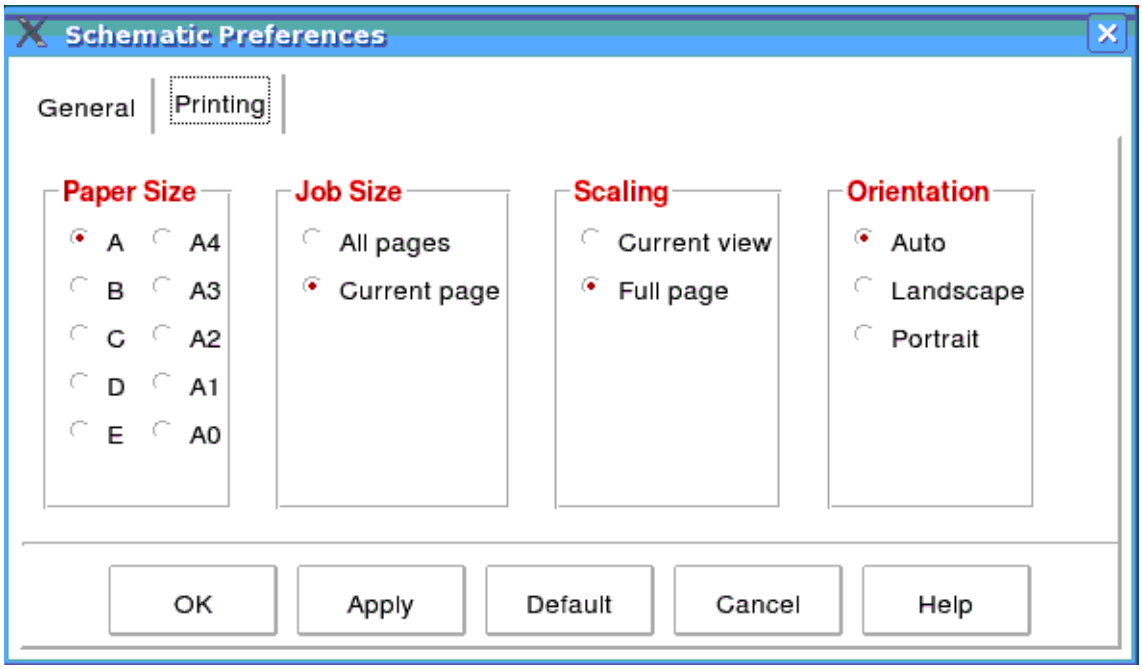
Schematic – General Fields and Options



Display Modes	Controls which object names are displayed in the Schematic Viewer. ■ *Bus ripper index*—Displays the bus names and the bus index on each individual net ■ *Cell name* **Note:** Displaying the Cell name also displays the subdesign name for hierarchical instances. ■ *Instance name* ■ *Net name* ■ *Pin name* ■ *Page frame*—Displays a frame around the schematic.
Cursor Query	Controls the location of information displayed for an object under the cursor. ■ *Info balloon* ■ *Status bar* ■ *Off*
Info Balloon	Configures information displayed when the *Info Balloon* under *Cursor Query* is selected. To speed schematic generation, turn this off. *Capacitance*— Displays the capacitance information with a pin. *DFT status*—Displays the DFT status of a flip-flop. The DFT status is only available after the `check_dft_rules` command has been run *Power*—Displays internal and leakage power for an instance. *Timing*—Displays timing info for a pin.

Page Size	Selects the page size to display Default: `None`. If you have a multi-page schematic, then the page is set to the hierarchical instance with the most ports. The indicators on the right side of the Schematic Viewer toolbar show the current and total page count.

Schematic – Printing Fields and Options



Paper Size	Selects the paper size to print on.
Job Size	Specifies to print the current page or all pages.
Scaling	Specifies to print the current page view, as seen in the viewer window, or the full page.
Orientation	Specifies to use Landscape or Portrait page orientation.

Save Preferences

Saves GUI preferences in the `~/.cadence/genus/gui.tcl` location.

Show Toolbar

Enables or disables the toolbar. See Figure 1-1.

The toolbar displays the path name for the last selected object (from the Schematic or Physical Viewer). This is copied into the clipboard so you can use terminal copy to paste the string into another window.

Use the *File - Preferences – General* command to change how the selected names are displayed.

Hide GUI

Hides the GUI and is equivalent to the `gui_hide` command from the command prompt.

Note: To show the GUI again, type the `gui_show` command from the command prompt.

Exit

Exits the GUI and the tool. It is equivalent to the `exit` command from the command prompt.

DFT Menu

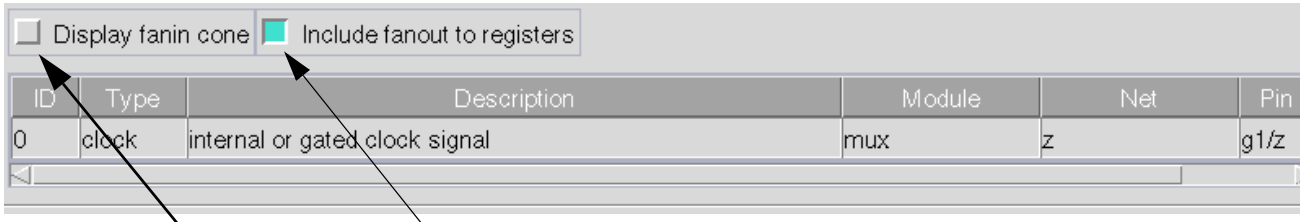
Violations

Generates a tabular report of DFT violations similar to the command `check_dft_rules`.

Click the middle-mouse on a report violation to highlight the violating pin or cell in the Hierarchy Viewer, HDL Viewer and the Schematic Viewer.

Highlight the fanin or fanout cone in a new Schematic by selecting the *Display fanin cone* button, or view the registers from the selected violation by clicking the *Include fanout to registers* button in the report, as shown below.

Click the right-mouse button on the pin or cell in the Schematic Viewer to display the pin or cell's context-sensitive menu to highlight the fanin and fanout cone.



Click the *Display fanin cone* check button to view the fanin cone of the selected violation in a new Schematic Viewer and click the *Include fanout to registers* button to view the registers from the selected violation in a new Schematic Viewer.

Violations (Advanced)

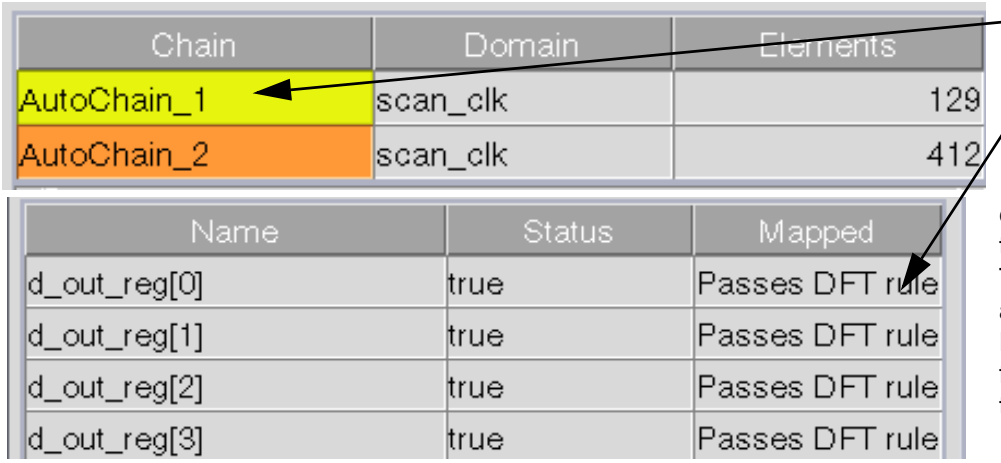
It reports the checks like tristate contention, asynchronous set or reset data race condition, clock and data race condition, floating net violation and X-source violation.

Scan Chains

Generates a scan chain report that lists the Chain, Domain, and Elements.

Release the middle-mouse button on a scan chain in the report to display the `Report Scan Chain Elements` to view details on the elements that make up the selected scan chain.

The scan chain registers are highlighted in the physical viewer with flight lines between them.



Release the middle-mouse button on a scan chain to display the *Report Scan Chain Elements* to view details on the elements that make up the selected scan chain. The scan chain registers are highlighted in the Physical Viewer with flight lines between them.

Scan Segments

A segment is a logical boundary in DFT over a set of flops intended to stay together. It provides a report on these scan segments.

Fail TDRC

Generates a tabular report of registers that fail Test Design Rule Checks (TDRCs) similar to the `report dft registers -fail tdrc` command.

Click the middle-mouse on a register in the report to highlight the violating pin or cell in the Schematic Viewer.

Level Sensitive

Generates a tabular report of level sensitive registers similar to the `report dft_registers -latch` command.

Lockup Elements

Generates a tabular report of registers used as lockup elements similar to `report dft_registers -lockup`.

Pass TDRC

Generates a tabular report of edge-triggered registers that pass TDRC and indicates whether or not a register is mapped to scan for DFT similar to the `report dft registers -pass_tdrc` command.

Click the middle-mouse on a register in the report to highlight the violating pin or cell in the Schematic Viewer.

The TDRC pass or fail status, `dont_scan`, `constant_value`, `test_clock`, and `dft_mapped` status is annotated to the register instances on the corresponding schematic, similar to the `dft status` attribute.

Set the DFT status annotations using File > *Preferences > Schematic > General > Info Balloon >DFT Status*. The propagated values of the `test_signals` are annotated if set.

Register	Description
accum1/r_reg[1]	PASS; Test clock: clk/rise
accum1/r_reg[2]	PASS; Test clock: clk/rise
accum1/r_reg[3]	PASS; Test clock: clk/rise
accum1/r_reg[4]	PASS; Test clock: clk/rise
accum1/r_reg[5]	PASS; Test clock: clk/rise
accum1/r_reg[6]	PASS; Test clock: clk/rise
accum1/r_reg[7]	PASS; Test clock: clk/rise

Release the middle mouse button in a report column to select and cross-probe objects under the cursor to the Schematic Viewer and the HDL Viewer.

Preserved

Generates a tabular report of registers marked similar to the `report dft registers -dont_scan` command.

Floorplan Menu

Check Placement

This is equivalent to the `check_placement` command which checks the placement legality and highlights illegal objects. It also returns some instance status statistics. These details are reported on the Genus prompt.

Highlight - Groups

Highlights groups in the Physical Viewer. These objects can be highlighted along with the library and power domains.

Highlight - Regions

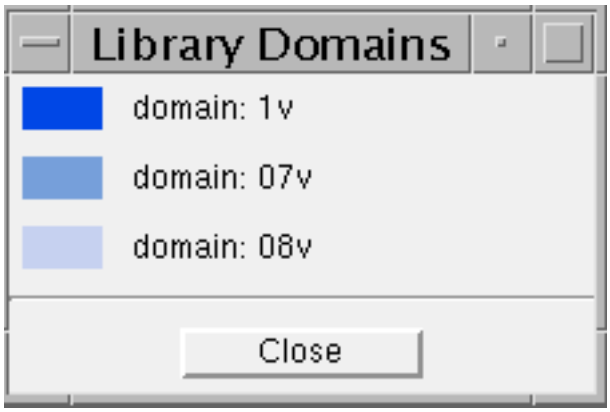
Highlights regions in the Physical Viewer. These objects can be highlighted along with the library and power domains.

Power Menu

Highlight

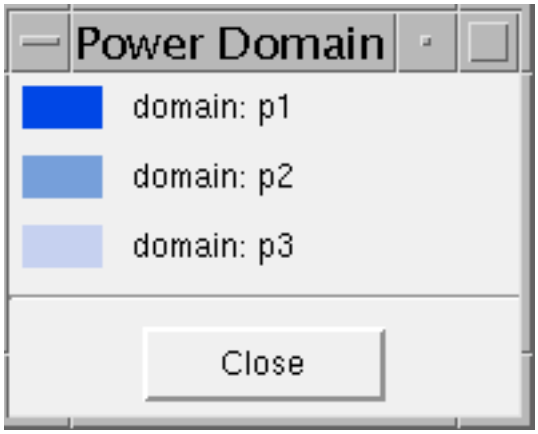
Layout – Library Domains

Displays the *Library Domains* color legend and highlights the instances in the Physical Viewer that belong to different library domains. The *Library Domains* color legend and the schematic highlighting will remain until the legend is closed.



Layout – Power Domains

Displays the *Power Domains* color legend and highlights the instances in the Physical Viewer that belong to different power domains. The *Power Domains* color legend and the schematic highlighting will remain until the legend is closed.



Layout – Clock Gating Cells

Highlights the clock gating cells in the Physical Viewer. These cells can be highlighted along with the library and power domains.

Layout – Isolation Cells

Highlights the isolation cells in the Physical Viewer. These cells can be highlighted along with the library and power domains.

Layout – Level Shifter Cells

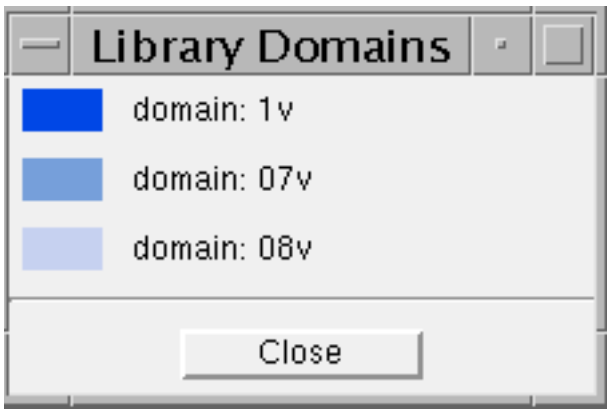
Highlights the level shifters in the Physical Viewer. These cells can be highlighted along with the library and power domains.

Layout – SRPG Cells

Highlights state-retention (SRPG) cells in the Physical Viewer. These cells can be highlighted along with the library and power domains.

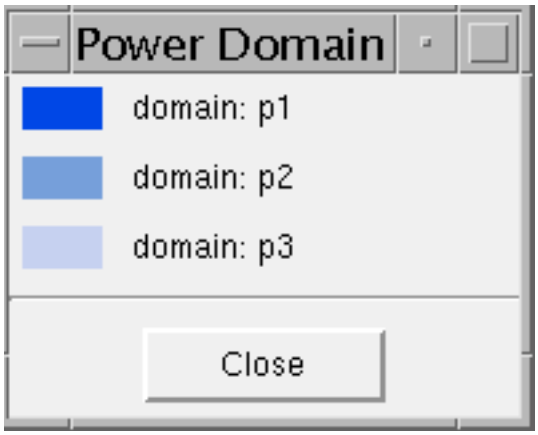
Schematic – Library Domains

Displays the *Library Domains* color legend and highlights the instances in the Schematic Viewer that belong to different library domains. The *Library Domains* color legend and the schematic highlighting will remain until the legend is closed.



Schematic – Power Domains

Displays the *Power Domains* color legend and highlights the instances in the Schematic Viewer that belong to different power domains. The *Power Domains* color legend and the schematic highlighting will remain until the legend is closed.



Schematic – Clock Gating Cells

Highlights the clock gating cells in the Schematic Viewer. These cells can be highlighted along with the library and power domains.

Schematic – Isolation Cells

Highlights the isolation cells in the Schematic Viewer. These cells can be highlighted along with the library and power domains.

Schematic – Level Shifter Cells

Highlights the level shifters in the Schematic Viewer. These cells can be highlighted along with the library and power domains.

Schematic – SRPG Cells

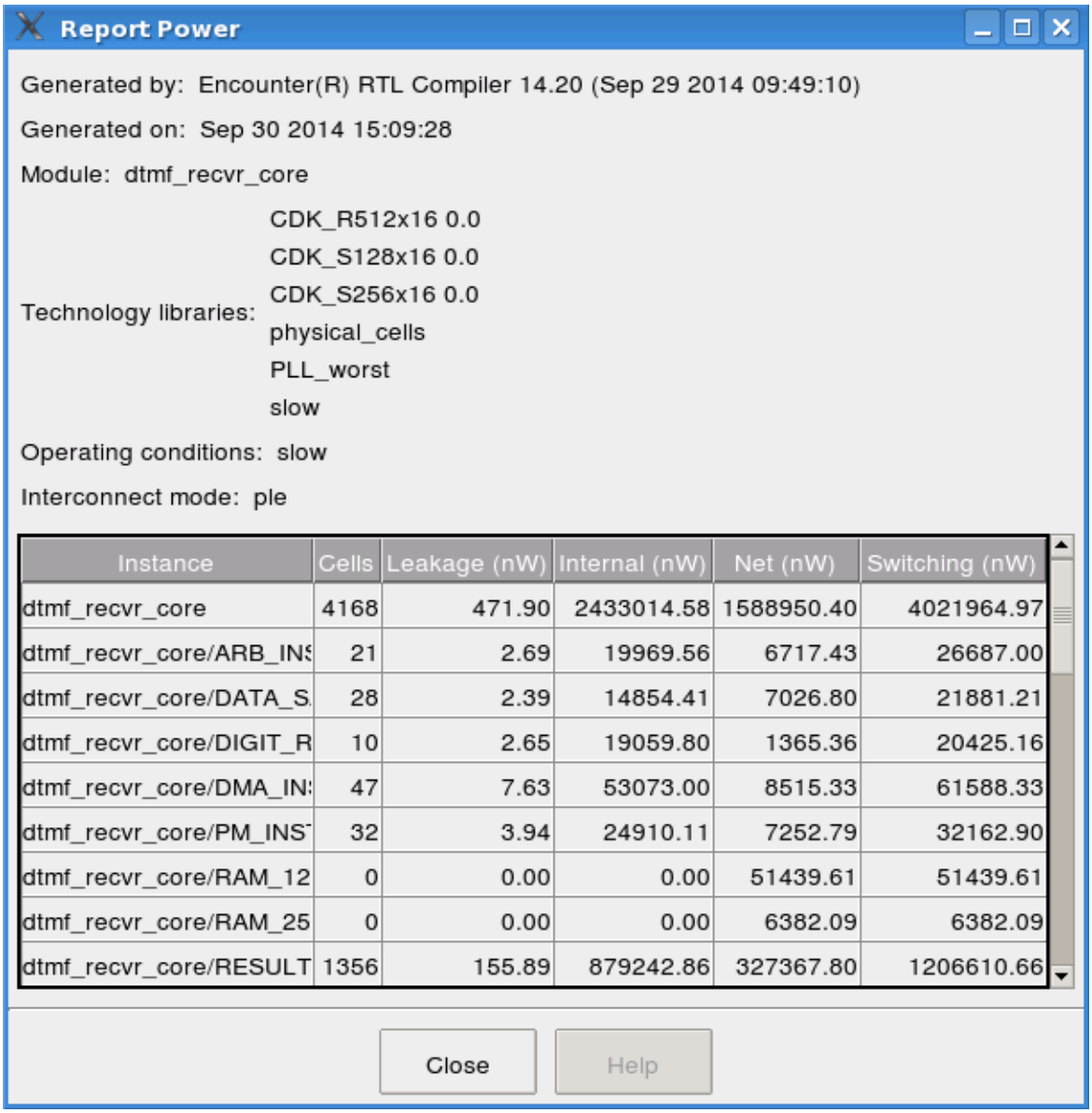
Highlights state-retention (SRPG) cells in the Schematic Viewer. These cells can be highlighted along with the library and power domains.

Report

Detailed Report

Generates a tabular report of netlist power that is similar to the command `report_power`.

Press the middle-mouse button on an instance name in the report to highlight the instance in the Schematic Viewer, and to cross-reference to the corresponding line number in the HDL Viewer.



Instance	Cells	Leakage (nW)	Internal (nW)	Net (nW)	Switching (nW)
dtmf_recvr_core	4168	471.90	2433014.58	1588950.40	4021964.97
dtmf_recvr_core/ARB_INS	21	2.69	19969.56	6717.43	26687.00
dtmf_recvr_core/DATA_S	28	2.39	14854.41	7026.80	21881.21
dtmf_recvr_core/DIGIT_R	10	2.65	19059.80	1365.36	20425.16
dtmf_recvr_core/DMA_IN:	47	7.63	53073.00	8515.33	61588.33
dtmf_recvr_core/PM_INST	32	3.94	24910.11	7252.79	32162.90
dtmf_recvr_core/RAM_12	0	0.00	0.00	51439.61	51439.61
dtmf_recvr_core/RAM_25	0	0.00	0.00	6382.09	6382.09
dtmf_recvr_core/RESULT	1356	155.89	879242.86	327367.80	1206610.66

RTL Power

Generates a report that shows the file, row number, leakage, internal, and net power, that cross-references the power consumed by the instances to the corresponding line in the RTL files.

Library Domains

Lists the library domains.

Power Domains

Generates a report that shows the *Domain*, *Shutoff Signal*, and *Shutoff Polarity*. A power domain is a collection of logic blocks (hierarchical instances), leaf instances and pins that use the same power supply and that can be simultaneously turned on or turned off.

Instance Power Usage

Generates a pie chart with the top ten power consuming instances.

The instances that are listed correspond to the hierarchical instances in the design. The remainder of the power is listed under *Other*.

Tip

You can also get this information from the Hierarchy Viewer's context-sensitive menu.

Net Power Usage

Generates a pie chart with the top ten power consuming instances measuring or "based on" net power.

The net power pie chart shows the top ten instances that are consuming the largest amount of net power. *Other* represents all other instances.

Tip

You can also get this information from the Hierarchy Viewer's context-sensitive menu.

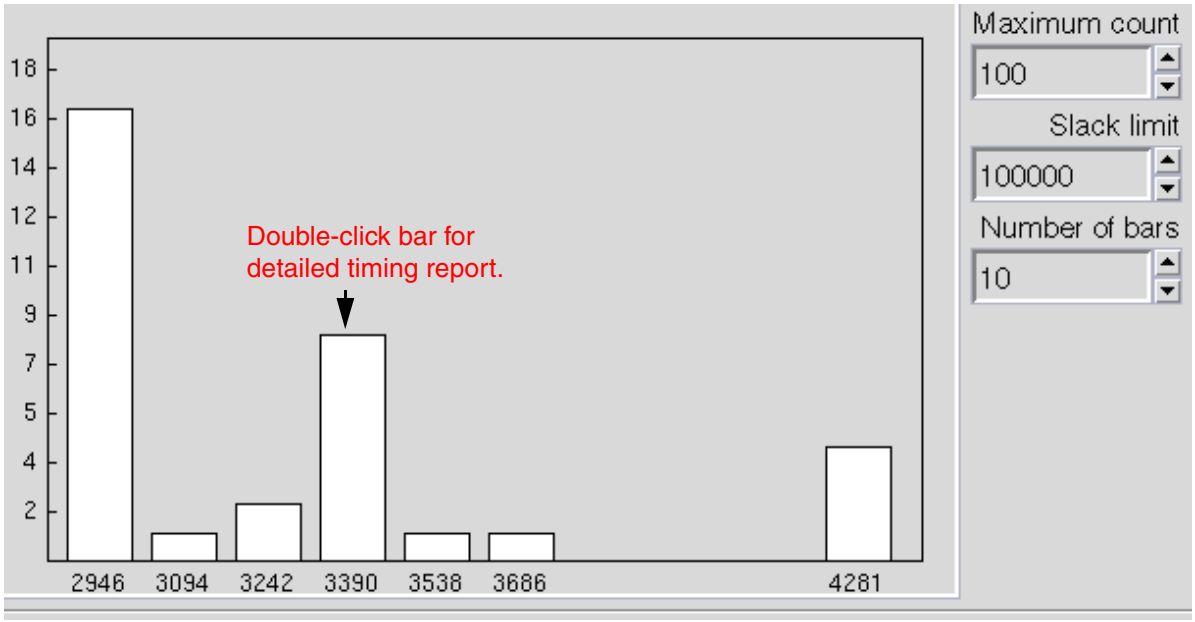
Timing Menu

- Report
  - Endpoint Histogram on page 127
  - Timing Lint on page 128
  - Worst Slack on page 129

Endpoint Histogram

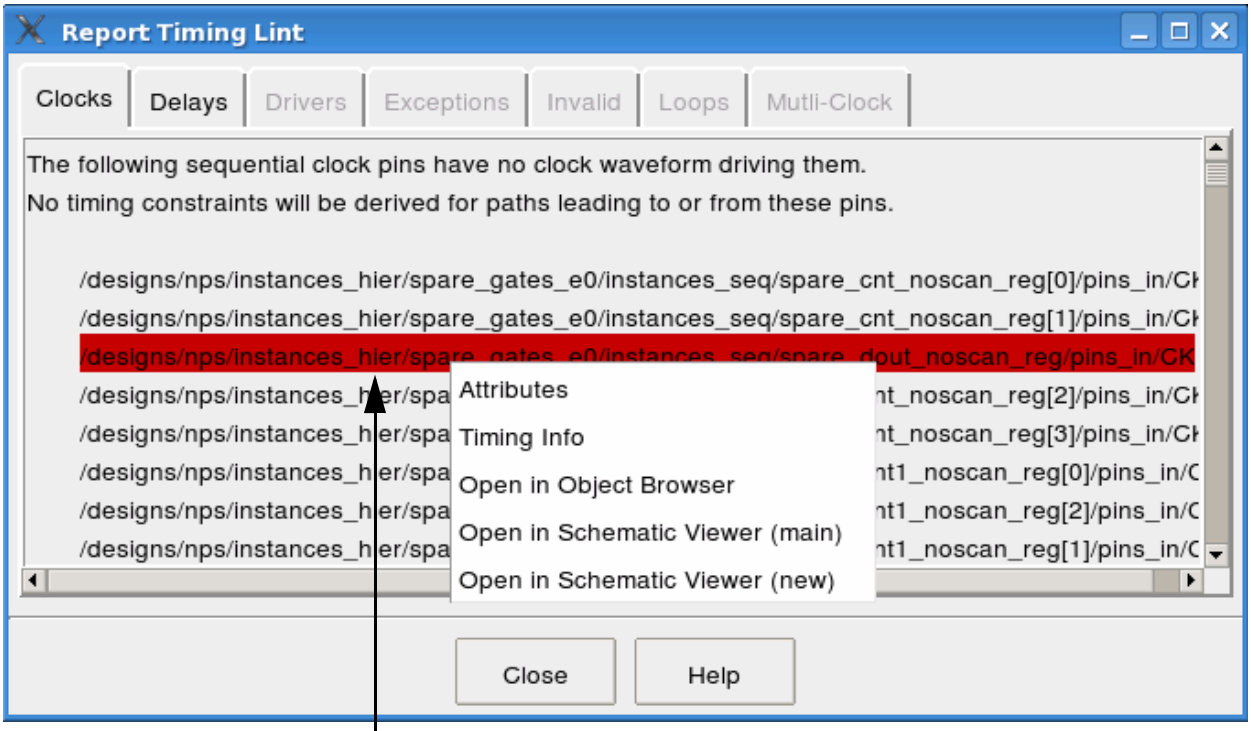
Generates *Endpoint Slack Histogram*.

Double-click on each histogram bar to display a *Detailed Timing Report* that shows the details for paths in that bin. Right-click in the Schematic Viewer to view the context-sensitive menu.



Timing Lint

Generates a tabular lint report that is similar to the `report_timing -lint` command report. Reports possible timing problems in the design, such as clock pins that have no clock waveform driving them, ports that have no external delays, timing exceptions that cannot be satisfied, and so on.



Right-click on an object name to view the context-sensitive menu. The *Exceptions* tab also includes a report timing command

Worst Slack

Generates a detailed timing report of the worst path and uses output from the `report_timing` command. Automatically generates a path schematic for a selected endpoint. Use the up and down arrow keys to move through the list of pins in the *Endpoint* table, which highlights the pins in the Schematic Viewer.

Right-click in a report column to view the context-sensitive menu that lets you view pin attributes, or to open an object browser.

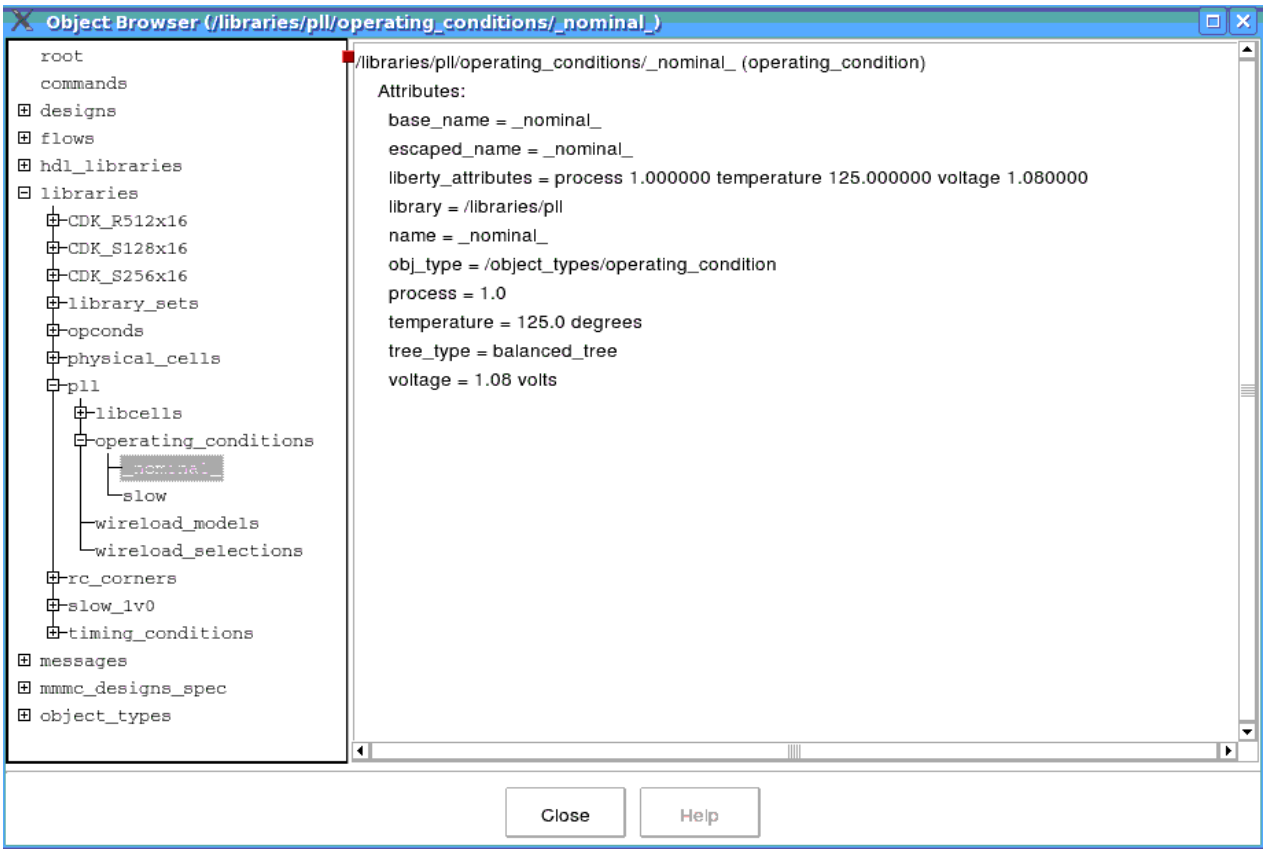
Right-click in the report's schematic viewer to view the context-sensitive menu that lets you show or hide instance names and fold or unfold all instances.

Tools Menu

Object Browser

Displays the Object Browser.

Note: You can configure preferences by selecting *File - Preferences – General – Object Browser Info*.



The left pane shows the design information hierarchy in Genus.

The +icon indicates that the hierarchy for a category is currently collapsed. Click + icon once to expand the first level of hierarchy below. The + icon is replaced by a – icon. Click the – icon to collapse the hierarchy.

When you left click on an object at the bottom of the hierarchy (without any icon in front of the object name), the information displayed in the right pane is equivalent to the information displayed with the `vls -a` command for that object.

When you right click in the left pane of the Object Browser a popup menu is displayed.

Popup Menu Command	Description
Refresh	Collapses the design hierarchy in the left pane if it was expanded.
Execute Command	Displays the Execute Command dialog to enter the command to execute. The path of the selected object is appended to the end of the command string. For example, selecting an instance from the designs object directory and typing the report power command in the Execute Command dialog, displays a power report for the selected instance on the command line.
Highlight Physical	Highlights the selected entry in the Physical Viewer.
Open In -->	*Attribute Viewer* — Displays a separate window that lists all the attributes for a selected object. This viewer has options to filter the number of attributes that are displayed. *Detail Viewer* — Displays the Object Detail Window. This window lists the same information for the selected object as you would see in the right pane of the Object Browser when you left click on the object. *Object Browser* — Displays the attributes for the selected object in as separate object browser.
	Schematic Viewer (main) — Opens the object in the current Schematic Viewer. *Schematic Viewer (new)* — Displays a new Schematic Viewer for a selected `instances_hier` object. Right-click to view the context-sensitive menu.

Windows Menu

This menu item helps you set up your main window when you open GUI. You can choose any of the four window options to be the main startup window in GUI. Your choice will be saved in the `~/.cadence/genus/gui.tcl`.

Main Hierarchy

Raises the Hierarchy Viewer to the foreground. For example, if the Hierarchy Viewer is in the background, this command brings it to the foreground.

Main HDL

Raises the HDL Viewer to the foreground. For example, if the HDL Viewer is in the background, this command brings it to the foreground.

Main Schematic

Raises the Schematic Viewer to the foreground. For example, if the Schematic Viewer is in the background, this command brings it to the foreground.

Main Physical

Raises the Physical Viewer to the foreground. For example, if the Physical Viewer is in the background, this command brings it to the foreground.

Help Menu

For information on how to get help on Genus messages, commands, and attributes see Getting Help on page 27.

Documentation

Invokes Cadence Help with the installed Genus reference manuals and user guides.

About

Displays the version and copyright information.

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