

SIEMENS EDA

Calibre® DESIGNrev™ Layout Viewer User's Manual

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Chapter 1

Introduction to Calibre DESIGNrev

Calibre DESIGNrev is a layout viewer specifically designed for displaying and manipulating layout data. Layout *viewers* differ from full-featured layout *editors* in terms of the performance and sophistication of key tasks. Layout viewers provide sophisticated data loading and reporting features. Full-featured layout editors provide sophisticated layout editing features.

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Calibre DESIGNrev Overview

Calibre DESIGNrev was designed specifically for streamlining tasks related to viewing and inspecting data. It also contains sufficient editing capability for targeted fixes and finalizations on your way to tape-out. Calibre DESIGNrev also provides a powerful scripting capability with Tcl, which gives you full custom automated chip-finishing capabilities and allows you to generate text and spreadsheet-based reports about your designs.

The Calibre DESIGNrev tool is embedded within other Calibre layout viewers that view and manipulate layouts. The other layout viewers include Calibre® WORKbench™, Calibre® LITHOview™, and Calibre® MDPview™. Each tool provides special-purpose functionality targeted for RET/OPC and MDP, plus all of the functionality of the Calibre DESIGNrev layout viewer.

Loading design data into Calibre DESIGNrev is much faster than loading the same data into a full-featured layout editor. This makes it possible for you to quickly review a design or find trouble spots needing to be fixed before moving to the next stage of development. In addition, the integration with the other Calibre tools gives you a layout verification environment from which to perform full-chip or incremental verification.

Calibre DESIGNrev Run Modes

There are two modes, standalone and embedded, in which you can run Calibre DESIGNrev.

- Standalone

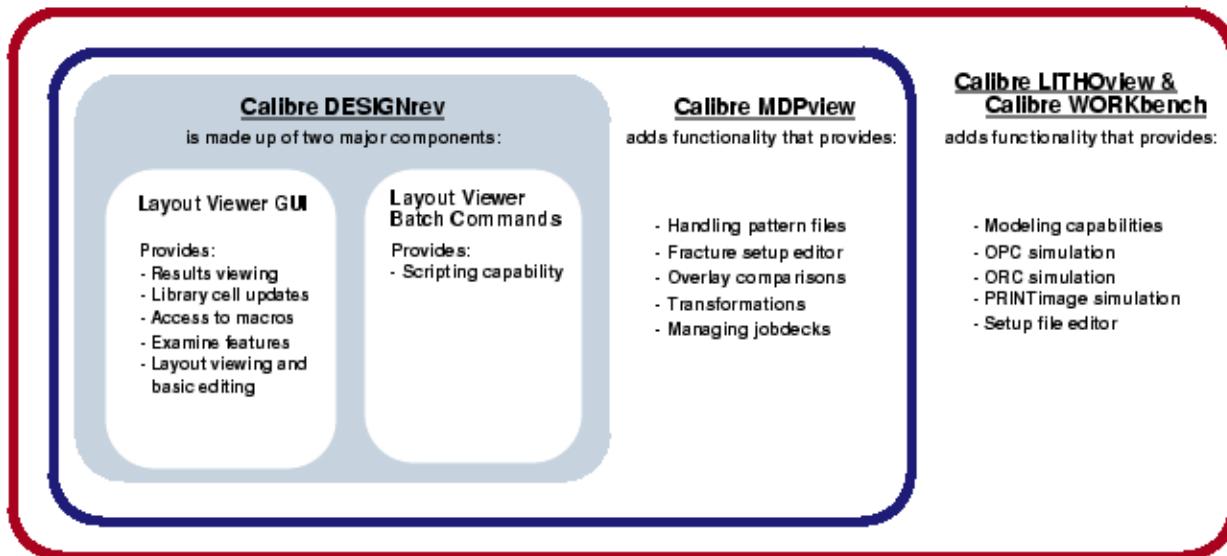
By itself, Calibre DESIGNrev provides a robust set of functionality for full-chip design viewing and basic editing work. It can be used in conjunction with Calibre® RVE™

(Results Viewing Environment) for viewing results from DRC, DFM, LVS, PERC, and PEX runs. Calibre RVE is a graphical debug program that interfaces with most IC layout tools.

- Embedded

The Calibre DESIGNrev layout viewer is embedded within other Calibre Graphical User Interface (GUI) tools used to view and manipulate layouts. These tools are Calibre MDPview, Calibre WORKbench, and Calibre LITHOview. Each tool provides special-purpose functionality targeted to address their users' needs, plus all the functionality of the Calibre DESIGNrev layout viewer.

Figure 1-1. Layout Viewer Family of Products



Tip

This manual covers the Calibre DESIGNrev GUI layout viewer components shown in [Figure 1-1](#). Layout viewer batch commands are found in the [Calibre DESIGNrev Reference Manual](#). The enhanced Calibre layout viewer tools are described in the [Calibre MDPview User's and Reference Manual](#) and the [Calibre WORKbench User's and Reference Manual](#). Calibre LITHOview is described in the [Calibre WORKbench User's and Reference Manual](#).

In this document, Calibre DESIGNrev and Layout Viewer are used interchangeably to refer to the same product.

Calibre DESIGNrev Workflow

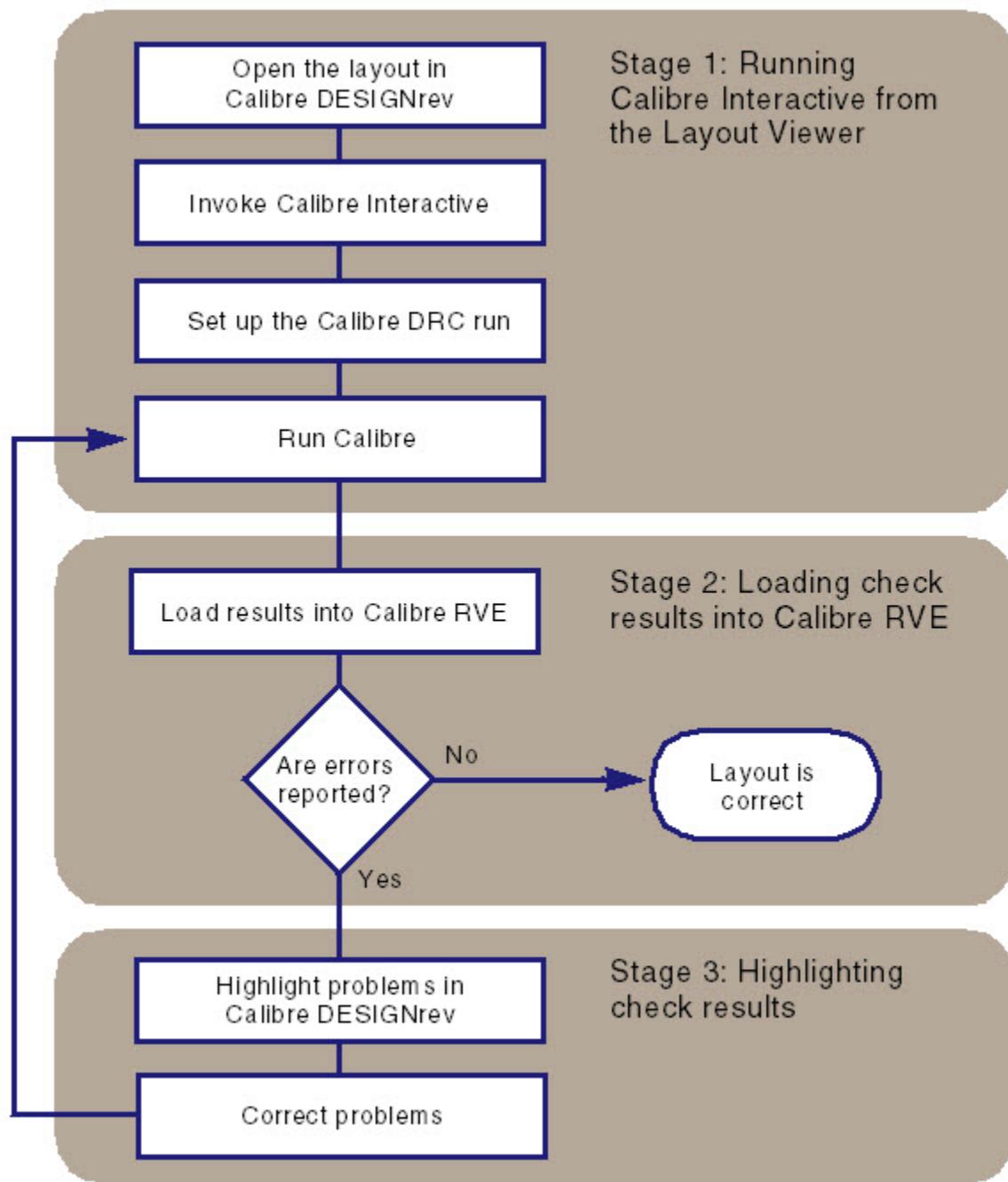
Calibre DESIGNrev and the other Calibre layout viewers are designed to be used in conjunction with Calibre® Interactive™ and Calibre RVE, when running checks and reviewing check results from most of the Calibre batch tools. Calibre Interactive is a front-end GUI for running Calibre

tools in an interactive verification environment. Calibre RVE is a graphical debug program that interfaces with most IC layout tools.

Calibre Interactive and Calibre RVE

When a fix has been identified and resolved, the Calibre Interactive tool run can be used again to find additional errors. [Figure 1-2](#) describes the basic flow.

Figure 1-2. Basic Verification Flow Using Calibre DESIGNrev and Other Tools



The verification flow illustrated in [Figure 1-2](#) involves three stages:

Table 1-1. Calibre Verification Flow

Stage	Action	Description
1	Running Calibre Interactive from the Layout Viewer	Invoke Calibre Interactive directly from within the Calibre layout viewer, set up a DRC run, and then run Calibre.
2	Using Calibre RVE to Work with Results Databases	After the run finishes, load the results and use Calibre RVE to manage and sort results in groups.
3	Highlighting Check Results	Highlight a selected check result in Calibre RVE to draw a highlight marker at its location within the design in Calibre DESIGNrev. After inspecting violations, you can make decisions on how to fix them.

Calibre DESIGNrev Requirements

There are some licensing requirements for running Calibre DESIGNrev, in addition to some required and optional environment variables.

Licensing

- Calibre DESIGNrev standard mode requires one Calibre DESIGNrev license.
- Calibre DESIGNrev High Capacity (HC) mode requires two Calibre DESIGNrev licenses.

Further license requirements depend upon the Calibre application to be run. For example, running Calibre RVE from Calibre DESIGNrev requires a Calibre RVE license. For more information on licensing, refer to the [Calibre Administrator's Guide](#).

Environment Variables

- CALIBRE_HOME — A required variable used to specify the path of the Calibre software tree. Refer to “[General and Administrative Environment Variables](#)” in the *Calibre Administrator's Guide* for more information.
- MGC_CWB_CONFIG_DIRS — An optional variable used to specify the path to the configuration files. The default path is `$HOME/.calibrewb_workspace`.
- MGC_CWB_RELOAD_ORIGINAL_LAYER_NAMES — An optional variable used to prevent the reloading of layer names when a layout is reloaded using **File > Reload Layout** or Alt+r. Set this variable to any value to enable this behavior. For example:

```
setenv MGC_CWB_RELOAD_ORIGINAL_LAYER_NAMES yes
```

By default, when a layout is reloaded, the layer names are also reloaded along with the geometries.

- MGC_CWB_PCR_PATH — An optional variable used to specify a directory location for PCR (Peek Cache Repository) files. The default PCR path is the directory containing the layout file. This variable is only used when you do not have write permissions to the current working directory.
- MGC_CWB_TMP_DIR — An optional variable used to specify the path to a *tmp* directory. The default path is \$HOME/.calibrewb_workspace/tmp.
- MGC_DRV_RELEASE_LICENSE_TIME — An optional variable used to specify a license timeout interval for Calibre DESIGNrev. Set this variable to the number of hours in which to release the license. You can also define a license release time using the **Misc** tab in the Preferences dialog box or using the prefs_license_timeoutInterval preference.
- CWB_CACHE_PATH — An optional variable used to specify the path(s) to the location of a cache file. Multiple paths must be separated with a colon (:). Refer to “[Creating a Cache File](#)” on page 162 for information on creating a cache file.
- CWB_DUMP_CONFIGURATION_ACTIVITIES — An optional variable used to enable (1) or disable (0) status messages being written to the transcript.
- MGC_CWB_LEGACY_OASIS_SAVE_OPTIONS — An optional variable used to override the default behavior when saving an OASIS file. Set this variable to 1 to save an OASIS file that is not gzipped or in strict mode format to a non-strict mode file.
- FILEMERGE_NO_WARN_DUPLICATE_LAYOUTS — An optional variable that prevents checking for duplicate input files to the layout filemerge command. Set this variable to any value to prevent the checking of duplicate input files.

Related Topics

[Multilevel Configuration](#)

[prefs_license_timeoutInterval](#)

[Preferences Dialog Box - Misc Tab](#)

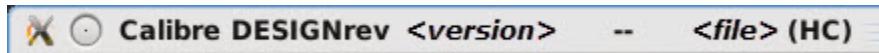
Invocation Modes and Options

You can run Calibre DESIGNrev in standard mode or in High Capacity (HC) mode. Both modes support options for running Calibre DESIGNrev interactively or non-interactively.

High Capacity Mode

High Capacity mode provides improved performance and consumes less memory than standard mode when loading and working with large layouts. You run Calibre DESIGNrev in High Capacity mode by specifying the -HC argument during invocation of any of the interactive or non-interactive options (see “[Invocation Options](#)” on page 32). When you open a layout in High

Capacity mode, the string “(HC)” appears in the top of the Calibre DESIGNrev window after the name of the current layout.



Most of the popular features, such as editing, rulers, overlays, net extraction, and integration with Calibre RVE, are supported in HC mode. Some functionality, such as incremental loading, is not supported in HC mode. Information on exception severity differences in HC mode can be found in [“High Capacity \(HC\) Mode Support for Exception Severities”](#) on page 536.

Information on unsupported commands in HC mode can be found in [“Unsupported Commands and Arguments in High Capacity \(HC\) Mode”](#) in the *Calibre DESIGNrev Reference Manual*.

Refer to [“Calibre DESIGNrev Requirements”](#) on page 24 for information on High Capacity licensing requirements.

Interactive and Non-Interactive Options

The most common option for accessing Calibre DESIGNrev is through an interactive GUI, which allows you to interact with the application directly in a layout viewing window. You can also use an interactive shell to perform the same actions, including loading, examining, and manipulating data, as in the interactive GUI. Non-interactive options provide single command or Tcl script execution, but do not provide access to the shell or the GUI.

[Table 1-2](#) provides a brief overview of the different interactive and non-interactive options. Each option and the associated command-line syntax is described in more detail in [“Calibre DESIGNrev Basics”](#) on page 29.

Table 1-2. Calibre DESIGNrev Operating Options

Option	Displays GUI?	Tk Commands Available	Invocation	Typical Usage
Interactive Options				
Interactive GUI	yes	yes	calibredrv	View layouts and use commands in the Console that are reflected in the viewing window.
Interactive Shell	no	no	calibredrv -shell	Interact with your layout through the Tcl interpreter. Layouts can be created and modified in this mode.
Non-Interactive Options				
Batch	no	no	calibredrv <script.tcl>	Use only Tcl and non-GUI simulation and modeling commands.
Batch GUI	no	yes	calibredrv <script.tcl> -gui	Use batch commands that require Tk.

Table 1-2. Calibre DESIGNrev Operating Options (cont.)

Option	Displays GUI?	Tk Commands Available	Invocation	Typical Usage
Command	no	no	calibredrv -a <command>	Use Tcl or non-GUI simulation and modeling commands.

Syntax Conventions

The command descriptions use font properties and several metacharacters to document the command syntax.

Table 1-3. Syntax Conventions

Convention	Description
Bold	Bold fonts indicate a required item.
<i>Italic</i>	Italic fonts indicate a user-supplied argument.
Monospace	Monospace fonts indicate a shell command, line of code, or URL. A bold monospace font identifies text you enter.
<u>Underline</u>	Underlining indicates either the default argument or the default value of an argument.
UPPercase	For certain case-insensitive commands, uppercase indicates the minimum keyword characters. In most cases, you may omit the lowercase letters and abbreviate the keyword.
[]	Brackets enclose optional arguments. Do not include the brackets when entering the command unless they are quoted.
{ }	Braces enclose arguments to show grouping. Do not include the braces when entering the command unless they are quoted.
‘ ’	Quotes enclose metacharacters that are to be entered literally. Do not include single quotes when entering braces or brackets in a command.
or	Vertical bars indicate a choice between items. Do not include the bars when entering the command.
...	Three dots (an ellipsis) follows an argument or group of arguments that may appear more than once. Do not include the ellipsis when entering the command.

Table 1-3. Syntax Conventions (cont.)

Convention	Description
Example: DE vice { <i>element_name</i> [‘(‘ <i>model_name</i> ‘)’]} <i>device_layer</i> { <i>pin_layer</i> [‘(‘ <i>pin_name</i> ‘)’] ...} [‘<’ <i>auxiliary_layer</i> ‘> ...] [‘(‘ <i>swap_list</i> ‘) ...] [BY NET BY SHAPE]	

Chapter 2

Calibre DESIGNrev Basics

Basic concepts about Calibre DESIGNrev include topics such as where user preferences and default settings are stored, file types that can be used in Calibre DESIGNrev, and different invocation modes.

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Files and Directories Created By Calibre DESIGNrev

Calibre DESIGNrev user preferences and default settings are stored in the `$HOME/.calibrewb_workspace` configuration directory by default. You can use the `MGC_CWB_CONFIG_DIRS` environment variable to store your preferences in a different location. If your user preference files are removed, you lose your personal settings. The actual files and directories contained in the configuration directory depend on the layout viewer tool you are using.

If you cannot use the `$HOME/.calibrewb_workspace` location for your configuration files, or if you want to have a multilevel configuration, use the `MGC_CWB_CONFIG_DIRS` environment variable, as described in “[Configuration Files](#)” on page 369. Multilevel configuration is adaptable to a variety of hierarchies and environments. For example, you can have all individuals working on a project share the same configuration.

Because the layout viewer uses the configuration directory to store temporary working files, you need enough space to meet these requirements. If your user partition does not have enough space, the `$HOME/.calibrewb_workspace/tmp` subdirectory can be linked or assigned to a partition with the needed space, in which case user privileges must be set for write access. You can also use the `MGC_CWB_TMP_DIR` environment variable to override the local `$HOME/.calibrewb_workspace/tmp` directory location.

Refer to “[Configuring the Layout Viewer](#)” on page 67 for additional information on how to customize Calibre DESIGNrev and to “[Configuration Files](#)” on page 369 for a complete description of the customization files that store your settings and preferences.

Note

 A user-specific directory named `$HOME/.calibrewb_workspace` is automatically created for every Calibre DESIGNrev user to maintain individual preferences and configurations. Setting this directory to read-only causes problems, as Calibre DESIGNrev writes to this directory during every invocation.

Supported File Types

Calibre DESIGNrev can read several different file types and can open compressed layout files directly. Calibre DESIGNrev can only write OASIS[®]¹, GDSII, and ASCII DRC RDB formats. Supported file types include:

Table 2-1. Supported File Types

File Type	Notes
ASCII RDB	This is the default format for Calibre nmDRC results databases. This format is used by Calibre RVE to view geometric results.
GDSII	If a GDSII layout containing newline characters is read in, and then Calibre DESIGNrev outputs OASIS, the output layout contains newline characters, which are not normally allowed in OASIS. This is done by Calibre for compatibility with GDS.
OASIS	When loading an OASIS-format database, Calibre DESIGNrev currently limits polygons to 8192 vertices.
OpenAccess	OpenAccess must be installed to access the OpenAccess database and read the data.
LEF/DEF	
zip	The gunzip command must be available in your search path.
Tcl scripts	

Note

 The EDA industry does not support encrypted GDSII or OASIS as it is not practical. There are two common reasons to encrypt a layout. One is to send the database to a business partner, however this can be done using PGP encryption. The second is to provide a customer with a layout to perform DRC, but not reveal the content of the layers. This turns out to not be practical, because if you can perform DRC on these layers, then you can use the DRC tool to output the encrypted layers.

1. OASIS[®] is a registered trademark of Thomas Grebinski and licensed for use to SEMI[®], San Jose. SEMI[®] is a registered trademark of Semiconductor Equipment and Materials International.

Note

 Calibre DESIGNrev generates a warning when opening a compressed (zip) file that does not contain the correct (.gz, .Z, .z) extension, or when opening an uncompressed file that contains one of the zip extensions. Calibre DESIGNrev proceeds with loading the layout.

Related Topics

[prefs_filetypes_gds](#)

[prefs_filetypes_oasis](#)

[prefs_filetypes_zip](#)

Invocation Options

Depending on how you want to use Calibre DESIGNrev, there are different options for invoking the tool. You can use the -h command line argument to display the command line syntax and the -version argument to display version information.

Refer to “[Issuing Tcl Commands](#)” in the *Calibre DESIGNrev Reference Manual* for information on using Tcl commands with the different invocations of Calibre DESIGNrev.

Table 2-2. Calibre DESIGNrev Invocation Options

Options	Description
<code>calibredrv</code>	Invokes Calibre DESIGNrev in interactive GUI mode.
<code>calibredrv -shell</code>	Invokes Calibre DESIGNrev in interactive shell mode.
<code>calibredrv <script.tcl></code>	Invokes Calibre DESIGNrev in a batch processing, non-interactive mode.
<code>calibredrv <script.tcl> -gui</code>	Invokes Calibre DESIGNrev in a batch processing GUI mode. Batch GUI mode refers to batch processing in which both the Tcl and Tk packages are available to you.
<code>calibredrv -a <command></code>	Invokes Calibre DESIGNrev in a non-interactive command mode.

calibredrv

Mode: Interactive GUI

Invokes Calibre DESIGNrev in interactive GUI mode.

Usage

```
calibredrv [misc-option...]
  [{layoutfile [-mapfile map_file [-only]]} | overlayfile | bookmark]
  [-s tclfile] [-- script_arg1 ... script_argN]
  [-dl layerpropertiesfile]
  [-db { {LEFDEF {deffile | @def_empty} leffiles ...} |
         {LEFDEF -def {deffiles | @def_empty} -lef leffiles} |
         {OA design cell view} }
  ]
  [-m layoutfile1 ... [-m layoutfileN] [-g cell] [-l layerpropertiesfile]
      [-merged] | -individual | -overlay]
  ]
  [-inputsrvf inputsrvf]
  [-c clipsfile]
  [-r rulerfile]
  [-incr]
  [-pcr_file pcrfile]
  [-b bookmark]
  [-last]
  [-o overlayfile [-l layerpropertiesfile]]
  [-filemerge [tclfile]]
  [ {-rve [-drc | -dfm | -pex] [rveFile] } |
    {-rve {-lvs | -perc | -pex | -dfm} rve_db [topCellName] [-rdb results.rdb...] } ]]
```

Arguments

- *misc-option ...*

An optional set of arguments that can be used with any invocation mode. Available options include:

-HC — Enables High Capacity mode when loading a layout. This mode provides improved performance (over standard mode) when loading and working with large layouts and consumes less memory than standard mode. HC mode is a session-wide option, and applies to both GUI and batch operations.

-noedit — Turns off layout commands which modify the layout.

-tb [origin | extent] — Specifies how the extent of a text affects the calculation of a cell bounding box. Valid options include:

origin — The origin of text objects is considered when finding the bounding box of a cell. The extent of the text objects is not considered.

extent — The text extent in the database is determined mainly by the height of text. The text width is calculated by using the character length multiplied by a fixed ratio of the height. The ratio is given by the font geometry of the application. Due to the under stroke of certain characters like, “g” the lower-left coordinate can be slightly lower than the origin of the text. If the text is rotated or aligned, the extent is calculated taking these attributes into account. The text extent is added to the cell extent.

The extent argument is not supported in HC mode.

-threads *num_threads* — Specifies the number of threads to use for running Calibre DESIGNrev. When this argument is not specified in standard mode, the application uses the maximum number of CPUs that are available when loading the layout. When this argument is not specified for HC mode, the application defaults to using 16 threads when loading the layout.

-nowait — Causes Calibre to queue briefly (approximately 10 seconds) before attempting to acquire substitute licenses.

-wait *time* — Specifies the maximum amount of time (in minutes) for Calibre to queue for a specific license. If the license is unavailable after queuing for the specified time, Calibre attempts to acquire any substitute licenses or exits if no suitable substitutions are defined.

-endDepth *depth* — Specifies the initial display depth shown when a layout file is first loaded. By default, the layout viewer uses a display depth of 0. With this option, the layout viewer accepts an integer of 0 or greater, and sets the initial display depth to this number. Use of this switch overrides other preferences for this session.

-hideLayers — Specifies to invoke the layout viewer with all layers hidden to aid in initial drawing speed. This allows you to quickly zoom to a region of interest, and then enable the display for layers of interest.

Note

 The -endDepth and -hideLayers arguments apply only to -m or -o filenames specified on the command line. They do not apply to additional files loaded within a session.

- *{layoutfile [-mapfile *map_file* [-only]]} | overlayfile | bookmark*

An optional argument specifying the name of a layout file, overlay file, or bookmark to load on invocation.

*layoutfile [-mapfile *map_file* [-only]]* — Specifies the name of a layout file. Supported file formats include GDS, OASIS, RDB, and ZIP.

When loading a GDS or OASIS file, you can also specify a layer map file.

- **-mapfile *map_file*** — Specifies a layer map file, which is a text file with this syntax:

```
<input_layer> <input_datatype> <layout_layer>
```

Each mapped layer is listed on a separate line. See “[Using Layer Maps](#)” on page 134 for general information.

All layers are loaded unless -only is specified. Any layers not listed in the *map_file* are assigned the same layer number as in the GDS or OASIS file.

- -only — An optional argument that specifies to load only the layers explicitly defined in the *map_file*.

overlayfile — Specifies the name of an overlay file (.ovly). This file must have been previously created using the New Overlay dialog box.

bookmark — Specifies the name of a previously-created bookmark.

- -s *tclfile*

An optional argument specifying the path to an existing Tcl script, which is then evaluated on invocation. Use this option to recreate a situation from a previous run.

- -- *script_arg1* ... *script_argN*

An optional argument used to designate that all remaining arguments are passed directly to a script’s argv variable without interpreting them. Use this option if a Tcl script requires arguments.

When using the “--” option with the -s option (-s *tclfile* -- *script_arg1* ...), Tcl requires the first argument to begin with a dash. Without the dash, Tcl interprets the first argument as a Tcl script and evaluates it.

Refer to “[Script 2: Setting up a Script to Accept Passed in Arguments](#)” in the *Calibre DESIGNrev Reference Manual* for more information on the argv variable.

- -dl *layerpropertiesfile*

An optional argument specifying the name of a layer properties file to load when invoking the layout viewer with any number of layouts. The layer properties file lasts for the entire session regardless of what layouts you open in your session. The -dl argument is overridden by the -l argument.

Any layer filters defined in the layer properties file are loaded in the same order as defined in the layer properties file. Refer to “[layerprops File Format](#)” on page 379 and “[Layer Menu](#)” on page 223 for information on the layer properties file.

- -db { {LEFDEF {*deffile* | @def_empty} *leffiles* ...} | {LEFDEF -def {*deffiles* | @def_empty} -lef *leffiles*} | {OA *design cell view*} }

An optional argument specifying the database file(s) to open on invocation. This option cannot be used with the -m option. Valid options include:

LEFDEF {*deffile* | @def_empty} *leffiles* ... — Specifies to open a LEFDEF database file. You can specify the path to a DEF file and one or more LEF files. You must specify “@def_empty” when a DEF file is not specified.

LEFDEF -def {*deffiles* | @def_empty} -lef *leffiles* — Specifies to open a LEFDEF database file. You can specify the path to a DEF file and one or more LEF files. You must specify “@def_empty” when a DEF file is not specified for the LEFDEF options.

OA *design cell view* — Specifies to open an OpenAccess database file. You must specify the name of a library, cell, and view to open.

- -m *layoutfile1* ... [-m *layoutfileN*] [-gcell] [-l *layerpropertiesfile*] [-merged | -individual | -overlay]

An optional argument specifying the layout file(s) to open on invocation.

-m *layoutfile1* ... [-m *layoutfileN*] — Specifies the path to one or more layout files to open on invocation. Supported formats include GDS, OASIS, Overlay, RDB, and ZIP. By default, Calibre DESIGNrev merges the files. If you want to load multiple different layout files, specify the -individual argument after the list of files.

Note

 For Calibre releases prior to 2011.3, the -m argument is required when specifying the name of a layout file to open on invocation. Starting with the 2011.3 release, the -m argument is optional when specifying the name of a layout file.

-g *cell* — Opens the design file to the specified cell.

-l *layerpropertiesfile* — Loads the specified layer properties file. If you load multiple layout files, this argument causes the specified layer properties file to be used for all layouts and ignores any layer properties file specified by the -dl option. Any layer filters defined in the layer properties file are loaded in the same order as defined in the layer properties file.

Specifying this option overrides the preference to use any internal layer names in an OASIS file, and uses the layer names from the specified layerprops file. The -l option is not required if the layer properties filename follows the <*layoutfile*>.*layerprops* naming convention (such as *mydb.gds.layerprops*). In this case, the layer properties file is loaded automatically.

Refer to “[layerprops File Format](#)” on page 379 and “[Layer Menu](#)” on page 223 for information on the layer properties file.

-merged | -individual | -overlay — Specifies the method for opening multiple layout files.

-merged — Merges two or more layout files specified on the layout viewer command line. This is the default behavior when multiple layouts are specified on the command line.

-individual — Opens two or more layout files individually when more than one layout file is specified on the command line.

-overlay — Opens layout files specified on the command line as an overlay.

- **-inputsrvf *inputsrvffile***

An optional argument that specifies the path to an SVRF rule file containing layer name mappings to load when opening the layout.

- **-c *clipsFile***

An optional argument that specifies the name of a clips file (*.clips*) or a coordinates file (*.coords*) to load on invocation. Clips are sets of coordinates that define areas of interest you mark in a layout using the **Clip** button in the layout viewer toolbar.

Refer to “[Creating and Working with User-Defined Clips](#)” on page 158 for information on clips. Refer to the description of the **-clipsFile *fileName*** argument for [\\$L create clip](#) in the *Calibre DESIGNrev Reference Manual* for information on the coordinates file.

- **-r *rulerfile***

An optional argument used to import the specified ruler file after loading the layout.

- **-incr**

An optional argument that invokes the layout viewer and loads a layout in incremental mode. When a layout is loaded in incremental mode, only hierarchical structures are loaded. This mode uses a peek cache repository (PCR) file to aid the initial drawing speed. Invoking the layout viewer with this switch automatically generates or updates a cache file. You can use **-incr** with the **-pcr_file** argument to specify the path to a specific PCR file. Specifying **-incr** without the **-pcr_file** argument creates a PCR file with a name that is based on the name of the current layout.

- **-pcr_file *pcrfile***

An optional argument specifying the path and filename of a peek cache repository (PCR) file. Use this switch with the **-incr** argument to specify a PCR file that aids the initial drawing speed when loading a layout in incremental mode. This argument is only supported when loading a single layout file and issues an error message if used when loading multiple layout files. The use of this argument overrides the **MGC_CWB_PCR_PATH** environment variable.

Note



The **MGC_CWB_PCR_PATH** environment variable specifies a directory location for the PCR files, while the **-pcr_file** argument specifies the path to a PCR file.

- **-b *bookmarkname***

An optional argument used to load a previously-created bookmark. Refer to “[Bookmarks](#)” on page 65 for more information on using bookmarks.

Note



If you specify a bookmark without the **-b** option, the layout viewer attempts to automatically determine if it is a bookmark.

- **-last**
An optional argument that loads the last file viewed in the previous layout viewer session.
- **-o *overlayfile* [-l *layerpropertiesfile*]**
An optional argument used to load an overlay file (.ovly). This file must have been previously created using the New Overlay dialog box. Refer to “[Overlaying Layouts](#)” on page 143 for more information on using overlays.

The optional -l *layerpropertiesfile* argument loads the specified layer properties file.

Note

 If you specify an overlay file without the -o option, the layout viewer automatically attempts to determine if the file is an overlay.

- **-filemerge [*tclfile*]**

An optional argument set that opens Calibre DESIGNrev and displays the [Layout Filemerge dialog box](#).

By default (without the *tclfile* argument), the Layout Filemerge dialog box is empty. Specify the files to merge and options, then click **Run Merge** to merge the files.

The optional *tclfile* argument specifies the path to a Tcl file containing the layout filemerge command and supported arguments. When Calibre DESIGNrev opens, the Layout Filemerge dialog box is displayed with the values from the layout filemerge command in the *tclfile*. Click **Run Merge** to merge the files.

There are some limitations for the layout filemerge command used in the *tclfile*:

- If the *tclfile* contains multiple layout filemerge commands, only the values from the last command in the file are loaded.
- Sub-commands and variables used in the layout filemerge command are not supported.

Refer to [layout filemerge](#) in the *Calibre DESIGNrev Reference Manual* for information on the available layout filemerge arguments.

Tip

 You can use the **Save Command** button in the Layout Filemerge dialog box to save settings to a Tcl file that can be used with the -filemerge argument.

- **-rve [-drc | -dfm | -pex] [*rveFile*]**

An optional argument that invokes Calibre RVE. Valid options include:

-drc | -dfm | -pex — Specifies the database type, DRC, DFM, or PEX, to open in Calibre RVE. If you do not specify a database type, a Calibre RVE dialog box displays prompting you to specify the database type and name.

rveFile — Specifies the name of a database to load.

- `-rve {-lvs | -perc | -pex | -dfm} rve_db [topCellName] [-rdb results.rdb [results2.rdb...]]`

An optional argument that invokes Calibre RVE. Valid options include:

`-lvs | -perc | -pex | -dfm` — Specifies the database type (LVS, PERC, PEX, or DFM) to open in Calibre RVE.

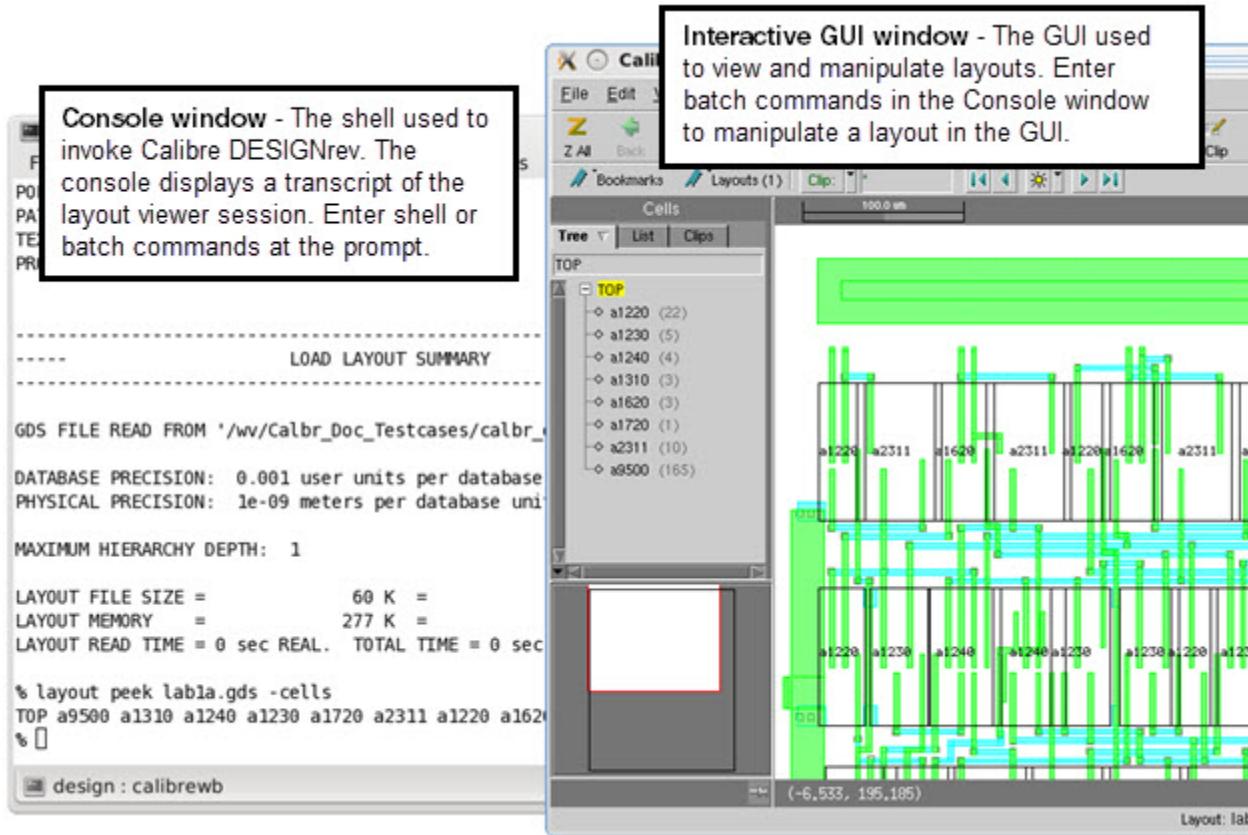
`rve_db [topCellName]` — Specifies the name of a Calibre results database to load. You can optionally specify a top cell name. The `topCellName` option can only be specified with `rve_db`.

`-rdb results.rdb [results2.rdb...]` — Specifies one or more DRC-style results databases to open in addition to the specified database. Examples of a DRC-style results database include an ERC results database or a database produced with the RDB keyword to the Net Area Ratio command.

Description

This command invokes the Calibre DESIGNrev layout viewer application in interactive GUI mode. In interactive GUI mode (illustrated in [Figure 2-1](#)), there are two windows to interact with Calibre DESIGNrev. The first window is the shell from which you invoke the GUI, referred to as the console (or terminal) window. The second window is the Calibre DESIGNrev GUI that you use for viewing layouts and pattern files. This window provides an interface for inspecting layouts and cross-probing.

Figure 2-1. Interactive GUI Mode



Console (Terminal) Window

You can use the console window to enter shell, Tcl, or Calibre DESIGNrev batch commands. The console window supports the following actions:

- Press the up and down arrow keys to display the command history list. Use “!” (exclamation point) followed by the command number in the history list to re-execute a specific command.
- Press the left or right arrow keys to move the cursor on the command line.
- Press the Tab key to auto-complete file or directory names. A backslash (/) is automatically appended to auto-completed directory names.

Examples

Example 1

This method of invocation starts a console window and a GUI for viewing layout results.

```
calibredrv
```

Example 2

This method of invocation starts the console window and opens *nand2_1.gds* in the GUI.

```
calibredrv -m nand2_1.gds
```

Note

 The -m switch is optional. If you specify a layout file without the -m option, the layout viewer attempts to determine if it is a layout file before opening the file.

Example 3

This method of invocation starts the console window and opens *golden_layout.gds* in the GUI. The -noedit argument specifies to open the layout in view only mode, preventing you from making any changes to the layout.

```
calibredrv -m golden_layout.gds -noedit
```

Example 4

This method of invocation starts the console window, opens *layout.gds* in the GUI, and opens the *drc.rdb* (results database) in Calibre RVE.

```
calibredrv -m layout.gds -rve drc.rdb
```

Example 5

This example opens an OASIS layout along with a clip file.

```
calibredrv -m mylayout.oas -c mylayout.clips
```

Example 6

This example opens an overlay along with a clip file.

```
calibredrv -o myoveray.ovly -c myoverlay.clips
```

Example 7

In this example, assume you have the following Tcl file named *merge_layouts.tcl*:

```
layout filemerge -append -createcache 1 -integerScaling -cblockmode 1 \
    -in /<path>/layout1.oas \
    -in /<path>/layout2.oas \
    -out /<path>/merged_layouts.oas
```

The following command invokes Calibre DESIGNrev, opens the Layout Filemerge dialog box, and loads the specified values from *merge_layouts.tcl* into the GUI.

```
calibredrv -filemerge merge_layouts.tcl
```

calibredrv -shell

Mode: Interactive shell

Invokes Calibre DESIGNrev in interactive shell mode.

Usage

calibredrv [misc-option...] -shell [-s tclfile] [-- script_arg1 ... script_argN]

Arguments

- *misc-option* ...

An optional set of arguments that can be used with any invocation mode. Available options include:

-HC — Enables High Capacity mode when loading a layout. This mode provides improved performance (over standard mode) when loading and working with large layouts and consumes less memory than standard mode. HC mode is a session-wide option, and applies to both GUI and batch operations.

-noedit — Turns off layout commands which modify the layout.

-tb [origin | extent] — Specifies how the extent of a text affects the calculation of a cell bounding box. Valid options include:

origin — The origin of text objects is considered when finding the bounding box of a cell. The extent of the text objects is not considered.

extent — The text extent in the database is determined mainly by the height of text. The text width is calculated by using the character length multiplied by a fixed ratio of the height. The ratio is given by the font geometry of the application. Due to the under stroke of certain characters like, “g” the lower-left coordinate can be slightly lower than the origin of the text. If the text is rotated or aligned, the extent is calculated taking these attributes into account. The text extent is added to the cell extent.

The extent argument is not supported in HC mode.

-threads *num_threads* — Specifies the number of threads to use for running Calibre DESIGNrev. When this argument is not specified in standard mode, the application uses the maximum number of CPUs that are available when loading the layout. When this argument is not specified for HC mode, the application defaults to using 16 threads when loading the layout.

-nowait — Causes Calibre to queue briefly (approximately 10 seconds) before attempting to acquire substitute licenses.

-wait *time* — Specifies the maximum amount of time (in minutes) for Calibre to queue for a specific license. If the license is unavailable after queuing for the specified time, Calibre attempts to acquire any substitute licenses or exits if no suitable substitutions are defined.

-endDepth *depth* — Specifies the initial display depth shown when a layout file is first loaded. By default, the layout viewer uses a display depth of 0. With this option, the

layout viewer accepts an integer of 0 or greater, and sets the initial display depth to this number. Use of this switch overrides other preferences for this session.

-hideLayers — Specifies to invoke the layout viewer with all layers hidden to aid in initial drawing speed. This allows you to quickly zoom to a region of interest, and then enable the display for layers of interest.

- -shell

A required argument that opens just the terminal shell window (no GUI). To interact with the tool, you must type commands into the shell. Use this option if there is no XWindows connection.

- -s *tclfile*

An optional argument set that evaluates the specified Tcl script on invocation. Use this option to recreate a situation from a previous run.

- -- *script_arg1* ... *script_argN*

An optional argument that designates that all remaining arguments are passed directly to a script's argv variable without interpreting them. Use this option if a Tcl script requires arguments.

When using the “--” option with the -s option (-s *tclfile* -- *script_arg1* ...), Tcl requires the first argument of a script executed as the -s script to begin with a dash. Without the dash, Tcl interprets the first argument as a Tcl script and evaluates it.

Refer to “[Script 2: Setting up a Script to Accept Passed in Arguments](#)” in the *Calibre DESIGNrev Reference Manual* for more information on the argv variable.

Description

Invokes Calibre DESIGNrev and opens a terminal shell window (no GUI). Use this mode when you do not need to view the layout data results. Refer to “[calibredrv](#)” on page 33 for information about the console (terminal) window.

You execute Tcl-based commands by typing them directly into the console (terminal) window. This mode does not allow for Tk-based commands. While you can create and manipulate layout data, you cannot view it. Instead, descriptions of the data are reported in the shell window.

Examples

```
% calibredrv -shell
```

calibredrv <script.tcl>

Mode: Batch processing, non-interactive

Invokes Calibre DESIGNrev in a batch processing, non-interactive mode.

Usage

calibredrv [misc-option...] script.tcl [-- script_arg1 ... script_argN]

Arguments

- *misc-option* ...

An optional set of arguments that can be used with any invocation mode. Available options include:

-HC — Enables High Capacity mode when loading a layout. This mode provides improved performance (over standard mode) when loading and working with large layouts and consumes less memory than standard mode. HC mode is a session-wide option, and applies to both GUI and batch operations.

-tb [origin | extent] — Specifies how the extent of a text affects the calculation of a cell bounding box. Valid options include:

origin — The origin of text objects is considered when finding the bounding box of a cell. The extent of the text objects is not considered.

extent — The text extent in the database is determined mainly by the height of text. The text width is calculated by using the character length multiplied by a fixed ratio of the height. The ratio is given by the font geometry of the application. Due to the under stroke of certain characters like, “g” the lower-left coordinate can be slightly lower than the origin of the text. If the text is rotated or aligned, the extent is calculated taking these attributes into account. The text extent is added to the cell extent.

The extent argument is not supported in HC mode.

-threads *num_threads* — Specifies the number of threads to use for running Calibre DESIGNrev. When this argument is not specified in standard mode, the application uses the maximum number of CPUs that are available when loading the layout. When this argument is not specified for HC mode, the application defaults to using 16 threads when loading the layout.

-nowait — Causes Calibre to queue briefly (approximately 10 seconds) before attempting to acquire substitute licenses.

-wait *time* — Specifies the maximum amount of time (in minutes) for Calibre to queue for a specific license. If the license is unavailable after queuing for the specified time, Calibre attempts to acquire any substitute licenses or exits if no suitable substitutions are defined.

-endDepth *depth* — Specifies the initial display depth shown when a layout file is first loaded. By default, the layout viewer uses a display depth of 0. With this option, the layout viewer accepts an integer of 0 or greater, and sets the initial display depth to this number. Use of this switch overrides other preferences for this session.

-hideLayers — Specifies to invoke the layout viewer with all layers hidden to aid in initial drawing speed. This allows you to quickly zoom to a region of interest, and then enable the display for layers of interest.

- **script.tcl**

A required argument that specifies the name or path to a Tcl script.

- **-- script_arg1 ... script_argN**

An optional argument that designates that all values specified after the “--” are passed as arguments directly to the script’s argv variable without interpreting them. Use this option if the Tcl script requires arguments. Refer to “[Script 2: Setting up a Script to Accept Passed in Arguments](#)” in the *Calibre DESIGNrev Reference Manual* for more information on the argv variable.

Description

Executes Calibre DESIGNrev in a non-interactive, batch processing mode. The non-interactive mode does not support access to the shell or the GUI.

In batch mode, only the Tcl package is available to you. Batch mode is used to process a Tcl script. Once the application processes the script, Calibre DESIGNrev exits. You have no opportunities to issue other commands or process additional scripts.

You can use batch mode any time you do not instruct the tool to execute any Tk commands, or any of the Calibre WORKbench simulation or modeling commands requiring GUI mode.

Examples

Invokes Calibre DESIGNrev in batch mode and executes the script myscript.tcl.

```
% calibredrv myscript.tcl
```

calibredrv <script.tcl> -gui

Mode: Batch processing GUI

Invokes Calibre DESIGNrev in a batch processing GUI mode. Batch GUI mode refers to batch processing in which both the Tcl and Tk packages are available to you.

Usage

calibredrv [misc-option...] script.tcl -gui [-- script_arg1 ... script_argN]

Arguments

- *misc-option* ...

An optional set of arguments that can be used with any invocation mode. Available options include:

-HC — Enables High Capacity mode when loading a layout. This mode provides improved performance (over standard mode) when loading and working with large layouts and consumes less memory than standard mode. HC mode is a session-wide option, and applies to both GUI and batch operations.

-noedit — Turns off layout commands which modify the layout.

-tb [origin | extent] — Specifies how the extent of a text affects the calculation of a cell bounding box. Valid options include:

origin — The origin of text objects is considered when finding the bounding box of a cell. The extent of the text objects is not considered.

extent — The text extent in the database is determined mainly by the height of text. The text width is calculated by using the character length multiplied by a fixed ratio of the height. The ratio is given by the font geometry of the application. Due to the under stroke of certain characters like, “g” the lower-left coordinate can be slightly lower than the origin of the text. If the text is rotated or aligned, the extent is calculated taking these attributes into account. The text extent is added to the cell extent.

The extent argument is not supported in HC mode.

-threads *num_threads* — Specifies the number of threads to use for running Calibre DESIGNrev. When this argument is not specified in standard mode, the application uses the maximum number of CPUs that are available when loading the layout. When this argument is not specified for HC mode, the application defaults to using 16 threads when loading the layout.

-nowait — Causes Calibre to queue briefly (approximately 10 seconds) before attempting to acquire substitute licenses.

-wait *time* — Specifies the maximum amount of time (in minutes) for Calibre to queue for a specific license. If the license is unavailable after queuing for the specified time, Calibre attempts to acquire any substitute licenses or exits if no suitable substitutions are defined.

-endDepth *depth* — Specifies the initial display depth shown when a layout file is first loaded. By default, the layout viewer uses a display depth of 0. With this option, the layout viewer accepts an integer of 0 or greater, and sets the initial display depth to this number. Use of this switch overrides other preferences for this session.

-hideLayers — Specifies to invoke the layout viewer with all layers hidden to aid in initial drawing speed. This allows you to quickly zoom to a region of interest, and then enable the display for layers of interest.

- ***script.tcl***

A required argument that specifies the name or path to a Tcl script.

- **-gui**

A required argument that specifies to invoke Calibre DESIGNrev in batch GUI mode.

- **-- *script_arg1* ... *script_argN***

An optional argument that designates that all values specified after the “--” are passed as arguments directly to a script’s argv variable without interpreting them. Use this option if the Tcl script requires arguments. Refer to “[Script 2: Setting up a Script to Accept Passed in Arguments](#)” in the *Calibre DESIGNrev Reference Manual* for more information.

Description

Executes Calibre DESIGNrev in batch GUI mode. Batch GUI mode refers to batch processing in which both the Tcl and Tk packages are available to you. You must use the batch GUI mode if any of the following commands are included in your script:

- A Tk command.
- Any of the Calibre WORKbench simulation or modeling commands that require GUI mode.

The command shell accepts commands typed at the % prompt in the Console window. Command results are output either to the shell window or as GUI elements.

Examples

Executes Calibre DESIGNrev in batch GUI mode in which both the Tcl and Tk packages are available.

```
% calibredrv myscript.tcl -gui
```

calibredrv -a <command>

Mode: Non-interactive command

Invokes Calibre DESIGNrev in a non-interactive command mode.

Usage

calibredrv [misc-option...] -a command

Arguments

- *misc-option ...*

An optional set of arguments that can be used with any invocation mode. Available options include:

-HC — Enables High Capacity mode when loading a layout. This mode provides improved performance (over standard mode) when loading and working with large layouts and consumes less memory than standard mode. HC mode is a session-wide option, and applies to both GUI and batch operations.

-noedit — Turns off layout commands which modify the layout.

-tb [origin | extent] — Specifies how the extent of a text affects the calculation of a cell bounding box. Valid options include:

origin — The origin of text objects is considered when finding the bounding box of a cell. The extent of the text objects is not considered.

extent — The text extent in the database is determined mainly by the height of text. The text width is calculated by using the character length multiplied by a fixed ratio of the height. The ratio is given by the font geometry of the application. Due to the under stroke of certain characters like, “g” the lower-left coordinate can be slightly lower than the origin of the text. If the text is rotated or aligned, the extent is calculated taking these attributes into account. The text extent is added to the cell extent.

The extent argument is not supported in HC mode.

-threads *num_threads* — Specifies the number of threads to use for running Calibre DESIGNrev. When this argument is not specified in standard mode, the application uses the maximum number of CPUs that are available when loading the layout. When this argument is not specified for HC mode, the application defaults to using 16 threads when loading the layout.

-nowait — Causes Calibre to queue briefly (approximately 10 seconds) before attempting to acquire substitute licenses.

-wait *time* — Specifies the maximum amount of time (in minutes) for Calibre to queue for a specific license. If the license is unavailable after queuing for the specified time, Calibre attempts to acquire any substitute licenses or exits if no suitable substitutions are defined.

-endDepth *depth* — Specifies the initial display depth shown when a layout file is first loaded. By default, the layout viewer uses a display depth of 0. With this option, the

layout viewer accepts an integer of 0 or greater, and sets the initial display depth to this number. Use of this switch overrides other preferences for this session.

-hideLayers — Specifies to invoke the layout viewer with all layers hidden to aid in initial drawing speed. This allows you to quickly zoom to a region of interest, and then enable the display for layers of interest.

- **-a *command***

A required argument set that specifies a single batch command to evaluate. The tool exits after completing the evaluation.

Description

Command mode evaluates a single Tcl command and then exits. Use command mode if you do not need access to Tk commands.

Examples

The example below shows how the layout viewer is used in command mode to create an incremental load cache file from the command line.

```
% calibredrv -a layout create mydb.gds -incr
```


Chapter 3

Getting Started: A Tour of Calibre DESIGNrev Features

You can use the Calibre DESIGNrev GUI to display and edit GDSII layouts, launch other Calibre tools, display results on a layout, and make simple layout changes.

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Invoking Calibre DESIGNrev in Interactive GUI Mode

Running Calibre DESIGNrev in interactive GUI mode provides you with an interface for viewing and manipulating your layout files.

Prerequisites

- You have two GDS or OASIS files.
- The CALIBRE_HOME environment variable is set to the location of the Calibre software tree.

Procedure

1. Use either of the following methods to invoke the Calibre DESIGNrev layout viewer in interactive GUI mode:
 - To invoke in standard mode:
`calibredrv`
 - To invoke in High Capacity (HC) mode:
`calibredrv -HC`
2. Choose **File > Open Layout File**.

This displays the Choose Layout Files dialog box.

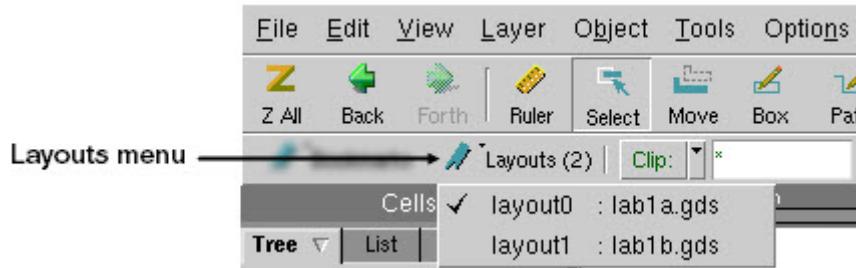
Note

In many cases, there are multiple ways (in addition to choosing a menu path as described above) that you can access a dialog box. For example, you can use either of the following methods to access the Choose Layout Files dialog box:

- Keyboard shortcut: Ctrl+o
- Menu accelerator: Press F10 to display the **File** menu and then press “o”

3. Browse to and choose a GDS or OASIS file and then click **Open**.
4. Familiarize yourself with the major components of the GUI as shown in [Figure 8-1](#) on page 206.
5. Use one of the methods described in step 2 to open a second layout file.
6. Use the **Layouts** menu located in the Session Toolbar to switch between multiple layouts that are open in the GUI.

Figure 3-1. Layouts Menu

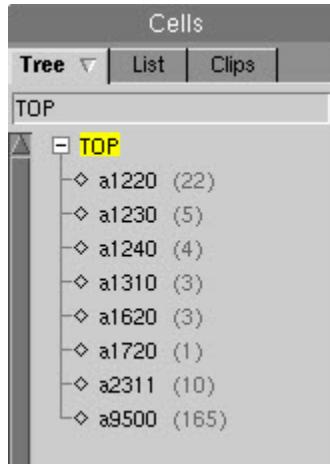


The name of the current layout appears in the Status Toolbar located at the bottom of the Calibre DESIGNrev GUI. The string “(HC)” appears after the layout name if you opened the layout in High Capacity mode.



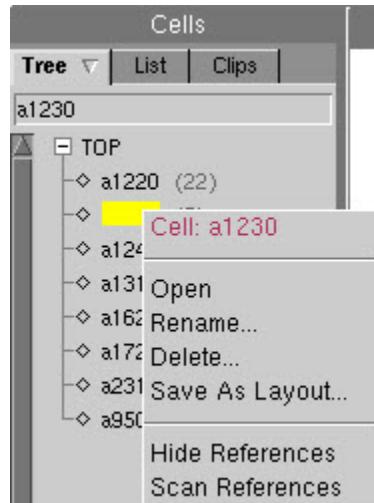
The layout viewer places no limit on the number of layout databases you can load into the application.

7. Use the Cells Browser to review the hierarchy of the layout. For example:



If the layout is hierarchical, the top cell should appear at the top of the hierarchy. The top cell refers to the parent of all cells in the design hierarchy.

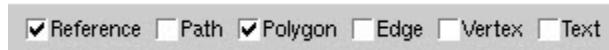
8. Choose a cell in the hierarchy to display it in the Layout Viewing Area.
9. Right-click a cell name and review the available options in the Cell popup menu.



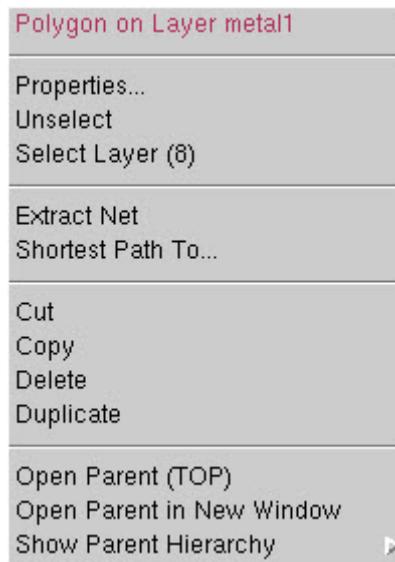
10. In the Find Object Toolbar, choose an object type (for example, Geom) from the dropdown list and click the arrow buttons to go to an instance of the object type.



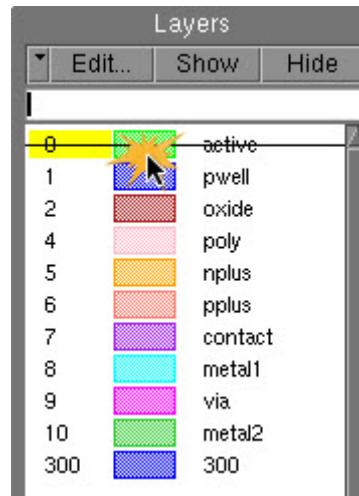
11. Practice selecting different object types in the Object Selection Toolbar and then selecting objects in the layout.



12. Choose an object in the layout and right-click to display a context-sensitive popup menu. Notice the popup menu contains options relevant to the currently selected object. For example, the popup menu for a selected polygon object contains the following items:

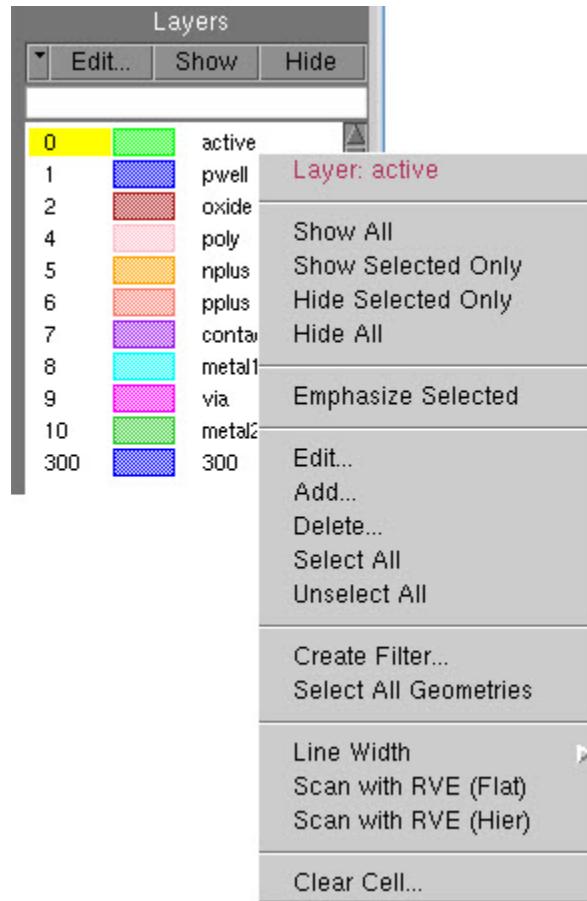


13. Double-click a layer in the Layers Browser to hide the layer in the layout.

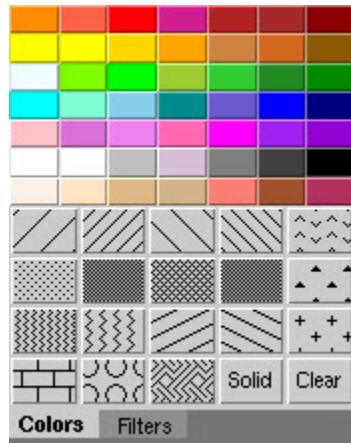


14. Double-click the same layer to display it.

15. Right-click a layer in the Layers Browser to display a context-sensitive popup menu and review the menu options.

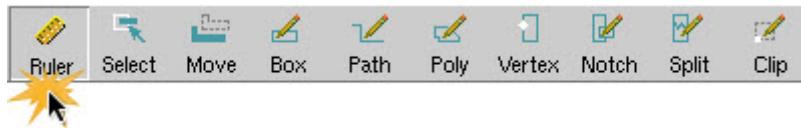


16. In the Layers palette, select a layer and then experiment with using the Colors and Fill palette to change the color and fill pattern for the selected layer.

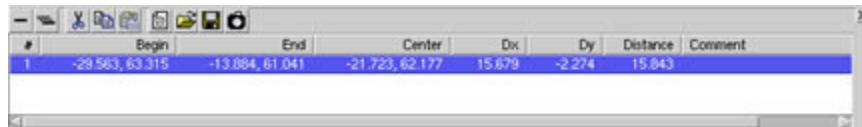


17. Choose View > Show Rulers Palette to display the Rulers palette.

18. Click the **Ruler** button in the Layout Viewer Toolbar and practice drawing a ruler in the layout.



The Rulers palette updates to display information about the new ruler. For example:



19. Choose **File > Exit**.
20. Click **Discard** when prompted to save changes.
21. Click **OK** to exit Calibre DESIGNrev.

Related Topics

[Choose Layout Files Dialog Box](#)

[Cells Browser](#)

[Layers Browser](#)

[Rulers Palette](#)

Calibre DESIGNrev Navigation Features

Navigating a large design layout can present challenges due to a limited viewing space. Calibre DESIGNrev provides several different methods, such as zooming and panning capabilities, Cells Browser, and Bookmarks, for adjusting your view to the appropriate locations in your layout.

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Zoom and Pan Features

You can use the zoom and pan features in Calibre DESIGNrev to visually scan and magnify the layout.

Zooming Methods

You can zoom using any of the following methods:

If you want to...	Do one of the following:
Zoom In	<ul style="list-style-type: none">• Hold down the right mouse button and move the cursor diagonally from left to right (the zoom magnification is determined by the stroke length)• Choose View > Zoom In• Press Ctrl and scroll the mouse wheel up• Press Ctrl + z• Press +
Zoom Out	<ul style="list-style-type: none">• Hold down the right mouse button and move the cursor diagonally from right to left (the zoom magnification is determined by the stroke length)• Choose View > Zoom Out• Press Ctrl and scroll the mouse wheel down• Press Shift + z• Press -
Zoom All	<ul style="list-style-type: none">• Click the Z All button in the toolbar• Choose View > Zoom All• Press Ctrl + a
Zoom Context	<ul style="list-style-type: none">• Choose View > Zoom Context

Panning Methods

There are several different methods you can use to pan:

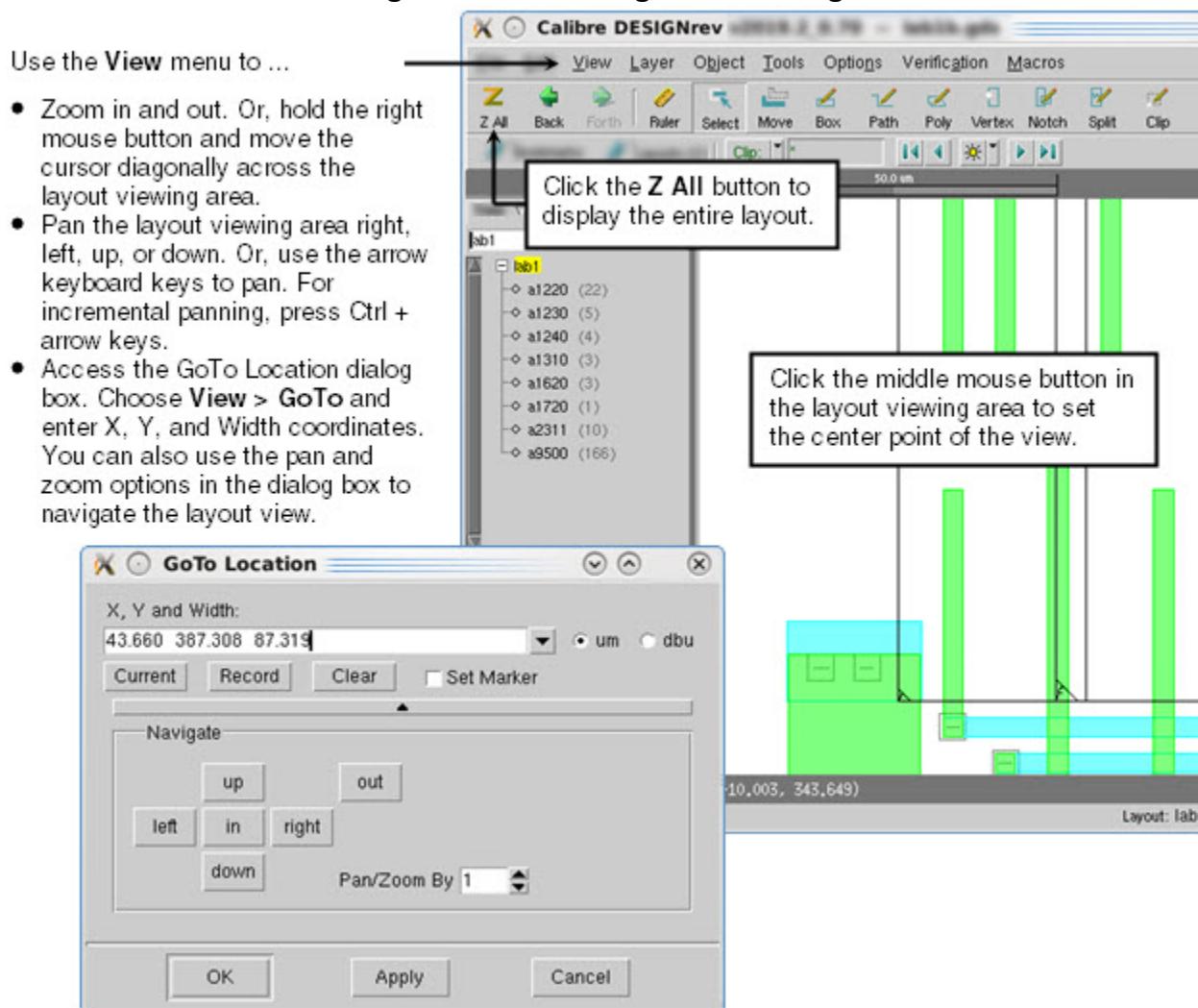
If you want to...	Do one of the following:
Pan Up	<ul style="list-style-type: none">• Press the ↑ key• Choose View > Pan > Up• Scroll the mouse wheel up.
Pan Down	<ul style="list-style-type: none">• Press the ↓ key• Choose View > Pan > Down• Scroll the mouse wheel down.
Pan Right	<ul style="list-style-type: none">• Press the → key• Choose View > Pan > Right• Press Shift and scroll the mouse wheel up.
Pan Left	<ul style="list-style-type: none">• Press the ← key• Choose View > Pan > Left• Press Shift and scroll the mouse wheel down.
Pan Center	<ul style="list-style-type: none">• Click the middle mouse button in the display area. This centers the viewing window where you clicked.

If you need to control how far the design moves when panning, set the value in the Arrow Key Pan Percent option in the **View** tab of the Preferences dialog box. You can set the amount panned to values from 0 to 100%. The default value is 50%. To incrementally pan, use the Ctrl key in combination with any arrow key.

Tip

 Each time you adjust the view, the application refreshes the display of the entire design. With large designs this can take a while. You can minimize this time by pressing the Esc key to interrupt the drawing, allowing you to adjust the partially drawn view to your satisfaction. When you are ready, you can press the keyboard shortcut “n” to instruct the application to complete the display refresh.

Figure 3-2. Zooming and Panning



Related Topics

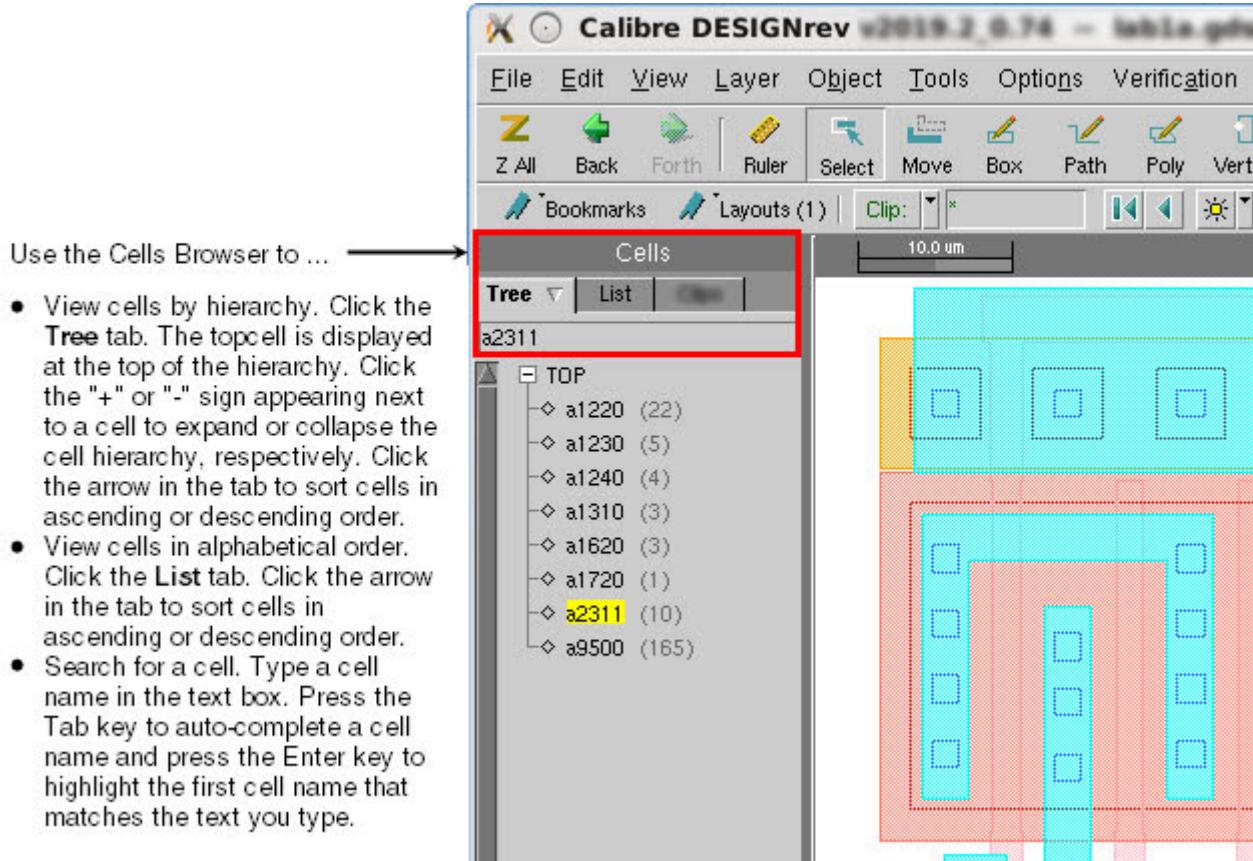
[Preferences Dialog Box - View Tab](#)

[View Menu](#)

Cells Browser

The Cells Browser provides a mechanism for navigating the cell hierarchy in a hierarchical design. When you load a hierarchical design into Calibre DESIGNrev, the cell hierarchy is displayed in the Cells Browser. A cell hierarchy is the traversal order of a tree-like structure of the parent and child cells in a design. You can use the Cells Browser to change the view to display different aspects of the design hierarchy. This includes selecting which cell to display and the view depth to display it with.

Figure 3-3. Navigating the Cell Hierarchy in the Cells Browser



Note

 In a layout containing multiple top cells, all top cells initially remain collapsed in the Cells Browser.

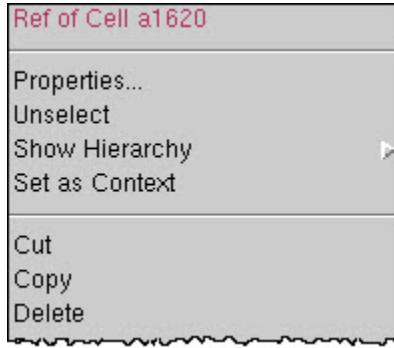
The Cells Browser contains three palettes that are accessed using the tabs located at the top of the Cells Browser.

- Tree palette — Displays a hierarchical view of the cells in the layout.
- List palette — Displays a list of all the cells in the layout, in alphabetical order.
- Clips palette — Displays a list of clips.

The text box located immediately below the tabs is used for searching and displaying information about currently-selected items. To search for cells, type a cell name into the text box. Use the Tab key to auto-complete the cell name, and press the Enter key to highlight the first cell instance matching text entered in the text box.

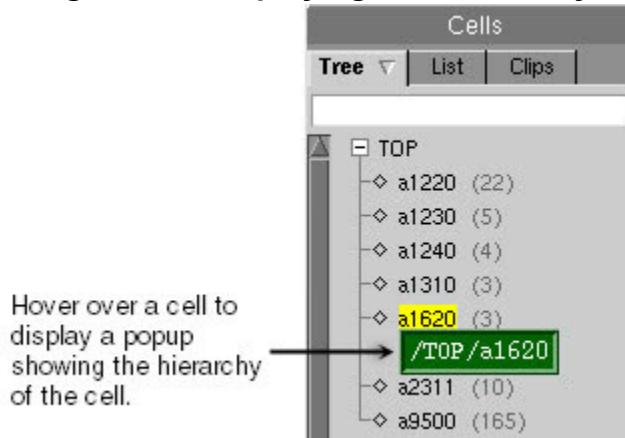
When you select a cell, array, text or polygon, you can tell what cell it belongs to by checking the parent cell name that is displayed in the layout viewer popup menu, as shown in [Figure 3-4](#), or in the [Object Properties dialog box](#).

Figure 3-4. Displaying a Cell Reference



You can view its location in the hierarchy, as shown in [Figure 3-5](#), by selecting and hovering over the cell.

Figure 3-5. Displaying Cell Hierarchy

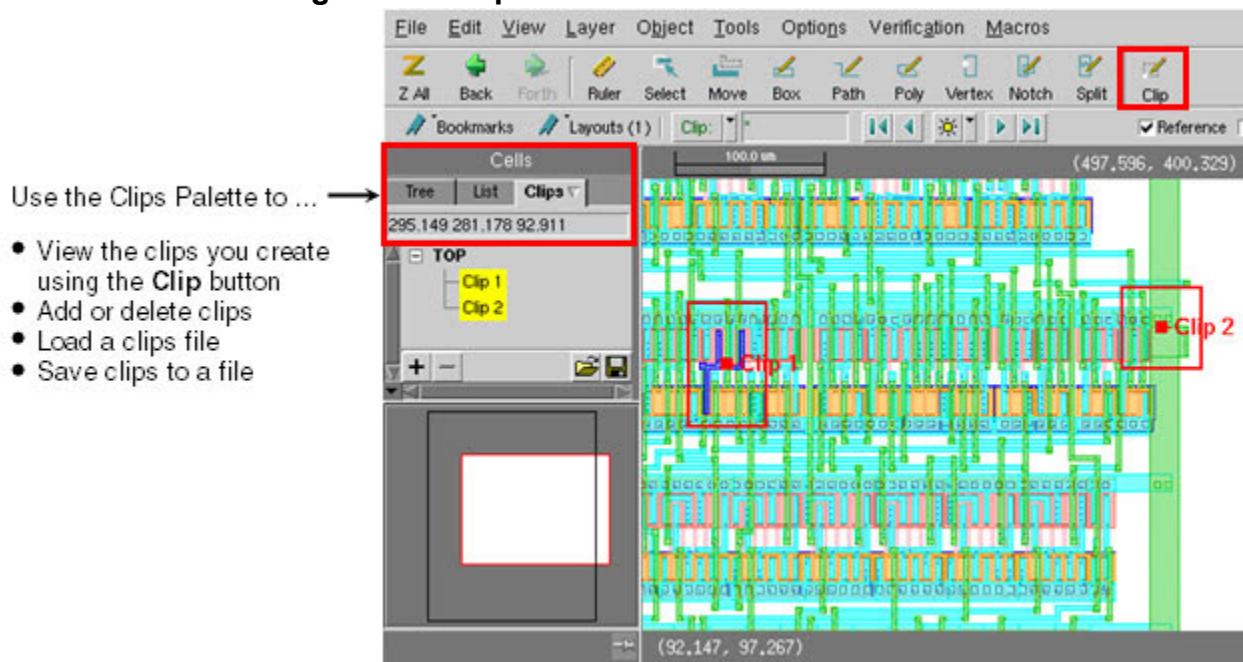


Clips Palette

Clips are rectangular regions of a layout that you can access and manipulate using the Clips palette. You can save clips to a clips file, which stores all layer information, allowing clips to be independent of a layout. Clips can be used as setup for incremental loading, and for sharing selected areas with other users.

You access the Clips palette by clicking the **Clips** tab in the Cells Browser. The Clips palette displays clips you create using the **Clips** button, clips you load from a clips file (*.clips*), or clips you load from a coordinates file (*.coords*). The palette provides the ability to easily access and manipulate clips.

Figure 3-6. Clips Palette in the Cells Browser



Related Topics

[Cells Browser](#)

[Clips Palette](#)

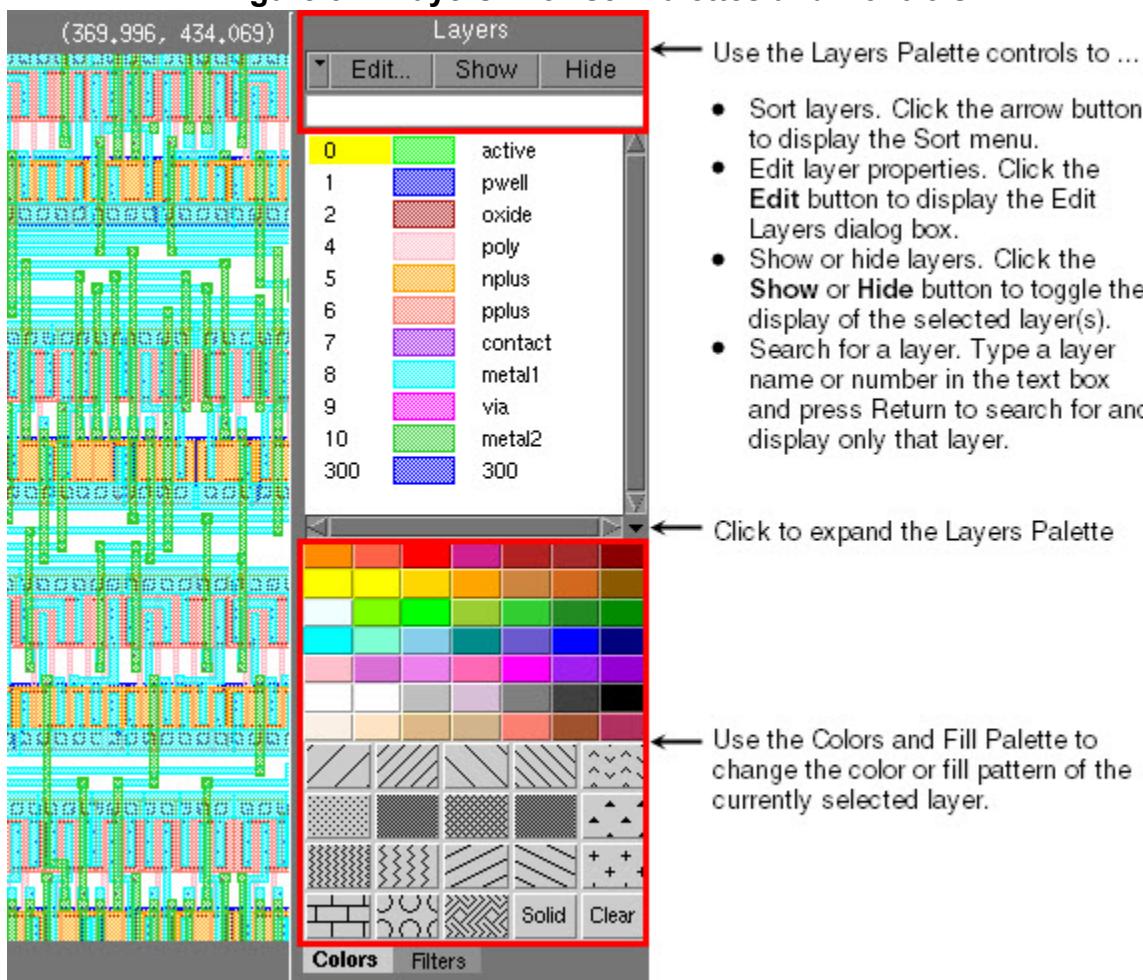
[Creating and Working with User-Defined Clips](#)

Layers Browser

The Layers Browser includes a Layers Palette for controlling layer visibility and a Colors and Fill Palette for controlling the appearance of layers in a layout.

Layer information includes planar geometric shapes, text labels, and other labels about the layer in hierarchical form. Layers have a numerical assignment in GDSII format and both a numerical and name assignment in OASIS format.

Figure 3-7. Layers Browser Palettes and Controls



Layer Properties

Layer properties refer to the color, fill pattern, visibility, order, and layer names in a layout. These are display properties, and have nothing to do with the technology or materials the layers represent. Layer properties are not stored with each individual layout database. Instead, they are a function of the application you use to display the layout.

When you first invoke the Calibre DESIGNrev in interactive GUI mode, it loads the default layer properties. These defaults can be modified by changing the layer names, colors and fill patterns. Once changes have been made, these settings can be saved to a Layer Properties (layerprops) file so they can be used again in another session or for a similar layout.

A default layerprops file is located in the layout viewer configuration directory (the default file can be specified using the -dl layout viewer option). You can create a properties file specific to a layout by renaming the default file and using the -l argument (with -m or -o) to load the layout or overlay with the specified layer properties file.

If you specify the -dl and the -l argument in the same invocation, the order of precedence is the following, starting with the lowest precedence:

- The default layout viewer’s configuration “layerprops” file, as specified by the layout viewer’s -dl option. The -dl option specifies a preexisting layer properties file to be used when invoking the layout viewer with any number of layouts.
- Calibre detects the presence of a “*layoutfile*.layerprops” file. The layoutfile prefix must contain the entire layout filename, such as “mylayout.gds.layerprops”. If you omit the “.gds”, your layer properties is not automatically loaded during the next invocation of the layout file.

Note

 If you are saving layer properties in a new session with an unsaved layout file, the filename defaults to the format, “layout0.layerprops”. This layerprops file is not automatically loaded during the next invocation of this layout file. You need a filename of the form, “layout0.gds.layerprops”, for the layerprops file to load automatically.

- A layerprops file specified by the -l argument (with -m or -o).

OASIS layout databases can have layer names embedded in them. GDS layout databases do not have this capability. If an OASIS database has embedded layer names, they appear in the Layers Browser, when you load the database. If you have an OASIS database loaded into the layout viewer and there are layer names in the database, these names can be overwritten if you load layer names from a rule file or from a Layer Properties file (**Layer > Load Layer Properties**).

Note

 The OASIS file format allows multiple layer name definitions per layer. When the layout viewer loads an OASIS layout, all of the layout’s layer names are read. However, only the first name of layers with a unique layer or datatype value are displayed in the Layers Browser.

When you write an OASIS format database, the layer names that appear in the Layers Browser are stored in the database. These layer names then appear in the Layers Browser when you load the OASIS database into the layout viewer. This does not apply to layer appearances, which can only be stored in a Layer Properties file.

Related Topics

- [Using Layer Maps](#)
- [Layers Browser](#)
- [Customizing Layers](#)
- [layerprops File Format](#)
- [Loading Layer Names from an SVRF File](#)

Bookmarks

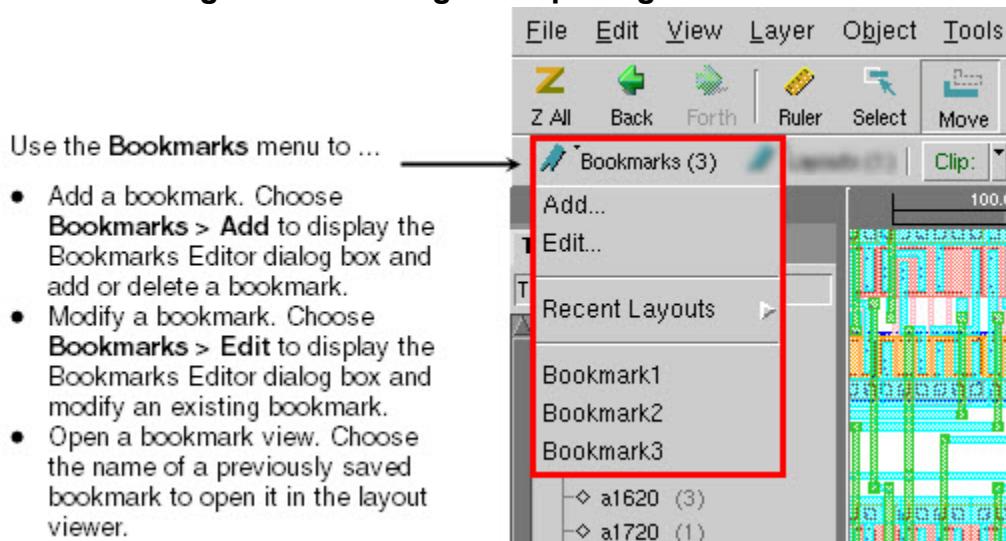
Bookmarks are a method of saving your current view of a layout, allowing you to return to the same view in a layout at any time. Bookmarks store the load options and layout properties that are in effect when the bookmark is created.

Note

 You can also use clips to mark and save areas of interest in a layout. A common practice is to save clips to a file for later viewing. Refer to “[Clips Palette](#)” on page 250 for more information on clips.

[Figure 3-8](#) shows how to add and open bookmarks.

Figure 3-8. Adding and Opening Bookmarks



The layout viewer stores a bookmark in the `$HOME/.calibrewb_workspace/bookmarks` file in your layout viewer configuration directory (or the location defined by the `$MGC_CWB_CONFIG_DIRS` environment variable). When you add a bookmark, the information necessary to recreate the bookmark view, including the name of the layout file, is stored in this file.

Bookmark information is independent of the layout or design session. It is possible to have many bookmarks, each identifying a different view in a different layout. If the bookmark information specifies a layout that is not loaded in the layout viewer, then selecting the bookmark automatically loads the layout and displays the bookmarked view.

Related Topics

[Bookmarks Editor Dialog Box](#)

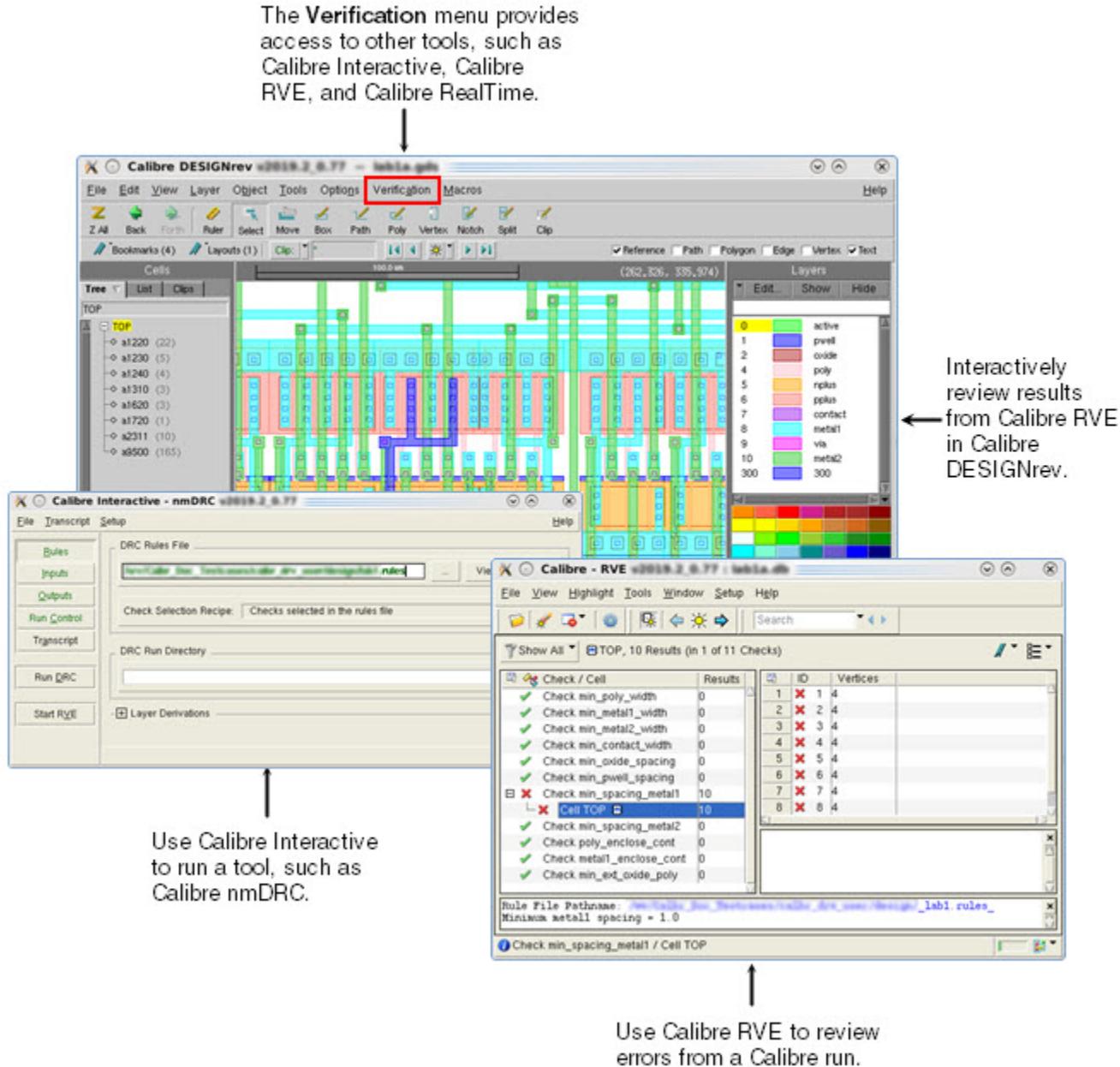
[Creating and Working with User-Defined Clips](#)

Access to Other Tools

You can use Calibre DESIGNrev in conjunction with tools, such as Calibre Interactive, Calibre RVE, and Calibre RealTime, to perform a range of tasks within the design verification flow.

Refer to “[Calibre DESIGNrev Workflow](#)” for an overview of a basic verification flow using Calibre DESIGNrev and other tools.

Figure 3-9. Using Calibre DESIGNrev Interactively with Other Calibre Tools



Chapter 4

Configuring the Layout Viewer

Calibre DESIGNrev is highly customizable, allowing you to configure your keyboard, rulers, display, and the appearance of data. You can write macros to add or extend functionality to the layout viewer.

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Configuring Keyboards and Rulers

The layout viewers provide the ability to define your own keyboard shortcuts and customize your rulers.

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Defining Keyboard Shortcuts

The layout viewers allow you to define your own keyboard shortcuts for a wide range of functions. These range from clearing rulers and accessing menu items to hiding layers or displaying dialog boxes.

For a complete list of the functions you can map to these keys, refer to the [\\$cwb bindKey](#) command description in the *Calibre DESIGNrev Reference Manual*.

The Shift function keys are reserved and cannot be assigned bindings within Calibre DESIGNrev. Any other keys can have bindings assigned by Calibre DESIGNrev.

Procedure

1. Create a *keyprefs* file in your layout viewer configuration directory.

You can copy the template file *\$HOME/.calibrewb_workspace/keyprefs.template* and rename it to *keyprefs* to use as a starting point.

2. Edit the *keyprefs* file and use the *bindkey* command to create your own set of unique keyboard shortcuts.

Note

 Alternatively, you can type the layout viewer batch command *\$cwb bindkey* in the layout viewer console window to create a temporary keyboard shortcut. Using this method, the keyboard shortcut is not saved in the *keyprefs* file and is not restored in subsequent sessions.

Related Topics

- [keyprefs File Format](#)
[\\$cwb bindKey \[Calibre DESIGNrev Reference Manual\]](#)

Changing Ruler Defaults

You can set the default ruler properties, such as color, direction, and format, using the **Rulers** tab in the Preferences dialog box. You can also enable or disable the option to allow multiple rulers.

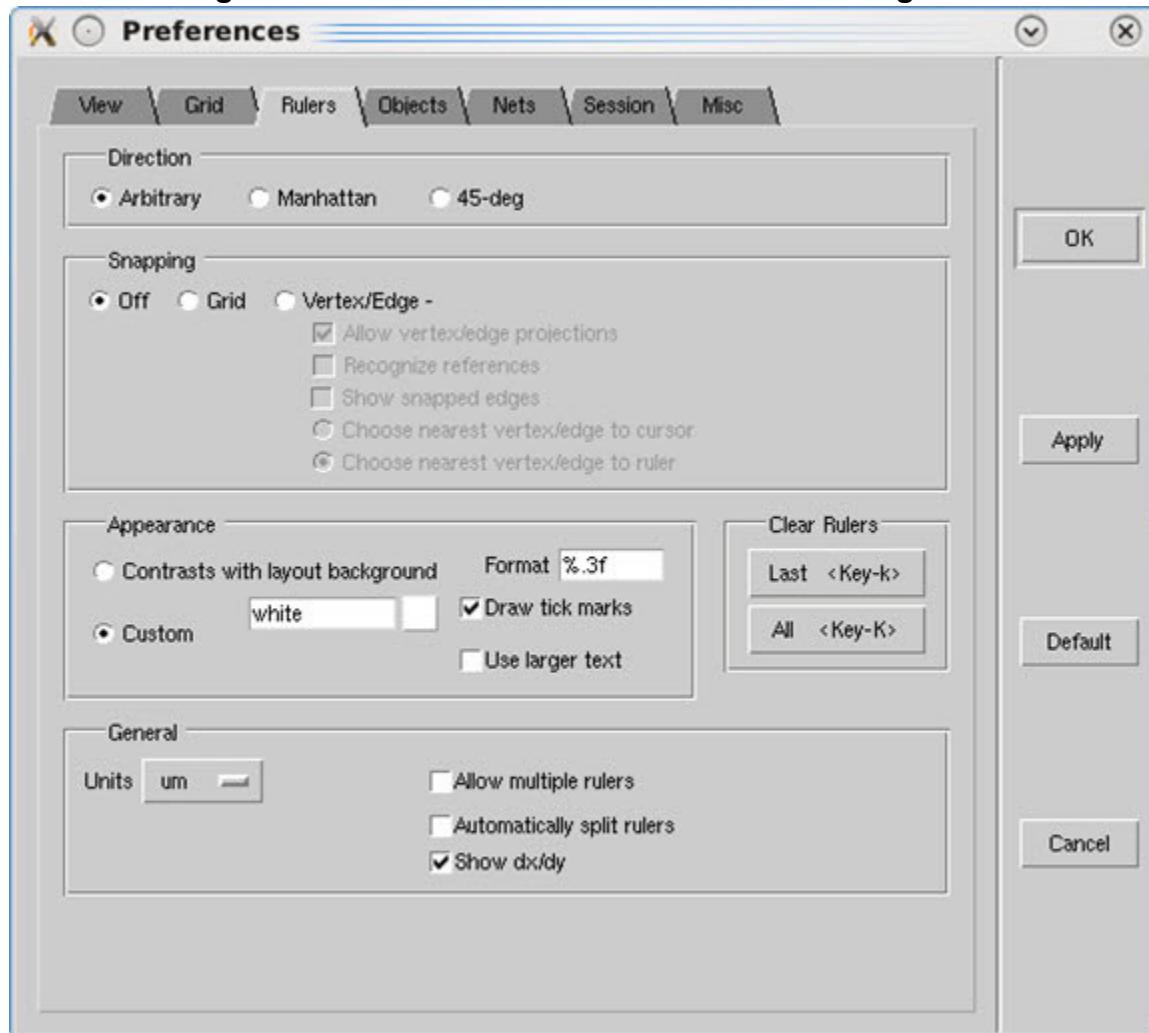
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

- Use one of the following methods to access the **Rulers** tab in the Preferences dialog box (shown in [Figure 4-1](#)):
 - Choose **Options > Ruler**.
 - Use the keyboard shortcut Shift+R.

Figure 4-1. Rulers Tab in the Preferences Dialog Box



- Set your desired ruler preferences.
- Click **OK** to save your preferences.

Results

The layout viewer saves your preferences for rulers. Each time you invoke the layout viewer, the ruler properties are set automatically to the properties you last defined in the Preferences dialog box.

While ruler preferences are saved, any rulers you create during a layout viewer session are not automatically saved. You can use the Rulers palette to export, import, and manage rulers.

Refer to “[preferences File Format](#)” on page 384 for information on the ruler preferences you can define in the *preferences* file.

Related Topics

[Measuring Distances with Rulers](#)

[Preferences Dialog Box - Rulers Tab](#)

[Rulers Palette](#)

Configuring Data Display

With Calibre DESIGNrev you can modify the visual aspect of the layout viewer.

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Changing the Default Background Color

You can change the background color of the Layout Viewing Area, Layers Browser, and Layout Navigator.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

Use one of the following methods to change the background color:

- Choose **Options > Layout View** to display the **View** tab in the Preferences dialog box.
 - In the “Layout view background” field, enter a color name (refer to [Table B-2](#) on page 594 for a list of allowed color names).

Or, click the color tile associated with the “Layout view background” field to display the Choose Layout Background Color dialog box. Select the desired color and click **OK** to return you to the Preferences dialog box.

Click **Apply** to immediately view and verify the change and then click **OK**.
- In the Colors and Fill palette of the Layers Browser, click the middle mouse button on one of the colors displayed in the palette to automatically update the background.

Results

The layout viewer saves your background color preferences in your *\$HOME/.calibrewb_workspace/preferences* file and loads it each time you invoke the layout viewer.

Related Topics

[prefs_view_bg](#)

Changing the Grid Settings

You can display the user grid to get a quick estimate of sizes and distances. When the grid is visible, it provides cues for calculating space, width, and alignment. The user grid aligns any

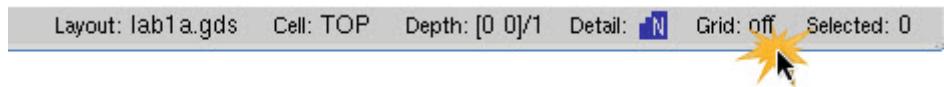
modifications you make to the design by snapping new vertices to grid points. Mouse input snaps to the user grid, so the grid size also defines the minimum size of the rectangles you can select while selecting an area. Snapping occurs whether the grid is visible or not.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Use one of the following methods to access the **Grid** tab in the Preferences dialog box:
 - Choose **Options > Grid Setting**.
 - Use the keyboard shortcut Shift-G.
 - Click the Grid status value in the status bar.



The Preferences dialog box lets you define grid properties and control whether the user grid is displayed.

2. Specify the desired positioning of the grid, and select the desired “Style”, “Color”, and “Snap Direction” options.
3. Click **Apply** to view and save your preferences.
4. Click **OK** to close the dialog box.

Results

The layout viewer saves your grid preferences in your `$HOME/.calibrewb_workspace/preferences` file and loads them each time you invoke the layout viewer.

Related Topics

[Preferences Dialog Box - Grid Tab](#)

Using Defaults to Control Data Display

When you open a layout, certain default preferences control drawing of objects, object colors, and panning. You can use the **View** tab in the Preferences dialog box to set your preferences for displaying the layout.

Prerequisites

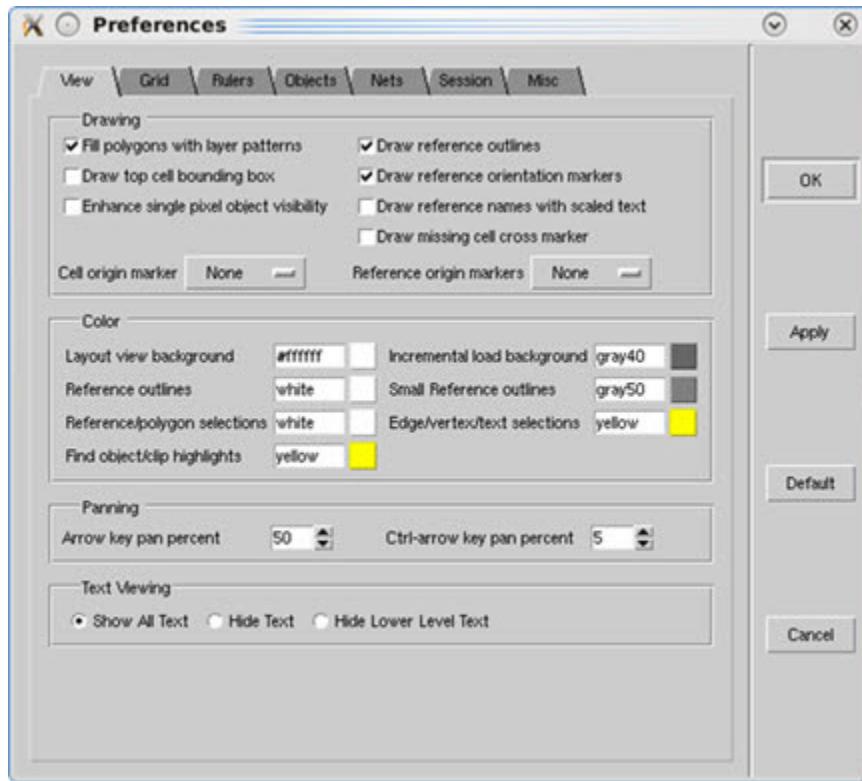
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Choose **Options > Layout View**.

This displays the **View** tab in the Preferences dialog box.

2. Set your desired layout viewing preferences.



3. Click **Apply** to view and save your preferences.
4. Click **OK** to close the dialog box.

Results

The layout viewer saves your viewing preferences in your `$HOME/.calibrewb_workspace/preferences` file and loads them each time you invoke the layout viewer.

Related Topics

[Preferences Dialog Box - View Tab](#)

Configuring Data Appearance

You can configure the appearance of your design data.

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Customizing Layers

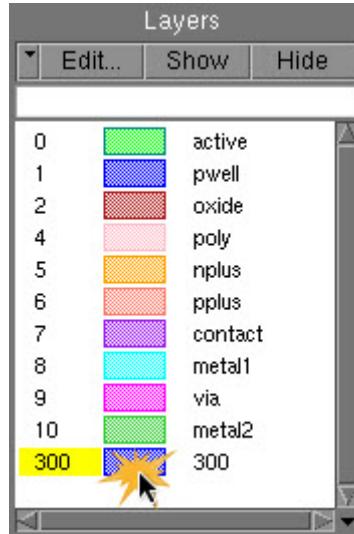
You can use the GUI to assign custom colors and fill patterns to the layers in your layout in order to make it easier to view. By default, layers display in the layout viewer in ascending numeric layer order; you can change the display order using the GUI. You can then save these customizations to a layer properties file for future use with the layout.

Prerequisites

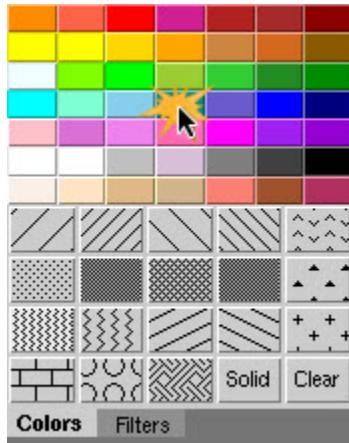
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

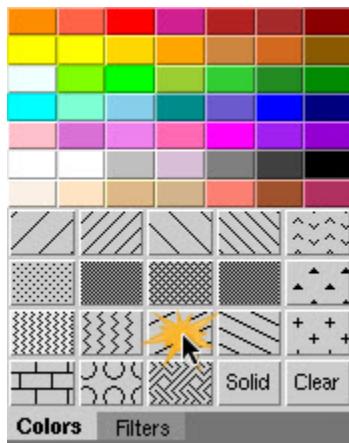
1. In the Layers Browser, select a layer that you want to customize by clicking on the layer in the Layers palette.



2. In the Layers Browser, change the color by selecting the desired color in the Colors and Fill palette.



3. Change a fill pattern by clicking the desired pattern in the Colors and Fill palette.



4. Repeat steps 1 through 3 to customize the color and fill pattern for additional layers.
5. Use one of the following methods to edit layers using the Edit Layers dialog box.
 - Choose **Layer > Edit**.
 - Right-click on a layer in the Layers Browser and choose **Edit** from the popup menu.

This displays the Edit Layers dialog box.



6. Change a layer name by clicking on a name in the Layer Name column and type the new name.

The layout viewer restricts layer name characters to the defined OASIS character set, for both GDS and OASIS layouts.

7. Repeat step 6 to modify the layer names for any other layers.
8. Change the draw order by dragging and dropping layers to the desired location.
9. Click **Set Draw Order** to save the new drawing order.
10. Click **Apply** to update the Layers Browser to reflect the drawing order you specified.
11. Save the layer properties with one of the following methods:

If you want to...	Do the following:
Save the layer properties as the default for all layouts.	Choose Layer > Save As Default to save the properties in the <code>\$HOME/.calibre_workspace/layerprops</code> file.
Save a layer properties file that is used only for the current layout.	Choose Layer > Save Layer Properties and save the file using the layout name and extension followed by ".layerprops" (for example, <code>mydesign.gds.layerprops</code>). The layer properties file is saved in the same directory as the layout.

Note

 To automatically load a layer properties file with a layout, the layer properties file must reside in the same directory as the layout, have the same name and extension as the layout file, and have the *.layerprops* suffix. If you subsequently save your layout with a different prefix, your layer properties file will not automatically load the next time you open the layout file.

Results

In future invocations of Calibre DESIGNrev, you can access these layer properties as follows:

- If you saved the layer properties as the defaults, the tool loads them unless you override this behavior by automatically loading design-specific layer properties as described in the next bullet items.
- If you saved the layer properties using the file naming convention *layout_name.layerprops*, the tool loads the layer properties automatically when you invoke the layout viewer.
- If you saved the layer properties with another name, you must pass the tool the layer properties filename using the -l switch. For example:
 - To invoke the layout viewer, load the layout named *mylayout.gds*, and load the layer properties file named *mylayout.layerprops*:

```
% calibredrv -m mylayout.gds -l mylayout.layerprops
```
 - To invoke the layout viewer, load the overlay file named *myoverlay.ovly*, and load the layer properties file named *overlay_layerprops.txt*:

```
% calibredrv -o myoverlay.ovly -l overlay_layerprops.txt
```
- To load an existing layer properties file from the GUI, choose **Layer > Load Layer Properties**.

Related Topics

[Layers Browser](#)

[Edit Layers Dialog Box](#)

[Layers Browser](#)

[layerprops File Format](#)

Loading Layer Names from an SVRF File

You can use the SVRF rule file that you use with your layout database to load layer names in Calibre DESIGNrev.

Calibre DESIGNrev uses the SVRF rule file parser to extract the layer information from the rule file. When loading a rule file in Calibre DESIGNrev, you should be aware of the following:

- If the rule file contains Layer Map statements that map the DATATYPE and TEXTTYPE to the same layer, the DATATYPE is given priority over the TEXTTYPE when loading the layer names into Calibre DESIGNrev.
- While an SVRF rule file allows you to map an original input layer to multiple Calibre layers, Calibre DESIGNrev can assign only one named layer to an original input layer. If a rule file contains multiple mappings of a layer, Calibre DESIGNrev loads only the first occurrence of that layer that is named in the rule file. In the following example, any layer number greater than or equal to 0 is mapped to layer 999. Layer 110 datatype 1 is mapped to layer 10000. However, layer POLY is loaded in Calibre DESIGNrev (instead of layer 110) because POLY is a named layer.

```
LAYER MAP >=0 DATATYPE >=0 999  
LAYER MAP 110 DATATYPE 1 10000  
LAYER POLY 10000
```

Prerequisites

- A layout is open in Calibre DESIGNrev.
- You have a rule file that meets the following criteria:
 - It follows proper SVRF rule file syntax. If the rule file cannot be parsed by the SVRF rule file parser, an error is generated. Refer to “[Key Concepts](#)” in the *Standard Verification Rule Format (SVRF) Manual* for information on the SVRF rule file.
 - It contains a valid layer number to layer name mapping.
 - The layers in the SVRF rule file match the layers in the layout file.
 - The layer name characters are restricted to the defined OASIS character set, for both GDS and OASIS layouts.
- Your environment must be set up correctly for the layer mappings to load. Be sure any environment variables specified in the rule file are set. Unset environment variables, such as those used in “if” statements, can cause layer maps to be excluded from being read. Verify the layer mappings in the rule file are read into Calibre DESIGNrev as expected.

Procedure

1. Depending on how layers are defined in your rule file, choose the appropriate menu item.

If you want to...	Do the following:
Read in layer names from Layer specification statements	Choose Layer > Load Input SVRF Layer Names to display the Load Input SVRF Layer Names dialog box shown in Figure 4-2 .
Read in layer names from DRC Check Map specification statements	Choose Layer > Load Output SVRF Layer Names to display the Load Output SVRF Layer Names dialog box.

Figure 4-2. Load Input SVRF Layer Names



2. Navigate to and select the desired rule file.
3. Click **Open**.

This loads the input or output layer names depending on the option you chose.

Note

 To modify the file types displayed in the dialog box, select **Options > Misc Preferences** to display the [Preferences Dialog Box - Misc Tab](#). Click the **Filetypes** button to display the Filetype Preferences dialog box. Modify or add file types in the Rules text box and click **Apply**. Click **OK** to close the Preferences dialog box.

You can also use the [prefs_filetypes_rules](#) preference to specify the available file types.

Related Topics

- [Layer \[Standard Verification Rule Format \(SVRF\) Manual\]](#)
- [DRC Check Map \[Standard Verification Rule Format \(SVRF\) Manual\]](#)
- [Preferences Dialog Box - Misc Tab](#)
- [prefs_filetypes_rules](#)

Creating and Loading Custom Fill Patterns

You can customize the layout viewer with your own fill patterns.

Procedure

1. Use a graphics tool to create an image for a custom fill pattern.
2. Save the fill pattern image file to an accessible directory.
The image file must be in the X bitmap format (.xbm). There are no size restrictions, as the pattern repeats when tiled across the area to be filled.
3. In the *layerprops* file, assign the fill pattern to the layer of your choice. For example:

```
1 green @X_stipple.xbm 1 1 1
```

Note

 You can use environment variables in the *layerprops* file with the syntax `@$environment_variable`. Refer to “[layerprops File Format](#)” on page 379 for more information.

4. Save the *layerprops* file.
5. Use one of the following methods to load a *layerprops* file in Calibre DESIGNrev.

Command line:

```
calibredrv <layoutfile> -dl <layerpropertiesfile>
```

GUI:

Invoke Calibre DESIGNrev, load the layout, and choose **Layer > Load Layer Properties**

Results

Calibre DESIGNrev looks for the *.xbm* file in the same directory that contains the *layerprops* file. If the *.xbm* file is not found, Calibre DESIGNrev then looks for the *.xbm* file in the current working directory.

Related Topics

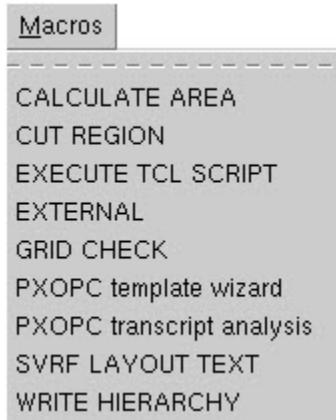
[layerprops File Format](#)

Extending the Layout Viewer Functionality Using Macros

You can add new functionality to the layout viewer by writing application extensions called *macros*. You create macros using Tcl and the layout viewer batch commands.

Once you create a macro, you can make the extensions accessible from the **Macros** menu. By default, the **Macros** menu contains several Siemens EDA-supplied macros as shown in [Figure 4-3](#). These macros provide useful functionality and also serve as examples of the sorts of functionality you can add to the application.

Figure 4-3. Macros Menu



Procedure

1. Create a simple macro. Refer to the “[Simple Macro Example](#)” in the *Calibre DESIGNrev Reference Manual*.

Or, assuming you already have a Tcl procedure that you want made into a macro, you have only to add a second brief procedure and a call to the Macros create batch command to turn the original procedure into a macro. For example:

```
proc original_tcl_script { } {
    ...
}
proc new_macro_plug_in { wbHandle window} {
    original_tcl_script
}
Macros create "my menu title" original_tcl_script new_macro_plug_in
```

2. To add the macro to the layout viewer **Macros** menu, source the macro from your *wbinit.tcl* file. For example:

```
echo "source macro_file.tcl" >> ~/.calibrewb_workspace/wbinit.tcl
```

3. Invoke Calibre DESIGNrev and choose the **Macros** menu to access your macro.

Related Topics

[Macros create \[Calibre DESIGNrev Reference Manual\]](#)

[Macros Menu](#)

Chapter 5

Common Editing Tasks

Calibre DESIGNrev provides several options for creating and manipulating objects in a layout.

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Creating Objects

The Layout Viewer Toolbar includes buttons for creating boxes, polygons, paths, and notches.

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Drawing a Box

A box is a 4-sided polygon with parallel sides. You can render a box in your layout using the **Box** button in the Layout Viewer Toolbar.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. In the Layers palette, select the layer on which you want to draw the box.
2. Set the edit mode to Box by clicking the **Box** button in the Layout Viewer toolbar.



Tip

You can press “b” to set the edit mode to Box.

3. In the Layout Viewing area, click the left mouse button to define the first corner of the box.

You can cancel the drawing of a box prior to defining the opposite corner, by pressing the Esc key.

Note

If you press Esc a second time (after canceling the current operation), the edit mode in the Layout Viewer toolbar reverts to Select mode.

4. Move the cursor diagonally to the desired location and click the left mouse button to define the opposite corner of the box.

Drawing a Polygon

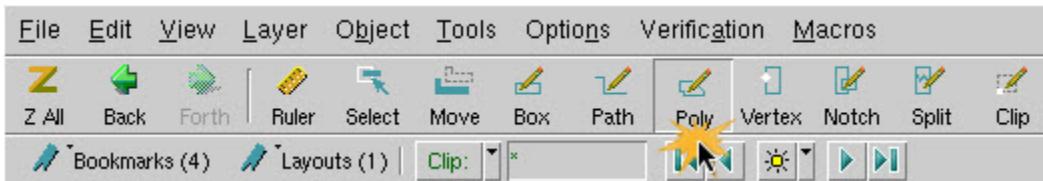
A polygon is a closed geometric object defined by three or more non-colinear vertices. The line segment between two adjacent vertices is called a polygon edge. The layout viewer lets you display polygons and their properties. Polygons can be added using the **Box** (to create a simple box) or the **Poly** toolbar buttons.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

- In the Layers palette, select the layer on which you want to draw the polygon.
- Set the edit mode to Polygon by clicking the **Poly** button in the Layout Viewer toolbar.



Tip

You can press “p” to set the edit mode to Polygon.

- In the Layout Viewing area, click the left mouse button to define a vertex point for the new polygon.
- Move the cursor to the desired location for the next vertex and click the left mouse button. Continue to add vertices this way.

You can cancel the drawing of a polygon by pressing Esc.

Note

If you press Esc a second time (after canceling the current operation), the edit mode in the Layout Viewer toolbar reverts to Select mode.

- Use either of the following techniques to finish:
 - Double-click the final vertex.
 - Click the final vertex, then double-click before moving the mouse.

Drawing a Path

A path is a line with thickness, also referred to as a trace. The line segment between two adjacent vertices is called a path centerline. Paths do not have outside edges. Instead, they have a centerline and a width. The centerline can be treated as an edge. The layout viewer displays

paths and their properties. Calibre batch tools convert them to polygons for processing. Paths have five properties: type, layer, width, location, and shape. These can be modified from the **Object > Properties** dialog box. Paths can be interconnected to form a net and can be converted to polygons.

Restrictions and Limitations

- Paths with rounded ends are treated as follows when the path is loaded or created in Calibre DESIGNrev and then exported:
 - To a GDS file: Paths and rounded ends are preserved.
 - To an OASIS file: Paths are output as polygons with rounded ends.In both cases, if a path is zero width and has rounded ends, the path is written with flush, square ends.

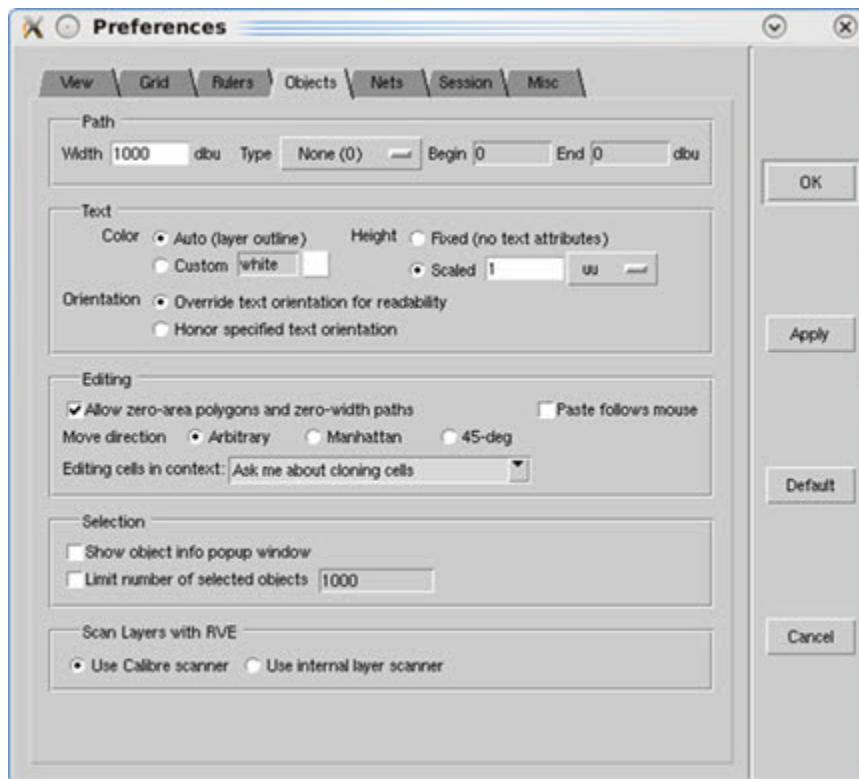
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

- Set your preferences for paths by choosing **Options > Objects**.

This displays the **Objects** tab in the Preferences dialog box.



- In the Path field, set the width, path type, and beginning and ending path extensions.

3. Click **OK** to save your preferences and close the dialog box.
4. In the Layers palette, select the layer on which you want to draw the path.
5. Set the edit mode to Path by clicking the **Path** button in the toolbar.



6. In the Layout Viewing area, click the left mouse button to define the first vertex of the new path.

When you move the cursor, the path displays between the first vertex and the cursor location. The path uses the properties that you set in the user preferences, such as path type and width.

7. Move the cursor to the desired location for the next vertex and click the left mouse button. Continue to add vertices this way.

You can cancel the drawing of a path by pressing Esc.

Note

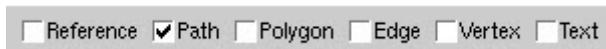
If you press Esc a second time (after canceling the current operation), the edit mode in the Layout Viewer toolbar reverts to Select mode.

8. Use either of the following techniques to finish the path:

- Double-click the final vertex.
- Click the final vertex, then double-click before moving the mouse.

9. To change the properties of a specific path:

- a. Ensure the object selection filter includes Path objects.



- b. Set the edit mode to select objects by clicking the **Select** button in the Layout Viewer toolbar.
- c. Right-click on the path and choose **Properties** to display the Object Properties dialog box.
- d. Set the desired path properties.
- e. Click **Apply** to immediately view the changes to the selected path. Click **OK** to save the changes and close the dialog box.

Results

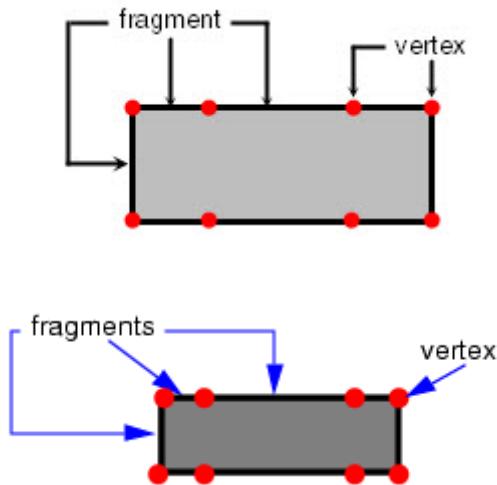
The path is drawn using the outline color of the currently selected layer.

Related Topics

[Preferences Dialog Box - Objects Tab](#)

Drawing a Vertex

A vertex is a point in an edge that breaks the edge into a smaller segments known as fragments. A fragment, which may also be referred to as an *edge fragment*, can be an entire edge (if the two vertices are both corners) or a part of an edge (if at least one vertex is not). Using the **Vertex** button on the layout viewer toolbar, additional vertices can be introduced to an edge, breaking that edge into smaller fragments.



Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Select the Polygon check box in the Object Selection toolbar.
2. Click the **Vertex** button in the toolbar.
3. Click the edge on which you want to add the new vertex.

The application highlights the polygon with the primary highlight color and highlights the edge you selected with the secondary highlight color. This lets you view the positions of the existing vertices.

4. Click where you want to insert the new vertex.

Results

The application adds a new vertex, snapping to the grid point nearest to where you clicked. To add additional vertices to the same polygon, repeat step 4 as needed. To add vertices to a different polygon, repeat steps 3 and 4.

Drawing a Notch

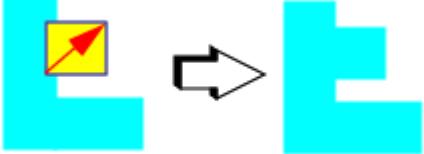
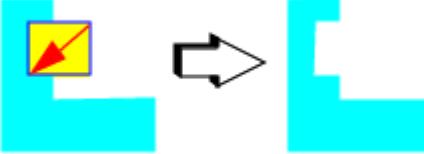
A notch is a small rectangular indent of a polygon or box. You can use the **Notch** button in the Layout Viewer Toolbar to create additional segments in your polygons.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

- Select the Polygon check box in the Object Selection toolbar.
- Click the **Notch** button in the Layout Viewer toolbar.
- Select the box or polygon on which you want to add or remove a notch.
- Use one of the following methods to notch out (add area) or notch in (remove area):

If you want to...	Do the following:
Add a notch	Draw a box from left to right, defining the notch to create. The box you draw must touch or intersect the selected object. 
Remove a notch	Draw a box from right to left, defining the notch to remove. The box you draw must touch or intersect the selected object. 

- Repeat steps 3 and 4 to add additional notches.

Creating Splits

You can use the **Split** button in the Layout Viewer Toolbar to slice paths and polygons into two abutting paths and polygons.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Select the Path and Polygon check box in the Object Selection toolbar.
2. Click the **Split** button in the Layout Viewer toolbar.
3. Select the paths and polygons you want to split.
4. Use the left mouse button to draw an orthogonal line through the selected polygons and paths.

The selected objects are split into multiple objects along that line.

Selecting and Unselecting Objects

There are multiple methods for selecting and unselecting objects in a layout. You use the Object Selection toolbar to control which objects you can select in the layout.

The Object Selection toolbar shown in [Figure 5-1](#) contains six check boxes, representing the different types of object filters.

Figure 5-1. Object Selection Toolbar



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Selecting Objects

There are multiple ways of selecting objects in Calibre DESIGNrev. When you click the **Select** button in the Layout Viewer toolbar, you can select objects from any visible layer, regardless of whether or not the layer is selected in the Layers palette. The Status Toolbar contains a “Selected” field which displays the number of currently selected objects.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

If you want to...	Do the following:
Select an object	<ol style="list-style-type: none"> In the Object Selection toolbar, select the type(s) of object you want to select in the layout. In the Layout Viewer toolbar, click the Select button. In the layout, click the object you want to select.
Select an object when several objects overlap	<ol style="list-style-type: none"> In the Object Selection toolbar, select the type(s) of object you want to select in the layout. In the Layout Viewer toolbar, click the Select button. In the layout, click the object you want to select. If the desired object is not selected, continue to click at the same point until the object is selected. The selection process steps through all overlapping objects of the types specified by the Object Selection filters.

If you want to...	Do the following:
Select multiple objects	<ol style="list-style-type: none">1. In the Object Selection toolbar, select the type(s) of object you want to select in the layout.2. In the Layout Viewer toolbar, click the Select button.3. In the layout, click the object you want to select.4. After the first object is selected, press the Ctrl key while clicking the additional objects you want to select. The status bar shows how many objects are currently selected.5. If you discover you have selected an object by mistake, you can unselect it by pressing the Ctrl key as you click the object again.
Select objects in an area	<ol style="list-style-type: none">1. In the Object Selection toolbar, select the type(s) of object you want to select in the layout.2. Hold the left mouse button while drawing a rectangle around the objects in the layout that you want to select.3. Choose Edit > Select Region.

Related Topics

[prefs_edit_selectLimit](#)
[prefs_edit_showPopupSelect](#)
[prefs_edit_selmode](#)

Unselecting Objects

There are multiple ways you can unselect objects in Calibre DESIGNrev. The status bar shows how many objects are currently selected.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Multiple objects are selected in the layout.

Procedure

Use one of the following methods to unselect objects:

If you want to...	Do the following:
Unselect all objects	<ul style="list-style-type: none">• Choose Edit > Unselect All.• Press “u”.• Click outside any selected object.

If you want to...	Do the following:
Unselect a specific object type when multiple object types are selected	Choose the object type in the Object Selection toolbar to automatically unselect objects of that type.

Moving Objects and Edges

Calibre DESIGNrev provides multiple options for moving objects and edges.

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Setting Directional Restriction Preferences

You can set a directional restriction preference that is used when moving objects. Directional restriction options include arbitrary, manhattan, and 45-degree.

- Arbitrary — You can move objects in any direction (default).
- Manhattan — You can move objects at 90-degree angles.
- 45-Degree — You can move objects at 45-degree angles.

Procedure

Use one of the following methods to set the directional restriction for moving objects:

If you want to...	Do the following:
Use the GUI	<ol style="list-style-type: none">1. Choose Options > Objects to display the Objects tab in the Preferences dialog box.2. In the Editing field, select the desired “Move direction” and click OK.
Use a preference	Define <code>prefs_edit_moveDirection</code> in your <code>\$HOME/.calibrewb_workspace/preferences</code> file.
Use a keyboard shortcut	Press the Tab key while moving an object to switch between directional restriction modes.

Moving Objects

You can select and move one or more path, polygon, reference, and text object types.

Prerequisites

- You have a layout open in Calibre DESIGNrev that contains references, paths, polygons or text.

Procedure

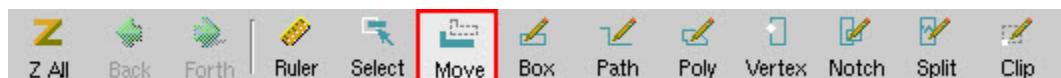
1. In the Object Selection toolbar, select the check box for the type or types of objects (Reference, Path, Polygon, or Text) that you want to move.



2. Click the **Select** button in the Layout Viewer toolbar.



3. Click on the object you want to move in order to select it.
4. To select multiple objects, press Ctrl while clicking on the additional objects to select them.
5. Click the **Move** button (or press “m”) in the Layout Viewer toolbar.



This displays the dx and dy text boxes in the lower-left corner of the Calibre DESIGNrev window.

dx: 0.000 dy: 0.000 (d 0.000)

6. Use one of the following methods to move the selected objects:

If you want to...	Do the following:
Use the mouse to move one or more objects	Use the left mouse button to drag the object(s) to the desired location.
Enter coordinates to move the objects	Click in the dx field, type a positive or negative value, and press Enter to move the selected objects in the x direction. Click in the dy field, type a positive or negative value, and press Enter to move the selected objects in the y direction. Values are in database units (dbu).

Note

 If the object you are moving is part of a cell that is referenced multiple times in the layout, you are prompted as to whether you want to clone the cell. Refer to “[Editing in Context](#)” on page 200 for more information on this topic.

Related Topics

[Selecting and Unselecting Objects](#)

Moving Edges

You can move one or more edges of a polygon or a path.

Restrictions and Limitations

The following restrictions apply when moving multiple edges:

- Edges can only be moved with other edges.
- All selected edges to be moved must be parallel.

Prerequisites

- You have a layout open in Calibre DESIGNrev that contains polygons or paths.

Procedure

1. Select the Edge check box in the Object Selection toolbar.



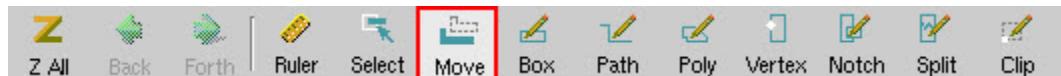
2. Click the **Select** button in the Layout Viewer toolbar.



3. Click on or near the edge of the path or polygon.

The tool automatically selects the edge closest to the cursor when you click.

4. To select multiple edges, press Ctrl while clicking on or near any additional edges to select them.
5. Click the **Move** button (or press “m”) in the Layout Viewer toolbar.



This displays the dx and dy fields in the lower-left corner of the Calibre DESIGNrev window.



6. Use one of the following methods to move the selected edges:

If you want to...	Do the following:
Use the mouse to move one or more edges	Use the left mouse button to drag the edge(s) to the desired location. If multiple edges are selected, press and hold Shift while moving the edges.
Enter coordinates to move the edges	Click in the dx text box, type a positive or negative value, and press Enter to move the selected edges in the x direction. Click in the dy text box, type a positive or negative value, and press Enter to move the selected edges in the y direction. Values are in database units (dbu).

Note

 If the edge you are moving is part of a cell that is referenced multiple times in the layout, you are prompted as to whether you want to clone the cell. Refer to “[Editing in Context](#)” on page 200 for more information on this topic.

Copying Objects

Calibre DESIGNrev provides options for copying layers and objects to different layers.

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Copying Cells to a Different Layer

You can select and copy existing objects to a new layer.

Prerequisites

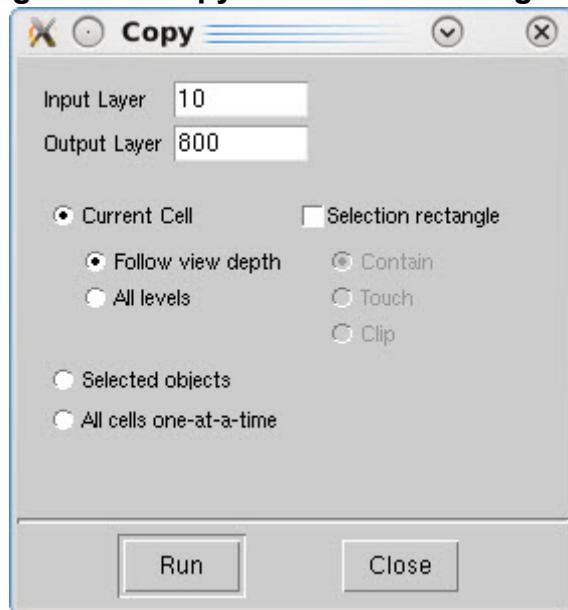
- You have a layout open in Calibre DESIGNrev that contains one or more cells.

Procedure

1. In the Cells Browser, select the cell you want to copy.
2. Choose **Layer > Copy**.

This displays the Copy dialog box.

Figure 5-2. Copy Current Cell Dialog Box



If you want to...	Do the following:
Copy the current cell at the current view depth	<p>1. Set the view depth by clicking the Depth values in the status bar.</p>  <p>This displays the View Depth dialog box.</p> <p>2. Enter the start and end depths and click OK.</p> <p>3. In the Copy dialog box, specify an Input Layer (the input layer must be an existing layer).</p> <p>4. Specify an Output Layer (the output layer can be an existing layer or a layer that does not exist).</p> <p>5. Select the “Current Cell” option.</p> <p>6. Select the “Follow view depth” option.</p>
Copy the current cell and all levels of the hierarchy	<p>1. In the Copy dialog box, specify an Input Layer (the input layer must be an existing layer).</p> <p>2. Specify an Output Layer (the output layer can be an existing layer or a layer that does not exist).</p> <p>3. Select the “Current Cell” option.</p> <p>4. Select the “All levels” option.</p>
Copy a selected area of the current cell	<p>1. In the Copy dialog box, specify an Input Layer (the input layer must be an existing layer).</p> <p>2. Specify an Output Layer (the output layer can be an existing layer or a layer that does not exist).</p> <p>3. Select the “Current Cell” option.</p> <p>4. Select the desired view depth option:</p> <ul style="list-style-type: none"> • Follow view depth — Copies the levels of the hierarchy based on the start and end view depth of the current cell • All levels — Copies all levels of the hierarchy of the current cell <p>5. In the Layout Viewing area, use the left mouse button to draw a rectangle around the area to copy.</p> <p>6. In the Copy dialog box, select the Selection rectangle check box and choose the selection criteria:</p> <ul style="list-style-type: none"> • Contain — Copies objects that are completely inside the selection rectangle • Touch — Copies objects that touch the selection rectangle • Clip — Copies objects that are based on the clip created by the selection rectangle

3. Click **Run**.

The current cell is copied from the input layer to the output layer. The objects in the cell that are copied are based on the view depth and selection rectangle settings.

Copying Selected Objects to a Different Layer

You can select and copy existing objects to a new layer.

Prerequisites

- You have a layout open in Calibre DESIGNrev that contains references, paths, polygons or text.

Procedure

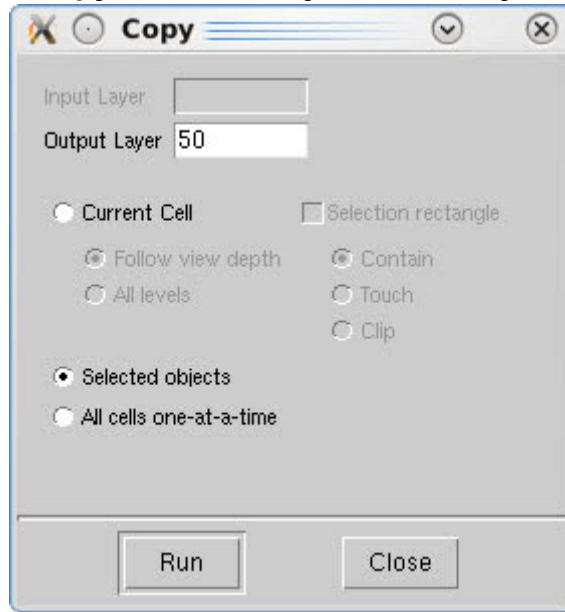
1. Select the objects you want to copy using one of the procedures described in “[Selecting Objects](#)” on page 91.

You can select objects on different layers and they will be copied to the same output layer.

2. Choose **Layer > Copy**.

This displays the Copy dialog box.

Figure 5-3. Copy Selected Objects on a Layer Dialog Box



3. Specify an Output Layer (note the output layer can be an existing layer or a layer that does not exist).
4. Select the “Selected Objects” option.

5. Click **Run**.

The selected objects are copied to the specified output layer. If you specified an output layer that did not exist, the newly-created layer will appear in the Layers Browser.

Copying Objects on a Specified Layer to a Different Layer

You can copy objects on an existing layer to a new layer.

Prerequisites

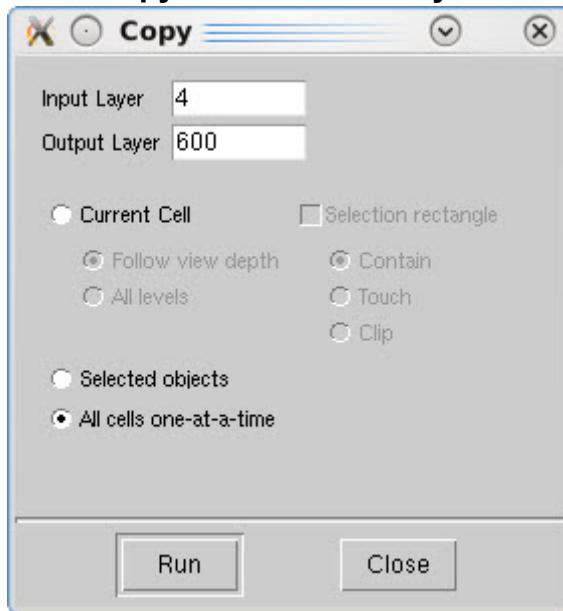
- You have a layout open in Calibre DESIGNrev that includes one or more layers.

Procedure

1. Choose **Layer > Copy**.

This displays the Copy dialog box.

Figure 5-4. Copy All Cells on a Layer Dialog Box



2. Select the “All cells one-at-a-time” option.
3. Specify an Input Layer (the input layer must be an existing layer).
4. Specify an Output Layer (the output layer can be an existing layer or a layer that does not exist).
5. Click **Run**.

The objects on the specified input layer are copied to the specified output layer. If you specified an output layer that did not exist, the newly-created layer will appear in the Layers Browser.

Deleting Objects and Cells

The process for deleting objects is basically the same regardless of the type of object you are deleting. However, the process for deleting cells differs from deleting objects.

Deleting an Object **103**

Deleting a Cell **104**

Deleting an Object

There are multiple methods for deleting objects in a layout.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. In the Object Selection toolbar, select the object type(s) you want to delete in the layout.
2. Select the object(s) in the layout that you want to delete.

When deleting paths or polygons, select the path or polygon only, not individual edges. The layout viewer assumes that deleting a selected path or polygon includes all edges and vertices, and selecting both paths or polygon as well as edges or vertices can cause performance issues in the deletion operation.

3. Use one of the following methods to delete the object(s):

If you want to...	Do the following:
Use a keyboard shortcut	Press Delete.
Use the GUI	Choose Edit > Delete .
Delete text or a polygon	Right-click and choose Delete .
Delete individual path edges or vertices	Select the edge or vertex and press Delete.

4. If the object(s) you are deleting are part of a cell that is referenced multiple times in the layout, you are prompted as to whether you want to clone the cell. Refer to “[Editing in Context](#)” on page 200 for more information on this topic.

Related Topics

[Selecting Objects](#)

Deleting a Cell

You can use the **Edit > Delete Cell** menu item or the **Delete** menu item in the Cells Browser popup menu to delete a cell.

Prerequisites

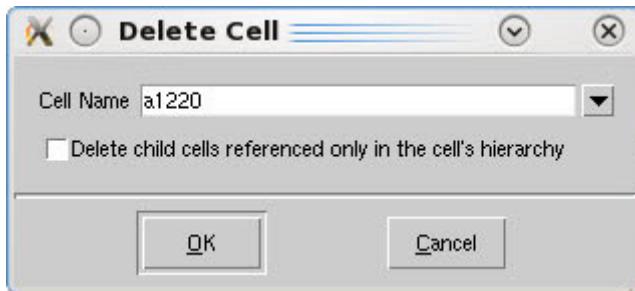
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

- Select the cell you want to delete in the Cells Browser.
- Use one of the following methods to display the Delete Cell dialog box:

If you want to...	Do the following:
Use the menu	Choose Object > Delete Cell .
Use the popup menu in the Cells Browser	Right-click on a cell in the Cells Browser and select Delete .

This displays the Delete Cell dialog box.



- Enter the name of the cell you want to delete or select a cell name from the dropdown list. You can use wildcards to delete multiple cells that match a particular pattern. For example, specifying "VIA*" deletes cells VIA12_0, VIA12_1, VIA12_2, and so on.
If the specified cell contains instances to other cells and you want to delete them, click the "Delete child cells referenced only in the cell's hierarchy" check box.
- Click **OK**.
This displays a warning confirming the cell to delete and that the undo operation is not available.
- Click **Yes** to delete the cell or **No** to cancel the operation.

Results

The application deletes the cell and all references to it. Child cells are also deleted if the cell contained instances to other cells and you enabled the “Delete child cells referenced only in the cell’s hierarchy” check box.

Merging Paths and Polygons

You can merge paths and polygons that are on the same layer and in the same cell.

Prerequisites

- Objects to be merged must be on the same layer and in the same cell.

Procedure

1. Select the Path and Polygon check boxes in the Object Selection toolbar.
2. Click the **Select** button in the Layout Viewer toolbar.
3. Select the paths and polygons you want to merge.
4. Right click and choose **Merge Shapes** or select **Edit > Merge Shapes**.

A dialog box is displayed if the selected objects are in a cell that is referenced multiple times. You can choose to edit all instances or the selected instance. Polygons that are in different references cannot be merged.

The selected paths and polygons are merged.

Working with Object Properties

The Calibre DESIGNrev GUI provides the ability to view, add, and edit object properties for references, paths, polygons, and text. The process for viewing, adding, and modifying properties uses the Object Properties dialog box.

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Viewing Object Properties

You use the Object Properties dialog box to view the properties of the selected object. The Object Properties dialog box contains tabs that correspond to the different types of objects in your layout.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Select Edge in the Object Selection toolbar.
2. Click the **Select** button in the Layout Viewer toolbar.
3. Select the edge of a polygon in the layout.

The application highlights the entire polygon with the primary highlight color, and highlights the selected edge with the secondary highlight color.

4. Right click and choose **Properties** or choose **Object > Properties**.
This displays the **Polygon** tab in the Object Properties dialog box.
5. Review the following information in the dialog box:
 - The coordinates of the vertices for the selected edge are highlighted.
 - The Edge/Vertex Index field displays the edge indices for the endpoints of the selected edge.
 - The Rise/Run data displays the change in the x and y coordinates, which you can use to quickly calculate the slope of the edge.

Note

 At this point, you can change the position of either endpoint of the edge by editing the coordinates for the vertex and clicking **Apply**.

6. Click **OK** to apply any changes and close the dialog box or click **Cancel** to discard any changes and close the dialog box.

Related Topics

[Adding Database Properties to Objects](#)

[Editing Object Properties](#)

[Object Properties Dialog Box](#)

Adding Database Properties to Objects

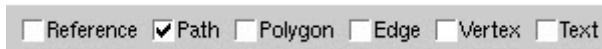
You can use the Object Properties dialog box to add database properties to reference, path, polygon, and text objects. Properties can be useful in many situations, such as selecting objects in a layout editor based on property values or extracting specific objects for downstream tools.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. In the Object Selection toolbar, select the type of object (Reference, Path, Polygon, Path, or Text) that you want to add properties to.



2. Click the **Select** button in the Layout Viewer toolbar.

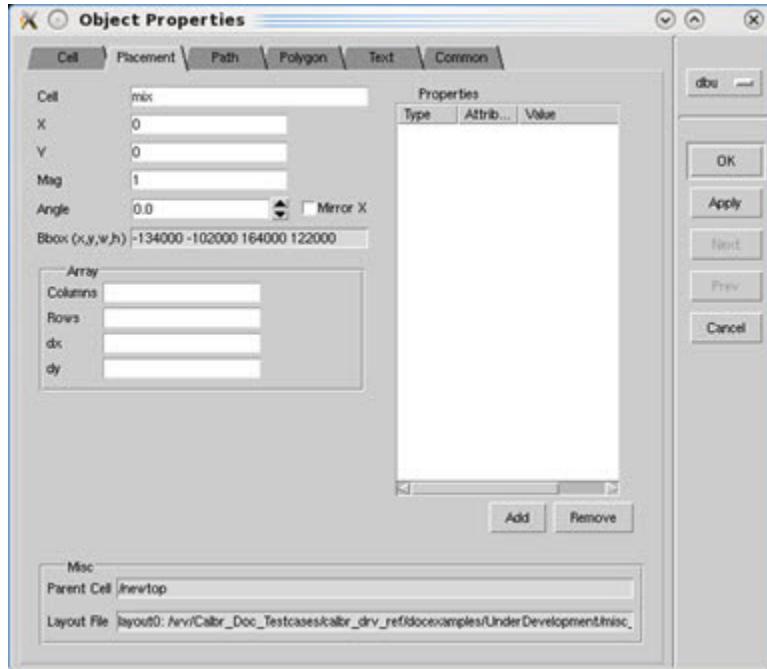


3. Select the reference, path, polygon, or text object in the layout that you want to add a property to.
4. Right click to display a popup menu and choose **Properties** or choose **Object > Properties**.

Common Editing Tasks

Adding Database Properties to Objects

This opens the Object Properties dialog box. The tab displayed depends on the type of object (reference, path, polygon, text) that is currently selected.



5. Below the Properties field, click the **Add** button to add a property.

When adding properties to a GDS or OASIS file, the Type defaults to GDS and the Attribute is automatically assigned a numeric value. The Attribute value is automatically incremented based on the previous attribute value.

6. To modify the type property, click the Type value to display a dropdown list that contains the Gds and User options.



7. Select Gds or User from the dropdown list.

- **Gds** — Specifies the property type assigned to the selected object is a GDS property. You can assign this property to objects in a GDS or OASIS database. For OASIS databases, this value specifies the property is an OASIS property (S_GDS_PROPERTY) that represents a GDS-style property.
- **User** — Specifies the property type assigned to the selected object is an OASIS user property. This property type is not saved with a GDS database.

8. To modify the attribute property, click the Attribute value and enter a valid value representing the attribute number. For a GDS property type, only positive integers between 0-65535 are allowed. For a User property type, it can be a valid OASIS string.
9. To modify the value, click in the Value field and enter an ASCII string representing the property value.
10. Click **Apply** to apply the values to the file.
11. Click **OK** to close the dialog box.

Related Topics

[Editing Object Properties](#)

[Object Properties Dialog Box](#)

Editing Object Properties

You use the Object Properties dialog box to edit the properties of the selected object. The tabs in the Object Properties dialog box correspond to the different types of objects in your layout.

When opening a GDS or OASIS layout, you can enable database property modification by enabling the “Preserve properties” check box located on the **Options** tab of the Choose Layout Files dialog box.

Note

 The OASIS facility for adding properties to files, cells, and elements is not available in GDSII. OASIS user-defined properties are discarded when writing a GDS formatted file.

You can read, edit, and write GDS properties for SREF, AREF, and geometry objects in a layout. You can read, edit and write OASIS element-level properties in both S_GDS_PROPERTY and user-defined types.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. In the Object Selection toolbar, select the type of object (Reference, Polygon, or Path) that you want to add properties to.
2. Click the **Select** button in the Layout Viewer toolbar.
3. Select the reference, path, or polygon.
4. Right click and choose **Properties** or choose **Object > Properties**.

Depending on the object you select, this opens the **Reference**, **Path**, or **Polygon** tab in the Object Properties dialog box and displays the properties of the selected object.

5. Modify the properties as follows:

- For path objects you can edit the shape, layer number, type, width, and GDS or OASIS properties.

If you want to...	Do the following:
Edit the shape	Modify the coordinates of one or more of the edges or vertices, which are displayed in the left side of the dialog box.
Edit the layer assignment	Modify the value in the Layer Number text box. The layer number you specify must be an existing layer.
Edit the type of path end	Select the type of path end from the drop down list. Valid values are: <ul style="list-style-type: none"> 0 — Square ended paths. 1 — Round ended. 2 — Square ended, extended by 1/2 width. 4 — Variable length extensions. If you specify this value, you must also specify values for Begin Extension and End Extension.
Edit the width	Change the value in the Width text box. You can specify zero-width paths, however the Boolean and SIZE operations available through the Macros menu ignores zero-width paths.
Edit the properties	Click Add or Remove to add or remove GDS or OASIS properties to the path.

- For polygon objects you can edit the shape, layer number and properties. Depending on how you edit the coordinates, you can either move or change the shape of the polygon.

If you want to...	Do the following:
Edit the shape	Modify the coordinates of one or more vertices, which are displayed in the left side of the dialog box. The polygon coordinates are expressed in database units and listed counter-clockwise starting with the vertex nearest the origin of the layout.
Edit the layer assignment	Modify the value in the Layer Number text box. The layer number you specify must be an existing layer.

If you want to...	Do the following:
Edit the properties	Click Add or Remove to add or remove GDS or OASIS properties to the polygon.

- For reference objects you can edit the placement, layer number and properties. Depending on how you edit the placement, you can either move or change the size of the cell reference.

If you want to...	Do the following:
Edit the placement	Modify the cell name, X- and Y-coordinates, magnification, and angle in their respective text boxes. The reference coordinates are expressed in database units and represent the offset from the origin of its referenced cell.
Edit the properties	Click Add or Remove to add or remove GDS or OASIS properties to the polygon.

- When you are finished editing the object data, click **Apply** to apply the changes.
- Click **OK** to close the dialog box.

Related Topics

[Viewing Object Properties](#)

[Adding Database Properties to Objects](#)

[Object Properties Dialog Box](#)

Chapter 6

Viewing Design Data

Calibre DESIGNrev includes several options, such as rulers, layer maps, and overlays, for configuring how you view your design data.

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Inspecting Layouts

The Calibre DESIGNrev layout viewer lets you inspect a layout in many different ways.	
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Measuring Distances with Rulers

The easiest way to check feature dimensions in your layout is to measure them with rulers, which you manually draw directly onto your design or you can automatically generate rulers for a selected a path or polygon object. These rulers are not saved with the design. You can export rulers or take a snapshot of the rulers.

Note

 The manual process allows you to draw multiple rulers if configured in your ruler preferences. The automatic process only supports drawing rulers for a selected path or polygon object.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

If you want to...	Do the following:
Manually measure one or more objects	<ol style="list-style-type: none"> Choose View > Show Rulers Palette to display the Rulers Palette. Set your ruler preferences by choosing Options > Ruler. This displays the Rulers Palette tab in the Preferences dialog box. Set the desired ruler preferences. For example, you can click the “Allow multiple rulers” check box to enable the ability to draw multiple rulers. After setting the ruler preferences, click OK to save your preferences and close the dialog box. Click the Ruler button in the “Layout Viewer Toolbar” on page 241. <p> Note: You can press “r” to set the edit mode to Ruler.</p> <ol style="list-style-type: none"> In the Layout Viewing Area, click the left mouse button to define the starting point for the ruler. Move the mouse to the desired end point location of the ruler and click the left mouse button a second time. <p>This displays a ruler showing the distance between the two endpoints and the differences between the x and y coordinates. The Rulers palette also displays the distance, in addition to the beginning and ending points.</p>
Automatically measure a selected path or polygon object	<ol style="list-style-type: none"> In the Object Selection toolbar, ensure the Path or Polygon object is selected. In the layout viewer, right-click on a path or polygon to display a popup menu and choose Measure Shape. <p>This creates rulers for the x and y direction and displays the ruler lengths.</p>

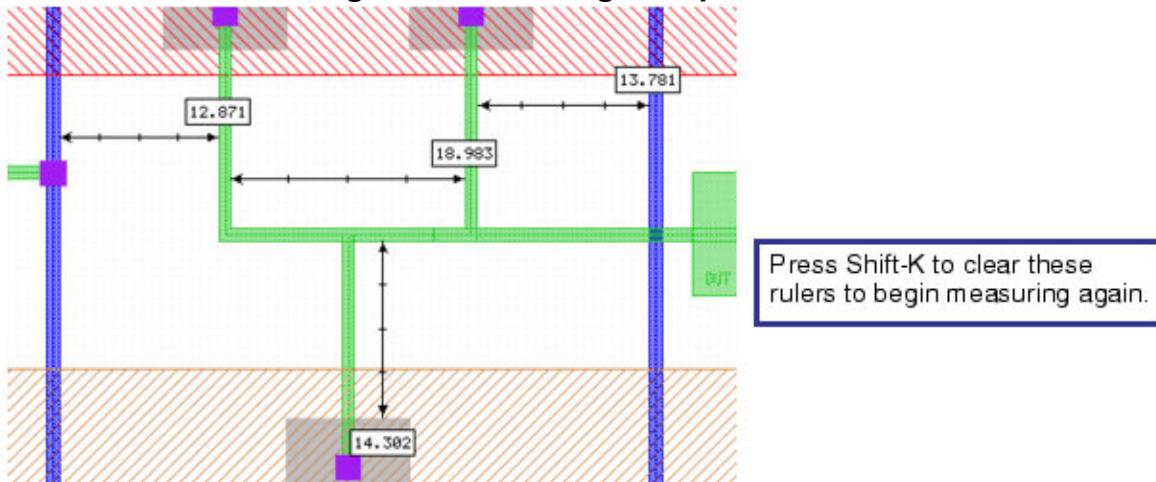
Results

You can use one of the following options to clear multiple ruler measurements.

If you want to...	Do the following:
Use the keyboard to clear all rulers	Press Shift-K.
Use the keyboard to clear one ruler at a time	Press k.

If you want to...	Do the following:
Use the menus to clear all rulers or one ruler at a time	<ol style="list-style-type: none">1. Choose Options > Ruler to display the Rulers tab in the Preferences dialog box.2. In the Clear Rulers section, choose All to clear all rulers or Last to clear rulers one by one.

Figure 6-1. Clearing Multiple Rulers



Related Topics

- [Changing Ruler Defaults](#)
- [Rulers Palette](#)
- [Changing the Grid Settings](#)
- [Preferences Dialog Box - Rulers Tab](#)

Getting Data About a Selected Object

To get comprehensive information about an object in your layout, select it and view its properties. The properties displayed vary according to the type of object you have selected. The object data aids you in targeting areas for fixes.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Verify the filters in the Object Selection Toolbar are set for the type of object you want to select.

Procedure

1. Select the desired object.

You can tell it is selected if its outline is highlighted.

2. Use one of the following options to display the Object Properties dialog box.
 - Right click on the selected object to display the popup menu and choose **Properties**.
 - From the menu, choose **Object > Properties**.

Results

The appropriate tab for the selected object type is automatically displayed. You can use the Object Properties dialog box to modify object data.

Related Topics

[Object Selection Toolbar](#)

[Object Properties Dialog Box](#)

[Editing Object Properties](#)

Viewing Two Designs Side by Side

When you want to look at two designs simultaneously, you can load them into separate windows. When you open two or more layouts in their respective windows within one Calibre DESIGNrev session, you can synchronize the panning and zooming operations.

Procedure

1. Open the first design in the layout viewer either on invocation using the -m command line option or by choosing **File > Open Layout Files**.
2. Choose **File > New Window** to open a new Calibre DESIGNrev window.
This automatically opens the layout you opened in the first step.
3. Use one of the following methods to open a layout or bookmark in the new window:

If you want to...	Do the following:
Open a layout	Choose File > Open Layout Files .
Open a previously-saved bookmark	Choose the bookmark name from the Bookmarks menu.

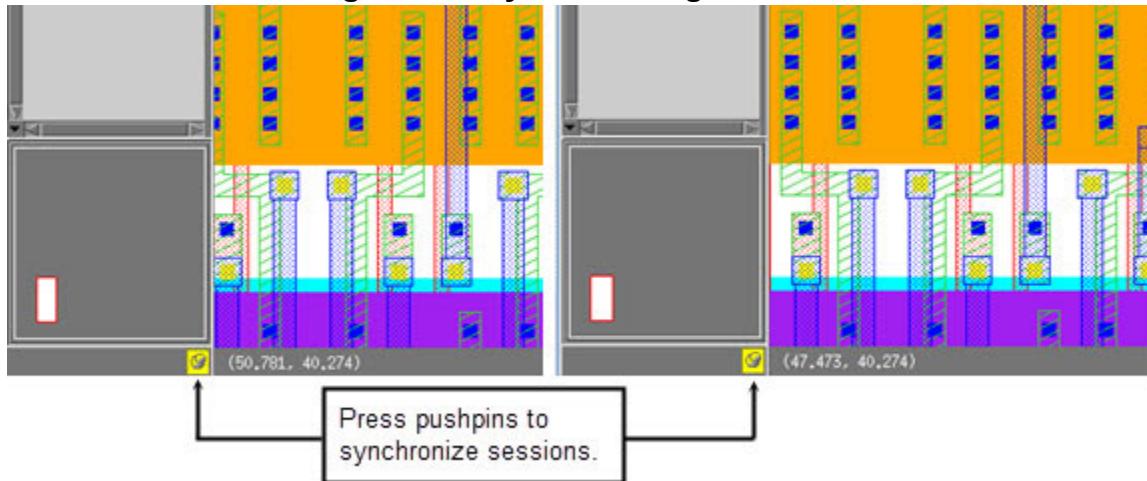
4. Move and resize the two windows so both are visible at the same time.

5. Adjust the views as needed so you are comparing the correct portions of the layout:

If you want to...	Do the following:
Compare two versions of the same layout	<ol style="list-style-type: none"> 1. Adjust the view in the first layout. 2. Choose View > Go To to read the coordinates and zoom level from the Go To dialog box. 3. In the second layout, choose View > Go To and enter the coordinates along with the zoom level into the Go To dialog box, and click Apply to see the same feature.
Compare two different layouts	<ul style="list-style-type: none"> • Use the cell browser to display the same cell. • Use panning and zooming to find the areas that interest you. • Use the Find Object Toolbar to find the objects that interest you.

6. Click the pushpin button located at the bottom of the Layout Navigator (refer to [Figure 6-2](#)) to turn on synchronization mode.

Figure 6-2. Synchronizing Windows



Related Topics

[Bookmarks](#)

[Zoom and Pan Features](#)

[Cells Browser](#)

[View Menu](#)

Find Object Toolbar

Controlling the Viewing Window

For complex designs, the main window may fill with so much information that interpreting what you are seeing can be difficult. Calibre DESIGNrev provides options, such as changing the view depth or hiding layers, to assist in effectively viewing layouts in the main window.

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Changing the View Depth

You can change the view depth to see the cells you want to work with and to orient yourself in the layout.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a hierarchical layout is open.

Procedure

1. Change the view depth using one of the following methods:

If you want to...	Do the following:
Use the status bar	Click the Depth values on the layout viewer status bar (on the bottom of the Calibre layout viewer window) to invoke the View Depth dialog box.
Use the menus	Choose View > Change Hierarchy Depth .
Use a keyboard shortcut to set a specific view depth	Start depth: Press Ctrl-<digit> End depth: Press <digit>.
Use a keyboard shortcut to increment the view depth	Increment from depth: Press “Ctrl - Shift - >” Increment to depth: Press “>”
Use a keyboard shortcut to decrement the view depth	Decrement from depth: Press “Ctrl - Shift - <” Decrement to depth: Press “<”
Use a keyboard shortcut to set the maximum end depth	Press “99”

2. Press “0” to display the top level of the design.

This level displays the least amount of detail. It shows you what the layout or cell looks like at the cell block level. When a non-top cell is displayed, this selection shows the top of that cell. Use this setting to become oriented with the layout.

3. Press “1” to display the top level and first level of hierarchy.

Cells beneath this first hierarchy level are seen as cell blocks.

4. Press “2” to display the subcells.

Subcells show up as cell reference outlines.

You can continue to press digits to display each level of the hierarchy in your layout. For example, if you layout has five levels of hierarchy, you can press “5” to see all levels.

Results

When selecting a view depth of N, all objects above and including level N become visible. All cell instances below level N are displayed as instance references, however the objects within those references are not visible.

Tip

 Press ‘99’ to display all hierarchy levels. This sets the end depth to 9999.

Hiding One or More Visible Layers

Calibre DESIGNrev provides options for hiding or showing all layers, hiding a single layer, or hiding multiple layers in order to better view the layout.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

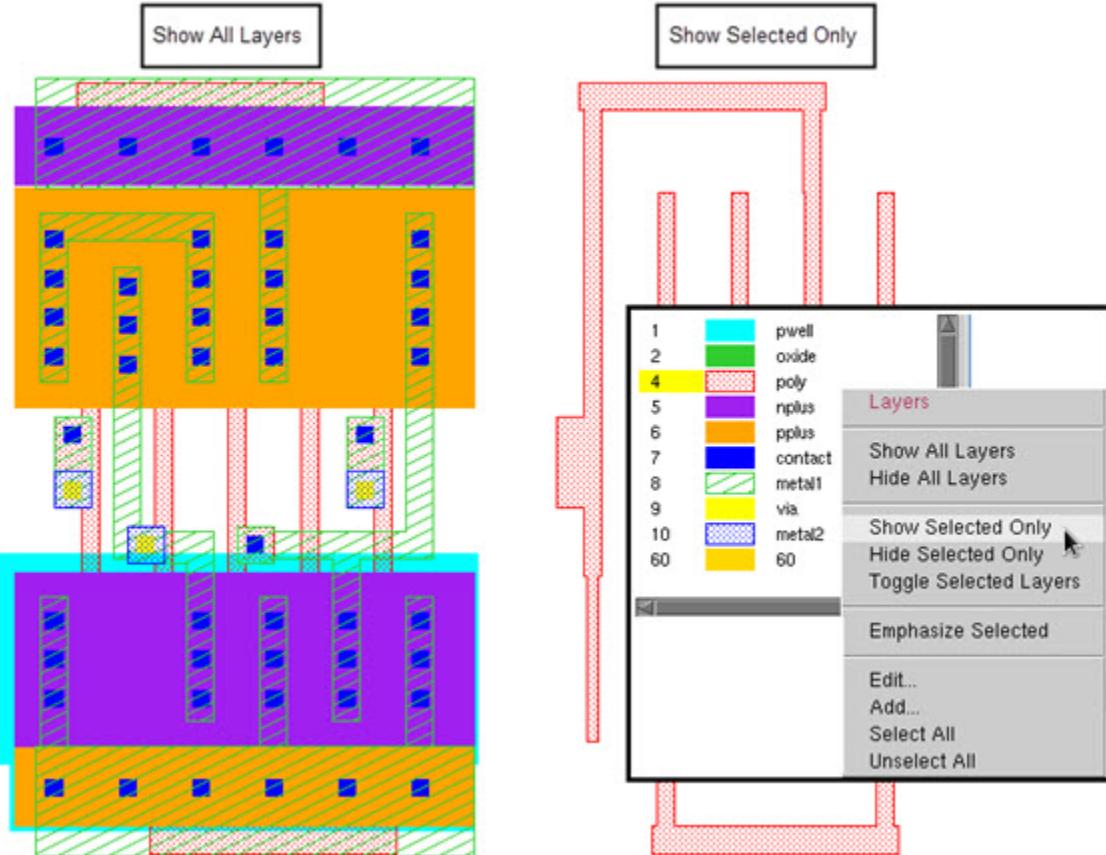
Procedure

Use one of the following methods to hide, show, or emphasize layers:

If you want to...	Do the following:
Hide or show all layers	<ul style="list-style-type: none">• Select Shift + Hide or Show button on the Layers Browser.• Unselect all layers in the Layers Browser and click Hide or Show.• Right-click the Layers Browser and select Hide All or Show All.
Emphasize a layer	Right-click the Layers Browser and select Emphasize Selected .

If you want to...	Do the following:
Hide a single layer	Double-click a layer in the Layers Browser to hide the layer. If a particular polygon dominates the main display window, look for the layer color in the Layers Browser, and then hide it to see its features below.
Hide multiple layers	<ol style="list-style-type: none"> Select the first layer with a left-click. Press the Ctrl or Shift key and select additional layers. Use the Shift key to select additional consecutive layers, or the Ctrl key to select additional non-consecutive layers. Select the Hide button to hide the selected layers, or right-click in the Layers Browser and select Hide Selected Only layers. Switch back to viewing all layers by right-clicking in the Layers Browser and selecting Show All. <p>Toggling between Show All Layers and Show Selected Only is the best way to isolate a single layer without losing its context in the layout when navigating around layouts, as shown in Figure 6-3.</p>

Figure 6-3. Toggling Between All Layers and Selected Layers



Changing the Default Behavior for Displaying Overlapping Layers

To display layer data, the layout viewer draws geometries one layer at a time. When one geometry overlaps another on a different layer, the default mode is to overwrite the colors. You can change the default mode to blend the colors of the overlapping layers.

Prerequisites

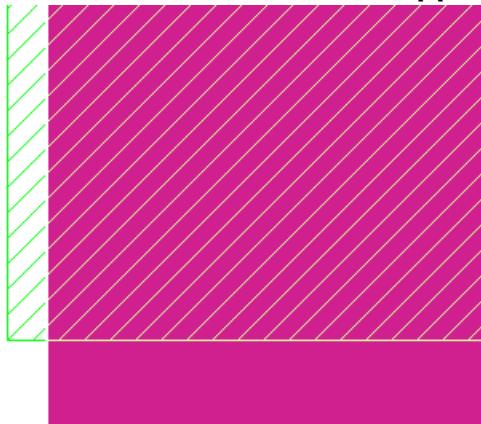
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. To change the default behavior and have overlapping shapes on different layers display as a new color, choose **Layer > Blend Colors**.

The colors where the two shapes on different layers overlap are ORed together. For example, a *blue* shape intersecting a *yellow* shape results in a *green* area, where the shapes overlap. The overlap color is usually a lighter color as ORing colors tends to saturate the red, green, and blue color values. A white shape, which already has 100% red, green and blue colors, always has a white overlap. The background color does not affect how the colors are merged, although there is a small performance penalty for drawing with light backgrounds ([Figure 6-4](#)).

Figure 6-4. Blended Colors in Overlapping Shapes



2. To change the behavior and overwrite the colors of overlapping shapes on different layers, choose **Layer > Overwrite Colors**.

Related Topics

[prefs_view_layerColorDrawMode](#)

Changing Fill Patterns to See Other Features

To make layers more distinguishable from each other, consider changing the fill patterns to stripes or cross-hatches. Any sparse fill pattern could help the visibility of multiple layers in your layouts. Contrasting light colors with a dark background also helps in detecting small features embedded in your layouts.

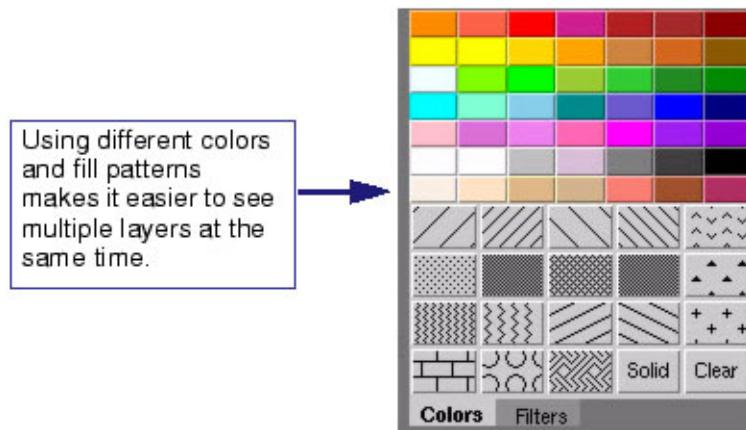
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

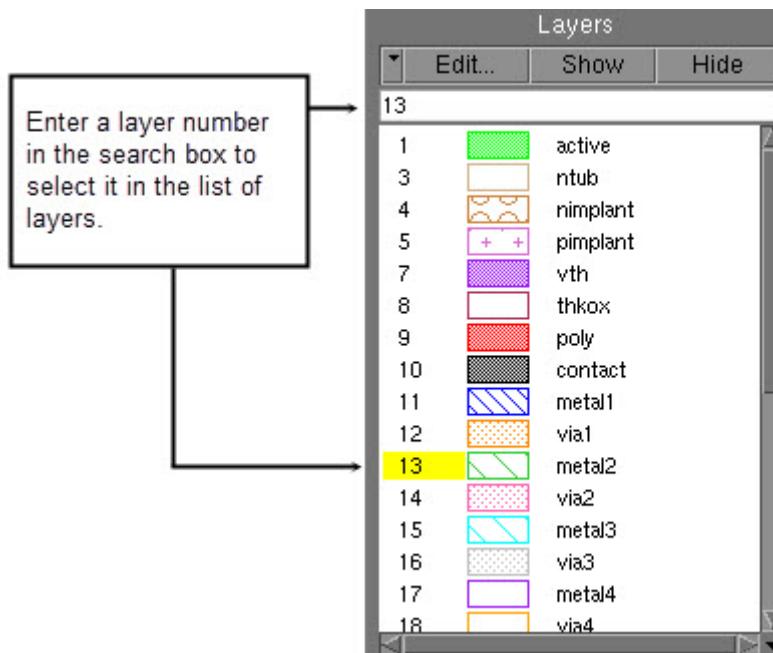
1. Select the layer in the Layers palette.
2. In the **Colors** tab, click the desired fill or color.

Figure 6-5. Change Fill Patterns and Polygon Shades to Increase Visibility



Any fill or color changes are automatically applied to the layer in the layout and Layers palette.

3. To search for a specific layer, enter the layer number (or layer name) in the Layers Browser search box.



The layer is automatically selected in the list of layers.

Defining Groups of Layers with Layer Filters

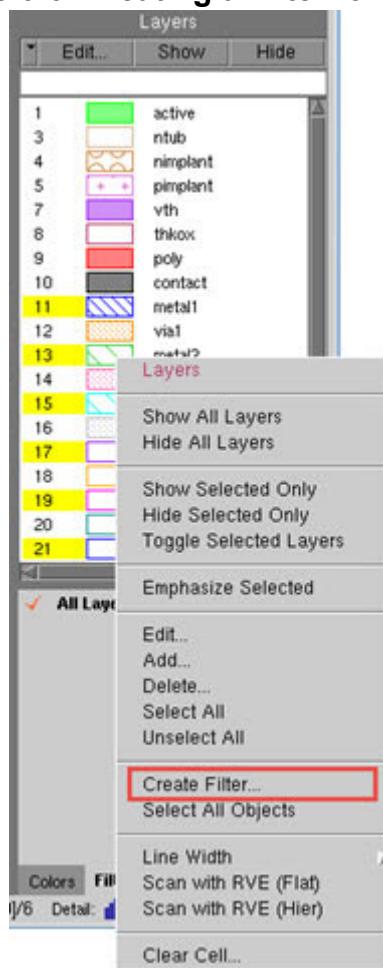
You can choose to show or hide groups of layers using layer filters. This can be helpful if you want to switch back and forth viewing groups of layers, depending on your current task. Any layer filters you create are saved to the layer properties file.

Prerequisites

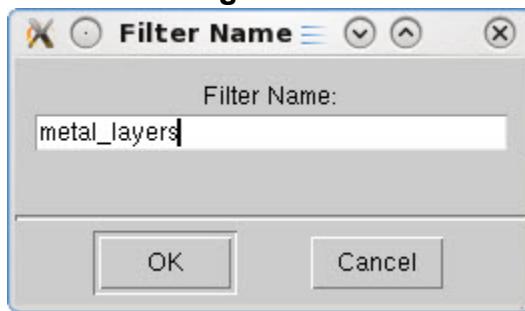
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. In the Layers palette, use Ctrl + Click to select the layers you want to filter.
2. Right-click to display the popup menu and select **Create Filter**.

Figure 6-6. Creating a Filter for Layers

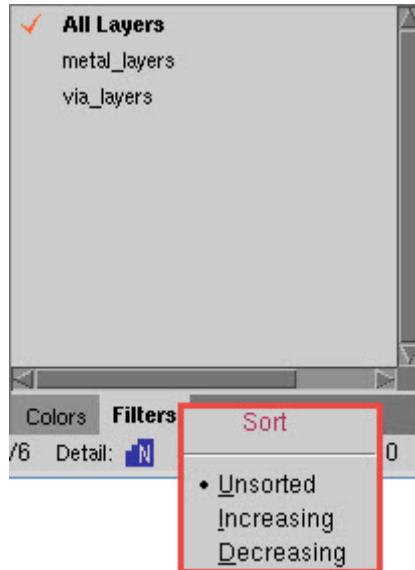
This displays the Filter Name dialog box.

Figure 6-7.

3. Specify a filter name and click **OK**.

The **Filters** tab, located at the bottom of the Layers Browser, displays the name of your new filter. You can double-click on All Layers or a filter name to display the associated set of layers.

4. Sort the filters by right-clicking on the **Filters** tab to display a popup menu providing options for sorting the layer filters.



You can drag and drop a filter in the list. The resulting list is then considered to be unsorted.

Results

The “All Layers” filter always displays at the top of the filter list regardless of the selected sorting state. The **Filters** tab displays the order in which the filters are sorted (increasing or decreasing). When the layers filter is sorted, the ordering of the list is maintained and updated to include or remove any filters. When the layers filter is unsorted, the filter list is preserved when adding a new filter, which is placed at the bottom of the filter list.

Related Topics

[Layers Browser](#)

Hiding Cells from View

To hide unnecessary cells from the viewing window, use the Show/Hide References dialog box. Cells can also be hidden by right-clicking on a cell in the Cells Browser.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

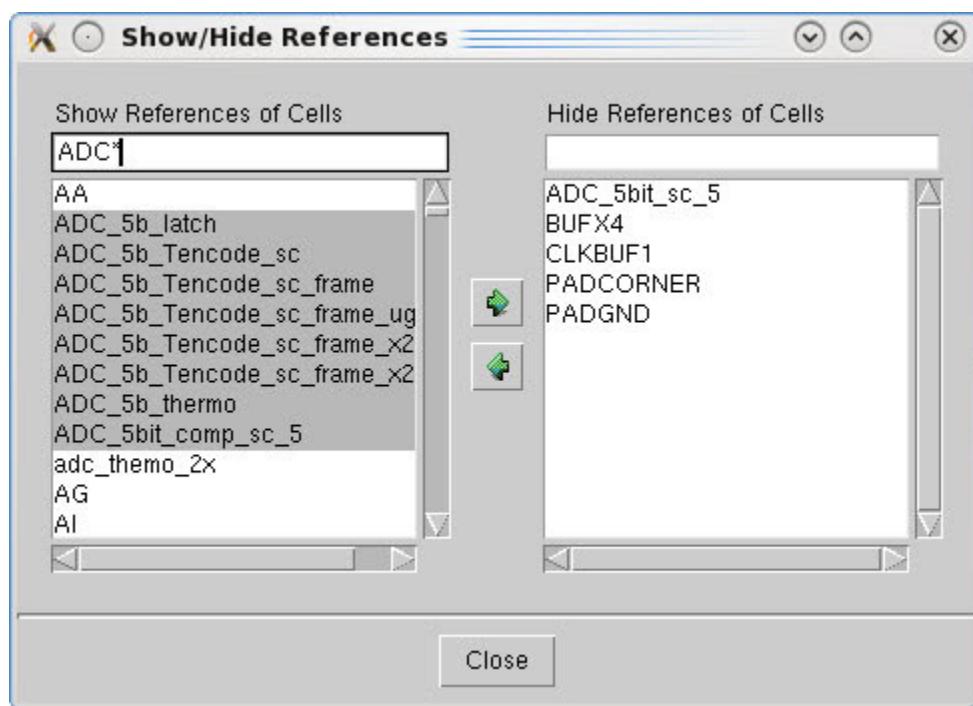
Procedure

1. Choose **View > Show/Hide References**.

This displays the Show/Hide References dialog box.

2. Use one of the following methods to select the cells you want to hide.

If you want to...	Do the following:
Use the mouse to select cell references	<ul style="list-style-type: none">Click a cell reference name.Press Ctrl and select multiple non-consecutive cell reference names.Press Shift and select multiple consecutive cell reference names.
Use the text entry box to select cell references	In the text entry box, type the cell reference name. You can use a wildcard '*' to select multiple cells.



3. Click the arrow to move selected cells to the Hide References for Cells list box.
The layout automatically updates and hides the cell references.
4. Click **Close**.

Working with Text and Character Shapes

Calibre DESIGNrev provides the ability to preserve GDS text attributes. While working in a layout, you can create and modify text objects and properties. You can also create and modify character shapes.

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Preserving Text Attributes

Text Attributes refer to information stored in a design file affecting the display of text. For example, GDS Text Attributes apply to the following characteristics: Text height, alignment, and rotation.

Note

 OASIS format does not support Text Attributes.

By default, GDS text attribute data is preserved when you open a layout. Text attribute data is stored in GDS files using the format type names PRESENTATION, STRANS, MAG, and ANGLE.

Procedure

1. Invoke Calibre DESIGNrev and open a layout file by selecting **File > Open Layout Files**.
This displays the Choose Layout Files dialog box.
2. Choose the GDS layout you want to open and then click the **Options** tab.
3. In the Objects section, click the Preserve text attributes check box to enable (selected) or disable (unselected) the preserving of text attributes.
4. Choose any other desired options and click **Open**.

Results

When the Preserve text attributes check box is enabled and text is loaded into the layout viewer, the application preserves it throughout all data manipulation operations. When you save the layout file, the application writes the text attribute data to the layout file along with all other changes made to the layout.

Related Topics

[Preferences Dialog Box - Objects Tab](#)

Creating and Modifying Text Objects and Properties

Text objects are non-geometrical objects containing alphanumeric text strings. Text objects are often used to label nets and ports for LVS comparisons and certain DRC checks. Text properties describe how the text objects appear.

Text objects are not printed on the mask (they are often confused with Character Shapes, which are polygons shaped like letters to be printed on the mask). Refer to [Table 6-1](#) on page 132 for information on the differences between text objects and character shapes.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

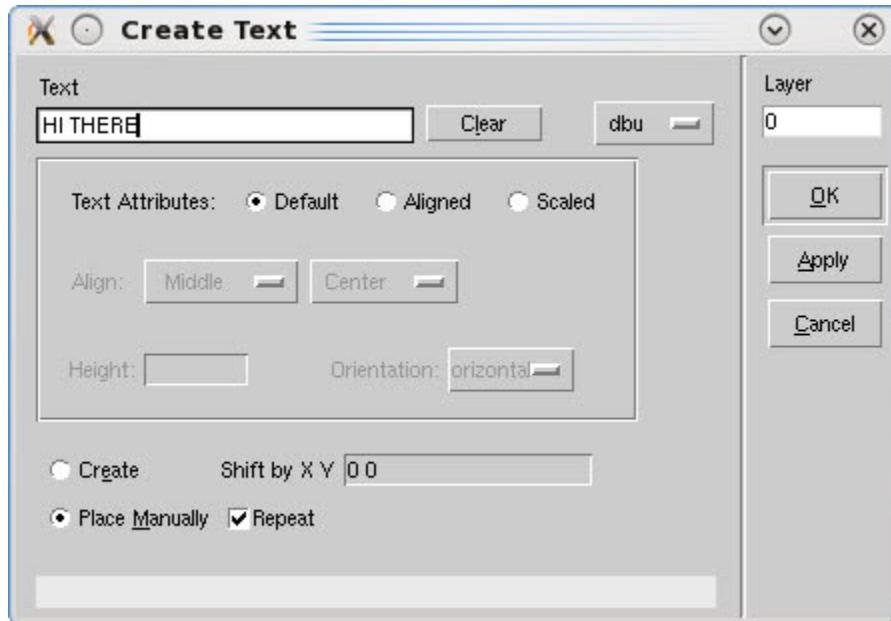
Procedure

- You can set preferences for creating text by choosing **Options > Objects**.

This displays the **Objects** tab in the Preferences dialog box.

- In the Text area, you can specify the settings to use for color, height, and orientation.
- Click **OK** to dismiss the dialog box.
- Choose **Object > Create Text**.

This displays the Create Text dialog box.



- In the Text box, type the text string to be displayed.
- Choose the units, dbu or um, to use for the text.

7. Click the desired Text Attributes radio button to set optional text attribute values.
Options include:
 - Default — Uses default align, height, and orientation settings for the text object.
 - Aligned — Enables the Align menus, allowing you to customize the alignment of the text object.
 - Scaled — Enables the Align, Height, and Orientation menus, allowing you to customize the text object.
8. Choose if you want Calibre DESIGNrev to create the text object or if you want to manually place the text object. If you have Calibre DESIGNrev create the text object, you can specify coordinates that define the center of the text object in the “Shift by X Y” text box. If you manually place the text object, you can choose the repeat option to place the same text object in the layout multiple times.
9. Type the layer number on which to place the text object.
10. Click **OK**.

If you chose to have Calibre DESIGNrev create the text object, then it is automatically placed at the specified coordinates and on the specified layer. If you chose to manually place the text object, then you must click the desired location in the layout to place the text object.

The color of the text object is defined by the layer on which it appears.

11. To modify properties associated with the text object, click **Text** in the Object Selection toolbar and click the **Select** button in the Layout Viewer toolbar.
12. Click near the point of origin for the text object to select it.
13. Choose **Object > Properties** to display the Object Properties dialog box.
14. Modify the text object properties, including the layer, location, and the displayed text string. You can also modify some of the attributes, such as alignment and orientation, and add or remove GDS or OASIS user properties.
15. Click **OK** to apply the property changes or **Cancel** to discard any changes.

Related Topics

[Creating Character Shapes](#)

[Preferences Dialog Box - Objects Tab](#)

Hiding Text Objects

Text in areas of dense features and multiple layers can hinder you from selecting the correct shape.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

You can toggle between the following options to hide text:

If you want to...	Do the following:
Hide all text items	Choose View > Hide Text .
Hide text items on a lower level	Choose View > Hide Lower Level Text .

Creating Character Shapes

Character shapes are polygons in the shape of alphanumeric characters to be represented in the layout. Parentheses are also supported. These shapes are polygon data you save with the design and are printed on the final mask. These are often confused with Text Objects.

The differences between character shapes and text objects are summarized in [Table 6-1](#).

Table 6-1. Differences Between Character Shapes and Text Objects

Type	Attribute
Character Shapes	Character shapes are polygons in the shapes of alphanumeric characters and parentheses to be printed on the mask. Special characters, such as !@#\$%^&*_+, are not supported.
Text Objects	Text objects are elements in the layout that are used to annotate geometry with labels. These labels are used for various purposes like DRC checks and connectivity extraction. These are not printed on the mask.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Select a layer.
2. Draw a selection rectangle around the area where you want to add the text. To do this:
 - a. Position the cursor in one corner of the area.
 - b. Hold the left mouse button as you drag the cursor to the diagonally opposite corner of the area.
 - c. Release the left mouse button.

3. Choose **Object > Character Shapes**.

This displays the Insert Char Shapes dialog box.

4. Type the text string in the String text box.

5. Adjust the Character grid as necessary.

This defines a grid to which all character shapes are snapped when the text is created.

6. Choose the justification: left, center, or right.

7. Click **OK**.

Results

Calibre DESIGNrev creates the character string inside the selection rectangle. It is centered vertically within the rectangle and drawn as large as possible while maintaining the standard shapes for the characters.

Using Layer Maps

A layer map file is an ASCII text file that specifies how data on a database layer is represented in the layout viewer when a layout database file is opened. This file also specifies where layer-based data from a loaded layout is placed when exported from the layout viewer to another layout file or format.

The layer map file typically has a “.txt” or “.map” extension.

The layer map file does not map layer names, only numbers. Layer names are defined in a related layer properties (layerprops) file. In addition, the layer map file restricts layout viewer layer ID numbers to a single integer. It does not allow the use of a decimal point to create composite “layer.datatype” layer identifiers that are sometimes used in the layout viewer.

The layer map file format is the same for both opening and exporting layouts. However, the entries in the file are interpreted differently when opening a layout versus exporting a layout. For this reason, a different layer map viewer dialog box is supplied for each situation, with the dialog boxes accessible from the **File > Open Layout Files** and **File > Export Layout** menu items, respectively.

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Layer Mapping and Datatype Concepts

Layer mapping refers to the process of specifying how data on a database layer gets represented in the layout viewer. A datatype is a record in a GDS or OASIS layout that uniquely identifies the layer an object is on. For example, an object can be on layer 1 datatype 0, and another object can be on layer 1 datatype 1. These can be treated as separate layers.

Mapping layer data differs from expanding datatypes in the following ways:

- Expanding datatypes assigns each layer and datatype pair to a separate layer when loading data.
- Layer mapping can combine multiple layers and datatypes into a single layer. You can map data in both directions: combining multiple layers and datatypes into a single layer when loading data into the application or saving multiple layers as a single layer in the layout file when saving data.

A layer with datatypes has multiple sublayers associated with it. Each sublayer contains a different datatype.

You can use datatypes to attach information to a layer that states something about the composition of the layer (also known as expanding a datatype).

By default, the layout viewer preserves the database layer and datatype relationships. You can override this default behavior and combine all the data on a given layer into a single layer in the layout viewer by unselecting the “Expand Datatypes” control in the **Open Layout File Browser Options** tab. The setting defined in this dialog box applies any time you load a file, and the application preserves this setting in the preferences file.

To expand the datatypes, the application creates one layer in the layout viewer for each layer and datatype combination. The layer ID is generated as follows:

```
<layer_number>.<datatype_number>
```

Thus, datatype 7 on layer 12 is assigned the layout viewer layer ID 12.7.

Once the application has expanded the datatypes, the Layers Browser reflects this by displaying the full layer ID layer designation. Continuing with the previous example, the Layers Browser displays “12.7”.

Layer Map File Format

You can specify a layer map file when performing operations such as opening a layout, exporting a layout, or using the Layout Diff tool. The required format for a layer map file is:

```
<reference_layer> <reference_datatype> <layout_layer>
```

Where *<reference_layer>* and *<reference_datatype>* represent a layer and datatype to which you want to map a layer in the layout. The *<layout_layer>* can be specified as layer.datatype. For example:

```
0 0 10.10
1 0 11.0
```

Generating a Layer Map File from Scratch

You can generate a layer map file from scratch that is suitable for opening the layout.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode.

Procedure

1. From the top-level menu, choose **File > Open Layout Files**.

2. Click the **Options** tab.
3. Select the Layer Map option.
4. Click the **Review Layers** button.

This displays the Open Layout Layer Map dialog box.

If a layout is currently open, you can click the **Show design layers** button to display all layers in the layout.

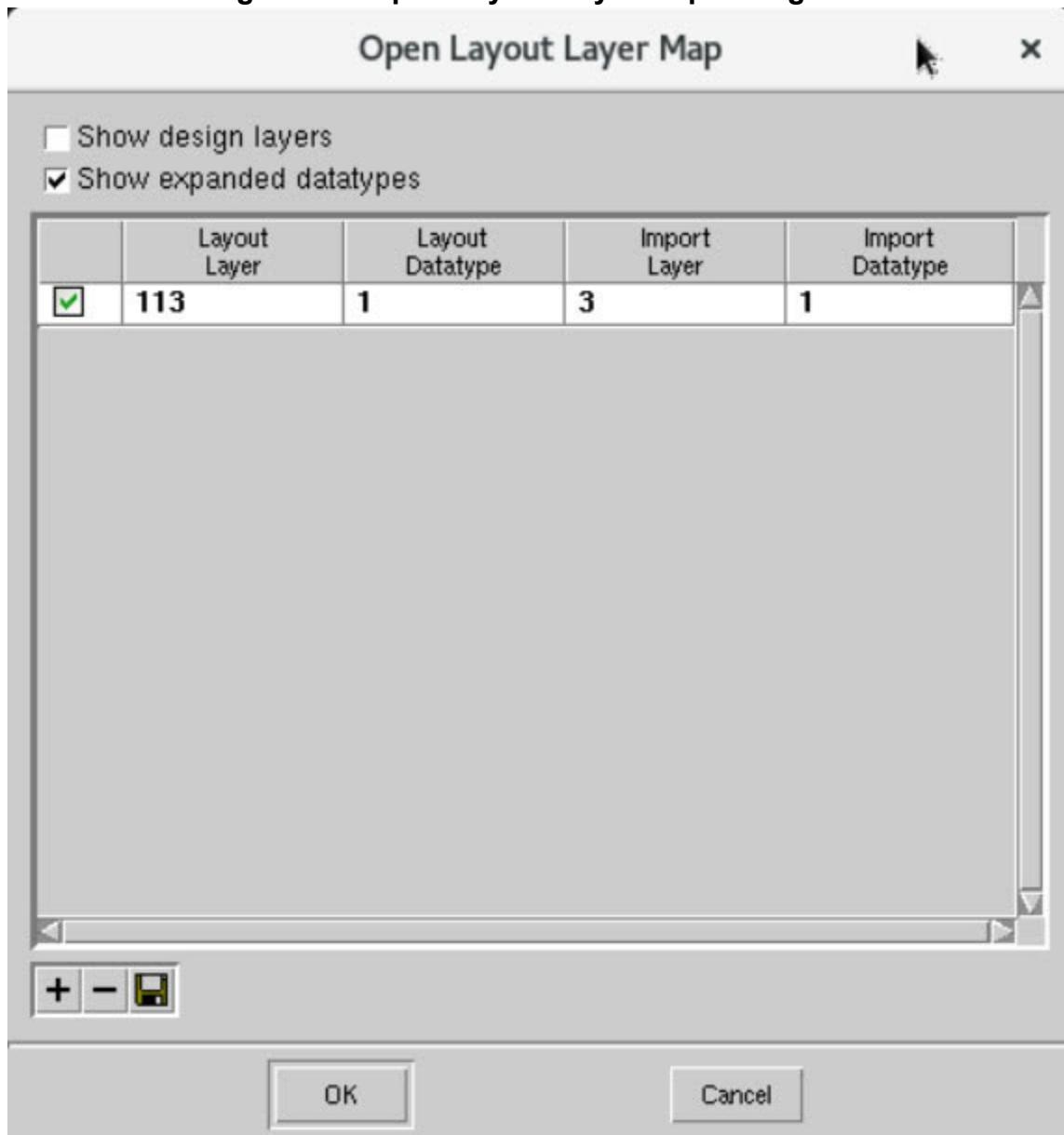
5. Click the “+” button to add an editable layer map entry.

Each entry has a check box, Layout Layer, Layout Datatype, Import Layer, and Import Datatype fields. When adding new layers, the check box should always remain enabled.

6. If all layers are displayed in the dialog box, you can click the checkbox next to an entry to select it for adding to the layer map.
7. If your source layout file does not contain datatypes, or the layout file has datatypes but you want them to be ignored when the layout is loaded, disable the “Show expanded datatypes” check box. This disables all fields in the Import Datatype column.
8. For each layer map entry:
 - Type in a layer and datatype pair found in your source layout file.
 - Type in the layout layer number that you want the import layer and datatype to map to when you load your source layout file into the viewer.

For example, if your source layout file contains data on layer 3, datatype 1, and you want this data to be displayed on layer 113 in the viewer, you enter ‘113’ into the Layout Layer field, ‘3’ into the Import Layer field, and ‘1’ into the Import Datatype field as shown in [Figure 6-8](#).

Figure 6-8. Open Layout Layer Map Dialog Box



9. To remove an unwanted layer map entry, click in one of the fields of that entry and then click the “-” button. The entry is removed from the list.
10. To sort the entries within a column in ascending or descending order, click the desired column heading.
For example, clicking on the Layout Layers column heading sorts the entries in this column in ascending and descending order. The same action applies to the Import Layer and Import Datatype labels.
11. When all entries are filled out, save the layer map to a file by clicking on the “disk” button.

This displays the Save Map to a File dialog box.

12. Type a file pathname in the File name text box.
13. Click **OK** to save the layer map to the file.

Results

Notice that the file you specified is now shown in the Layer Map File field. If you now intend to load a layout file and you want to use your new layer map file, activate the check box next to the layer map field.

Related Topics

[Choose Layout Files Dialog Box - Options Tab](#)

Generating a Layer Map File from an Unopened Layout File

You can generate a layer map file that is suitable for opening with a specific layout file.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode.

Procedure

1. From the top-level menu, choose **File > Open Layout Files**.
2. Browse to and select your source layout in the source layout filename in the File name field.
3. Click the **Options** tab and then click the **Review Layers** button.

This displays the Open Layout Layer Map dialog box.
4. To populate the layer map from your chosen layout file, select the “Show design layers” check box. This causes one of the following actions to occur:
 - If you previously created a cache file for your source layout, then the layer map should update promptly with the layers found in your layout file.
 - If no cache file exists, your source layout file has to be scanned to extract its layers. For large files this may take a significant amount of time. In this case, you are asked whether or not to proceed with the peek operation.
5. Once the layer map has been populated with all the layers from your source layout, you need to choose the layers that you want to use in your final layer map. Do this by selecting the check box associated with each entry you want to use.

Note

-  If an entry remains unchecked, it is not saved to any subsequent layer map file.
-

Each entry contains the default mapping to be used if the source layout file was loaded with no layer map at all.

Note

-  The Import Layer and Import Datatype fields cannot be edited, since they are determined by the source layout. You can edit the Layout Layer and Layout Datatype fields for each entry.
-

6. To sort the entries within a column in ascending or descending order, click the desired column heading.

For example, clicking on the Layout Layers column heading sorts the entries in this column in ascending and descending order. The same action applies to all column headings.

7. You can remove entries from the layer map by selecting the entry and clicking the “-” button.

Note

-  Any removed entries do not display when the source layout file is loaded. Removed entries are not saved to the layer map file.

Entries that are added using the “+” button are ignored when the source layout file is loaded, since all layers in the source layout file were already identified.

8. When all entries are edited, save the layer map to a file by clicking the “disk” button to display the Save Map to a File dialog box.
9. Type a filename in the File name text box.
10. Click **Save** or **Cancel** to close the Save Map to a File dialog box.
11. Click **OK** to close the Open Layout Layer Map dialog box.

Related Topics

[Choose Layout Files Dialog Box](#)

Generating a Layer Map File from a Loaded Layout File

You can generate a layer map file from a layout file that is already loaded in Calibre DESIGNrev.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Determine whether you want to export all, selected, or visible layers:

If you want to...	Do the following:
Export all layers	No action is required.
Export selected layers	Select the layers to export in the Layers Browser.
Export the visible layers	Select the layers to export in the Layers Browser. Right-click and choose Show Selected Only .

2. Choose **File > Export Layout**.
3. In the Layers field, select **All**, **Selected**, or **Visible**, depending on which layers you want to export.
4. Click the **Review Layers** button.

This displays the Export Layer Map dialog box. The layers that you wish to export for the loaded design are listed in read-only fields on the left side of the dialog box, under the Input Layer Name and Input Layer column headings. On the right-side of the dialog box are editable columns for Output Layer and Output Datatype. The output columns show the default mappings used for exporting the layout layers.

Note

 The Input Layer Name column is provided for reference only, as the layer map file does not retain layer names.

5. Click in the desired Output Layer or Output Datatype field to edit the value.
Once you edit a value, it is displayed in bold type.
6. You can click any column heading to sort the entries in that column in ascending or descending order.
7. When all entries are edited, save the layer map to a file by clicking the **Save As** button.
This displays the Save Map to a File dialog box.

Note

 You must edit at least one output field in order to save the layer map to a file.

8. Type a filename in the File name text box.

9. Click **Save** to save the layer map file and close the Save Map to a File dialog box.
10. Click **OK** to close the Export Layer Map dialog box.

Related Topics

[Export Layout Dialog Box](#)

Opening a Layout with a Layer Map File

This procedure describes how to apply a layer map file when opening a layout file.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode.

Procedure

1. Choose **File > Open Layout Files**.
2. Click the **Options** tab.
3. Select the **Map File** check box and browse to or specify the name of the layer map file.
4. (Optional) Click the **Review Layers** button to display the Open Layout Layer Map dialog box.

This displays the layers in the layer map file, allowing you to review the layers that are defined in the specified layer map file. When you are finished viewing the layers, click **OK** or **Cancel**.

5. In the Load Layers field, select the layers to load you want to load:
 - All — Loads all layers in a source layout file.
 - Custom — Loads only the layers defined in the layer map.

Note

 If you choose to load all layers from a source layout file, but your layer map file does not define all the layers in the layout files, then those layers not defined in the map file keep their source layer values in the layout viewer.

6. Click the **Files** tab and select a source layout file to open.
7. Click **Open** to finish loading the layout file.

Note

 Once a layer map has been selected and activated in the **Options** tab, it is used for all subsequent Open Layout File operations until it is either disabled or another layer map file is selected.

Related Topics

[Choose Layout Files Dialog Box - Options Tab](#)

Exporting a Layout with a Layer Map File

When exporting a layout file in Calibre DESIGNrev, you can choose a layer map file to export with the layout.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

- Choose **File > Export Layout**.

This displays the Export Layout dialog box.

- In the Layers section of the dialog box, select **All**, **Selected**, or **Visible** depending on which layers you wish to export.
- Check the **Map File** option to activate the file field and specify a layer map file.
- (Optional) Click the **Review Layers** button to see what layers are exported, and what layer map settings they are exported with.

Note

 If the layer map file does not define all layers to be exported, then those layers not defined in the map file are exported with their layer ID as seen in the layout viewer.

- Choose an output file and a format and click **Save**.

Related Topics

[layerprops File Format](#)

[Export Layout Dialog Box](#)

[Choose Layout Files Dialog Box](#)

Overlaying Layouts

Overlaying refers to the process of superimposing layouts (without concatenating the data) for the purpose of visual comparison. Calibre DESIGNrev provides the ability to create, edit, and work with overlays. The user interface for overlays is slightly different than that for viewing individual layout files.

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About Overlays

You can use the overlay feature to find similarities and differences in your designs. You can select multiple GDS or OASIS layout files to overlay and compare in the layout window. This allows you to compare multiple layout files to an original design. Overlays are view-only, so all of the edit features are disabled within the GUI. However, you can select objects in any of the layouts, take ruler measurements, and use all basic layout viewing capabilities. In addition to using overlays to visually compare layouts, you can save overlays to GDSII and OASIS formats, allowing you to visualize a chip before the final merge.

Note

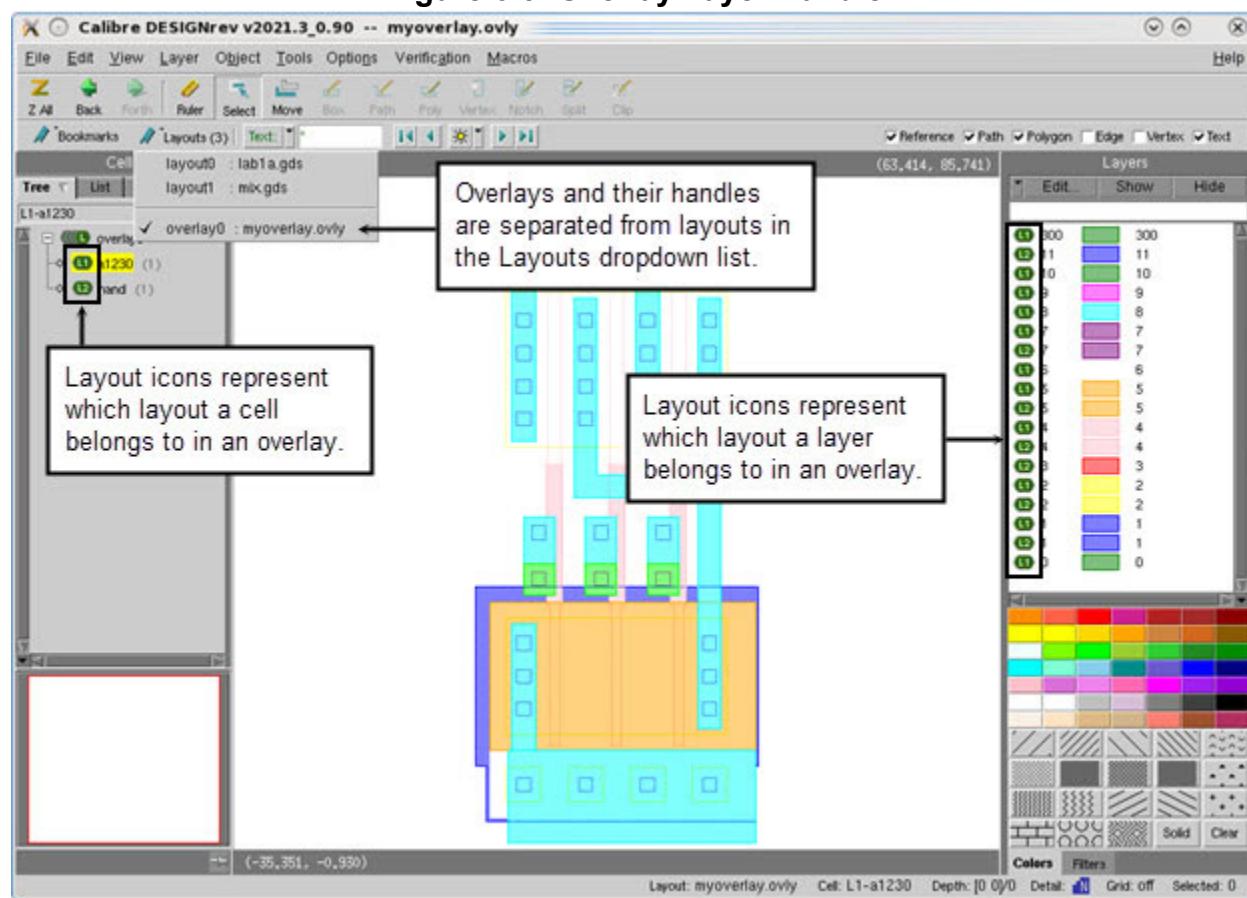
 In addition to using the overlay feature to superimpose several layouts, you can also use overlays to apply transforms to a single layout.

You can load multiple instances of one layout in an overlay. The layout is loaded only once to save memory. However, each instance of the loaded layout is independent. You can change the top-level cell, alignment, and layer properties respectively for each single instance. This enables you to do visual IC chip assembly with multiple instances of a single block, and it allows you to compare two or more cells in the same chip.

Accessing the Layout in the Cells Browser and Layers Browser

One difference between the layout viewer GUI for an overlay versus individual layouts is the presence of *layout icons* (see [Figure 6-9](#)) in the Cells and Layers Browser. These layout icons are the layout differentiators for the overlay layouts.

Figure 6-9. Overlay Layer Handle



Tip

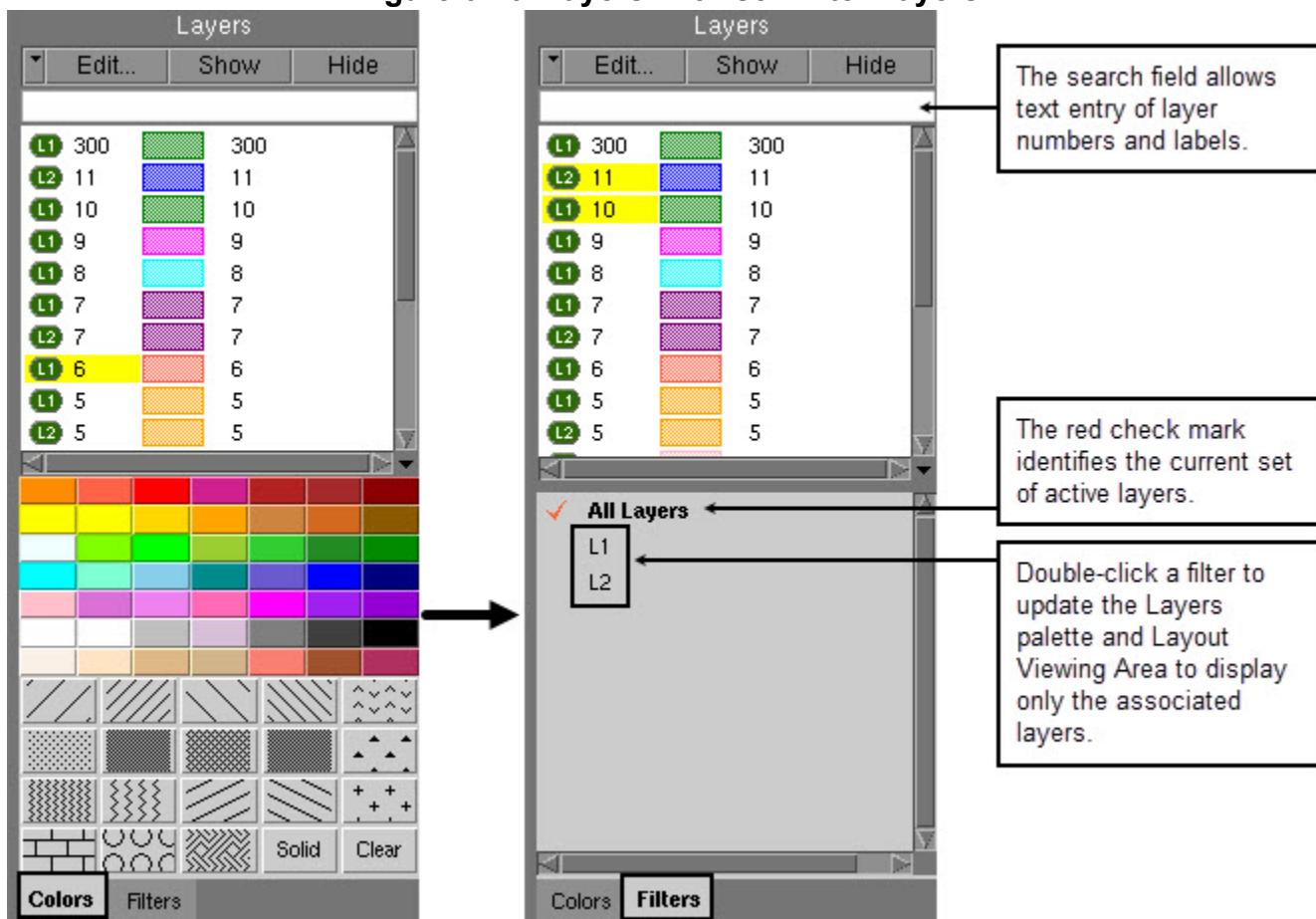
The small push pin in the lower right corner of the World Navigator is used to preserve the navigator's view coordinates when switching cells or layouts. This is useful for comparing overlays if you want to inspect the same area in a different cell.

The layout viewer GUI for an overlay is similar to the user interface for individual layouts. When an overlay is open, the **Filters** and **Colors** tabs display the current status of the layer filters in addition to the layer colors and patterns.

Filtering Layers in the Layers Browser

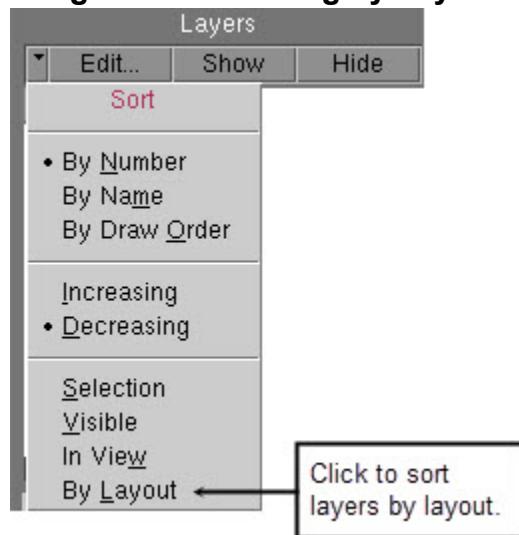
If you have an overlay open, the layout viewer displays the **Filters** and **Colors** tabs at the bottom of the Layers Browser. The **Colors** tab displays the layer colors and patterns shown in Calibre DESIGNrev by default. The **Filters** tab displays the current list of filters or overlays, with the active set of filters identified by a red check mark. A filter for each layout in a loaded overlay is automatically added to the Filters tab. Click any filter in the **Filters** tab to make it active and update the Layers palette and Layout Viewing Area accordingly. Using the example shown in [Figure 6-10](#), double-clicking L1 in the **Filters** tab updates the Layers palette and Layout Viewing Area to display the only the layers associated with L1.

Figure 6-10. Layers Browser Filter Layers



You can sort overlay layers by name, number, or draw order. Overlay layers sorted by name are sorted in alphanumeric order by layer name. If you choose to sort by layer number, you have the option of then sorting the layer numbers by layout. The **By Layout** option is displayed only when you enable the **By Number** option as shown in Figure 6-11. Layers can then be sorted by layout and layer number.

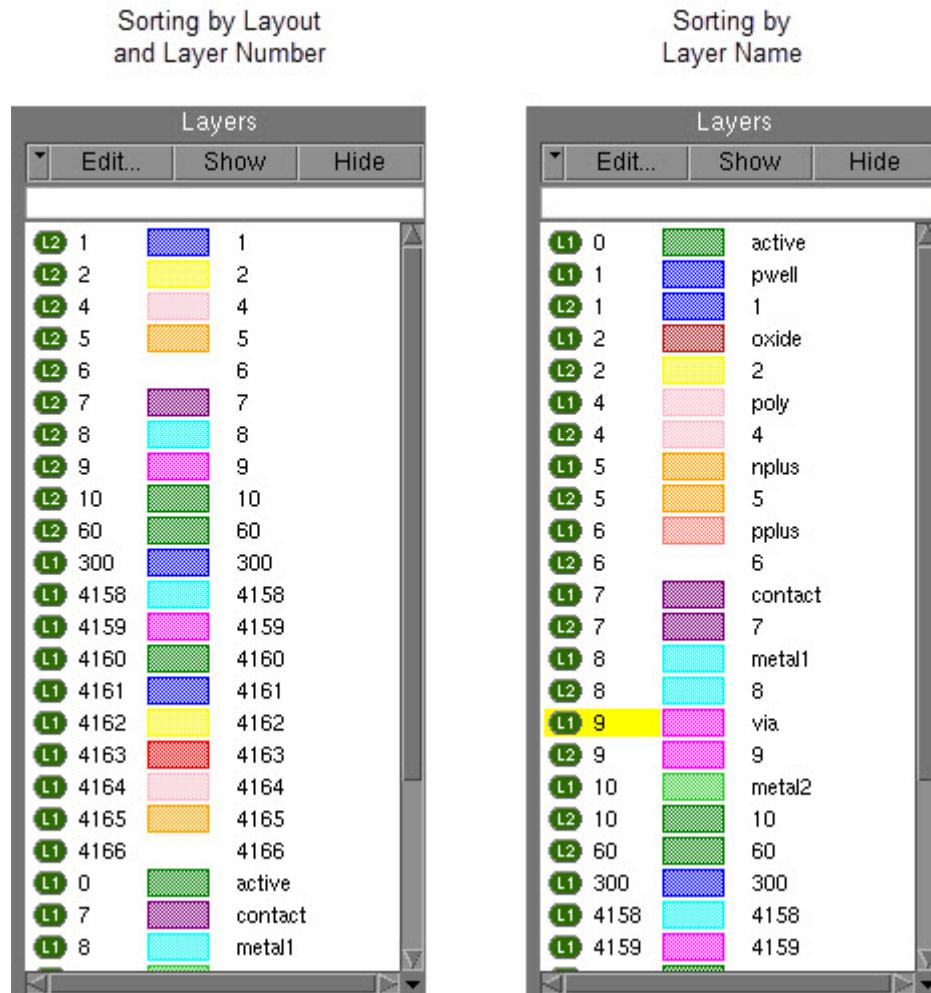
Figure 6-11. Sorting by Layout



Note

 The Layers Browser **Show** and **Hide** buttons only apply to layers in the Layers Browser.

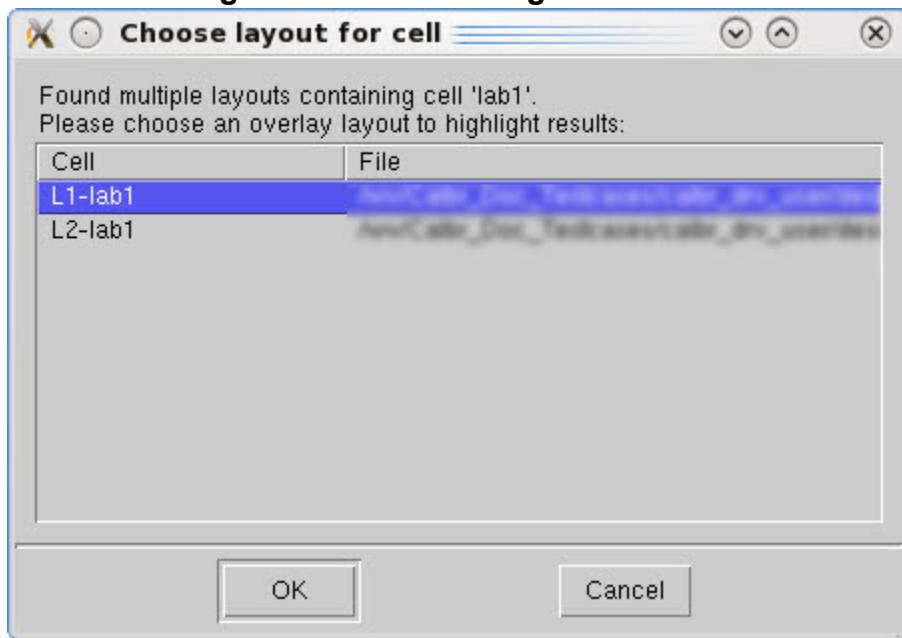
Figure 6-12. Sorting Overlay Layers by Name versus by Layout/Layer Number



Handling Conflicting Cell Names During Highlighting with Calibre RVE

Input layouts sometimes have cells with the same name. If Calibre RVE tries to highlight a result in a cell that exists in more than one layout in the overlay, a dialog box is displayed asking you to choose which layout to highlight the result in. An example of the dialog box is shown in Figure 6-13.

Figure 6-13. Conflicting Cell Names



Creating an Overlay

You can create an overlay setup file using a Calibre DESIGNrev command line option or using the Calibre DESIGNrev GUI.

Prerequisites

- One or more layouts are available for loading into Calibre DESIGNrev. These layouts will become part of the overlay.

Procedure

Use one of the following methods to create an overlay:

If you want to...	Do the following:
Invoke Calibre DESIGNrev and open layout files as an overlay	<p>Use the following syntax to invoke Calibre DESIGNrev and create an overlay:</p> <pre>calibredrv -m file1 file2 ... fileN -overlay</pre> <p>For example:</p> <pre>calibredrv msub.gds nsub.gds -overlay</pre>

If you want to...	Do the following:
Use the GUI to create an overlay	<ol style="list-style-type: none"> 1. Invoke Calibre DESIGNrev and open the layouts that will make up the overlay. 2. Choose File > Create Overlay to display the New Overlay dialog box. 3. Click the Add Files or Add Loaded Layouts button to add layouts to the overlay.

Related Topics

[New Overlay Dialog Box](#)

[Choose Layout Files Dialog Box - Files Tab](#)

Opening and Editing an Overlay

Once you load and display an overlay, you can use the Edit Overlay dialog box to modify an overlay.

Prerequisites

- An existing overlay file. To create an overlay file, refer to “[Exporting an Overlay](#)” on page 151.

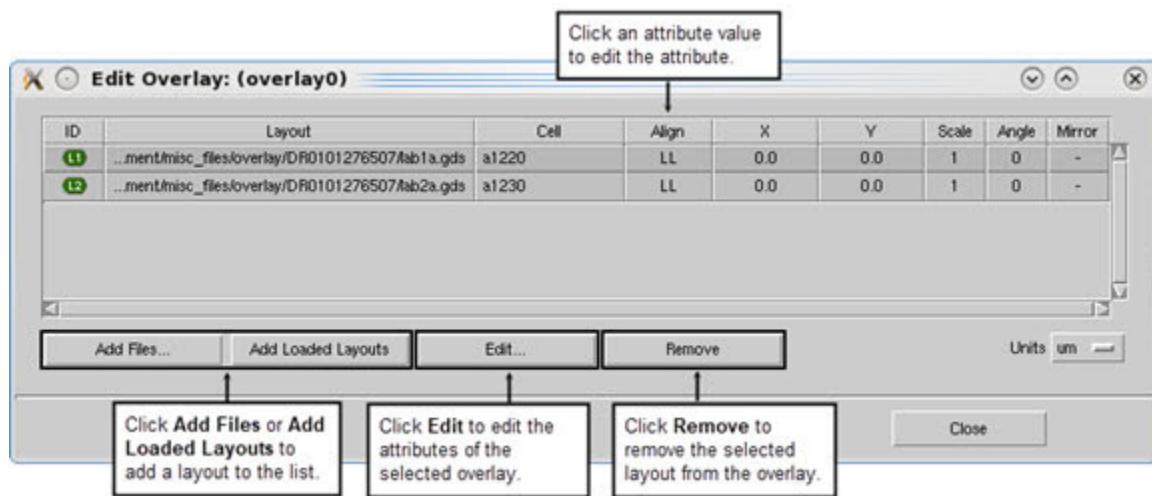
Procedure

1. Use either of the following methods to open an overlay file:

If you want to...	Do the following:
Load an overlay when you invoke Calibre DESIGNrev	<p>Use the following syntax to invoke Calibre DESIGNrev and open an overlay file:</p> <pre>calibredrv -o <overlay_setup_file_name></pre> <p>For example:</p> <pre>calibredrv -o myoverlay.ovly</pre>
Load an overlay from the Calibre DESIGNrev GUI	<ol style="list-style-type: none"> 1. Choose File > Open Layout Files. 2. In the Choose Layout Files dialog box, select the overlay you wish to open. 3. Click the down arrow on the Open button to display the popup menu and choose Open Overlay.

2. Right click the overlay in the Cells Browser and choose **Edit Overlay** to display the Edit Overlay dialog box.

Figure 6-14. Edit Overlay Dialog Box



3. Use the following methods to add layout databases to the overlay:

If you want to...	Do the following:
Browse to and select layouts that are not already open	<ol style="list-style-type: none">1. Click Add Files to display the Choose Layout Files dialog box.2. Browse to and select the files you want to add to the overlay (press Ctrl+click to select more than one file). You can add the same layout multiple times.3. Click Open to add selected files to the Edit Overlay list box.
Add layouts that are already open (referred to as in-memory layouts)	Click Add Loaded Layouts to add in-memory layouts to the Edit Overlay list box.

Caution

 Layout load options are ignored when adding layouts already loaded in memory to the overlay. The layout is not reloaded due to differing load options.

4. To remove a layout file from the overlay, select the layout ID in the ID column and click **Remove**.

5. To edit the attributes of an overlay, use either of the following methods:

If you want to...	Do the following:
Use the Edit Row dialog box to edit attributes	<ol style="list-style-type: none"> Select the layout ID in the ID column and click Edit to display the Edit Row dialog box. Edit the attributes. Click OK.
Edit attributes directly in the Edit Overlay dialog box.	Select the field you wish to edit. Some fields, such as Layout, Cell, and Align, display a menu of options. Other fields, such as X, Y, and Scale, allow you to enter a new value directly into the field.

Both methods allow you to edit the layout path, cell, alignment, X and Y coordinates, scale, angle, and mirror.

6. Click **Apply** to review any changes.
7. Click **Close** when you are done with all changes.

Exporting an Overlay

You can export an overlay to an overlay (*.ovly*) file or, depending on the files that make up the overlay, a GDS (*.gds*) or OASIS (*.oas*) file. If the overlay is made up of GDS layout files, you can export to a GDS file. Similarly, if the overlay is made up of OASIS layout files, you can export to an OASIS file. In order to export an overlay, the overlay must be made up of more than one layout file. The export operation exports only the saved changes. If you make edits to a layout that is part of an overlay, you must save the edits prior to exporting in order for the latest edits to be exported.

Restrictions and Limitations

An overlay can be made up of both GDS and OASIS layout files, but you cannot export this type of overlay.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode, and an overlay made up of either GDS or OASIS files is loaded into Calibre DESIGNrev. Refer to “[Opening and Editing an Overlay](#)” on page 149.

Procedure

1. Choose **File > Export Layout**.

This displays the Export Overlay dialog box.

2. Type the filename and specify the format you want to export to.
3. Click **Export**.

Results

You can now open the exported file in Calibre DESIGNrev. Exporting to GDSII or OASIS formats, allows you to visualize a chip before the final merge.

Exporting to GDSII or OASIS formats merges the input layout files.

Saving and Closing an Overlay

Saving an overlay file saves the configuration and allows you to reopen it without repeating the setup steps. To close an overlay and all its input layouts, you must first close the overlay and then close each layout. You cannot close an individual layout currently in use by an overlay.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and an overlay file is loaded into the tool. Refer to “[Opening and Editing an Overlay](#)” on page 149.

Procedure

1. Use one of the following methods to select the overlay you want to save:

If you want to...	Do the following:
Use the Cells Browser	Select the overlay in the Cells Browser.
Use the Layouts menu	Select the overlay from the Layouts dropdown menu.

2. Choose **File > Save** or **File > Save As**.

This displays the Save Overlay Setup dialog box.

3. Either select an existing overlay setup file or type a new filename in the Save Overlay Setup dialog box.

If you select an existing overlay setup file, you are prompted if you want to overwrite the existing file. Click **Yes** to overwrite the existing file.

4. Click **Save** to save the overlay setup file.

5. To close the overlay, use one of the methods described in step 1 to select the overlay.

6. Click **File > Close Layout**.

Incrementally Loading Layouts

Incremental loading helps reduce loading time when reviewing Calibre results with large layout files and mostly flat designs, such as output from OPC and MDP tools. Instead of loading the entire file into memory, incremental loading loads only specified areas into memory, reducing loading and drawing time and memory usage in the layout viewer. Incremental loading enables the layout viewer to load huge layout files into memory that were not possible previously, due to the size limit of the workstation memory. The incremental loading feature supports both GDS and OASIS files.

Note

 Peek Cache Repository (PCR) files cannot be read in HC mode.

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The Peek Cache Repository File

Peeking refers to probing for layout information without loading a layout into memory. Peek objects are created with the layout peek command that displays units, precision, list of cells, list of topcells, list of layers, and other information a layout file.

The [layout peek](#) command supports two arguments, -handle and -cache, that each generate a *peek handle*.

- **-handle** — Specifies a handle to assign to the newly created peek object. Multiple layout peek queries can use this option to avoid rereading layout files to extract the peek information.
- **-cache** — Specifies the location of a cache file to prevent re-reading the layout to retrieve the peek information.

Cache File (PCR) Search Order

The incremental loading feature uses a cache to index a layout file and uses this index to speed up initial loading of the layout. Incremental load index files are also referred to as PCR (Peek Cache Repository) files. By default, incremental load index files are placed in the directory containing the layout file. However, you can use the MGC_CWB_PCR_PATH environment variable to specify the path to a directory for storing the incremental load index files.

In a shell window, set the MGC_CWB_PCR_PATH environment variable to the directory containing the incremental load index files. For example:

```
setenv MGC_CWB_PCR_PATH incremental_load_index_directory
```

The search *and* placement order for the incremental load index file is as follows:

1. Within the MGC_CWB_PCR_PATH directory, if the environment variable is set.
2. In the directory containing the layout file, if the MGC_CWB_PCR_PATH environment variable is not set.
3. Within the current directory.

Note

 The format for the incremental load index filename is the layout filename and the “.pcr” suffix. For example, “filename.gds” becomes “filename_gds.pcr”.

Creating a Cache File from the Command Line (Recommended)

The Calibre DESIGNrev “layout create” batch command and “-incr” switch directs the Tcl command to use an incremental load cache file. You can use this switch to create a cache file from the command line.

Caution

 Creating a cache file from the command line can take a substantial amount of time. However, it also saves time in future Calibre DESIGNrev incremental mode invocations.

Procedure

Enter the following command to invoke the layout viewer in command mode, create an incremental load cache file, and then exit. The cache file is automatically updated if it already exists and is out of date.

```
calibredrv -a layout create <filename> -incr
```

The -a argument evaluates the “layout create” batch command, which creates a new layout, returns a new layout object handle, and exits. When no arguments are supplied, this command creates an empty layout. When a filename is supplied, it creates a layout containing data loaded from the specified GDS or OASIS file. The -incr argument tells the tool to load the layout incrementally and generate a cache file if needed.

Opening a Layout in Incremental Mode

The Calibre DESIGNrev application has an “-incr” switch directing the tool to invoke the layout viewer in incremental mode, which uses a cache file to aid the initial drawing speed. Invoking the layout viewer with this switch instructs the tool to load the layout incrementally and to generate or update a cache file if needed. When a layout is incrementally loaded, only hierarchical structures are loaded.

Compressed layout files can be incrementally loaded, and OASIS files using cell block (CBLOCK) compression internal to the layout file can also be incrementally loaded without a performance penalty. However, if an entire OASIS layout file is compressed externally via gzip, gdzip or 7zip, and if the OASIS file does not use CBLOCK compression, there can be severe incremental loading performance issues. This is due to the layout file having to be uncompressed each time it is accessed by the layout viewer. The size of an OASIS file utilizing CBLOCK compression is approximately 10 percent larger than a gzipped OASIS file.

Procedure

Use one of the following methods to open a layout in incremental mode:

If you want to...	Do the following:
Use the command line to open a layout in incremental mode	<p>Use the following syntax to invoke Calibre DESIGNrev and open the specified layout file in incremental mode:</p> <pre>calibredrv -incr <layoutfile></pre> <p>For example:</p> <pre>calibredrv -incr layout.gds</pre>
Use the GUI to open a layout in incremental mode	<ol style="list-style-type: none">Invoke Calibre DESIGNrev without specifying any arguments. For example: <code>calibredrv</code>Choose File > Open Layout Files.In the Files tab, select the layout file you wish to open.From the Open dropdown menu, choose Open Incrementally.

Results

When the layout is incrementally loaded, only hierarchical structures are loaded. You can change the hierarchy depth to navigate through the hierarchy. Invoking Calibre DESIGNrev in incremental mode generates or updates the cache file.

Related Topics

[Choose Layout Files Dialog Box - Files Tab](#)

Reviewing Calibre Verification Results With an Incrementally Loaded Layout

You can invoke Calibre RVE from within Calibre DESIGNrev and incrementally load a layout by loading results from an RDB file. This is useful when you need to review verification results on large layouts.

Note

 User-defined clips are also useful for incremental loading, as this is a method for you to manually load an area, without using Calibre RVE to drive the process. Refer to “[Creating and Working with User-Defined Clips](#)” on page 158 for more information.

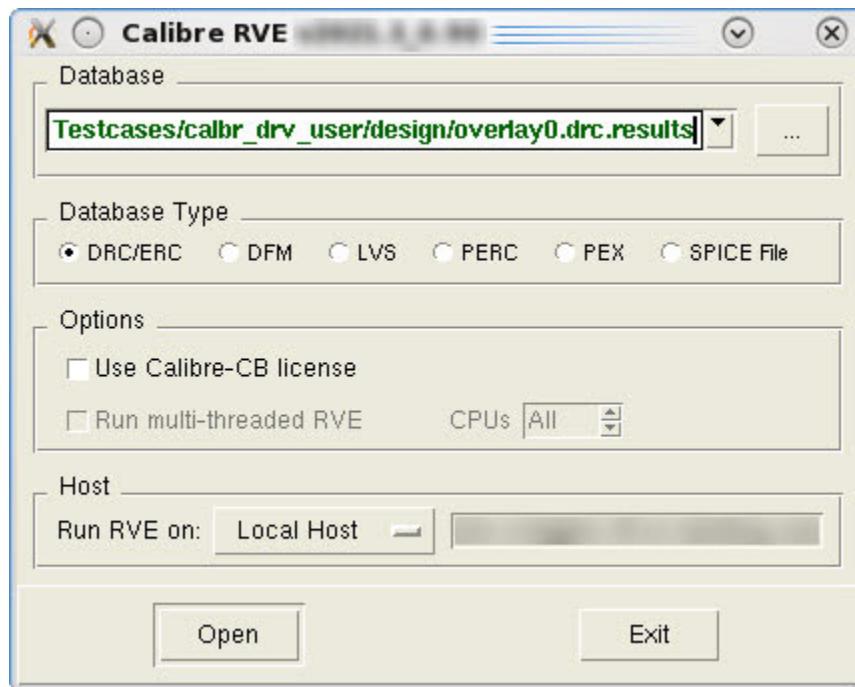
Procedure

1. Open a layout incrementally in Calibre DESIGNrev. For example:

```
calibredrv -incr -m lab1.gds
```

2. Choose **Verification > Start RVE**.

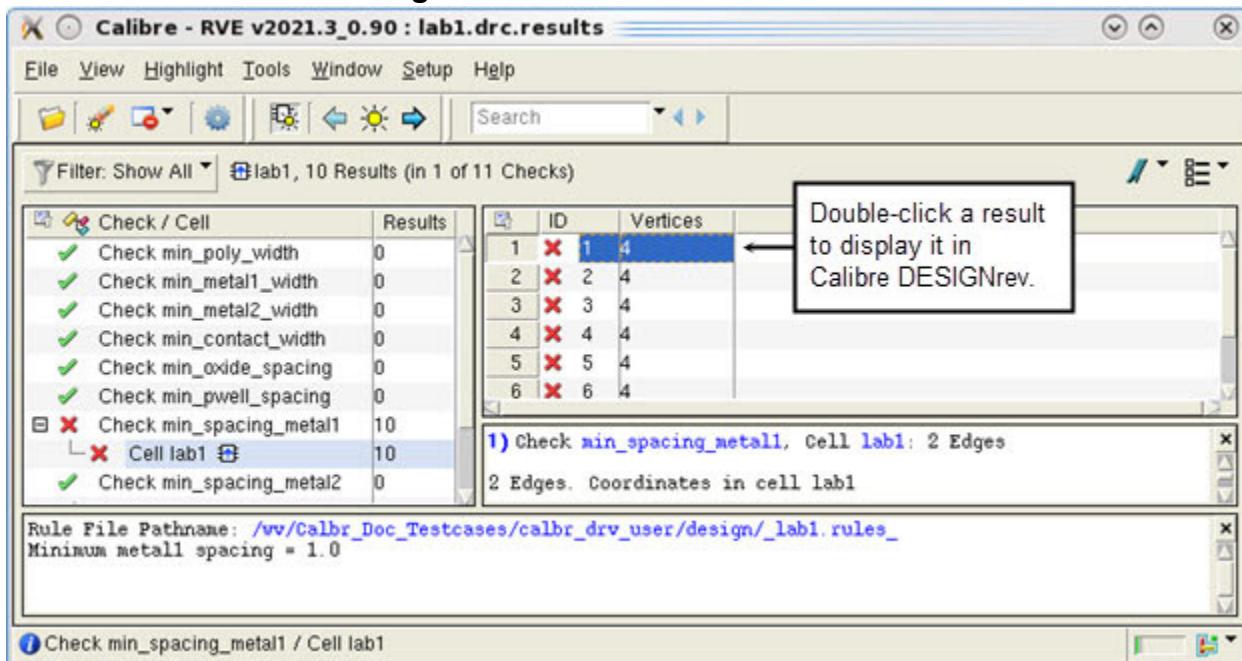
This displays the Calibre RVE dialog box.



3. In the Database field, type or browse to and select the results database name.
4. In the Database Type field, select the DRC/ERC option.
5. Click **Open**.

This invokes Calibre RVE and opens the results database. In the example shown in Figure 6-15, the database contains multiple errors for the “lab1” cell.

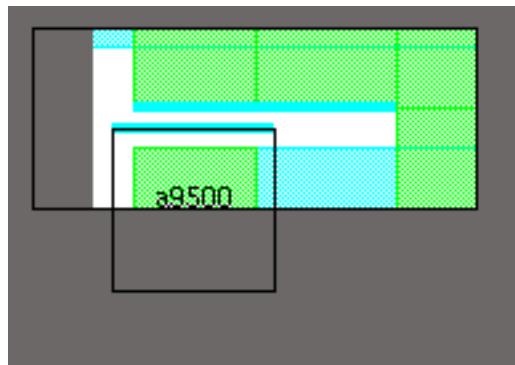
Figure 6-15. Calibre RVE Results



- In Calibre RVE, double-click the result that you want to display in Calibre DESIGNrev.

This displays the relevant region as a clip in Calibre DESIGNrev. The gray color represents areas not loaded by the layout viewer. Loaded areas are displayed with the assigned layer and background colors.

Figure 6-16. Calibre DESIGNrev Loaded Area



- If you want to change the halo for this clip, choose **Options > Misc Preferences** to display the **Misc** tab in the Preferences dialog box.

The halo is 0 um by default.

- In the Load / Clips section, specify a Halo value (in um).
- Click **OK** to close the Preferences dialog box.

If you changed the halo, the Calibre DESIGNrev layout is updated for new clips.

Note

 For instructions on loading clips from an RDB file, refer to the [\\$L create clip](#) batch command in the *Calibre DESIGNrev Reference Manual*.

Creating and Working with User-Defined Clips

Calibre DESIGNrev can load selected areas, referred to as clips, in the layout viewer's interactive GUI mode. Clips are areas in a layout you mark and can save to a file, so that you can easily access and view them later. Clips are independent of the layout. They can be used as setup for incremental loading and for sharing selected areas with other users.

Note

 For information on utilizing user-defined clips to manually load an area to drive incremental loading, refer to "[Reviewing Calibre Verification Results With an Incrementally Loaded Layout](#)" on page 156.

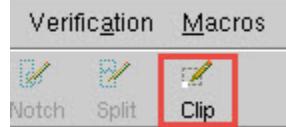
Procedure

1. Open a layout incrementally. For example:

```
calibredrv -incr lab1.gds
```

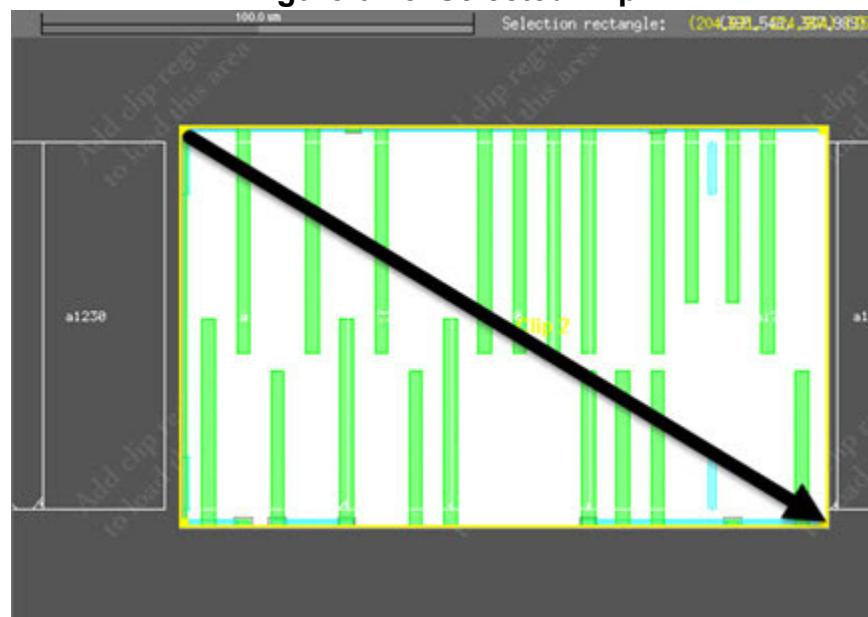
2. Click the **Clips** tab in the Cells Browser to display the Clips palette.
3. Click the **Clip** button in the Layout Viewer Toolbar.

Figure 6-17. Clip Button



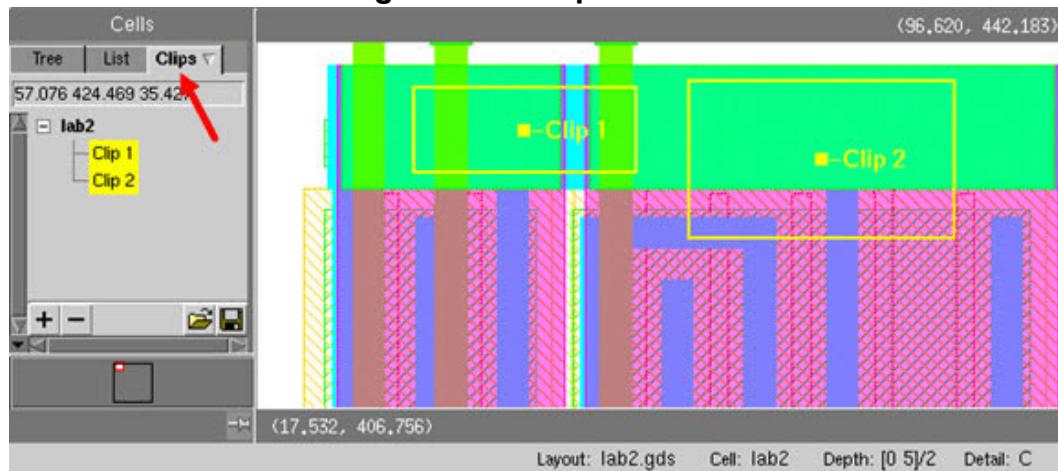
4. Left-click and drag the cursor across part of the layout to create a bounding box for the clip.

Figure 6-18. Selected Clip



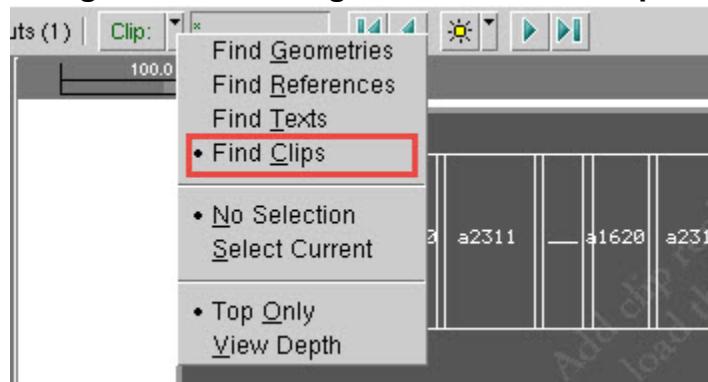
- Repeat this step to create at least two different clips. Each clip you create should appear in the Clips palette.

Figure 6-19. Clips Palette



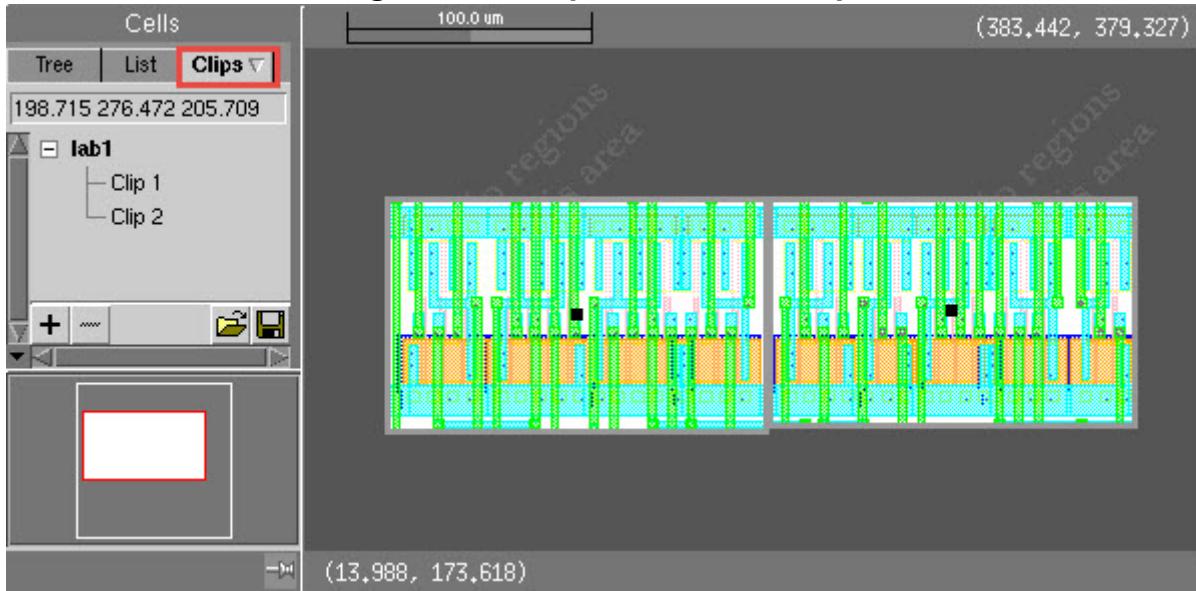
A toolbar located at the bottom of the Clips palette contains buttons for adding (+), deleting (-), loading, and saving clips.

- In the Find Object Toolbar, click the arrow and choose **Find Clips**.

Figure 6-20. Setting Find Toolbar to Clips

7. Step through each clip by clicking the forward and backward arrows in the Find Object Toolbar.

When you step through clips, the tool behaves similarly to stepping through polygons on a layer.

Figure 6-21. Clips Palette and Clips

8. In the Find Object Toolbar, click the arrow and choose **Find Geometries**.
9. Select a clip in the Clips palette to display its coordinates in the text box located at the top of the palette.
10. Double-click a clip to zoom the view to the clip in the Layout Viewing Area.
11. Click the right mouse button on a clip to display a clip-specific popup menu.
12. Click the **Save Clips to File** button to save your clips to a file of clip coordinates.

You can identify a clips file by the “.clip” extension.

Related Topics

[Clips Palette](#)

Creating and Loading a Cache File

In HC mode, you can create a cache file and subsequently use the cache file to enable faster loading of a layout.

Note

 When creating a cache file, exception severities determine which objects are written to the cache file. Any errors that the exception severities allow to be added to the layout database are written to the cache file. Objects that are ignored or generate an error as a result of the exception severities are not written to the cache file. You can customize the *readerprefs* file to control how the exception severity errors are handled (see [readerprefs File Format](#)).

When loading a cache file, the layout viewer applies the exception severities only to the objects that were written to the cache file when the cache file was created. Most GDS-only exception severities, such as AREF_PLACEMENT, are not applied when loading a cache file.

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Creating a Cache File

You can create a cache file for any layout file and subsequently use the cache file to enable faster loading of a layout.

Note

 This procedure is only supported in HC mode.

Procedure

1. Invoke Calibre DESIGNrev in HC mode.

```
% calibredrv -HC
```

2. In the Calibre DESIGNrev terminal window, enter the [layout createCache](#) command and specify an input layout file to use for creating the cache file. For example:

```
% layout createCache my_layout.oas
```

In this case, the default outputs the cache file to the current working directory using the layout name and appending the *.clv* suffix to the file. For example:

```
<path>/my_layout.oas.clv
```

Results

A cache file is created using the layout filename and appending a *.clv* suffix.

You can optionally specify an output file for the cache file. For example:

```
% layout createCache my_layout.oas <path>/tmp/my_cache.clv
```

Related Topics

[layout createCache \[Calibre DESIGNrev Reference Manual\]](#)

[Loading a Cache File](#)

[Calibre DESIGNrev Requirements](#)

Loading a Cache File

You can use an existing cache (.clv) file to enable faster loading of a layout. When loading a layout in Calibre DESIGNrev, the tool automatically loads a cache file when the layout filename with a .clv suffix is found and the cache file was written with a compatible version. You can set the CWB_CACHE_PATH environment variable to search for cache files when loading a layout.

Note

 This procedure is only supported in HC mode.

Prerequisites

- An existing cache file (see “[Creating a Cache File](#)” on page 162). Calibre DESIGNrev automatically searches for a .clv file in the following locations when loading a layout using the command line, the Calibre DESIGNrev GUI, or Tcl:
 - The current working directory.
 - The directory in which the specified layout file is located.
 - The directory or directories specified by the CWB_CACHE_PATH environment variable.

Procedure

If you want to...	Do the following:
Load a cache file from the current working directory or the directory in which the layout file is located.	<ol style="list-style-type: none">1. Ensure the current working directory or directory in which the layout file is located contains a <i><layout>.clv</i> file.2. Invoke Calibre DESIGNrev using the command line, Calibre DESIGNrev GUI, or Tcl and open the desired layout. Calibre DESIGNrev automatically searches for the <i><layout>.clv</i> file in the current working directory or the directory in which the specified layout file is located.
Load a cache file from the directory specified by <code>CWB_CACHE_PATH</code>	<ol style="list-style-type: none">1. Set the <code>CWB_CACHE_PATH</code> environment variable to the path or paths containing the cache (<i>.clv</i>) file. When specifying multiple paths, each path must be separated by a colon (:).2. Invoke Calibre DESIGNrev using the command line, Calibre DESIGNrev GUI, or Tcl, and open the desired layout. Calibre DESIGNrev searches for the <i><layout>.clv</i> file in the path(s) specified by the <code>CWB_CACHE_PATH</code> variable.

Results

The cache file is loaded when the following requirements are met:

- A file with a *.clv* suffix that has the same name as the layout name is found.
- The cache (*.clv*) file matches the layout file. If the layout file was modified after creating the cache file, then the cache file is ignored and the layout file is loaded.

If a cache file is found that meets these requirements, the cache file is loaded into Calibre DESIGNrev and a message is written to the terminal window identifying the cache file that was loaded.

Note

 Occasionally, the structure of cache files change which may make them incompatible with older releases of Calibre DESIGNrev. In this case, Calibre DESIGNrev ignores the incompatible cache file and loads the original layout file instead.

Related Topics

[layout createCache \[Calibre DESIGNrev Reference Manual\]](#)

[Creating a Cache File](#)

[Calibre DESIGNrev Requirements](#)

Tracing Connectivity

A net is an electronically interconnected set of objects in an electronic design. The layout viewer enables you to highlight a net based on a property name. You can also highlight a set of paths and polygons as a connected net. It extracts the connectivity based on the intersection of polygons and paths on layers in the layout.

Note

 Net extraction is not supported for overlays. An overlay is a set of superimposed yet unmerged layouts used for visual comparison.

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Extracting a Connected Net

You can use this procedure to highlight a set of paths and polygons as a connected net. The layout viewer extracts the connectivity based on the intersection of polygons and paths on layers. Each extracted net is represented as a set of polygons on a unique layer. To remove the extracted net, delete the generated net layer. If you reload a layout, all extracted nets are deleted.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- You have defined connectivity using connect statements in your layerprops file. In addition to layer numbers, you can use layer names in a connect statement, however the names must have been previously loaded. If the layer name definitions are in the same file as the connect statement, an error is generated.

Note

 You can access the connect functionality using the `$L connect` batch command.

- The layer properties file must be loaded before extracting connectivity.

Note

 If connectivity is specified for active or diffusion layers, net extraction may short through transistor source or drain pins. For this reason, specifying connectivity for these layers is not suggested.

Procedure

1. Choose **Options > Nets**.

This displays the Preferences dialog box with the **Nets** tab selected.

2. Choose the connectivity setting for hierarchy levels:
 - **Top only** (default) searches only the top level of the hierarchy for intersecting geometries.
 - **All levels** searches all levels of the hierarchy.

Note

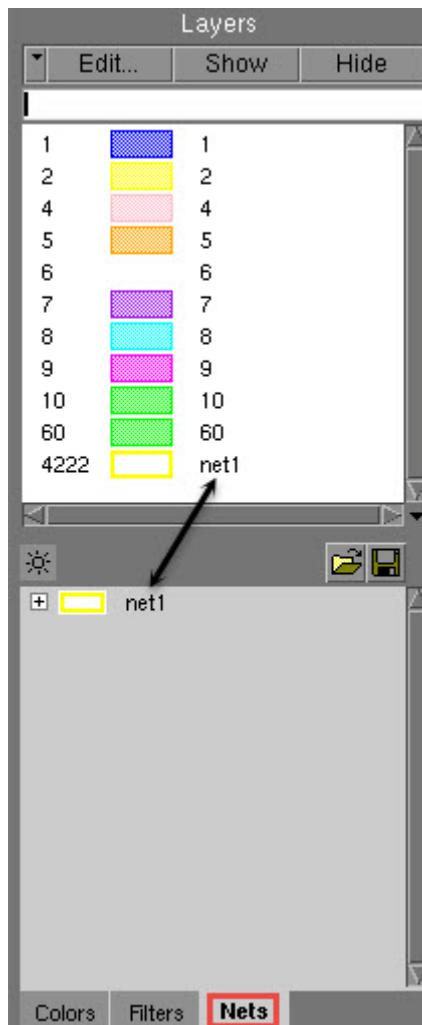
 Changing this setting does not alter an already extracted net.

3. You can optionally set both the starting layer number and range in the Highlight section of this tab.

If you do not change the default values, the first extracted net object will be written to layer 4222 and up to 50 consecutive net extractions will be kept.

4. Select a polygon or path, then right-click and choose **Extract Net**.

This opens the **Nets** tab directly below the Layers palette. Both the **Nets** tab and Layers palette display the name (net1) of the extracted net. The Layers palette also displays the assigned layer number.

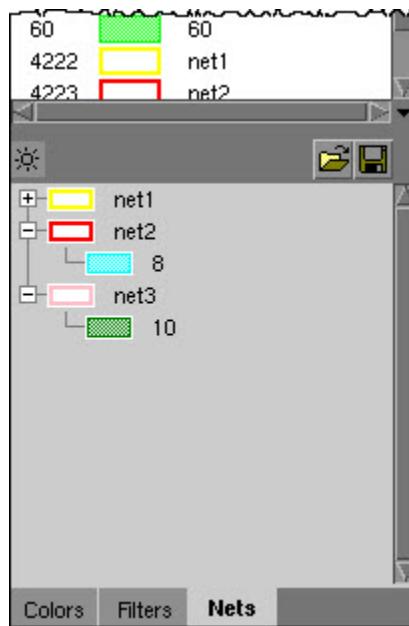


The first time you perform net extraction, the assigned highlight layer number and number of layers used for highlighting is based on the values defined by `prefs_net_highlightBase` and `prefs_net_highlightCount`, respectively.

For example, the default `prefs_net_highlightBase` number is 4222. If you do not change the default, then a base net highlight layer number of 4222 is assigned to the extracted net the first time you perform net extraction.

5. Select another polygon or path in the layout, then right-click and choose **Extract Net**.

Notice the net highlight layer number for the extracted net is incremented to 4223. Each net is expanded to display the layers containing the intersecting polygons and paths.



6. Experiment with clicking the “-” or “+” sign next to a net name to collapse or expand the extracted net.
7. Right click net1 on layer 4222 and select **Delete Net** from the popup menu.
Notice the popup menu also includes options for hiding, renaming, and exporting (to RVE or to a file) the extracted net.
8. Select another polygon or path in the layout, then right-click and choose **Extract Net**.
Notice the layer 4222 is reused and assigned to the newly extracted net.
9. Continue to extract nets from the layout.

The default maximum number of layers used for highlighting (prefs_net_highlightCount) is 50. Once you reach this maximum, you can no longer use a layer for highlighting and an error is issued. To continue highlighting extracted nets, you must either delete some of the net layers or increase the value of the prefs_net_highlightCount preference.

10. Click the  (Emphasize All Layers) button located at the top of the Nets palette to emphasize the display of the extracted net layers in the Layout Viewing Area. You can click this button again to toggle the display.
11. Double-click a net name or net segment in the Nets palette to hide the full extracted net or net segment.

You can also right-click a net name or net segment and choose **Hide Net** in the popup menu to hide the extracted net in the Layout Viewing Area.

12. Select a cell in the Cells Browser, select a polygon or path, and then choose **Extract Net**.

Notice the **Nets** tab updates to display the name of the extracted net for the selected cell.

Results

The nets displayed in the Nets palette are specific to the currently viewed layout or cell. Switching to the layout or a different cell automatically updates the list of extracted nets, if any, to the current cell.

Related Topics

[Preferences Dialog Box - Nets Tab](#)

[layerprops File Format](#)

[Opening a Layout with a Layer Map File](#)

[prefs_net_highlightBase](#)

[prefs_net_highlightCount](#)

Finding Nets Based on a Property Name

You can use Calibre DESIGNrev to extract nets by selecting only objects with a specific property.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Either one of the following:
 - A GDS file that has the annotated values PROPATTR and PROPVAlUE.
 - An OASIS layout file that has the annotated values PROPERTY, PROPNAME, and PROPSTRING values.

Procedure

1. Choose **Options > Nets**.

This displays the **Nets** tab in the Preferences dialog box.

2. Select the **Use Specific Property** option.
3. Type the property name you want to base your extraction on. (The default property used to designate a net is NET.)

4. Optionally, you can create a selection rectangle. If a selection rectangle is not defined, the net extraction operates on the complete layout. If a selection rectangle is defined, the net extraction is confined to the specified rectangle. Net objects can overlap outside of the selection rectangle, however net extraction does not continue outside of the rectangle.
5. After applying the changes, right-click a polygon or path and choose **Extract Net**.

Results

The layout viewer attempts to trace the net for all connecting polygons with the named property. If there are no properties on the selected path or polygon, the layout viewer returns an error message.

If no matching property is present on the object, but other properties are available, the layout viewer prompts you with a dialog box to select from the properties on the object. You are also given the option to set the selected property as the new default for Use Specific Property.

Related Topics

[Preferences Dialog Box - Nets Tab](#)

Extracting Multiple Shortest Paths

Shortest-path extraction can be used to detect LVS shorts. You can highlight two points from a net and two points originally belonging to another net. By detecting intersecting points, identifying shorts is simplified.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- You have defined connectivity using connect statements in your layerprops file. In addition to layer numbers, you can use layer names in a connect statement, however the names must have been previously loaded. If the layer name definitions are in the same file as the connect statement, an error is generated.

Note



The connect functionality can also be accessed using the [\\$L connect](#) batch command.

- The layer properties file must be loaded before extracting connectivity.
- “Allow multiple rulers” must be selected in the **Rulers** tab of the Preferences dialog box.

Procedure

1. Select a path in the layout, then right-click and choose **Shortest Path To**.

2. Move the cursor to a second point in the net, and then select this point.
The tool dynamically displays the point-to-point shortest net path.
3. Press the Esc key.
4. Select a point on a second net, right-click, and then choose **Shortest Path To**.
5. Move the cursor to a second point in the second net, and then select this point.
The application dynamically displays this second point-to-point shortest net path, and now multiple shortest paths are selected.

Related Topics

- [Preferences Dialog Box - Nets Tab](#)
[layerprops File Format](#)
[Preferences Dialog Box - Rulers Tab](#)
[Opening a Layout with a Layer Map File](#)

Exporting an Extracted Net

You can export an extracted net to RDB, GDS, or OASIS format.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- You have defined connectivity using connect statements in your layerprops file.

Note



You can access the connect functionality using the [\\$L connect](#) batch command.

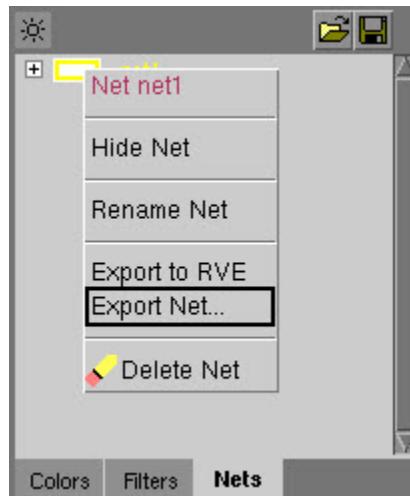
- The layer properties file must be loaded before extracting connectivity.

Procedure

1. Select a polygon or path, then right-click and choose **Extract Net**.

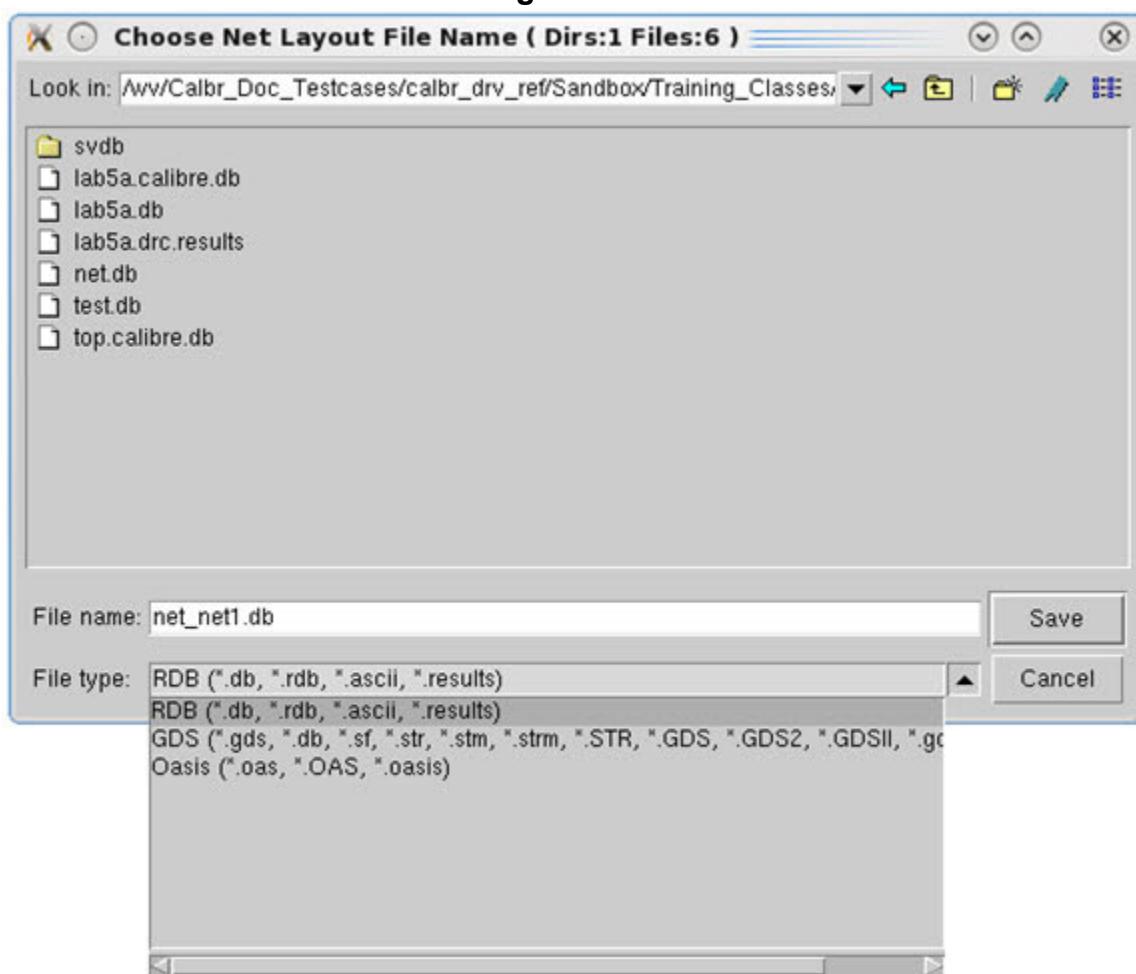
This opens the **Nets** tab directly below the Layers palette.

2. Right-click on the net name in the **Nets** tab to display a popup menu.



3. Select **Export Net** to display the Choose Net Layout File Name dialog box.
4. Navigate to the directory in which you want to save the extracted net.
5. Click the arrow in the File Type field to display the dropdown menu and select the output type (RDB, GDS, or Oasis). The default output type is RDB.

Figure 6-22.



6. You can use the default file name for the extracted net or click in the File name field to specify a different name.
7. Click **Save**.

Results

The extracted net is now saved to the specified file in the selected output format.

Chapter 7

Using the Layout Viewer in Your Workflow

Calibre DESIGNrev is part of a larger workflow cycle that takes advantage of the tool's viewing, cross-probing, and editing abilities.

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Running Calibre Interactive from the Layout Viewer

When you invoke Calibre Interactive directly from within Calibre DESIGNrev, you can run several Calibre batch tools on a cell or area in an open layout database. After processing, you can view the results using Calibre RVE, comparing the information returned from DRC or LVS with data in the layout viewer.

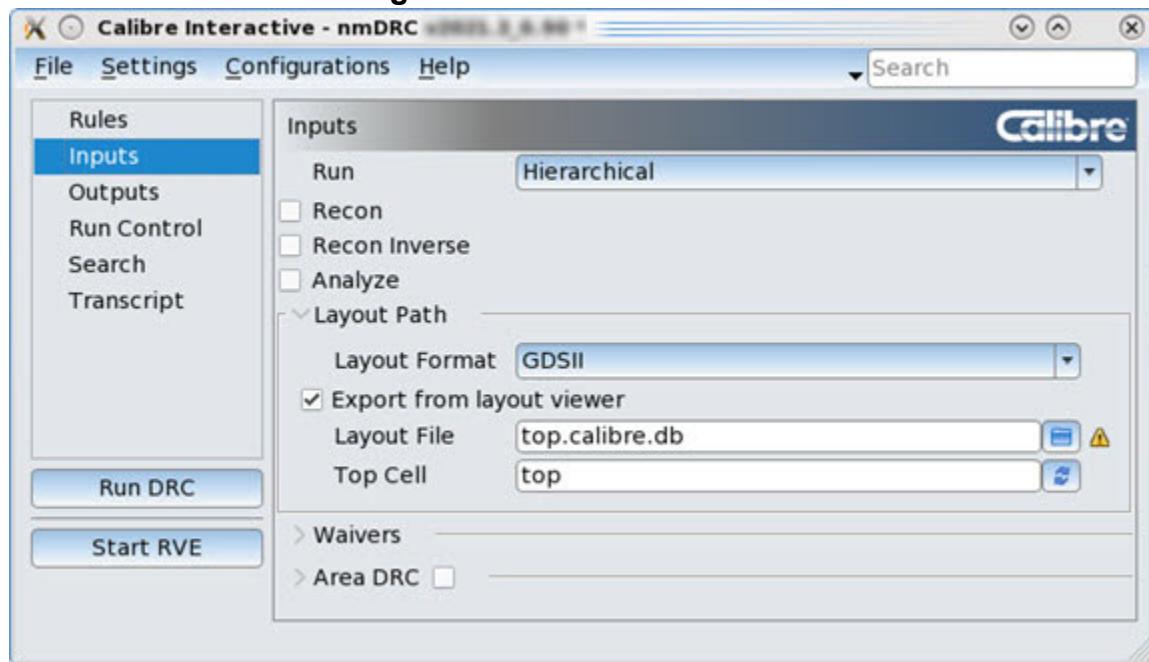
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and the layout you want to evaluate is open.
- The rule file for running the analysis.
- The layout database.

Procedure

1. In Calibre DESIGNrev, choose one of the tools to run from the **Verification** menu.
On opening, the application queries you for permission to open the last runset used, and displays the information in the text box.
2. If you have a runset defining the settings for the Calibre run, make sure the pathname for that file is displayed in the Runset field and click **OK**. If you do not have a runset, click **Cancel**.
Calibre Interactive opens and displays data from the runset (if used).

Figure 7-1. Calibre Interactive



3. If the **Inputs** button on the left side of the window is not selected, click to select it.
4. Make sure **Export from layout viewer** is selected. This instructs Calibre Interactive to use the data in Calibre DESIGNrev as input to the run.
 - If you want to pass only a portion of the layout to Calibre Interactive - nmDRC for processing, click the **Area** or **Area DRC** button and select the area in the layout for processing. The application waits for you to draw a rectangle in the Calibre DESIGNrev application.

Note

 While drawing the rectangle to pass to DRC, the application deletes any existing selection regions and disables the edit mode buttons on the toolbar. Pressing Esc in the application cancels this draw region box mode. If you press Esc a second time (after canceling the current operation), the layout viewer mode reverts to Select mode.

5. Configure the Calibre Interactive runset as needed.
6. (Optional but recommended.) Configure Calibre Interactive to invoke Calibre RVE on completion of the run:
 - a. Click the **Outputs** button on the left side of the window.
 - b. Select **Show results in RVE**.
7. Click the appropriate button to invoke the batch tool.

Once the Calibre run is complete, the system opens the results database in the Calibre RVE application, allowing you to step through results and view them in the layout viewer.

Related Topics

- [Highlighting Check Results](#)
- [Calibre Interactive User's Manual](#)
- [Calibre RVE User's Manual](#)

Using Calibre RVE to Work with Results Databases

When used in conjunction with Calibre DESIGNrev, Calibre RVE makes it possible for you to visually inspect the results databases output by DRC, LVS, or yield analysis.

In most cases you configure Calibre Interactive to load the results directly into Calibre RVE as soon as the run completes. However, if you do not, there are options for loading the data into Calibre RVE after the run.

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Loading a Calibre Results Database into Calibre RVE

Use the procedure to load the results from Calibre verification runs when they are saved as an ASCII results database. This is done automatically if you ran Calibre from Calibre Interactive and selected **Show results in RVE**.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- You have the verification results for the layout saved in ASCII RDB format.

Procedure

1. Choose **Verification > Start RVE**.
This displays the Calibre RVE dialog box.
2. Select the appropriate database type.
3. Click the **Browse** button to open the file browser, then select the path to the Calibre ASCII database corresponding to the database you loaded into Calibre DESIGNrev.
4. Click **Open**.

The system opens the results database in the Calibre RVE application, allowing you to step through results and view them in the Calibre DESIGNrev revision application.

Related Topics

- [Highlighting Check Results](#)
[Calibre Interactive User's Manual](#)

[Calibre RVE User's Manual](#)

Inspecting Layout Design Data with Calibre RVE

This procedure tells you how to scan a layout using Calibre RVE. It allows you to step through geometries in the layout. Use this procedure to inspect design data. When scanning overlays, only one of the overlay's layout files can be scanned.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Check results have been saved as one or more new layers in the layout database.

Procedure

1. Select a layer in the Calibre DESIGNrev application Layers Browser.
2. Choose **Tools > Scan with RVE > Scan Layer with RVE (Flat) or Scan Layer with RVE (Hier)**. This invokes Calibre RVE, allowing you to step through polygons on the selected layer.

- Using Flat Scan

When you perform a flat scan, Calibre RVE identifies all polygons on the selected layer, regardless of whether they exist in the top level cell, or are drawn in cell references.

- Using Hierarchical Scan

When you perform a hierarchical scan, Calibre RVE preserves the hierarchy and identifies results in the cells in which they exist. It does not flag drawn polygons in cell references. This allows you to view the data in different ways:

- Viewing all the results in a cell.
- Viewing a single result (polygon) in a cell.

Related Topics

[Highlighting Check Results](#)

[Calibre Interactive User's Manual](#)

[Calibre RVE User's Manual](#)

Highlighting Check Results

Once check results are loaded into Calibre RVE, you can highlight their locations on the layout in Calibre DESIGNrev simply by selecting them in Calibre RVE and issuing the Highlight command.

Prerequisites

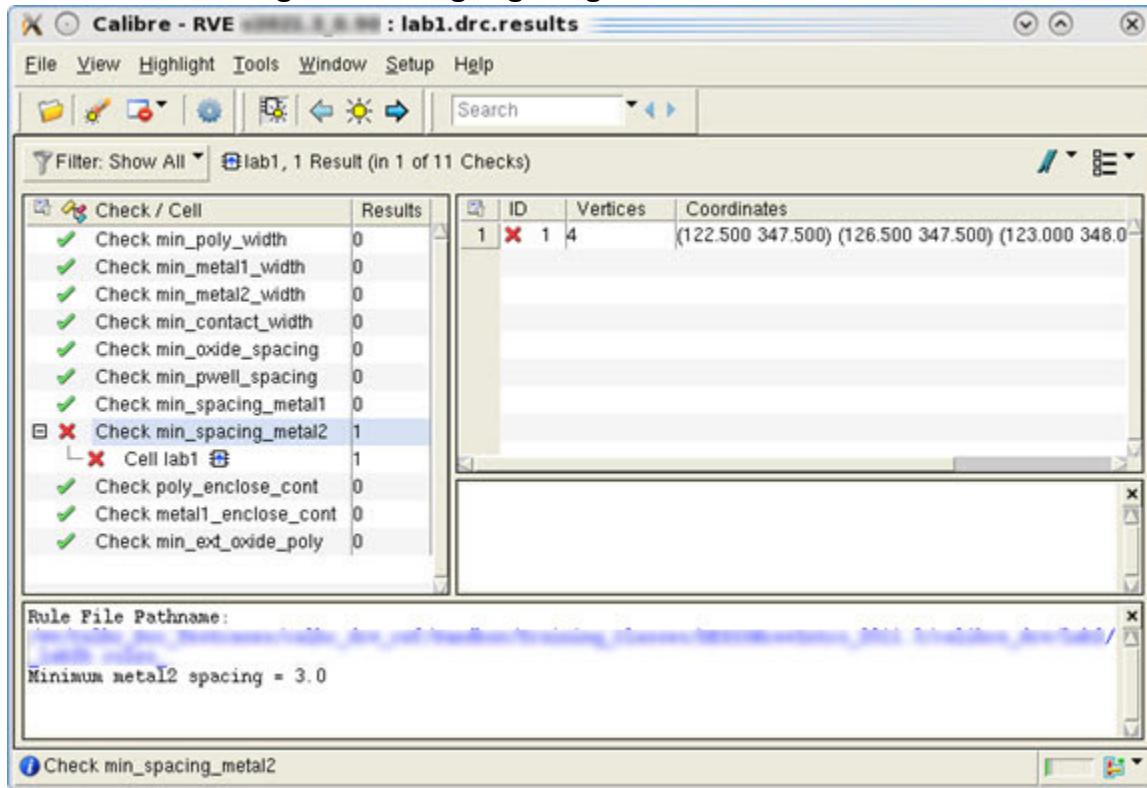
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Calibre RVE is running, with the results loaded.

Procedure

1. In Calibre RVE, if the results are not displayed by number, as in [Figure 7-2](#), click the “+” signs in the hierarchy list to expand the result hierarchy.

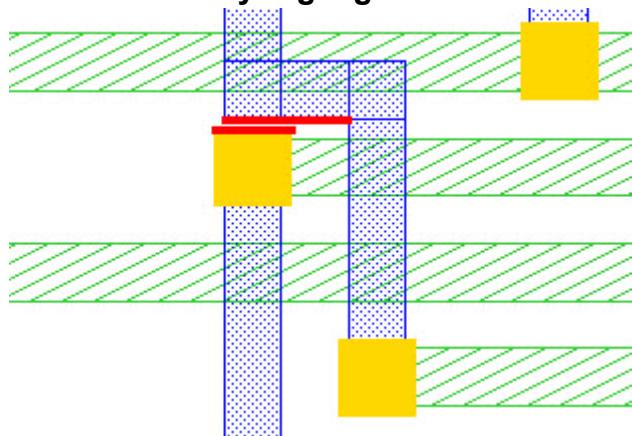
The results from the run are displayed in a tree view on the left side of the Calibre RVE window. Each error is organized under the specific check that generated the error along with the number of results.

Figure 7-2. Highlighting Calibre RVE Results

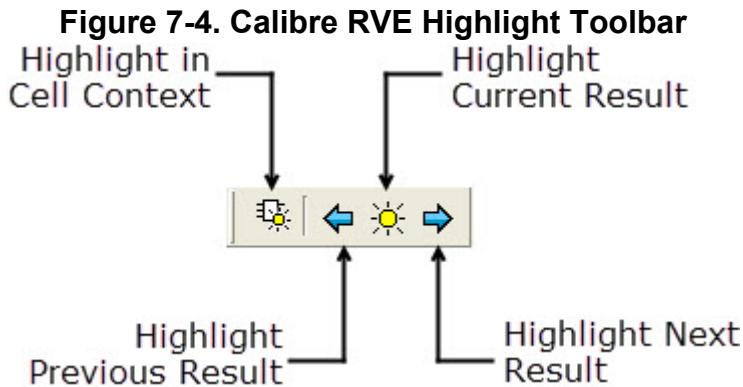


2. To highlight an error in Calibre DESIGNrev, click the check to display the results in the result view (right side of Calibre RVE window). Click the result and use one of the following methods to highlight it:
 - Right-click and choose **Highlight** from the popup menu.
 - Click the “Highlight Selected Results” button in the toolbar.

Figure 7-3. Geometry Highlighted from Calibre RVE



3. Use the options in the Calibre RVE highlight toolbar to view the results in your layout viewer. The Highlight in Cell Context button is a toggle that turns the highlighting in context setting on and off.



4. Select **Highlight > Highlight All** to highlight all results.
5. View all errors for a specific rule check or cell by right clicking the check in the Check/Cell panel in Calibre RVE and choosing **Highlight**.

Note

When “Highlight DRC results in context” and “Show highlights in top cell” are enabled in Calibre RVE, the view depth is automatically set in Calibre DESIGNrev so that all highlights in the context cells are visible.

6. Select **Highlight > Clear Highlights** to clear all highlights in the layout viewer.
7. Modify the design in Calibre DESIGNrev as needed to address the results you are viewing.

When a layout is saved, Calibre RVE edge highlights are written as zero-width paths. If you load a layout containing Calibre RVE edge highlights and the Convert Paths to Polygons option is selected, the highlights are converted from zero-width paths to

polygons with a width of 4 database units (dbu). One micrometer (um) times the precision equals one dbu.

Note

In Calibre RVE, you can configure highlighting options for the layout viewer by selecting **Setup > Options** to display the Options tab. Select the **Highlighting** category to display the available highlighting options.

Related Topics

[Calibre Interactive User's Manual](#)

[Calibre RVE User's Manual](#)

Saving Highlighted Shapes as a Calibre nmDRC Results Database (RDB)

You can save the shapes in the loaded layout as an ASCII format Calibre nmDRC results database. This can be helpful if you want to use the viewing and analysis features of Calibre RVE for DRC. For example, in Calibre RVE for LVS, you can highlight nets in Calibre DESIGNrev then save the highlighted layer as an RDB.

The video “How To Save Net Polygons as an RDB Using Calibre RVE and Calibre DESIGNrev” demonstrates how to:

- Highlight the polygons in a net using Calibre RVE
- Save an RDB of highlighted net polygons with Calibre DESIGNrev



Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Calibre RVE is open and a supported results database is loaded.

Procedure

1. In Calibre RVE, highlight the results or shapes that you want to save as an RDB.
2. Do the following in Calibre DESIGNrev to save the highlighted shapes as an RDB.

- a. Select the highlight layer(s) in the Layers Browser.
 - b. Choose **File > Export Layout** to open the Export Layout dialog box.
 - c. Choose a file name for the RDB in the File entry field.
 - d. Choose a format of “Flat RDB” or “Hierarchical RDB.”
 - e. In the Filters region, enable the “Selected” option for Layers.
 - f. Click **Save** to save the RDB.
3. To view the RDB, choose **Verification > Start RVE**.

Results

The shapes selected in Calibre RVE are now saved to your named RDB. The RDB can be opened at any time for viewing and analysis in Calibre RVE for DRC. The RDB has a rule check for each layer. The layout shapes are saved as results for the rule check.

Related Topics

[Export Layout Dialog Box](#)

[Saving a Subset of DRC Results as an RDB \[Calibre RVE User's Manual\]](#)

Creating a Non-Design Layer to Pass to Others

When you identify specific layout areas requiring additional processing, you can create a non-design layer (one that is not printed on the final mask) containing markers to be passed to other tools to perform the appropriate operations on those regions. This type of layer is referred to as a marker layer.

A *marker layer* is a non-mask layer containing shapes used to identify regions or geographical features (for instance, particular cells or transistors) of a layout. Marker layers can be derived from SVRF rule checks, or can be created using the layout viewer.

These types of layers can be island layers (typically passed to Optical Process Correction tools for additional fragmentation and tagging), or marker layers (used to constrain processing to specific areas). Though these types of layers are often derived using SVRF rules, the following methods that can be performed directly using the layout viewer:

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Creating a New Layer with Markers on the Topcell

In situations where you want to mark areas on the top-level cell to control the processing for those regions, you can create a layer and render boxes or polygons as a marker layer.

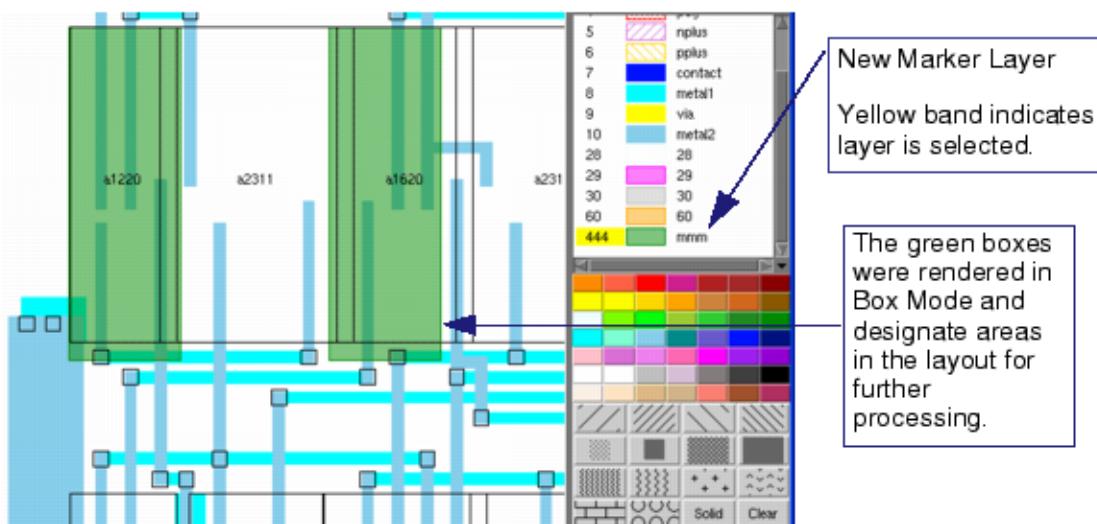
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Calibre DESIGNrev is set (using zoom and view depth) to view the top-level cell area where you render the marker areas.

Procedure

1. Right-click in the Layers Browser and select **Add** from the popup menu. Assign a name and layer number not currently being used, as well as a color and fill pattern.
2. On the new layer (make sure it is selected in the Layers Browser), either set the drawing mode to **Box** (for rectangular areas) or **Poly** (for polygons) to render shapes that designate areas on the layout for additional processing.

Figure 7-5. Marker Regions on the Top-Level Cell



Creating a New Layer with Markers on Lower Levels of the Layout

When you need to pass in marker layers identifying key regions in reference cells, a simpler process is to use this method to create areas in duplicate cells.

The changes you make actually update the original cell and are inherited by all other references to the cell. You can also see the neighbor cells as you create the marker regions so you can better view how your changes interact with those cells. This method preserves hierarchy and does not negatively affect the hierarchy of the cells.

Prerequisites

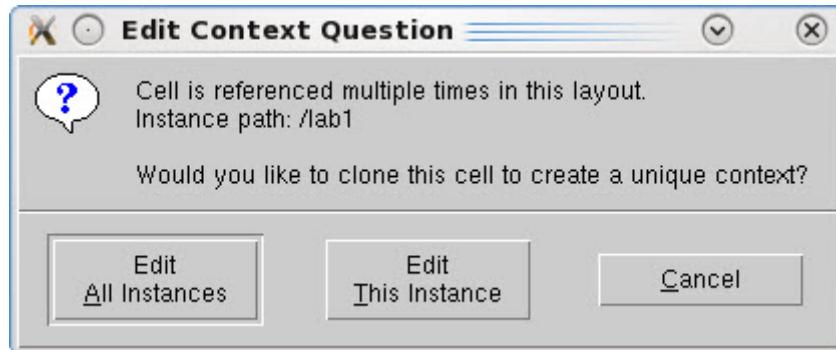
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Calibre DESIGNrev is set (using zoom and view depth) to view the cells for which you are going to create the marker layer. The cell reference you edit must have a magnification equal to 1, to ensure the modifications translate to the original cell.
- Make sure the current cell contains the reference you want to use as the context for editing.

Procedure

1. Right-click in the Layers Browser and select **Add** from the popup menu. Assign a name and layer number not currently being used, as well as a color and fill pattern. Make sure this layer is selected.
2. Adjust the viewer depth until the reference cell you want to select appears outlined. Depending on the number of levels in the layout hierarchy, this may be 0 or a higher number.

3. Select the reference cell or array of reference cells. Be sure the Reference select mode filter is checked.
4. Click the right mouse button to display the popup menu and choose **Set as Context**.

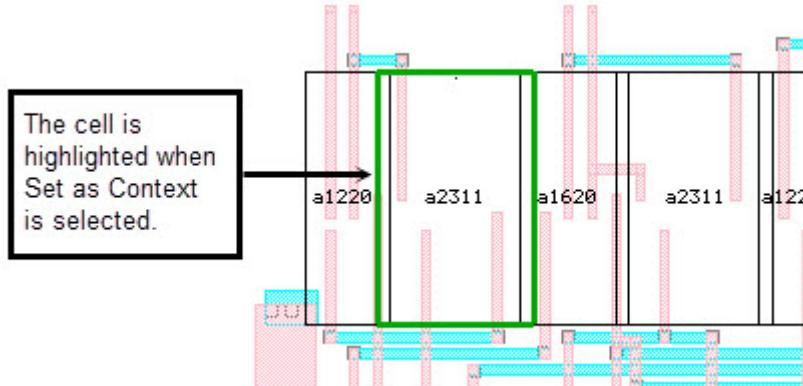
This displays the Edit Context Question dialog box.



5. Select whether you want to edit all instance or the currently selected instance.

The cell extent is highlighted as shown in [Figure 7-6](#).

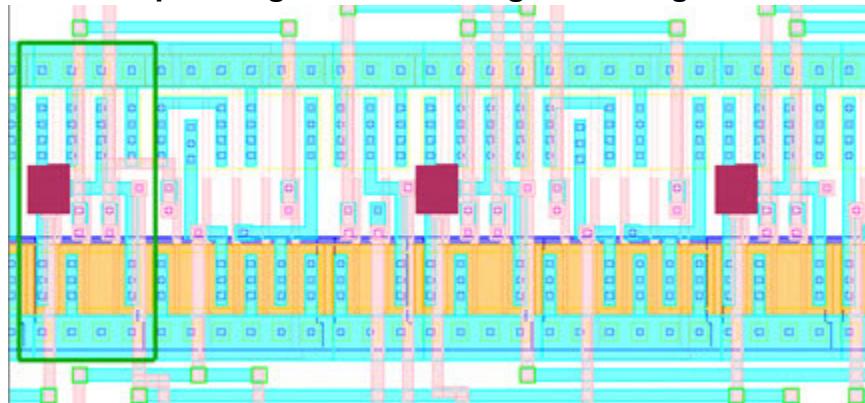
Figure 7-6. Setting a Cell as Context



6. Increase the viewer depth as needed to display contents of the selected cell inside the green outline of the cell extent.
7. Within the selected cell (and with the new marker layer highlighted), render the areas for further processing using the Box or Poly modes.

In this example, selecting “Edit All Instances” in Step 5 causes all cells that are identical to the selected cell to be edited as shown by the red polygons in [Figure 7-7](#).

Figure 7-7. Duplicating the Marker Regions Using Cell References



8. Select **Edit > Clear Context** to clear the selected reference from the current context.

Sharing Data With Others

Layout information must often be shared among users, requiring some common point of reference or specific data set that all can work from. In such circumstances, there are multiple methods you can use in the layout viewer to collect layout information to be shared.

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Passing Coordinate Data

One method of sharing information is simply passing your view settings for that layout. When passing coordinates, provide additional information such as layer number, view depth, and possibly a layout name and cell name.

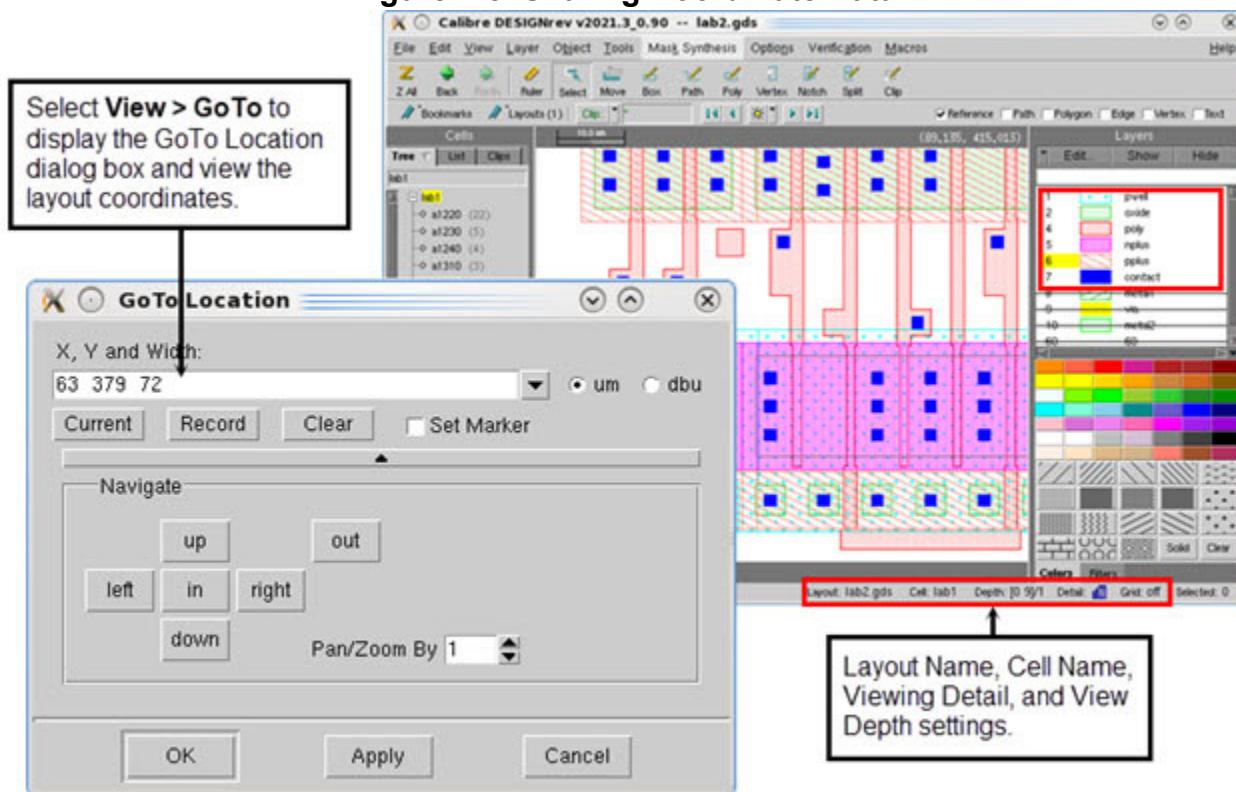
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Calibre DESIGNrev is set (using zoom and view depth) to the view area you want to show.

Procedure

Figure 7-8 shows where the information can be taken from the layout viewer interface. Use the areas illustrated in this figure to collect data to write down and pass to others.

Figure 7-8. Sharing Coordinate Data



Extracting a Portion of the Layout

You can use clips to mark and save coordinates for areas of interest in a layout. The extracted areas are saved as a GDS or OASIS layout. These areas are useful in that they can be passed to others to focus work on particular area or object.

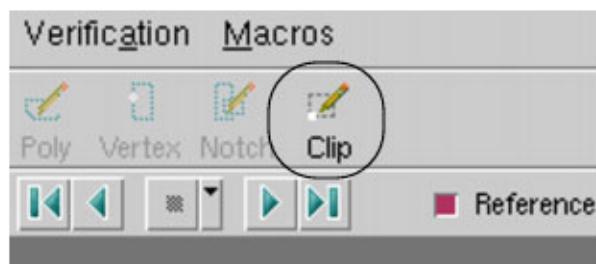
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Calibre DESIGNrev is set (using zoom and view depth) to view the area you want to extract.

Procedure

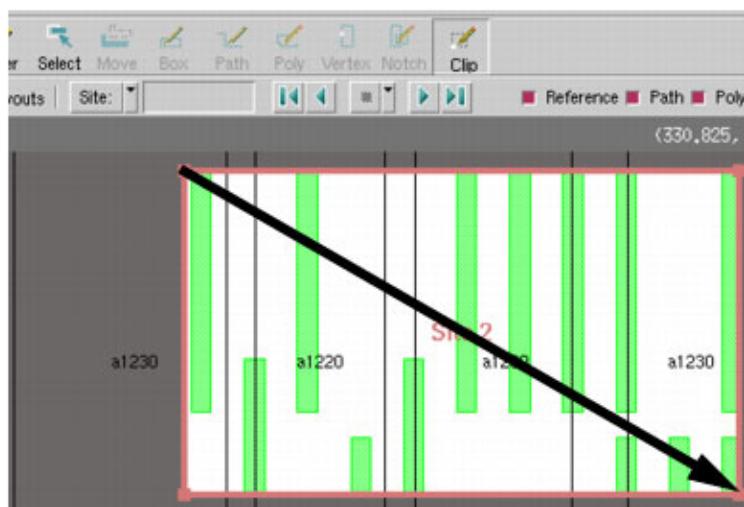
1. Select Clip in the Layout Viewer toolbar.

Figure 7-9. Select Clip Mode



2. Left-click and drag a box over the region of interest in order to select a clip.

Figure 7-10. Select a Clip



3. Select the **File > Export Layout** menu item.

The Export Layout dialog box allows you to generate a new layout with special options or to change the layout format.

4. In the Export Layout dialog box, select “Write selected clip region from” and select your clip.
5. In the Export Layout dialog box, enter a different filename if desired and then click **Save**.

The extracted region is saved as its own GDS layout, and it can be loaded into the layout viewer.

Related Topics

[Creating and Working with User-Defined Clips](#)

[Clips Palette](#)

Taking a Snapshot of the Current View

Once you have established your view settings, you can take a screenshot of the current view and export it to a viewable graphics file for future review.

Prerequisites

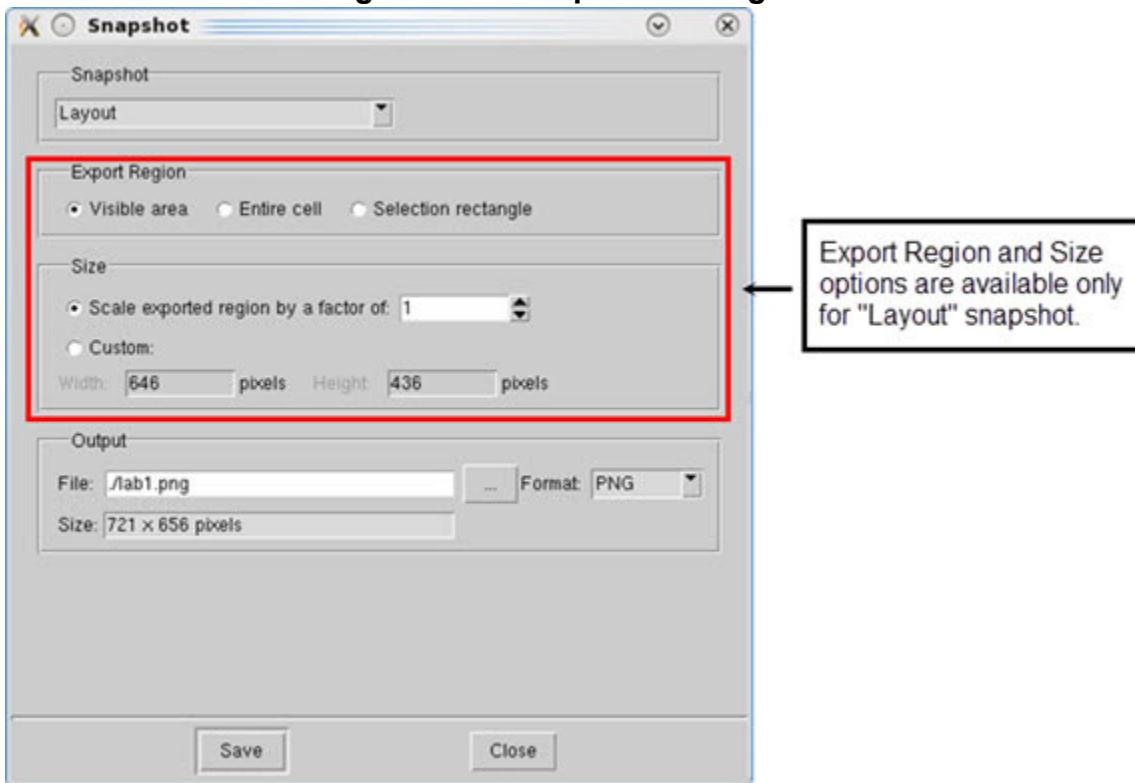
- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Calibre DESIGNrev is set (using zoom and view depth) to view the area you want to take a snapshot of.

Procedure

1. Choose **View > Snapshot** to display the Snapshot dialog box.

The default snapshot for exporting is Layout, which presents additional export options.

Figure 7-11. Snapshot Dialog Box



2. In the Snapshot dropdown list, select the layout item(s) you would like to export. Options include Layout, Layout in view, Layout + Legend, Layer Palette, and Toplevel window.
3. Specify the output filename and select the output format. Output format options include:
 - **PNG** — Portable Network Graphics is both a lossy and lossless compression format which supports 8-bit paletted images and 24-bit color images.

- JPG — Joint Photographic Experts Group is a lossy compression format which supports 8-bit grayscale images and 24-bit color images.
 - GIF — Graphics Interchange Format is a lossless compression format limited to an 8-bit palette, or 256 colors.
 - BMP — Windows bitmap file format is an uncompressed format.
 - XPM — X Pixmap is a bitmap format.
 - PPM — Portable Pixmap file format is a bitmap format.
 - TIFF — Tagged Image File Format is both a lossy and lossless compression format which supports 8-bit or 16-bit per color (red, green, blue) images.
4. Click **Save** to save the screenshot to the specified file in the specified format.

Related Topics

[Snapshot Dialog Box](#)

Flattening a Hierarchical Design

Most of the layout viewer's ability to flatten a hierarchical design file is handled using batch commands.

The following layout batch commands can be used to flatten hierarchical layouts:

- [\\$L expand cell](#) — Flattens a single cell reference.
- [\\$L flatten cell](#) — Flattens all levels of hierarchy of the specified cell across all cells.
- [\\$L expand ref](#) — Flattens entire array references.
- [\\$L flatten ref](#) — Flattens all levels of polygons throughout the reference.
- [layout copy](#) — Copies a layout, flattening it at a specified depth.

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Flattening a Hierarchical Layout's Cell References

While you normally use the batch commands to flatten a hierarchical layout, support for flattening a cell in the top level hierarchy is available from the layout viewer. You can flatten a cell reference to include the cell contents directly into the design. This places the cell geometry at the top level of the hierarchy and allows you to edit the geometry without affecting the original cell.

Restrictions and Limitations

- Flattening a cell reference is a one-way conversion and cannot be undone.
- Flattening a cell reference can only be done one cell reference instance at a time. No other cell references are affected by an individual flattening.
- Once a cell reference is flattened, it is no longer associated with the cell reference information and is not updated by future changes to that cell.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Use the Go Up depth key (<) to go up levels in the hierarchy until you see the cell blocks. Typically this is at depth 0.
2. Make sure your selection filter includes type **Reference**.
3. Right-click inside the boundary box for the reference and select **Flatten Reference** from the popup menu that appears.

The cell reference frame is replaced with the cells contents.

Flattening All Levels of Hierarchy

While you normally use the batch commands to flatten all levels of a cell hierarchy, support is available from the layout viewer. You flatten a hierarchy to include the cell contents directly into the design, allowing you to edit the geometry without affecting the original cell.

Restrictions and Limitations

- Flattening an instance is a one-way conversion and cannot be undone.
- Flattening a cell instance can only be done one instance at a time.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Use the Go Up depth key (<) to go up levels in the hierarchy until you see the cell blocks. Typically this is at depth 0.
2. Make sure your selection filter includes type Reference.
3. Select a cell instance.
4. Right-click in the cell instance and choose **Flatten Reference**.
5. Choose depth of 1 or All and click **OK** or **Apply**.

The instance is replaced with the cells contents.

Working with Cells

With Calibre DESIGNrev you can create and edit cells and cell references.

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About Cells

The current cell refers to the cell currently selected and displayed in the viewing window. The layout viewer application window can have only one current cell at any time. By default, the top level cell of the layout is the current cell. You can quickly select a new current cell by clicking on its name in the Cells Browser.

You can also change the current cell using any of the following methods:

- In the Cell Browser, select the **List** tab and type the first few letters of the cell name in the text box at the top of the List palette in the Cells Browser. When you have entered enough letters to uniquely identify the cell, press Enter.
- Use the **View > Open Cell** dialog box.
- Select the desired polygon or cell, right-click to display the Polygon or Cell menu, then choose **Open Parent** or **Open Parent in New Window**.

Also note that:

- Cell names are case-sensitive.
- The layout viewer allows you to open multiple windows during a single session. When you have more than one window open, each has its own current cell.
- Right-clicking in a cell and selecting **Open in New Window** makes the selected cell the current cell in the new window. In the original window, the current cell is unaffected.

Tip

 Cell outlines are only visible if you have the **Options > Layout View** Preferences dialog box, “Draw Outlines of References” option enabled.

A selected cell at the View Depth of 0 level has its name highlighted in bold.

Creating Cells

A cell is a named object in the layout database that can be referenced within other cells to create hierarchy. Cells can contain geometric text, polygons, paths, cell references, and cell reference arrays. Once you create a cell and populate it with geometries or reference cells, you can reference the new cell from within other cells.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Make sure the current layout is set to the layout in which you want to create the new cell.
2. Optionally, select objects to be included in the new cell by switching to Select mode, then selecting individual objects (shift-click to select additional objects). You cannot create cells with contents by using a bounding box.
3. Choose **Object > Create Cell**.

This displays the Create Cell dialog box.

4. Type the name of the new cell.

If you have selected objects to be added to the cell, switch the radio button to “From Selection”. To convert the selected objects into the new cell instance, select the “Replace selection with cell instances” check box.

Click **OK**. The name of the new cell appears in the Cells Browser and it is automatically selected, making it the current cell.

5. Zoom in or out as needed so that the view is reasonable for the work you want to perform. This is easier if you have the user grid turned on, as it gives you a sense of scale.
6. Insert objects as needed.
7. Place references to the new cell within other cells in the design.
8. The layout viewer lets you edit cells in two ways:
 - You can edit the cell directly by opening it from the layout window or Cells Browser. This displays the cell separate from the other cells in the layout.
 - You can set a cell reference to be the “editing context”, which means you make changes to the original cell while seeing how the cell fits in context to a higher-level cell (the current cell).

Using either method, any changes you make to the cell are replicated in every cell reference.

9. You can also select an instance of a cell and copy it to the same layout in a different location, or copy it to a completely different layout. If you copy a cell to a different layout, all dependent cells are also copied to the new layout.

Editing a Cell Reference or Cell Reference Array

A cell reference is a pointer to an original cell. Editing the cell causes the contents of all references to that cell to be updated automatically. The layout viewer lets you display cell references and their properties. Hierarchical designs are comprised of cells which can be nested. Because a cell reference is a pointer to a single cell, the only property you can edit for it is its placement (location, orientation, and magnification).

A cell outline provides a visual reference on the dimensions of a cell reference. Use one of the following methods to display cell outlines:

- Display the Preference dialog box by choosing **Options > Layout View**, and then select the Draw Reference Outline option to display cell outlines. Deselect it to hide cell outlines.
- Use the keyboard shortcut Shift-c (or C) to toggle the display of cell outlines.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- Cell outlines are displayed.

Procedure

1. Enable the Reference select mode filter if it is not already enabled.
2. In the Cells Browser, select the cell containing the reference cell or reference cell array.
3. Set the viewer depth such that the reference cell or reference cell array you want to inspect appears outlined.
4. Select the reference cell or reference cell array.

The application highlights the selected reference or reference array.

5. Display the Object Properties dialog box using one of the following methods:
 - Click the right mouse button to display the Cell menu and choose **Properties**.
 - Choose **Object > Properties**.
6. Specify the new placement by editing any of the following:
 - X or Y coordinates
 - Magnification
 - Angle of rotation

- Mirror

Cell reference arrays contain the following additional fields:

- Columns
- Rows
- dx
- dy

7. Click **Apply**.

Note

 If the extent of the cell has changed, you may have to adjust the zoom to see the effect of the changes.

Creating an Array of Cell References

A cell reference array is a collection of cell references arranged in a two-dimensional array. Cell reference arrays are treated as a single object and manipulated using any function that applies to cell references.

The properties you can edit are all of the cell reference properties, which impact each cell reference in the array, plus the dimensions of the array (expressed in terms of number of references along the x and y axis), and the spacing of the references in each direction.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Choose **Object > Create Array Reference**.

This displays the Create Array Reference dialog box.

2. Fill out the parameters for the cell reference array.

3. Select the **Create** option to create the cell reference array at specified X- and Y-coordinates, or select the **Place Manually** option to place it in the layout using the cursor.

To place multiple cell reference arrays using the **Place Manually** option, select the **Repeat** check box.

4. Click **OK**.

- If you selected the **Create** option, the cell reference array is created at the specified X- and Y-coordinates.

- If you selected the Place Manually option, click in the layout to place the cell reference array. If the Repeat check box was selected, you can continue placing cell reference arrays. To stop placing arrays, press Esc.

Editing in Context

When making minor edits using the Calibre layout viewer, you can modify any shape across the layout's cell hierarchy without switching the edit context. This ability to select geometries at any level and edit them directly is useful for making changes to a lower-level polygon with the higher-level context in view. You can either modify the geometry for all instances of the cell in which it is contained, or you can have the tool clone the context and modify the geometry for only the selected cell.

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Creating a Cloned Cell

Clones are replicas of cell references. Cells that have more than one instance can have a reference replaced with a reference clone. This is useful if you want to apply edits to an instance but do not want those instances to affect other instances of the same cell. If you choose to clone the cell containing the geometry to be modified, cells up the hierarchy are cloned.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- The layout must contain at least two instances of a referenced subcell.

Procedure

1. Click **Reference** in the Object Selection Toolbar.
2. Right-click on a reference in the layout and choose **Clone Cell** from the popup menu.

The Cells Browser displays the resulting cloned cell. The name of the clone is the original cellname appended with “_copy_#”, where “#” is an integer starting with 1, and this number is incremented for each added cloned cell for the same original cell.

Results

You can now modify the cloned cell without affecting other instances of the same cell.

Editing a Cloned Cell

Cloning a cell to create a unique context works even if the context is deep in the cell hierarchy or if array instances are involved. If you choose to clone the cell containing the geometry to be modified, cells up the hierarchy are cloned.

Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.
- The layout must contain at least two instances of a referenced subcell.

Procedure

1. Increase the viewer depth as needed to display the outline of the referenced cell.
2. Click **Reference** in the Object Selection Toolbar.
3. Right-click on a reference in the layout and choose **Set as Context**.

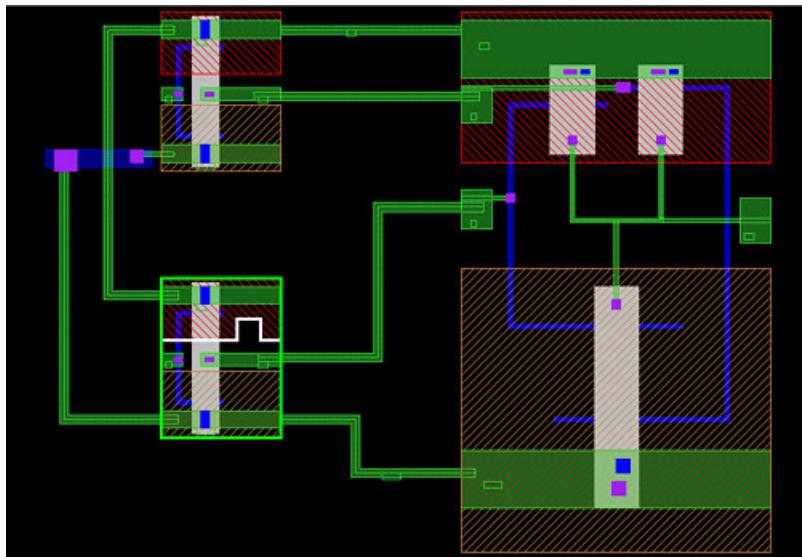
This displays the Edit Context Question dialog box asking if you want to clone the cell to create a unique context. Options include:

- Edit All Instances — Changes all instances.
 - Edit This Instance — Clones the cell to create a unique context.
 - Cancel
4. Select **Edit This Instance**.
- This clones the cell to create a unique context. The Cells Browser displays the resulting cloned cell.
5. Optionally, choose **View > Zoom Context** to zoom to the cloned cell.
 6. You can now perform editing operations, such as move, rotate, or delete, on the cloned cell.

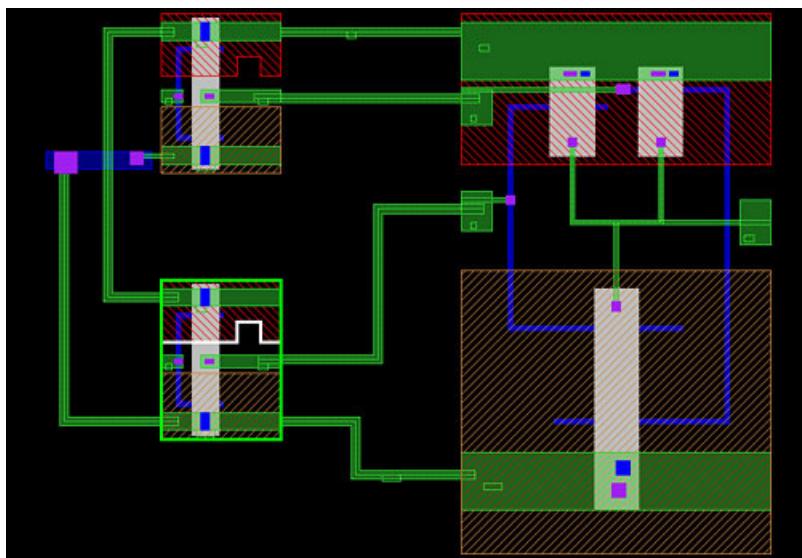
Note

 Other instances of this cell remain unchanged.

For example, the polygon being notched in the figure is in a cell referenced twice in the layout. If you choose to edit a clone to create a unique edit context rather than editing the original cell, only one instance of the cell is updated.



If you choose to edit the original cell rather than editing a clone, both instances of the cell are updated.



Editing Multiple Cell Contexts

You can edit across multiple cell contexts for the delete, move, notch, split, expand, flatten, and split array reference operations. The Editing cells in context setting located on the **Objects** tab in the Preferences dialog box determines how edits are handled across multiple cell contexts.

Restrictions and Limitations

The rotate, mirror X/Y, and snap to grid operations are not supported.

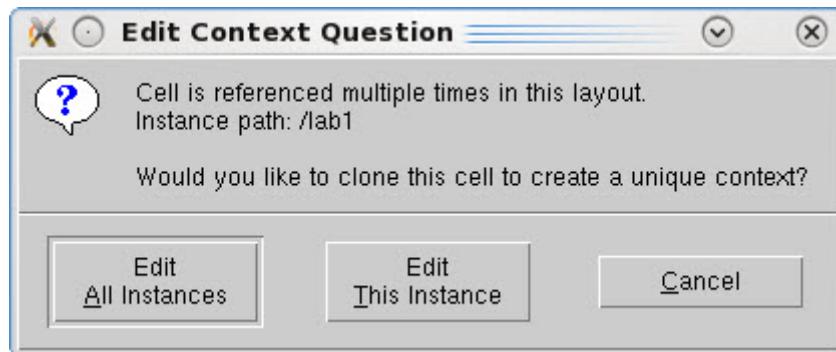
Prerequisites

- Calibre DESIGNrev is running in interactive GUI mode and a layout is open.

Procedure

1. Choose **Options > Objects** to display the **Objects** tab in the Preferences dialog box.
2. Set the Editing cells in context option to “Ask me about cloning cells”.
3. Click **OK**.
4. Ensure the desired object type (for example, Polygon) is selected in the Object Selection toolbar.
5. Increase the viewer depth as needed to display the contents of the referenced cell.
6. Select the desired object in the cell.
7. Perform the desired edit operation. For editing multiple cell contexts, valid edit operations include delete, move, notch, split, expand, flatten, and split array reference.

This displays the Edit Context Question dialog box.



8. Choose the Edit All Instances option.

Related Topics

[Preferences Dialog Box - Objects Tab](#)

Chapter 8

User Interface Reference

There are some major GUI items in Calibre DESIGNrev that are also common to the other layout viewers (Calibre WORKbench, Calibre MDPview, and Calibre LITHOview).

For information that is specific to the other layout viewers, refer to the appropriate user documentation:

- For Calibre MDPview — *Calibre MDPview User's and Reference Manual*
- For Calibre LITHOview and Calibre WORKbench — *Calibre WORKbench User's and Reference Manual*

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Calibre DESIGNrev GUI

The Calibre DESIGNrev GUI is a window-based graphical environment consisting of several elements that enable you to view and manipulate your layout.

Figure 8-1. Calibre DESIGNrev GUI

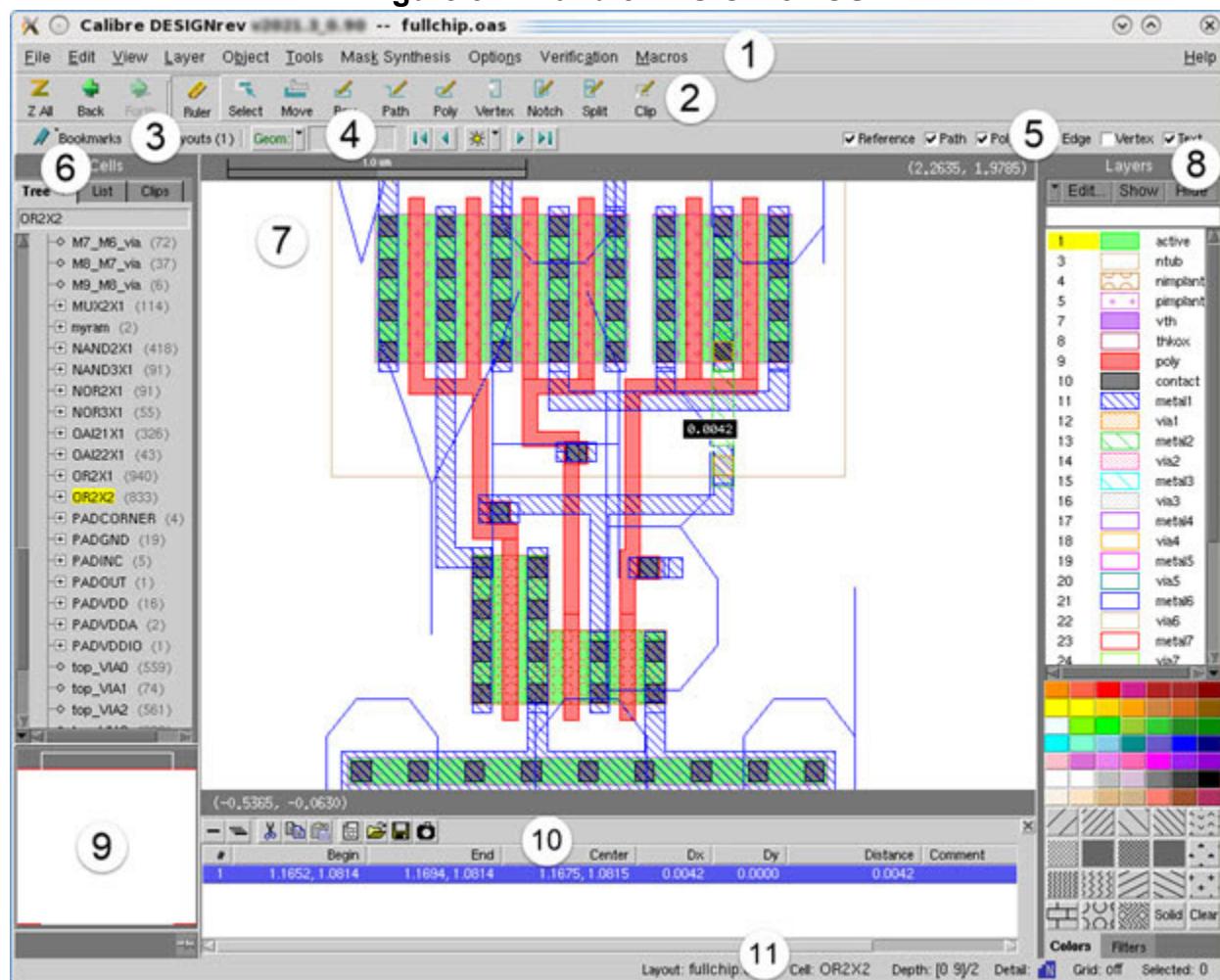


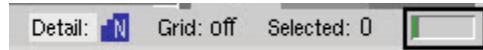
Table 8-1. Layout Viewer Window Contents

Index	Name	Purpose
1	Menus	Provides access to the application commands.
2	Layout Viewer Toolbar	Provides more commonly-used controls for navigating and editing a layout. Several of these controls are also available in the menus.
3	Session Toolbar	Contains menus that allow you to quickly switch between previously loaded bookmarks, layout files, and overlay files.
4	Find Object Toolbar	Allows you to define search criteria and quickly search for objects.
5	Object Selection Toolbar	Filters for including or excluding the selection of different object types.

Table 8-1. Layout Viewer Window Contents (cont.)

Index	Name	Purpose
6	Cells Browser	Used to view and navigate the cells in a layout based on a tree or list view. Provides access to the Clips palette for accessing and manipulating clips.
7	Layout Viewing Area	Displays the layout(s). Popup menus are available depending on the selected object
8	Layers Browser	Controls the display and appearance of layers in the layout.
9	Layout Navigator	Shows the current viewing area of the layout relative to the whole layout viewing area.
10	Rulers Palette	Displays information about the rulers used in the layout and provides controls for managing the rulers.
11	Status Toolbar	Provides status information for the layout currently displayed in the Layout Viewing Area. The status information includes the layout name, selected cell, display depth, viewing detail, grid display, and number of selected objects. If you invoke Calibre DESIGNrev in High Capacity (HC) mode, the status toolbar displays “(HC)” after the layout name.

The Layout Viewer includes a memory meter that monitors memory usage. To display this meter, choose **Options > Misc Preferences** to open the **Misc** tab in the Preferences dialog box. Click “Show memory usage in status bar” and then click **Apply**. This displays a memory meter in the bottom right corner of the Status Toolbar.

Figure 8-2. Memory Meter

Click the memory meter to display a memory allocation summary.

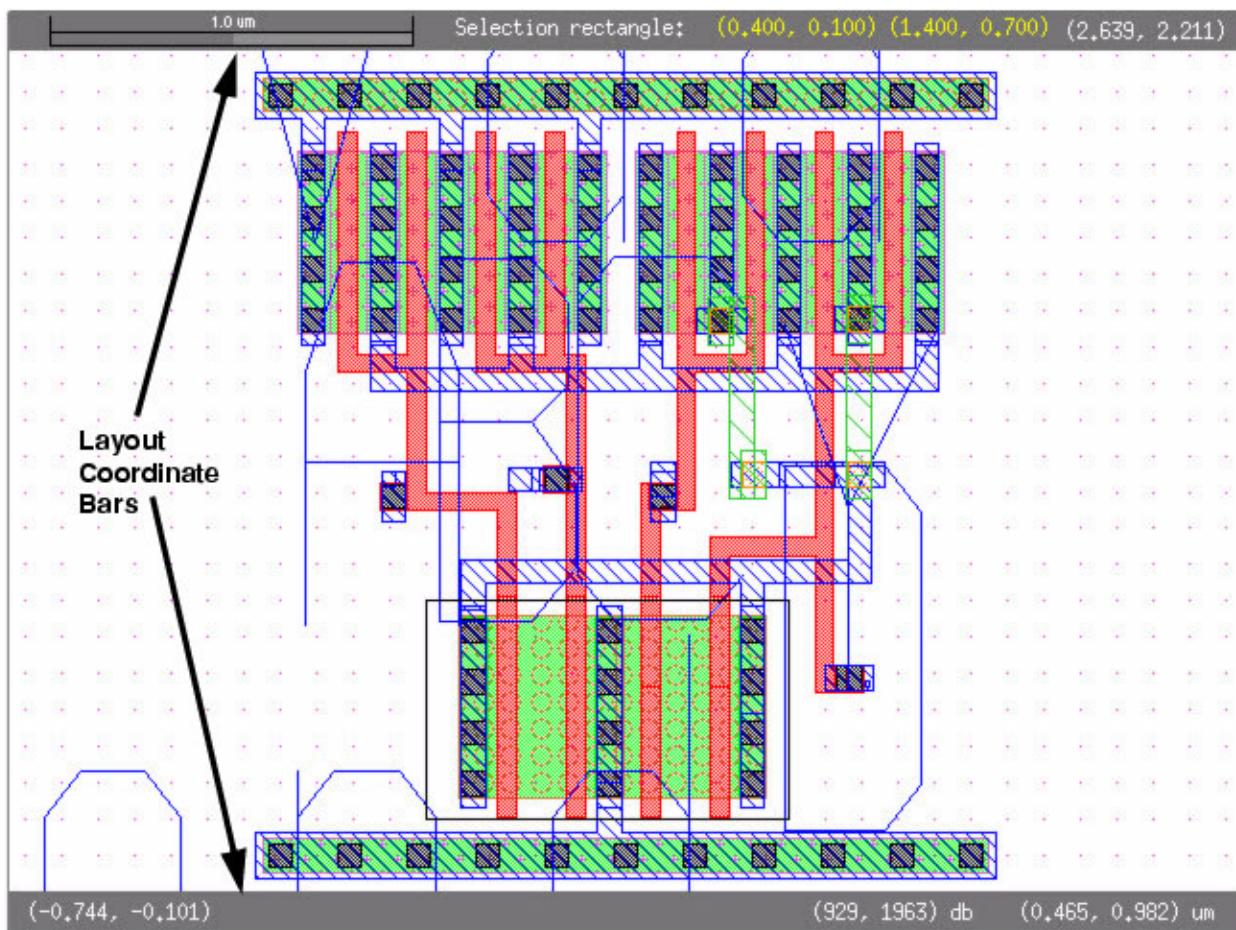
Figure 8-3. Memory Allocation Summary

Memory Allocation	16m:14s
Used by Calibre:	325.7 MB
Other Processes:	1254.3 MB
Free Memory	: 14370.0 MB
<hr/>	
Physical Memory:	15950.0 MB

Layout Viewing Area

You use the Layout Viewing Area to view and edit the current layout.

Figure 8-4. Layout Viewing Area



Layouts are editable unless opened as read-only. To edit an object, such as a polygon, path, text, cell ref, or array, select the object and right-click to display a context sensitive popup menu.

When opening a hierarchical design at view depth 0 (the default) the cells appear as outlines only. To see the contents of the cells, you can change the view depth by pressing numbers 0 through 9. This displays details in your layout. While changing the view depth may cause more objects to be visible (and hence selectable), you cannot edit them directly if they belong to a reference cell.

When your layout does not display in the Layout Viewing Area, you can:

- Change the zoom level.
- Make cells visible.
- Make layers visible.

To edit a cell, first select it in the Cells Browser. The cell appears in the main window where you can begin applying changes.

The Layout Coordinate Bars located at the top and bottom of the Layout Viewing Area provide information on your current view. [Table 8-2](#) provides descriptions of these bars.

Table 8-2. Layout Coordinate Bars

Field	Description
Upper coordinates bar	Displays the coordinates of the upper right corner of the view on the right side of the bar. When a selection rectangle is drawn, displays the lower left and upper right coordinates. Displays the grid scale length on the left side of the bar.
Lower coordinates bar	Displays the coordinates of the lower left corner of the view on the left side of the bar. On the right side of the bar, displays the coordinates of the cursor in database units as well as in microns.

Several customization options are available, including the ability to:

- Change the default drawing order and display of layers.
- Change the default background color.
- Change the view depth.

Related Topics

[Customizing Layers](#)

[Changing the Default Background Color](#)

[Changing the View Depth](#)

Menus

The Calibre DESIGNrev layout viewer menus provide access to the application commands.

Some menu options and toolbar buttons are not available in all layout viewers.

The application commands are organized into the menus shown in Figure [Figure 8-5](#).

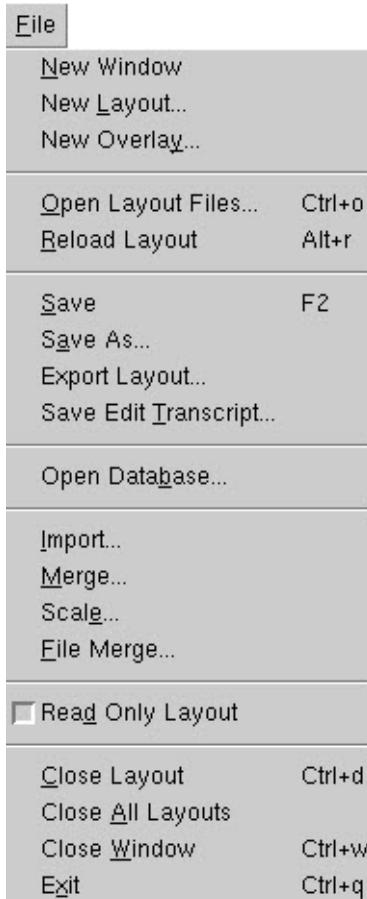
Figure 8-5. Layout Viewer Menus

File	Edit	View	Layer	Object	Tools	Options	Verification	Macros	Help
File Menu									211
Edit Menu									216
View Menu									219
Layer Menu									223
Object Menu									227
Tools Menu									229
Options Menu									231
Verification Menu									233
Macros Menu									236
Help Menu									238

File Menu

The **File** menu contains commands used to operate on layout files.

Figure 8-6. File Menu



Fields

Table 8-3. File Menu

Field	Keyboard Shortcut	Description
New Window		Opens a viewer window you can use to display another layout or other views of the same layout.
New Layout		Displays the Create Layout dialog box , which you use to specify values for a new layout. Upon specifying the values, click OK to open a new empty layout.
New Overlay		Displays the New Overlay dialog box displaying all in-memory layouts in the overlay table of layouts. Overlays are used to visually inspect overlapping data in layouts, and to perform transforms.

Table 8-3. File Menu (cont.)

Field	Keyboard Shortcut	Description
Open Layout Files	Ctrl + o or F5	Displays the Choose Layout Files dialog box used to open an existing layout file. To configure the loading options, select the Options tab.
Reload Layout	Alt + r	Reloads the currently-displayed layout and layer definitions from the last saved version. To reload the layout without reloading layer definitions, set the MGC_CWB_RELOAD_ORIGINAL_LAYER_NAMES environment variable to any value.
Save	F2	Saves the current layout. An OASIS file that is not in gzip format is saved in strict mode by default. To override the default, set the MGC_CWB_LEGACY_OASIS_SAVE_OPTIONS environment variable to 1 prior to saving the file.
Save As		Depending on the type of file you are saving, this option displays either the Choose GDS Layout File Name or Choose Oasis Layout File Name dialog box. You can then select or specify a name for saving the currently open layout. An OASIS file that is not in gzip format is saved in strict mode by default. To override the default, set the MGC_CWB_LEGACY_OASIS_SAVE_OPTIONS environment variable to 1 prior to saving the file.
Export Layout		Displays the Export Layout dialog box used to specify values for exporting the current layout.
Save Edit Transcript		Displays the Save Edit Transcript dialog box used to select or specify a filename for the session transcript. This option records the changes made to a particular layout database during the current session. Refer to Table 8-4 for information on the batch commands that are saved in the transcript file.
Open Database		Displays the Open Database dialog box used to specify values for the database you wish to open.
Import		Displays the Import Layout dialog box used to specify values for importing data from the specified layout into the current layout.
Merge		Displays the Merge Layouts dialog box used to specify values for concatenating two layouts to a new third layout.

Table 8-3. File Menu (cont.)

Field	Keyboard Shortcut	Description
Scale		Displays the Scale layout factor dialog box for specifying a scale factor for the current layout. Enter a scaling factor as either a positive number (to increase the scaling size) or a fractional number (to decrease the scaling size). Scaling is performed by multiplying the coordinates of every layout object by the scaling factor. No rounding (or snapping to a grid) is performed. Undo is not available for use with scaling. To revert to the previous scale, apply an inverse scaling factor.
File Merge		Displays the Layout Filemerge dialog box for merging multiple GDS files, OASIS files, or a mixed input format (GDS and OASIS).
Read Only Layout		When set, prevents editing of the layout. You can change to read-only mode at any time using the Read Only Layout menu option. Choosing this menu item after modifying a layout displays a dialog box prompting you to confirm whether or not to turn on read-only mode. If you click Yes, you will not be prompted to save changes before closing the layout. Related preference: prefs_gui_READONLYEditMode
Close Layout	Ctrl + d	Closes the current layout file but the layout viewer window remains open.
Close All Layouts		Closes all layouts that are open in the layout viewer. For any layouts that were modified, the layout viewer automatically prompts to save or discard changes, or cancel the close operation.
Close Window	Ctrl + w	If multiple windows are open, closes the current viewing window, leaving the layout file open. If only one window is open, exits the application.
Exit	Ctrl + q	Exits the application.

Usage Notes

Table 8-4 displays the batch commands that are saved to the transcript file when you select **File > Save Edit Transcript**. The GUI action that saves the same batch command to the transcript is also listed if available.

Table 8-4. GUI Action and Associated Batch Command Recorded by File > Save Edit Transcript

Batch Command	GUI Action
\$L AND	Layer > Boolean

Table 8-4. GUI Action and Associated Batch Command Recorded by File > Save Edit Transcript (cont.)

Batch Command	GUI Action
\$L cellname	In Cells browser, right-click on cell and select Rename .
\$L COPYCELL GEOM	Layer > Copy
layout create	File > New Layout
\$L create cell	Object > Create Cell
\$L create layer	In Layers browser, click Edit to display Edit Layers dialog box. Then click Add Layer .
\$L create polygon	Object > Create Polygon
\$L create ref	Object > Create Reference
\$L create text	Object > Create Text
\$L create wire	Object > Create Path
\$L delete cell	Object > Delete Cell
\$L delete clip	In Clips palette, right-click on clip and select Delete .
\$L delete layer	In Layers browser, right-click on layer and select Delete .
\$L delete polygon	In Layout Viewing area, right-click on polygon and select Delete .
\$L delete ref	In Layout Viewing area, right-click on reference and select Delete .
\$L delete text	In Layout Viewing area, right-click on text and select Delete .
\$L delete wire	In Layout Viewing area, right-click on wire (path) and select Delete .
\$L flatten cell	In Cells browser, right-click on cell and select Flatten .
\$L flatten ref	In Layout Viewing area, right-click on reference and select Flatten > References .
\$L gdsout	Select File > Export Layout . In the Export Layout dialog box, set the export format to GDS.
\$L import layout	File > Import

Table 8-4. GUI Action and Associated Batch Command Recorded by File > Save Edit Transcript (cont.)

Batch Command	GUI Action
\$L modify layer	In the Layers browser, right-click on the layer and select Edit .
\$L modify origin	Select Object > Properties . In the Cell tab, enter new values in the Origin (X Y) field.
\$L NOT	Layer > Boolean
\$L oasisout	Select File > Export Layout . In the Export Layout dialog box, set the export format to OASIS.
\$L OR	Layer > Boolean
\$L scale	File > Scale
\$L XOR	Layer > Boolean

Edit Menu

To access: **Edit**

Contains commands used to operate on geometric objects selected in the main window.

Figure 8-7. Edit Menu



Fields

Table 8-5. Edit Menu

Field	Keyboard Shortcut	Description
Undo		Undoes the last edit. You can undo the last 25 edit actions.
Redo		Redoes the most recently undone edit task.
Cut	Ctrl + x	Cuts the selected object(s).
Copy	Ctrl + c	Copies the selected object(s).
Paste	Ctrl + v	Paste the cut or copied object(s) at the same coordinates and layer. Pasted objects must be moved.
Delete	Del	Deletes the selected object(s).
Duplicate	Ctrl + e	Creates a copy of an object in “rubber stamp” mode. Only refs, polygons, paths, and text can be duplicated.
MirrorX		Mirrors the selected object(s) across the X axis.

Table 8-5. Edit Menu (cont.)

Field	Keyboard Shortcut	Description
MirrorY		Mirrors the selected object(s) across the Y axis.
Rotate	O	Rotates the selected object around the center of the object (for individual objects) or the center of the bounding box surrounding the objects (for multiple objects), in 90 degree increments in a counter clockwise direction.
Snap to Grid		Causes tool to snap selected objects to the current grid setting.
Merge Shapes		Merges the selected paths and polygons that are on the same layer and in the same cell. The merged objects are created on the original layer and in the original cell. The original objects are deleted.
Set Context	Alt + c	Sets the selected cell reference as the editing context for editing in place.
Clear Context	Alt + C	Unsets the selected cell reference as the editing context.
Select Region	Alt + s	Selects objects that are located within the drawn selection region, and based on the current settings in the Object Selection toolbar. You can specify the maximum number of objects that can be selected by specifying a selected object limit in the Preferences dialog box (Objects tab) or by setting the prefs_edit_selectLimit preference.
Unselect All	u	Unselects all selected objects.

Usage Notes

- Cut, Copy, Paste, and Duplicate are related editing functions that involve the application clipboard. Cut and Copy copy the selected data from the current cell to the clipboard. Paste copies the contents of the clipboard into the current cell. Duplicate makes an additional copy of selected objects.

The object that results from pasting is placed on the same layer and at the same coordinates as the original object. In order to see the resulting object, you must move it after pasting.

If you are pasting into a different cell, make sure the current cell is set to the cell into which you want to paste the object(s).

If you need to adjust the position of new object(s) after pasting or duplicating, refer to “[Moving Objects](#)” on page 94 for information describing how to select and drag objects to the desired location.

- MirrorX, MirrorY, and Rotate are related editing operations that involve transforming the selected objects. All three operations orient the selected objects around their centers. Rotation is in 90 degree increments in a counterclockwise direction.

- If a single object is selected, the operations transform the object around its center.
- If multiple objects are selected, the operations transform the objects around the center of the bounding box enclosing all selected objects.

Related Topics

[Moving Objects](#)

[Object Selection Toolbar](#)

[Preferences Dialog Box - Objects Tab](#)

View Menu

To access: **View**

Contains commands used to assist in navigating and viewing the layout, and controlling the display of palettes.

Figure 8-8. View Menu



Fields

Table 8-6. View Menu

Field	Keyboard Shortcut	Description
Open Cell	d	Displays the Open Cell dialog box used to specify or select a cell for opening. The cell is opened in the Layout Viewing Area and becomes the current cell.
Open Previous Cell	Ctrl + u	After switching from viewing one cell to viewing a different cell, this menu item returns you to the last view of the previous cell.

Table 8-6. View Menu (cont.)

Field	Keyboard Shortcut	Description
Change Hierarchy Depth		<p>Changes the hierarchy depth. Options include:</p> <ul style="list-style-type: none"> • Depths — Displays the View Depth dialog box, which you use to set the Start depth and End depth values controlling which levels of the hierarchy are visible. Value range is integers 0 - 999. You can also use keys 0 - 9 to set the Start depth to values of 0 - 9, and Ctrl + 0 - 9 to set the End depth to values of 0 - 9. Use the F key to set the depth to 9999. • Increment From Depth — Increases the Start depth by 1. • Decrement From Depth — Decreases the Start depth by 1. • Increment To Depth — Increases the End depth by 1. • Decrement To Depth — Decreases the End depth by 1.
Show/Hide References		<p>Displays the Show/Hide References dialog box used to select which cell references are displayed in the layout viewer.</p> <p>The related Scan References menu item is available from the right-click popup menu in the Cells palette, and it invokes the Calibre RVE tool.</p>
Show/Hide Cells		Displays the Show/Hide Cells in Palette dialog box used to select which cells are displayed or hidden in the layout viewer.
Zoom All	Ctrl + a	Shows the entire layout.
Zoom In	Ctrl + z	Magnifies the view by 2x.
Zoom Out	Z	Shrinks the view by 2x.
Zoom Context	—	Show the current edit context.
Go To	Ctrl-.	<p>Displays the GoTo Location dialog box containing options for navigating to a specific location in the design.</p> <p>Enter the x and y coordinates, and an optional width of the display area. Entries can be separated by a space, comma, left or right parentheses, colon, or semi-colon.</p> <p>See “GoTo Location Dialog Box” on page 221 for more details.</p>
Pan	Arrow keys	<p>Pans to selected locations in the layout. Options include:</p> <ul style="list-style-type: none"> • Up • Down • Left • Right
Update Display	U	Redraws the current display.

Table 8-6. View Menu (cont.)

Field	Keyboard Shortcut	Description
Add Clip Region	Alt + R	Adds a clip for the selected area.
Show Clips Palette		Toggles the display of the Clips palette. Related preference: prefs_gui_showClipsPalette
Show Console		Displays the Tk framework console.
Show Rulers Palette		Displays the rulers palette.
Preserve View Across Cells		Allows you to preserve the current viewed coordinates when switching the cell or layout being viewed. The small push pin in the lower right corner of the World Navigator is also used to preserve the navigator's view coordinates when switching cells or layouts.
Hide Text		Toggles visibility of text items. Related preference: prefs_text_show
Hide Lower Level Text		Hides text items on a lower level. Related preference: prefs_text_show
Snapshot		Displays the Snapshot dialog box used to specify the output name, format, and source. This creates a snapshot of the current contents of the layout viewing area and saves it to a graphics output file.

Usage Notes

GoTo Location Dialog Box

The GoTo Location dialog box provides precise control over the view location. Choose **View > GoTo** to display the GoTo Location dialog box. You can then:

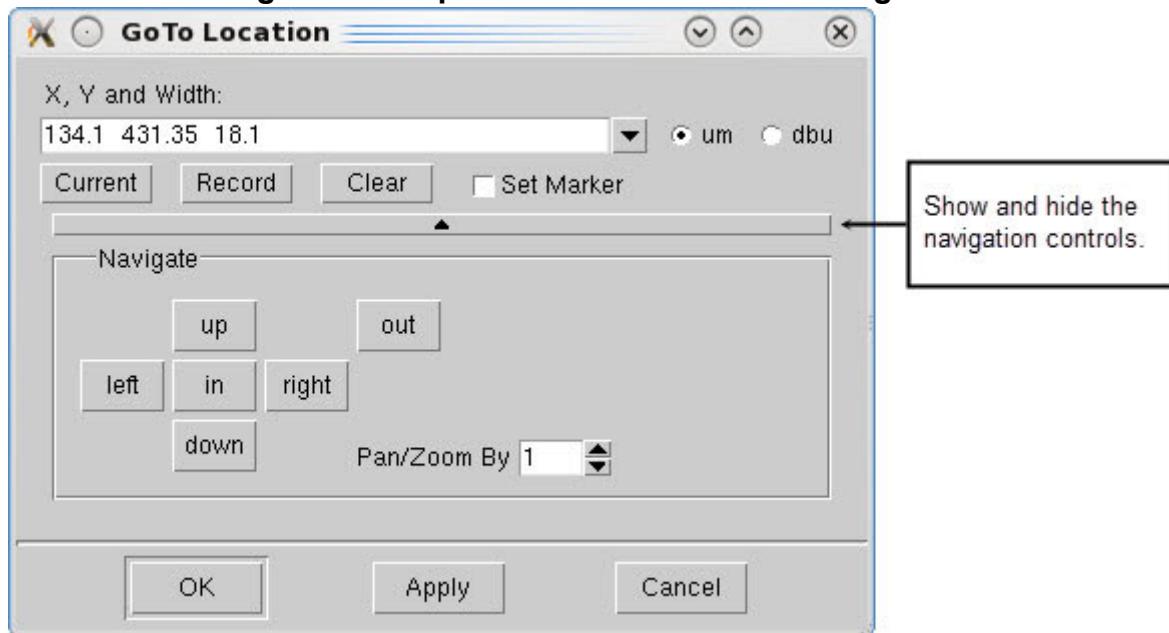
- **Go to a desired location** — Enter X, Y coordinates in the text box to specify the center point of the display, and enter an optional width value for the width of the area to display. Entries can be separated by space, comma, left or right parentheses, colon, or semi-colon. Click **Apply** to go to the location.

Standard math expressions may be used to express a value, but the expression cannot contain any separator characters. Math expressions are evaluated when you click **Apply**.

- **Pan and zoom using the Navigate field** — Click the arrow button to display the Navigate field. This field contains buttons for zooming and panning the current viewing area. You can also set the amount by which you zoom or pan. See [Figure 8-9](#).

- **Record coordinates** — Enter coordinates in the text box, or navigate to a desired location and click **Current**. Then, click **Record** to record the setting. Repeat these steps to record multiple sets of coordinates. You can return to any recorded setting by clicking the arrow next to the text box and selecting a recorded setting from the dropdown list. Recorded settings are preserved for the duration of the session. You can click **Clear** to clear the recorded settings.
- **Set a marker** — Click the **Set Marker** button to enable the marker, and enter coordinates, if desired. When you click **Apply**, a temporary marker is placed at the coordinate location. The marker can be used as a visual aid, and remains at the current location until **Apply** is clicked again, or you close the GoTo dialog box.

Figure 8-9. Expanded GoTo Location Dialog Box



Related Topics

[Show/Hide References Dialog Box](#)

[Zoom and Pan Features](#)

[Snapshot Dialog Box](#)

Layer Menu

To access: Layer

Contains commands used to manipulate layers and layer properties.

Figure 8-10. Layer Menu



Fields

Table 8-7. Layer Menu

Field	Keyboard Shortcut	Description
Edit		Displays the Edit Layers dialog box used to change the layer name, width, and drawing order for selected layer(s).
Restore Defaults	Ctrl + r	Resets all layer properties to the defaults, which are saved in the default layer properties file.

Table 8-7. Layer Menu (cont.)

Field	Keyboard Shortcut	Description
Save as Default		Saves the contents of the current layer file to the default layer configuration file located at <code>~/.calibrewb_workspace/layerprops</code> .
Sort by		<p>Sorts the layers in the Layers Browser by the selected criteria. Options include:</p> <ul style="list-style-type: none"> • Number — Sorts Layers Browser by layer number. Used with Increasing Decreasing options. Default: Sort by number in increasing order. • Name — Sorts the Layers Browser alphabetically by name. Used with Increasing Decreasing options. • Draw Order — Sorts the Layers Browser using the drawing order previously specified using Layer > Edit. • Increasing — Sorts the Layers Browser from lowest to highest value either numerically or alphabetically. Default: Sort in ascending order. • Decreasing — Sorts the Layers Browser from highest to lowest value either numerically or alphabetically. • Selection — Groups layers listed on the Layers Browser by selection state. • Visible — Groups layers listed in the Layers Browser by visibility state. • In View — Groups layers listed in the Layers Browser by what is in the currently-viewable design area. Redraws those layer groups in either ascending or descending order. For example, in the default state (Ascend), the layer of a currently-viewable object is moved to the top of the list. The layer of an object not in the current view is moved to the bottom of the list.
Reassign Colors by Sort Order		Reassigns layer colors by the Layers Browser sort order.
Load Layer Properties		Displays the Load Layer Properties dialog box used to select a layer properties file to load. Layer filters are loaded in the Layers Filter palette in the same order as specified in the layer properties file.

Table 8-7. Layer Menu (cont.)

Field	Keyboard Shortcut	Description
Save Layer Properties		Displays the Save Layer Properties dialog box used to save the layer properties as they exist in the currently loaded layout file. This action saves layers, connection statements, layer filters, and layer appearance definitions. Layer filters are written to the layer properties file in the order presented in the Layers Filter palette.
Load Input SVRF Layer Names		Displays the Load Input SVRF Layer Names dialog box used to read the layer mapping from Layer specification statements (layer <name> <number>).
Load Output SVRF Layer Names		Displays the Load Output SVRF Layer Names dialog box used to specify a rule file for reading in layer names from DRC Check Map statements.
Oasis Layer Names		Opens the Oasis Layernames dialog box and displays all layer name data for the layout. This option is useful for OASIS layer names, as the OASIS file format allows multiple layer name definitions per layer. When the layout viewer loads an OASIS layout, all of the layout's layer names are read. However, only the first name of layers with a unique layer or datatype value is displayed in the Layers Browser.  Note: This option is not supported in HC mode.
Import Net Layers		Displays the Choose Net Layout File dialog box used to select the net database file to import.  Note: This option is not supported in HC mode.
Select All Layers	Ctrl + I	Selects all layers in the Layers Browser.
Select All Layer Objects		Selects all layer geometries in the layout. This can take a long time, and there is no interrupt feature.
Clear Cell Layers		Removes all polygons from selected layers in a cell. (No Undo)
Clear Net Layers		Clears any existing net highlights.
Clear RVE Layers		Clears any existing Calibre RVE highlights.
Copy		Copies an input layer, cell, or selection to a new output layer.
Size		Resizes an input layer, cell, or selection to a new output layer.

Table 8-7. Layer Menu (cont.)

Field	Keyboard Shortcut	Description
Boolean		Performs the selected Boolean operation on the specified input layers, cells, or selections and writes the result to an output layer.
Line Width		Changes the line width of layout geometries. Options include: <ul style="list-style-type: none">• 5 pixels• 3 pixels• 1 pixel• Increment• Decrement
Overwrite Colors		When selected, shapes that overlap are drawn with the higher ordered layer on top. Objects underneath the last layer are hidden. Related preference: prefs_view_layerColorDrawMode
Blend Colors		When selected, shapes that overlap have their colors blended together. Related preference: prefs_view_layerColorDrawMode

Related Topics

[Edit Layers Dialog Box](#)

[Loading Layer Names from an SVRF File](#)

[Using Layer Maps](#)

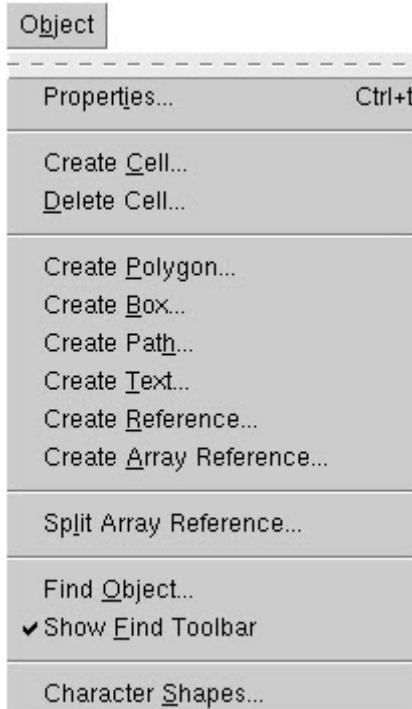
Object Menu

Contains commands for manipulating and creating objects in a design.

Description

The **Object** menu shown in [Figure 8-11](#) provides access to application commands used to manipulate and create objects in a design. Refer to [Table 8-8](#) for descriptions of these fields.

Figure 8-11. Object Menu



Fields

Table 8-8. Object Menu

Field	Keyboard Shortcut	Description
Properties	Ctrl + t	Displays the Object Properties dialog box used to edit the data of a selected object.
Create Cell		Displays the Create Cell dialog box used to creates a new cell.
Delete Cell		Displays the Delete Cell dialog box used to specify a cell to delete. You can use a wildcard to delete one or more cells matching the specified pattern.
Create Polygon		Displays the Create Polygon dialog box used to specify the parameters for creating a polygon.

Table 8-8. Object Menu (cont.)

Field	Keyboard Shortcut	Description
Create Box		Displays the Create Box dialog box used to specify values for creating a box.
Create Path		Displays the Create Path dialog box used to specify values for creating a path.
Create Text		Displays the Create Text dialog box used to specify values for creating text.
Create Reference		Displays the Create Cell Reference dialog box used to specify values for creating a cell reference.
Create Array Reference		Displays the Create Array Reference dialog box used to specify the parameters for creating an array reference.
Split Array Reference		Splits an array of references into individual cell references.
Find Object		Displays the Find Object dialog box used to search for geometries, references, text objects, and clips in the current layout. This dialog box provides the ability to specify an optional filter and search options.
Show Find Toolbar		Toggles the visibility of the Find Object Toolbar.
Character Shapes		Displays the Insert Char Shapes dialog box used for inserting letters in the form of polygons. Dialog box options are: <ul style="list-style-type: none">• String — In the text box, enter valid characters include uppercase and lowercase alpha characters, numeric characters, and ????• Character grid, dbu — Select the grid, dbu value for displaying the text.• Justify — Select the justification (left, center, right) for displaying the text. Character shapes are typically used to create logos.

Related Topics

[Object Properties Dialog Box - Cell Tab](#)

[Find Object Toolbar](#)

[Find Object Dialog Box](#)

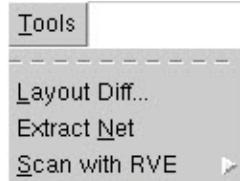
Tools Menu

Contains commands used to perform tool operations on a design.

Description

The **Tools** menu shown in [Figure 8-12](#) provides access to application commands used to perform various tool operations on a design. Refer to [Table 8-9](#) for descriptions of these fields.

Figure 8-12. Tools Menu



Fields

Table 8-9. Tools Menu

Field	Keyboard Shortcuts	Description
Layout Diff		Displays the Layout Diff dialog box used to compare two files.
Extract Net		Displays the results of the extracted Nets in the Nets browser.

Table 8-9. Tools Menu (cont.)

Field	Keyboard Shortcuts	Description
Scan with RVE		<p>Invokes the Calibre RVE application. Options include:</p> <ul style="list-style-type: none">• Scan References with RVE — Displays the Scan References with RVE dialog box in which you can select or specify cell instances to scan with Calibre RVE. You can use the wildcard character (*) to scan multiple cells.• Scan Layer With RVE (flat) — Calibre RVE identifies all polygons on the selected layer, regardless of whether they exist in the top-level cell, or are drawn in cell references.• Scan Layer With RVE (hierarchical) — Calibre RVE preserves the hierarchy and identifies results in the cells in which they exist. It does not flag drawn polygons in cell references. <p>When scanning overlays, only one of the overlay's layout files can be scanned.</p> <p>These operations use the currently viewed cell as the top cell for the scan. Refer to the <i>Calibre RVE User's Manual</i> for complete information on Calibre RVE.</p>

Related Topics

[Layout Diff Dialog Box](#)

[Extracting a Connected Net](#)

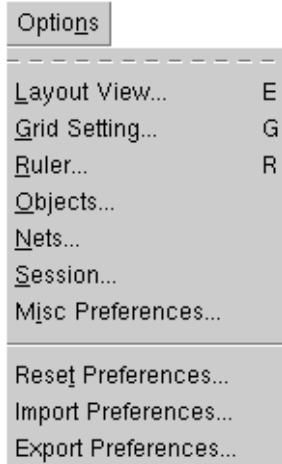
Options Menu

Contains commands used to customize different aspects of the layout viewer.

Description

The **Options** menu shown in [Figure 8-13](#) provides access to application commands used to customize different aspects of the layout viewer. Refer to [Figure 8-13](#) for descriptions of these fields.

Figure 8-13. Options Menu



Fields

Table 8-10. Options Menu

Field	Keyboard Shortcut	Description
Layout View	E	Displays the View tab in the Preferences dialog box, used to control the appearance of the layout viewer.
Grid Setting	G	Displays the Grid tab in the Preferences dialog box, used to control the behavior and appearance of the grid.
Ruler	R	Displays the Rulers tab in the Preferences dialog box, used to control ruler properties
Objects		Displays the Objects tab in the Preferences dialog box, used to control the default settings for paths and text.
Nets		Displays the Nets tab in the Preferences dialog box, used to control the methods used to detect and highlight net connectivity in the layout viewer.
Session		Displays the Session tab in the Preferences dialog box, used to control the appearance of the layout viewer interface and text effects on cell extents.

Table 8-10. Options Menu (cont.)

Field	Keyboard Shortcut	Description
Misc Preferences		Displays the Misc tab in the Preferences dialog box, used to control options such as exit behavior, licensing, Layers and Cells palettes, and incremental loading.

Related Topics

- [Preferences Dialog Box - View Tab](#)
- [Preferences Dialog Box - Nets Tab](#)
- [Preferences Dialog Box - Grid Tab](#)
- [Preferences Dialog Box - Session Tab](#)
- [Preferences Dialog Box - Rulers Tab](#)
- [Preferences Dialog Box - Misc Tab](#)
- [Preferences Dialog Box - Objects Tab](#)

Verification Menu

Contains commands used to access Calibre .

Description

The **Verification** menu shown in [Figure 8-14](#) provides access to several Calibre GUI interfaces for verification tools, such as Calibre Interactive, Calibre RVE, Calibre Pattern Matching, and Calibre RealTime. Refer to for descriptions of these fields.

Figure 8-14. Verification Menu



Fields

Table 8-11. Verification Menu

Field	Keyboard Shortcut	Description
Run nmDRC		Invokes Calibre Interactive for initiating a Calibre nmDRC run. Refer to “ Calibre Interactive nmDRC ” in the <i>Calibre Interactive User’s Manual</i> for more information.

Table 8-11. Verification Menu (cont.)

Field	Keyboard Shortcut	Description
Run DFM		Invokes Calibre Interactive for initiating a Calibre DFM run. Refer to “ Using Calibre Interactive to Perform DFM ” in the <i>Calibre Interactive (Classic GUI) User’s Manual</i> for more information.
Run nmLVS		Invokes Calibre Interactive for initiating a Calibre LVS run. Refer to “ Calibre Interactive nmLVS ” in the <i>Calibre Interactive User’s Manual</i> for more information.
Run PERC		Invokes Calibre Interactive for initiating a Calibre PERC run. Refer to “ Calibre Interactive nmLVS ” in the <i>Calibre Interactive User’s Manual</i> for more information.
Run PEX		Invokes Calibre Interactive for initiating a Calibre PEX run. Refer to “ Calibre Interactive PEX ” in the <i>Calibre Interactive User’s Manual</i> for more information.
Run xACT		Invokes Calibre Interactive for initiating a Calibre xACT run. Refer to “ Calibre Interactive xACT ” in the <i>Calibre Interactive User’s Manual</i> for more information.
Run 3DSTACK		Invokes Calibre Interactive for initiating a Calibre 3DSTACK run. Refer to “ Getting Started With Calibre 3DSTACK ” in the <i>Calibre 3DSTACK User’s Manual</i> for more information.
Start RVE		Invokes the Calibre RVE tool selection box. Refer to “ Getting Started with Calibre RVE ” in the <i>Calibre RVE User’s Manual</i> for information on using Calibre RVE.
Run Jobs		Invokes the Calibre Interactive tool to set up a job using one of the following flows: <ul style="list-style-type: none"> • DRC • LVS • PERC • xACT • PEX Refer to the <i>Calibre Interactive User’s Manual</i> for information on using Calibre Interactive.
RVE/CI Setup		Invokes the RVE/CI Setup dialog box. Refer to “ RVE/CI Setup Dialog Box ” on page 354 for information on using this dialog box.

Table 8-11. Verification Menu (cont.)

Field	Keyboard Shortcut	Description
RealTime		<p>Provides options for running Calibre RealTime with Calibre DESIGNrev. Options include:</p> <ul style="list-style-type: none">• Run DRC• Options — Displays the Calibre RealTime-Options dialog box used to specify configuration options for running Calibre RealTime. <p>Refer to the <i>Calibre RealTime Custom User's Manual</i> for more information</p>
Pattern Matching		<p>Provides options for invoking Calibre Pattern Matching from Calibre DESIGNrev. Options include:</p> <ul style="list-style-type: none">• Run Capture — Invokes the Capture Patterns GUI.• Run Match — Invokes the Run Matching GUI.• Open GUI — Invokes the Calibre Pattern Matching GUI. <p>Refer to the <i>Calibre Pattern Matching User's Manual</i> for more information.</p>

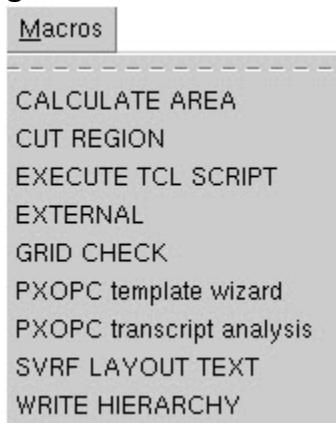
Macros Menu

Provides access to user-defined macros.

Description

The **Macros** menu shown in [Figure 8-15](#) provides access to user-defined macros, which you can define in the *wbinit.tcl* file. Macros are application extensions you write to add new functionality directly to the layout viewer. [Table 8-12](#) lists the Siemens EDA-supported example macros that are installed with Calibre DESIGNrev. These macros provide useful functionality and also serve as examples of the sorts of functions you can add to the application. Some of these macros spawn Calibre batch tool runs that generate the actual results. For information on writing your own macros, consult the [Calibre DESIGNrev Reference Manual](#).

Figure 8-15. Macros Menu



Fields

Table 8-12. Macros Menu

Field	Description
CALCULATE AREA	Calculates the total area of the selected objects and the area of the selected objects for each layer.
CUT REGION	Displays the Save region as dialog box prompting you to specify a layout file for saving the selected region.
EXECUTE TCL SCRIPT	Displays the Open File dialog box prompting you to select a TCL script for execution.
EXTERNAL	Performs EXTERNAL spacing checks on a layer.
GRID CHECK	Checks to see if objects are on the grid.
PXOPC template wizard	Displays the PXOPC template generator dialog box for creating an initial pxOPC recipe. Refer to “ Setting Up the SVRF File Using the Calibre pxOPC Template Wizard ” in the <i>Calibre pxOPC User’s and Reference Manual</i> for more information.

Table 8-12. Macros Menu (cont.)

Field	Description
PXOPC transcript analysis	Calls Gnuplot to display graphs of the rate and objective to help you find convergence problems and tune your Calibre PxOPC run. Refer to “ Analyzing Transcripts ” in the <i>Calibre pxOPC User’s and Reference Manual</i> for more information.
SVRF LAYOUT TEXT	Displays the Open File dialog box prompting you to choose a rule file. Upon successfully loading the rule file, the macro adds the text objects that are specified by Layout Text statements. All cells referenced by the Layout Text statements must exist in the currently open layout. An error is generated if a cell does not exist. The macro prints a summary indicating the number of text objects that were added.
WRITE HIERARCHY	Writes a cell’s hierarchy to either the transcript or a separate file.

Related Topics

[wbinit.tcl File Format](#)

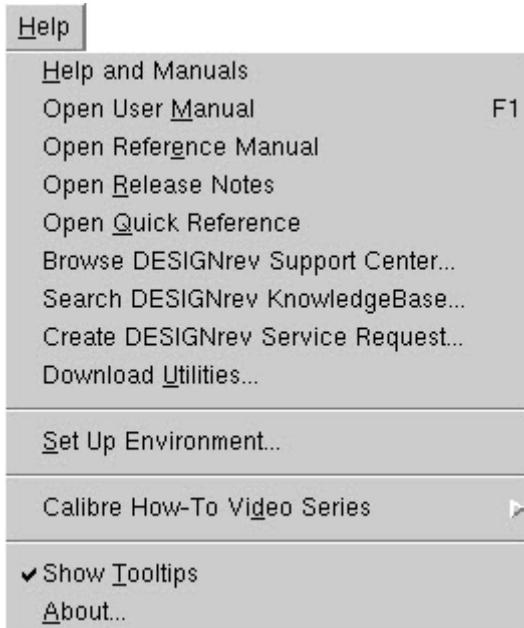
Help Menu

Provides access to the user documentation, utilities, and configuration options.

Description

The **Help** menu shown in [Figure 8-16](#) contains application commands used to access the user documentation, utilities, and configuration options. Refer to [Table 8-13](#) for descriptions of these fields.

Figure 8-16. Help Menu



Fields

Table 8-13. Help Menu

Field	Keyboard Shortcut	Description
Help and Manuals		Invokes the PDF viewer and opens the appropriate Calibre tools bookcase, from which you can open any of the manuals associated with your product.
Open User Manual	F1	Invokes the PDF viewer and opens the appropriate layout viewer manual.
Open Reference Manual		Invokes the PDF viewer and opens the <i>Calibre DESIGNrev Reference Manual</i> .
Open Release Notes		Invokes the PDF viewer and opens the <i>Calibre Release Notes</i> .
Open Quick Reference		Invokes the PDF viewer and opens the <i>Calibre DESIGNrev Key Definitions Quick Reference Card</i> .

Table 8-13. Help Menu (cont.)

Field	Keyboard Shortcut	Description
Browse DESIGNrev Support Center		Invokes a browser and, upon logging in to Support Center, displays the Calibre DESIGNrev Overview web page.
Search DESIGNrev Knowledgebase		Invokes a browser and, upon logging in to Support Center, displays the Advanced Search web page.
Create DESIGNrev Service Request		Invokes a browser and, upon logging in to Support Center, displays the Open a New Service Request web page.
Download Utilities		Invokes a browser and, upon logging in to Support Center, displays the Download Calibre Utilities web page.
Set Up Environment		Opens the Setup Online Documentation Reader window, which allows you to define the reader to invoke when viewing online documentation.
Calibre How-To Video Series		Provides access to Calibre How-To videos on YouTube, Support Center, and Siemens.com.
Show Tooltips		Toggles balloon help on or off.
About		Displays version information about the application.

Toolbars and Palettes

The toolbars and palettes are typically groupings of items that are related to a specific operation, such as selecting or finding an object.

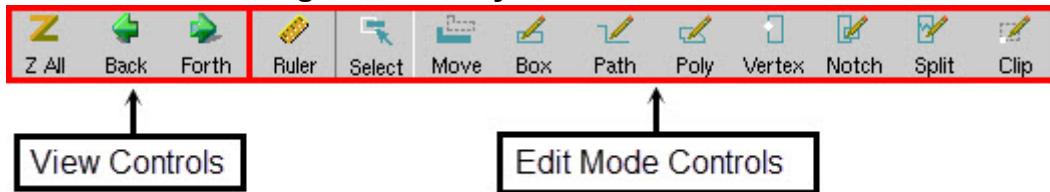
Layout Viewer Toolbar	241
Session Toolbar	244
Find Object Toolbar	245
Object Selection Toolbar	247
Status Toolbar	248
Clips Palette	250
Rulers Palette	252

Layout Viewer Toolbar

To access: Located below the Layout Viewer menus.

Use the layout viewer toolbar to access view controls for navigating a layout and edit mode controls for manipulating the layout.

Figure 8-17. Layout Viewer Toolbar



Description

The Calibre DESIGNrev layout viewer toolbar occupies the left (view controls) and right (edit mode controls) sides of the toolbar row. This toolbar is organized into two sets of controls:

- View Controls — Used to navigate a layout.
- Edit Mode Controls — Used to manipulate objects in the layout view.

Calibre LITHOview, Calibre MDPview, and Calibre WORKbench have additional controls available in the Layout Viewer toolbar that are specific to those tools.

Fields

Table 8-14. Layout Viewer Toolbar

Field	Keyboard Shortcut	Description
Z All	Ctrl + a	Displays the entire layout.
Back		Returns to view displayed just previous to the current view.
Forth		Returns to the view just after the current view.
Ruler	r	Use this to measure objects in the display. Preferences can be set to cause rulers to snap to edges.
Select	s	Hold down the Shift key and click additional geometries to select multiple objects. Draw a box around an area with the left mouse button to select all objects inside the box on the currently selected layer when you use the Edit > Select Region menu item.
Move	m	Clicking and dragging with the left mouse button moves the selected object(s).

Table 8-14. Layout Viewer Toolbar (cont.)

Field	Keyboard Shortcut	Description
Box	b	Each click of the left mouse button defines a diagonal Vertex of a rectangular polygon.
Path	h	Each click of the left mouse button defines a vertex of a path object.
Polygon	p	Each click of the left mouse button defines a vertex of a polygon. A double-click of the left mouse button completes the polygon.
Vertex	v	Each click of the left mouse button identifies an edge to be broken, then adds a new vertex to the edge, breaking it into two edges.
Notch		In Notch mode, you add or remove rectangular sections of a polygon by drawing them with the mouse.
Split		In Split mode, you draw an orthogonal line through selected polygons and paths. These shapes are split into multiple objects along that line.
Clip		In Clip mode, you add clips by drawing them with the mouse. You drag across part of the layout to make a clip. Clips are independent of the layout.

Usage Notes

- You can also control the view by zooming in and out using the right mouse button to create a zoom rectangle. Hold down the right button and move diagonally. The view zooms in or out depending on the direction of the mouse movement.
- Pan through the layout view in any direction by clicking the middle mouse button. The view re-centers on the spot where you clicked.
- A View History tracks all adjustments you make to the view. You can return to a previous view at any time by clicking the **Back** button in the toolbar. Once you are at a previous view, the **Forth** button lets you move forward in the view history up to the latest view. However, if you are on a previous view and modify the layout, you change that record. All views after the view you modify are erased. To save a particular view setting, use Bookmarks.

Figure 8-18. View History Controls



Related Topics

[Zoom and Pan Features](#)

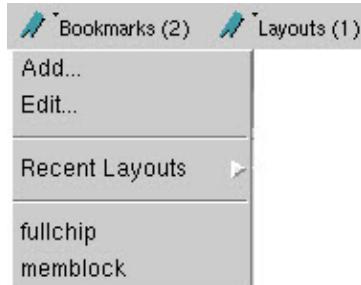
- [Drawing a Box](#)
- [Drawing a Polygon](#)
- [Drawing a Path](#)
- [Drawing a Vertex](#)
- [Drawing a Notch](#)
- [Creating Splits](#)
- [Creating and Working with User-Defined Clips](#)

Session Toolbar

To access: Located below the Layout Viewer toolbar on the left side of the main window.

Use the Session toolbar to quickly switch between previously loaded bookmarks, layout files, and overlay files.

Figure 8-19. Session Toolbar



Description

Use the Session toolbar to quickly switch between previously loaded bookmarks and layout files. The number of open bookmarks or layout files is shown in parenthesis after the toolbar item. For example, “Layouts (3)” indicates three layouts are open.

Fields

Table 8-15. Session Toolbar

Field	Description
Bookmarks	Lists all previously saved bookmarks. The menu also contains options for accessing the Bookmarks Editor dialog box for adding or editing a bookmark.
Layouts	Lists all loaded layouts and overlays. A small check mark shows the current layout or overlay.

Related Topics

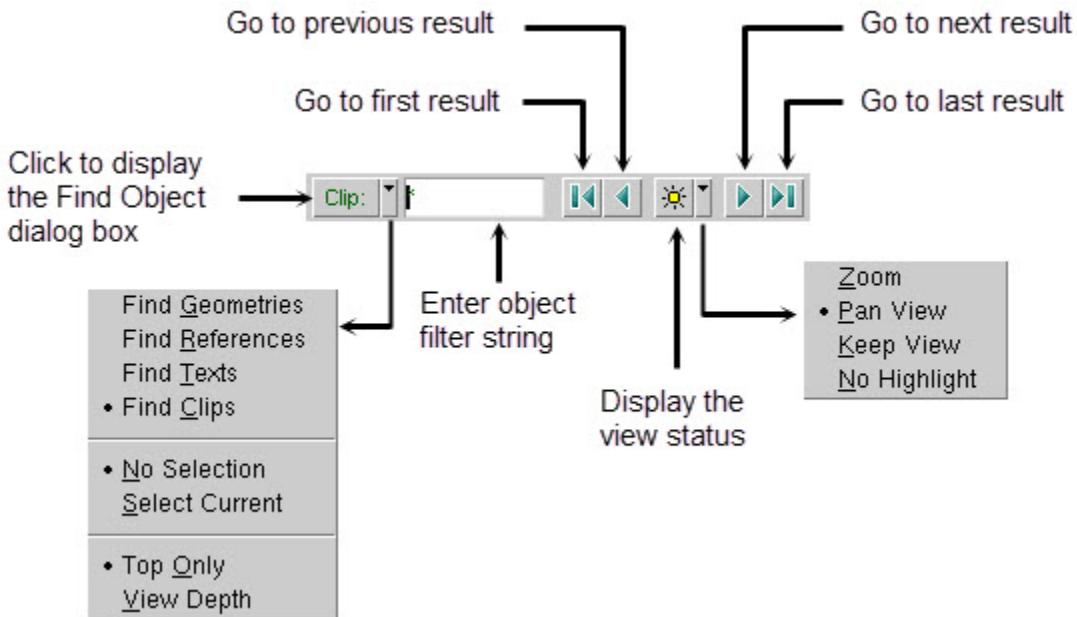
[Bookmarks Editor Dialog Box](#)

Find Object Toolbar

To access: Located below the Layout Viewer toolbar, to the right of the Session toolbar.

Use the Find Object Toolbar to find geometries, references, texts, and clips in the layout. Options allow you to control how you navigate to different object types in the layout.

Figure 8-20. Find Object Toolbar



Description

If the Find Object Toolbar does not appear in your Layout Viewer Window, you can display it using the **Object > Show Find Toolbar** menu item.

The Find Object toolbar displays the current object type (for example, Geom). Click this button to display the Find Object dialog box, which contains all of the toolbar options and some additional features.

Click the arrow next to the object type to display a menu of object filter and search options. You can use the text box to constrain the find operation to specific layers, cell names, text strings, or clips. Specifying an object filter in the Find Object Toolbar is automatically reflected in the Find Object dialog box.

The arrow buttons (from left to right) navigate to the first, previous, next, and last result. The down arrow located between the navigation buttons displays a menu of viewing options that you select to zoom, pan, keep, or not highlight the view when an object is found.

Fields

Table 8-16. Find Object Toolbar

Field	Description
Find Geometries	Limits the search to specific layers. This option includes paths and uses the layer number text box in the toolbar, or, if no numbers are entered, uses the selected layer(s) in the Layers Browser.
Find References	Limits the search to specific cell names and includes arrays.
Find Texts	Limits the search to specific strings and uses the selected layer(s) in the Layers Browser.
Find Clips	Limits the search to clips.
No Selection	Does not select the currently highlighted result.
Select Current	Selects the currently highlighted result.
Top Only	Searches only the top cell level for connecting geometries.
View Depth	Searches all visible levels.

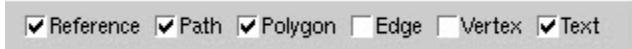
Related Topics

[Find Object Dialog Box](#)

Object Selection Toolbar

To access: Located below the Layout Viewer toolbar, to the right of the Find Objects toolbar.
Use the Object Selection filters to include or exclude the selection of different object types. You can select one or more object selection filters.

Figure 8-21. Object Selection Toolbar



Fields

Table 8-17. Object Selection Toolbar

Field	Description
Reference	Used to move or select a cell reference or array reference.
Path	Used to move or select a contiguous path object.
Polygon	Used to move or select an entire polygon.
Edge	Used to move or select an edge of a polygon.
Vertex	Used to move or select a vertex for an edge.
Text	Used to move or select a text object.

Usage Notes

Alternatively, you can use [prefs_edit_semode](#) to set the object selection mode.

Status Toolbar

To access: Located at the bottom right side of the main window.

Use the layout viewer status bar to find additional information about the current layout.

Figure 8-22. Status Toolbar

Layout: fullchip.oas Cell: top Depth: [0 0]/6 Detail: N Grid: off Selected: 0

Fields

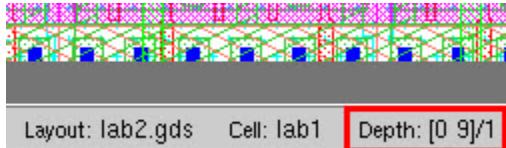
Table 8-18. Status Toolbar

Field	Description
Layout	Displays the name of the current layout. The string “(HC)” appears after the name when a layout is opened in HC mode, and the string “(incr)” appears after the name when a layout is opened in incremental mode.
Cell	Displays the name of the current cell.
Depth	Displays the current view depth. Click the depth values to display the View Depth dialog box.
Detail	Displays the current view detail. Click to toggle the view detail between Normal and High.
Grid	Displays the current status of the grid display. Click to display the Grid tab in the Preferences dialog box.
Selected	Displays the number of selected objects.

Usage Notes

- The view depth is associated with the number of levels in the cell hierarchy. Depths vary from 0 to n-1, where n is the number of hierarchy levels of that cell. The layout viewer displays data on all levels between the two depth integer fields, inclusively. The beginning depth defaults to 0 (zero) and is not allowed to be greater than the ending depth.

Figure 8-23. View Depth

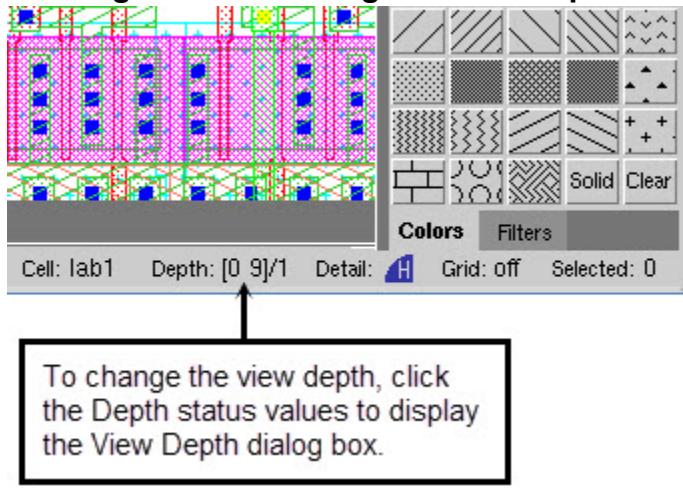


- View depth of 0 displays layout data at the top level for the current cell.
- View depths greater than 0 shows the numbers of levels of hierarchy below the current cell.

If your layout file contains numerous layers, decreasing the viewing depth simplifies the view of the layout. You can control the view depth using the following methods:

- Using numbers 0 through 9.
- Through the View Depth dialog box, displayed by clicking the Depth status values in the status bar.
- Using **View > Change Hierarchy Depth**.

Figure 8-24. Setting the View Depth



Note

 You can only edit data belonging to the current cell. While changing the view depth may allow more objects to be visible and hence, selectable, you cannot edit cells directly if they belong to a reference cell.

- You can set the default view depth using the Preferences dialog box or through the preferences file.

Related Topics

[Calibre DESIGNrev Navigation Features](#)

[Changing the View Depth](#)

Clips Palette

To access: Click the **Clips** tab in the Cells Browser.

Use the Clips palette to access and manipulate the clips you create using the Clip tool.

Description

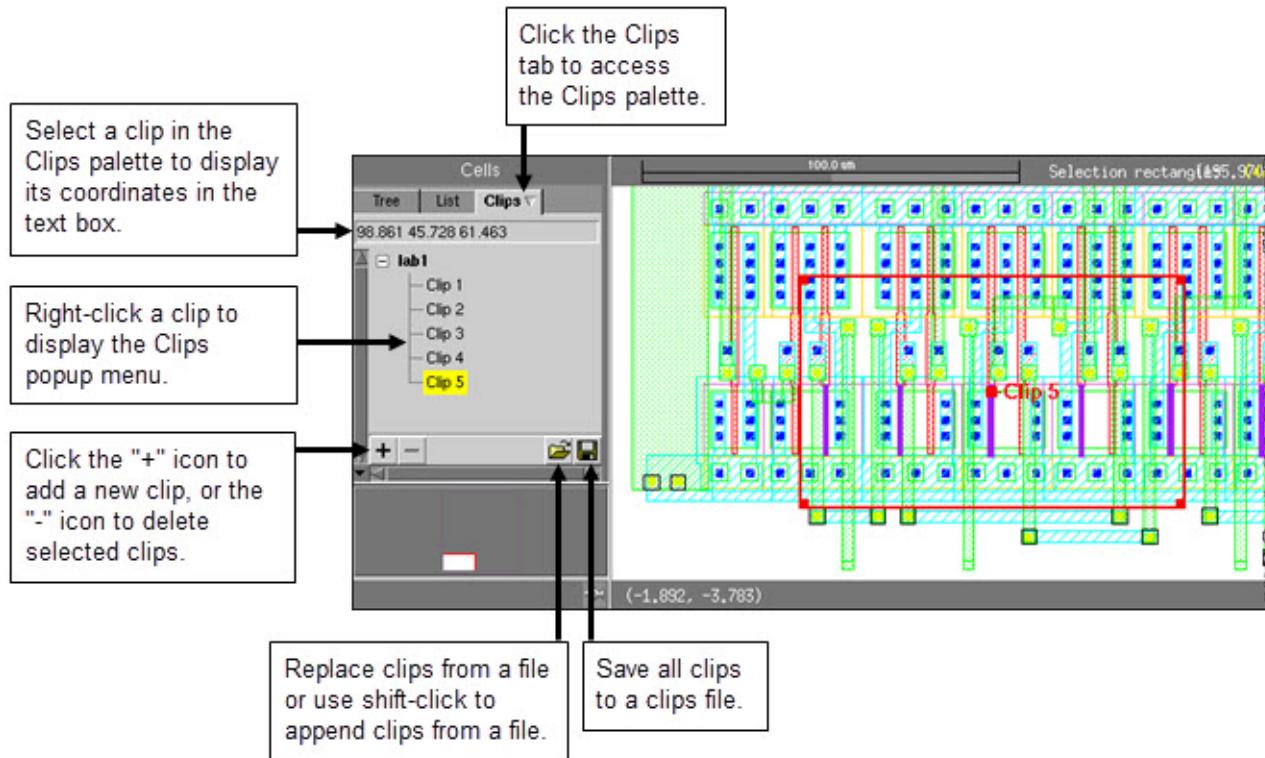
You use the Clips palette to view, create, delete, load, and save clips as shown in [Figure 8-25](#). The Clips palette is accessible from the Cells browser area by clicking the **Clips** tab. You can toggle the display of the Clips palette using the **View > Show Clips Palette** menu item.

Selecting a clip in the Clips palette displays the coordinates of the clip in the text box and highlights the rectangular region surrounding the clip in the layout viewing area. Double-clicking a clip in the Clips palette zooms to the clip area.

You can enter strings in the text box to search for clips or you can enter coordinates to go to a specific location in the layout. For example, entering two points, such as “0 0 500 500”, zooms to those coordinates. Entering one point, such as “100 200”, centers the layout on this point, rather than zooming.

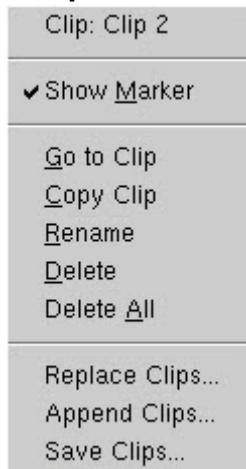
There are buttons located along the bottom of the Clips palette you can use for adding the area currently displayed in the layout viewing area as a clip, deleting the selected clip, loading a clips file, and saving all clips to a clips file.

Figure 8-25. Managing Clips with the Clips Palette



Clicking on a clip with the right mouse button displays a clip-specific popup menu as shown in Figure 8-26.

Figure 8-26. Clips Palette Popup Menu



Fields

Table 8-19. Clips Palette Popup Menu Contents

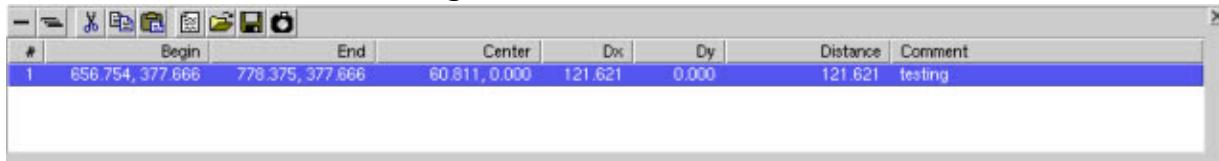
Field	Description
Show Marker	Toggles between displaying and hiding the clip marker. The clip marker identifies the center point of the clip.
Go to Clip	Updates the layout viewing area to display the selected clip.
Copy/Paste Clip	Toggles between copying the currently selected clip and pasting the copied clip.
Rename	Displays the Edit Clip dialog box allowing you to specify a different name for the clip.
Delete	Deletes the currently selected clip.
Delete All	Deletes all clips.
Replace Clips	Displays the Replace Clips from File dialog box allowing you to select a clips file to replace the currently loaded clips.
Append Clips	Displays the Append Clips from File dialog box allowing you to select a clips file to append to the currently loaded clips.
Save Clips	Saves the currently selected clip(s) to a clips file. If the clip is of a specific cell, the cell name information is stored in the clip file. This allows the clip to be appended to the correct cell when loading the clip file. To save all clips to a clips file, use the save button located at the bottom of the Clips palette.

Rulers Palette

To access: **View > Show Rulers Palette**

Use the Rulers palette to help with layout measurements and manage the rulers in a layout.

Figure 8-27. Rulers Palette



Fields

Table 8-20. Rulers Palette

Field	Description
	Deletes the selected rulers.
	Deletes all rulers.
	Cuts the selected rulers to the clipboard.
	Copies the selected rulers to the clipboard.
	Paste the rulers from the clipboard.
	Generates a ruler report file.
	Imports rulers from a file. See Usage Notes.
	Exports rulers to a file. See Usage Notes.
	Takes a snapshot of the rulers.

Usage Notes

- With the 2021.1 release, Calibre DESIGNrev exports rulers in floating point values into an XML file. When this file is read by previous versions of Calibre DESIGNrev, the values are truncated to integers.
- To add or modify a ruler comment for an existing ruler, click in the Comment field in the Rulers palette and enter the desired comment.

- To zoom to the ruler location, double click a ruler value in any field except the Comment field.

Browsers

Calibre DESIGNrev includes browsers for browsing cells, layers, and the layout.

Cells Browser	255
Layers Browser	259
Layers Browser Popup	263
Layout Navigator	268

Cells Browser

To access: Located on the left side of the Layout Viewer Window.

Use the Cells Browser to view and navigate cells in a layout based on a tree or list view.

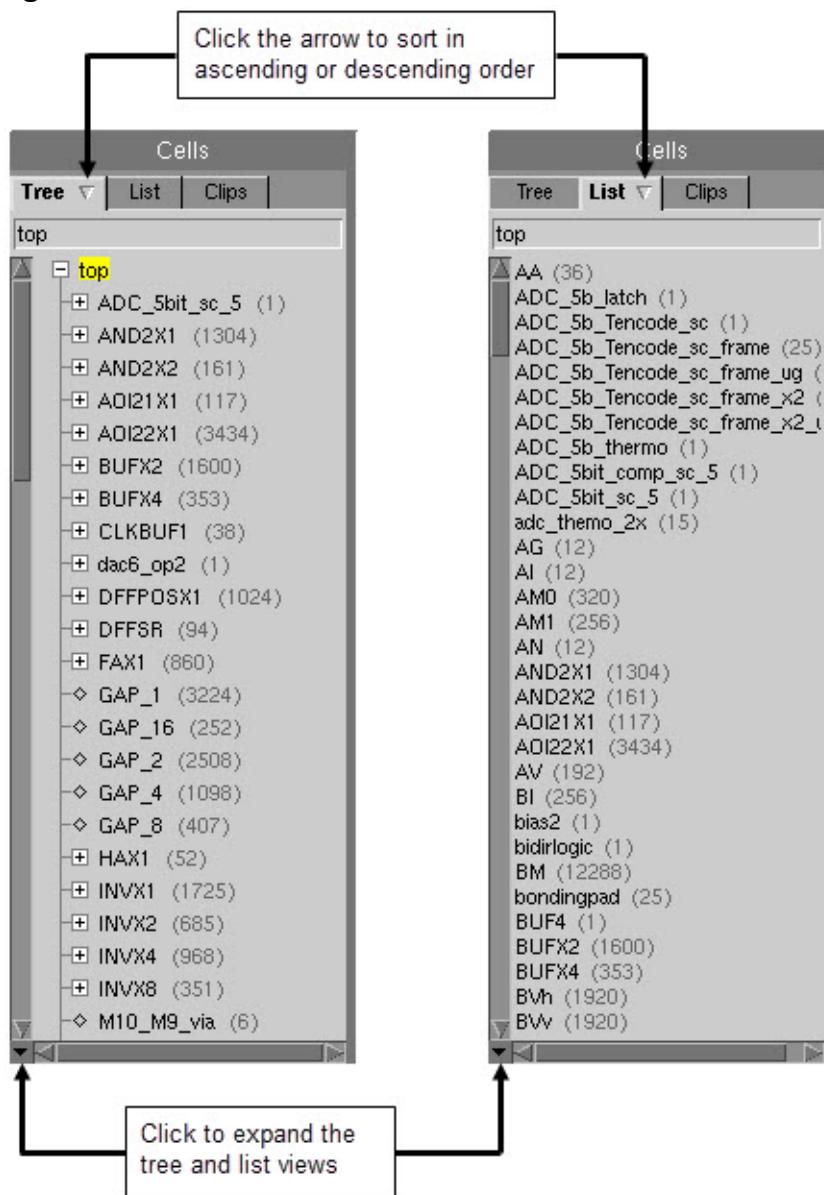
Description

The Cells Browser includes three different palettes that are all accessible from tabs in the Cells Browser. The different tabs and description are provided in [Table 8-21](#).

Table 8-21. Cells Browser Tabs

Tab	Description
Tree	Displays a hierarchical view of the components in the current layout as shown in Figure 8-28 . Popup menu items allow you to open, rename, delete, flatten, and save the selected component.
List	Displays an alphabetized list view of the components in the current layout as shown in Figure 8-28 . Popup menu items allow you to open, rename, delete, flatten, and save the selected component.
Clips	Displays any clips you load from a clips file or create using the Clips button. Refer to “ Clips Palette ” on page 250 for more information.

Figure 8-28. Cells Browser Palettes - Tree and List Views



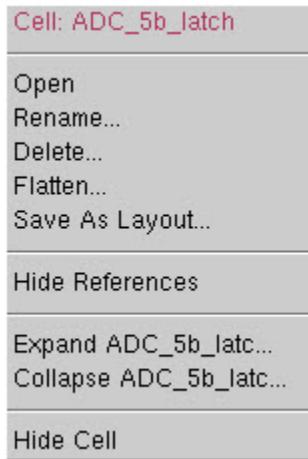
You can click the name of a cell in the tree or list view to display the cell in the layout viewing area. The arrows in the tabs allow you to sort the cells in ascending or descending order. The number displayed in parenthesis identifies the number of placements of a component.

The text box (located immediately below the tabs) displays the name of the currently selected cell. You can enter strings in this text box to search for cells, which is useful when working with large designs. You can press the Tab key to auto-complete the name, and then press Enter to display the cell in the layout viewing area.

The tree and list view each have an associated popup menu that contains options for manipulating the selected cell. The contents of this popup menu vary depending on the status of

the currently opened file and the selected cell. [Figure 8-29](#) shows all possible options available in the popup menu when the layout is opened in edit mode, the selected cell is referenced by other cells, and the selected cell contains a hierarchy.

Figure 8-29. Cells Browser Popup Menu



Fields

Field	Description
Open	Opens the selected cell in the layout viewing area.
Rename	Displays the Rename cell dialog box allowing you to rename the selected cell. This menu item is not available when the layout view is in readonly mode.
Delete	Displays the Delete Cell dialog box allowing you to delete the selected cell or select the cell to delete from the dropdown list. This menu item is not available when the layout view is in readonly mode.
Flatten	Displays the Flatten Cell dialog box prompting you to verify flattening the selected cell. This menu item is not available when the layout view is in readonly mode or when the selected cell does not contain hierarchy.
Save as layout	Displays the Export Cell as Layout dialog box. Refer to the “Export Layout Dialog Box” on page 283 for information on the fields in this dialog box. This menu item is not available when the layout view is in readonly mode.
Hide/Show References	Hides or shows references to the selected cell in the layout viewing area. This menu item toggles between Hide References and Show References depending on the current state of the selected cell. This menu item is not available when the layout view is in readonly mode, or when there are no references to the selected cell.

Field	Description
Expand/Collapse <cell>	Expands or collapses the selected cell. These fields do not display in the popup menu if the selected cell contains no hierarchy.
Hide Cell	Hides the selected cell from the Tree or List view. The Cells tab updates and displays a hidden icon indicating there are hidden cells.  A screenshot of the Calibre DESIGNrev Cells palette. The title bar says "Cells" with a lightning bolt icon. Below it are three tabs: "Tree" (disabled), "List" (selected and has a dropdown arrow), and "Clips". Click the icon to display the Show/Hide Cells in Palette dialog box. Cells hidden in the Tree view are automatically hidden in the List view and vice versa.
Scan References	Invokes Calibre RVE and checks references to the selected cell. The menu item is not available when there are no references to the selected cell.

Related Topics

[Cells Browser](#)

[Clips Palette](#)

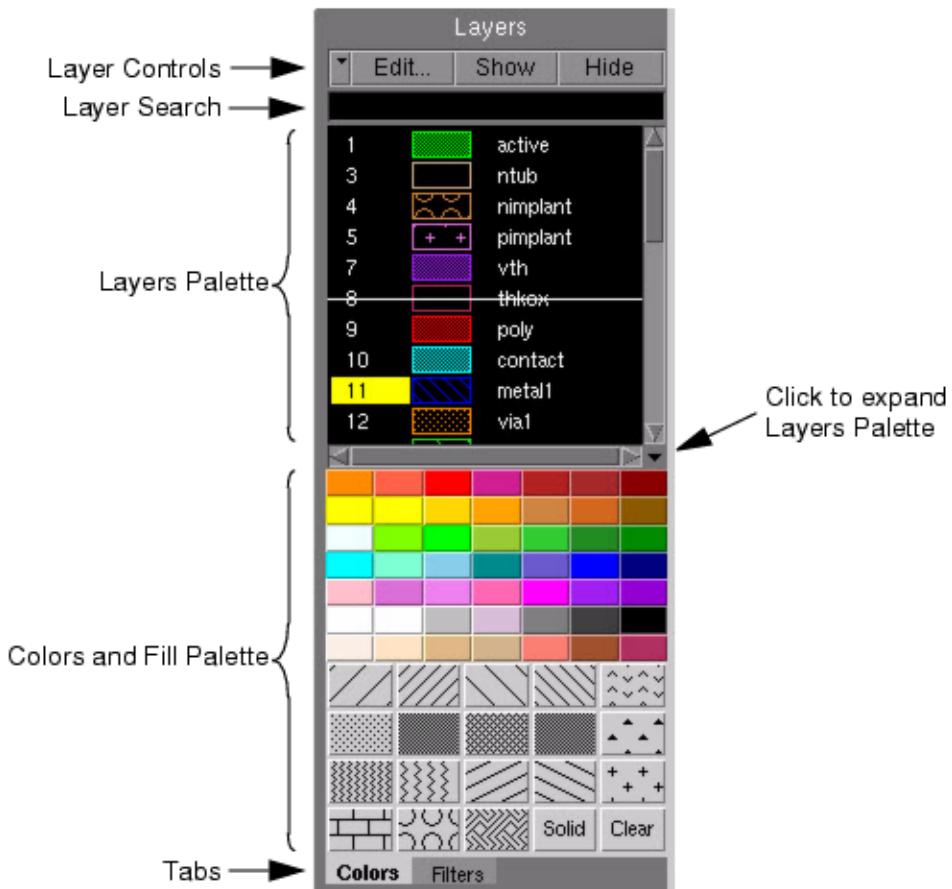
[Creating and Working with User-Defined Clips](#)

Layers Browser

To access: Located on the right side of the Layout Viewer Window.

Controls the display and appearance of layers in the layout.

Figure 8-30. Layers Browser



Description

The Layers Browser displays a list of the layers in a design and provides the ability to control layer visibility and the appearance of layers. Right-click a layer name in the Layers palette to display a popup menu containing items for editing the selected layer(s).

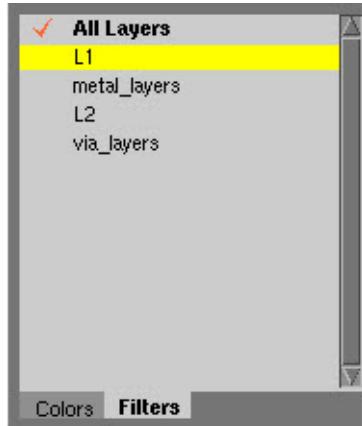
Colors Tab

The **Colors** tab displays the Color and Fill palette.

Filters Tab

The **Filters** tab displays a list of any filters or overlays you create (as shown in [Figure 8-31](#)). You can use the Preferences dialog box (**Misc** tab) to enable or disable the display of the **Filters** tab, and to enable or disable the sharing of layer visibility across filters. Alternatively, you can use [`prefs_layerpalette_filterBy`](#) to enable or disable the display of the **Filters** tab and [`prefs_layerpalette_filterShared`](#) to enable or disable the sharing of layer visibility across filters.

Figure 8-31. Layers Browser - Filters Tab

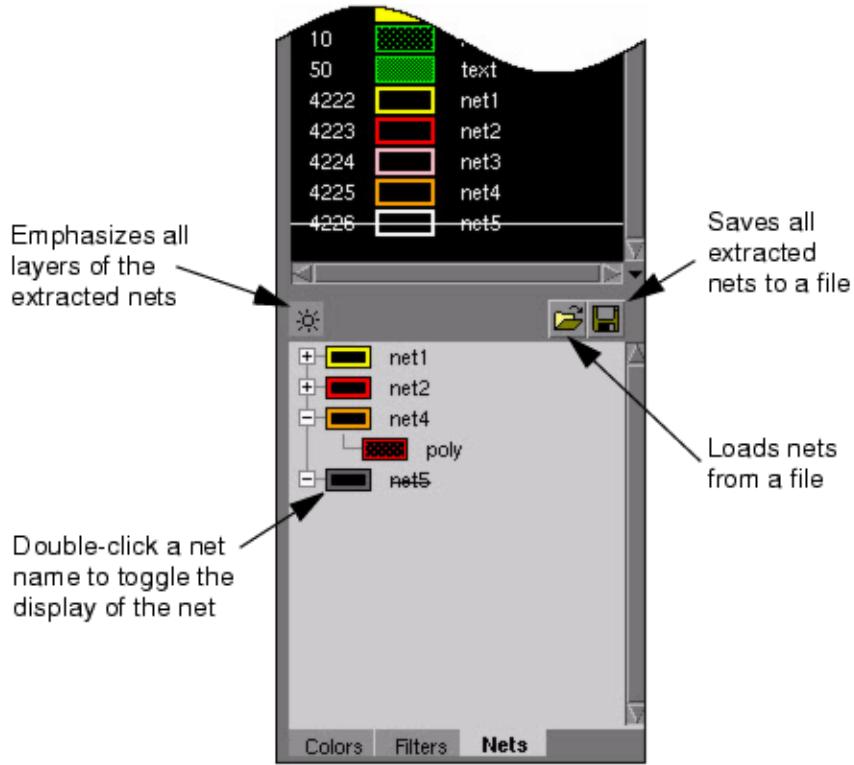


Nets Tab

Performing net extraction automatically opens the **Nets** tab in the Layers Browser and displays any extracted nets in a hierarchical form. The **Nets** tab displays only the extracted nets that are specific to the currently viewed layout or cell. Switching to a different layout or cell automatically updates the list of nets.

When performing net extraction on a large design, results are returned incrementally, allowing you to start debugging while net extraction continues to run.

Figure 8-32. Layers Browser - Nets Tab



You can toggle the display of a net or individual net segment by double-clicking on the name. You can also select a net or an individual net segment to highlight it in the layout.

The toolbar in the **Nets** tab includes buttons for emphasizing all layers of the extracted nets, loading nets from a file, and saving all extracted nets to a file. You can right-click a net to display a popup menu of options that operate only on the currently selected net. This includes options for hiding, renaming, and deleting the selected net, in addition to options for exporting the net to RVE or to a file.

Fields

Table 8-22. Layers Browser Contents

Field	Description
Layer Controls	Consists of four fields: <ul style="list-style-type: none">— Displays a dropdown menu containing options for sorting and grouping layers in a layout. You can sort layers by number (default), by name, and by draw order. Options are available to sort layers in increasing and decreasing order. You can also group layers by selection, visibility, current view, and by layout.— Displays the Edit Layers dialog box for manipulating layers.— Displays the selected layers. To display all layers, press Shift while clicking Show.— Hides the selected layers. To hide all layers, press Shift while clicking Hide.
Layer Search	A text box in which you can enter layer numbers and labels of layers you want to search for.
Layers Palette	Displays the layers that are defined in the layout. Each layer has a color, fill, and name associated with it. The layer number appears in white if an object on the layer is currently visible in the layout viewing area, or in gray if no objects on the layer are visible. A horizontal line through a layer identifies a hidden layer. Selected layers are highlighted in yellow. Multiple layers can be selected using Shift+Click or Ctrl+Click.
Color and Fill Palette	A selectable palette used to change the color or fill of a selected layer (or layers).
Nets Palette	A selectable palette used to display extracted nets.

Usage Notes

- By default, layers are sorted in numerical order. You can use the layer controls in the Layers Browser, the Layers popup menu, or options available in the **Layer > Sort By** menu to control the sorting and grouping of layers. Alternatively, you can use the

following preferences to control the sorting and grouping of layers:
`prefs_layerpalette_groupBy`, `prefs_layerpalette_sortAltFocus`, and
`prefs_layerpalette_sortBy`.

- Layers are drawn from bottom to top or top to bottom depending on the settings in the Edit Layers (**Layer > Edit**) dialog box.
- The Layers Palette includes a context-sensitive Layer popup menu. See “[Layers Browser Popup](#)” on page 263 for information on this menu.

Related Topics

[Overlaying Layouts](#)

[Defining Groups of Layers with Layer Filters](#)

[Extracting a Connected Net](#)

[Preferences Dialog Box - Misc Tab](#)

Layers Browser Popup

The Layers Browser has a context-sensitive popup menu that varies depending on the selection mode and the edit mode.

Description

Figure 8-33 shows the Layers Browser popup menus that are available when a layout is open in edit mode. The menus differ depending on whether or not a layer is selected in the Layers Browser. The entry that appears at the top of the popup menu identifies the number or name of the selected layer, or displays “Layers” when no layers or multiple layers are selected.

Figure 8-33. Layers Browser Popup Menus - Layout Opened in Edit Mode

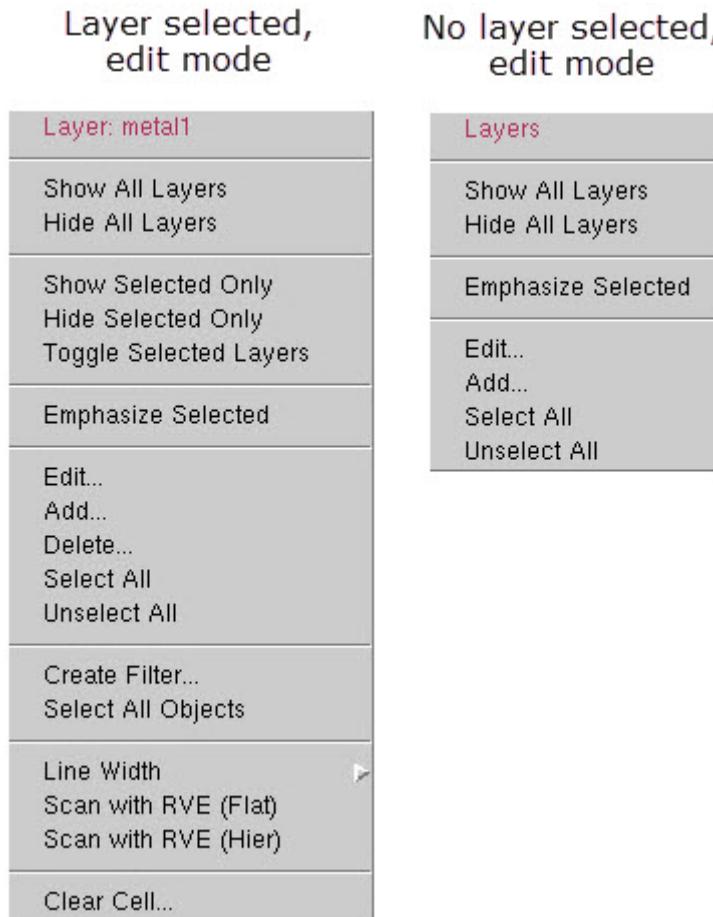


Figure 8-34 shows the Layers Browser popup menus that are available when a layout is open in read-only mode. The menus differ depending on whether or not a layer is selected in the Layers Browser. The entry that appears at the top of the popup menu identifies the number or name of the selected layer, or displays “Layers” when no layers or multiple layers are selected.

Figure 8-34. Layers Browser Popup Menus - Layout Opened in Read-Only Mode

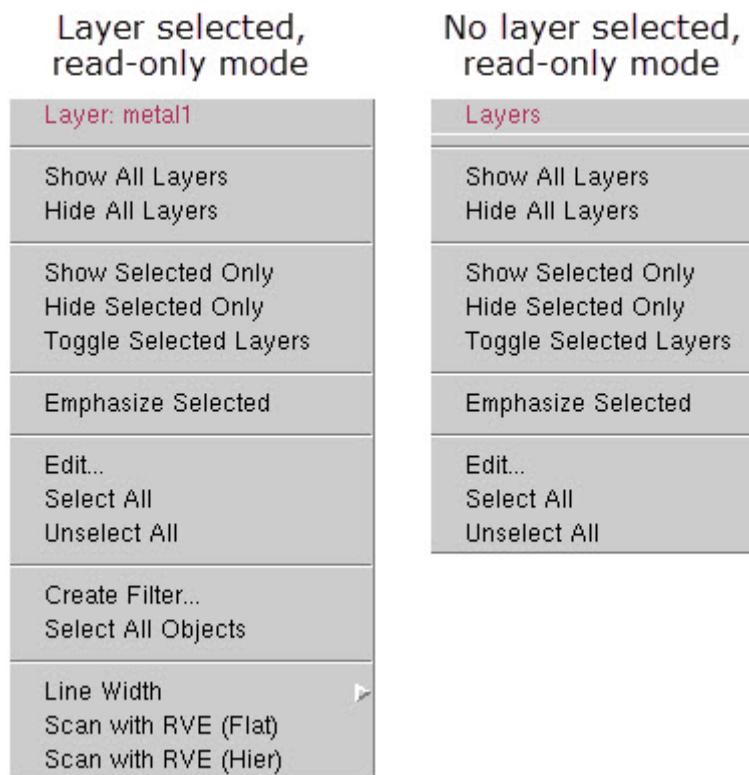


Figure 8-35 shows the Layers Browser popup menu that is available when a layout is open in edit or read-only mode and one or more RVE layers is selected.

Figure 8-35. Layers Browser Popup Menu for RVE Layer - Layout Opened in Edit or Read-only Mode

Fields

Field	Available in...	Description
Show All Layers	All modes.	Displays all layout and RVE layers.
Hide All Layers	All modes.	Hides all layout and RVE layers.
Show Selected Only	Any mode when a layout layer or RVE layer is selected.	Displays only the layers that are selected in the Layers Browser.
Hide Selected Only	Any mode when a layout layer or RVE layer is selected.	Hides only the layers that are selected in the Layers Browser.
Toggle Selected Only	Any mode when a layout layer or RVE layer is selected.	Toggles the visibility state of the selected layers.

Field	Available in...	Description
Emphasize Selected	All modes.	Highlights the objects on the selected layers. The color and fill of objects on other layers is dimmed.
Edit...	All modes.	Displays the Edit Layers Dialog Box .
Add...	Edit mode only for layout layers.	Displays the Add Layers dialog box which you can use to add a new layer to the layout by specifying one or more layer numbers, names, and line widths. The layer numbers, names, and widths must be separated by a space.
Delete...	Edit mode when one or more layout layers are selected, and edit and read-only mode when one or more RVE layers are selected.	Displays the Delete Layer dialog box, prompting you to confirm if you want to delete the selected layer. This option cannot be undone.
Select All	All modes.	Selects all layout and RVE layers in the Layers Browser.
Unselect All	All modes.	Unselects all layout and RVE layers in the Layers Browser.
Create Filter...	Any mode when one or more layout layers or RVE layers are selected.	Displays the Filter Name dialog box in which you can enter a name for the filter you are creating. The Filters tab updates to display the new filter.
Select Layer Filters	Edit or read-only mode when any layout layers that have a filter applied are selected.	Selects the filters in the Filters tab that are associated with the selected layer(s).
Select All Objects	Edit or read-only mode when one or more layout layers or RVE layers are selected.	Selects the objects on the currently selected layout layers and RVE layers.
Line Width	Edit or read-only mode when one or more layout layers or RVE layers are selected.	Changes the line width of the geometries on the currently selected layer(s). Line width options include 1, 3, and 5 pixels, in addition to "No line". The menu also includes options for incrementing or decrementing the line width by 1 pixel.
Scan with RVE (Flat)	Edit or read-only mode when one or more layout layers or RVE layers are selected.	Generates an ASCII RDB and opens it in Calibre RVE. The hierarchy of the layout is flattened to the top cell. You can click a result in Calibre RVE to create an RVE layer in Calibre DESIGNrev and highlight the result on that layer.

Field	Available in...	Description
Scan with RVE (Hier)	Edit or read-only mode when one or more layout layers or RVE layers are selected.	Generates an ASCII RDB and opens it in Calibre RVE. The hierarchy of the layout is preserved. You can click a result in Calibre RVE to create an RVE layer in Calibre DESIGNrev and highlight the result on that layer.
Clear Cell ...	Edit mode when one or more layout layers are selected.	Displays the Clear Cell Layers dialog box, prompting you to confirm if you want to delete all objects on the selected layers. This operation cannot be undone.
Clear RVE Layers	Edit or read-only mode when one or more RVE layers are selected.	Removes the selected RVE layers from the Layers Browser.

Layout Navigator

To access: Lower left corner of the Layout Viewer Window.

Shows the current viewing area of the layout relative to the whole layout.

Fields

Table 8-23. Layout Navigator

Field	Description
View area box	Click inside the box and drag the viewing area, or click outside the box to move the box, centered around the mouse. Press the right mouse button to draw a box representing a zoom area for the Layout Viewing area.
 	The pushpin button enables or disable preserving of the viewing coordinates when switching cells or layouts.

Dialog Boxes

Some dialog boxes in Calibre DESIGNrev are complex, having multiple tabs or controls that affect other GUI elements.

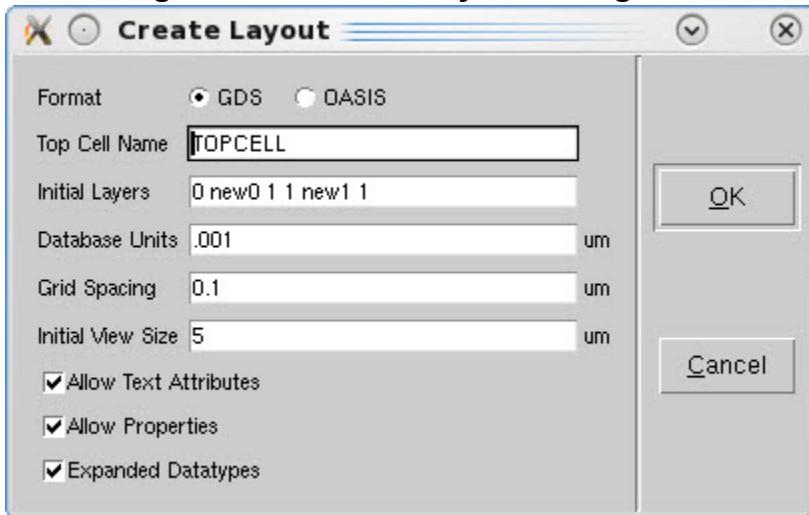
Create Layout Dialog Box	270
New Overlay Dialog Box	272
Choose Layout Files Dialog Box	274
Export Layout Dialog Box	283
Open Database Dialog Box	287
Import Layout Dialog Box	292
Merge Layouts Dialog Box	294
Layout Filemerge Dialog Box	297
Show/Hide References Dialog Box	305
Snapshot Dialog Box	307
Edit Layers Dialog Box	309
Object Properties Dialog Box	312
Find Object Dialog Box	325
Layout Diff Dialog Box	328
Preferences Dialog Box	330
RVE/CI Setup Dialog Box	354
Bookmarks Editor Dialog Box	356

Create Layout Dialog Box

To access: **File > New Layout**

Use the Create Layout dialog box to specify initial values for creating a new layout. The new layout is empty and has the layers you specified.

Figure 8-36. Create Layout Dialog Box



Fields

Table 8-24. Create Layout Dialog Box

Field	Description
Format	Sets the format of the layout. Options include: <ul style="list-style-type: none">• GDSII• OASIS
Top Cell Name	Specifies the name of the top cell.
Initial Layers	Specifies the initial layers for the layout. Specify layer values in this order: <code>number name line_width</code> Multiple layers can be defined, separated by spaces.
Database Units	Specifies the database units (in um) to be used for the layout. This must be a floating point value (in um).
Grid Spacing	Specifies the grid spacing (in um) for the layout.
Initial View Size	Specifies the size of the view (in um) relative to the grid spacing.
Allow Text Attributes	Enables or disables text attributes in the new layout.
Allow Properties	Enables or disables properties in the new layout.

Table 8-24. Create Layout Dialog Box (cont.)

Field	Description
Expanded Datatypes	Enables or disables expanded datatypes in the new layout. If enabled, layers with datatypes are given separate layers.

Related Topics

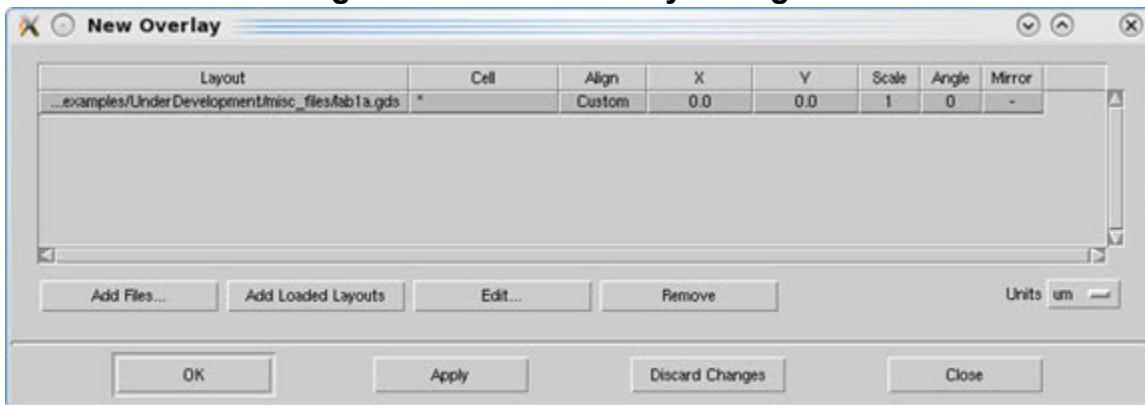
[Using Layer Maps](#)

New Overlay Dialog Box

To access: **File > New Overlay**

Use the New Overlay dialog box to specify the names of layouts you want to overlay for the purpose of visual comparison.

Figure 8-37. New Overlay Dialog Box



Fields

Table 8-25. New Overlay Dialog Box

Field	Description
Layout file list box	<p>Displays the layouts to be overlaid by the order specified in the list. The layout file list displays the following transformation information for each layout:</p> <ul style="list-style-type: none">• Layout — The pathname of the layout file.• Cell — Displays the top cell by default. Click the cell name to display a selectable list of all cells in the layout.• Align — Displays the alignment for the layout. Click a value in the Align column to display a selectable list of alignment values.• X — Displays the X offset coordinates. The default is 0.0. Click the displayed value to specify a new value.• Y — Displays the Y offset coordinates. The default is 0.0. Click the displayed value to specify a new value.• Scale — Displays the scale for the layout. The default is 1. Click the displayed value to specify a new value.• Angle — Displays the orientation of the layout. The default is 0. Click the displayed value to specify a new value.• Mirror — Displays the mirror setting for the layout. The default is “-”, which means no mirroring. Click the displayed value to select X for mirroring across the X-axis or Y for mirroring across the Y-axis.

Table 8-25. New Overlay Dialog Box (cont.)

Field	Description
Add Files...	Adds new layouts to the Layout file list, indicating they are to be overlaid. Can be used to add the same layout twice. In-memory layouts are not reloaded when duplicated from the file browser in overlays. Layouts are added to an overlay even if the loading options mismatch. When adding a layout, the viewer does not use available loading options that are selected.
Add Loaded Layouts	Displays the Choose Layout Files dialog box in which you can select layouts to add to the Layout file list. Only layouts not already in the list are added. Layouts are added to an overlay even if loading options mismatch. When a layout is already loaded in memory and subsequently added to the overlay, selected loading options are not checked.
Edit...	Displays the Edit Row dialog box in which you can edit cell and alignment information for a layout in the Layout file list.
Remove	Removes selected rows from the Layout file list.
Units	Sets the database units. Options include: <ul style="list-style-type: none"> • um (default) • dbu

Usage Notes

Once you have created an overlay, it appears in the Cells Browser. To edit the overlay, right-click the overlay in the Cells Browser and choose **Edit Overlay** from the popup menu. This displays the Edit Overlay dialog box.

The Discard Changes button in the Add Overlay and Edit Overlay dialog boxes restores all information back to what it was before the last Apply was selected.

Related Topics

[Overlaying Layouts](#)

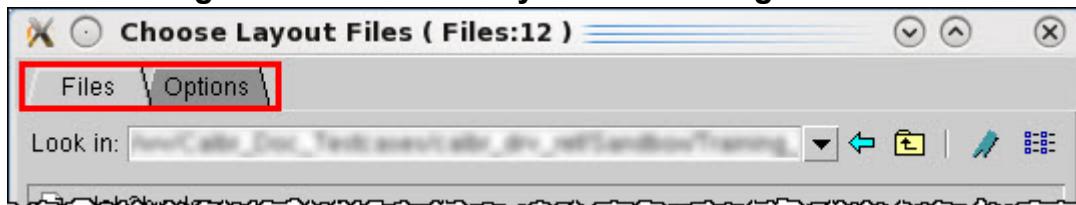
Choose Layout Files Dialog Box

To access: **File > Open Layout Files**

Use the Choose Layout Files dialog box to browse to and select a layout to open and for specifying options that control what is loaded with the layout. This dialog box follows the conventions of a standard file and directory navigation tool, but also includes some advanced features specific to the layout viewer.

The Choose Layout Files dialog box includes two tabs as shown in [Figure 8-38](#).

Figure 8-38. Choose Layout Files Dialog Box Tabs



Choose Layout Files Dialog Box - Files Tab [275](#)

Choose Layout Files Dialog Box - Options Tab [280](#)

Choose Layout Files Dialog Box - Files Tab

To access: **File > Open Layout Files**

Use the **Files** tab in the Choose Layout Files dialog box to browse to and select a layout to open.
To open multiple files, use Ctrl + click.

Figure 8-39. Choose Layout Files Dialog Box - Files Tab

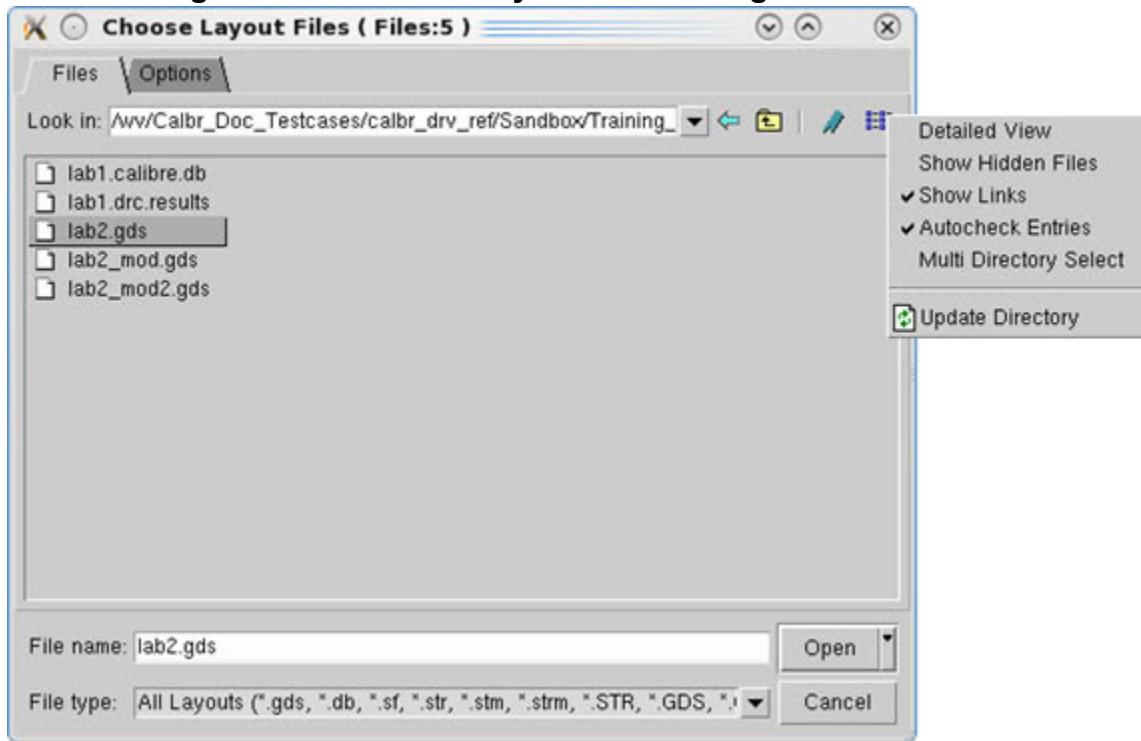
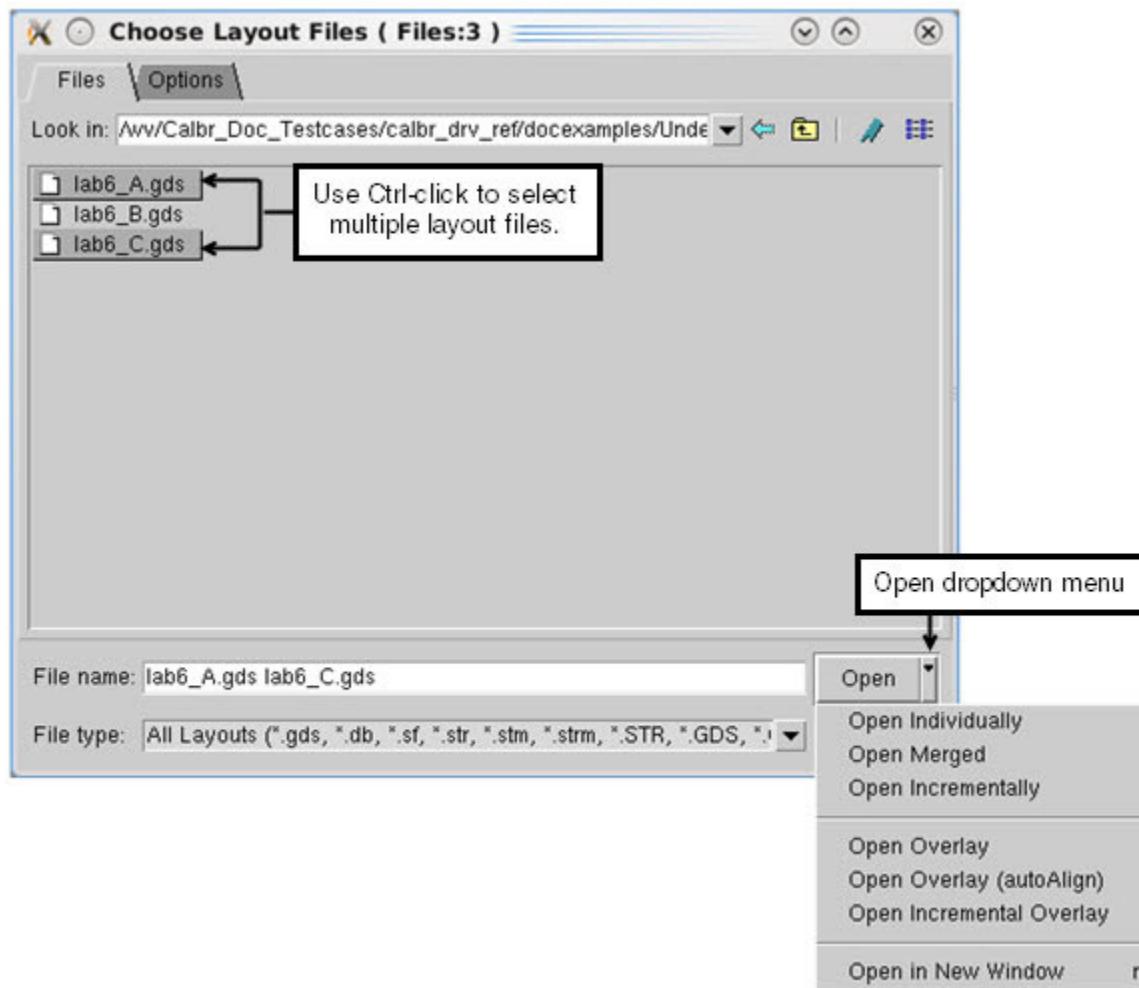


Figure 8-40. Open Dropdown Menu



Fields

Table 8-26. Choose Layout Files Dialog Box - Files Tab

Field	Description
Look in	Specifies the directory in which to look for the layout file. Click the associated down arrow to display a list of possible directory choices.
	Navigates to the previously displayed directory path.
	Navigates to the parent of the currently displayed directory.
	Displays a menu with options to: <ul style="list-style-type: none">• Bookmark the current directory location (bookmarks persist between sessions).• Select a previously bookmarked directory.

Table 8-26. Choose Layout Files Dialog Box - Files Tab (cont.)

Field	Description
	<p>Displays a menu with the following options for controlling the file browser display:</p> <ul style="list-style-type: none"> • Detailed View — Displays a detailed listing (size, modified, and access) of the directories and files. • Show Hidden Files — Displays hidden filenames. • Show Links — Displays link names. • Autocheck Entries — Checks if the path or filename is valid. An invalid path or filename is displayed in red text. • Multi Directory Select — Changes the dialog box to multiple files mode, allowing you to select multiple files to open. • Update Directory — Refreshes the directory view.
File name	Displays the name of the layout file you select in the file browser. You can also type in the name of the layout file. The Calibre layout viewers do not support spaces in pathnames.
File type	Displays a list of the supported file types (see Table 8-27). You can use this to constrain the types of files displayed in the file browser.

Table 8-26. Choose Layout Files Dialog Box - Files Tab (cont.)

Field	Description
Open	<p>The following options are available from the Open dropdown menu when one layout file is selected in the Open Layout File dialog box:</p> <ul style="list-style-type: none">• Open Layout — Open one layout file (default).• Open Incrementally — Open layout file incrementally.• Open Overlay — Open file in overlay mode with physical units aligned.• Open Overlay (autoAlign) — Open file in overlay mode with lower-left corners aligned.• Open Incremental Overlay — Open file incrementally in overlay.• Open in New Window — Enable the check box to open file in a new window. If a layout is not loaded in the current window when you select this option, then the current window is used to open the layout. <p>The following options are available from the Open dropdown menu when two or more files are selected in the Open Layout File dialog box:</p> <ul style="list-style-type: none">• Open Individually — Open each selected file as a separate layout (default).• Open Merged — Open selected files and merge them into a new layout in memory. This performs the DRC SVRF merge operation, rather than the Calibre DESIGNrev File > Merge operation.• Open Incrementally — Open selected layout files incrementally.• Open Overlay — Open selected files in overlay mode with physical units aligned as shown in “Open Dropdown Menu” on page 276.• Open Overlay (autoAlign) — Open selected files in overlay mode with lower-left corners aligned.• Open Incremental Overlay — Open selected files incrementally in overlay mode.• Open in New Window — Enable the check box to open file in a new window.

Usage Notes

Note

 The Calibre layout viewers do not support spaces in pathnames. The command line syntax does not allow spaces.

- Files are opened in read and write mode by default. To view a file in read-only mode, click the **File > Read Only Layout** check box menu item.
- During loading, a progress meter is displayed in the lower left hand corner of the main window. Click the **Abort** button to the right of the progress meter to stop loading a file before the load completes.
- Opening a layout also causes it to be shown in the display area, making it the current layout. Any previously loaded layouts remain in memory.
- The layout viewer opens layouts of the file types and extensions shown in [Table 8-27](#).

Table 8-27. List of Supported File Formats

Format Type	Accepted Extensions
GDS	.gds, .db, .sf, .str, .stm, .strm, .STR, .GDS, .GDS2, .GDSII, .gds2, .gdsii
OASIS	.oas, .OAS, .oasis
Overlay	.ovly
RDB	.db, .rdb, .ascii, .results
zip	.gz, .Z, .z

Note

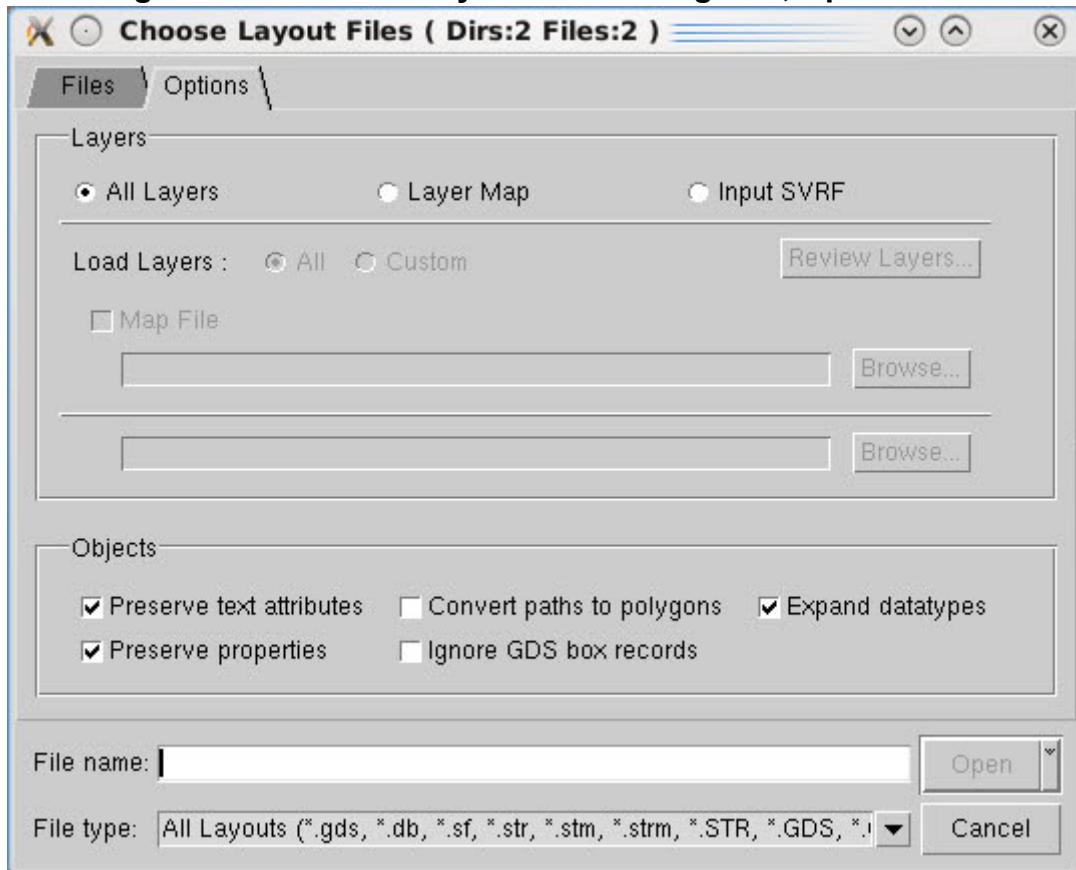
 Calibre DESIGNrev generates a warning when opening a compressed (zip) file that does not contain the correct (.gz, .Z, .z) extension, or when opening an uncompressed file that contains one of the zip extensions. Calibre DESIGNrev proceeds with loading the layout.

Choose Layout Files Dialog Box - Options Tab

To access: **File > Open Layout Files**

Use the **Options** tab in the Choose Layout Files dialog box to specify the layers to load with the layout and how to handle objects. Settings in this tab persist between layout viewer sessions.

Figure 8-41. Choose Layout Files Dialog Box, Options Tab



Fields

Table 8-28. Choose Layout Files Dialog Box - Options Tab

Field	Description
Layers	

Table 8-28. Choose Layout Files Dialog Box - Options Tab (cont.)

Field	Description
Layers	<p>Specifies the layers to load when opening a layout. Options include:</p> <ul style="list-style-type: none"> • All Layers — Loads all layers from the layout. • Layer Map — Enables the Load Layers options allowing you to load layers from a layer map file. You can choose to load all layers or a custom set of layers and specify a path to a layer map file. <p>The Review Layers button displays the Open Layout Layer Map dialog box, which you can use to choose the layers to open, add or remove layers, and save the layer entries to a layer map file.</p> <ul style="list-style-type: none"> • Input SVRF — Enables the Load Layers option for specifying the path to an SVRF rule file containing layer name mappings. This option loads the layer names from the rule file when opening the layout.
Objects	
Preserve text attributes	<p>Saves any GDS text attributes or GDS text properties contained in the file. Refer to “Calibre RVE with Calibre DESIGNrev and Calibre WORKbench” in the <i>Calibre RVE User’s Manual</i> for information on this control.</p> <p>Related preference: prefs_load_preserveTextAttributes</p>
Preserve properties	<p>Enables or disables the preserving of GDS properties for SREF, AREF, and geometry objects. The default is to preserve GDS properties. You can also use <code>prefs_load_preserveProperties</code> to set this preference.</p> <p>Related preference: prefs_load_preserveProperties</p>
Convert paths to polygons	<p>Enables or disables the conversion of GDS paths to polygons as the layout is loaded. The default is not to automatically convert GDS paths to polygons. You can also use <code>prefs_load_pathsToPolygons</code> to set this preference.</p> <p>Related preference: prefs_load_pathsToPolygons</p>
Ignore GDS box records	<p>Enables or disables the ignoring of BOX records when reading GDS files. The default is not to ignore BOX records. You can also use <code>prefs_load_ignoreGdsBoxes</code> to set this preference.</p> <p>Related preference: prefs_load_ignoreGdsBoxes</p>
Expand datatypes	<p>Enables or disables layers with datatypes to be given individual layers for each type.</p> <p>Related preference: prefs_load_expandDatatypes</p>

Note

 Preserving imported object and text properties for loaded layouts has Calibre DESIGNrev usage implications. You can add properties and text attributes to objects without having to load the layout with the -preserveProperties and -preserveTextAttributes switches. When writing out layouts, added property data is written out. For text attributes, written out GDS layouts include added attribute data. OASIS does not support text attribute data.

Caution

 Calibre RVE edge highlights are created as zero width paths. If you save a layout containing Calibre RVE edge highlights with the Convert paths to polygons option active, they are converted to polygons with a width of 4 database units (dbu) when the layout is reloaded.

Related Topics

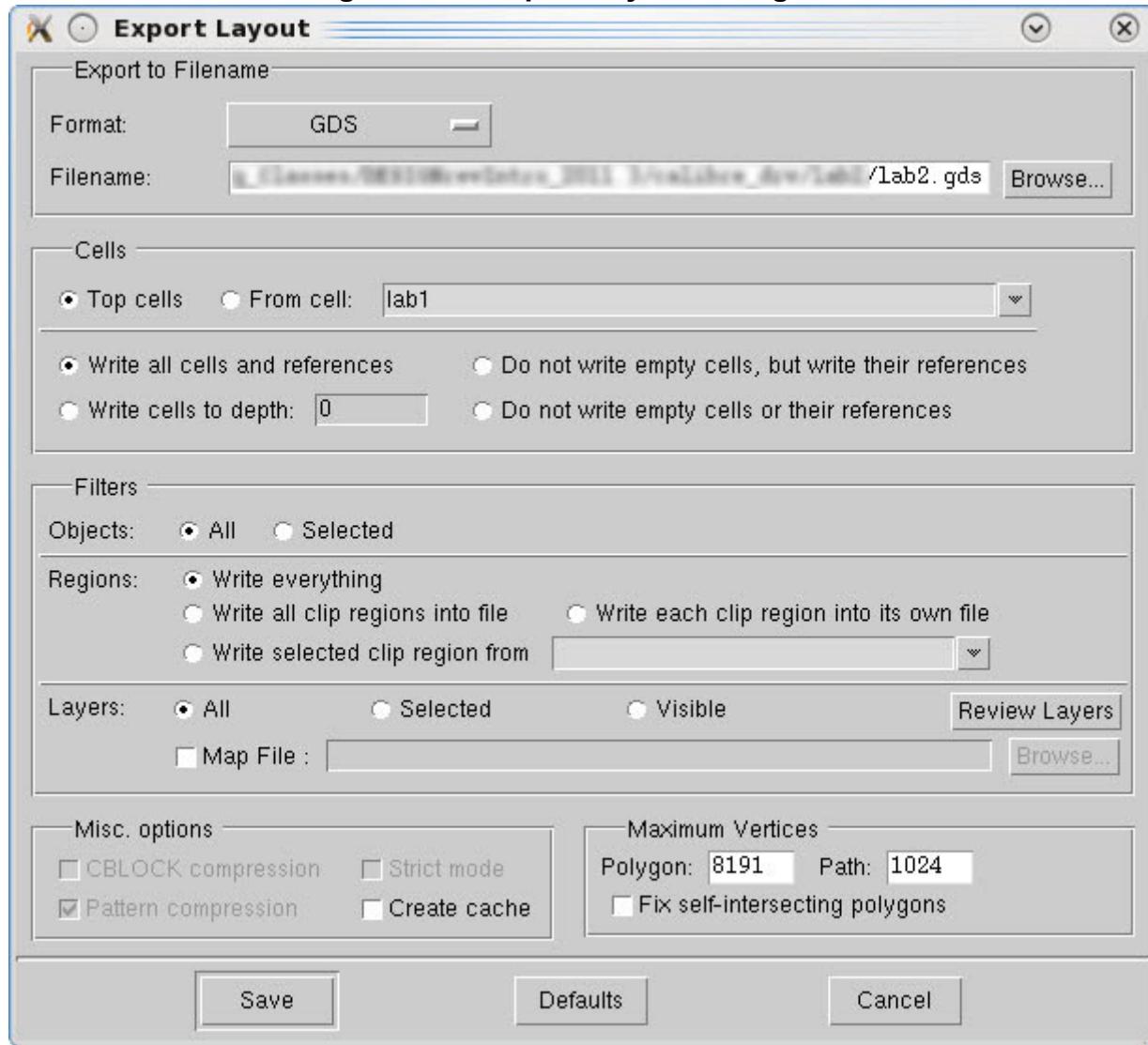
[Using Layer Maps](#)

Export Layout Dialog Box

To access: **File > Export Layout**

Performs an export to a GDSII, OASIS, or RDB file. When exporting to a GDSII or OASIS file, you can specify the objects, regions, and layers to export. When exporting to a flat or hierarchical RDB file, you can specify the objects and layers to export.

Figure 8-42. Export Layout Dialog Box

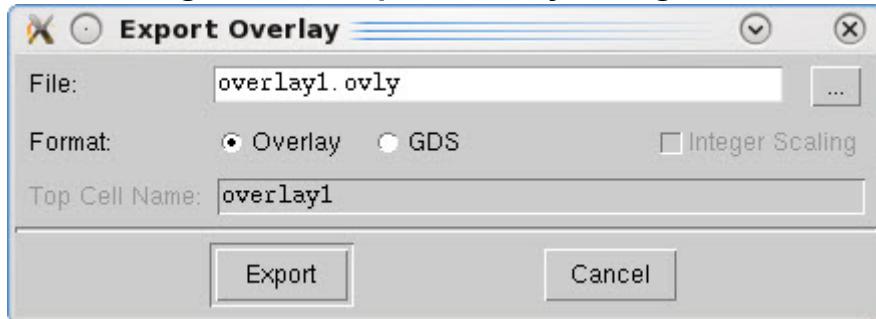


Description

If you are exporting an overlay to a GDS or OASIS layout file, it must be made up of more than one layout file. The overlay's layout files can either be GDS or OASIS, however they cannot be a combination of both formats. When exporting an overlay to GDS or OASIS, save your latest changes for each layout handle of the overlay's files, as the viewer exports each layout handle's original file on disk. If you have a combination of GDS and OASIS layouts in your overlay, you

can only export the overlay to an overlay format file (*<filename>.ovly*). When exporting an overlay, choosing **File > Export Layout** displays the Export Overlay dialog box shown in Figure 8-43.

Figure 8-43. Export Overlay Dialog Box



If you are exporting clip regions to layout files, you can choose to export all clips into the same layout file, each clip into an individual file, or selected clips to one layout file. The hierarchy of the clipped area is preserved in the output file(s).

If you are exporting to flat or hierarchical RDB format, only the supported RDB options are enabled in the Export Layout dialog box.

Fields

Table 8-29. Export Layout Dialog Box

Field	Description
Export to Filename	
Format	The format of the file to be exported. Supported formats include GDS, OASIS, flat RDB, or hierarchical RDB.
File	The name of the file to export. If the specified filename matches an existing filename, you are prompted to overwrite the file. The default is the current layout.
Cells	
Top cells	Writes the entire layout beginning at each top cell. Default.
From cell	Writes the layout beginning at the specified cell.
Write all cells and references	Includes non-empty and empty cell definitions. Default. Related preference: prefs_save_keepEmptyCells
Write cells to depth	Excludes cell definitions first referenced below the specified depth. Related preference: prefs_save_keepEmptyCells
Do not write empty cells, but write their references	Excludes empty cell definitions, but includes empty cell references.

Table 8-29. Export Layout Dialog Box (cont.)

Field	Description
Do not write empty cells or their references	Excludes empty cell definitions and references to empty cells. Related preference: prefs_save_keepEmptyCells
Filters	
Objects	Choose from the following options: <ul style="list-style-type: none"> • All — Exports all objects. Default. • Selected — Exports only the selected objects. This option is disabled when exporting clip regions using the “Write all clip regions into file,” “Write selected clip region from,” or “Write clip region into its own file” option.
Regions	Choose from the following options: <ul style="list-style-type: none"> • Write everything — Exports all clip regions. Default. • Write all clip regions into file — Exports clip regions to a file. • Write selected clip region from — Exports clip regions from the selected window. • Write each clip region into its own file — Exports each clip region to a separate file.
Layers	Choose from the following options: <ul style="list-style-type: none"> • All Selected Visible — Specifies which layers are to be exported. The Selected radio button is disabled when no layers are selected in the Layers Browser. Similarly, the Visible radio button is disabled when all layers are hidden in the Layers Browser. • Review Layers — Displays the Export Layer map dialog box, which you use to specify the layers and datatypes to be exported. • Map File — Specifies the path to a layer map file to be used when exporting the file.
Misc. options	
CBLOCK Compression	Writes compression cell blocks (CBLOCKS) at the cell level. This is only used by the OASIS format.
Pattern compression	Writes pattern compression at the cell level. This is used by the OASIS format only.

Table 8-29. Export Layout Dialog Box (cont.)

Field	Description
Strict mode	Writes OASIS in strict mode. Strict mode OASIS layouts have a faster processing time. Layout viewer strict mode flags are set consistently with Calibre strict mode flags. Note: If an OASIS layout file is compressed externally via gzip, gzip or 7zip, use of Strict Mode is not allowed. Use CBLOCKs for compression.
Create cache	Creates a PCR (Peek Cache Repository) file when the layout is exported to GDSII or OASIS.
Maximum Vertices	
Polygon	Specifies the maximum number of polygon vertices that are exported. Related preference: prefs_save_maxPolygonVertices
Path	Specifies the maximum number of path vertices that are exported. Related preference: prefs_save_maxPathVertices
Fix self-intersecting polygons	Repairs self-intersecting polygons. Related preference: prefs_save_fixPolygons

Usage Notes

- The maximum limit fields (path and polygon vertices) are exported to the preferences file, and are used in future layout viewer sessions.
- Clicking **Defaults** resets the dialog box options to their default settings.
- By default, when you select a different file Format, change from Top cells to any other cell, or change the Objects or Regions, the Filename text box automatically updates to reflect the change. For example, selecting the OASIS format automatically changes a file named “design.gds” to “design.oas”. However, manually editing the path in the Filename text box disables this behavior. Clicking the **Defaults** button fully restores this default behavior.
- Attempting to export a layout having a layer number greater than 65535 displays an error, indicating that the file cannot be exported because the layer number exceeds 65535. The 65535 layer number limitation is a constraint of the GDS II file format.

Related Topics

[layerprops File Format](#)

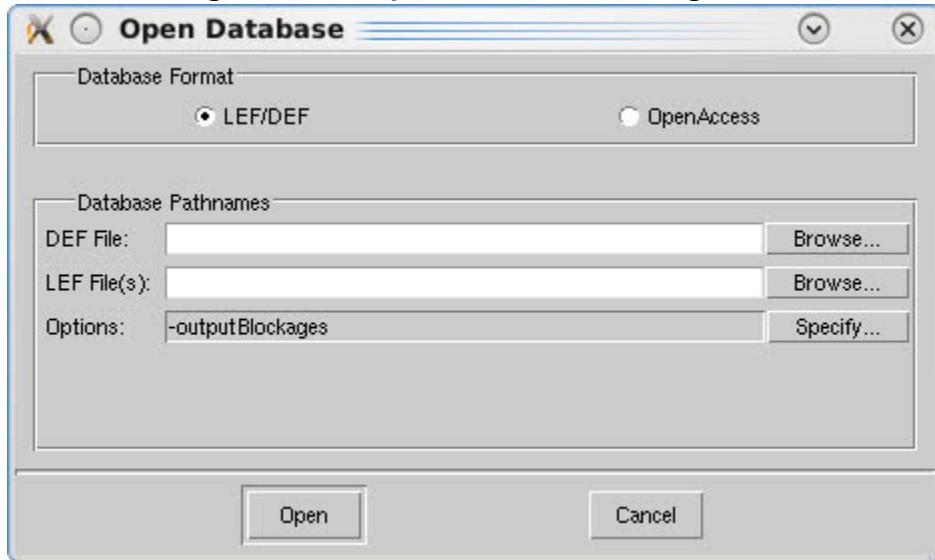
[Saving Highlighted Shapes as a Calibre nmDRC Results Database \(RDB\)](#)

Open Database Dialog Box

To access: **File > Open Database**

Use the Open Database dialog box to open Foreign Database Interface (FDI) files. Supported database formats include LEF/DEF and OpenAccess. Calibre DESIGNrev can read LEF/DEF and OpenAccess, but cannot write to these database formats. The tool can only write OASIS and GDSII database formats.

Figure 8-44. Open Database Dialog Box

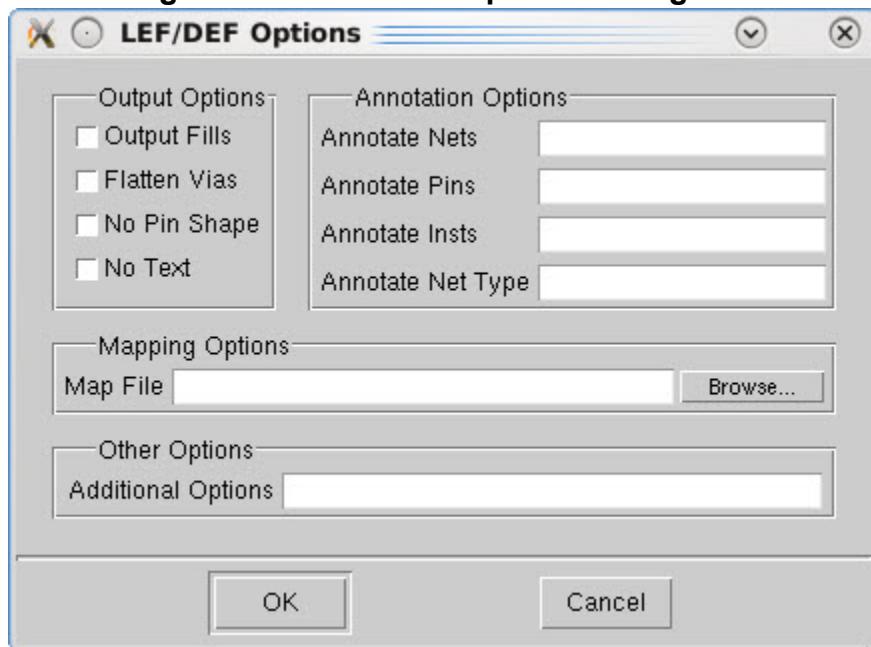


Description

In the Open Database dialog box, click the desired Database Format (LEF/DEF or OpenAccess) to access the set of options that are specific to each format.

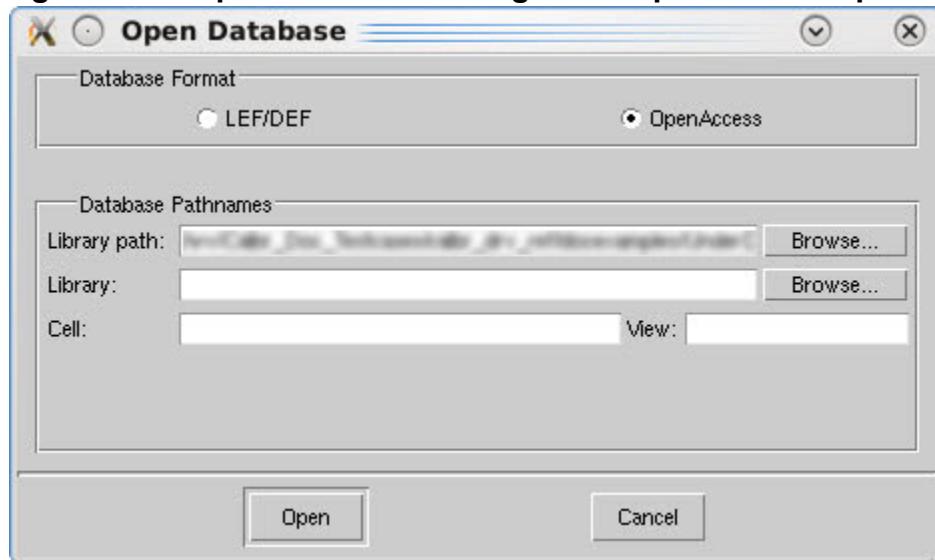
The LEF/DEF database format options are shown in [Figure 8-44](#) and described in [Table 1-1](#). Clicking the **Specify** button associated with the “Options” field displays the LEF/DEF Options dialog box shown in [Figure 8-45](#) and described in [Table 1-2](#).

Figure 8-45. LEF/DEF Options Dialog Box



OpenAccess must be installed to access an OpenAccess database and read the data. The OpenAccess database format options are shown in [Figure 8-46](#) and described in [Table 1-3](#).

Figure 8-46. Open Database Dialog Box - OpenAccess Options



Fields

Open Database - LEF/DEF Options

Table 8-30. Open Database Dialog Box - LEF/DEF Options

Field	Description
DEF File	Specifies the path to a DEF file. Click the Browse button to display the Open DEF file dialog box and choose the DEF file to open.
LEF File(s)	Specifies the path to one or more LEF files. Click the Browse button to display the Open LEF files dialog box and choose the LEF files to open. LEF files are loaded in the order they are selected.
Options	Specifies options for modifying the default read-in behavior of the LEF/DEF database. The default option is -outputBlockages. Click the Specify button to display the LEF/DEF Options dialog box shown in Figure 8-45 and described in Table 1-2 . You can use the MGC_CALIBRE_DB_READ_OPTIONS variable to define the read-in behavior of a LEF/DEF database. If you set this variable, the Specify button is disabled. Refer to Layout System (“MGC_CALIBRE_DB_READ_OPTIONS Arguments” table) in the <i>SVRF Manual</i> for a description of some of the more commonly used settings.

Table 8-31. LEF/DEF Options Dialog Box

Field	Description
Output Options	
Output Fills	Reads fill shapes. The default is to not read fill shapes.
Flatten Vias	Flattens vias. The default is to not flatten vias.
No Pin Shape	Does not read pin shapes. The default is to read pin shapes.
No Text	Does not read text objects. The default is to read text objects.
Annotation Options	
Annotate Nets	Adds net name annotations to all shapes that belong to a net. Refer to “ Complete FDI Command Line Syntax ” in the <i>Calibre Layout Comparison and Translation Guide</i> (-annotateNets).

Table 8-31. LEF/DEF Options Dialog Box (cont.)

Field	Description
Annotate Pins	Adds pin name annotations to all pin shapes. The annotations can be either text objects or properties in the output file. Refer to “ Complete FDI Command Line Syntax ” in the <i>Calibre Layout Comparison and Translation Guide</i> (-annotatePins).
Annotate Insts	Adds property annotations to instances. Refer to “ Complete FDI Command Line Syntax ” in the <i>Calibre Layout Comparison and Translation Guide</i> (-annotateInsts).
Annotate Net Type	Adds a net type property annotation to nets. You can optionally specify the net type to receive the annotation. Refer to “ Complete FDI Command Line Syntax ” in the <i>Calibre Layout Comparison and Translation Guide</i> (-annotateNetType)
Mapping Options	
Map File	Specifies the path to a mapping file to use when the database is read. The mapping file maps specific input layers to a user-specified list of output layers and datatypes. By default, objects are mapped to their corresponding layer name and a datatype of 0 (zero). Refer to “ Complete FDI Command Line Syntax ” in the <i>Calibre Layout Comparison and Translation Guide</i> (-layerMap).
Other Options	
Additional Options	Refer to “ Complete FDI Command Line Syntax ” in the <i>Calibre Layout Comparison and Translation Guide</i> . The LEF/DEF system uses all options described in this section except the following: <ul style="list-style-type: none"> • -design library cell [view] • [-abortOnEmptyPCell] • [-libdefs file ...] • [-preservePath]

Open Database - OpenAccess Options

Table 8-32. Open Database Dialog Box - OpenAccess Options

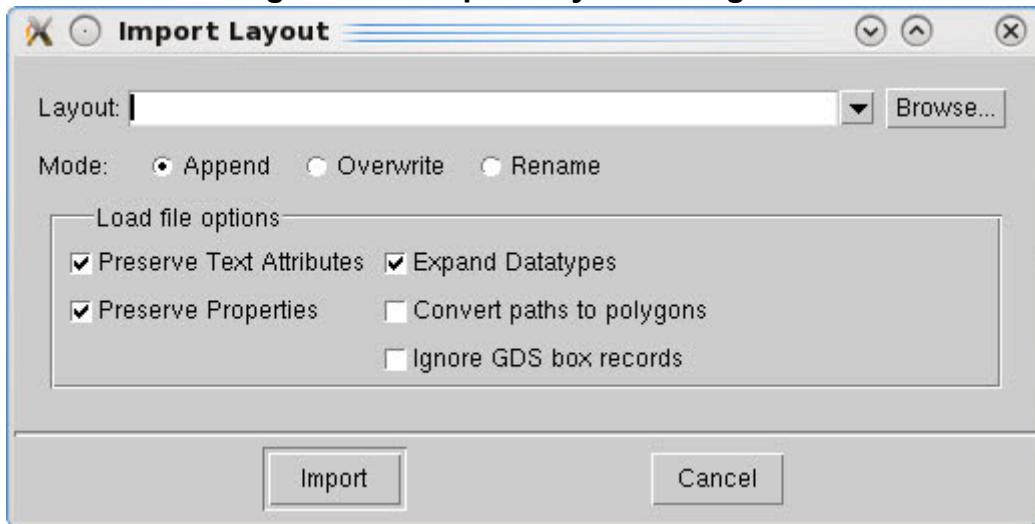
Field	Description
Library path	Specifies the path to the directory containing a library definitions file. Click the Browse button to display the Choose OA Library Directory dialog box and navigate to the directory containing a library definitions file. The <i>cds.lib</i> library definition file is used when the OA_HOME environment variable is set; otherwise, the <i>lib.defs</i> file is used.
Library	Specifies the name of the design library. Click the Browse button to display the Library Browser. The Library Browser allows you to select the library, cell, and view, and uses these selections to automatically fill in the fields in the Open Database dialog box.
Cell	Specifies the name of a physical cell in the library.
View	Specifies the name of a view in the cell.

Import Layout Dialog Box

To access: **File > Import**

Use the Import dialog box to copy all cells directly from one layout into the current layout.

Figure 8-47. Import Layout Dialog Box



Description

Three modes allow you to choose whether to append, overwrite, or rename the contents of cells in layout1 with the contents of cells of the same name in layout2. If the cells have different names, they are not appended, overwritten, or renamed.

Fields

Table 8-33. Import Layout Contents

Field	Description
Layout	The layout path of the layout (layout2) to be imported over the current layout (layout1).
Mode	Choose from the following options: <ul style="list-style-type: none">• Append — Appends the contents from the cell in layout2 to the cell in layout1 with the same name.• Overwrite — Overwrites the contents of the cell in layout1 with the contents of the cell of the same name in layout2.• Rename — Renames those cells layout2 that have the same name as a cell in layout1. The new name is created by adding the extension _WBx extension to the original name, where x is an integer.
Load file options	
Preserve Text Attributes	Saves any GDS text attributes contained in the file.

Table 8-33. Import Layout Contents (cont.)

Field	Description
Preserve Properties	Saves any GDS text properties contained in the file.
Expand Datatypes	Causes layers with datatypes to be given individual layers for each datatype.
Convert paths to polygons	Controls automatic conversion of GDS paths to polygons when a design file is loaded.
Ignore GDS box records	Ignores BOX records when reading GDS files. The default is to not ignore BOX records.

Usage Notes

- To import a layout database, the following must be true:
 - Both layout databases must have the same database unit settings.
 - The layout into which you are importing data to, must be loaded.

Note

 Importing is the process of including data from one layout directly into another layout to append, update, or replace existing data. Importing is not the same as Merging, which is used specifically to combine two layouts for visual comparison only.

Note

 Calibre RVE edge highlights are created as zero width paths. If you save a layout containing Calibre RVE edge highlights with the Convert paths to polygons option active, they are converted to polygons with a width of 4 dbu when the layout is reloaded.

Related Topics

[Using Layer Maps](#)

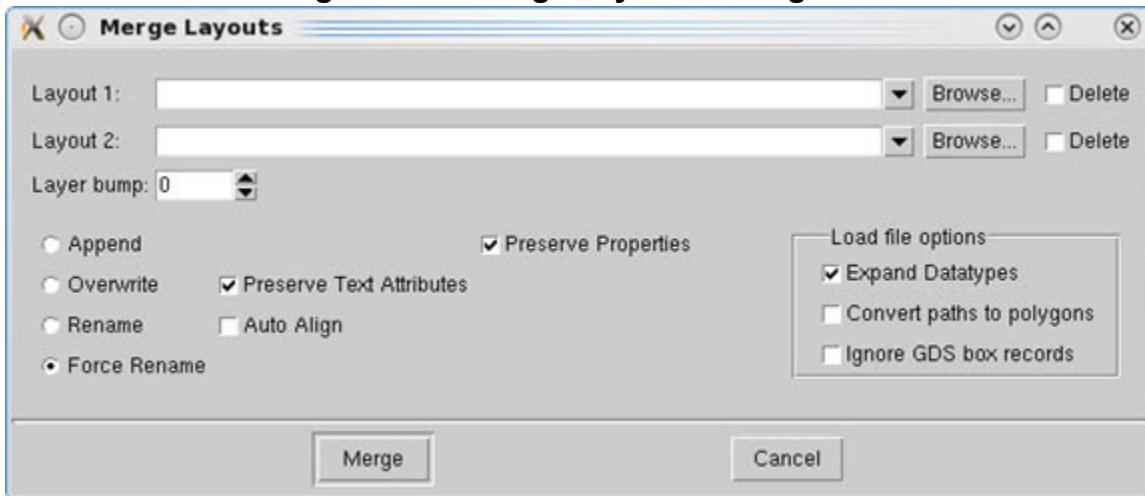
[Merge Layouts Dialog Box](#)

Merge Layouts Dialog Box

To access: **File > Merge**

Use the Merge Layouts dialog box to merge the contents of two layouts into a third layout.

Figure 8-48. Merge Layouts Dialog Box



Description

The Merge Layouts dialog box provides a GUI interface to the layout merge batch command. You use this command to merge the contents of two layouts that are loaded into memory into a new layout.

During the merge operation, cell contents are concatenated or combined according to the mode (Append, Overwrite, Rename, Force Rename) you select and the top level cell of the merged database is named “TOP”. The layout viewer automatically assigns a system-generated name to the new layout, but it is not automatically saved by the merge function. You must save the new layout, to the system-generated name or a different name, to avoid losing data.

If you merge two layouts having different database units, the application calculates a new dbu for the merged layout. If the tool cannot determine a new dbu for the merged layout, it displays a warning and uses the lesser of the two input dbus.

Note

 Merging should not be used to replace or update database information. For example, updating an older version of a cell should be performed using the **File > Import** operation instead.

The layout filemerge batch command can be used to perform disk-based file merges on multiple GDS or OASIS input files without loading them into memory. Batch commands are described in the [Calibre DESIGNrev Reference Manual](#).

Fields**Table 8-34. Merge Layouts Dialog Box**

Field	Description
Layout 1	Specifies the name of the first layout to be merged. Selecting the Delete check box closes the source layout after the merge operation, so that it is no longer loaded into memory.
Layout 2	Specifies the name of the second layout to be merged. Selecting the Delete check box closes the source layout after the merge operation, so that it is no longer loaded into memory.
Layer bump	Specifies an integer that is added to the layer number of each layer in Layout 2, in order to avoid layer number collisions. The default is 0 which causes data to be combined when cells have the same number.
Append Overwrite Rename Force Rename	Choose from the following options: <ul style="list-style-type: none"> • Append — Copies the complete contents from the same named cells in both layouts into one cell with that name. All cells from both layouts with unique names appear in the final layout. • Overwrite — Copies the contents of the Layout 2 cells into the resulting layout, overwriting any cells from Layout 1 having the same name. All cells from both layouts with unique names appear in the final layout. • Rename — Copies cells with the same name into the final layout as unique cells with unique names. All cells from both layouts with unique names appear in the final layout. • Force Rename — Copies all cells from both layouts into the final layout as unique cells with unique names even if their names do not match names in the other layout. The new name is created by adding the _WBx extension to the original name, where x is an integer. This is the default.
Preserve Properties	Preserves any GDS geometry and reference property data in the merged layout.
Preserve Text Attributes	Preserves any GDS Text Presentation and Strans attribute data in the merged layout.
Auto Align	Aligns the coordinates of the merged layout at 0,0. Used only by Calibre MDPview
Load file options	
Expand Datatypes	Assigns layers with datatypes to individual layers for each datatype.

Table 8-34. Merge Layouts Dialog Box (cont.)

Field	Description
Convert paths to polygons	Converts GDS paths to polygons when loading the merged layout. Calibre RVE edge highlights are created as zero width paths. This option converts these edges to polygons with a width of 4 dbu when the merged layout is loaded.
Ignore GDS box records	Ignores GDS BOX records when reading GDS files. The default is to not ignore BOX records.

Related Topics

[Import Layout Dialog Box](#)

[Overlaying Layouts](#)

[layout merge \[Calibre DESIGNrev Reference Manual\]](#)

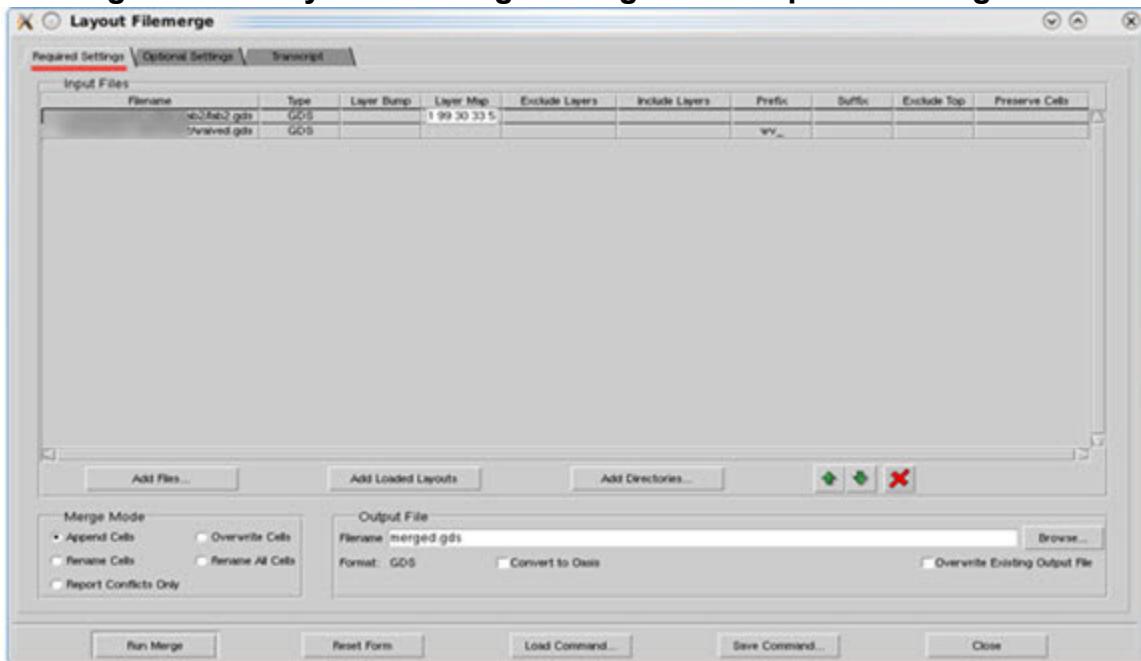
[layout filemerge \[Calibre DESIGNrev Reference Manual\]](#)

Layout Filemerge Dialog Box

To access: **File > File Merge**

Use the Layout Filemerge dialog box to perform a disk-based file merge on multiple GDS input files, multiple OASIS input files, or a mix of input formats (GDS and OASIS) without loading the files into memory.

Figure 8-49. Layout Filemerge Dialog Box - Required Settings Tab



Description

The Layout Filemerge dialog box provides a GUI interface to the [layout filemerge](#) batch command. Use this dialog box to merge multiple files without loading them into memory. The Layout Filemerge dialog box organizes the layout filemerge options into the following three tabs:

- **Required Settings** — Shown in [Figure 8-49](#), this tab displays the required settings for the layout filemerge command. Refer to “[Required Settings Tab](#)” for information on the fields in this tab.
- **Optional Settings** — Shown in [Figure 8-50](#), this tab displays the available optional settings for the layout filemerge command. Refer to “[Optional Settings Tab](#)” for information on the fields in this tab.
- **Transcript** — Shown in [Figure 8-51](#), this tab displays the transcript from the layout filemerge operation and provides options for finding text strings, highlighting merge messages and saving the transcript. Refer to “[Transcript Tab](#)” for information on the fields in this tab.

The Layout Filemerge dialog box includes buttons located at the bottom of the dialog box for saving the layout filemerge settings to a Tcl file (**Save Command**) or loading the settings from a Tcl file (**Load Command**).

Figure 8-50. Layout Filemerge Dialog Box - Optional Settings Tab

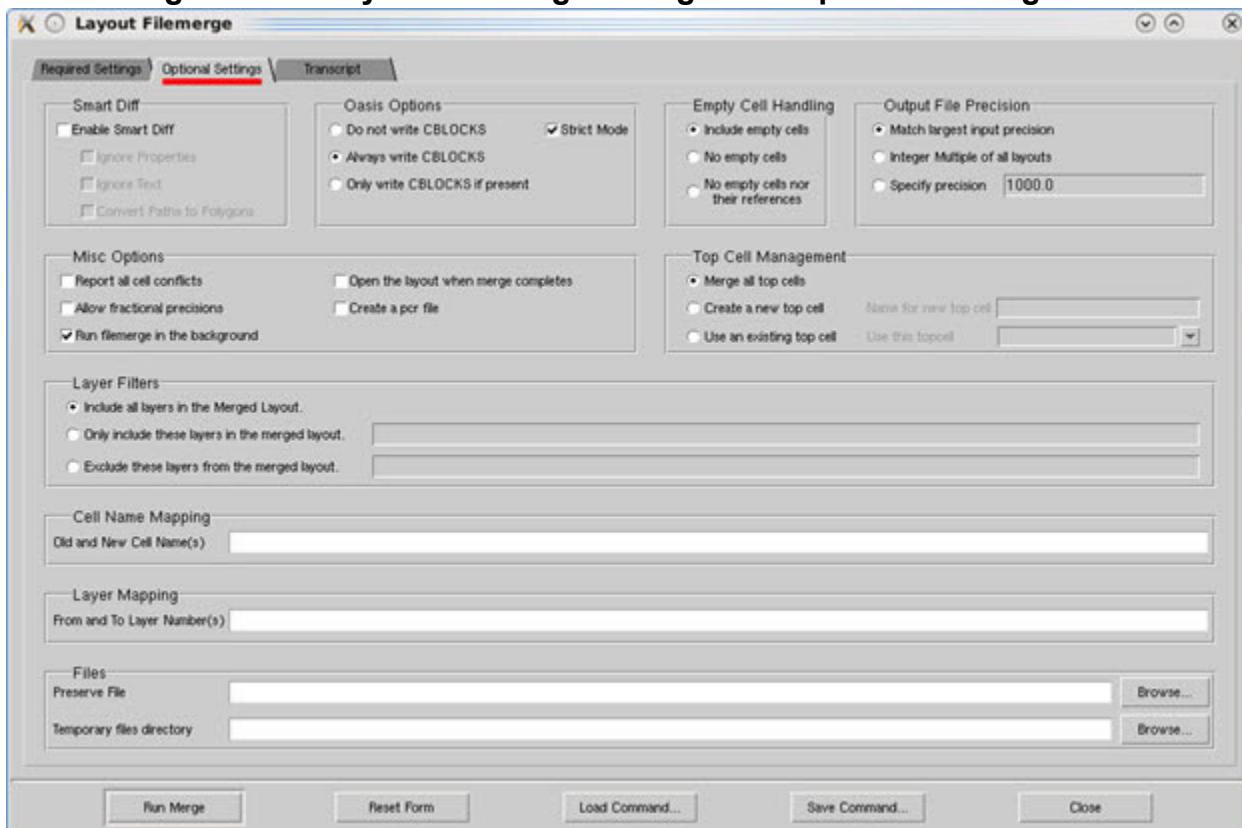
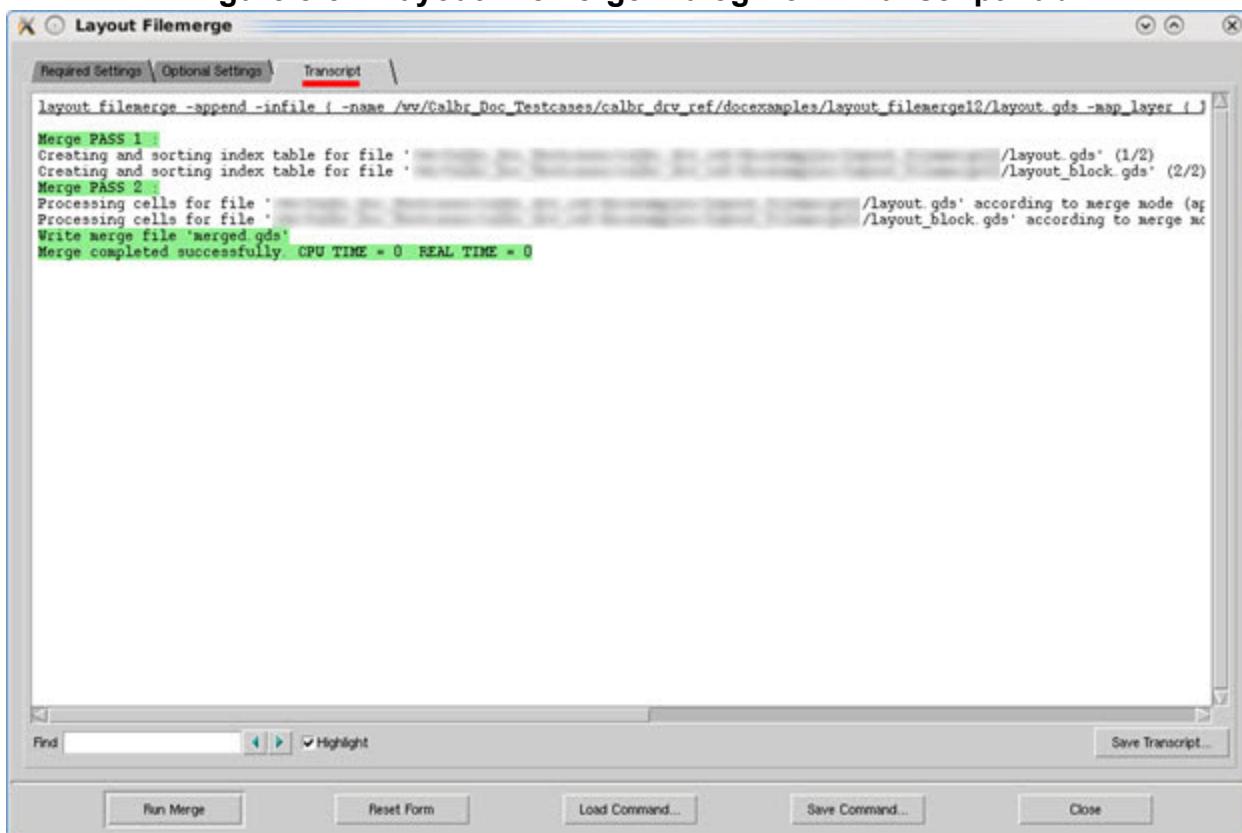


Figure 8-51. Layout Filemerge Dialog Box - Transcript Tab



Fields

Table 8-35. Layout Filemerge Dialog Box - Required Settings Tab

Field	Description
Input Files	
Add Files	Displays the “Specify one or more layouts to merge” dialog box. Select the files you wish to merge. Use Ctrl+click to select multiple files. The selected files and associated file types are displayed in the Filename and Type fields.
Add Loaded Layouts	Adds the layouts that are currently loaded in Calibre DESIGNrev into the list of input files.
Add Directories	Selects one or more directories containing the layout files to be merged. The Exclude Layer, Include Layer, Layer Mapping, and Preserve Cells options for directories must be set on the Optional Settings tab.
	Moves the selected input file(s) up or down in the list of input files.

Table 8-35. Layout Filemerge Dialog Box - Required Settings Tab (cont.)

Field	Description
	Removes the currently selected file(s) from the list of input files.
Input Files Table	<p>For each input file, you can click in the following fields to set file-specific filters that are applied to the associated layout file during the merge operation. You can specify layers in the Layer Map, Exclude Layers, and Include Layers fields as either a layer number or a layer number and datatype value separated by a “.”.</p> <ul style="list-style-type: none"> • Layer Bump — Specifies a value by which the layer number of each layer in the input file is incremented in the merged output file. You cannot specify a Layer Map value with this option. • Layer Map — Specifies <i>from</i> and <i>to</i> layers for mapping objects on the layers in the input file to layers in the resulting output file. • Exclude Layers — Specifies a list of layer numbers to exclude from the merged output file. • Include Layers — Specifies a list of layer numbers to include in the merged output file. • Prefix — Specifies a prefix to append to each cell name (including top cells) in order to create unique cells, thereby preventing cells with the same name from being merged. This option is not supported when the Overwrite Cells option in the Merge Mode field is enabled. • Suffix — Specifies a suffix to append to each cell name (including top cells) in order to create unique cells, thereby preventing cells with the same name from being merged. This option is not supported when the Overwrite Cells option in the Merge Mode field is enabled. • Exclude Top — Specifies that topcells in the input file are excluded from having a prefix or suffix appended. This option is only supported when the Append Cells option in the Merge Mode field is enabled. • Preserve Cells — Selects a cell to preserve during the merge operation.
Merge Mode	
Append Cells	Concatenates two cells together when cellname conflicts occur.
Rename Cells	Renames a cell when cellname conflicts occur.

Table 8-35. Layout Filemerge Dialog Box - Required Settings Tab (cont.)

Field	Description
Overwrite Cells	Writes the cell contents from the second file over the cell contents of the first file. This mode generates an error if a prefix or suffix is specified for a layout file.
Rename All Cells	Renames original and new cellnames to be unique.
Report Conflicts Only	Reports the cells in the input files that have the same name. Enabling this option disables the Output File field, as well as most options on the Optional Settings tab. The Transcript tab reports the layout files and cells that have naming conflicts.
Output File	
Filename	Specifies the pathname of the output file. The output filename cannot be the same as any of the input filenames.
Convert to Oasis	Specifies to output the merged results in OASIS format. This option displays only when all input files are in GDS format.
Overwrite Existing Output File	Specifies that an existing file is overwritten by the layout filemerge operation. The Layout Filemerge GUI automatically saves and restores the setting for this option.

Table 8-36. Layout Filemerge Dialog Box - Optional Settings Tab

Field	Description
Smart Diff	
Enable Smart Diff	Causes additional processing to be performed when cellname conflicts occur. Clicking this check box enables the following related options: <ul style="list-style-type: none"> • Ignore Properties — Do not consider properties for comparison. • Ignore Text — Do not consider text objects for comparison. • Convert Paths to Polygons — Convert paths to polygons for comparison.
OASIS Options	
Do not write CBLOCKS	Does not use CBLOCK compression to write OASIS layout files.
Always write CBLOCKS	Uses CBLOCK compression to write OASIS layout files.
Only write CBLOCKS if present	Uses CBLOCK compression to write OASIS layout files only when the input file contains CBLOCKS.

Table 8-36. Layout Filemerge Dialog Box - Optional Settings Tab (cont.)

Field	Description
Strict Mode	The option creates strict mode output for all fields in the table-offsets structure of the resulting OASIS layout database.
Empty Cell Handling	
Include empty cells	Writes empty cell definitions to the output file.
No empty cells	Does not write empty cells to the output. References to empty cells are written to the output.
No empty cells nor their references	Does not write empty cells or their references to the output. This option works recursively, removing all cells that only contain references to empty cells.
Output File Precision	
Match largest input precision	Sets the target output precision to the largest precision of all input layout files. When you select this option, the text box displays the target output precision of the input files currently loaded in the Layout Filemerge GUI. This option may fractionally scale the resulting output.
Integer multiple of all layouts	Sets the target output precision to the lowest integer multiple of all input layout files. When you select this option, the text box displays the target output precision of the input files currently loaded in the Layout Filemerge GUI.
Specify precision	Sets the target output precision to the value you enter in the text box. This option may fractionally scale the resulting output.
Top Cell Management	
Merge all top cells	Performs an import-style merge of the input layouts without creating a topcell.
Create a new top cell	Creates a topcell with the specified name and adds the topcell from each input file as a child of the new topcell.
Use an existing top cell	Displays a list of the topcells from the layouts that are loaded in the Layout Filemerge GUI. The selected topcell becomes the topcell in the resulting merged layout.
Misc Options	
Report all cell conflicts	Reports merge conflicts, including the cells causing the name conflicts and the action taken for each conflict.
Allow fractional precisions	Issues a warning and proceeds with scaling the input databases having a fractional precision value.

Table 8-36. Layout Filemerge Dialog Box - Optional Settings Tab (cont.)

Field	Description
Run filemerge in the background	Executes the command as a separate background process. This option is enabled by default. When disabled, the transcript is output to the shell window instead of the Transcript tab. The Layout Filemerge GUI automatically saves and restores the setting for this option.
Open the layout when merge completes	Automatically opens the resulting layout at the completion of the merge operation. The Layout Filemerge GUI automatically saves and restores the setting for this option.
Create a pcr cache	Creates a cache (.pcr) file for the resulting merged output file.
Layer Filters	
Include all layers in the Merged Layout	Includes all layers in the merged layout.
Only include these layers in the merged layout	Specifies one or more layer numbers containing objects to include in the merged output file. You can specify layers as either a layer number or a layer number and datatype value separated by a period (.). Values entered in this field are applied globally to the input files, except when values are entered in the Include Layers field on the Required Settings tab.
Exclude these layers from the merged layout	Specifies one or more layer numbers containing objects to exclude from the merged output file. You can specify layers as either a layer number or a layer number and datatype value separated by a period (.). Values entered in this field are applied globally to the input files, except when values are entered in the Exclude Layers field on the Required Settings tab.
Cell Name Mapping	
Old and New Cell Name(s)	Specifies pairs of cell names; a cell name in the input layout and a cell name to map it to in the merged layout.
Layer Mapping	
From and To Layer Number(s)	Specifies <i>from</i> and <i>to</i> layers for mapping objects on the layers in the input file(s) to layers in the resulting output file. You can specify layers as either a layer number or a layer number and datatype value separated by a period (.). Values entered in this field are applied globally to the input files. Values entered in the Layer Map field on the Required Settings tab take precedence over values entered in this field.

Table 8-36. Layout Filemerge Dialog Box - Optional Settings Tab (cont.)

Field	Description
Preserve file	Specifies the pathname of a file containing the names of cells to preserve during the merge operation.
Temporary files directory	Specifies a temporary directory for expanding input files that are in gzip format.

Table 8-37. Layout Filemerge Dialog Box - Transcript Tab

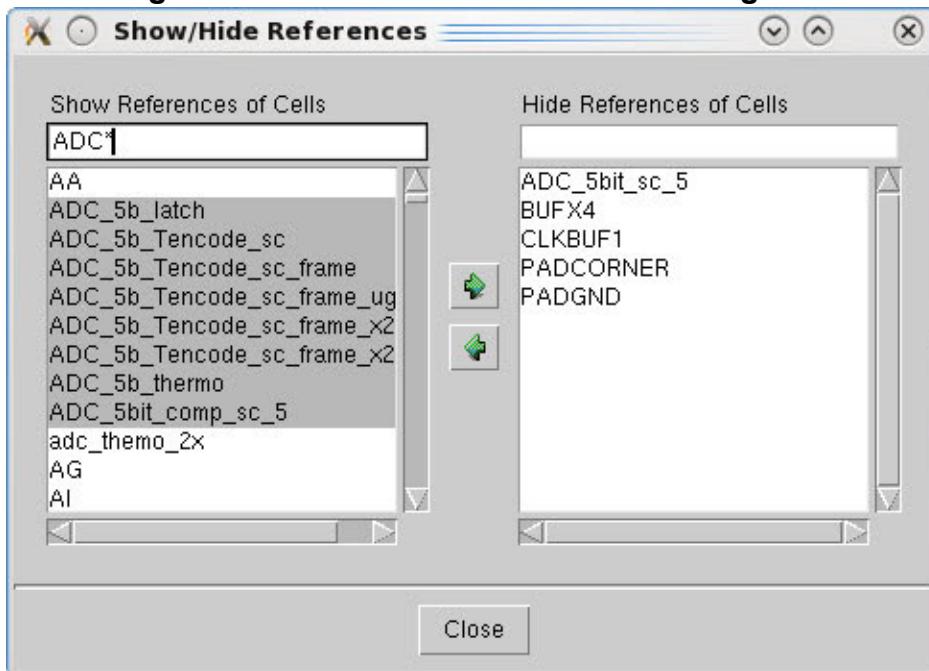
Field	Description
Find	Specifies a text string to highlight in the transcript. The arrows move to the previous and next occurrence of the string.
Highlight	Highlights messages in the transcript. Progress messages are highlighted in green, merge conflicts in yellow, and merge errors in red. The Layout Filemerge GUI automatically saves and restores the setting for this option.
Save Transcript	Displays the Save Filemerge Transcript dialog box for selecting or specifying a file in which to save the transcript.

Show/Hide References Dialog Box

To access: **View > Show/Hide References**

Use the Show/Hide References dialog box to select which cell references are displayed in the layout viewer.

Figure 8-52. Show/Hide References Dialog Box



Fields

Table 8-38. Show/Hide References Dialog Box

Field	Description
Show References for Cells	Lists referenced cells in current layout, highlighting those that are either manually selected, or are selected by wildcards in the text box.
Hide References for Cells	Lists hidden references in current layout, and highlights those that are either manually selected, or are selected by wildcards in the text box.
Arrows	The arrows allow you to transfer cells from the Show References for Cells area to the Hide References for Cells area.

Usage Notes

- You can use a wildcard '*' to select zero or more cell references. For example, entering the string ca*t matches cat, cabinet, and catalyst.

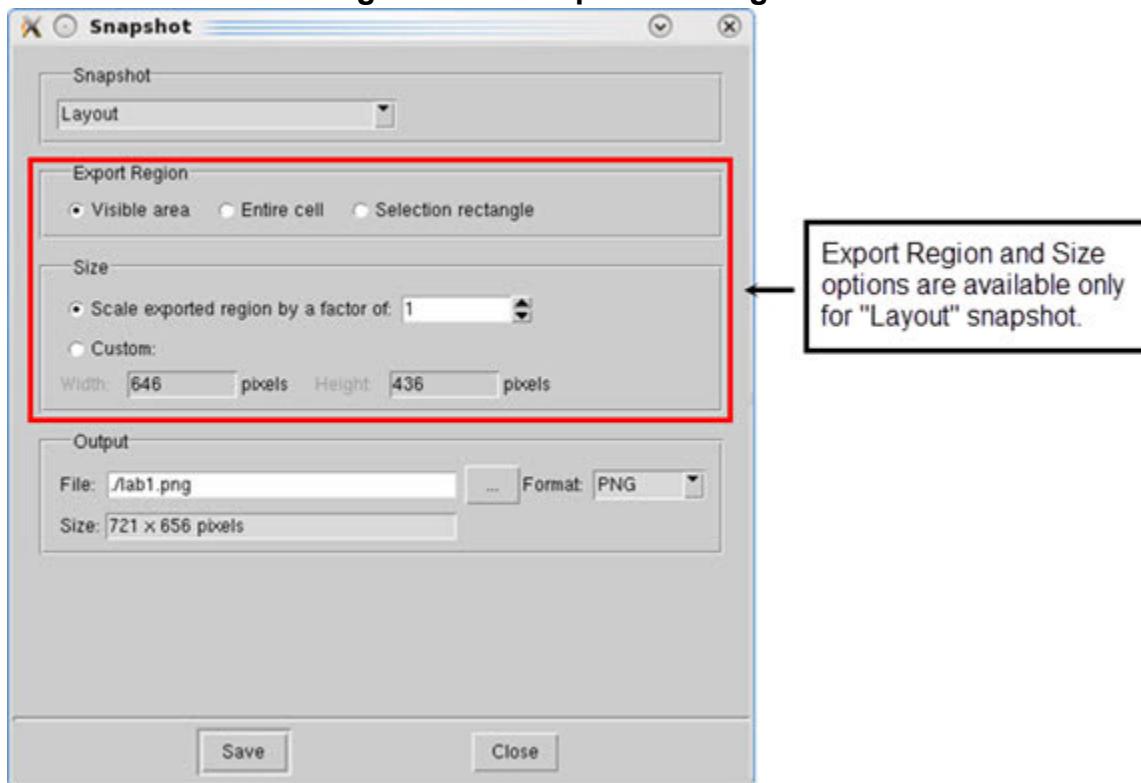
- The related **Scan References** menu item is available from the right-click popup menu in the Cells Browser and invokes Calibre RVE.
- You can also hide references by right-clicking a reference in the layout and choosing **Hide References** from the popup menu. To show references, right-click on the cell name in the Cells Browser and choose **Show References** from the popup menu.

Snapshot Dialog Box

To access: View > Snapshot

Use the Snapshot dialog box to create snapshots of the Layout Display Area.

Figure 8-53. Snapshot Dialog Box



Fields

Table 8-39. Snapshot Dialog Box

Field	Description
Snapshot	The layout item(s) to be exported. Options include: <ul style="list-style-type: none"> • Layout • Layout + Legend • Layer Palette • Toplevel window
Export Region (Layout snapshot only)	The region to be exported. Options include: <ul style="list-style-type: none"> • Visible area • Entire cell • Selection rectangle

Table 8-39. Snapshot Dialog Box (cont.)

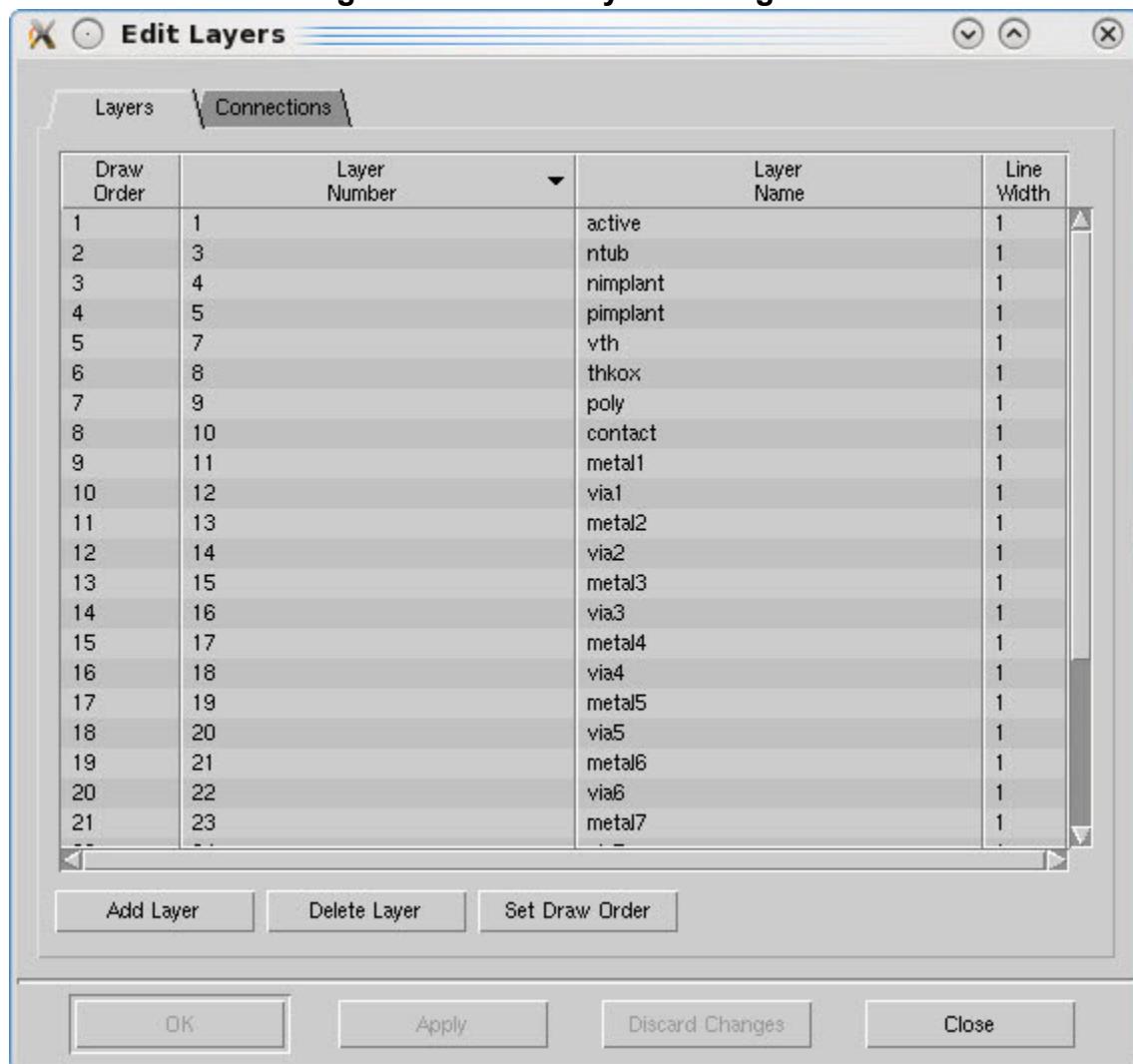
Field	Description
Size (Layout snapshot only)	The size of the snapshot to be exported. Options include: <ul style="list-style-type: none"> • Scale exported region by a factor of — A scaling factor applied to the size of the exported region. • Custom — Export the region at the specified width and height (in pixels).
Output	
File	The filename and extension to save as. Click the browse button (...) to display the Choose Image File dialog box.
Format	The output format. Supported types include: <ul style="list-style-type: none"> • PNG — Portable Network Graphics is both a lossy and lossless compression format which supports 8-bit palettes and 24-bit color images. • JPG — Joint Photographic Experts Group is a lossy compression format which supports 8-bit grayscale images and 24-bit color images. • GIF — Graphics Interchange Format is a lossless compression format limited to an 8-bit palette, or 256 colors. • BMP — Windows bitmap file format is an uncompressed format. • XPM — X Pixmap is a bitmap format. • PPM — Portable Pixmap file format is a bitmap format. • TIFF — Tagged Image File Format is both a lossy and lossless compression format which supports 8-bit or 16-bit per color (red, green, blue) images.
Size	Read-only field. Shows the size of the expected output graphic, which defaults to the size of the Layout Viewing Area.

Edit Layers Dialog Box

To access: Layer > Edit

Use the Edit Layers dialog box to modify layers, such as the layer number, layer name, line width, drawing order, and connections between layers.

Figure 8-54. Edit Layers Dialog Box



Fields

Table 8-40. Edit Layers Dialog Box

Field	Description
Layer Number	The layer number can be edited in place by clicking on an entry and typing the new value in the text box. Changes are applied as soon as you click another line.

Table 8-40. Edit Layers Dialog Box (cont.)

Field	Description
Layer Name	The layer name can be edited in place by clicking on an entry and typing the new value in the text box. Changes are applied as soon as you click another line.
Line Width	Sets the width of polygon and path lines on that layer. Click the line width to change the value.
Add Layer	Displays the Add Layers dialog box, which you use to add a new layer(s).
Delete Layer	Deletes a selected layer.
Set Draw Order	Drag and drop a layer to a new position in the list and click Set Draw Order to change the drawing order. This does not change the order a layer is listed at in the Layers Browser unless the Sort order is set to Drawing Order.

Usage Notes

- The Add Layers dialog box allows you to specify multiple layers. Each layer number that you specify must have a corresponding layer name and line width. In other words, you must enter the same number of values into each field. Layer names can include alphanumeric and special characters, and can be enclosed in double quotes as shown in [Figure 8-55](#). Unmatched double quotes will generate a warning.

Figure 8-55. Add Layers Dialog Box

- Enter the layer number(s).
- Enter the layer name(s) for each layer number you specify. Layer names can be enclosed in double quotes.
- Enter the line width(s) for each layer number you specify.
- Click OK and the Layers palette updates to display the new layers.

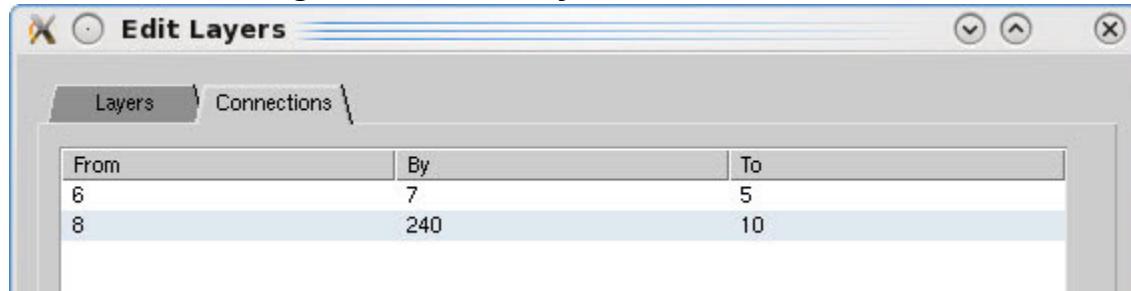


- Adding a layer greater than 65535 causes an error to be displayed when you save the file, indicating that the file cannot be written because the layer number exceeds 65535. The 65535 layer limitation is a constraint of the GDS II file format.
- To edit connections between layers, click the **Connections** tab in the Edit Layers dialog box as shown in [Figure 8-56](#). You can also use Connect statements in your layerprops

file to define connectivity. For example, the following specifies connectivity layers to be associated with each other:

```
connect 1 7 by 11
connect 12 5 by 18
```

Figure 8-56. Edit Layers Connections Tab



- In addition to using the Edit Layers dialog box, you can also set the layer drawing order using the following methods:
 - Use the [\\$L customLayerDrawOrder](#) batch command.
 - Insert a `customLayerDrawOrder layer_list` statement in the [layerprops](#) file.

Related Topics

[Layers Browser](#)

[layerprops File Format](#)

Object Properties Dialog Box

To access: **Object > Properties**

Use the Object Properties dialog box to view and adjust the properties associated with objects in the design.

The object properties are organized into the six tabs shown in Figure 8-57. Each tab in the Object Properties dialog box includes a dropdown list you can use to set the units used to measure object properties. You can also use [prefs_property_unitMeasure](#) to set this preference.

Figure 8-57. Object Properties Dialog Box Tabs



Object Properties Dialog Box - Cell Tab	313
Object Properties Dialog Box - Placement Tab	315
Object Properties Dialog Box - Path Tab	317
Object Properties Dialog Box - Polygon Tab	319
Object Properties Dialog Box - Text Tab	321
Object Properties Dialog Box - Common Tab	323

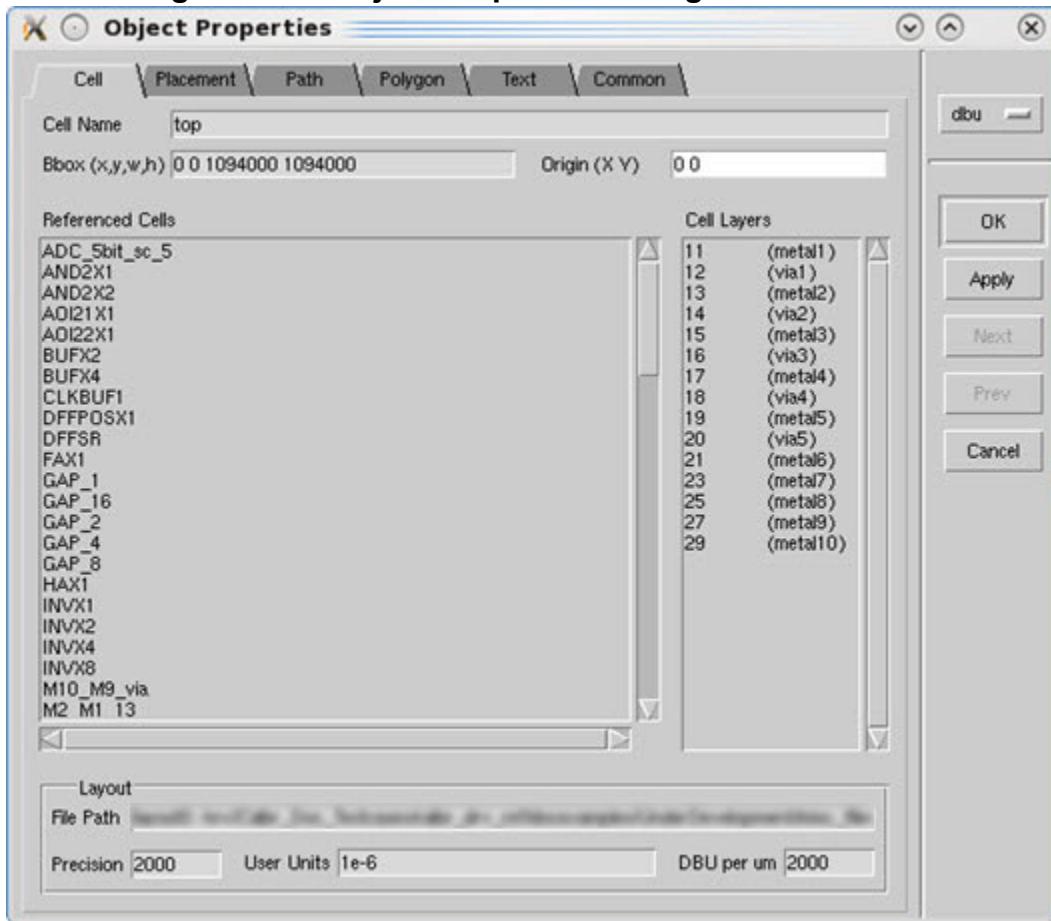
Object Properties Dialog Box - Cell Tab

To access:

- Object > Properties > Cell tab
- Select a cell, right-click, and choose Properties

Use the Object Properties Cell tab to view or change cell information.

Figure 8-58. Object Properties Dialog Box - Cell Tab



Fields

Table 8-41. Object Properties - Cell Tab

Field	Description
Cell Name	The name of the cell.
Bbox	Read-only field. The bounding box of the cell.
Origin (X Y)	Modifies origin for Cell Name.
Referenced Cells	Cells referenced by Cell Name.
Cell Layers	Layers used by Cell Name.

Table 8-41. Object Properties - Cell Tab (cont.)

Field	Description
Layout	
File Path	Layout file handle and pathname.
Precision	Cell precision.
User Units	User units default to one micron.
DBU per um	Units per micron.

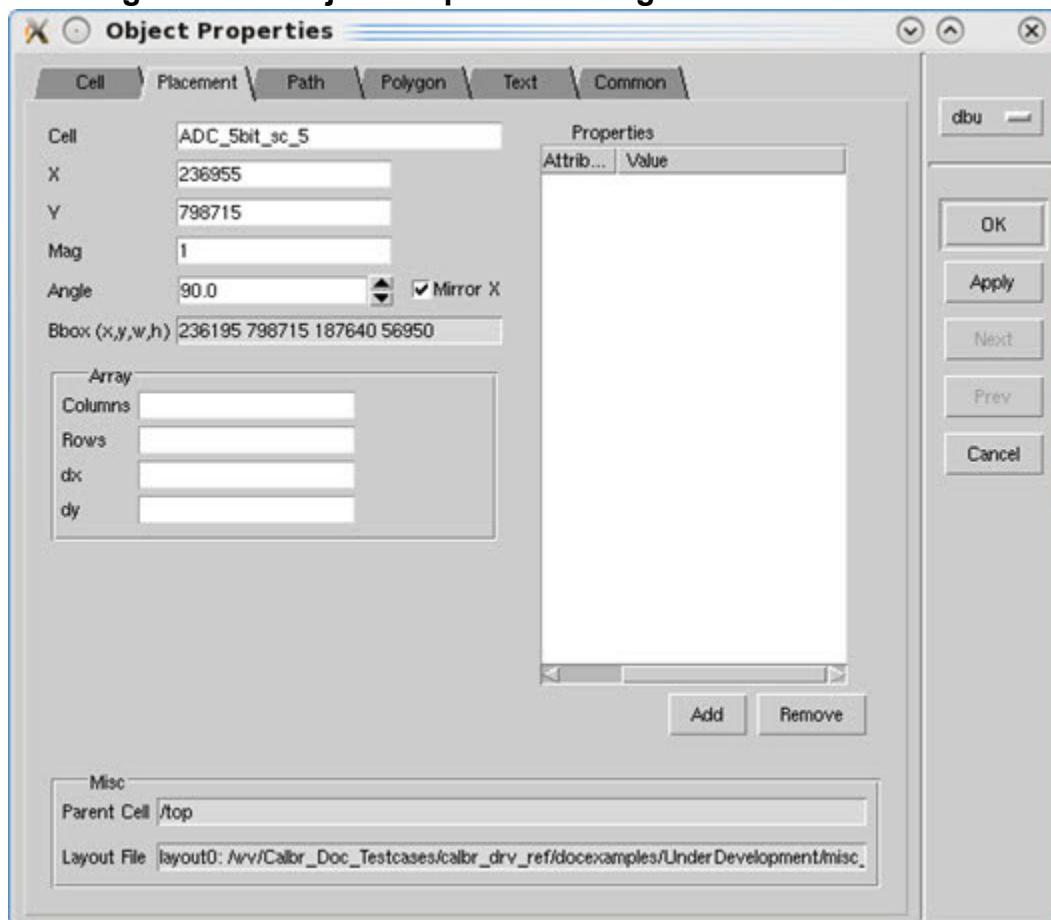
Object Properties Dialog Box - Placement Tab

To access:

- **Object > Properties > Placement tab**
- Select a cell or array, right-click, and choose **Properties**

Use the Object Properties **Placement** tab to change the placement of cells and cell reference arrays.

Figure 8-59. Object Properties Dialog Box - Placement Tab



Fields

Table 8-42. Object Properties Dialog Box - Placement Tab

Field	Description
Cell	Shows the placement details and other information about the cell.
X and Y	Editable fields; changing the X and Y placement, magnification, mirroring, and angle orientation fields modifies the cell placement properties.
Mag	
Mirror X	
Angle	
Bbox	Read-only field. The bounding box of the cell.
Array	
Columns	Displays the number of array columns. Changing this value adjusts the array.
Rows	Displays the number of array rows. Changing this value adjusts the array.
dx	Displays the X distance between elements in the array (before magnification).
dy	Displays the Y distance between elements in the array (before magnification).
Properties	
Type/Attribute/Value	View, add, and remove properties for the selected placement. Refer to “ Adding Database Properties to Objects ” on page 107 for more information.
Misc	
Parent Cell	Read-only field. The name of the cell parent.
Layout File	Read-only field. The layout file handle and pathname.

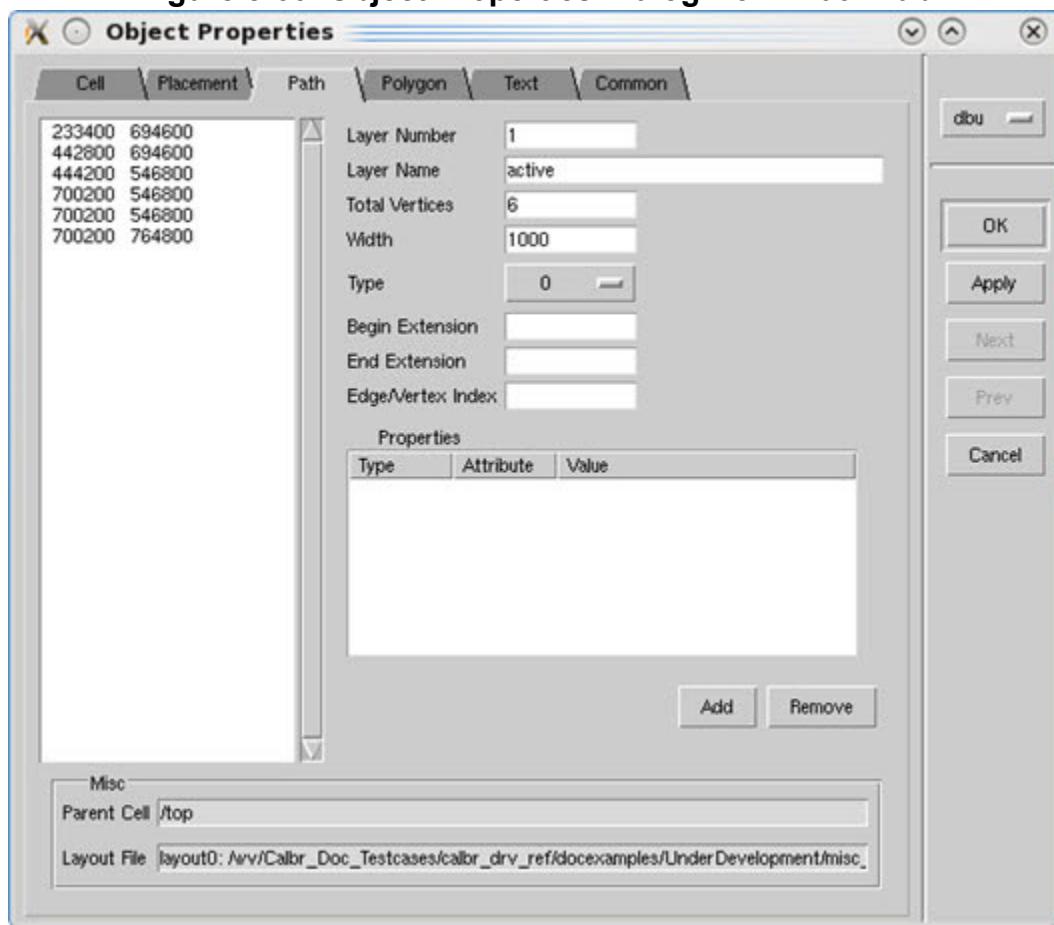
Object Properties Dialog Box - Path Tab

To access:

- Object > Properties > Path tab
- Select a path, right-click, and choose Properties

Use the Object Properties **Path** tab to inspect and adjust selected path properties.

Figure 8-60. Object Properties Dialog Box - Path Tab



Fields

Table 8-43. Object Properties Dialog Box - Path Tab

Field	Description
Layer Number	Applying a change of this field moves the path to the new layer.
Layer Name	Read-only field. The name of the layer associated with the Layer Number.
Total Vertices	Read-only field. The total number of vertices used to create the path. Each of the coordinates shown in the left pane is a single vertex.

Table 8-43. Object Properties Dialog Box - Path Tab (cont.)

Field	Description
Width	Change this field to modify the width of the path.
Type	Sets the type of path end. Valid values are: <ul style="list-style-type: none"> • 0 — Square ended paths. • 1 — Round ended. • 2 — Square ended, extended by 1/2 width. • 4 — Variable length extensions. If you specify this value, you must also specify values for Begin Extension and End Extension.
Begin Extension	Used only for Path Type 4. Used to view and change the bgnextn and endextn fields.
End Extension	
Edge/Vertex Index	Read-only field. Displays the edge indices for the endpoints of the selected edge.
Parent Cell	Read-only field. The name of the cell parent.
Layout File	Layout file handle and pathname.
Properties	
Type/Attribute/Value	View, add, and remove properties for the selected placement. Refer to “ Adding Database Properties to Objects ” on page 107 for more information.
Misc	
Parent Cell	Read-only field. The name of the cell parent.
Layout File	Layout file handle and pathname.

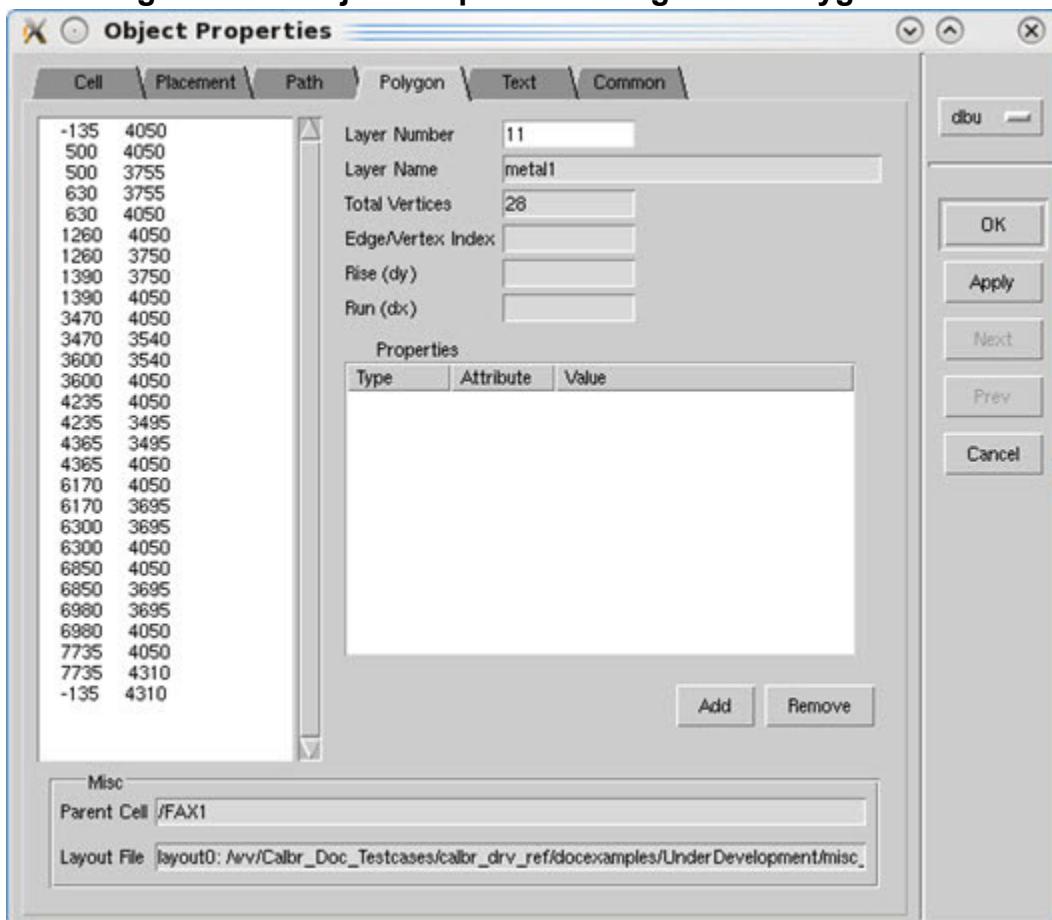
Object Properties Dialog Box - Polygon Tab

To access:

- **Object > Properties > Polygon tab**
- Select a polygon, right-click, and choose **Properties**

Use the Object Properties **Polygon** tab to inspect the properties for the currently selected polygon.

Figure 8-61. Object Properties Dialog Box - Polygon Tab



Fields

Table 8-44. Object Properties Dialog Box - Polygon Tab

Field	Description
Layer Number	The layer number the polygon is on. Applying changes to this value moves the polygon to the specified layer.
Layer Name	The name of the layer associated with the Layer Number. Read-only field.

Table 8-44. Object Properties Dialog Box - Polygon Tab (cont.)

Field	Description
Total Vertices	The total number of vertices used to create the polygon. Each of the coordinates shown in the left pane is a single vertex. Read-only field.
Edge/Vertex Index	Displays the edge indices for the endpoints of the selected edge. Read-only field.
Rise/Run	Displays the change in the x and y coordinates, which you can use to quickly calculate the slope of the edge.
Properties	View, add, and remove properties for the selected polygon. Refer to “ Adding Database Properties to Objects ” on page 107 for more information.
Properties	
Type/Attribute/Value	View, add, and remove properties for the selected placement. Refer to “ Adding Database Properties to Objects ” on page 107 for more information.
Misc	
Parent Cell	Read-only field. The name of the cell parent.
Layout File	Layout file handle and pathname.

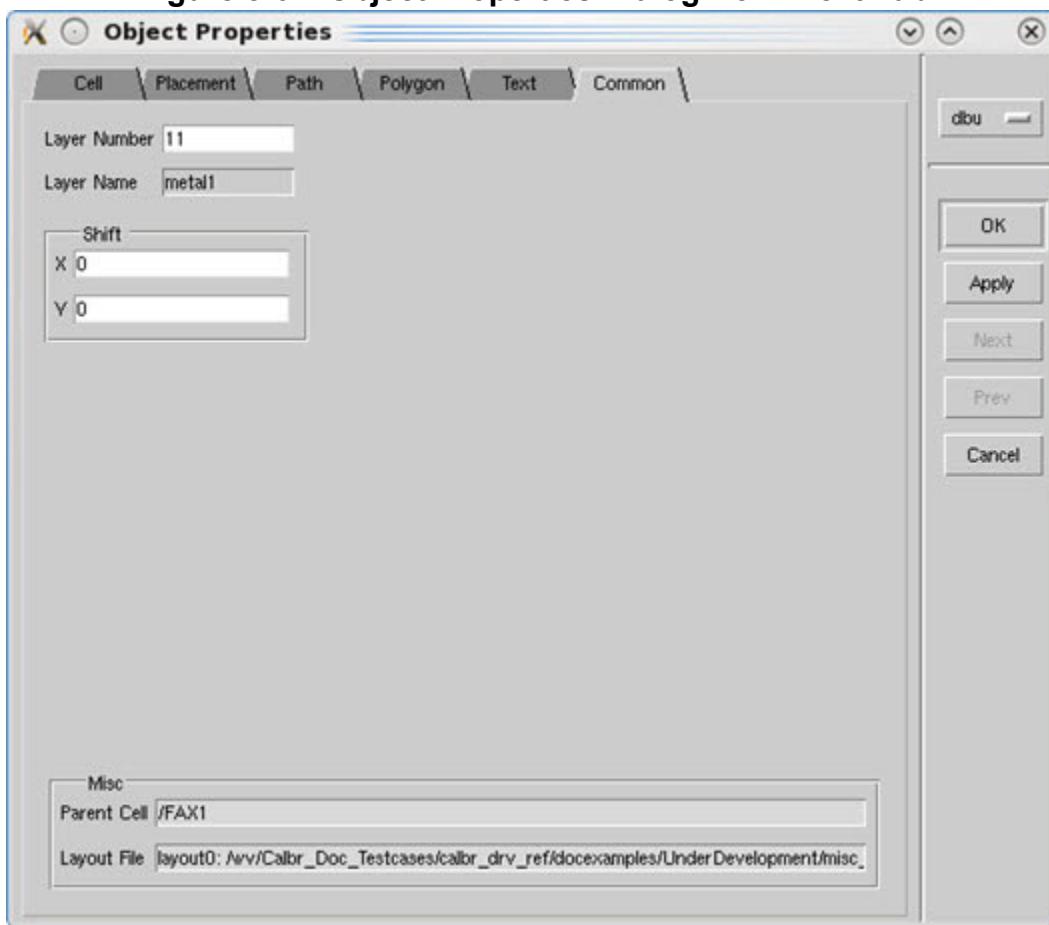
Object Properties Dialog Box - Text Tab

To access:

- **Object > Properties > Text tab**
- Select a text object (not a Character Shape), right-click, and choose **Properties**

Use the Object Properties **Text** tab to inspect and edit the currently selected text object.

Figure 8-62. Object Properties Dialog Box - Text Tab



Fields

Table 8-45. Object Properties Dialog Box - Text Tab

Field	Description
Layer Number	The layer number the text is on. Applying changes to this value moves the text to the specified layer.
Layer Name	The name of the layer associated with the layer number.
Text	Can be changed to modify the text object's string.
x and y	Can be changed to move the text object.

Table 8-45. Object Properties Dialog Box - Text Tab (cont.)

Field	Description
Attributes	
Presentation	Affected by the Align settings.
Strans	-
Magnification	Affected by the Height setting.
Angle	Affected by the Orientation setting.
Align	Sets the alignment of the text object relative to its placement point. Affects the Presentation value as an additive hex value: <ul style="list-style-type: none"> • Top (0x0), Middle (0x4), Bottom (0x8) • Left (0x0), Center (0x1), Right (0x2)
Height	Sets the height of the text object.
Orientation	Horizontal (0) and Vertical (90) degree orientations are possible and are shown in the Angle field.
Properties	
Type/Attribute/Value	View, add, and remove properties for the selected text. Refer to “ Adding Database Properties to Objects ” on page 107 for more information.
Misc	
Parent Cell	Read-only field. The name of the cell parent.
Layout File	Layout file handle and pathname.

Usage Notes

- The Attributes are only used when the layout viewer preferences are set to display them as described in the Objects Tab of the Preferences Dialog Box. If the Fixed Height preference is set, none of the Attributes fields set in the Properties dialog box have a visible effect.
- Supports the selection of multiple text objects. You can cycle through the selected objects using the **Prev** and **Next** buttons.

Related Topics

[Preferences Dialog Box - Objects Tab](#)

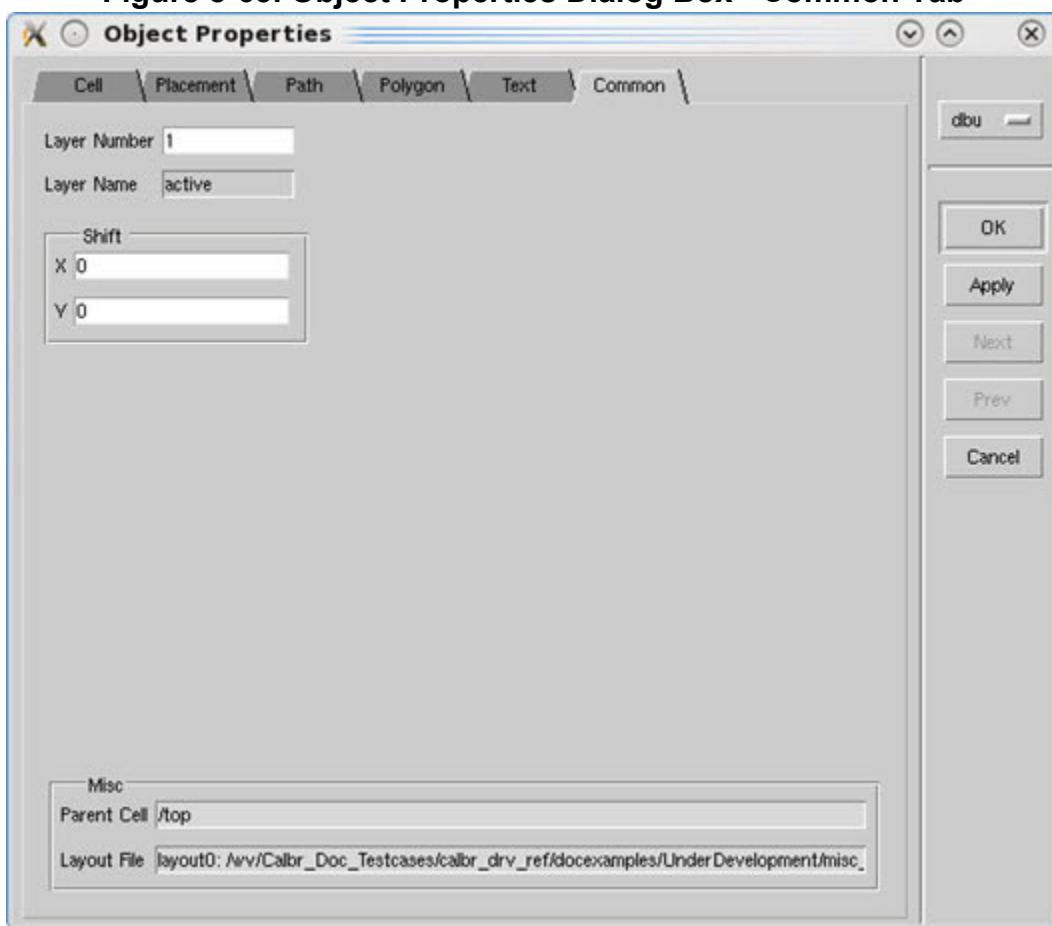
Object Properties Dialog Box - Common Tab

To access:

- Object > Properties > Common tab
- Select a shape, right-click, and choose Properties

Use the Object Properties **Common** tab to inspect and edit the common objects, allowing you to edit properties for multiple selected geometries simultaneously. This tab shows common editable fields across all selected geometries and allows you to change them. An empty field indicates the value differs between selected objects. A layer number and a shift by x and y edit can be applied to the selected geometries.

Figure 8-63. Object Properties Dialog Box - Common Tab



Fields

Table 8-46. Object Properties Dialog Box - Common Tab

Field	Description
Layer Number	The layer number the object is on. Applying changes to this value moves the object to the specified layer.

Table 8-46. Object Properties Dialog Box - Common Tab (cont.)

Field	Description
Layer Name	The name of the layer associated with the Layer Number.
Shift	
x	Shifts the object by the specified amount along the x axis.
y	Shifts the object by the specified amount along the y axis.
Misc	
Parent Cell	Read-only field. The name of the cell parent.
Layout File	Layout file handle and pathname.

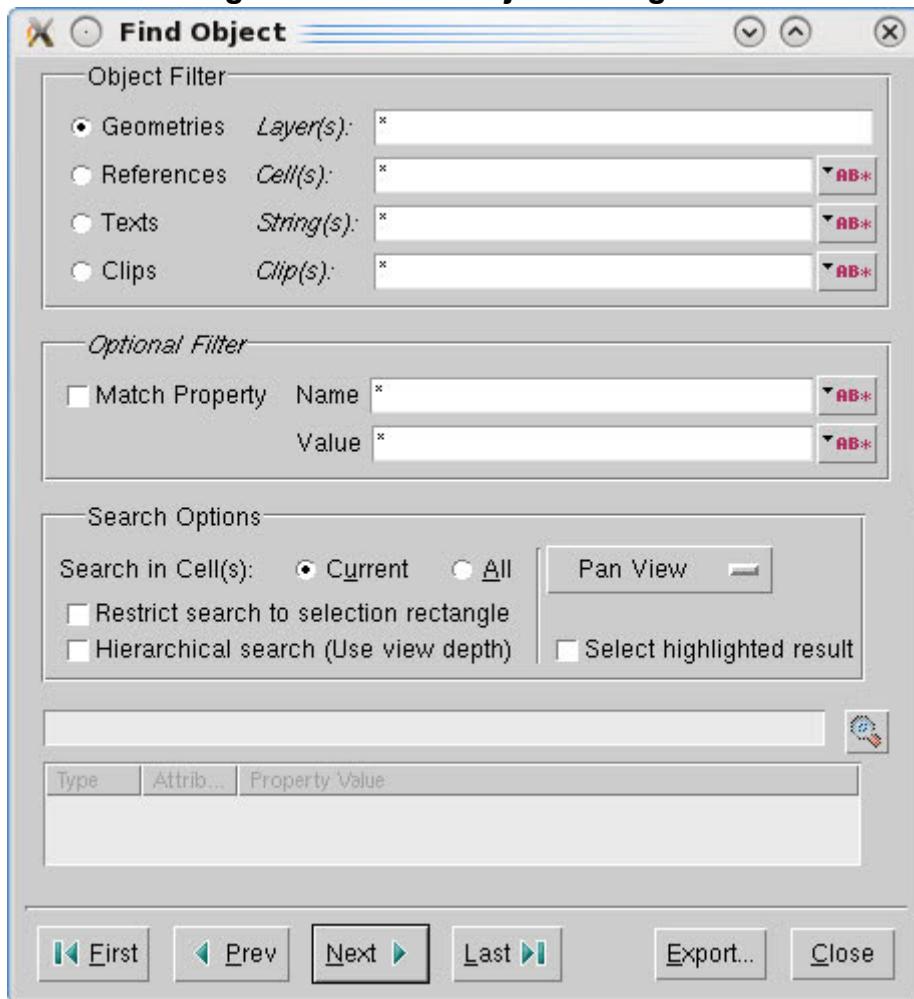
Find Object Dialog Box

To access:

- **Object > Find**
- Click the selection button in the Find Object Toolbar.

Use the Find Object dialog box to find objects of various types in the current layout.

Figure 8-64. Find Object Dialog Box



Fields

Table 8-47. Find Object Dialog Box

Field	Description
Object Filter	
Geometries	Limits the search to geometries on the specified layer number.

Table 8-47. Find Object Dialog Box (cont.)

Field	Description
References	Limits the search for references to cell names matching the specified string. Click the button to the right of the text entry box to display a popup menu containing the options: Exact Match, Case-Insensitive, and Wildcard.
Texts	Limits the search to texts matching the specified string. Click the button to the right of the text entry box to display a popup menu containing the options: Exact Match, Case-Insensitive, and Wildcard.
Clips	Limits the search to clips matching the specified string. Click the button to the right of the text entry box to display a popup menu containing the options: Exact Match, Case-Insensitive, and Wildcard.
Optional Filter	
Match Property	Restricts the search to objects having the specified GDS or OASIS property name and value. Click the button to the right of each text entry box to display a popup menu containing the options: Exact Match, Case-Insensitive, and Wildcard.
Search Options	
Search in Cell(s)	Searches all cells or only the current cell.
Restrict search to selection rectangle	Searches only the selected area.
Hierarchical search (Use view depth)	Searches all visible levels.
View	Select from the following options: <ul style="list-style-type: none"> • Zoom — Zooms to the selected object. • Pan View — Pans to the selected object. • Keep View — Keeps the current location. • No Highlight — Pans to the selected object without highlighting the object.
Select highlighted result	Allow the current highlighted result to be selected.
Magnifying glass button	Click the magnifying glass to zoom to the currently selected object using a specified zoom factor.
Navigation buttons	Use the First, Prev, Next, and Last buttons to navigate the found objects.

Table 8-47. Find Object Dialog Box (cont.)

Field	Description
Export	<p>Displays a popup menu. Options include:</p> <ul style="list-style-type: none"> • Set Export Layer — Displays the Set Export Layer dialog box in which you specify a layer number for the export results. • Export Current Result — Exports the current result of the find operation to the currently defined export layer. • Export All Results — Exports all results of the find operation to the currently defined layer. • Clear Exports — Clears the results of the Export Current Result or Export All Results operations. • Export to RVE — Exports the results via an RDB file and displays the results in Calibre RVE in top cell coordinates.

Usage Notes

- Specifying an object filter in the Find Object dialog box is automatically reflected in the Find Object Toolbar.
- Wildcard searches are supported. For example:
 - The '*' character finds zero or more object occurrences.
 - The '?' character matches a single character.
 - '[*chars*]' matches a single character in *chars* or sequences of the form a-b.
 - '*x*' matches the character *x*.
 - '{*a,b,...*}' matches any of the strings *a,b,...*
- Searching by polygons includes paths. Searching by references includes arrays. You can also filter by specific layers and cell names.
- All results of the find operation are reported in top cell coordinate space.

Related Topics

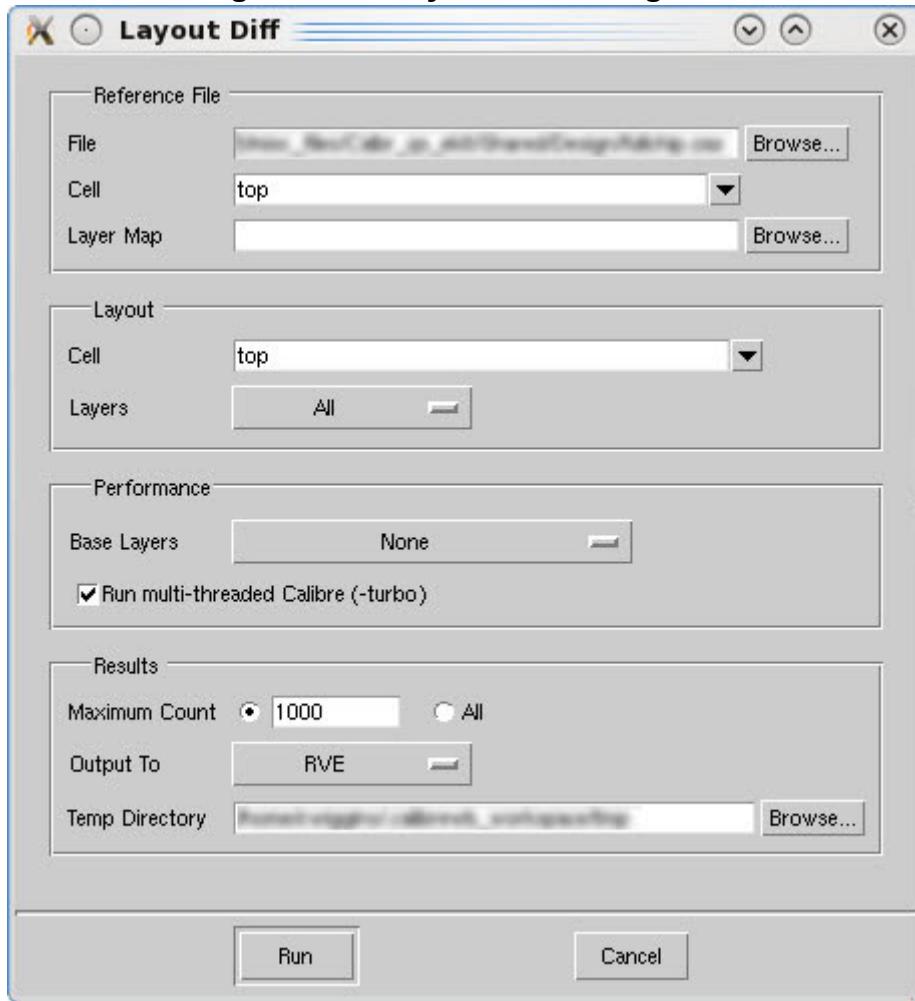
[Find Object Toolbar](#)

Layout Diff Dialog Box

To access: **Tools > Layout Diff**

Use the Layout Diff dialog box to highlight places where a reference layout is different from the current layout.

Figure 8-65. Layout Diff Dialog Box



Fields

Table 8-48. Layout Diff Dialog Box

Field	Description
Reference File	
File	Specifies the file to compare the current layout to.
Cell	Specifies the name of the cell in the reference layout to use for the diff operation.
Layer Map	Specifies a layer map file.

Table 8-48. Layout Diff Dialog Box (cont.)

Field	Description
Layout	
Cell	Specifies the name of the cell in the layout to use for the diff operation.
Layers	Specifies the layers in the layout to use. Options include: <ul style="list-style-type: none"> • All • Selected • Visible
Performance	
Base Layers	Specifies whether or not to use base layers. Options include: <ul style="list-style-type: none"> • None — Base layers are not used. • Read from Rules File — Displays a text box allowing you to enter the path to the rule file, or you can click the Browse button to navigate to and select the rule file. • Specify Layers — Displays a text box that you use to enter the names of the base layers.
Run multi-threaded Calibre (-turbo)	Specifies to run the job in multi-threaded mode. This is the same as using the -turbo command line switch. This option is enabled by default.
Results	
Maximum Count	Limits the maximum number of output shapes. Options include: <ul style="list-style-type: none"> • Specify a maximum count value • All
Output To	Specifies the tool that the results are output to. Options include: <ul style="list-style-type: none"> • Calibre RVE • Calibre DESIGNrev
Temp Directory	Specifies a directory for writing the results of the run.

Preferences Dialog Box

To access: **Options > Layout View**

Use the Preferences dialog box to customize different aspects of the layout viewer.

Preferences are stored in the *preferences* file. You can use the Preferences dialog box in the GUI to set your preferences, or you can edit the *preferences* file to add, delete, or modify preferences. The *preferences* file is read each time you invoke a layout viewer. Refer to “[preferences File Format](#)” on page 384 for information on the preferences file, in addition to reference information for the available preference keywords.

The preferences are organized into the seven tabs shown in Figure 8-66.

Figure 8-66. Preferences Dialog Box Tabs



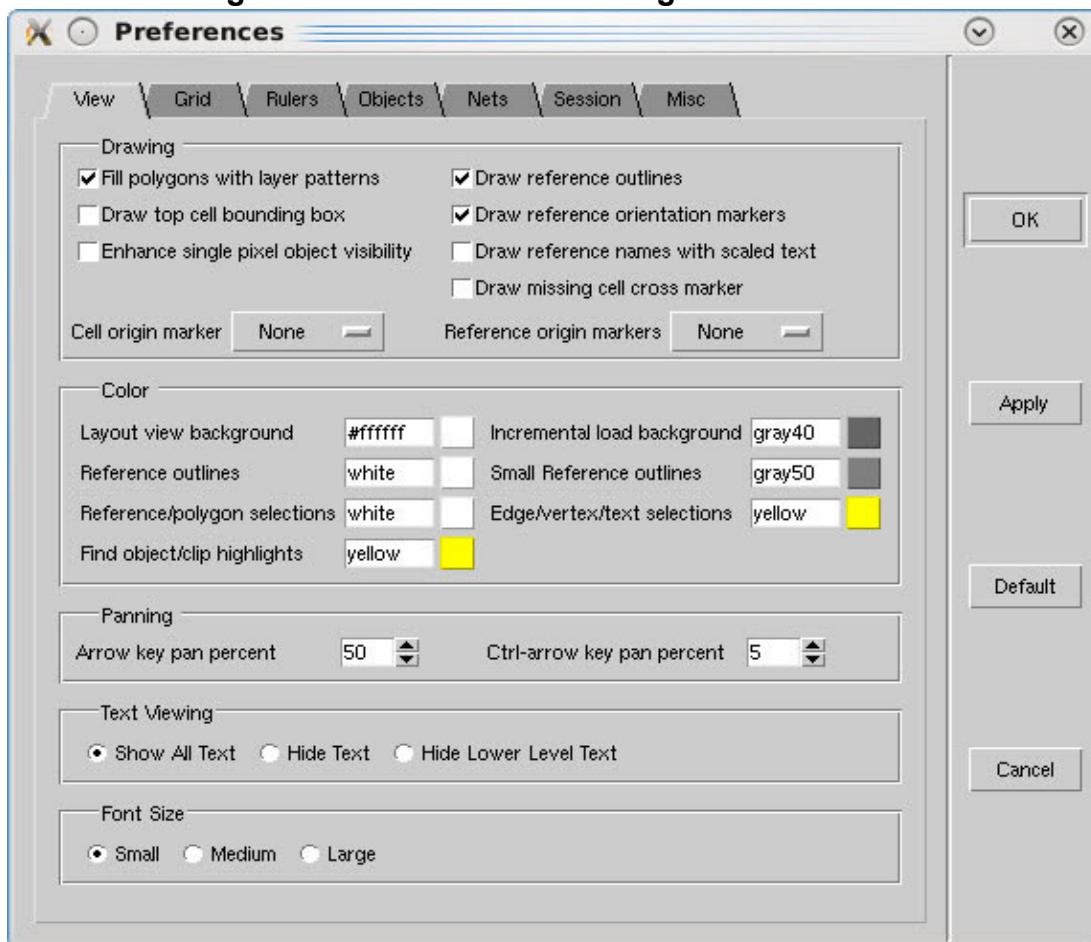
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Preferences Dialog Box - View Tab

To access: Options > Layout View

Use the **View** tab in the Preferences dialog box to control the drawing of objects, background and object colors, and panning.

Figure 8-67. Preferences Dialog Box - View Tab



Fields

You can use the GUI to set the preferences described in the following table. Settings made using the GUI are saved in the *preferences* file. Refer to “[preferences File Format](#)” on page 384 for more information. Some preferences can also be set by editing the *preferences* file to add, modify, or delete keywords and associated values. Related preferences, if available, are listed in the following table.

Table 8-49. Preferences Dialog Box - View Tab

Field	Description
Drawing	
Fill polygons with layer patterns	Adds shading to newly-drawn polygons based on layer settings. The default is on. Related preference: prefs_view_fillpolygons
Draw reference outlines	Enables or disables the display of outlines around cell references when they are not visible at the current depth. The default is on. Related preference: prefs_view_celloutline
Draw top cell bounding box	Draw bounding box for the top cell. The default is off. Related preference: prefs_view_drawTopCellBox
Draw reference orientation markers	Enables or disables the display of reference orientation markers (f) to show how cell references are oriented to the design. The default is on. Related preference: prefs_view_cellorientmarker
Enhance single pixel object visibility	Highlights objects too small to draw with a 3 x 3 pixel bounding box. The default is off. Related preference: prefs_view_repPixels
Draw reference names with scaled text	Enables or disable the display of reference names with scaled text using the current zoom factor. The default is off. Related preference: prefs_view_cellnamescaled
Draw missing cell cross marker	Enables or disables missing cell cross chip markers. The default is off. Related preference: prefs_view_missingCellMarker
Cell origin marker	Cell origin marker set to None, Square, or Cross. The default is None. Related preference: prefs_view_markerOrgMode
Reference origin markers	Reference origin marker set to None, Square, or Cross. Draws a marker at the reference origin translated to the in-view cell of any selected references. Marker is distinguished from the cell origin by being drawn in the selection highlight color. The default is None. Related preference: prefs_view_refOriginMarker
Color	
Layout view background	Sets layout background color. The default is black. Related preference: prefs_view_bg

Table 8-49. Preferences Dialog Box - View Tab (cont.)

Field	Description
Reference outlines	Sets the color of reference outlines. The default is white. Related preference: prefs_view_outlineRefColor
Reference/polygon selections	Sets the color of selected polygons and cell references. The default is white. Related preference: prefs_view_selectRefPolyColor
Find object/clip highlights	Sets the color of clips. The default is yellow. Related preference: prefs_view_findObjClipColor
Incremental load background	Sets the color of the incremental loading background. The default is gray. Related preference: prefs_view_clipColor
Small reference outlines	Sets the color of small reference outlines. The default is gray. Related preference: prefs_view_smallRefColor
Edge/vertex/text selections	Sets the color of selected edges, vertices, and text objects. The default is yellow. Related preference: prefs_view_selectOtherColor
Panning	
Arrow key pan percent	Sets the distance across the design that the layout viewer pans when the arrow keys are pressed. Incremental panning is accomplished by using the Ctrl key in combination with the arrow keys. The default is 50. Related preference: prefs_view_panpercent
Ctrl-arrow key pan percent	Sets the distance across the design that the layout viewer pans when the ctrl-arrow keys are pressed. The setting is intended to be very low compared to the regular pan keys to cause small pan increments. The default is 5. Related preference: prefs_view_smallPanPercent
Text Viewing	
Show All Text	Shows text labels. Related preference: prefs_text_show
Hide Text	Hides text labels. Related preference: prefs_text_show
Hide Lower Level Text	Hides lower level text labels and shows only top level text labels. Related preference: prefs_text_show

Table 8-49. Preferences Dialog Box - View Tab (cont.)

Field	Description
Font Size	
Small	Sets the font size to small for GUI elements, such as labels, menus, and coordinates. It also changes the font size of fixed reference names, text objects, and ruler text in the layout viewing area. This is the default.
Medium	Sets the font size to medium for GUI elements, such as labels, menus, and coordinates. It also changes the font size of fixed reference names, text objects, and ruler text in the layout viewing area.
Large	Sets the font size to large for GUI elements, such as labels, menus, and coordinates. It also changes the font size of fixed reference names, text objects, and ruler text in the layout viewing area.

Usage Notes

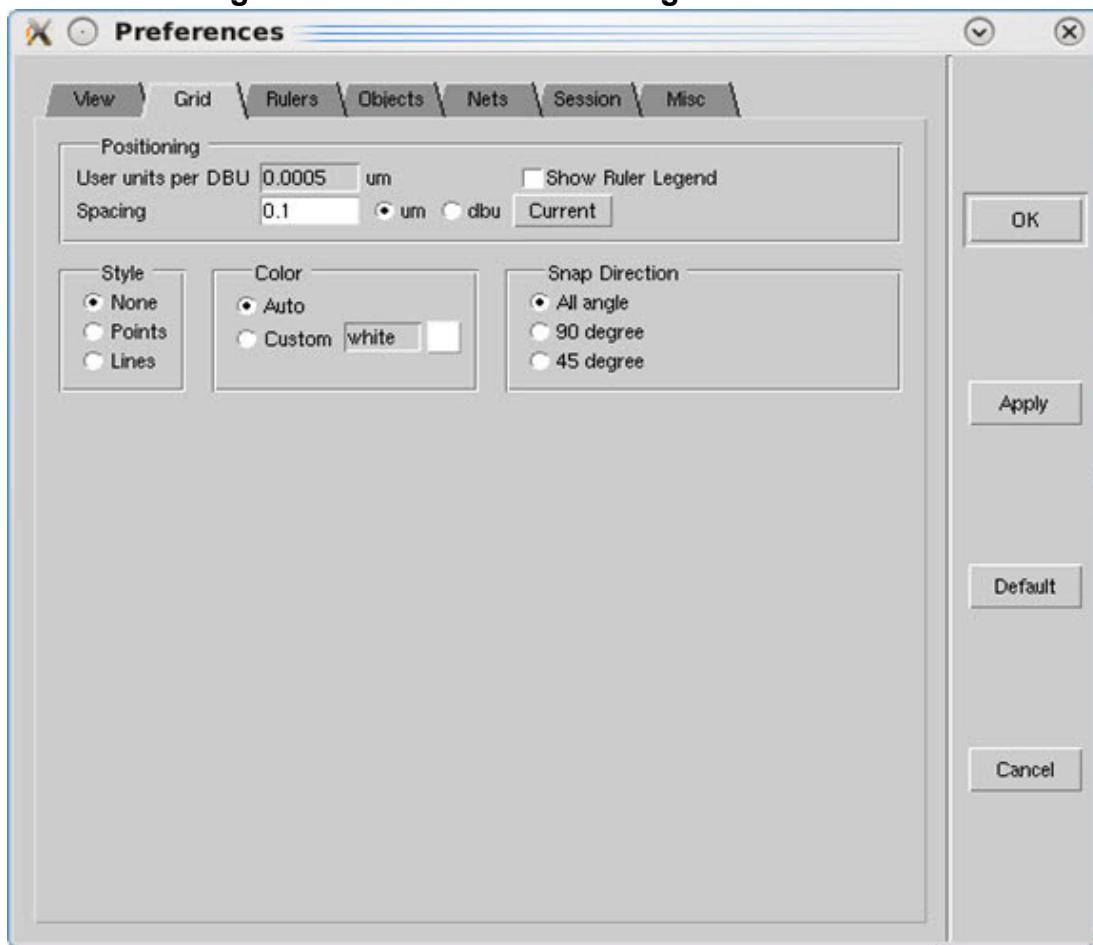
- Choices made in the **View** tab of the Preferences dialog box should be made to best suit your performance and display needs. If refresh time is slow, try selecting options that reduce detail and object counts. Reducing the detail increases performance speed by reducing the objects that must be drawn with every screen refresh.

Preferences Dialog Box - Grid Tab

To access: Options > Grid Setting

Use the **Grid** tab in the Preferences dialog box to control the behavior and appearance of the grid.

Figure 8-68. Preferences Dialog Box - Grid Tab



Fields

You can use the GUI to set the preferences described in the following table. Settings made using the GUI are saved in the *preferences* file. Refer to “[preferences File Format](#)” on page 384 for more information. Some preferences can also be set by editing the *preferences* file to add, modify, or delete keywords and associated values. Related preferences, if available, are listed in the following table.

Table 8-50. Preferences Dialog Box - Grid Tab

Field	Description
Positioning	
User units per DBU, um	Displays the database units (dbu) in micrometers (um), which is the resolution of the database. Used as a minimum value to limit grid settings. One um times the precision equals one dbu.
Show Ruler Legend	Enables or disables the display of the ruler legend in the layout view. If enabled, the ruler legend is shown framing the layout view. Related preference: prefs_gui_showRulerLegend
Spacing (um dbu)	Sets the user grid size. Be sure to select the correct units (um or dbu) to the right of the text box before proceeding. Related preference: prefs_grid_major
Current	Sets to the current grid spacing.
Style	
None	Turns off the display of the grid. Related preference: prefs_grid_style
Points	Uses points to display the grid. Related preference: prefs_grid_style
Lines	Uses lines to display the grid. Related preference: prefs_grid_style
Color	
Auto	Displays a white grid for dark backgrounds and a dark grid for light backgrounds (recommended). Related preference: prefs_grid_autoColorEnabled
Custom	Enter a color name or RGB value (for example, #FFFFFF) in the text box. Refer to “ Layout Viewer Color Reference ” on page 593 for information on supported color names and RGB colors. Alternatively, you can click the color button to display the Choose Grid Color dialog box and use the Red, Green, and Blue selectors to set the grid color. Related preference: prefs_grid_autoColorEnabled , prefs_grid_usercolor
Snap Direction	
All Angle	Sets the snap direction to the nearest grid point. Related preference: prefs_grid_snap

Table 8-50. Preferences Dialog Box - Grid Tab (cont.)

Field	Description
90 degree	Sets the snap direction to the nearest grid point aligned vertically or horizontally. Related preference: prefs_grid_snap
45 degree	Sets the snap direction to the nearest grid point at a 0, 45, or 90 degree angle. Related preference: prefs_grid_snap

Usage Notes

- When the grid is visible, it provides visual cues for calculating spacing, width, and alignment. New vertices created when drawing objects or rulers are snapped to the nearest grid point according to the snap direction setting.
- The size of the user grid controls the spacing of vertices. The default value for the grid size is 0.1 mm. The minimum value is defined by the resolution of the database to limit grid settings.
- The grid size is limited to values that are a multiple of the database unit value.
 - When you load in a new layout with a different database unit, the layout viewer notifies you the grid spacing is not a multiple of the database unit through the shell window.
 - When you change the Grid Spacing value, the application checks to see whether or not it is a multiple of the database unit. If not, a popup dialog box asks you whether to use the multiple nearest to the specified value, or the database unit.

Note

 While choosing the nearest value is a convenient way to set the grid value, this calculation can take some time if there is a large difference between the database unit value and the grid spacing value.

- If you zoom out from the view to the point where grid lines or points appear next to each other, the grid disappears. This feature ensures the grid does not obscure the design.
- If you need to change the size of the database unit in an open layout, you can do so using the \$L units user batch command. The new value for the database unit must be an integer multiple of 1 nm or unexpected behavior results.

If you run into this problem, you can resolve it by issuing the following commands:

```
$L units database <val>
$L units user [expr <val> * 1.0e6]
```

Related Topics

[\\$L units user \[Calibre DESIGNrev Reference Manual\]](#)

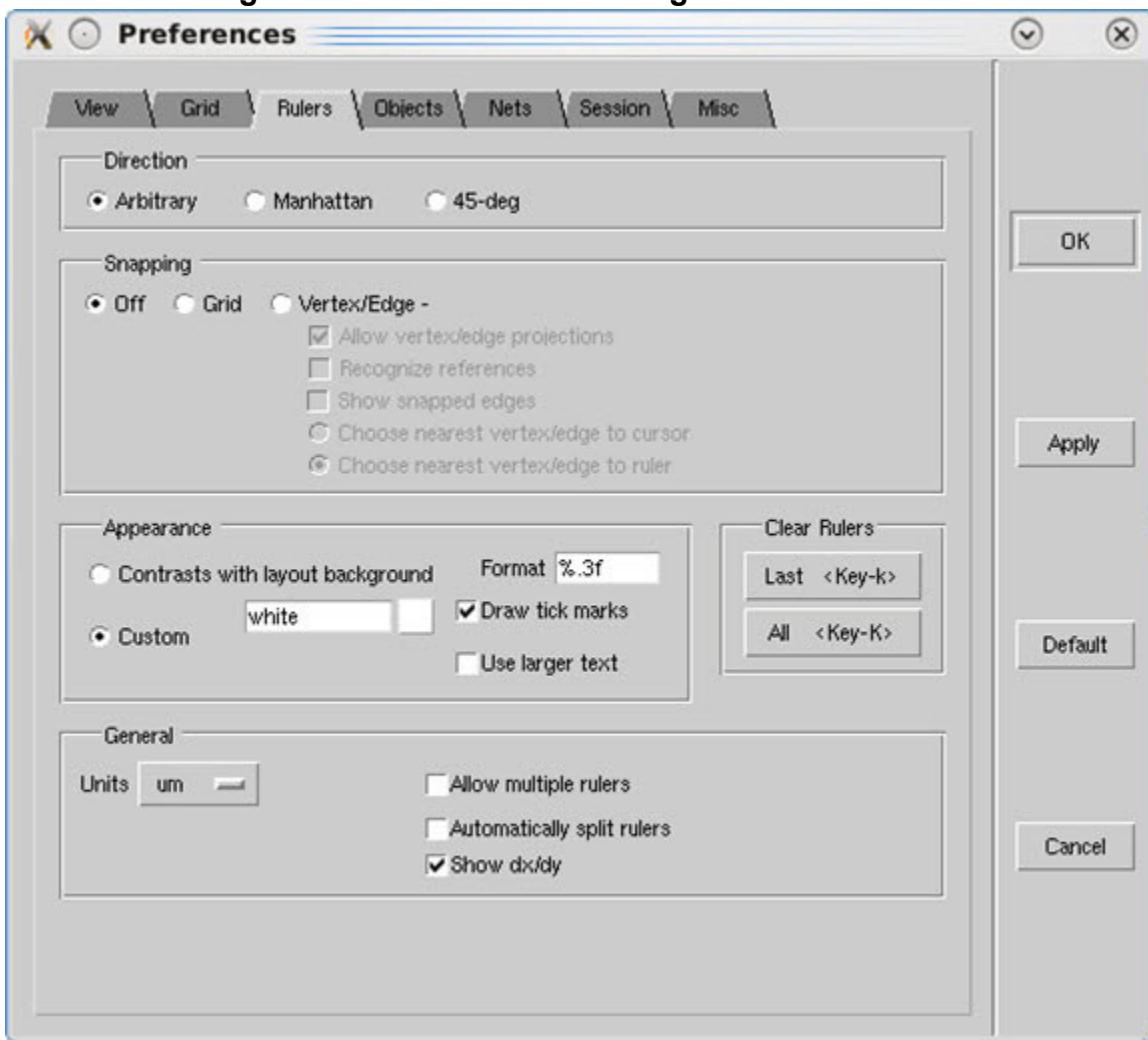
[\\$L units database \[Calibre DESIGNrev Reference Manual\]](#)

Preferences Dialog Box - Rulers Tab

To access: Options > Ruler

Use the **Rulers** tab in the Preferences dialog box to control the ruler direction, snapping, and ruler appearance.

Figure 8-69. Preferences Dialog Box - Rulers Tab



Fields

You can use the GUI to set the preferences described in the following table. Settings made using the GUI are saved in the *preferences* file. Refer to “[preferences File Format](#)” on page 384 for more information. Some preferences can also be set by editing the *preferences* file to add, modify, or delete keywords and associated values. Related preferences, if available, are listed in the following table.

Table 8-51. Preferences Dialog Box - Rulers Tab

Field	Description
Direction	
Arbitrary	Sets the direction for drawing rulers to no restriction. Related preference: prefs_ruler_direction
Manhattan	Restricts the direction for drawing rulers to manhattan (90-degree) angles. Related preference: prefs_ruler_direction
45-deg	Restricts the direction for drawing rulers to 45-degree angles. Related preference: prefs_ruler_direction
Snapping	
Off	Turns off ruler snapping. Related preference: prefs_ruler_snap
Grid	Causes rulers to snap to the nearest grid point. Related preference: prefs_ruler_snap
Vertex/Edge	Causes rulers to snap to the nearest vertex or edge. If selected, options include: <ul style="list-style-type: none"> • Allow vertex/edge projections — Extends edges into empty space in the same direction as possible endpoints for rulers. This may cause the ruler to appear to snap into empty space as its endpoint. • Recognize references — Configure rulers to measure the distance from a layout object to a cell boundary. • Show snapped edges — Show the edges to which the ruler snaps. • Choose nearest vertex/edge to cursor — Snaps to the nearest vertex or edge relative to its location from the cursor. • Choose nearest vertex/edge to ruler — Snaps to the nearest vertex or edge relative to the ruler. Default behavior. Related preference: prefs_ruler_snap , prefs_ruler_snapEVProjections , prefs_ruler_snapToReferences , prefs_ruler_showSnappedEdge , prefs_ruler_snapToNearest
Appearance	
Contrasts with layout background	Color contrasts with layout background color. Related preference: prefs_ruler_color

Table 8-51. Preferences Dialog Box - Rulers Tab (cont.)

Field	Description
Custom	<p>Enter a color name or RGB value (for example, #FFFFFF) in the text box. Refer to “Layout Viewer Color Reference” on page 593 for information on supported color names and RGB colors.</p> <p>Alternatively, you can click the color button to display the Choose Grid Color dialog box and use the Red, Green, and Blue selectors to set the grid color.</p> <p>Related preference: prefs_ruler_color</p>
Format	<p>Specifies a different format for displaying the ruler length. The format must be written using the notation of the Tcl format command. For example: %.3f</p> <p>where:</p> <ul style="list-style-type: none"> • The percent sign introduces the format and is required. • The integer after the “.” indicates the precision (digits after the decimal). • The letter indicates the format (such as decimal, octal, or floating point). <p>Related preference: prefs_ruler_format</p>
Draw tick marks	<p>Enables or disables the display of tick marks. The default is enabled.</p> <p>Related preference: prefs_ruler_tickMarkMode</p>
Use larger text	<p>Enables or disables larger, scaled text for ruler captions. Default is disabled.</p> <p>Related preference: prefs_ruler_height</p>
Clear Rulers	
Last	Deletes the last ruler created. You can press “k” to perform the same action.
All	Deletes all rules. You can press “K” to perform the same action.
General	
Units	<p>Switches the display units between database units (dbu), microns (um), and nanometers (nm). See Usage Notes.</p> <p>Related preference: prefs_ruler_unitMeasure</p>
Allow multiple rulers	<p>Enables or disables multiple rulers (up to 500). If this option is not selected, the previous ruler is deleted each time you create a new ruler and you cannot extract multiple shortest paths.</p> <p>Related preference: prefs_ruler_multiple</p>

Table 8-51. Preferences Dialog Box - Rulers Tab (cont.)

Field	Description
Automatically split rulers	Enables splitting of rulers on shape boundaries. Related preference: prefs_ruler_splitMode
Show dx/dy	Enables (default) or disables the display of the dx/dy values in the layout viewing area when you draw a ruler. The dx/dy values are displayed in the Rulers palette regardless of this setting. Related preference: prefs_ruler_showDxDy

Usage Notes

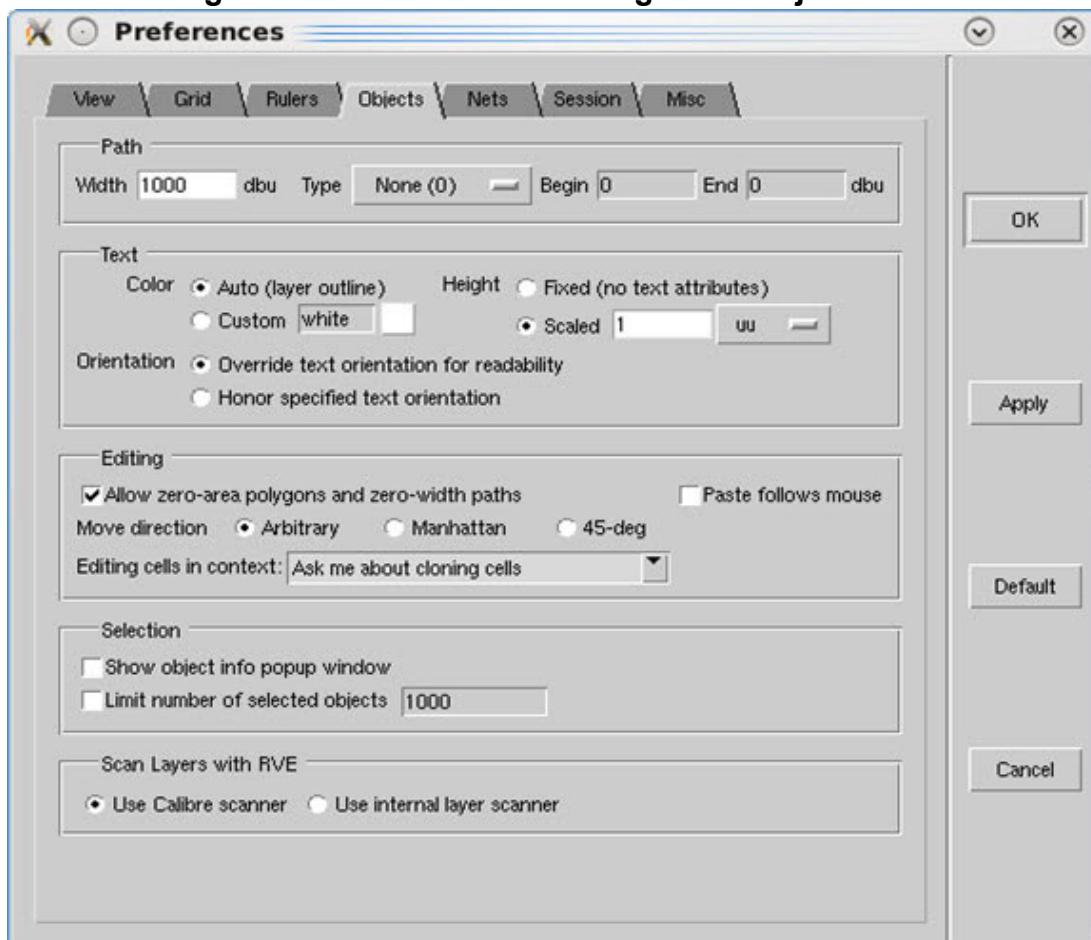
- To enable a ruler to measure off-grid (sub-DBU) results, you must set the ruler units to “um” or “nm”. To enable an integer-based ruler, you must set the ruler units to “dbu”.
- In ruler mode, the ruler snaps according to its mode. Press the Tab key to cycle between the Arbitrary, Manhattan, and 45-deg options.
- When snapping to the nearest vertex, if you select a point not near any vertex, the point snaps to the nearest point on the nearest polygon edge. If the snapped objects are not on the grid, the closest grid point is chosen instead of the actual objects.

Preferences Dialog Box - Objects Tab

To access: Options > Objects

Use the **Objects** tab in the Preferences dialog box to control the default settings for paths and text drawn in the layout viewer window.

Figure 8-70. Preferences Dialog Box - Objects Tab



Fields

You can use the GUI to set the preferences described in the following table. Settings made using the GUI are saved in the *preferences* file. Refer to “[preferences File Format](#)” on page 384 for more information. Some preferences can also be set by editing the *preferences* file to add, modify, or delete keywords and associated values. Related preferences, if available, are listed in the following table.

Table 8-52. Preferences Dialog Box - Objects Tab

Field	Description
Path	
Width	Sets the drawn width of paths (in dbu) on the display. Related preference: prefs_path_width
Type	Sets the path type. Options include: <ul style="list-style-type: none"> • None (0) • Round (1) • Square (2) • Custom (4) Related preference: prefs_path_type
Begin	Sets the extension distance (in dbu) past the starting point of a path. Related preference: prefs_path_bgnExtn
End	Sets the extension distance (in dbu) past the ending point of a path. Related preference: prefs_path_endExtn
Text	
Color	Sets the text color. Options include: <ul style="list-style-type: none"> • Auto (layer outline) • Custom — Enter a valid color name or select the color button to display the Choose Text Color dialog box. Related preference: prefs_text_defaultColor
Orientation	Sets the text orientation. Options include: <ul style="list-style-type: none"> • Override text orientation for readability • Honor specified text orientation Related preference: prefs_text_isoText
Height	Sets the text height. Options include: <ul style="list-style-type: none"> • Fixed (no text attributes) • Scaled — Enter a valid value and select the desired units. Valid values are: <ul style="list-style-type: none"> • dbu — Database units. • um — Microns. • uu — User units (default). Related preference: prefs_text_defaultHeight , prefs_text_defaultHeightUnits , prefs_text_drawScaled

Table 8-52. Preferences Dialog Box - Objects Tab (cont.)

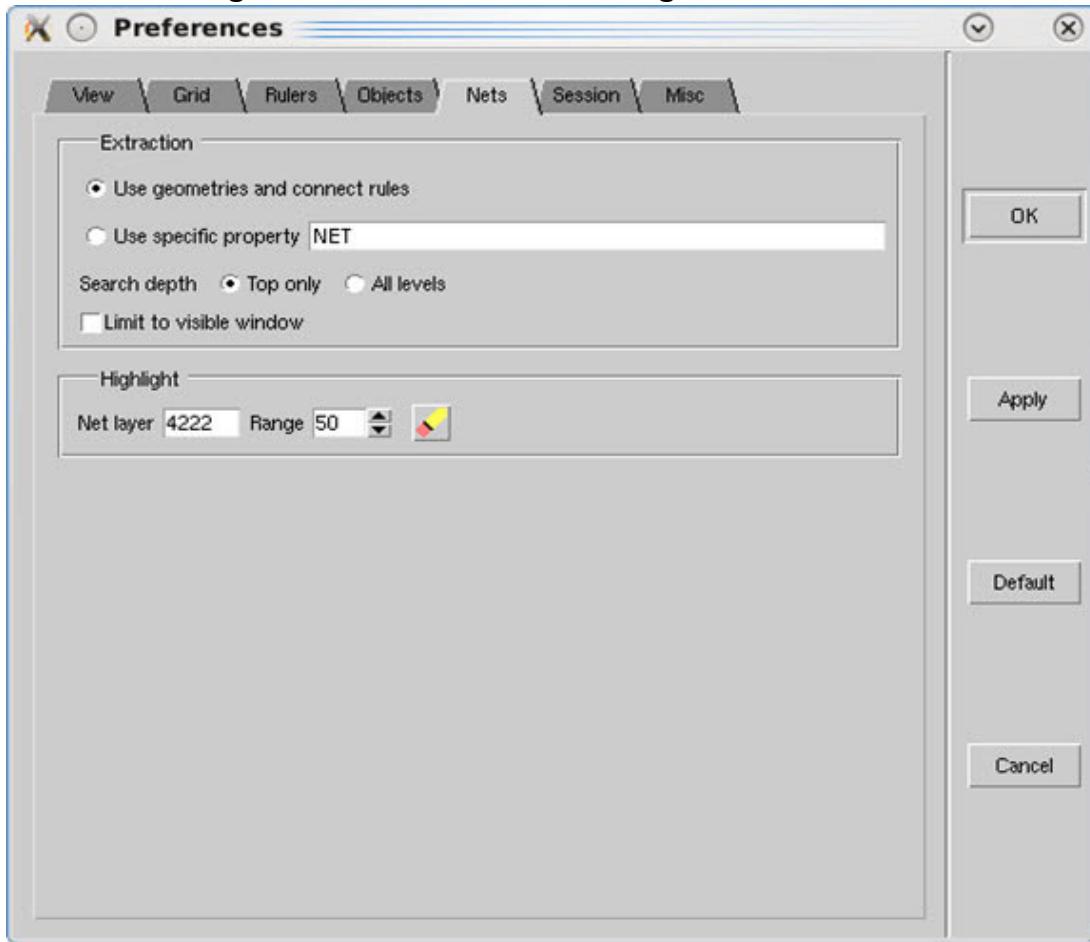
Field	Description
Editing	
Allow zero-area polygons and zero-width paths	Toggles whether to allow zero-area polygons and zero-width paths. Related preference: prefs_edit_allowZeroArea
Paste follows mouse	Toggles whether to have the focus follow the cursor. Related preference: prefs_edit_pasteFollowsMouse
Move direction	Sets the directional restrictions when moving objects. Options include: <ul style="list-style-type: none"> • Arbitrary — Move objects in any direction (default). • Manhattan — Move objects at 90-degree angles. • 45-deg — Move objects at 45-degree angles. Related preference: prefs_edit_moveDirection
Editing cells in context	Options include: <ul style="list-style-type: none"> • Ask me about cloning cells — Displays a dialog box offering to clone cells in order to create a unique edit context. • Clone cells to create unique context. • Don't clone cell; edit all instances. Related preference: prefs_misc_contextCloneMode
Selection	
Show object info popup window	Toggles whether to display a tooltip popup windows while hovering over a layout object such as a reference, polygon, path, edge, or vertex. The object must be selected for the tooltip to appear. Related preference: prefs_edit_showPopupSelect
Limit number of selected objects	Specifies a limit on the maximum number of objects that can be selected at the same time. Related preference: prefs_edit_selectLimitEnabled , prefs_edit_selectLimit
Scan Layers with RVE	
Use Calibre scanner Use internal layer scanner	Specifies to use the Calibre scanner or the internal layer scanner. Related preference: prefs_misc_layersScanMode

Preferences Dialog Box - Nets Tab

To access: Options > Nets

Use the **Nets** tab in the Preferences dialog box to control the methods used to detect and highlight net connectivity in the layout viewer. As with rulers, detected nets are temporary and not saved with the design file.

Figure 8-71. Preferences Dialog Box - Nets Tab



Fields

You can use the GUI to set the preferences described in the following table. Settings made using the GUI are saved in the *preferences* file. Refer to “[preferences File Format](#)” on page 384 for more information. Some preferences can also be set by editing the *preferences* file to add, modify, or delete keywords and associated values. Related preferences, if available, are listed in the following table.

Table 8-53. Preferences Dialog Box - Nets Tab

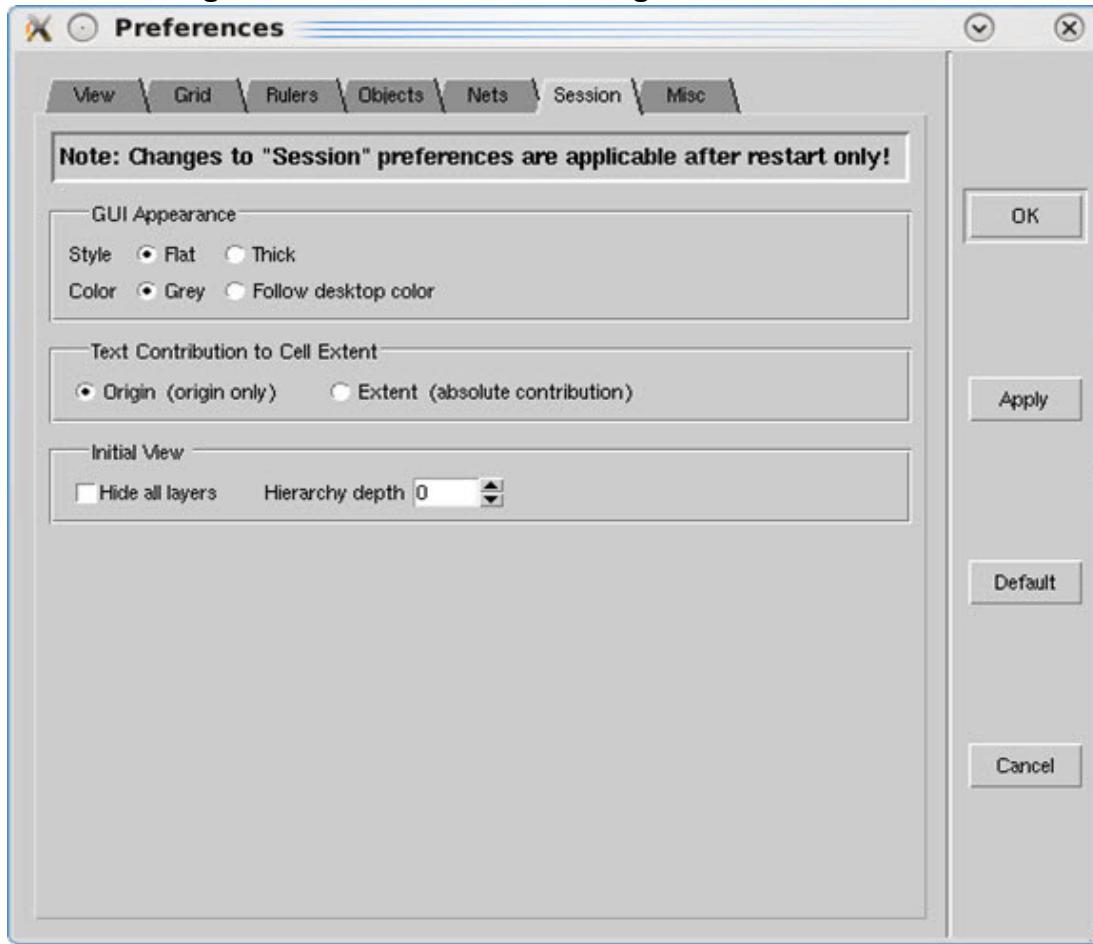
Field	Description
Extraction	
Use geometries and connect rules Use specific property	<ul style="list-style-type: none"> • Use geometries and connect rules — Dynamically traces nets based on connections to selected polygons connected to each other in the same layer or according to the connection rules set in the layer properties file. • Use specific property — Traces nets that match the specified property name. All connecting polygons with the property name are used in the trace attempt. The default property name is NET. Related preference: prefs_net_extractionMode , prefs_net_propertyName
Search depth	Options include: <ul style="list-style-type: none"> • Top only — Searches using the current layer for connecting geometries. • All levels — Searches the entire design hierarchy. Should be set to All Levels when performing net extraction within overlays, as net extraction is not permitted from within the subcells of overlays. Related preference: prefs_net_searchDepth
Limit to visible window	Toggles whether to limit extraction to the visible window. Related preference: prefs_net_extractionLimit
Highlight	
Net Layer	Highlights traced nets on the specified layer number. Related preference: prefs_net_highlightBase
Range	Limits the number of extracted net layers displayed. The next layer after the limit has been reached clears the first extracted net layer. Related preference: prefs_net_highlightCount
	Clears existing net highlight layers.

Preferences Dialog Box - Session Tab

To access: **Options > Session**

Use the **Session** tab in the Preferences dialog box to control the appearance of the layout viewer interface and text effects on cell extents. Changes to the session preferences are applied only after you restart the layout viewer.

Figure 8-72. Preferences Dialog Box - Session Tab



Fields

You can use the GUI to set the preferences described in the following table. Settings made using the GUI are saved in the *preferences* file. Refer to “[preferences File Format](#)” on page 384 for more information. Some preferences can also be set by editing the *preferences* file to add, modify, or delete keywords and associated values. Related preferences, if available, are listed in the following table.

Table 8-54. Preferences Dialog Box - Session Tab

Field	Description
GUI Appearance	
Style	Sets the appearance for the GUI. Options include: <ul style="list-style-type: none"> • Flat — A 2-dimensional style. • Thick — A 3-dimensional style. Related preference: prefs_misc_widgetThickness
Color	Sets the color scheme for windows. Options include: <ul style="list-style-type: none"> • Grey — Uses a monochrome color scheme. • Follow desktop color — Uses the desktop color scheme. Related preference: prefs_misc_widgetColor
Text Contribution to Cell Extent	
Origin (Origin only)	The text origin is used as lower-left and upper-right coordinate of the extent. The text origin is added to the cell extent. Related preference: prefs_text_bboxHandling
Extent (absolute contribution)	The text extent in the database is determined mainly by the height of text. The text-width is calculated by using the character length multiplied by a fixed ratio of the height. The ratio is given by the font geometry of the application. Due to the under stroke of certain characters like “g”, the lower-left coordinate can be slightly lower than the origin of the text. If the text is rotated or aligned, the extent is calculated taking these attributes in account also. The text extent is added to the cell extent. Related preference: prefs_text_bboxHandling
Initial View	
Hide all layers	All layers are hidden when the layout viewer is invoked. Related preference: prefs_view_hideLayersOnLoad
Hierarchy depth	Displays only the layers to the specified hierarchy depth when a layout is opened. Related preference: prefs_view_endDepth

Usage Notes

- All settings do not take place until you close and restart Calibre DESIGNrev.
- If the Extent option is selected, it hides the Display options in the **Text** tab the next time Calibre DESIGNrev is restarted. Default scaled text is applied to all text objects.

Preferences Dialog Box - Misc Tab

To access: Options > Misc Preferences

Use the **Misc** tab in the Preferences dialog box to control options such as the exit behavior, licensing, Layers and Cells palettes, and incremental loading.

Figure 8-73. Preference Dialog Box - Misc Tab

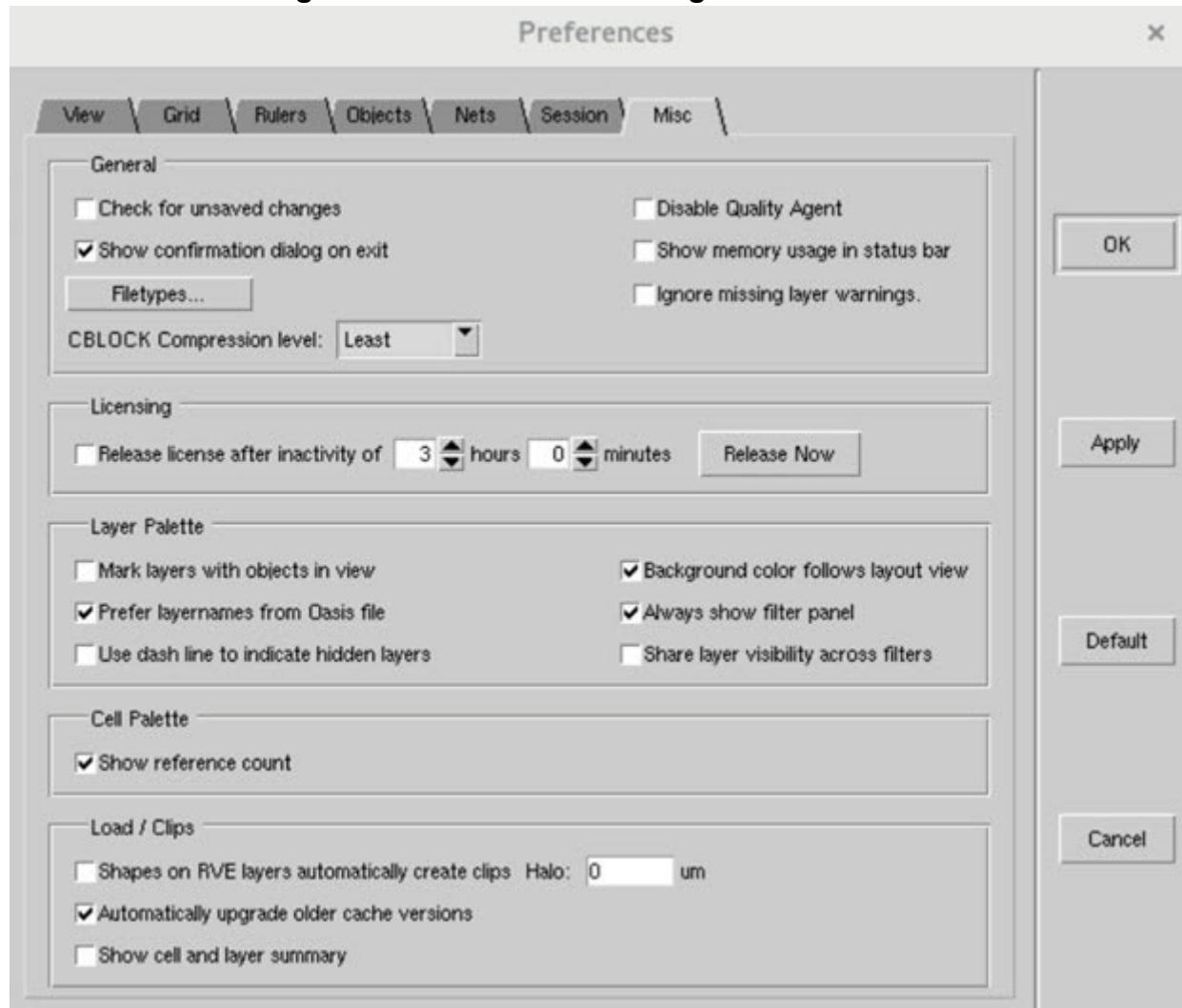
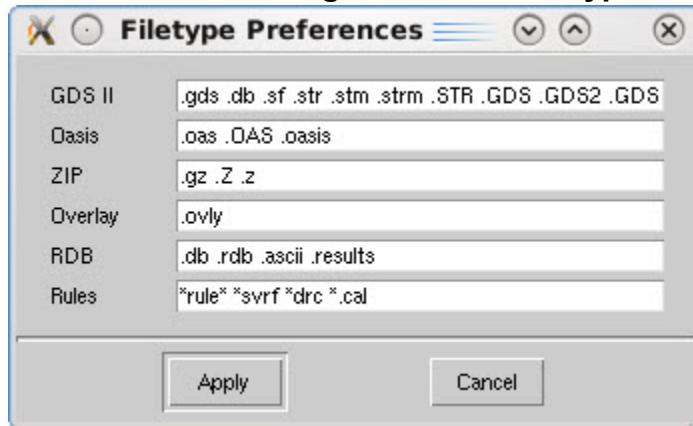


Figure 8-74. Preference Dialog Box - Misc Filetype Preferences

Fields

You can use the GUI to set the preferences described in the following table. Settings made using the GUI are saved in the *preferences* file. Refer to “[preferences File Format](#)” on page 384 for more information. Some preferences can also be set by editing the *preferences* file to add, modify, or delete keywords and associated values. Related preferences, if available, are listed in the following table.

Table 8-55. Preference Dialog Box - Misc Tab

Field	Description
General	
Check for unsaved changes	Warns of unsaved layout changes when closing a layout or exiting the application. The default is to not check for unsaved changes. Related preference: prefs_misc_queryUnsavedChanges
Show confirmation dialog on exit	Displays a confirmation prompt when an exit signal is received. Related preference: prefs_misc_queryOnExit
Filetypes	Displays the Filetype Preferences dialog box (see Figure 8-74), which you use to specify the extensions to use for the supported file types that can be displayed in the file browsers. Related preference: prefs_filetypes_gds , prefs_filetypes_oasis , prefs_filetypes_ovly , prefs_filetypes_rdb , prefs_filetypes_zip , prefs_filetypes_rules
Disable Quality Agent	Enables or disables the quality agent tool. Related preference: prefs_misc_disableQualityAgent
Show memory usage in status bar	Enables or disables the display of a memory usage bar in the status bar. Related preference: prefs_gui_showMemoryStatus

Table 8-55. Preference Dialog Box - Misc Tab (cont.)

Field	Description
CBLOCK Compression level	Specifies whether to use the least amount of CBLOCK compression or the best rate of CBLOCK compression.
Licensing	
 Note: This section of the dialog box is disabled when a TIMEOUT value is set in the license server.	
Release license after inactivity of x hours x minutes	Configures the layout viewer to release its license if it is inactive for more than a specified number of hours and minutes. The default is 3 hours, with a minimum of 5 minutes. You can use the MGC_DRV_RELEASE_LICENSE_TIME environment variable to define a timeout interval. Related preference: prefs_license_timeout , prefs_license_timeoutInterval
Release Now	Immediately releases a license. This starts a sequence of save actions, and changes the button to Reacquire .
Layers Palette	
Mark layers with objects in view	Enables or disables the marking of layer numbers with the objects currently in the view (white highlighted layer numbers when visible, dim grey when not visible). Related preference: prefs_misc_layersInViewIndicator
Prefer layernames from Oasis file	Enables or disables the selection of layer names from the OASIS file rather than the layer properties file. Specifying the “-l” option on the tool startup line overrides this preference and uses the layer names in the layerprops file. Related preference: prefs_load_useOasisLayerNames
Use dash line to indicate hidden layers	Enables or disables the use of a dashed line instead of a solid line to indicate hidden layers. Related preference: prefs_misc_hiddenLayerDashLine
Background color follows layout view	Enables or disables the background color of the Layers palette following the background color of the layout view. Related preference: prefs_misc_layersByColorLayout
Always show filter panel for layouts	Enables or disables the display of the filter panel at startup. Related preference: prefs_layerpalette_filterBy
Share layer visibility across filters	Enables or disables the sharing of layer visibility across filters. When disabled (unselected), the Show/Hide settings for each layer are retained across filters. Related preference: prefs_layerpalette_filterShared

Table 8-55. Preference Dialog Box - Misc Tab (cont.)

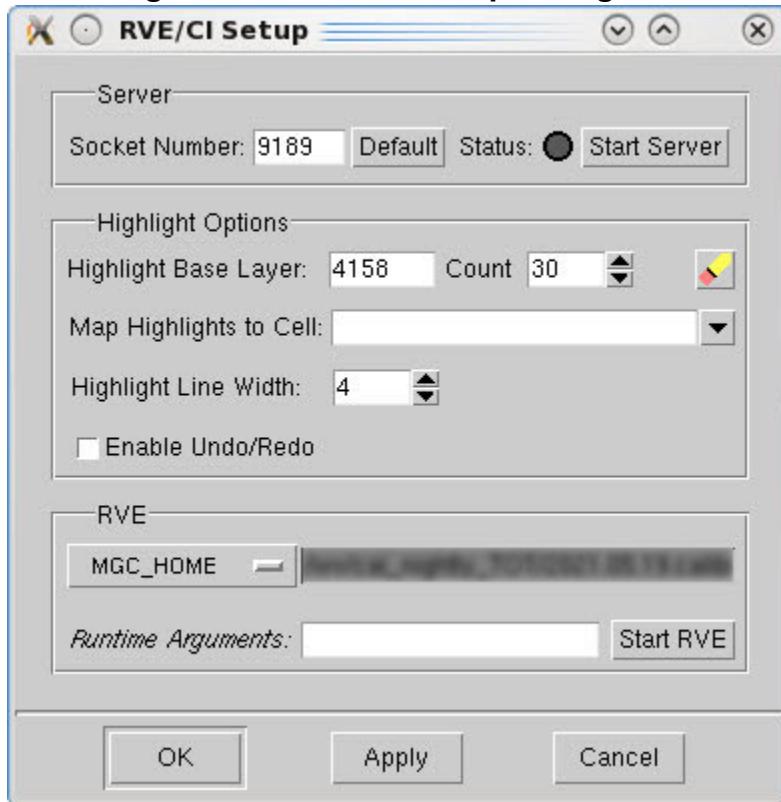
Field	Description
Cells Palette	
Show reference count	Enables or disables the display of the total reference count. Related preference: prefs_misc_showCellRefCount
Load / Clips	
Shapes on RVE layers automatically create clips	Enables or disables the automatic creation of clips from shapes on Calibre RVE layers for layouts that are loaded non-incrementally. For layouts loaded incrementally, clips are always created regardless of this setting. When this option is disabled, any clips that were already created from Calibre RVE are deleted. When this option is enabled, all existing RVE highlights add a matching clip with a halo. Related preference: prefs_load_addClipOnRVELayer
Halo	Specifies a halo size in um (microns) for clips when “Shapes on RVE layers automatically create clips” is enabled. When this value is changed, any clips that were already created from Calibre RVE are resized with the new halo value. Related preference: prefs_load_defIncLoadHalo
Automatically upgrade older cache versions	Tool automatically upgrades older cache file (PCR) versions. Related preference: prefs_load_incrLoadUpgradeCache
Show cell and layer summary	Enables or disables transcripting of the Cell Summary and Layer Summary information. Related preference: prefs_load_showCellLayerSummary

RVE/CI Setup Dialog Box

To access: **Verification > RVE/CI Setup**

Use the RVE/CI Setup dialog box to specify values for Calibre RVE and Calibre Interactive, such as the socket number, highlighting layers, and cell mapping.

Figure 8-75. RVE/CI Setup Dialog Box



Fields

Table 8-56. RVE/CI Setup Dialog Box

Field	Description
Server	
Socket Number	Specifies the socket number, or port, to use for the server. The default is 9189.
Status	Displays Calibre RVE server status. Should turn from gray to green when Calibre is listening to port server listed in Socket Number field.
Start Server	Starts the RVE socket server.
Highlight Options	

Table 8-56. RVE/CI Setup Dialog Box (cont.)

Field	Description
Highlight Base Layer	Specifies the base Calibre RVE highlight layer number. Related preference: prefs_rve_highlightBase
Count	Specifies the base Calibre RVE highlight count. Related preference: prefs_rve_highlightCount
	Clears the existing RVE highlight layers.
Map Highlights to Cell	Maps highlights to a specific cell. If a cell is not found in the current layout, Calibre RVE uses the specified cell instead.
Enable Undo/Redo	Enables or disables the undo/redo option. Related preference: prefs_rve_allowUndoRedo
RVE	
MGC_HOME	Environment variable and path for MGC tree. Options include: <ul style="list-style-type: none">• MGC_HOME (default)• CALIBRE_HOME• User specified Related preference: prefs_rve_pathEnv
Runtime Arguments	Specifies optional runtime arguments for Calibre RVE. This option is not saved with the preferences.
Start RVE	Invokes Calibre RVE application.

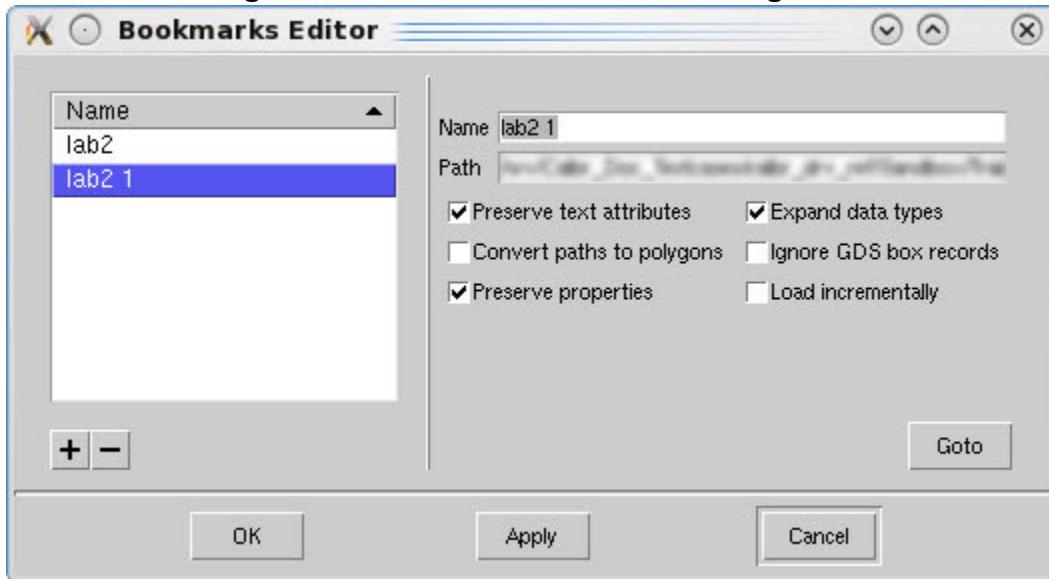
Bookmarks Editor Dialog Box

To access:

- **Bookmarks > Add**
- **Bookmarks > Edit**

Use the Bookmarks Editor to add or edit bookmarks.

Figure 8-76. Bookmarks Editor Dialog Box



Fields

Table 8-57. Bookmarks Editor Contents

Field	Description
Name	The name of the bookmark.
Path	The layout file pathname.
Preserve text attributes	Saves any GDS text attributes or GDS text properties contained in the file. The <i>Calibre RVE User's Manual</i> discusses setting this control, while using Calibre RVE with Calibre DESIGNrev to set text size for highlighting.
Convert paths to polygons	Controls automatic conversion of GDS paths to polygons when a design file is loaded.
Preserve properties	Preserve GDS properties for SREF, AREF, and geometry objects.
Expand data types	Causes layers with datatypes to be given individual layers for each datatype.
Ignore GDS box records	Ignores BOX records when reading GDS files.

Table 8-57. Bookmarks Editor Contents (cont.)

Field	Description
Load incrementally	Use incremental loading.
Goto	Goto the selected bookmark.

Usage Notes

The Name list box (on the left side of the dialog box) displays a list of the existing bookmarks. You use the arrow at the top of the box to sort the list in ascending or descending order. Once you define a bookmark by specifying a Name and other desired values, you can use the “+” sign to add it to the list. To remove an existing bookmark, select the bookmark name in the list and click the “-” sign. Deleting a bookmark displays the Delete Bookmark dialog box prompting you to confirm. You can use the [prefs_misc_promptDeleteBookmark](#) preference to disable this dialog box.

Related Topics

[Bookmarks](#)

[Using Layer Maps](#)

Chapter 9

Troubleshooting

Some troubleshooting tips are provided that address problems frequently encountered when running Calibre DESIGNrev.

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Calibre DESIGNrev Does Not Start

When you attempt to run Calibre DESIGNrev, the main window never appears, errors appear in the console window, or you cannot see the banner screen.

Causes	Solution
Lack of an available license. An error message similar to “License request for feature failed” is displayed in the console window where you invoked the tool.	<ul style="list-style-type: none">Ensure your LM_LICENSE_FILE environment variable points to a license server or an up-to-date license.dat file, and your network connectivity is working properly.Licenses are already in use. You may need to wait until a license frees up before trying to run the tool again.

Causes	Solution
Incorrect invocation option specified. A help-style set of possible invocation options is displayed in the console window where you invoked the tool.	Check the invocation string you specified for options that do not appear in the list.
Bad configuration file options specified in the configuration file.	See “ Configuration File Crashes the Layout Viewer ” for more information.

Related Topics

[Invocation Options](#)

Configuration File Crashes the Layout Viewer

The layout viewer crashes when you invoke it, and the error message returned is similar to “Unrecognized configuration preference.”

Causes	Solution
<p>Switching from a newer version to a older version of Calibre DESIGNrev, Calibre MDPview, or Calibre WORKbench.</p> <p>Each invocation of a layout viewer tool writes configuration file settings to the preferences file when you exit the tool. Some settings are not backward compatible. As a result, if you return to the earlier version of the Calibre tool, it may crash when it finds the unrecognized setting. Refer to “preferences File Format” on page 384 for editing your own configuration file.</p>	<ol style="list-style-type: none"> 1. Create a backup of the layout viewer preferences file. 2. Delete the preferences file. 3. Re-run the application. <p>Calibre DESIGNrev automatically generate a new preferences file compatible with the current version, if one is not found.</p>

Layer Property File Changes Not Applied

When you edit your layer properties file, some or all of the changes you make seem to have no effect.

Causes	Solution
<p>Your change was superseded by another layer properties file. Calibre DESIGNrev searches for customization files in the following order (lowest priority to highest):</p> <ol style="list-style-type: none"> 1. “layerprops” file in the layout viewer’s configuration directory. 2. A <i>layoutfile filetype</i>.layerprops file with a designation for the current design, located in the directory with the design. 3. A file explicitly specified with the -l command line argument when Calibre DESIGNrev was invoked. 	<ul style="list-style-type: none"> • Make your changes to the highest priority file. • Find the higher priority configuration file and delete it. • Explicitly load your file when invoking Calibre DESIGNrev with the -l switch. <p>Exit Calibre DESIGNrev and re-invoke to apply changes.</p>
<p>The tool is selecting layer names from the layer properties file rather than from the OASIS layout.</p>	<p>On the Misc tab of the Preferences dialog box, select the “Prefer layernames from Oasis file” option to have the tool use layer names from the OASIS layout rather than from the layer properties file.</p>

Related Topics

[Configuration Files](#)

Customization GUI Changes Not Applied

You have made one or more changes in the Preferences dialog boxes, but nothing appears to change.

Causes	Solution
<p>If you made a change to a preference in the GUI, Calibre DESIGNrev does not automatically update the display to show the changes.</p>	<p>Use the View > Update Display menu item to force a redraw of the window.</p>
<p>Not all changes cause an obvious visual change.</p>	<p>You may need to perform the related operation to see the change take effect. For example, changing the Net Layer Highlight number does not take effect until the next time you extract a net.</p>

Related Topics

[Preferences Dialog Box](#)

Workstation Becomes Unresponsive After Loading File

When loading a file, the file loading operation completes, but then the workstation works extremely slowly, including windows unrelated to Calibre DESIGNrev.

Causes	Solution
An extremely large file on a machine with limited memory capability.	For OASIS files, use the -v option (this is only available in Calibre MDPview and Calibre WORKbench).

Unable to Find the Right File Using the Directory Browser

You have navigated to what you think is the correct directory to open a file, but your file does not appear in the Choose Layout dialog box.

Causes	Solution
Files that have an incorrect file extension when the file filter is active do not appear.	Change the File Type setting to All Files(*). If the file still does not appear, the file is not in the directory.

Related Topics

[Choose Layout Files Dialog Box - Files Tab](#)

Saved File Does Not Exist

A previously saved file does not appear in the file browser when you try to load it.

Causes	Solution
There is insufficient disk space.	Check the available disk space.
There are no writer permissions for the destination directory.	Verify the permissions on the destination directory.

Cannot Select a Polygon to Move or Delete

Clicking on objects in the main display does not select the object.

Causes	Solution
Opening a file in read-only mode.	In the File menu, toggle the Read Only Layout option.
Attempting to edit a child cell while currently in the top cell. Features in child cells cannot be modified when you are in the top cell.	Select the child cell for modification first in the Cells Browser, and then begin making changes.
Not in Select or Move mode.	Click the Select button on the toolbar to switch to Select mode.
Wrong filter types selected.	Change the Object Selection Filters to be the appropriate type.
Grid spacing configured too high for the design. If the grid spacing is set incorrectly and the mouse behavior is set to snap to grid points, mouse clicks may snap off the visual part of the display, giving the appearance of nothing being selected.	On the Grid tab in the Preferences dialog box, change the Spacing value to a smaller value (suggested: .001).
Overlapping features getting selected instead.	Click again in the same spot. Calibre DESIGNrev attempts to cycle through objects at the same click location based on the selection filters.
Attempting to select a net layer.	Net layers are not selectable so that net extraction results (which have the same color and appearance as other layers) do not interfere with the next extraction. You cannot select a net layer by mistake thinking it is a regular shape in the database and subsequently run extraction on it.

Related Topics

[Object Selection Toolbar](#)

Copy and Paste Does Not Work

Pasting an object copied to the clipboard to a new location does not copy anything.

Causes	Solution
Pasting duplicates the object at the exact same location as the original shape. You must move the pasted copy to see it.	Use the Edit > Duplicate menu item to create a copy of the selected object(s), and offset the copy by five screen units for more obvious copy visibility.

Empty Screen

No objects appear in the design viewing area.

Causes	Solution
You have zoomed in too far.	<ul style="list-style-type: none">• Choose View > Zoom Out to attempt to see more of the design.• Click the Z All button in the Layout Viewer Toolbar to zoom out to the maximum viewing distance.
Nothing on a layer in this area.	<p>Check the Layers Browser to see if all the layer numbers for visible layers are dimmed. A dimmed layer number indicates there are no objects on that layer that can be viewed at the current coordinates.</p> <p> Note: You must have the Mark layers with objects in view setting enabled in Options > Misc. Preferences.</p>

Related Topics

[Layers Browser](#)

Overlapping Features Keep Critical Polygons Hidden

For multilayer designs, the object of interest is briefly visible, but then gets hidden by other objects drawn by the layout viewer.

Causes	Solution
<p>By default, Calibre DESIGNrev draws objects in ascending numerical layer order. This causes objects on a higher layer number to cover objects on a lower layer number.</p>	<ul style="list-style-type: none"> Change the draw order preference for the layer. You perform this task in the Edit Layers dialog box by dragging the layer with the covered object to the bottom of the list. Changes take effect after you click the Set Draw Order button. Change the fill pattern on the layers covering the object to be clear or hidden. You perform this task in the Layers Browser of the main window by selecting one or more layers with higher numbers than the layer that contains your objects, then clicking the Clear or Hide buttons in the Layers Browser. Select the Layer > Blend Colors menu item. On the next redraw, objects that overlap are drawn as a blended color instead of overwritten.

Screen Does Not Redraw

Large sections of the Calibre DESIGNrev window (not limited to the design viewing area) are blank.

Causes	Solution
<p>Attempting to run Calibre DESIGNrev as a background process. When run as a background process, the first few GUI actions work, however eventually the window manager suspends Calibre DESIGNrev.</p>	<p>Make the tool a foreground process task and click in the GUI window.</p>
<p>A computationally expensive operation is currently running.</p>	<p>Verify this by checking the console window for activity. You cannot perform any actions until the operation completes.</p>

No Grid Display

The grid spacing is set, but grid points are not visible.

Troubleshooting

None of the Menus or Controls Respond

Causes	Solution
<ul style="list-style-type: none">The grid style is set to None in the Preferences dialog box (Grid tab).The grid spacing is larger than the window dimensions.The grid color is set to the same color as the background.	Change the settings in the Grid tab of the Preferences dialog box.
The grid is not displayed when it becomes so dense it obscures the layout. If you zoom out too much relative to grid spacing, the grid disappears. This feature ensures the grid does not obscure the design.	None.

Related Topics

[Preferences Dialog Box - Grid Tab](#)

None of the Menus or Controls Respond

Clicking on buttons and menus has no effect.

Causes	Solution
An open dialog box is expecting input (such as the Open File dialog box). If you have switched windows, the dialog box prompt can get hidden behind the main window.	Minimize the layout viewer, then restore it. When the layout viewer is restored, any prompt dialog boxes are redrawn last.
The layout viewer is performing a very long redraw operation or other computationally expensive operation.	Confirm by switching to the console window (this is the window you ran the layout viewer from) and see if there is activity there.

No Wires In Loaded Design

Calibre DESIGNrev does not display the wires in a source file known to contain wires.

Causes	Solution
The loading option that converts paths to polygons has been set.	<ol style="list-style-type: none">Choose File > Open Layout Files.Click the Options tab.Ensure the “Convert Paths to Polygons” check box is unchecked before loading the file.

Cannot Enter Batch Commands in Console Window

Attempting to type in the console window has no visible effect.

Causes	Solution
Processing has not yet completed.	If pressing the Return key in the console window does not give a prompt, you may need to wait for the process to complete.

Appendix A

Configuration Files

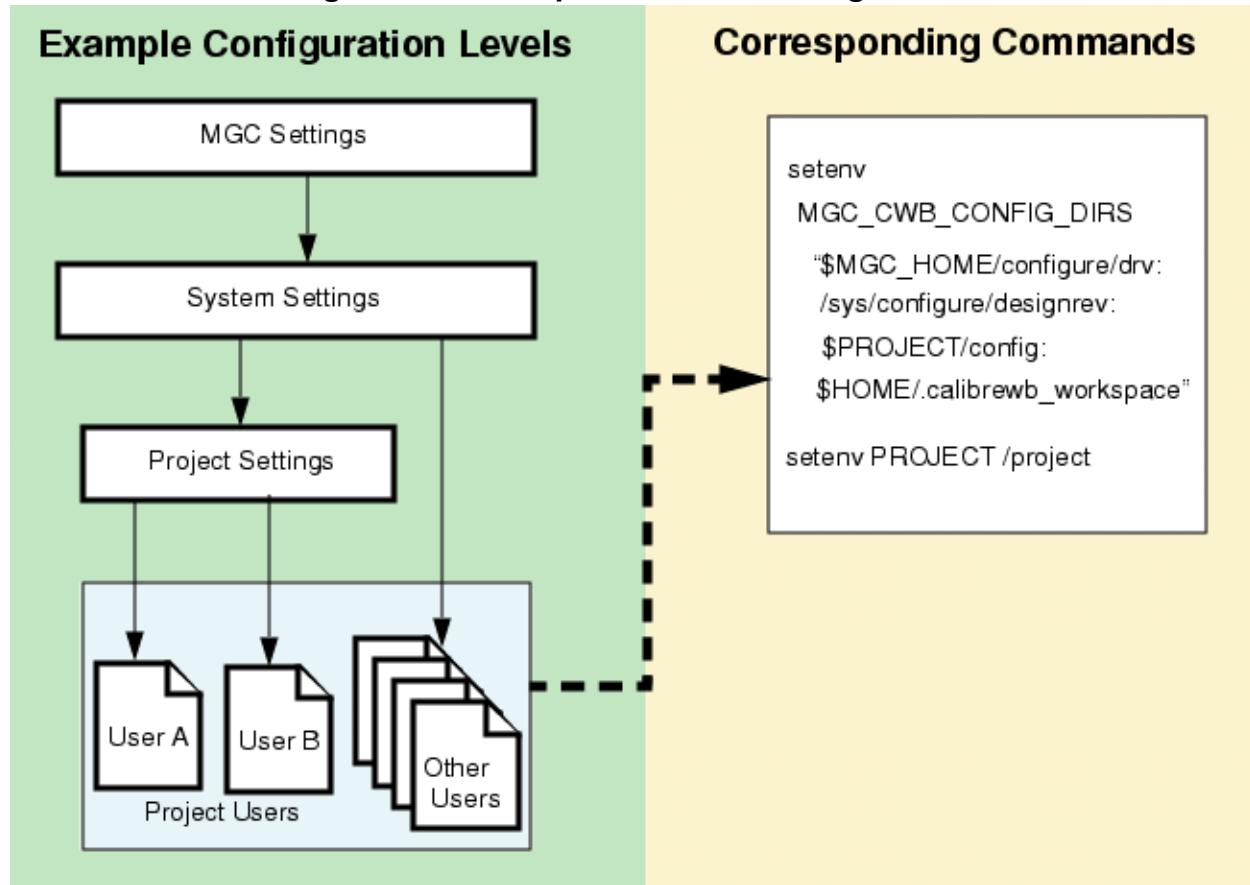
Calibre DESIGNrev uses configuration files to store information about the appearance and behavior of the layout viewer. Depending on your environment, you can set up multilevel configuration files for use at a system, project, or user level.

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Multilevel Configuration

To enable levels of the layout viewer configuration, Calibre layout viewers support reading configuration files from directories other than the default layout viewer configuration directory, `$HOME/.calibrewb_workspace`. For example, a system configuration directory might contain configurations that apply to all users supported by a particular administrator, and a project directory might contain configurations that apply to all usage for a specific project. A single-level configuration meets the needs of many individual users, and most of the users who use the multilevel configuration have it set by an administrator. One feature of a multilevel configuration is that it allows everyone working on a project to share the same configuration.

Figure A-1. Example Multilevel Configuration



You specify the ordered list of multilevel configuration directories with the `MGC_CWB_CONFIG_DIRS` environment variable. This environment variable specifies the configurations in an ordered list, separated by colons (:) and without spaces. The order of precedence is from left to right, as with a Linux PATH variable. If a given type of configuration file exists in two or more directories in the list, then the configuration setting whose directory occurs first in the list is used.

The value of the `MGC_CWB_CONFIG_DIRS` environment variable is used to load the preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences. If the

environment variable is unspecified, the value of `$HOME/.calibrewb_workspace` is used to load the preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences. If `$HOME/.calibrewb_workspace` is not listed in `MGC_CWB_CONFIG_DIRS`, files are not saved in this location.

You can also specify the directory for temporary file storage with the `MGC_CWB_TMP_DIR` environment variable. If `MGC_CWB_TMP_DIR` is defined, it overrides everything. Otherwise, if the deprecated `CWB_TMPDIR` variable is defined, it is used. Otherwise, `$HOME/.calibrewb_workspace/tmp` is used.

Note

 Whenever you set up `MGC_CWB_CONFIG_DIRS`, you should set up `MGC_CWB_TMP_DIR` as well to avoid exceeding size quotas for your home directory.

The “Individual Usage” and “System and Project Defaults Usage” topics describe unmanaged uses for multilevel configuration, while the “Grid Submission Usage”, Partially-Managed Environment Usage”, and “Fully-Managed Environment Usage” topics describe managed uses for multilevel configuration.

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Individual Usage

For an individual user configuration, you can manage your preferences, layer properties, bookmarks, layer mappings, keyboard shortcuts, and reader preferences using the layout viewer GUI. Configuration information is automatically saved to and read from `$HOME/.calibrewb_workspace`. The `MGC_CWB_CONFIG_DIRS` environment variable is typically not used in this scenario.

In this example, the layout viewer automatically generates an individual configuration directory:

```
% mv .calibrewb_workspace .calibrewb_workspace_old
% unsetenv MGC_CWB_CONFIG_DIRS
% calibredrv
// Calibre DESIGNrev
Created workspace directory $HOME/.calibrewb_workspace
```

System and Project Defaults Usage

The administrator manages the system-wide and project-wide preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences using a text editor and the shell. For system and project usage, the administrator uses the MGC_CWB_CONFIG_DIRS environment variable to specify *\$HOME/.calibrewb_workspace*, a project-wide directory, and a system-wide directory. The user manages preferences, layer properties, bookmarks, layer mappings, keyboard shortcuts, and reader preferences using the layout viewer GUI.

When using the MGC_CWB_CONFIG_DIRS environment variable to define the user, project, and system directory locations, preferences are loaded as follows:

- All preferences, including layer properties, bookmarks, keyboard shortcuts, and reader preferences, are loaded from *\$HOME/.calibrewb_workspace*.
- Preferences that are not already loaded, including layer properties, bookmarks, keyboard shortcuts, and reader preferences, are loaded from the project-wide directory.
- Preferences that are not already loaded, including layer properties, bookmarks, keyboard shortcuts, and reader preferences, are loaded from the system-wide directory.
- Layer mappings from *\$HOME/.calibrewb_workspace* are loaded.

The layout viewer automatically saves preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences to *\$HOME/.calibrewb_workspace*.

In this example, the layout viewer accesses both project and system configuration directories the user can override:

```
% setenv MGC_CWB_CONFIG_DIRS \
    "$HOME/.calibrewb_workspace:/proj/drv_project:/sys/drv_system"
% calibredrv
// Calibre DESIGNrev
```

Grid Submission Usage

A grid enables you to distribute jobs and data among clusters in an established relationship. CAD groups often want a fully managed Calibre DESIGNrev configuration to make sure all users run batch jobs using the same configurations to get the same results, regardless of where the job actually runs in the cluster.

- The user or administrator specifies a system-wide directory for MGC_CWB_CONFIG_DIRS and a directory visible on the grid for MGC_CWB_TMP_DIR in the shell environment.
- The administrator manages the system-wide preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences using a text editor and the shell.
- The user manages layer mappings using the Calibre DESIGNrev GUI.

- Calibre DESIGNrev loads all preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences from the system-wide directory.
- Calibre DESIGNrev loads layer mappings from `$HOME/.calibrewb_workspace`.
- Calibre DESIGNrev stores temporary files in `MGC_CWB_TMP_DIR`.

In this example, the user sets both `MGC_CWB_CONFIG_DIRS` and `MGC_CWB_TMP_DIR` environment variables:

```
% setenv MGC_CWB_TMP_DIR "/tmp"  
% setenv MGC_CWB_CONFIG_DIRS "$HOME/.calibrewb_workspace:/drv_sys"  
% calibredrv  
// Calibre DESIGNrev
```

Partially-Managed Environment Usage

When setting up for a partially-managed environment, the administrator specifies a system-wide directory and `$HOME/.calibrewb_workspace` for `MGC_CWB_CONFIG_DIRS` in the shell environment.

- The administrator manages the system-wide preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences using a text editor and the shell.
- The user manages preferences, layer properties, bookmarks, layer mappings, keyboard shortcuts, and reader preferences using the Calibre DESIGNrev GUI.
- Calibre DESIGNrev loads all preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences from the system-wide directory.
- Calibre DESIGNrev loads not-already-loaded preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences from `$HOME/.calibrewb_workspace`.
- Calibre DESIGNrev loads layer mappings from `$HOME/.calibrewb_workspace`.
- Calibre DESIGNrev saves preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences to `$HOME/.calibrewb_workspace`.

In this example, the layout viewer accesses an administrator's configuration directory that specifies the tool hides all layers on loading. The user cannot override this setting, because the administrator's directory is to the left of the user's directory in the `MGC_CWB_CONFIG_DIRS` environment variable:

```
% setenv MGC_CWB_CONFIG_DIRS "/drvadmin:$HOME/.calibrewb_workspace"  
% cat /drvadmin/preferences  
prefs_view_hideLayersOnLoad 1  
% calibredrv  
// Calibre DESIGNrev
```

Fully-Managed Environment Usage

For fully-managed environments, the administrator specifies a system-wide directory for MGC_CWB_CONFIG_DIRS in the shell environment. In the fully-managed environment, *\$HOME/.calibrewb_workspace* is not listed in MGC_CWB_CONFIG_DIRS, and therefore files are not saved in this location.

- The administrator manages the system-wide preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences using a text editor and the shell.
- The user manages layer mappings using the Calibre DESIGNrev GUI.
- Calibre DESIGNrev loads all preferences, layer properties, bookmarks, keyboard shortcuts, and reader preferences from the system-wide directory.
- In this example, the layout viewer only accesses an administrator's configuration directory. The user cannot override the administrator's settings:

```
% setenv MGC_CWB_CONFIG_DIRS "/adm/drv_administrator"  
% calibredrv  
// Calibre DESIGNrev
```

Configuration File Reference

Any time you configure the layout viewer, the tool saves your setting in one of several configuration files. While you can use the GUI to configure some aspects of the tool, you also have the option of editing the configuration files. Some aspects of the layout viewer behavior can only be modified by editing one of the configuration files.

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keyprefs File Format

Used by: Calibre DESIGNrev, Calibre LITHOview, Calibre MDPview, Calibre WORKbench

Generated by:

- Invoking the layout viewer, which automatically creates a link in the `$HOME/.calibrewb_workspace` directory to a template keyprefs file in the `$CALIBRE_HOME` directory.
- Manually creating a custom *keyprefs* file or copying the template file. To automatically load a custom *keyprefs* file, you must place the file in `$HOME/.calibrewb_workspace/keyprefs`.

The *keyprefs* file contains the definitions for the key and mouse wheel bindings and is automatically loaded when you invoke a layout viewer.

A template file is available through the following symbolic link:

`$HOME/.calibrewb_workspace/keyprefs.template`

There is no mechanism in the layout viewer GUI to modify a *keyprefs* file. You can create a custom *keyprefs* file by copying the template file to `$HOME/.calibrewb_workspace/keyprefs`. At invocation, if the `$HOME/.calibrewb_workspace/keyprefs` file exists, the layout viewer will automatically load it. Otherwise, the layout viewer uses the default key bindings.

Refer to the *Calibre DESIGNrev Key Definitions Quick Reference* card for information on the default key and mouse wheel bindings that are defined in the template.

Format

A *keyprefs* file must conform to the following formatting and syntax rules:

- Must be ASCII
- Must use the following syntax for the bindKey command to map a key or mouse wheel action:

`bindKey <keyname> {cwbFunction|user_proc|null} [menu_name "menu_item"]`

Note



The arguments for the bindKey command and `$cwb bindKey` are identical. Use the bindKey command in a *keyprefs* file and the `$cwb bindKey` command in a Tcl script or procedure.

Parameters

- **<keyname>**

A required argument specifying the name of a key or mouse wheel combination. Refer to [\\$cwb bindKey](#) in the *Calibre DESIGNrev Reference Manual* for a list of the supported key and mouse wheel bindings. The angle brackets (<>) around the keyname are required.

- **cwbFunction | user_proc | null**

A required argument specifying the action to associate with the <**keyname**>. Valid values are:

cwbFunction — Specifies the name of an action to bind to the key or mouse wheel combination. Refer to [\\$cwb bindKey](#) in the *Calibre DESIGNrev Reference Manual* for a list of actions that you can bind to a key or the mouse wheel. If you want to associate the action with a menu, you must specify values for the *menu_name* and “*menu_pick*”.

user_proc — Specifies the name of the user procedure to execute. This can be a Tcl script you have defined and loaded.

null — Removes the key or mouse wheel binding. If the binding appears in a menu, you must specify values for the *menu_name* and “*menu_item*” arguments to remove the binding from the menu.

- **menu_name**

An optional argument specifying the name of the menu (for example, **File** or **Edit**) in which you want to add or remove the binding. When you create a new key or mouse wheel binding, the application also automatically removes the label for the new binding from any menu item that previously used it.

Note

This argument only adds or removes custom key or mouse wheel bindings and cannot be used to change the core set of menu items available in the GUI.

- “**menu_item**”

An optional argument specifying the text string that appears in the menu specified by *menu_name*. The quotes (“ ”) are required. When removing an item from a menu, this value must exactly match the item that appears in the menu.

Examples

In this example, the *keyprefs* file located in *\$HOME/.calibrewb_workspace* is modified to add mouse bindings for <Control-Button-4> and <Control-Button-5>. The new bindings (shown in orange text below) zoom in when pressing the Ctrl key and scrolling the mouse wheel up, and zoom out when pressing the Ctrl key and scrolling the mouse wheel down.

```
# ...
#####
# Function Keys
#
bindKey <Key-F1>    cwbHelp           Help      "Open User Manual"      ;#
bindKey <Key-F2>    cwbSaveLayout     File      "Save"                 ;#
bindKey <Key-F5>    cwbOpenLayout     File      "Open Layout ..."       ;#
bindKey <Key-F9>    cwbPreferences   RealTime "Run DRC"            ;#
bindKey <Key-F12>   cwbRealTimeRunDRC RealTime "Run DRC"            ;#
...
# Mouse Wheel bindings
bindKey <Button-4>    cwbPanDown      ...      ...
bindKey <Button-5>    cwbPanUp        ...      ...
bindKey <Shift-Button-4> cwbPanLeft     ...      ...
bindKey <Shift-Button-5> cwbPanRight    ...      ...
bindKey <Control-Button-4> cwbZoomIn     ...      ...
bindKey <Control-Button-5> cwbZoomOut    ...      ...
```

layerprops File Format

Used by: Calibre DESIGNrev, Calibre LITHOview, Calibre MDPview, Calibre WORKbench

Generated by:

- Saving current layer properties to a file using **Layer > Save Layer Properties**
- Manually created by the user

The *layerprops* file defines the layer properties, polygon connectivity, and via cell information. The layer properties include the layer number, color, fill, name, visibility, and drawing line width. You can create a *layerprops* file that defines the default layer properties for all layouts or that defines a layout-specific set of layers.

You can create custom fill patterns and save the pattern to a *.xbm* file. You can specify the *.xbm* file in the *layerprops* file for loading in Calibre DESIGNrev. Refer to “[Creating and Loading Custom Fill Patterns](#)” on page 80 for information on creating and loading custom fill patterns.

Note

 By default, Calibre DESIGNrev looks for the *.xbm* file in the same directory that contains the *layerprops* file. If the *.xbm* file is not found, Calibre DESIGNrev then looks for the file in the current working directory.

Format

A *layerprops* file must conform to the following formatting and syntax rules:

- Must be ASCII
- One statement per line

[Table A-1](#) identifies the valid statements for a *layerprops* file, in addition to providing the syntax and an example for each statement. The arguments for the layer definition statement are described in this command reference section. Information on all other valid statements can be found in the [Calibre DESIGNrev Reference Manual](#).

Table A-1. Valid *layerprops* File Statements

Statement	Syntax/Example
layer definition	<pre>layer_ID layer_color layer_fill layer_name layer_visibility layer_width 1.0 chartreuse speckle active 1 1</pre> <p>The arguments for the layer definition statement are described in the Parameters section.</p>

Table A-1. Valid *layerprops* File Statements (cont.)

Statement	Syntax/Example
connect statement	connect <i>layer1</i> <i>layer2</i> [by <i>layer3</i>] connect 17 19 by 18 See \$L connect for more information.
viacell statement	viacell <i>cellname</i> viacell c4400 See \$L viacell for more information.
customLayerDrawOrder statement	customLayerDrawOrder [<i>layer_list</i>] customLayerDrawOrder 1 3 5 7 11 4 2 See \$L customLayerDrawOrder for more information.
layerFilters statement	layerFilters -add <i>filterName</i> [<i>list_of_layers</i> <i>layer_0 ... layer_n</i>] layerFilters -add L1 L1-1 L1-2 L L1-4 L1-5 L1-6 L1-8 See \$L layerFilters for more information.
stopconnect statement	stopconnect [<i>input_layer</i> by <i>stop_layer</i>] [<i>input_layer</i>] stopconnect 20 by 22 See \$L stopconnect for more information.

Parameters

- *layer_ID*

The layer designator for the Calibre DESIGNrev layer. The layer ID can be specified as *overlay-layer*, *layer* or *layer.datatype*, where:

overlay — “L” followed by an integer between 0 and 65535.

layer — An integer between 0 and 65535.

datatype — An integer between 0 and 65535.

- *layer_color*

Any valid Tcl color name. For a complete list of valid color names, refer to “[Layout Viewer Color Reference](#)” on page 593.

- *layer_fill*

Layer fill can be specified using one of the following methods:

Layer fill value — Valid values are: clear, wave, speckle, diagonal_1, brick, light_speckle, diagonal_2, circles, and solid.

`@pathname` — Specifies the name of a `.xbm` file. The *pathname* must be prefaced with “`@`”. For example:

```
1 green @X_stipple.xbm 1 1 1
```

`@$environment_variable` — Specifies the name of an environment variable that defines the path to a `.xbm` file. The environment variable must be prefaced with “`@`”. For example, if you set `LAYER_1_STIPPLE` to ‘`./circles.xbm`’ in your invocation shell, then you can define this environment variable in the *layerprops* file using the following syntax:

```
1 blue @$LAYER_1_STIPPLE 1 1 1
```

- *layer_name*

An alphanumeric string specifying the name of the layer.

Note

 The OASIS layout format has an optional record for storing a layer name. If you store such a record in the database, the layout viewer adds the layer name in the Layers Browser. No Layer Properties File is required to add layer names to the Layers Browser if the layer name records are embedded in the OASIS database.

- *layer_visibility*

Specifies whether the layer is visible or not visible. Valid values are:

0 — Layer is not visible.

1 — Layer is visible.

- *layer_width*

An integer greater than or equal to 1 that specifies the line width of the polygon outline on that layer.

Examples

This example is for a *layerprops* file with a custom drawing order:

Figure A-2. Example *layerprops* File

```
0 green speckle 0 1 1
1 blue speckle 1 1 1
2 yellow speckle 2 1 1
3 red speckle 3 1 1
4 pink speckle 4 1 1
5 orange speckle 5 1 1
6 magenta speckle 6 1 1
7 purple speckle 7 1 1
8 cyan speckle 8 1 1
9 maroon speckle 9 1 1
10 green speckle 10 1 1
11 cyan4 speckle 11 1 1
12 azure speckle 12 1 1

customLayerDrawOrder 1 3 5 7 11 4 2
```

This example is for an overlay *layerprops* file:

Figure A-3. Overlay *layerprops* File

```
L1-1 cyan clear pwell 1 1
L2-1 cyan diagonal_2 pwell 1 1
L1-2 green clear oxide 1 1
L2-2 green diagonal_1 oxide 1 1
L1-4 red light_speckle poly 1 1
L2-4 red light_speckle poly 1 1
L1-5 orchid clear nplus 1 1
L2-5 orchid diagonal_1 nplus 1 1
L1-6 gold clear pplus 1 1
L2-6 gold diagonal_2 pplus 1 1
L1-7 blue solid contact 1 1
L2-7 blue solid contact 1 1
L1-8 skyblue speckle metall 1 1
L2-8 cyan solid metall 1 1
L1-9 yellow1 solid via 1 1
L2-9 yellow1 solid via 1 1
L2-10 chartreuse solid metal2 1 1
L1-10 green speckle metal2 1 1

layerFilters -add L1 L1-1 L1-2 L1-4 L1-5 L1-6 L1-7 L1-8 L1-9 L1-10
layerFilters -add L2 L2-1 L2-2 L2-4 L2-5 L2-6 L2-7 L2-8 L2-9 L2-10
layerFilters -add fmet1 L1-8 L2-8
```

Related Topics

[\\$L connect \[Calibre DESIGNrev Reference Manual\]](#)

[\\$L layerFilters \[Calibre DESIGNrev Reference Manual\]](#)

[\\$L customLayerDrawOrder \[Calibre DESIGNrev Reference Manual\]](#)

[\\$L viacell \[Calibre DESIGNrev Reference Manual\]](#)

[\\$L stopconnect \[Calibre DESIGNrev Reference Manual\]](#)

[Layers Browser](#)

[Customizing Layers](#)

preferences File Format

The preferences documented in this section can be used by all layout viewers (Calibre DESIGNrev, Calibre LITHOview, Calibre MDPview, Calibre WORKbench) unless otherwise noted.

Generated by:

- Automatically by the layout viewer tools
- Manually created by the user

The `$HOME/.calibrewb_workspace/preferences` file stores default appearance and behavior settings for the layout viewer. The layout viewer reads the *preferences* file located either in the layout viewer configuration directory or the system-wide directory specified by your administrator.

Note

 Refer to “[Multilevel Configuration](#)” on page 370 for setting up an alternate configuration directory for your layout viewer.

Some characteristics of the preferences file include:

- If the *preferences* file is deleted, the layout viewer automatically creates a new *preferences* file upon invocation of the next layout viewer session.
- If an entry in the preference file is not valid, it is ignored and not saved when the preference file is updated by the layout viewer on exit.
- Some of the preferences keywords can be modified using controls in the [Preferences Dialog Box](#), while others can only be modified by editing the preferences file in an ASCII text editor. These changes affect your next layout viewer session, and remain in effect until you change the preferences either through the user interface or by editing the file.

Note

 If a preference entry appears in the *preferences* file but is not documented, it is considered internal and should not be modified.

Format

A *preferences* file must conform to the following formatting and syntax rules:

- Default filename must be “preferences”
- Must be ASCII
- One keyword per line

- Uses the syntax:

```
<preference_name> <value>
```

- Create comments for a full line by beginning the line with a pound sign (#)

Parameters

The preferences used in the *preferences* file are organized alphabetically into reference pages. Most preferences can be set in the GUI or by specifying a preference name and value in the *preferences* file.

The following table identifies the preferences that you can define in the *preferences* file or in the **View** tab of the Preferences dialog box.

Table A-2. View Preferences

Preference Name	Description
prefs_view_bg	Specifies the background color for the layout viewing area.
prefs_view_cellnamescaled	Enables or disables the display of reference names with scaled text.
prefs_view_cellorientmarker	Enables or disables the display of a reference orientation marker in the lower left corner of a reference to visually indicate mirroring and rotation.
prefs_view_celloutline	Enables or disables the display of cell outlines.
prefs_view_clipColor	Specifies the color of the incremental loading background.
prefs_view_drawTopCellBbox	Enables or disables the display of the top cell bounding box.
prefs_view_fillpolygons	Enables or disables using layer patterns for the polygon fill.
prefs_view_findObjClipColor	Specifies the highlight color used for clips and finding objects.
prefs_view_markerOrgMode	Specifies the type of marker drawn at the at the top cell's origin.
prefs_view_missingCellMarker	Enables or disables the display of missing cell cross markers.
prefs_view_outlineRefColor	Specifies the color used for reference outlines.
prefs_view_panpercent	Specifies the percentage of view to move when panning.

Table A-2. View Preferences (cont.)

Preference Name	Description
prefs_view_refOriginMarker	Specifies the type of marker to draw at the selected reference's origin.
prefs_view_repPixels	Enables or disables the display of 3x3 pixel boxes in place of single pixel objects for improved visibility.
prefs_view_selectOtherColor	Specifies the highlight color used for edge, vertex, and text selections.
prefs_view_selectRefPolyColor	Specifies the highlight color used for reference and polygon selections.
prefs_view_smallPanPercent	Specifies the percentage of view to move when incrementally panning.
prefs_view_smallRefColor	Specifies the color used for small reference outlines.

The following table identifies the preferences that you can define in the *preferences* file or in the **Grid** tab of the Preferences dialog box.

Table A-3. Grid Preferences

Preference Name	Description
prefs_grid_autoColorEnabled	Specifies whether the grid color is auto-generated or a user-specified custom color.
prefs_grid_major	Specifies the grid spacing in microns.
prefs_grid_snap	Controls the snapping direction of the cursor when creating polygons or paths.
prefs_grid_style	Sets the grid style.
prefs_grid_usercolor	Specifies the color of the grid.
prefs_gui_showRulerLegend	Enables or disables the display of the ruler legend in the layout viewing area.

The following table identifies the preferences that you can define in the *preferences* file or in the **Rulers** tab of the Preferences dialog box.

Table A-4. Rulers Preferences

Preference Name	Description
prefs_ruler_color	Sets the ruler color.
prefs_ruler_direction	Sets the allowed snapping direction used for drawing rulers.
prefs_ruler_format	Specifies the format to use for displaying the ruler length.

Table A-4. Rulers Preferences (cont.)

Preference Name	Description
<code>prefs_ruler_height</code>	Enables or disables the use of larger text for ruler captions.
<code>prefs_ruler_multiple</code>	Enables or disables multiple rulers.
<code>prefs_ruler_showDxDy</code>	Enables or disables the display of the dx/dy ruler values.
<code>prefs_ruler_showSnappedEdge</code>	Enables or disables the highlighting of the vertex or edge to which the ruler snaps.
<code>prefs_ruler_snap</code>	Sets the snapping of rulers.
<code>prefs_ruler_snapEVProjections</code>	Enables or disables the projection of edges and vertices beyond their endpoints for ruler snapping.
<code>prefs_ruler_snapToNearest</code>	Specifies whether the ruler snaps to the vertex or edge that is nearest the cursor or the ruler.
<code>prefs_ruler_snapToReferences</code>	Enables or disables snapping to reference edges and vertices.
<code>prefs_ruler_splitMode</code>	Enables or disables the splitting of rulers on shape boundaries.
<code>prefs_ruler_tickMarkMode</code>	Specifies whether tick marks are used for rulers.
<code>prefs_ruler_unitMeasure</code>	Specifies the units in which to display the ruler length.

The following table identifies the preferences that you can define in the *preferences* file or in the **Objects** tab of the Preferences dialog box.

Table A-5. Objects Preferences

Preference Name	Description
<code>prefs_edit_allowZeroArea</code>	Allows or disallows zero area polygons and zero-width paths.
<code>prefs_edit_moveDirection</code>	Sets the directional restriction for moving selected objects.
<code>prefs_edit_pasteFollowsMouse</code>	Enables or disables pasting copied or cut objects over an existing object.
<code>prefs_edit_selectLimit</code>	Specifies the number of objects that can be selected at the same time.
<code>prefs_edit_selectLimitEnabled</code>	Enables or disables setting a limit on the number of objects that can be selected at the same time.

Table A-5. Objects Preferences (cont.)

Preference Name	Description
<code>prefs_edit_showPopupSelect</code>	Enables or disables the display of the popup window for information about a selected object.
<code>prefs_misc_contextCloneMode</code>	Sets the behavior of context cloning.
<code>prefs_misc_layersScanMode</code>	Specifies which scanner (Calibre RVE or internal scanner) to use to scan layer objects.
<code>prefs_path_bgnExtn</code>	Sets the beginning line-end extent for a path with a type of 4 (custom).
<code>prefs_path_endExtn</code>	Sets the ending line-end extent for a path with a type of 4 (custom).
<code>prefs_path_type</code>	Sets the path type.
<code>prefs_path_width</code>	Sets the path width.
<code>prefs_text_defaultColor</code>	Sets the default color used for text.
<code>prefs_text_defaultHeight</code>	Sets the default height for scaled text.
<code>prefs_text_defaultHeightUnits</code>	Sets the units used for scaled text.
<code>prefs_text_drawDefaultColor</code>	Toggles between using the current layer outline color or a custom color for scaled text.
<code>prefs_text_drawScaled</code>	Toggles between drawing scaled text or fitted height text.
<code>prefs_text_isoText</code>	Toggles between overriding the text orientation and honoring the specified text orientation.
<code>prefs_view_cellnamescaled</code>	Enables or disables the display of reference names with scaled text.

The following table identifies the preferences that you can define in the *preferences* file or in the **Nets** tab of the Preferences dialog box.

Table A-6. Nets Preferences

Preference Name	Description
<code>prefs_net_extractionLimit</code>	Sets a limit on the area in which net extraction runs.
<code>prefs_net_extractionMode</code>	Sets the net extraction mode to use geometries or specific properties.
<code>prefs_net_highlightBase</code>	Defines the base highlight layer number for the net layer.

Table A-6. Nets Preferences (cont.)

Preference Name	Description
prefs_net_highlightCount	Defines the number of layers used for highlighting extracted nets.
prefs_net_propertyName	Specifies a property for extracting nets.
prefs_net_searchDepth	Sets a depth for searching for nets.

The following table identifies the preferences that you can define in the *preferences* file or in the **Session** tab of the Preferences dialog box.

Table A-7. Session Preferences

Preference Name	Description
prefs_misc_widgetColor	Sets a color scheme for the GUI appearance.
prefs_misc_widgetThickness	Sets a style for the GUI appearance.
prefs_text_bboxHandling	Specifies the bounding box of text relative to the cell extent.
prefs_view_endDepth	Specifies the initial hierarchy depth shown when first opening a layout.
prefs_view_hideLayersOnLoad	Enables or disables the display of all layers when first opening a layout.

The following table identifies the preferences that you can define in the *preferences* file or in the **Misc** tab of the Preferences dialog box.

Table A-8. Misc Preferences

Preference Name	Description
prefs_filetypes_gds	Specifies the GDS file extensions that are displayed in the file browser.
prefs_filetypes_oasis	Specifies the OASIS file extensions that are displayed in the file browser.
prefs_filetypes_ovly	Specifies the overlay file extensions that are displayed in the file browser.
prefs_filetypes_rdb	Specifies the RDB file extensions that are displayed in the file browser.
prefs_filetypes_rules	Specifies the file types to display in the Load Input SVRF Layer Names and Load Output SVRF Layer Names dialog boxes.
prefs_filetypes_zip	Specifies the zipped or compressed file extensions that are displayed in the file browser.

Table A-8. Misc Preferences (cont.)

Preference Name	Description
<code>prefs_gui_READONLYEditMode</code>	Enables or disables opening a layout in read-only mode.
<code>prefs_gui_showMemoryStatus</code>	Controls the display of the memory usage meter in the status toolbar.
<code>prefs_layerpalette_filterBy</code>	Controls the display of the Filters panel.
<code>prefs_layerpalette_filterShared</code>	Enables or disables the sharing of layer visibility across filters.
<code>prefs_license_timeout</code>	Enables or disables the license timeout functionality.
<code>prefs_license_timeoutInterval</code>	Defines a timeout interval for releasing licenses after inactivity.
<code>prefs_load_addClipOnRVELayer</code>	Controls the behavior for automatically creating clips when highlighting from Calibre RVE.
<code>prefs_load_defInLoadHalo</code>	Controls the halo size when shapes on RVE layers automatically create clips with halos.
<code>prefs_load_incrLoadUpgradeCache</code>	Controls whether older incremental load cache files are automatically upgraded.
<code>prefs_load_showCellLayerSummary</code>	Enables or disables the transcripting of Cell Summary and Layer Summary information.
<code>prefs_load_useOasisLayerNames</code>	Enables or disables the reading of layer property file layer names when loading OASIS files.
<code>prefs_misc_disableQualityAgent</code>	Enables or disables the Quality Agent.
<code>prefs_misc_hiddenLayerDashLine</code>	Enables or disables the use of a dashed line to indicate hidden layers.
<code>prefs_misc_layersByColorLayout</code>	Enables or disables the background color of the Layers palette following the Layout Viewing area.
<code>prefs_misc_layersInViewIndicator</code>	Enables or disables the highlighting of layers currently displayed in the Layout Viewing area.
<code>prefs_misc_queryOnExit</code>	Enables or disables a confirmation dialog box before exiting the application.
<code>prefs_misc_queryUnsavedChanges</code>	Enables or disables a confirmation dialog box before closing or reloading a layout with unsaved changes.

Table A-8. Misc Preferences (cont.)

Preference Name	Description
prefs_misc_showCellRefCount	Enables or disables the display of the total reference count.

The following table identifies the preferences that you can define in the *preferences* file or in the **Options** tab of the Choose Layout Files dialog box.

Table A-9. Choose Layout Files Options Preferences

Preference Name	Description
prefs_load_expandDatatypes	Controls the expanding of datatypes when loading a layout.
prefs_load_ignoreGdsBoxes	Controls whether box records are ignored when reading GDS files.
prefs_load_pathsToPolygons	Controls whether paths are preserved or converted to polygons on input.
prefs_load_preserveProperties	Enables or disables the preserving of GDS properties for SREF, AREF, and geometry objects.
prefs_load_preserveTextAttributes	Enables or disables the preserving of text attributes.

The following table identifies the preferences that you can define in the *preferences* file or in the Export Layout dialog box.

Table A-10. Export Layout Preferences

Preference Name	Description
prefs_save_fixPolygons	Enables or disables fixing self-intersecting polygons when exporting a layout.
prefs_save_keepEmptyCells	Specifies how to handle empty cells and references when exporting a layout.
prefs_save_maxPathVertices	Specifies a limit for the maximum number of vertices for a path when exporting a layout.
prefs_save_maxPolygonVertices	Specifies a limit for the maximum number of vertices for a polygon when exporting a layout.

The following table identifies the preferences that you can define in the *preferences* file or in the RVE/CI Setup dialog box.

Table A-11. Calibre RVE Preferences

Preference Name	Description
<code>prefs_rve_allowUndoRedo</code>	Enables or disables the Undo and Redo functionality in Calibre RVE.
<code>prefs_rve_highlightBase</code>	Sets the base highlight layer number for Calibre RVE.
<code>prefs_rve_highlightCount</code>	Specifies the maximum number of layers that can be used for multilayer highlighting.
<code>prefs_rve_pathEnv</code>	Specifies the path to the Calibre Interactive and Calibre RVE software.

The following table identifies the preferences that you can define using menu options, GUI widgets, or in the *preferences* file.

Table A-12. General Preferences

Preference Name	Description
<code>prefs_balloon_help</code>	Enables or disables balloon help.
<code>prefs_edit_duplicateShift</code>	Specifies the amount by which to shift a referenced cell or geometry when it is duplicated.
<code>prefs_edit_duplicateUnit</code>	Specifies the units to use for <code>prefs_edit_duplicateShift</code> .
<code>prefs_edit_selmode</code>	Sets the object selection mode for the Object Selection toolbar.
<code>prefs_gui_expandCellPalette</code>	Controls the size of the Cells Browser.
<code>prefs_gui_expandLayerPalette</code>	Controls the size of the Layers palette.
<code>prefs_gui_showClipsPalette</code>	Controls the display of the Clips palette in the Cells Browser.
<code>prefs_layerpalette_groupBy</code>	Controls the grouping of layers in the Layers palette.
<code>prefs_layerpalette_sortAltFocus</code>	Controls the sorting of layers based on the layers displayed by the current view depth setting.
<code>prefs_layerpalette_sortBy</code>	Sets the layer sort based on the layer values.
<code>prefs_load_openNewWindow</code>	Controls whether to open a layout in the existing window or create a new window.
<code>prefs_misc_promptDeleteBookmark</code>	Enables or disables a confirmation dialog box before deleting a bookmark.
<code>prefs_text_show</code>	Controls the display of text labels.

Table A-12. General Preferences (cont.)

Preference Name	Description
<code>prefs_view_drawTopDown</code>	Specifies whether to draw layers from the top down or bottom up (default).
<code>prefs_view_layerColorDrawMode</code>	Specifies the display of layer colors.
<code>prefs_view_minPixels</code>	Specifies the minimum number of height and width pixels.
<code>prefs_view_refDetailSize</code>	Specifies the height and width of cell reference pixels.

The following table identifies the Calibre MDPview and Calibre WORKbench preferences that you can define in the GUI or in the *preferences* file.

Table A-13. Calibre MDPview and Calibre WORKbench Preferences

Preference Name	Description
<code>prefs_filetypes_hitachi</code>	Specifies the Hitachi file extensions that are displayed in the file browser.
<code>prefs_filetypes_hitachiJobDeck</code>	Specifies the Hitachi job deck extensions that are displayed in the file browser.
<code>prefs_filetypes_jeol</code>	Specifies the JEOL file extensions that are displayed in the file browser.
<code>prefs_filetypes_jeolJobDeck</code>	Specifies the JEOL job deck extensions that are displayed in the file browser.
<code>prefs_filetypes_mebes</code>	Specifies the MEBES file extensions that are displayed in the file browser.
<code>prefs_filetypes_mebesJobDeck</code>	Specifies the MEBES job deck extensions that are displayed in the file browser.
<code>prefs_filetypes_micronic</code>	Specifies the Micronic file extensions that are displayed in the file browser.
<code>prefs_filetypes_micronicJobDeck</code>	Specifies the Micronic job deck extensions that are displayed in the file browser.
<code>prefs_filetypes_sem</code>	Specifies the SEM file extensions that are displayed in the file browser.
<code>prefs_filetypes_vboasis</code>	Specifies the MDP fracture file extensions that are displayed in the file browser.
<code>prefs_load_mdpChipViewModeFull</code>	Controls the display of chip file names in the Layers palette.
<code>prefs_load_useMDPChipLayerNames</code>	Enables or disables the use of MDP file chip layer names from a layerprops file.

Table A-13. Calibre MDPview and Calibre WORKbench Preferences (cont.)

Preference Name	Description
prefs_misc_promptOnMdpIndexFileUpdate	Enables or disables prompting before an MDP index file updates.
prefs_opc_mapLayerByName	Enables or disables the Map Layer By Name setting.
prefs_view_mdpColorExtentBy	Specifies whether to draw MDP extents in layer colors or chip colors.
prefs_view_mdpCrossMode	Enables or disables the display of a cross at the center of polygons that are otherwise too small to see at high levels.
prefs_view_mdpMode	Specifies the groups of pattern data you see in Calibre MDPview.
prefs_view_missingChipMarkers	Enables or disables the display of markers for any missing chip definition files.

Examples

The following is an example of the *preferences* file.

```
# Generated by Calibre DESIGNrev.  
prefs_load_expandDatatypes 1  
prefs_load_ignoreGdsBoxes 0  
prefs_load_multipleFile 0  
prefs_load_openNewWindow
```

prefs_balloon_help

Input for: preferences file (see [preferences File Format](#))

Enables or disables balloon help.

Usage

prefs_balloon_help {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables balloon help. Valid values are:

- 0 — Disables balloon help.
- 1 — Enables balloon help (default).

Description

This preference enables or disables balloon help in the GUI and can only be set in the preferences file.

Examples

`prefs_balloon_help 0`

prefs_edit_allowZeroArea

Input for: preferences file (see [preferences File Format](#))

Allows or disallows zero area polygons and zero-width paths.

Usage

prefs_edit_allowZeroArea {0 | 1}

Arguments

- **0 | 1**

A required argument used to allow or disallow zero area polygons and zero width paths.
Valid values are:

- 0 — Disallows zero area polygons and zero width paths.
- 1 — Allows zero area polygons and zero width paths (default).

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by enabling or disabling the “Allow zero-area polygons and zero-width paths” check box.

Examples

`prefs_edit_allowZeroArea 0`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_edit_duplicateShift

Input for: preferences file (see [preferences File Format](#))

Specifies the amount by which to shift a referenced cell or geometry when it is duplicated with **Edit > Duplicate**.

Usage

prefs_edit_duplicateShift *value*

Arguments

- ***value***

A required argument specifying a value in user or delta screen units, depending on the setting for `prefs_edit_duplicateUnit`. The default is 5.

Description

This preference can only be defined in the preference file. It defines the amount by which a referenced cell or geometry is automatically shifted when it is copied.

Examples

`prefs_edit_duplicateShift 10`

Related Topics

[prefs_edit_duplicateUnit](#)

prefs_edit_duplicateUnit

Input for: preferences file (see [preferences File Format](#))

Specifies the units to use for prefs_edit_duplicateShift.

Usage

prefs_edit_duplicateUnit {user | screen}

Arguments

- **user | screen**

A required argument used to specify user or screen units. Valid values are:

user — User units are used.

screen — Screen units are used (default).

Description

This preference can only be defined in the preference file. It defines the units to use for the prefs_edit_duplicateShift preference.

Examples

`prefs_edit_duplicateUnit user`

Related Topics

[prefs_edit_duplicateShift](#)

prefs_edit_moveDirection

Input for: preferences file (see [preferences File Format](#))

Sets the directional restriction for moving selected objects.

Usage

prefs_edit_moveDirection {a | m | 45}

Arguments

- **a | m | 45**

A required argument used to specify the type of directional movement restriction for selected objects. Valid values are:

- a — Sets no restriction on moving selected objects (default).
- m — Restricts movement of selected objects to manhattan (90-degree) angles.
- 45 — Restricts movement of selected objects to 45-degree angles.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by selecting one of the “Move direction” radio buttons.

Examples

`prefs_edit_moveDirection m`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_edit_pasteFollowsMouse

Input for: preferences file (see [preferences File Format](#))

Enables or disables pasting copied or cut objects over an existing object.

Usage

prefs_edit_pasteFollowsMouse {0 | 1}

Arguments

- **0 | 1**

A required argument used to specify whether copied or cut objects are pasted over an existing object. Valid values are:

- 0 — Paste cut or copied objects over existing objects (default).
- 1 — Paste cut or copied objects at the cursor location.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by enabling or disabling the “Paste follows mouse” check box.

Examples

`prefs_edit_pasteFollowsMouse 1`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_edit_selectLimit

Input for: preferences file (see [preferences File Format](#))

Specifies the number of objects that can be selected at the same time.

Usage

prefs_edit_selectLimit value

Arguments

- ***value***

A required argument specifying the number of objects that can be selected at the same time.

The range of valid values is 0 to $2^{32}-1$. Note that large values can degrade performance.

Description

This preference can be set in the **Objects** tab of the Preferences dialog box by enabling the “Limit number of selected objects” check box and specifying a value in the text box. This setting only has an effect if `prefs_edit_selectLimitEnabled` is set to 1.

Examples

```
prefs_edit_selectLimit 500
```

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_edit_selectLimitEnabled

Input for: preferences file (see [preferences File Format](#))

Enables or disables setting a limit on the number of objects that can be selected at the same time.

Usage

prefs_edit_selectLimitEnabled {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables setting a limit on the number of objects that can be selected at the same time. Valid values are:

- 0 — Disables setting a limit (default).
- 1 — Enables setting a limit.

Description

This preference can be set in the **Objects** tab of the Preferences dialog box by enabling or disabling the “Limit number of selected objects” check box.

Examples

`prefs_edit_selectLimitEnabled 1`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_edit_semode

Input for: preferences file (see [preferences File Format](#))

Sets the object selection mode for the Object Selection toolbar.

Usage

```
prefs_edit_semode {ref | path | polygon | edge | vertex | text | none | best}
```

Arguments

- **ref | path | polygon | edge | vertex | text | none | best**

A required argument that specifies the object selection mode for the Object Selection toolbar when invoking the Calibre DESIGNrev GUI. Valid values are:

- ref — Sets the object selection mode to Reference.
- path — Sets the object selection mode to Path.
- polygon — Sets the object selection mode to Polygon.
- edge — Sets the object selection mode to Edge.
- vertex — Sets the object selection mode to Vertex.
- text — Sets the object selection mode to Text.
- none — Sets the object selection mode to none (no objects are selected).
- best — Sets the object selection mode to Reference, Path, Polygon, and Text (default).

Description

This can only be set in the preferences file or using the Object Selection toolbar in the GUI.

You can specify multiple object types with this command.

Examples

```
prefs_edit_semode path text
```

Related Topics

[Object Selection Toolbar](#)

prefs_edit_showPopupSelect

Input for: preferences file (see [preferences File Format](#))

Enables or disables the popup window displaying information about a selected object.

Usage

prefs_edit_showPopupSelect {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the popup window displaying information about a selected object. If enabled and multiple objects are selected, information is displayed about the object the cursor is currently in. Valid values are:

- 0 — Disables the popup window (default).
- 1 — Enables the popup window.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by enabling or disabling the “Show object info popup window” check box.

Examples

`prefs_edit_showPopupSelect 1`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_filetypes_gds

Input for: preferences file (see [preferences File Format](#))

Specifies the GDS file extensions that are displayed in the file browser.

Usage

prefs_filetypes_gds *string*

Arguments

- ***string***

A required argument specifying the GDS file extensions to display in the file browser.

Allowed values include file extensions associated with GDS files. When this preference is not specified, the default is .gds, .db, .sf, .str, .stm, .strm, .STR, .GDS, .GDS2, .GDSII, .gds2, and .gdsii.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_gds .gds .db .GDS .GDS2 .GDSII .gds2 .gdsii`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_filetypes_hitachi

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the Hitachi file extensions that are displayed in the file browser.

Usage

prefs_filetypes_hitachi *string*

Arguments

- ***string***

A required argument specifying the Hitachi file extensions to display in the file browser.

Allowed values include file extensions associated with Hitachi files. When this preference is not specified, the default is .PFH, .PFH3, .IPH, .pfh, .pfh3, and .iph.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_hitachi .PFH .PFH2 .PFH3 pfh .pfh2 .pfh3`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_filetypes_hitachiJobDeck

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the Hitachi job deck extensions that are displayed in the file browser.

Usage

prefs_filetypes_hitachiJobDeck *string*

Arguments

- ***string***

A required argument specifying the Hitachi job deck extensions to display in the file browser. Allowed values include file extensions associated with Hitachi job decks. When this preference is not specified, the default is “*”.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_hitachiJobDeck *`

Related Topics

[Calibre MDPview User’s and Reference Manual](#)

prefs_filetypes_jeol

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the JEOL file extensions that are displayed in the file browser.

Usage

prefs_filetypes_jeol *string*

Arguments

- *string*

A required argument specifying the JEOL file extensions to display in the file browser.

Allowed values include file extensions associated with JEOL files. When this preference is not specified, the default is “*”.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_jeol *`

Related Topics

[Calibre MDPview User’s and Reference Manual](#)

prefs_filetypes_jeolJobDeck

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the JEOL job deck extensions that are displayed in the file browser.

Usage

prefs_filetypes_jeolJobDeck *string*

Arguments

- ***string***

A required argument specifying the JEOL job deck extensions to display in the file browser. Allowed values include file extensions associated with JEOL job decks. When this preference is not specified, the default is .JDF and .jdf.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_jeolJobDeck .JDF .jdf`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_filetypes_mebes

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the MEBES file extensions that are displayed in the file browser.

Usage

prefs_filetypes_mebes *string*

Arguments

- ***string***

A required argument specifying the MEBES file extensions to display in the file browser. Allowed values include file extensions associated with MEBES files. When this preference is not specified, the default is “?????????.??”.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_mebes ??????????.??`

Related Topics

[Calibre MDPview User’s and Reference Manual](#)

prefs_filetypes_mebesJobDeck

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the MEBES job deck extensions that are displayed in the file browser.

Usage

prefs_filetypes_mebesJobDeck *string*

Arguments

- ***string***

A required argument specifying the MEBES job deck extensions to display in the file browser. Allowed values include file extensions associated with MEBES job decks. When this preference is not specified, the default is .JB and .jb.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_mebesJobDeck .JB .jb`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_filetypes_micronic

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the Micronic file extensions that are displayed in the file browser.

Usage

prefs_filetypes_micronic *string*

Arguments

- *string*

A required argument specifying the Micronic file extensions to display in the file browser.

Allowed values include file extensions associated with Micronic files. When this preference is not specified, the default is .LA and .la.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

```
prefs_filetypes_micronic .LA .la
```

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_filetypes_micronicJobDeck

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Specifies the Micronic job deck extensions that are displayed in the file browser.

Usage

prefs_filetypes_micronicJobDeck *string*

Arguments

- ***string***

A required argument specifying the Micronic job deck extensions to display in the file browser. Allowed values include file extensions associated with Micronic job decks. When this preference is not specified, the default is .MS and .ms.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_micronicJobDeck .MS .ms`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_filetypes_oasis

Input for: preferences file (see [preferences File Format](#))

Specifies the OASIS file extensions that are displayed in the file browser.

Usage

prefs_filetypes_oasis *string*

Arguments

- *string*

A required argument specifying the OASIS file extensions to display in the file browser. Allowed values include file extensions associated with OASIS files. When this preference is not specified, the default is .oas, .OAS, and .oasis.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_oasis .oas .OAS .oasis .OASIS`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_filetypes_ovly

Input for: preferences file (see [preferences File Format](#))

Specifies the overlay file extensions that are displayed in the file browser.

Usage

prefs_filetypes_ovly *string*

Arguments

- ***string***

A required argument specifying the overlay file extensions to display in the file browser. Allowed values include file extensions associated with overlay files. When this preference is not specified, the default is .ovly.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_ovly .ovly .overlay`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_filetypes_rdb

Input for: preferences file (see [preferences File Format](#))

Specifies the RDB file extensions that are displayed in the file browser.

Usage

prefs_filetypes_rdb *string*

Arguments

- ***string***

A required argument specifying the RDB file extensions to display in the file browser.

Allowed values include file extensions associated with OASIS files. When this preference is not specified, the default is .db, .rdb, .ascii, and .results.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_rdb .db .rdb .ascii`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_filetypes_rules

Input for: preferences file (see [preferences File Format](#))

Specifies the file types to display in the Load Input SVRF Layer Names and Load Output SVRF Layer Names dialog boxes.

Usage

prefs_filetypes_rules *string*

Arguments

- *string*

A required argument specifying the file types to display in the Load Input SVRF Layer Names and Load Output SVRF Layer Names dialog boxes. When this preference is not specified, the default is *rule*, *svrf, *drc, *.cal.

Description

This preference is used to specify the file types that are displayed in the Load Input SVRF Layer Names and Load Output SVRF Layer Names dialog boxes. These dialog boxes are accessed from the [Layer Menu](#) menu. This preference can also be set in the [Preferences Dialog Box - Misc Tab](#) by clicking the **Filetypes** button and entering values in the Rules text box.

Examples

```
prefs_filetypes_rules *rule* *svrf *drc *.cal *my_rules
```

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_filetypes_sem

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview and Calibre WORKbench

Specifies the SEM file extensions that are displayed in the file browser.

Usage

prefs_filetypes_sem *string*

Arguments

- *string*

A required argument specifying the SEM file extensions to display in the file browser.

Allowed values include file extensions associated with SEM files. When this preference is not specified, the default is .tiff, .TIFF, .tif, and .TIF.

Description

This preference can also be set in Calibre WORKbench in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

```
prefs_filetypes_sem .tiff .TIFF .tif .TIF
```

Related Topics

[Calibre MDPview User's and Reference Manual](#)

[Calibre WORKbench Users and Reference Manual](#)

prefs_filetypes_vboasis

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Specifies the MDP fracture file extensions that are displayed in the file browser.

Usage

prefs_filetypes_vboasis *string*

Arguments

- ***string***

A required argument specifying the MDP fracture file extensions to display in the file browser. Allowed values include file extensions associated with OASIS files. When this preference is not specified, the default is .VB and .vb.

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_vboasis .VB .vb`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_filetypes_zip

Input for: preferences file (see [preferences File Format](#))

Specifies the zipped or compressed file extensions that are displayed in the file browser.

Usage

prefs_filetypes_zip *string*

Arguments

- *string*

A required argument specifying the zipped or compressed file extensions to display in the file browser. Allowed values include file extensions associated with zipped or compressed files. When this preference is not specified, the default is .gz, .Z, and .z.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by clicking the **Filetypes** button and defining values in the Filetype Preferences dialog box.

Examples

`prefs_filetypes_zip .gz .Z .z .gzip`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_grid_autoColorEnabled

Input for: preferences file (see [preferences File Format](#))

Specifies whether the grid color is auto-generated or a user-specified custom color.

Usage

prefs_grid_autoColorEnabled {0 | 1}

Arguments

- **0 | 1**

A required argument used to specify whether the grid color is automatically generated or a custom color specified by the user. Valid values are:

- 0 — The grid color is a custom color specified by the user.
- 1 — The grid color is automatically generated (default).

Description

This preference can also be set in the **Grid** tab of the Preferences dialog box using the Auto or Custom radio buttons in the Color field.

Examples

`prefs_grid_autoColorEnabled 0`

Related Topics

[Preferences Dialog Box - Grid Tab](#)

prefs_grid_major

Input for: preferences file (see [preferences File Format](#))

Specifies the grid spacing in microns.

Usage

prefs_grid_major *value*

Arguments

- ***value***

A required argument that specifies the grid size in microns. The specified value must be a floating point number. When this preference is not specified, the default is 0.1.

Description

This preference can also be set in the **Grid** tab of the Preferences dialog box by specifying a value in the Spacing text box.

Examples

`prefs_grid_major 0.05`

Related Topics

[Preferences Dialog Box - Grid Tab](#)

prefs_grid_snap

Input for: preferences file (see [preferences File Format](#))

Controls the snapping direction of the cursor when creating polygons or paths.

Usage

prefs_grid_snap {All Angle | A90 | A45}

Arguments

- **All Angle | A90 | A45**

A required argument that controls the snapping direction of the cursor when creating polygons or paths. Valid values are:

All Angle — Snaps to the grid at any angle (default).

A90 — Snaps orthogonally to the grid.

A45 — Snaps orthogonally or diagonally to the grid.

Description

This preference can also be set in the **Grid** tab of the Preferences dialog box using the All angle, 90 degree, or 45 degree radio button in the Snap Direction field.

Examples

prefs_grid_snap A90

Related Topics

[Preferences Dialog Box - Grid Tab](#)

prefs_grid_style

Input for: preferences file (see [preferences File Format](#))

Sets the grid style.

Usage

prefs_grid_style {-1 | 0 | 1}

Arguments

- **-1 | 0 | 1**

A required argument that specifies the grid style. Valid values are:

- 1 — There is no grid (default).
- 0 — The grid style is dots.
- 1 — The grid style is lines.

Description

This preference can also be set in the **Grid** tab of the Preferences dialog box using the None, Points, or Line radio button in the Style field.

Examples

`prefs_grid_style 0`

Related Topics

[Preferences Dialog Box - Grid Tab](#)

prefs_grid_usercolor

Input for: preferences file (see [preferences File Format](#))

Specifies the color of the grid.

Usage

prefs_grid_usercolor *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the color of the grid. You must specify a valid *xwin_color name* or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is white.

Description

This preference can also be set in the **Grid** tab of the Preferences dialog box by selecting the Custom radio button in the Color field and specifying a valid *xwin_color name* or a Hex color code. You can also click the color button to display the Choose Grid Color dialog box.

Examples

`prefs_grid_usercolor #ff00ff`

Related Topics

[Preferences Dialog Box - Grid Tab](#)

prefs_gui_expandCellPalette

Input for: preferences file (see [preferences File Format](#))

Controls the size of the Cells Browser.

Usage

prefs_gui_expandCellPalette {0 | 1}

Arguments

- **0 | 1**

A required argument that controls the size of the Cells Browser. Valid values are:

0 — The size of the Cells Browser is reduced so that the Layout Navigator is visible (default).

1 — The size of the Cells Browser is expanded so that the Layout Navigator is hidden.

Description

You can also use the small down or up triangles located in the lower left corner of the Cells Browser to expand or reduce the size of the browser.

Examples

```
prefs_gui_expandCellPalette 1
```

Related Topics

[Cells Browser](#)

prefs_gui_expandLayerPalette

Input for: preferences file (see [preferences File Format](#))

Controls the size of the Layers palette.

Usage

prefs_gui_expandLayerPalette {0 | 1}

Arguments

- **0 | 1**

A required argument that controls the size of the Layers palette. Valid values are:

- 0 — The size of the Layers palette is reduced so that the Layer Color and Layer Fill palette is visible (default).
- 1 — The size of the Cells Browser is expanded so that the Layer Color and Layer Fill palette is hidden.

Description

You can also use the small down or up triangles located in the lower right corner of the Layers palette to expand or reduce the size of the palette.

Examples

```
prefs_gui_expandLayerPalette 1
```

Related Topics

[Layers Browser](#)

prefs_gui_readOnlyEditMode

Input for: preferences file (see [preferences File Format](#))

Enables or disables opening a layout in read-only mode.

Usage

prefs_gui_readOnlyEditMode {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables opening a layout in read-only mode. Valid values are:

0 — Disables read only mode (default).

1 — Enables read-only mode.

Description

This preference can also be set by enabling or disabling the **File > Read Only Layout** check box.

Examples

`prefs_gui_readOnlyEditMode 1`

prefs_gui_showClipsPalette

Input for: preferences file (see [preferences File Format](#))

Controls the display of the Clips palette in the Cells Browser.

Usage

```
prefs_gui_showClipsPalette {0 | 1}
```

Arguments

- **0 | 1**

A required argument that controls the display of the Clips palette in the Cells Browser.
Valid values are:

- 0 — Hides the Clips palette in the Cells Browser.
- 1 — Shows the Clips palette in the Cells Browser (default).

Description

This preference can also be set by enabling or disabling the **View > Show Clips Palette** check box.

Examples

```
prefs_gui_showClipsPalette 0
```

Related Topics

[Cells Browser](#)

prefs_gui_showMemoryStatus

Input for: preferences file (see [preferences File Format](#))

Controls the display of the memory usage meter in the status toolbar.

Usage

prefs_gui_showMemoryStatus {0 | 1}

Arguments

- **0 | 1**

A required argument that controls the display of the memory usage meter in the status toolbar. Valid values are:

- 0 — Hides the memory usage meter in the status toolbar (default).
- 1 — Shows the memory usage meter in the status toolbar.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Show memory usage in status bar” check box.

Examples

```
prefs_gui_showMemoryStatus 1
```

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_gui_showRulerLegend

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of the ruler legend in the layout viewing area.

Usage

prefs_gui_showRulerLegend {0 | 2}

Arguments

- **0 | 2**

A required argument that enables or disables the display of the ruler legend in the layout viewing area. Valid values are:

- 0 — Hides the ruler legend in the layout viewing area (default).
- 2 — Shows the ruler legend in the layout viewing area.

Description

This preference can also be set in the **Grid** tab of the Preferences dialog box by enabling or disabling the “Show Ruler Legend” check box.

Examples

```
prefs_gui_showRulerLegend 2
```

Related Topics

[Preferences Dialog Box - Grid Tab](#)

prefs_ignoreLayerWarnings

Enables or disables the reporting of warnings for missing layers.

Usage

prefs_ignoreLayerWarnings {0 | 1}

Arguments

- **0 | 1**

A required argument that controls the reporting of warnings for missing layers. Valid values are:

- 0 — Reports missing layers in the shell window (default).
- 1 — Ignores missing layers.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Ignore missing layer warnings” check box.

Examples

`prefs_ignoreLayerWarnings 1`

prefs_layerpalette_filterBy

Input for: preferences file (see [preferences File Format](#))

Controls the display of the Filters panel.

Usage

prefs_layerpalette_filterBy {none | visible}

Arguments

- **none | visible**

A required argument that controls the display of the Filters panel. Valid values are:

none — Hides the Filters panel.

visible — Displays the Filters panel (default).

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Always show filter panel” check box.

Examples

`prefs_layerpalette_filterBy none`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_layerpalette_filterShared

Input for: preferences file (see [preferences File Format](#))

Enables or disables the sharing of layer visibility across filters.

Usage

prefs_layerpalette_filterShared {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the sharing of layer visibility across filters.
Valid values are:

- 0 — Disables the sharing of layer visibility across filters (default). When disabled, each filter still retains its Show/Hide settings for each layer.
- 1 — Enables the sharing of layer visibility across filters.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Share layer visibility across filters” check box.

Examples

`prefs_layerpalette_filterShared 1`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_layerpalette_groupBy

Input for: preferences file (see [preferences File Format](#))

Controls the grouping of layers in the Layers palette.

Usage

```
prefs_layerpalette_groupBy {none | selection | visible | inview}
```

Arguments

- **none | selection | visible | inview**

A required argument used to control the grouping of layers in the Layers palette. Valid values are:

none — The layers are not grouped (default).

selection — The layers are grouped based on whether or not they are selected in the Layers palette.

visible — The layers are grouped based on whether or not they are shown or hidden in the Layers palette.

inview — The layers are grouped based on whether or not objects on a layer are visible in the layout viewing area.

Description

This preference can also be set by clicking the arrow in the Layers Browser to display the dropdown menu and choosing **Selection**, **Visible**, or **In View**.

Examples

```
prefs_layerpalette_groupBy selection
```

Related Topics

[Layers Browser](#)

prefs_layerpalette_sortAltFocus

Input for: preferences file (see [preferences File Format](#))

Controls the sorting of layers based on the layers displayed by the current view depth setting.

Usage

prefs_layerpalette_sortAltFocus {none | all}

Arguments

- **none | all**

A required argument that controls the sorting of layers. Valid values are:

none — Layers are not sorted (default).

all — Layers are sorted based on the layers displayed by the current view depth setting.

Description

This can only be set in the preferences file.

Examples

`prefs_layerpalette_sortAltFocus all`

prefs_layerpalette_sortBy

Input for: preferences file (see [preferences File Format](#))

Sets the layer sort based on the layer values.

Usage

```
prefs_layerpalette_sortBy {number_ascend | number_descend | name_ascend  
| name_descend | draworder_ascend | draworder_descend}
```

Arguments

- **number_ascend** | **number_descend** | **name_ascend** | **name_descend** | **draworder_ascend** | **draworder_descend**

A required argument that specifies the layer sort based on the layer values. Valid values are:

number_ascend — Layers are sorted in ascending order based on the layer number (default).

number_descend — Layers are sorted in descending order based on the layer number.

name_ascend — Layers are sorted in ascending order based on the layer name.

name_descend — Layers are sorted in descending order based on the layer name.

draworder_ascend — Layers are sorted in ascending order based on the drawing order.

draworder_descend — Layers are sorted in descending order based on the drawing order.

Description

This preference can also be set by clicking the arrow in the Layers Browser to display the dropdown menu and choosing **By Number**, **By Name**, or **By Draw Order**, in addition to choosing **Ascending** or **Descending**.

Examples

```
prefs_layerpalette_sortBy name_descend
```

Related Topics

[Layers Browser](#)

prefs_license_timeout

Input for: preferences file (see [preferences File Format](#))

Enables or disables the license timeout functionality.

Usage

prefs_license_timeout {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the license timeout functionality. When enabled, the license timeout functionality releases licenses after a specified amount of time. Valid values are:

- 0 — Disables the license timeout functionality (default).
- 1 — Enables the license timeout functionality.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Release license after inactivity of” check box. When enabled, licenses are released after an amount of time specified by `prefs_license_timeoutInterval`.

Examples

`prefs_license_timeout 1`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_license_timeoutInterval

Input for: preferences file (see [preferences File Format](#))

Defines a timeout interval for releasing licenses after inactivity.

Usage

prefs_license_timeoutInterval *value*

Arguments

- ***value***

A required argument that specifies a timeout interval in hours. The specified value must be a positive real number. When this preference is not specified, the default is 3 hours.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling the “Release license after inactivity of” check box and entering hour and minute values in the text boxes.

You can also use the MGC_DRV_RELEASE_LICENSE_TIME environment variable to define a timeout interval.

This preference does not have any effect unless prefs_license_timeout is enabled.

Examples

`prefs_license_timeoutInterval 2.0`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_load_addClipOnRVELayer

Input for: preferences file (see [preferences File Format](#))

Controls the behavior for automatically creating clips when highlighting from Calibre RVE.

Usage

prefs_load_addClipOnRVELayer {0 | 1}

Arguments

- **0 | 1**

A required argument used to specify whether clips are automatically created when highlighting from Calibre RVE. Valid values are:

- 0 — Clips are not automatically created when highlighting from Calibre RVE (default).
- 1 — Clips are automatically created when highlighting from Calibre RVE.

Description

This preference only controls whether clips are created if the layout is loaded non-incrementally; clips are always created if the layout is loaded incrementally, regardless of this preference.

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Shapes on RVE layers automatically create clips” check box.

Examples

`prefs_load_addClipOnRVELayer 1`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

[prefs_load_defIncLoadHalo](#)

prefs_load_defIncLoadHalo

Input for: preferences file (see [preferences File Format](#))

Controls the halo size when shapes on RVE layers automatically create clips with halos.

Usage

`prefs_load_defIncLoadHalo value`

Arguments

- ***value***

A required argument that specifies the halo size to use when shapes on RVE layers automatically create clips with halos. The value must be a positive value and specified in microns. When this preference is not specified, the default is 1.0.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by specifying a value in the “Halo:” text entry box.

Examples

`prefs_load_defIncLoadHalo 5.0`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_load_expandDatatypes

Input for: preferences file (see [preferences File Format](#))

Controls the expanding of datatypes when loading a layout.

Usage

prefs_load_expandDatatypes {0 | 1}

Arguments

- **0 | 1**

A required argument that controls whether datatypes are expanded when loading a layout.
Valid values are:

- 0 — Datatypes are not expanded.
- 1 — Datatypes are expanded (default).

Description

This preference can also be set in the **Options** tab of the Choose Layout Files dialog box by enabling or disabling the “Expand datatypes” check box.

Examples

`prefs_load_expandDatatypes 0`

Related Topics

[Choose Layout Files Dialog Box - Options Tab](#)

prefs_load_ignoreGdsBoxes

Input for: preferences file (see [preferences File Format](#))

Controls whether box records are ignored when reading GDS files.

Usage

prefs_load_ignoreGdsBoxes {0 | 1}

Arguments

- **0 | 1**

A required argument that controls whether box records are ignored when reading GDS files.
Valid values are:

- 0 — Box records are not ignored (default).
- 1 — Box records are ignored.

Description

This preference can also be set in the **Options** tab of the Choose Layout Files dialog box by enabling or disabling the “Ignore GDS box records” check box.

Examples

`prefs_load_ignoreGdsBoxes 1`

Related Topics

[Choose Layout Files Dialog Box - Options Tab](#)

prefs_load_incrLoadUpgradeCache

Input for: preferences file (see [preferences File Format](#))

Controls whether older incremental load cache files are automatically upgraded.

Usage

prefs_load_incrLoadUpgradeCache {0 | 1}

Arguments

- **0 | 1**

A required arguments used to control whether older incremental load cache files are automatically upgraded. Valid values are:

0 — Older incremental load cache files are read without upgrading.

1 — Older incremental load cache files are automatically upgraded (default).

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Automatically upgrade older cache versions” check box.

Examples

`prefs_load_incrLoadUpgradeCache 0`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_load_mdpChipViewModeFull

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Controls the display of chip file names in the Layers palette.

Usage

```
prefs_load_mdpChipViewModeFull {Color By Chip | Color By Placement |  
Color By Definition}
```

Arguments

- **Color By Chip | Color By Placement | Color By Definition**

A required argument that controls the display of chip file names in the Layer palette. Valid values are:

Color By Chip — Displays chip file names in the Layers palette for better identification (default).

Color by Placement — Treats unique job deck placement definitions as unique chips and assigns them separate colors to add a visual distinction between placements.

Color By Definition — Causes all layers within each job deck chip definition to be colored the same. The same color is assigned to both the level layers and their contained chip layers in the level and chip views.

Description

This preference can also be set in Calibre MDPview in the **Session** tab of the Preferences dialog box by selecting the desired option from the “MDP chip view” dropdown list.

Examples

```
prefs_load_mdpChipViewModeFull Color By Chip
```

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_load_openNewWindow

Input for: preferences file (see [preferences File Format](#))

Controls whether to open a layout in the existing window or create a new window.

Usage

prefs_load_openNewWindow {0 | 1}

Arguments

- **0 | 1**

A required argument that controls whether a layout is opened in the existing window or in a new window. Valid values are:

- 0 — The layout is opened in the existing window (default).
- 1 — The layout is opened in a new window.

Description

This can only be set in the preferences file.

Examples

`prefs_load_openNewWindow 1`

prefs_load_pathsToPolygons

Input for: preferences file (see [preferences File Format](#))

Controls whether paths are preserved or converted to polygons on input.

Usage

prefs_load_pathsToPolygons {0 | 1}

Arguments

- **0 | 1**

A required argument that controls whether to preserve paths or convert them to polygons on input. Valid values are:

- 0 — Preserves paths.
- 1 — Paths are converted to polygons (default).

Description

This preference can also be set in the **Options** tab of the Choose Layout Files dialog box by enabling or disabling the “Convert paths to polygons” check box.

Examples

`prefs_load_pathsToPolygons 1`

Related Topics

[Choose Layout Files Dialog Box - Options Tab](#)

prefs_load_preserveProperties

Input for: preferences file (see [preferences File Format](#))

Enables or disables the preserving of GDS properties for SREF, AREF, and geometry objects.

Usage

prefs_load_preserveProperties {0 | 1}

Arguments

- **0 | 1**

A required argument that controls whether to preserve GDS properties for SREF, AREF, and geometry objects. Valid values are:

- 0 — GDS properties are not preserved.
- 1 — GDS properties are preserved (default).

Description

This preference can also be set in the **Options** tab of the Choose Layout Files dialog box by enabling or disabling the “Preserve properties” check box.

Examples

```
prefs_load_preserveProperties 0
```

Related Topics

[Choose Layout Files Dialog Box - Options Tab](#)

prefs_load_preserveTextAttributes

Input for: preferences file (see [preferences File Format](#))

Enables or disables the preserving of text attributes.

Usage

prefs_load_preserveTextAttributes {0 | 1}

Arguments

- **0 | 1**

A required argument that controls whether to preserve text attributes. Valid values are:

- 0 — Text attributes are not preserved.
- 1 — Text attributes are preserved (default).

Description

This preference can also be set in the **Options** tab of the Choose Layout Files dialog box by enabling or disabling the “Preserve text attributes” check box.

Examples

```
prefs_load_preserveTextAttributes 0
```

Related Topics

[Choose Layout Files Dialog Box - Options Tab](#)

prefs_load_showCellLayerSummary

Input for: preferences file (see [preferences File Format](#))

Enables or disables the transcripting of Cell Summary and Layer Summary information.

Usage

prefs_load_showCellLayerSummary {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the transcripting of Cell Summary and Layer Summary information. Valid values are:

- 0 — Disables the transcripting of summary information (default).
- 1 — Enables the transcripting of summary information.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Show cell and layer summary” check box.

Examples

```
prefs_load_showCellLayerSummary 1
```

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_load_useMDPChipLayerNames

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Enables or disables the use of MDP file chip layer names from a layerprops file.

Usage

prefs_load_useMDPChipLayerNames {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the use of MDP file chip layer names from a layerprops file. Valid values are:

0 — Layer names from a layerprops file are used.

1 — Layer names from a layerprops file are not used (default).

Description

This can only be set in the preferences file.

Examples

`prefs_load_useMDPChipLayerNames 1`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_load_useOasisLayerNames

Input for: preferences file (see [preferences File Format](#))

Enables or disables the reading of layer names in a layer property file when loading OASIS files.

Usage

prefs_load_use_OasisLayerNames {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the reading of layer names in a layer property file when loading OASIS files. Valid values are:

- 0 — Layer names in the layer property file are used.
- 1 — OASIS layer names are used (default).

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Prefer layernames from Oasis file” check box. Specifying the “-l” argument when invoking Calibre DESIGNrev overrides this preference and loads the layer names in the specified layerprops file.

Examples

```
prefs_load_useOasisLayerNames 0
```

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_contextCloneMode

Input for: preferences file (see [preferences File Format](#))

Sets the behavior of context cloning.

Usage

prefs_misc_contextCloneMode {0 | 1 | 2}

Arguments

- **0 | 1 | 2**

A required argument used to set the behavior of context cloning. Valid values are:

- 0 — Edit all instances.
- 1 — Ask about cloning (default).
- 2 — Clone cell to create a unique context.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by selecting the desired option from the “Editing cells in context” dropdown list.

Examples

`prefs_misc_contextCloneMode 2`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_misc_disableQualityAgent

Input for: preferences file (see [preferences File Format](#))

Enables or disables the Quality Agent.

Usage

prefs_misc_disableQualityAgent {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the Quality Agent. Valid values are:

0 — Enables the Quality Agent (default).

1 — Disables the Quality Agent.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Disable Quality Agent” check box.

Examples

`prefs_misc_disableQualityAgent 1`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_hiddenLayerDashLine

Input for: preferences file (see [preferences File Format](#))

Enables or disables the use of a dashed line to indicate hidden layers.

Usage

prefs_misc_hiddenLayerDashLine {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the use of a dashed line to indicate hidden layers. Valid values are:

0 — Disables use of a dashed line (default).

1 — Enables use of a dashed line.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Use dash line to indicate hidden layers” check box.

Examples

`prefs_misc_hiddenLayerDashLine 1`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_layersByColorLayout

Input for: preferences file (see [preferences File Format](#))

Enables or disables the background color of the Layers palette following the Layout Viewing area.

Usage

prefs_misc_layersByColorLayout {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the background color of the Layers palette following the background color of the Layout Viewing area. Valid values are:

- 0 — The background color of the Layers palette does not follow the Layout Viewing area.
- 1 — The background color of the Layers palette follows the Layout Viewing area (default).

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Background color follows layout view” check box.

Examples

```
prefs_misc_layersBgColorLayout 0
```

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_layersInViewIndicator

Input for: preferences file (see [preferences File Format](#))

Enables or disables the highlighting of layers currently displayed in the Layout Viewing area.

Usage

prefs_misc_layersInViewIndicator {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the highlighting of layer numbers for layers that are currently displayed in the Layout Viewing area. Valid values are:

- 0 — Layer numbers are not highlighted (default).
- 1 — Layer numbers are highlighted.

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Mark layers with objects in view” check box.

Examples

```
prefs_misc_layersInViewIndicator 1
```

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_layersScanMode

Input for: preferences file (see [preferences File Format](#))

Specifies which scanner (Calibre RVE or internal scanner) to use to scan layer objects.

Usage

prefs_misc_layersScanMode {0 | 1}

Arguments

- **0 | 1**

A required argument used to specify which scanner to use to scan layer objects. Valid values are:

0 — Use Calibre RVE to scan layer objects (default).

1 — Use an internal layer scanner to scan layer objects.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by choosing the “Use Calibre scanner” or “Use internal layer scanner” radio button.

Examples

`prefs_misc_layersScanMode 1`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_misc_promptDeleteBookmark

Input for: preferences file (see [preferences File Format](#))

Enables or disables a confirmation dialog box before deleting a bookmark.

Usage

prefs_misc_promptDeleteBookmark {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables a confirmation dialog box before deleting a bookmark. Valid values are:

- 0 — Prompt is disabled.
- 1 — Prompt is enabled (default).

Description

This preference can also be disabled in the Delete Bookmark dialog box (accessed from the Bookmarks Editor dialog box) by clicking the “Do not prompt when deleting bookmarks” check box. To re-enable the prompt, you must enable (set to 1) this option in the preferences file.

Examples

`prefs_misc_promptDeleteBookmark 1`

Related Topics

[Bookmarks Editor Dialog Box](#)

prefs_misc_promptOnMdplIndexFileUpdate

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Enables or disables prompting before an MDP index file updates.

Usage

prefs_misc_promptOnMdplIndexFileUpdate {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables prompting before an MDP index file updates.

Valid values are:

- 0 — Prompting is disabled.
- 1 — Prompting is enabled (default).

Description

This preference can also be set in Calibre MDPview in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Prompt before MDP index file updates” check box.

Examples

```
prefs_misc_promptOnMdplIndexFileUpdate 0
```

Related Topics

[Calibre MDPview User’s and Reference Manual](#)

prefs_misc_queryOnExit

Input for: preferences file (see [preferences File Format](#))

Enables or disables a confirmation dialog box before exiting the application.

Usage

prefs_misc_queryOnExit {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables a confirmation dialog box before exiting the application. Valid values are:

- 0 — Disables the confirmation dialog box.
- 1 — Enables the confirmation dialog box (default).

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Show confirmation dialog on exit” check box.

Examples

`prefs_misc_queryOnExit 0`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_queryUnsavedChanges

Input for: preferences file (see [preferences File Format](#))

Enables or disables a confirmation dialog box before closing or reloading a layout with unsaved changes.

Usage

prefs_misc_queryUnsavedChanges {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables a confirmation dialog box before closing or reloading a layout with unsaved changes. Valid values are:

- 0 — The confirmation dialog box is disabled.
- 1 — The confirmation dialog box is enabled (default).

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Check for unsaved changes” check box.

Examples

`prefs_misc_queryUnsavedChanges 0`

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_showCellRefCount

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of the total reference count.

Usage

prefs_misc_showCellRefCount {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of the total reference count. Valid values are:

0 — The total reference count is not displayed.

1 — The total reference count is displayed (default).

Description

This preference can also be set in the **Misc** tab of the Preferences dialog box by enabling or disabling the “Show reference count” check box.

Examples

```
pref_misc_showCellRefCount 0
```

Related Topics

[Preferences Dialog Box - Misc Tab](#)

prefs_misc_widgetColor

Input for: preferences file (see [preferences File Format](#))

Sets a color scheme for the GUI appearance.

Usage

prefs_misc_widgetColor {grey | desktop}

Arguments

- **grey | desktop**

A required value used to set a color scheme for the GUI appearance. Valid values are:

grey — The GUI uses a grey (monochrome) color scheme (default).

desktop — The GUI use the desktop color scheme.

Description

This preference can also be set in the **Session** tab of the Preferences dialog box by selecting the “Grey” or “Follow desktop color” radio button.

Examples

`prefs_misc_widgetColor desktop`

Related Topics

[Preferences Dialog Box - Session Tab](#)

prefs_misc_widgetThickness

Input for: preferences file (see [preferences File Format](#))

Sets a style for the GUI appearance.

Usage

prefs_misc_widgetThickness {flat | thick}

Arguments

- **flat | thick**

A required argument used to set a style for the GUI appearance. Valid values are:

flat — The GUI uses a flat style (default).

thick — The GUI use a thick style.

Description

This preference can also be set in the **Session** tab of the Preferences dialog box by selecting the “Flat” or “Thick” radio button.

Examples

`prefs_misc_widgetThickness thick`

Related Topics

[Preferences Dialog Box - Session Tab](#)

prefs_net_extractionLimit

Input for: preferences file (see [preferences File Format](#))

Sets a limit on the area in which net extraction runs.

Usage

prefs_net_extractionLimit {none | visible}

Arguments

- **none | visible**

A required argument used to set a limit on the area in which net extraction runs. Valid values are:

none — Sets no limit on the area (default).

visible — Sets the limit to the visible window.

Description

This preference can also be set in the **Nets** tab of the Preferences dialog box by selecting the “Limit to visible window” check box.

Examples

`prefs_net_extractionLimit visible`

Related Topics

[Preferences Dialog Box - Nets Tab](#)

prefs_net_extractionMode

Input for: preferences file (see [preferences File Format](#))

Sets the net extraction mode to use geometries or specific properties.

Usage

prefs_net_extractionMode {geom | prop}

Arguments

- **geom | prop**

A required argument used to set the net extraction mode to use geometries or specific properties. Valid values are:

geom — Uses geometries and connect rules (default).

prop — Uses specific properties.

Description

This preference can also be set in the **Nets** tab of the Preferences dialog box by selecting the “Use geometries and connect rules” or “Use specific property” radio button.

Use the `prefs_net_propertyName` statement to specify the properties used in net extraction.

Examples

```
prefs_net_extractionMode prop
```

Related Topics

[Preferences Dialog Box - Nets Tab](#)

prefs_net_highlightBase

Input for: preferences file (see [preferences File Format](#))

Defines the base highlight layer number for the net layer.

Usage

prefs_net_highlightBase *value*

Arguments

- ***value***

A required argument that defines the base highlight layer number used for extracted nets.
The specified value must be an integer > 0. When this preference is not specified, the default is 4222.

Description

This preference can also be set in the **Nets** tab of the Preferences dialog box by entering a value in the “Net layer” text box.

Examples

`prefs_net_highlightBase 5000`

Related Topics

[Preferences Dialog Box - Nets Tab](#)

prefs_net_highlightCount

Input for: preferences file (see [preferences File Format](#))

Defines the number of layers used for highlighting extracted nets.

Usage

prefs_net_highlightCount *value*

Arguments

- ***value***

A required argument that defines the number of layers that can be used for highlighting extracted nets. The specified value must be an integer > 0 . When this preference is not specified, the default is 50.

Description

This preference can also be set in the **Nets** tab of the Preferences dialog box by entering a value in the Range text box.

Examples

`prefs_net_highlightCount 75`

Related Topics

[Preferences Dialog Box - Nets Tab](#)

prefs_net_propertyName

Input for: preferences file (see [preferences File Format](#))

Specifies a property for extracting nets.

Usage

prefs_net_propertyName *property*

Arguments

- *property*

A required argument specifying an object property name for extracting nets. When this preference is not specified, the default is NET.

Description

This preference can also be set in the **Nets** tab of the Preferences dialog box by entering a value in the “Use specific property” text box.

`prefs_net_extractionMode` must be set to “prop” for this statement to have an effect.

Examples

```
prefs_net_propertyName NET2
```

Related Topics

[Preferences Dialog Box - Nets Tab](#)

prefs_net_searchDepth

Input for: preferences file (see [preferences File Format](#))

Sets a depth for searching for nets.

Usage

prefs_net_searchDepth {top | all}

Arguments

- **top | all**

A required argument specifying the depth for searching for nets in the hierarchy. Valid values are:

Top only — Searches the top level only (default).

All levels — Searches all levels.

Description

This preference can also be set in the **Nets** tab of the Preferences dialog box by selecting the “Top only” or “All levels” radio button.

Examples

`prefs_net_searchDepth all`

Related Topics

[Preferences Dialog Box - Nets Tab](#)

prefs_opc_mapLayerByName

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre WORKbench

Enables or disables the Map Layer By Name setting.

Usage

prefs_opc_mapLayerByName {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the Map Layer By Name setting. Valid values are:

- 0 — Disables the Map Layer By Name setting (default).
- 1 — Enables the Map Layer By Name setting.

Description

This preference can also be set using the Calibre WORKbench GUI.

Examples

`prefs_opc_mapLayerByName 1`

Related Topics

[Calibre WORKbench Users and Reference Manual](#)

prefs_path_bgnExtn

Input for: preferences file (see [preferences File Format](#))

Sets the beginning line-end extent for a path with a type of 4 (custom).

Usage

prefs_path_bgnExtn *value*

Arguments

- ***value***

A required argument that specifies the beginning line-end extent in dbus. The specified value must be an integer.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by setting the Type to Custom and entering a value in the Begin text box.

Examples

`prefs_path_bgnExtn 2`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

[prefs_path_type](#)

prefs_path_endExtn

Input for: preferences file (see [preferences File Format](#))

Sets the ending line-end extent for a path with a type of 4 (custom).

Usage

prefs_path_endExtn *value*

Arguments

- *value*

A required argument that specifies the ending line-end extent in dbus. The specified value must be an integer.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by setting the Type to Custom and entering a value in the End text box.

Examples

```
prefs_path_endExtn 2
```

Related Topics

[Preferences Dialog Box - Objects Tab](#)

[prefs_path_type](#)

prefs_path_type

Input for: preferences file (see [preferences File Format](#))

Sets the path type.

Usage

prefs_path_type {0 | 1 | 2 | 4}

Arguments

- **0 | 1 | 2 | 4**

A required argument specifying the type of path. Valid values are:

0 — None (default).

1 — Round.

2 — Square.

4 — Custom.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by selecting the desired value in the Type dropdown list.

Examples

`prefs_path_type 4`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_path_width

Input for: preferences file (see [preferences File Format](#))

Sets the path width.

Usage

prefs_path_width *value*

Arguments

- ***value***

A required argument specifying the width of a path. The value must be an integer > 0.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by specifying a value in the Width text box.

Examples

`prefs_path_width 1500`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_property_unitMeasure

Input for: preferences file (see [preferences File Format](#))

Sets the units used to measure object properties.

Usage

prefs_property_unitMeasure {dbu | um}

Arguments

- **dbu | um**

A required argument specifying the units used to measure object distances. Valid values are:

dbu — Database units (default).

um — Microns.

Description

This preference can also be set on any of the tabs in the Object Properties dialog box.

Examples

`prefs_property_unitMeasure um`

Related Topics

[Object Properties Dialog Box](#)

prefs_ruler_color

Input for: preferences file (see [preferences File Format](#))

Sets the ruler color.

Usage

```
prefs_ruler_color {auto | xwin_color_name}
```

Arguments

- **auto | xwin_color_name**

A required argument that specifies the color of the ruler. Valid values are:

auto — Specifies the ruler color contrasts with the layout background color.

xwin_color_name — Specifies a valid xwin_color name or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. The default is white.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by choosing the “Contrasts with layout background” or “Custom” radio button in the Appearance field. If you choose Custom, you can enter an RGB value or color in the text box, or click the color button to display the Choose Ruler Color dialog box.

Examples

```
prefs_ruler_color #00ffff
```

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_direction

Input for: preferences file (see [preferences File Format](#))

Sets the allowed snapping direction used for drawing rulers.

Usage

prefs_ruler_direction {a | m | 45}

Arguments

- **a | m | 45**

A required argument that specifies the snapping direction to use for drawing rulers. Valid values are:

a — Sets no restriction (default).

m — Restricts movement to manhattan (90-degree) angles.

45 — Restricts movement to an integer multiple of 45-degree angles.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by choosing the Arbitrary, Manhattan, or 45-deg radio button.

Examples

`prefs_ruler_direction m`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_format

Input for: preferences file (see [preferences File Format](#))

Specifies the format to use for displaying the ruler length.

Usage

prefs_ruler_format *string*

Arguments

- *string*

A required argument specifying the format to use for displaying the ruler length. The string should be written using the notation of the Tcl format command where:

- % — Introduces the format (required).
- *integer* — Specifies the precision and is entered after a “.” (period). You can specify extra digits of precision based on the precision of the currently viewed layout.
- *alphabetic character* — Specifies the type of conversion to perform. The “f” character specifies to convert the number to a signed decimal string in the form of *xx.yyy*, where the number of y’s is determined by the precision.

When this preference is not specified, the default is %.3f.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by entering a value in the Format text box. Set the format to a precision of %.4f or higher to allow for off-grid (sub-DBU) measurements.

Examples

`prefs_ruler_format %.2f`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_height

Input for: preferences file (see [preferences File Format](#))

Enables or disables the use of larger text for ruler captions.

Usage

prefs_ruler_height {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the use of larger text for ruler captions. Valid values are:

0 — Disables the use of larger text for ruler captions (default).

1 — Enables the use of larger text. Text is displayed in 14 point size.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by enabling or disabling the “Use larger text” check box.

Examples

`prefs_ruler_height 14`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_multiple

Input for: preferences file (see [preferences File Format](#))

Enables or disables multiple rulers.

Usage

prefs_ruler_multiple {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the use of multiple rulers. Valid values are:

- 0 — Disables the use of multiple rulers (default). Only one ruler is allowed at a time.
- 1 — Enables the use of multiple rulers.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by enabling or disabling the “Allow multiple rulers” check box.

Examples

`prefs_ruler_multiple 1`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_showDxDy

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of the dx/dy ruler values.

Usage

prefs_ruler_showDxDy {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of the dx/dy ruler values in the layout viewing area. Valid values are:

0 — Disables the display of the dx/dy values.

1 — Enables the display of the dx/dy values (default).

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by clicking the Show dx/dy check box.

Examples

`prefs_ruler_showDxDy 1`

prefs_ruler_showSnappedEdge

Input for: preferences file (see [preferences File Format](#))

Enables or disables the highlighting of the vertex or edge to which a ruler snaps.

Usage

prefs_ruler_showSnappedEdge {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables highlighting the vertex or edge to which a ruler snaps. Valid values are:

- 0 — Disables highlighting.
- 1 — Enables highlighting (default).

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by clicking the Vertex/Edge radio button and then enabling or disabling the “Show snapped edges” check box.

Examples

`prefs_ruler_showSnappedEdge 1`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_snap

Input for: preferences file (see [preferences File Format](#))

Sets the snapping of rulers.

Usage

prefs_ruler_snap {o | v | g}

Arguments

- **o | v | g**

A required argument that sets the snapping of rulers. Valid values are:

- o** — Snapping is off (default).
- v** — Snap to the vertex or edge.
- g** — Snap to the grid.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by clicking the Off, Grid, or Vertex/Edge radio button.

Examples

prefs_ruler_snap v

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_snapEVProjections

Input for: preferences file (see [preferences File Format](#))

Enables or disables the projection of edges and vertices beyond their endpoints for ruler snapping.

Usage

prefs_ruler_snapEVProjections {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the projection of edges and vertices beyond their endpoints for ruler snapping. Valid values are:

- 0 — Disables the projection of edges and vertices during snapping.
- 1 — Enables the projection of edges and vertices during snapping (default).

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by clicking the Vertex/Edge radio button and then enabling or disabling the “Allow vertex/edge projections” check box.

Examples

```
prefs_ruler_snapEVProjections 0
```

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_snapToNearest

Input for: preferences file (see [preferences File Format](#))

Specifies whether the ruler snaps to the vertex or edge that is nearest the cursor or the ruler.

Usage

prefs_ruler_snapToNearest {cursor | ruler}

Arguments

- **cursor | ruler**

A required argument that specifies whether the ruler snaps to the vertex or edge that is nearest the cursor or the ruler. Valid values are:

cursor — The ruler snaps the vertex or edge that is nearest the cursor.

ruler — The ruler snaps the vertex or edge that is nearest the ruler (default).

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by clicking the Vertex/Edge radio button and then clicking the “Choose nearest vertex/edge to cursor” or “Choose nearest vertex/edge to ruler” radio button.

Examples

`prefs_ruler_snapToNearest cursor`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_snapToReferences

Input for: preferences file (see [preferences File Format](#))

Enables or disables snapping to reference edges and vertices.

Usage

prefs_ruler_snapToReferences {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables snapping to the edges and vertices of references. Valid values are:

- 0 — Disables snapping to references (default).
- 1 — Enables snapping to references.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by clicking the Vertex/Edge radio button and then enabling or disabling the “Recognize references” check box.

Examples

```
prefs_ruler_snapToReferences 1
```

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_splitMode

Input for: preferences file (see [preferences File Format](#))

Enables or disables the splitting of rulers on shape boundaries.

Usage

prefs_ruler_splitMode {none | auto}

Arguments

- **none | auto**

A required argument that enables or disables the splitting of rulers on shape boundaries.
Valid values are:

none — Disables splitting of rulers (default).

auto — Enables splitting of rulers.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by enabling or disabling the “Automatically split rulers” check box.

Examples

`prefs_ruler_splitMode auto`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_tickMarkMode

Input for: preferences file (see [preferences File Format](#))

Specifies whether tick marks are used for rulers.

Usage

prefs_ruler_tickMarkMode {none | zzz}

Arguments

- **none | zzz**

A required argument that specifies whether tick marks are used for rulers. Valid values are:

none — Tick marks are not used.

zzz — Tick marks are used (default).

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by enabling or disabling the “Draw tick marks” check box.

Examples

`prefs_ruler_tickMarkMode none`

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_ruler_unitMeasure

Input for: preferences file (see [preferences File Format](#))

Specifies the units in which to display the ruler length.

Usage

prefs_ruler_unitMeasure {dbu | um | nm}

Arguments

- **dbu | um | nm**

A required argument that specifies the units in which to display the ruler length. Valid values are:

dbu — Database units.

um — Microns (default).

nm — Nanometers.

Description

This preference can also be set in the **Rulers** tab of the Preferences dialog box by selecting the desired value from the Units dropdown list.

Examples

prefs_ruler_unitMeasure dbu

Related Topics

[Preferences Dialog Box - Rulers Tab](#)

prefs_rve_allowUndoRedo

Input for: preferences file (see [preferences File Format](#))

Enables or disables the Undo and Redo functionality in Calibre RVE.

Usage

prefs_rve_allowUndoRedo {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables adding Undo RVE and Redo RVE selections to the Edit menu. Valid values are:

- 0 — Disables the Undo and Redo functionality (default).
- 1 — Enables the Undo and Redo functionality.

Description

This preference can also be set in the RVE/CI Setup dialog box by enabling or disabling the “Enable Undo/Redo” check box.

Examples

`prefs_rve_allowUndoRedo 1`

Related Topics

[RVE/CI Setup Dialog Box](#)

prefs_rve_highlightBase

Input for: preferences file (see [preferences File Format](#))

Sets the base highlight layer number for Calibre RVE.

Usage

prefs_rve_highlightBase *value*

Arguments

- ***value***

A required argument that specifies the base highlight layer number for Calibre RVE. The specified value must be an integer > 0. When this preference is not specified, the default is 4158.

Description

This preference can also be set in the RVE/CI Setup dialog box by entering a value in the “Highlight Base Layer” text box.

Examples

`prefs_rve_highlightBase 5000`

Related Topics

[RVE/CI Setup Dialog Box](#)

prefs_rve_highlightCount

Input for: preferences file (see [preferences File Format](#))

Specifies the maximum number of layers that can be used for multilayer highlighting.

Usage

prefs_rve_highlightCount *value*

Arguments

- ***value***

A required argument that specifies the maximum number of layers that can be used for multilayer highlighting. The specified value must be an integer > 0 . When this preference is not specified, the default is 30.

Description

This preference can also be set in the RVE/CI Setup dialog box by entering a value in the Count text box.

Examples

`prefs_rve_highlightCount 50`

Related Topics

[RVE/CI Setup Dialog Box](#)

prefs_rve_pathEnv

Input for: preferences file (see [preferences File Format](#))

Specifies the path to use for Calibre Interactive and Calibre RVE.

Usage

prefs_rve_pathEnv {MGC_HOME | CALIBRE_HOME | *user_specified*}

Arguments

- **MGC_HOME | CALIBRE_HOME | *user_specified***

A required argument that specifies the path to use for Calibre Interactive and Calibre RVE.
Valid values are:

MGC_HOME — The path is defined by the MGC_HOME variable (default).

CALIBRE_HOME — The path is defined by the CALIBRE_HOME variable.

user_specified — The path is defined by the specified value.

Description

This preference can also be set in the RVE/CI Setup dialog box by selecting a value from the dropdown list in the RVE field. If you choose User Specified, you must specify a path to the Calibre Interactive and Calibre RVE software.

Examples

`prefs_rve_pathEnv CALIBRE_HOME`

Related Topics

[RVE/CI Setup Dialog Box](#)

prefs_save_fixPolygons

Input for: preferences file (see [preferences File Format](#))

Enables or disables fixing self-intersecting polygons when exporting a layout.

Usage

prefs_save_fixPolygons {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the fixing of self-intersecting polygons when exporting a layout. Valid values are:

0 — Do not fix self-intersecting polygons (default).

1 — Fix self-intersecting polygons by merging or splitting polygons.

Description

This preference can also be set in the Export Layout dialog box by enabling or disabling the “Fix self-intersecting polygons” check box.

Examples

```
prefs_save_fixPolygons 1
```

Related Topics

[Export Layout Dialog Box](#)

prefs_save_keepEmptyCells

Input for: preferences file (see [preferences File Format](#))

Specifies how to handle empty cells and references when exporting a layout.

Usage

prefs_save_keepEmptyCells {0 | 1 | 2}

Arguments

- **0 | 1 | 2**

A required argument that specifies how to handle empty cells and references when exporting a layout. Valid values are:

- 0 — Do not write empty cells, but write their references.
- 1 — Write all cells and references (default).
- 2 — Do not write empty cells or their references.

Description

This preference can also be set in the Export Layout dialog box by selecting the “Write all cells and references”, “Do not write empty cells, but write their references”, or “Do not write empty cells or their references” radio button.

Examples

`prefs_save_keepEmptyCells 0`

Related Topics

[Export Layout Dialog Box](#)

prefs_save_maxPathVertices

Input for: preferences file (see [preferences File Format](#))

Specifies a limit for the maximum number of vertices for a path when exporting a layout.

Usage

prefs_save_maxPathVertices *value*

Arguments

- ***value***

A required argument that specifies the maximum number of vertices for a path when exporting a layout. The range for GDS files is 2 to 8191 and the range for OASIS files is > 2. Note the Calibre reader is limited to 1024, which is the default.

Description

This preference can also be set in the Export Layout dialog box by specifying a value in the Path text box.

Examples

`prefs_save_maxPathVertices 256`

Related Topics

[Export Layout Dialog Box](#)

prefs_save_maxPolygonVertices

Input for: preferences file (see [preferences File Format](#))

Specifies a limit for the maximum number of vertices for a polygon when exporting a layout.

Usage

prefs_save_maxPolygonVertices *value*

Arguments

- ***value***

A required argument that specifies the maximum number of vertices for a polygon when exporting a layout. The range for GDS files is 3 to 8191 and the range for OASIS files is > 3. Note the Calibre reader is limited to 8192. The default is 8191.

Description

This preference can also be set in the Export Layout dialog box by specifying a value in the Polygon text box.

Examples

`prefs_save_maxPolygonVertices 1024`

Related Topics

[Export Layout Dialog Box](#)

prefs_text_bboxHandling

Input for: preferences file (see [preferences File Format](#))

Specifies the bounding box to use for text relative to the cell extent.

Usage

```
prefs_text_bboxHandling {origin | extent}
```

Arguments

- **origin** | **extent**

A required argument that specifies the type of bounding box to use for text relative to the cell extent. Valid values are:

- origin — The bounding box is the lower-left and upper-right coordinates of the text (default). The text origin is added to the cell extent.
- extent — The bounding box is determined mainly by the height of the text. The text width is calculated using the character length multiplied by a fixed ratio of the height. The ratio is provided by the font geometry of the application. Characters with descenders (for example, g) can cause the lower-left coordinate to be slightly lower than the origin of the text. For rotated or aligned text, the extent is calculated taking these attributes into account, The text extent is added to the cell extent.

Description

This preference can also be set in the **Session** tab of the Preferences dialog box by selecting the “Origin (origin only)” or “Extent (absolute contribution)” radio button.

Examples

```
prefs_text_bboxHandling extent
```

Related Topics

[Preferences Dialog Box - Session Tab](#)

prefs_text_defaultColor

Input for: preferences file (see [preferences File Format](#))

Sets the default color used for text.

Usage

prefs_text_defaultColor *value*

Arguments

- ***value***

A required argument that specifies the default color used for text. You must specify a valid xwin_color name or a Hex color code (for example, #ff0000). Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is to use the current layer outline color.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by clicking the “Auto” or “Custom” radio button in the Text field and entering a Hex color code in the text box. You can optionally click the color button to display the Choose Text Color dialog box.

Examples

`prefs_text_defaultColor #ff00ff`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_text_defaultHeight

Input for: preferences file (see [preferences File Format](#))

Sets the default height for scaled text.

Usage

prefs_text_defaultHeight *value*

Arguments

- ***value***

A required argument that specifies the default height for scaled text. The specified value must be a floating point number. When this preference is not specified, the default is 1.0.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by clicking the “Scaled” radio button and entering a value in the text box.

The units of the default height are set by [prefs_text_defaultHeightUnits](#).

Examples

`prefs_text_defaultHeight 2`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

[prefs_text_defaultHeightUnits](#)

prefs_text_defaultHeightUnits

Input for: preferences file (see [preferences File Format](#))

Sets the units used for scaled text.

Usage

prefs_text_defaultHeightUnits {dbu | um | uu}

Arguments

- **dbu | um | uu**

A required argument used to specify the units used for scaled text. Valid values are:

dbu — Specifies database units.

um — Specifies microns.

uu — Specifies user units (default).

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by clicking the “Scaled” radio button and choosing a value from the dropdown list.

This preference specifies the units of the default height value set by `prefs_text_defaultHeight`.

Examples

`prefs_text_defaultHeightUnits dbu`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

[prefs_text_defaultHeight](#)

prefs_text_drawDefaultColor

Input for: preferences file (see [preferences File Format](#))

Toggles between using the current layer outline color or a custom color for scaled text.

Usage

prefs_text_drawDefaultColor {0 | 1}

Arguments

- **0 | 1**

A required argument that specifies either the use of the current layer outline color or a custom color for scaled text. Valid values are:

- 0 — Use the current layer outline color (default).
- 1 — Use the currently selected custom color.

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by clicking the “Auto (layer outline)” or “Custom” radio button in the Text field.

Examples

```
prefs_text_drawDefaultColor 1
```

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_text_drawScaled

Input for: preferences file (see [preferences File Format](#))

Toggles between drawing scaled text or fitted height text.

Usage

prefs_text_drawScaled {0 | 1}

Arguments

- **0 | 1**

A required argument that specifies to draw fixed or scaled height text. Valid values are:

0 — Draw fixed (no text attributes) height text.

1 — Draw scaled height text (default).

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by clicking the “Fixed (no text attributes)” or “Scaled” radio button in the Text field.

Examples

`prefs_text_drawScaled 0`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_text_isoText

Input for: preferences file (see [preferences File Format](#))

Toggles between overriding the text orientation and honoring the specified text orientation.

Usage

prefs_text_isoText {0 | 1}

Arguments

- **0 | 1**

A required argument that specifies whether to honor or override the text orientation. Valid values are:

- 0 — Honors the specified text orientation.
- 1 — Overrides the text orientation for readability (default).

Description

This preference can also be set in the **Objects** tab of the Preferences dialog box by clicking the “Override text orientation for readability” or “Honor specified text orientation” radio button in the Text field.

Examples

`prefs_text_isoText 0`

Related Topics

[Preferences Dialog Box - Objects Tab](#)

prefs_text_show

Input for: preferences file (see [preferences File Format](#))

Controls the display of text labels.

Usage

prefs_text_show {0 | 1 | 2}

Arguments

- **0 | 1 | 2**

A required argument used to control the display of text labels. Valid values are:

- 0 — Hide all text.
- 1 — Show all text (default).
- 2 — Hide lower level text and show only top level text.

Description

This preference can also be set by choosing the **View > Hide Text** check box to hide all text or choosing the **View > Hide Lower Level Text** check box to show only top level text. All text is shown when these check boxes are disabled.

Examples

`prefs_text_show 2`

Related Topics

[View Menu](#)

prefs_view_bg

Input for: preferences file (see [preferences File Format](#))

Specifies the background color for the layout viewing area.

Usage

prefs_view_bg *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the background color of the layout viewing area. You must specify a valid *xwin_color* name or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is black (#000000).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by entering a value in the “Layout view background” text box. You can optionally click the color button to display the Choose Layout Background Color dialog box.

Examples

prefs_view_bg white

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_cellnamescaled

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of reference names with scaled text.

Usage

```
prefs_view_cellnamescaled {0 | 1}
```

Arguments

- **0 | 1**

A required argument that enables or disables the display of reference names with scaled text. Valid values are:

- 0 — Disables the display of reference names with scaled text (default).
- 1 — Enables the display of reference names with scaled text. Text is scaled to the size set in the **Objects** tab of the Preferences dialog box.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by enabling or disabling the “Draw reference names with scaled text” check box.

Examples

```
prefs_view_cellnamescaled 1
```

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_cellorientmarker

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of a reference orientation marker in the lower left corner of a reference to visually indicate mirroring and rotation.

Usage

prefs_view_cellorientmarker {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of a marker in the lower left corner of a reference to visually indicate mirroring and rotation. Valid values are:

- 0 — Disables the display of reference orientation markers.
- 1 — Enables the display of reference orientation markers (default).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by enabling or disabling the “Draw reference orientation markers” check box.

Examples

```
prefs_view_cellorientmarker 0
```

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_celloutline

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of cell outlines.

Usage

prefs_view_celloutline {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of cell outlines. Valid values are:

- 0 — Disables the display of cell outlines.
- 1 — Enables the display of cell outlines (default).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by enabling or disabling the “Draw reference outlines” check box.

Examples

`prefs_view_celloutline 0`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_clipColor

Input for: preferences file (see [preferences File Format](#))

Specifies the color of the incremental loading background.

Usage

prefs_view_clipColor *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the color of the incremental loading background. You must specify a valid *xwin_color* name or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is gray40 (#666666).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by entering a value in the “Incremental load background” text box. You can optionally click the color button to display the Choose Incremental Load Background Color dialog box.

Examples

`prefs_view_clipColor #aaaaaa`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_drawTopCellBox

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of the top cell bounding box.

Usage

prefs_view_drawTopCellBox {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of the top cell bounding box. Valid values are:

- 0 — Disables the display of the top cell bounding box (default).
- 1 — Enables the display of the top cell bounding box.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by enabling or disabling the “Draw top cell bounding box” check box.

Examples

`prefs_view_drawTopCellBbox 1`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_drawTopDown

Input for: preferences file (see [preferences File Format](#))

Specifies whether to draw layers from the top down or bottom up (default).

Usage

```
prefs_view_drawTopDown {0 | 1}
```

Arguments

- **0 | 1**

A required argument that specifies the draw order of layers. Valid values are:

0 — Layers are drawn from the bottom up (default).

1 — Layers are drawn from the top down.

Description

This can only be set in the preferences file.

Examples

```
prefs_view_drawTopDown 1
```

Related Topics

[layerprops File Format](#)

prefs_view_endDepth

Input for: preferences file (see [preferences File Format](#))

Specifies the initial hierarchy depth shown when first opening a layout.

Usage

prefs_view_endDepth *value*

Arguments

- ***value***

A required argument that specifies the initial hierarchy depth that is shown when first opening a layout. The specified value must be an integer ≥ 0 . When this preference is not specified, the default is 0.

Description

This preference can also be set in the **Session** tab of the Preferences dialog box by clicking the “Hierarchy depth” arrows to increase or decrease the depth value.

Examples

`prefs_view_endDepth 3`

Related Topics

[Preferences Dialog Box - Session Tab](#)

prefs_view_fillpolygons

Input for: preferences file (see [preferences File Format](#))

Enables or disables using layer patterns for the polygon fill.

Usage

prefs_view_fillpolygons {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the use of layer patterns for the polygon fill.
Valid values are:

- 0 — Disables the use of layer patterns for the polygon fill.
- 1 — Enables the use of layer patterns for the polygon (default).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by enabling or disabling the “Fill polygons with layer patterns” check box.

Examples

`prefs_view_fillpolygons 0`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_findObjClipColor

Input for: preferences file (see [preferences File Format](#))

Specifies the highlight color used for clips and finding objects.

Usage

prefs_view_findObjClipColor *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the highlight color used for clips and for finding objects. You must specify a valid *xwin_color name* or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is yellow (#ffff00).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by entering a value in the “Find object/clip highlights” text box. You can optionally click the color button to display the Choose Object/Clip Highlight Color dialog box.

Examples

`prefs_view_findObjClipColor #ff0000`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_hideLayersOnLoad

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of all layers when first opening a layout.

Usage

prefs_view_hideLayersOnLoad {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of all layers when first opening a layout. Valid values are:

- 0 — Enables the display of all layers (default).
- 1 — Disables the display of all layers. This allows you to quickly zoom to a region of interest and then enable the display of the layers of interest.

Description

This preference can also be set in the **Session** tab of the Preferences dialog box by enabling or disabling the “Hide all layers” check box.

Examples

`prefs_view_hideLayersOnLoad 1`

Related Topics

[Preferences Dialog Box - Session Tab](#)

prefs_view_layerColorDrawMode

Input for: preferences file (see [preferences File Format](#))

Specifies the display of layer colors.

Usage

```
prefs_view_layerColorDrawMode {overwrite | blend}
```

Arguments

- **overwrite | blend**

A required argument used to specify the display of layer colors. Valid values are:

overwrite — The color of objects on the highest level overwrites object colors on lower levels (default).

blend — The color of objects on all overlapping layers are blended.

Description

This preference can also be set by choosing the **Layer > Overwrite Colors** check box to overwrite layer colors or choosing the **Layer > Blend Colors** check box to blend layer colors.

Examples

```
prefs_view_layerColorDrawMode blend
```

Related Topics

[Layer Menu](#)

prefs_view_markerOrgMode

Input for: preferences file (see [preferences File Format](#))

Specifies the type of marker drawn at the top cell's origin.

Usage

```
prefs_view_markerOrgMode {None | Square | Cross | Crosshair}
```

Arguments

- **None | Square | Cross | Crosshair**

A required argument specifying the type of marker drawn at the origin of the top cell. Valid values are:

None — No marker is drawn (default).

Square — A square marker is drawn.

Cross — A cross is drawn.

Crosshair — A crosshair is drawn.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by selecting the desired option from the “Cell origin marker” dropdown list.

Examples

```
prefs_view_markerOrgMode Square
```

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_mdpColorExtentBy

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Specifies whether to draw MDP extents in layer colors or chip colors.

Usage

prefs_view_mdpColorExtentBy {ref | chip}

Arguments

- **ref | chip**

A required argument that specifies whether to draw MDP extents in layer colors or chip colors. Valid values are:

ref — Draw MDP extents in layer colors (default).

chip — Draw MDP extents in chip colors.

Description

This preference can also be set in Calibre MDPview by choosing the **View > MDP Mode > Color Extent By Ref** or **View > MDP Mode > Color Extent By Chip** radio button.

Examples

`prefs_view_mdpColorExtentBy chip`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_view_mdpCrossMode

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Enables or disables the display of a cross at the center of polygons that are otherwise too small to see at high levels.

Usage

prefs_view_mdpCrossMode {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of a cross at the center of polygons that are otherwise too small to see at high levels. Valid values are:

0 — Disables the display of a cross (default).

1 — Enables the display of a cross.

Description

This preference can also be set in Calibre MDPview by enabling or disabling the **View > MDP Mode > Cross** check box.

Examples

`prefs_view_mdpCrossMode 1`

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_view_mdpMode

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Specifies the groups of pattern data you see in Calibre MDPview.

Usage

```
prefs_view_mdpMode {Extent | All | All+Boundary | Boundary | Style4 | Style5 | All+Extent}
```

Arguments

- **Extent | All | All+Boundary | Boundary | Style4 | Style5 | All+Extent**

A required argument used to specify the groups of pattern data you see in Calibre MDPview. Valid values are:

Extent — Layout extent only.

All — All geometry data (default).

All+Boundary — All geometry and hierarchy elements. The hierarchy elements vary depending on the fracture format.

Boundary — Hierarchy elements only.

Style4 — Individual geometry only (for MEBES format) or LB (for JEOL format).

Style5 — Arrayed data (MEBES only).

All+Extent — All geometry data and the layout extent.

Description

This preference can also be set in Calibre MDPview in the **Session** tab of the Preferences dialog box by selecting the desired option from the “MDP view mode” dropdown list.

Examples

```
prefs_view_mdpMode All+Boundary
```

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_view_minPixels

Input for: preferences file (see [preferences File Format](#))

Specifies the minimum number of height and width pixels.

Usage

`prefs_view_minPixels value`

Arguments

- ***value***

A required argument that specifies the minimum number of height and width pixels. The specified value must be a positive integer. When this preference is not specified, the default is 2.

Description

This can only be set in the preferences file.

Examples

`prefs_view_minPixels 4`

prefs_view_missingCellMarker

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of missing cell cross markers.

Usage

prefs_view_missingCellMarker {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of missing cell cross markers.
Valid values are:

- 0 — Disables the display of missing cell cross markers (default).
- 1 — Enables the display of missing cell cross markers.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by enabling or disabling the “Draw missing cell cross marker” check box.

Examples

`prefs_view_missingCellMarker 1`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_missingChipMarkers

Input for: preferences file (see [preferences File Format](#))

For use with: Calibre MDPview

Enables or disables the display of markers for any missing chip definition files.

Usage

prefs_view_missingChipMarkers {0 | 1}

Arguments

- **0 | 1**

A required argument that enables or disables the display of markers for any missing chip definition files. Valid values are:

- 0 — Disables the display of markers (default).
- 1 — Enables the display of markers.

Description

This preference can also be set in Calibre MDPview by enabling or disabling the **View > MDP Mode > Missing Chip Markers** check box.

Note

 This preference replaces the deprecated prefs_view_mdpMissingChipMarkers preference.

Examples

```
prefs_view_missingChipMarkers 1
```

Related Topics

[Calibre MDPview User's and Reference Manual](#)

prefs_view_outlineRefColor

Input for: preferences file (see [preferences File Format](#))

Specifies the color used for reference outlines.

Usage

prefs_view_outlineRefColor *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the color used for reference outlines. You must specify a valid xwin_color name or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is white (#ffffff).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by entering a value in the “Reference outlines” text box. You can optionally click the color button to display the Choose Reference Outline Drawing Color dialog box.

Examples

`prefs_view_outlineRefColor #ff0000`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_panpercent

Input for: preferences file (see [preferences File Format](#))

Specifies the percentage of view to move when panning.

Usage

prefs_view_panpercent *value*

Arguments

- ***value***

A required argument specifying the percentage of view to move when panning. The specified value must be an integer > 0. When this preference is not specified, the default is 50.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by using the up or down arrow to select the desired value in the “Arrow key pan percent” field.

Examples

`prefs_view_panpercent 25`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_refDetailSize

Input for: preferences file (see [preferences File Format](#))

Specifies the height and width of cell reference pixels.

Usage

`prefs_view_refDetailSize value`

Arguments

- ***value***

A required integer that specifies the height and width of cell reference pixels. The specified value must be an integer > 0. When this preference is not specified, the default is 10.

Description

This can only be set in the preferences file.

Examples

```
prefs_view_refDetailSize 15
```

prefs_view_refOriginMarker

Input for: preferences file (see [preferences File Format](#))

Specifies the type of marker to draw at the selected reference's origin.

Usage

prefs_view_refOriginMarker {none | square | cross}

Arguments

- **none | square | cross**

A required argument that specifies the type of marker to draw at the selected reference's origin. Valid values are:

- none — No marker (default).
- square — Draw a square.
- cross — Draw a cross.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by selecting the desired option from the “Reference origin markers” dropdown list.

Examples

`prefs_view_refOriginMarker Square`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_repPixels

Input for: preferences file (see [preferences File Format](#))

Enables or disables the display of 3x3 pixel boxes in place of single pixel objects for improved visibility.

Usage

prefs_view_repPixels {1 | 3}

Arguments

- **1 | 3**

A required argument that enables or disables the display of 3x3 pixel boxes in place of single pixel objects for improved visibility. Valid values are:

- 1 — Displays single pixel objects as is (default).
- 3 — Displays 3x3 pixel boxes in place of single pixel objects.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by enabling or disabling the “Enhance single pixel object visibility” check box.

Examples

`prefs_view_repPixels 3`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_selectOtherColor

Input for: preferences file (see [preferences File Format](#))

Specifies the highlight color used for edge, vertex, and text selections.

Usage

prefs_view_selectOtherColor *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the highlight color used for edge, vertex and text selections. This includes the edge or vertex of a selected polygon or the origin of a text object. You must specify a valid *xwin_color name* or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is yellow (#ffff00).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by entering a value in the “Edge/vertex/text selections” text box. You can optionally click the color button to display the Choose Edge/Vertex/Text Selection Highlight Color dialog box.

Examples

`prefs_view_selectOtherColor #00ff00`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_selectRefPolyColor

Input for: preferences file (see [preferences File Format](#))

Specifies the highlight color used for reference and polygon selections.

Usage

prefs_view_selectRefPolyColor *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the highlight color used for reference and polygon selections. You must specify a valid *xwin_color* name or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is white (#ffffff).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by entering a value in the “Reference/polygon selections” text box. You can optionally click the color button to display the Choose Reference/Polygon Selection Highlight Color dialog box.

Examples

`prefs_view_selectRefPolyColor #00ffff`

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_smallPanPercent

Input for: preferences file (see [preferences File Format](#))

Specifies the percentage of view to move when incrementally panning.

Usage

`prefs_view_smallPanPercent value`

Arguments

- ***value***

A required argument specifying the percentage of view to move when incrementally panning. The specified value must be an integer > 0. When this preference is not specified, the default is 5.

Description

This preference can also be set in the **View** tab of the Preferences dialog box by using the up or down arrow to select the desired value in the “Ctrl-arrow key pan percent” field.

Examples

```
prefs_view_smallPanPercent 10
```

Related Topics

[Preferences Dialog Box - View Tab](#)

prefs_view_smallRefColor

Input for: preferences file (see [preferences File Format](#))

Specifies the color used for small reference outlines.

Usage

prefs_view_smallRefColor *xwin_color_name*

Arguments

- ***xwin_color_name***

A required argument that specifies the color used for small reference outlines. You must specify a valid xwin_color name or a Hex color code. Refer to “[Layout Viewer Color Reference](#)” on page 593 for a list of valid names. When this preference is not specified, the default is gray50 (#7f7f7f).

Description

This preference can also be set in the **View** tab of the Preferences dialog box by entering a value in the “Small Reference outlines” text box. You can optionally click the color button to display the Choose Reference Outline Drawing Color dialog box.

Examples

`prefs_view_smallRefColor #9f9f9f`

Related Topics

[Preferences Dialog Box - View Tab](#)

readerprefs File Format

Tools: Calibre DESIGNrev, Calibre LITHOview, Calibre MDPview, Calibre WORKbench

When a Calibre layout viewer loads a layout, it can encounter errors or exceptions with the layout. You can control how the layout viewer responds to these situations by specifying layout exceptions in the *readerprefs* file.

A default *readerprefs* file is automatically placed in your layout viewer configuration directory the first time you invoke the viewer. The layout viewer reads this file when you load a layout file, and processes the exception types and severities. You can use an ASCII text editor to change the exception settings in the *readerprefs* file.

High Capacity (HC) Mode Support for Exception Severities

High Capacity (HC) mode is configured to support the behavior of most layout exception severity settings. When opening a layout in HC mode, the transcript identifies the exception severities defined in the *readerprefs* file. For example:

```
LOADING LAYOUT FILE WITH READER PREFERENCES:  
CIRCLE 3  
TEXTSTRING_ASTRING 1
```

The exception severity reference pages in this section identify any differences in behavior when using HC mode. The behavior cannot be overridden when using HC mode.

Refer to “[High Capacity Mode](#)” on page 25 for more information on HC mode.

Format

A *readerprefs* file must conform to the following formatting and syntax rules:

- Must be ASCII
- Must use the syntax:
exceptionSeverity exception_name severity_value
- Comments must be created by beginning the line with a pound sign (#)

For example:

```
# Reader Preferences File  
exceptionSeverity TEXTSTRING_ASTRING 1
```

Parameters

The following table provides a complete list of exceptions used by Calibre DESIGNrev along with a brief description.

Table A-14. Exceptions Detected While Reading Layouts

Keyword	Description
Arrays	
ARRAY_PITCH_ZERO	Controls zero row or column spacing in placement arrays in GDSII or OASIS input layout databases.
AREFs	
AREF_ANGLED	Controls handling of AREF rotation that is not a multiple of 90 degrees.
AREF_PLACEMENT	Controls handling when a GDSII AREF is encountered.
Cells	
DUPLICATE_CELL	A cell structure has been encountered multiple times in the input layout database.
MISSING_REFERENCE	A placement points to a cell that is not defined in the database.
Miscellaneous geometry	
CIRCLE	An OASIS circle has been encountered.
CIRCLE_RADIUS_ZERO	An OASIS circle has zero radius.
CTRAPEZOID_AREA_ZERO	A CTRAPEZOID has zero area.
CTRAPEZOID_DEGENERATE	A CTRAPEZOID record is degenerate (that is, cannot be formed into a polygon as specified).
TRAPEZOID_AREA_ZERO	A TRAPEZOID has zero area.
TRAPEZOID_DEGENERATE	A TRAPEZOID record is degenerate (that is, cannot be formed into a polygon as specified).
Paths	
PATH_ACUTE	A path has a centerline with one or more acute angles.
PATH_ANGLLED	A path has a centerline with one or more angled segments.
PATH_CIRCULAR	A type-1 path (circular endcap) is present.
PATH_COINCIDENT	A path has no length.
PATH_DEGENERATE	A path has 0 or 1 vertices.
PATH_ENDSEGMENT_SHORT	The endsegment of a type-0 GDSII path or flush-ended OASIS path is less than 1/2 the path width.
PATH_EXTENSION	A type-4 GDSII path or variable-end OASIS path cannot be extended.

Table A-14. Exceptions Detected While Reading Layouts (cont.)

Keyword	Description
PATH_NEGATIVE	A type-4 GDSII path or variable-end OASIS path has a negative start or end extension.
PATH_NONORIENTABLE	A path cannot be oriented after expansion.
PATH_NONSIMPLE	A path overlaps itself after expansion.
PATH_SPIKE	Consecutive path segments retrace the same length.
PATH_VARIABLE	A GDSII path of type 4 or OASIS path with a non-flush or non-square extension is encountered.
PATH_WIDTH_ABSOLUTE	A GDSII path has absolute width specified in the database.
PATH_WIDTH_ODD	A path has an odd-valued width. The half-width value is rounded when the path is expanded to a polygon.
PATH_WIDTH_ZERO	A path has zero width.
Placements	
PLACEMENT_ANGLE_ABSOLUTE	A GDSII placement has an absolute rotation angle.
PLACEMENT_MAGNIFICATION_A_BSOLUTE	A GDSII placement has an absolute magnification.
PLACEMENT_MAGNIFICATION_N_ONPOSITIVE	A placement has a non-positive magnification.
PLACEMENT_MAGNIFIED	A GDSII or OASIS placement has a non-unit magnification.
Polygons	
POLYGON_ACUTE	An acute angle exists in a GDSII boundary or OASIS polygon.
POLYGON_AREA_ZERO	A zero-area boundary exists in a GDSII-type database or a zero-area polygon exists in an OASIS database.
POLYGON_DEGENERATE	A polygon has 0 or 1 vertices.
POLYGON_IS_RECTANGLE	A two-point GDSII BOUNDARY is encountered.
POLYGON_NONORIENTABLE	A polygon cannot be oriented.
POLYGON_NONSIMPLE	A polygon overlaps itself.
POLYGON_NOT_CLOSED	Controls how Calibre interprets open GDSII BOUNDARY parameters.
POLYGON_SPIKE	Applies to spikes in boundaries read from GDSII-type input layout databases or polygons read from OASIS-type input layout databases.

Table A-14. Exceptions Detected While Reading Layouts (cont.)

Keyword	Description
RECTANGLE_SIDE_ZERO	A rectangle (including a two-point GDSII polygon) has zero width or length.
Records	
BOX_RECORD	An error occurred in handling a BOX record for the input layout database.
CELLNAME_NSTRING	The string in a CELLNAME, CELL, or PLACEMENT record is not an OASIS n-string.
NODE_RECORD	An error occurred in handling a NODE record for the input layout database.
PROPNAME_NSTRING	The string in a PROPNAME or PROPERTY record is not an OASIS n-string.
TEXTSTRING_ASTRING	The string in a TEXTSTRING or TEXT record is not an OASIS a-string.
XELEMENT_UNSUPPORTED	An XELEMENT record (not supported) has been encountered.
XGEOMETRY_UNSUPPORTED	An XGEOMETRY record (not supported) has been encountered.
XNAME_UNSUPPORTED	An XNAME record (not supported) has been encountered.
Text	
TEXT_BIG	A GDSII text object has more than one vertex.
TEXT_DEGENERATE	A GDSII text object has zero vertices.

Examples

```
# Reader Preferences File
exceptionSeverity TEXTSTRING_ASTRING 0
```

AREF_ANGLED

Input for: readerprefs file (see [readerprefs File Format](#))

Controls handling of AREF rotation that is not a multiple of 90 degrees.

Usage

AREF_ANGLED {0 | 1 | 2}

Arguments

- **0**
Quietly process the AREF placement as normal (default).
- **1**
Warn and process the AREF placement as normal.
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity AREF_ANGLED 2
```

AREF_PLACEMENT

Input for: readerprefs file (see [readerprefs File Format](#))

Controls handling when a GDSII AREF is encountered.

Usage

AREF_PLACEMENT {0 | 1 | 2}

Arguments

- **0**
Quietly process the AREF placement as normal. (default)
- **1**
Warn and process the placement as normal.
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity AREF_PLACEMENT 2
```

ARRAY_PITCH_ZERO

Input for: readerprefs file (see [readerprefs File Format](#))

Controls zero row or column spacing in placement arrays in GDSII or OASIS input layout databases. For GDSII, this occurs when an AREF placement has its x-dimension (or y-dimension) > 1 but the spacing in the x-direction (or y-direction) is zero. For OASIS, this occurs when a placement record has a type 1 or 2 repetition and the x-direction spacing is zero, or a placement record has a type 1 or 3 repetition and the y-direction spacing is zero.

Usage

ARRAY_PITCH_ZERO {0 | 1 | 2}

Arguments

- **0**
Quietly process the placement as normal (default).
- **1**
Warn and process the placement as normal.
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity ARRAY_PITCH_ZERO 2
```

BOX_RECORD

Input for: readerprefs file (see [readerprefs File Format](#))

An error occurred in handling a BOX record for the input layout database.

Usage

BOX_RECORD {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Quietly ignore the record (default).
- **1**
Warn and ignore the record.
- **2**
Quietly process the record.
- **3**
Warn and process the record.
- **4**
Fatal error.

Examples

```
# Reader Preferences File
exceptionSeverity BOX_RECORD 2
```

CELLNAME_NSTRING

Input for: readerprefs file (see [readerprefs File Format](#))

The string in a CELLNAME, CELL, or PLACEMENT record is not an OASIS n-string.

Usage

CELLNAME_NSTRING {0 | 1 | 2}

Note

 In HC mode, blank characters are replaced with an underscore (_) to produce a valid NSTRING for values 0 and 1.

Arguments

- **0**
Quietly allow the string to contain any ASCII character except zero.
- **1**
Warn and allow the string to contain any ASCII character except zero.
- **2**
Error. (default)

Examples

```
# Reader Preferences File
exceptionSeverity CELLNAME_NSTRING 1
```

CIRCLE

Input for: readerprefs file (see [readerprefs File Format](#))

An OASIS circle has been encountered.

Usage

CIRCLE {0 | 1 | 2 | 3 | 4}

Note

 In HC mode, the circle is quietly read and rendered as a 64-point polygon for values 3 and 4.

Arguments

- **0**
Ignore the circle.
- **1**
Warn and ignore the circle (default).
- **2**
Error.
- **3**
Quietly replace the circle with a 64-vertex polygon.
- **4**
Warn and replace the circle with a 64-vertex polygon.

Examples

```
# Reader Preferences File
exceptionSeverity CIRCLE 2
```

CIRCLE_RADIUS_ZERO

Input for: readerprefs file (see [readerprefs File Format](#))

An OASIS circle has zero radius.

Usage

CIRCLE_RADIUS_ZERO {0 | 1 | 2}

Arguments

- **0**
Ignore the circle.
- **1**
Warn and ignore the circle (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity CIRCLE_RADIUS_ZERO 2
```

CTRAPEZOID_AREA_ZERO

Input for: readerprefs file (see [readerprefs File Format](#))

A CTRAPEZOID has zero area.

Usage

CTRAPEZOID_AREA_ZERO {0 | 1 | 2}

Arguments

- **0**
Ignore the trapezoid.
- **1**
Warn and ignore the trapezoid (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity CTRAPEZOID_AREA_ZERO 2
```

CTRAPEZOID_DEGENERATE

Input for: readerprefs file (see [readerprefs File Format](#))

A CTRAPEZOID record is degenerate (that is, cannot be formed into a polygon as specified).

Usage

ARRAY_PITCH_ZERO {0 | 1 | 2}

Arguments

- **0**
Ignore the trapezoid.
- **1**
Warn and ignore the trapezoid.
- **2**
Error (default).

Examples

```
# Reader Preferences File
exceptionSeverity CTRAPEZOID_DEGENERATE 1
```

DUPLICATE_CELL

Input for: readerprefs file (see [readerprefs File Format](#))

A cell structure has been encountered multiple times in the input layout database.

Usage

DUPLICATE_CELL {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Quietly ignore subsequent definitions.
- **1**
Warn and ignore subsequent definitions.
- **2**
Error (default).
- **3**
Quietly combine multiple definitions of the same cell.
- **4**
Warn and combine multiple definitions of the same cell.

Examples

```
# Reader Preferences File
exceptionSeverity DUPLICATE_CELL 1
```

MISSING_REFERENCE

Input for: readerprefs file (see [readerprefs File Format](#))

A placement points to a cell that is not defined in the database.

Usage

MISSING_REFERENCE {0 | 1 | 2}

Arguments

- **0**
Quietly generate an empty cell definition for the condition.
- **1**
Warn and generate an empty cell definition for the condition (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity MISSING_REFERENCE 2
```

NODE_RECORD

Input for: readerprefs file (see [readerprefs File Format](#))

An error occurred in handling a NODE record for the input layout database.

Usage

NODE_RECORD {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Quietly ignore the record (default).
- **1**
Warn and ignore the record.
- **2**
Quietly process the record.
- **3**
Warn and process the record.
- **4**
Fatal error.

Examples

```
# Reader Preferences File
exceptionSeverity NODE_RECORD 1
```

PATH_ACUTE

Input for: readerprefs file (see [readerprefs File Format](#))

A path has a centerline with one or more acute angles.

Usage

PATH_ACUTE {0 | 1 | 2 | 3 | 4 | 5 | 6}

Arguments

- **0**
Quietly ignore the path.
- **1**
Quietly process the path (default).
- **2**
Warn and ignore the path.
- **3**
Warn and process the path.
- **4**
Fatal error.
- **5**
Quietly process the path, but clip 45-degree acute angles on the centerline so as to avoid small angled notches.
- **6**
Warn and process the path, but clip 45-degree acute angles on the centerline so as to avoid small angled notches.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_ACUTE 2
```

PATH_ANGLED

Input for: readerprefs file (see [readerprefs File Format](#))

A path has a centerline with one or more angled segments.

Usage

PATH_ANGLED {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Quietly ignore the path.
- **1**
Quietly process the path (default).
- **2**
Warn and ignore the path.
- **3**
Warn and process the path.
- **4**
Fatal error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_ANGLED 3
```

PATH_CIRCULAR

Input for: readerprefs file (see [readerprefs File Format](#))

A type-1 path (circular endcap) is present in the layout.

Usage

PATH_CIRCULAR {0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8}

Arguments

- **0**
Quietly drop the path.
- **1**
Quietly convert the path to type 0, flush ended (default).
- **2**
Quietly convert the path to type 2, square ended.
- **3**
Drop the path with a warning.
- **4**
Warn and convert the path to type 0.
- **5**
Warn and convert the path to type 2.
- **6**
Error.
- **7**
Quietly create a round-ended path.
- **8**
Warn and create a round-ended path.

Description

Paths with rounded ends are treated as follows when the path is loaded or created in Calibre DESIGNrev and then exported:

- To a GDS file: Paths and rounded ends are preserved.
- To an OASIS file: Paths are output as polygons with rounded ends.

In both cases, if a path is zero width and has rounded ends, the path is written with flush, square ends.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_CIRCULAR 2
```

PATH_COINCIDENT

Input for: readerprefs file (see [readerprefs File Format](#))

A path has no length.

Usage

PATH_COINCIDENT {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Quietly ignore the path.
- **1**
Quietly process the path (default).
- **2**
Warn and ignore the path.
- **3**
Warn and process the path.
- **4**
Fatal error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_COINCIDENT 2
```

PATH_DEGENERATE

Input for: readerprefs file (see [readerprefs File Format](#))

A path has 0 or 1 vertices.

Usage

PATH_DEGENERATE {0 | 1 | 2}

Arguments

- **0**
Ignore the path.
- **1**
Warn and ignore the path (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_DEGENERATE 2
```

PATH_ENDSEGMENT_SHORT

Input for: readerprefs file (see [readerprefs File Format](#))

The endsegment of a type-0 GDSII path or flush-ended OASIS path is less than 1/2 the path width.

Usage

PATH_ENDSEGMENT_SHORT {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Quietly expand the path, even if a small notch develops.
- **1**
Warn and expand the path, even if a small notch develops (default).
- **2**
Error.
- **3**
Quietly extend the short endsegment to avoid a notch prior to expanding the path.
- **4**
Warn and extend the short endsegment to avoid a notch prior to expanding the path.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_ENDSEGMENT_SHORT 4
```

PATH_EXTENSION

Input for: readerprefs file (see [readerprefs File Format](#))

A type-4 GDSII path or variable-end OASIS path cannot be extended.

Usage

PATH_EXTENSION {0 | 1 | 2}

Arguments

- **0**
Quietly do not perform variable-end path extension.
- **1**
Warn and do not perform variable-end path extension (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_EXTENSION 1
```

PATH_NEGATIVE

Input for: readerprefs file (see [readerprefs File Format](#))

A type-4 GDSII path or variable-end OASIS path has a negative start or end extension. If severities 2, 5, or 6 occur at the start extension, then there is no further checking for the end extension.

Usage

PATH_NEGATIVE {0 | 1 | 2 | 3 | 4 | 5 | 6}

Arguments

- **0**
Quietly do not perform the negative extension.
- **1**
Perform the negative extension (default).
- **2**
Quietly drop the path.
- **3**
Warn and do not perform the negative extension.
- **4**
Warn and perform the negative extension as usual.
- **5**
Warn and drop the path.
- **6**
Fatal error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_NEGATIVE 3
```

PATH_NONORIENTABLE

Input for: readerprefs file (see [readerprefs File Format](#))

A path cannot be oriented after expansion.

Usage

PATH_NONORIENTABLE {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Ignore the condition (default).
- **1**
Ignore the condition and generate a warning.
- **2**
Error.
- **3**
Fix the path using a double-merge technique and convert it to a polygon. The path is processed with no message.
- **4**
Fix the path using a double-merge technique and convert it to a polygon. The path is processed with a warning message.

Note

 Prior to the 2022.1 release, the behavior for arguments 3 and 4 was to fix the path and perform no conversion. To revert back to the previous behavior, set the MGC_CWB_ADD_NONORIENTABLE_PATH_AS_PATH environment variable to 1.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_NONORIENTABLE 2
```

PATH_NONSIMPLE

Input for: readerprefs file (see [readerprefs File Format](#))

A path overlaps itself after expansion.

Usage

PATH_NONSIMPLE {0 | 1 | 2}

Arguments

- **0**
Ignore the condition since the overlap is merged away (default).
- **1**
Warn and ignore the condition since the overlap is merged away.
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_NONSIMPLE 2
```

PATH_SPIKE

Input for: readerprefs file (see [readerprefs File Format](#))

Consecutive path segments retrace the same length.

Usage

PATH_SPIKE {0 | 1 | 2}

Arguments

- **0**
Quietly remove the spike.
- **1**
Warn and remove the spike (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_SPIKE 0
```

PATH_VARIABLE

Input for: readerprefs file (see [readerprefs File Format](#))

A GDSII path of type 4 or OASIS path with a non-flush or non-square extension is encountered.

Usage

PATH_VARIABLE {0 | 1 | 2 | 3 | 4}

Arguments

- **0**
Quietly drop the path.
- **1**
Quietly process the path as normal (default).
- **2**
Warn and drop the path.
- **3**
Warn and process the path as normal.
- **4**
Fatal error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_VARIABLE 2
```

PATH_WIDTH_ABSOLUTE

Input for: readerprefs file (see [readerprefs File Format](#))

A GDSII path has absolute width specified in the database. See a GDSII functional specification for the definition of absolute width.

Usage

PATH_WIDTH_ABSOLUTE {0 | 1 | 2}

Arguments

- **0**
Ignore the path.
- **1**
Warn and ignore the path (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_WIDTH_ABSOLUTE 1
```

PATH_WIDTH_ODD

Input for: readerprefs file (see [readerprefs File Format](#))

A path has an odd-valued width. The half-width value is rounded when the path is expanded to a polygon.

Usage

PATH_WIDTH_ODD {0 | 1 | 2}

Arguments

- **0**
Quietly process the path (default).
- **1**
Warn and process the path.
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PATH_WIDTH_ODD 1
```

PATH_WIDTH_ZERO

Input for: readerprefs file (see [readerprefs File Format](#))

A path has zero width.

Usage

PATH_WIDTH_ZERO {0 | 1 | 2 | 3}

Arguments

- **0**
Ignore the path.
- **1**
Warn and ignore the path.
- **2**
Error.
- **3**
Process the path (default).

Examples

```
# Reader Preferences File
exceptionSeverity PATH_WIDTH_ZERO 2
```

PLACEMENT_ANGLE_ABSOLUTE

Input for: readerprefs file (see [readerprefs File Format](#))

A GDSII placement has an absolute rotation angle.

Usage

PLACEMENT_ANGLE_ABSOLUTE {0 | 1 | 2}

Arguments

- **0**
Ignore the absolute angle.
- **1**
Warn and ignore the absolute angle (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PLACEMENT_ANGLE_ABSOLUTE 1
```

PLACEMENT_MAGNIFICATION_ABSOLUTE

Input for: readerprefs file (see [readerprefs File Format](#))

A GDSII placement has an absolute magnification. See a GDSII functional specification for the definition of absolute angle in a STRANS record.

Usage

PLACEMENT_MAGNIFICATION_ABSOLUTE {0 | 1 | 2}

Arguments

- **0**
Ignore the magnification.
- **1**
Warn and ignore the magnification (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PLACEMENT_MAGNIFICATION_ABSOLUTE 1
```

PLACEMENT_MAGNIFICATION_NONPOSITIVE

Input for: readerprefs file (see [readerprefs File Format](#))

A placement has a non-positive magnification.

Usage

PLACEMENT_MAGNIFICATION_NONPOSITIVE {0 | 1 | 2}

Note

 The negative magnification when ignored is converted to 1.0.

Arguments

- **0**
Ignore the magnification.
- **1**
Warn and ignore the magnification (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity PLACEMENT_MAGNIFICATION_NONPOSITIVE 1
```

PLACEMENT_MAGNIFIED

Input for: readerprefs file (see [readerprefs File Format](#))

A GDSII or OASIS placement has a non-unit magnification.

Usage

PLACEMENT_MAGNIFIED {0 | 1 | 2}

Arguments

- **0**
Quietly process the magnified placement as normal (default).
- **1**
Warn and process the magnified placement as normal.
- **2**
Error.

Description

A GDSII or OASIS placement has a non-unit magnification.

Examples

```
# Reader Preferences File
exceptionSeverity PLACEMENT_MAGNIFIED 2
```

POLYGON_ACUTE

Input for: readerprefs file (see [readerprefs File Format](#))

An acute angle exists in a GDSII boundary or OASIS polygon.

Usage

POLYGON_ACUTE {0 | 1 | 2}

Arguments

- **0**
Ignore the condition and process the object normally (default).
- **1**
Warn and process the object normally.
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_ACUTE 2
```

POLYGON_AREA_ZERO

Input for: readerprefs file (see [readerprefs File Format](#))

A zero-area boundary exists in a GDSII-type database or a zero-area polygon exists in an OASIS database.

Usage

POLYGON_AREA_ZERO {0 | 1 | 2 | 3}

Arguments

- **0**
Ignore the object.
- **1**
Warn and ignore the object.
- **2**
Error.
- **3**
Process the object (default).

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_AREA_ZERO 2
```

POLYGON_DEGENERATE

Input for: readerprefs file (see [readerprefs File Format](#))

A polygon has 0 or 1 vertices.

Usage

POLYGON_DEGENERATE {0 | 1 | 2}

Arguments

- **0**
Ignore the polygon.
- **1**
Warn and ignore the polygon (default).
- **2**
Error.

Description

A polygon has 0 or 1 vertices.

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_DEGENERATE 2
```

POLYGON_IS_RECTANGLE

Input for: readerprefs file (see [readerprefs File Format](#))

A two-point GDSII BOUNDARY is encountered.

Usage

POLYGON_IS_RECTANGLE {0 | 1 | 2}

Arguments

- **0**

Interpret them as rectangles orthogonal to the database axes with no message (default).

- **1**

Interpret them as rectangles orthogonal to the database axes with a warning for each instance.

- **2**

Error.

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_IS_RECTANGLE 2
```

POLYGON_NONORIENTABLE

Input for: readerprefs file (see [readerprefs File Format](#))

A polygon cannot be oriented.

Usage

POLYGON_NONORIENTABLE {0 | 1 | 2 | 3 | 4}

Arguments

Note

 The definitions and default values that are used in the layout viewer for this exception differ from the definitions and default values used by the [Layout Input Exception Severity](#) statement in Calibre nmDRC/Calibre nmDRC-H.

- **0**

Ignore the condition and process the polygon (if possible) without fixing (default).

- **1**

Warn and process the polygon (if possible) without fixing.

- **2**

Error.

- **3**

Fix the polygon using a double-merge technique. This technique generally succeeds in filling non-orientable polygons in an intuitive fashion. The polygon is processed with no message.

- **4**

Warn and fix the polygon using a double-merge technique. This technique generally succeeds in filling non-orientable polygons in an intuitive fashion. The polygon is processed with a warning message.

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_NONORIENTABLE 1
```

POLYGON_NONSIMPLE

Input for: readerprefs file (see [readerprefs File Format](#))

A polygon overlaps itself.

Usage

POLYGON_NONSIMPLE {0 | 1 | 2}

Arguments

- **0**

Ignore the condition since the overlap is merged away (default).

- **1**

Warn and ignore the condition since the overlap is merged away.

- **2**

Error.

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_NONSIMPLE 1
```

POLYGON_NOT_CLOSED

Input for: readerprefs file (see [readerprefs File Format](#))

Controls the message that is generated when closing an open GDSII BOUNDARY.

Usage

POLYGON_NOT_CLOSED {0 | 1 | 2}

Arguments

- **0**

Automatically close an open BOUNDARY with no message (default).

- **1**

Automatically close an open BOUNDARY with a warning for each instance.

- **2**

Error.

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_NOT_CLOSED 2
```

POLYGON_SPIKE

Input for: readerprefs file (see [readerprefs File Format](#))

Applies to spikes in boundaries read from GDSII-type input layout databases or polygons read from OASIS-type input layout databases. A “spike” is defined as two consecutive edges whose interior angle is 0 or 360 degrees.

Usage

POLYGON_SPIKE {0 | 1 | 2}

Arguments

- **0**
Quietly process the object as usual (default).
- **1**
Warn and process the object as usual.
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity POLYGON_SPIKE 2
```

PROPNAMENSTRING

Input for: readerprefs file (see [readerprefs File Format](#))

The string in a PROPNAMENSTRING or PROPERTY record is not an OASIS n-string.

Usage

PROPNAMENSTRING {0 | 1 | 2}

Arguments

- **0**
Quietly allow the string to contain any ASCII character except zero.
- **1**
Warn and allow the string to contain any ASCII character except zero.
- **2**
Error (default).

Examples

```
# Reader Preferences File
exceptionSeverity PROPNAMENSTRING 1
```

RECTANGLE_SIDE_ZERO

Input for: readerprefs file (see [readerprefs File Format](#))

A rectangle (including a two-point GDSII polygon) has a zero length side.

Usage

RECTANGLE_SIDE_ZERO {0 | 1 | 2}

Arguments

- **0**
Ignore the rectangle.
- **1**
Warn and ignore the rectangle (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity RECTANGLE_SIDE_ZERO 1
```

TEXT_BIG

Input for: readerprefs file (see [readerprefs File Format](#))

A GDSII text object has more than one vertex.

Usage

TEXT_BIG {0 | 1 | 2}

Arguments

- **0**
Ignore the object.
- **1**
Warn and ignore the object (default).
- **2**
Fatal read error.

Examples

```
# Reader Preferences File
exceptionSeverity TEXT_BIG 2
```

TEXT_DEGENERATE

Input for: readerprefs file (see [readerprefs File Format](#))

A GDSII text object has zero vertices.

Usage

TEXT_DEGENERATE {0 | 1 | 2}

Arguments

- **0**
Ignore the object.
- **1**
Warn and ignore the object (default).
- **2**
Fatal read error.

Examples

```
# Reader Preferences File
exceptionSeverity TEXT_DEGENERATE 1
```

TEXTSTRING_ASTRING

Input for: readerprefs file (see [readerprefs File Format](#))

The string in a TEXTSTRING or TEXT record is not an OASIS a-string.

Usage

TEXTSTRING_ASTRING {0 | 1 | 2}

Arguments

- **0**
Quietly allow the string to contain any ASCII character except zero.
- **1**
Warn and allow the string to contain any ASCII character except zero.
- **2**
Error (default).

Examples

```
# Reader Preferences File
exceptionSeverity TEXTSTRING_ASTRING 1
```

TRAPEZOID_AREA_ZERO

Input for: readerprefs file (see [readerprefs File Format](#))

A TRAPEZOID has zero area.

Usage

TRAPEZOID_AREA_ZERO {0 | 1 | 2}

Arguments

- **0**
Ignore the trapezoid.
- **1**
Warn and ignore the trapezoid (default).
- **2**
Error.

Examples

```
# Reader Preferences File
exceptionSeverity TRAPEZOID_AREA_ZERO 2
```

TRAPEZOID_DEGENERATE

Input for: readerprefs file (see [readerprefs File Format](#))

A TRAPEZOID record is degenerate (that is, cannot be formed into a polygon as specified).

Usage

TRAPEZOID_DEGENERATE {0 | 1 | 2}

Arguments

- **0**
Ignore the trapezoid.
- **1**
Warn and ignore the trapezoid.
- **2**
Fatal read error (default).

Examples

```
# Reader Preferences File
exceptionSeverity TRAPEZOID_DEGENERATE 1
```

XELEMENT_UNSUPPORTED

Input for: readerprefs file (see [readerprefs File Format](#))

An OASIS XELEMENT record (not supported) has been encountered.

Usage

XELEMENT_UNSUPPORTED {0 | 1 | 2}

Arguments

- **0**
Ignore the record.
- **1**
Warn and ignore the record.
- **2**
Error (default).

Examples

```
# Reader Preferences File
exceptionSeverity XELEMENT_UNSUPPORTED 1
```

XGEOMETRY_UNSUPPORTED

Input for: readerprefs file (see [readerprefs File Format](#))

An OASIS XGEOMETRY record (not supported) has been encountered.

Usage

XGEOMETRY_UNSUPPORTED {0 | 1 | 2}

Arguments

- **0**
Ignore the record.
- **1**
Warn and ignore the record.
- **2**
Error (default).

Examples

```
# Reader Preferences File
exceptionSeverity XGEOMETRY_UNSUPPORTED 1
```

XNAME_UNSUPPORTED

Input for: readerprefs file (see [readerprefs File Format](#))

An OASIS XNAME record (not supported) has been encountered.

Usage

XNAME_UNSUPPORTED {0 | 1 | 2}

Arguments

- **0**
Ignore the record.
- **1**
Warn and ignore the record.
- **2**
Error (default).

Examples

```
# Reader Preferences File
exceptionSeverity XNAME_UNSUPPORTED 1
```

wbinit.tcl File Format

Tools: Calibre DESIGNrev, Calibre LITHOview, Calibre MDPview, Calibre WORKbench

The *wbinit.tcl* file is an application extension file allowing you to write Tcl-based scripts to create customized macros and modifications to the behavior of the layout viewer.

Caution

 This is an advanced, scripting-level form of customization that allows you to both create macros and enable levels of layout viewer configuration. Use of this functionality should be made with great care. See “[Multilevel Configuration](#)” on page 370 for information on enabling levels of layout viewer configuration.

You must create the *wbinit.tcl* file and place it in one of the following locations where it can be sourced by the layout viewer:

- A directory specified by the \$MGC_CWB_CONFIG_DIRS environment variable
- *\$HOME/.calibrewb_workspace/wbinit.tcl*

If the \$MGC_CWB_CONFIG_DIRS environment variable is set, any *wbinit.tcl* files in the \$MGC_CWB_CONFIG_DIRS directories are sourced. Alternatively, if \$MGC_CWB_CONFIG_DIRS is not set, then a *wbinit.tcl* file in the *\$HOME/.calibrewb_workspace* directory is sourced.

When you run Calibre DESIGNrev in shell mode (using the -shell or -a command option), Tcl is loaded without the Tk package. In this state, the applications are unable to execute Tk commands in the *wbinit.tcl* file, and abort with an error if they encounter such commands. You can avoid these errors by protecting any Tk commands, with conditional statements testing whether Tk is loaded or not. For example:

```
# protected Tk command
if [isTkLoaded] {
    set filename [tk_getSaveFile]
}
```

Alternatively, you can create a *wbposttkinit.tcl* file that gets automatically sourced after both the Tcl and Tk packages are loaded.

Note

 The *wbinit.tcl* file must test if Tk is loaded before doing anything dependent on Tk being loaded (for example, the \$cwb commands are written with Tk commands).

Format

A *wbinit.tcl* file must conform to the following formatting and syntax rules:

- Must be a Tcl/Tk-based script

- Most of the commands within this file fall into one of the following categories:
 - The set command, which you use for setting global Tcl variables. This is rarely used except for debugging purposes.
 - Macro definitions, which let you create user-defined procedures and macros. You can then use macro definitions like any other commands for the application. By default, the **Macros** menu contains example macros. Refer to the *Calibre DESIGNrev Reference Manual* for a complete discussion of creating macros.

Parameters

None.

Examples

Add the following line to your *wbinit.tcl* file to set the default object selection mode when you invoke Calibre DESIGNrev:

```
option add *Canvas*selectionMode mode
```

Replacing “mode” with one of the following options:

none best ref polygon edge vertex

wbposttkinit.tcl File Format

Tools: Calibre DESIGNrev, Calibre LITHOview, Calibre MDPview, Calibre WORKbench

The *wbposttkinit.tcl* file is an application extension file allowing you to write Tcl-based scripts to create customized macros and modifications to the behavior of the layout viewer.

The difference between the *wbinit.tcl* file and the *wbposttkinit.tcl* file is that *wbinit.tcl* is read after the Tcl package is initialized, whereas *wbposttkinit.tcl* is read after both the Tcl and Tk packages are initialized. This is useful when you want to execute a macro containing Tk commands while running the layout viewer in shell mode (-shell or -a).

You must create the *wbposttkinit.tcl* file and place it in one of the following locations where it can be sourced by the layout viewer:

- A directory specified by the \$MGC_CWB_CONFIG_DIRS environment variable
- *\$HOME/.calibrewb_workspace/wbposttkinit.tcl*

If the \$MGC_CWB_CONFIG_DIRS environment variable is set, any *wbposttkinit.tcl* files in the \$MGC_CWB_CONFIG_DIRS directories are sourced in the order in which they are defined by the variable. Alternatively, if \$MGC_CWB_CONFIG_DIRS is not set, then a *wbposttkinit.tcl* file in the *\$HOME/.calibrewb_workspace* directory is sourced.

Format

A *wbposttkinit.tcl* file must conform to the following formatting and syntax rules:

- Must be a Tcl/Tk-based script
- Most of the commands within this file fall into one of the following categories:
 - The set command, which you use for setting global Tcl variables. This is rarely used except for debugging purposes.
 - Macro definitions, which let you create user-defined procedures and macros. You can then use macro definitions like any other commands for the application. By default, the **Macros** menu contains example macros. Refer to the *Calibre DESIGNrev Reference Manual* for a complete discussion of creating macros.

Parameters

None.

Appendix B

Layout Viewer Color Reference

RGB colors are represented as hexadecimal values, with a leading pound (#) sign. For example, the hexadecimal number for black is #000000. The first two numbers (00) represent the amount of red in the color. The second two numbers (00) represent the amount of green in the color, and the last two numbers (00) represent the amount of blue the color contains. When a color, such as black, contains 00 amount of red, green or blue, this means it contains none of that color. Colors containing RGB values of FF (255 in decimal) contain the most color. For example, the hexadecimal value for white is #FFFFFF, which means it contains the most red, green, and blue.

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Valid Layout Viewer Colors

The layout viewers accept Hex, RGB color values, and color names.

Table B-1. Hex Colors

Color Name	Hex	R	G	B
Blue	#0000FF	0	0	255
Green	#00FF00	0	255	0
Red	#FF0000	255	0	0
Yellow	#FFFF00	255	255	0
Azure	#F0FFFF	240	255	255
Black	#000000	0	0	0
White	#FFFFFF	255	255	255

Table B-2 lists the color names that are allowed by Calibre DESIGNrev:

Table B-2. Color Names Allowed by the Calibre DESIGNrev

aliceblue	cadetblue	darkgrey
antiquewhite	cadetblue1	darkkhaki
antiquewhite1	cadetblue2	darkmagenta
antiquewhite2	cadetblue3	darkolivegreen
antiquewhite3	cadetblue4	darkolivegreen1
antiquewhite4	chartreuse	darkolivegreen2
aquamarine	chartreuse1	darkolivegreen3
aquamarine1	chartreuse2	darkolivegreen4
aquamarine2	chartreuse3	darkorange
aquamarine3	chartreuse4	darkorange1
aquamarine4	chocolate	darkorange2
azure	chocolate1	darkorange3
azure1	chocolate2	darkorange4
azure2	chocolate3	darkorchid
azure3	chocolate4	darkorchid1
azure4	coral	darkorchid2
beige	coral1	darkorchid3
bisque	coral2	darkorchid4
bisque1	coral3	darkred
bisque2	coral4	darksalmon
bisque3	cornflowerblue	darkseagreen
bisque4	cornsilk	darkseagreen1
black	cornsilk1	darkseagreen2
blanchedalmond	cornsilk2	darkseagreen3
blue	cornsilk3	darkseagreen4
blue1	cornsilk4	darkslateblue
blue2	cyan	darkslategray
blue3	cyan1	darkslategray1
blue4	cyan2	darkslategray2
bluevioletbrown	cyan3	darkslategray3
brown1	cyan4	darkslategray4
brown2	darkblue	darkslategrey
brown3	darkcyan	darkturquoise
brown4	darkgoldenrod	darkviolet
burlywood	darkgoldenrod1	deeppink
burlywood1	darkgoldenrod2	deeppink1
burlywood2	darkgoldenrod3	deeppink2
burlywood3	darkgoldenrod4	deeppink3
burlywood4	darkgray	deeppink4
	darkgreen	deepskyblue

Table B-2. Color Names Allowed by the Calibre DESIGNrev (cont.)

deepskyblue1	gray2	gray59
deepskyblue2	gray20	gray6
deepskyblue3	gray21	gray60
deepskyblue4	gray22	gray61
dimgray	gray23	gray62
dimgrey	gray24	gray63
dodgerblue	gray25	gray64
dodgerblue1	gray26	gray65
dodgerblue2	gray27	gray66
dodgerblue3	gray28	gray67
dodgerblue4	gray29	gray68
firebrick	gray3	gray69
firebrick1	gray30	gray7
firebrick2	gray31	gray70
firebrick3	gray32	gray71
firebrick4	gray33	gray72
floralwhite	gray34	gray73
forestgreen	gray35	gray74
gainsboro	gray36	gray75
ghostwhite	gray37	gray76
gold	gray38	gray77
gold1	gray39	gray78
gold2	gray4	gray79
gold3	gray40	gray8
gold4	gray41	gray80
goldenrod1	gray42	gray81
goldenrod2	gray43	gray82
goldenrod3	gray44	gray83
goldenrod4	gray45	gray84
gray	gray46	gray85
gray0	gray47	gray86
gray1	gray48	gray87
gray10	gray49	gray88
gray100	gray5	gray89
gray11	gray50	gray9
gray12	gray51	gray90
gray13	gray52	gray91
gray14	gray53	gray92
gray15	gray54	gray93
gray16	gray55	gray94
gray17	gray56	gray95
gray18	gray57	gray96
gray19	gray58	gray97

Table B-2. Color Names Allowed by the Calibre DESIGNrev (cont.)

gray98	grey38	grey76
gray99	grey39	grey77
green	grey4	grey78
green1	grey40	grey79
green2	grey41	grey8
green3	grey42	grey80
green4	grey43	grey81
greenyellow	grey44	grey82
grey	grey45	grey83
grey0	grey46	grey84
grey1	grey47	grey85
grey10	grey48	grey86
grey100	grey49	grey87
grey11	grey5	grey88
grey12	grey50	grey89
grey13	grey51	grey9
grey14	grey52	grey90
grey15	grey53	grey91
grey16	grey54	grey92
grey17	grey55	grey93
grey18	grey56	grey94
grey19	grey57	grey95
grey2	grey58	grey96
grey20	grey59	grey97
grey21	grey6	grey98
grey22	grey60	grey99
grey23	grey61	honeydew
grey24	grey62	honeydew1
grey25	grey63	honeydew2
grey26	grey64	honeydew3
grey27	grey65	honeydew4
grey28	grey66	hotpink
grey29	grey67	hotpink1
grey3	grey68	hotpink2
grey30	grey69	hotpink3
grey31	grey7	hotpink4
grey32	grey70	indianred
grey33	grey71	indianred1
grey34	grey72	indianred2
grey35	grey73	indianred3
grey36	grey74	indianred4
grey37	grey75	ivory

Table B-2. Color Names Allowed by the Calibre DESIGNrev (cont.)

ivory1	lightpink2	mediumorchid2
ivory2	lightpink3	mediumorchid3
ivory3	lightpink4	mediumorchid4
ivory4	lightsalmon	mediumpurple
khaki	lightsalmon1	mediumpurple1
khaki1	lightsalmon2	mediumpurple2
khaki2	lightsalmon3	mediumpurple3
khaki3	lightsalmon4	mediumpurple4
khaki4	lightseagreen	mediumseagreen
lavender	lightskyblue	mediumslateblue
lavenderblush	lightskyblue1	mediumspringgreen
lavenderblush1	lightskyblue2	mediumturquoise
lavenderblush2	lightskyblue3	mediumvioletred
lavenderblush3	lightskyblue4	midnightblue
lavenderblush4	lightslateblue	mintcream
lawngreen	lightslategray	mistyrose
lemonchiffon	lightslategrey	mistyrose1
lemonchiffon1	lightsteelblue	mistyrose2
lemonchiffon2	lightsteelblue1	mistyrose3
lemonchiffon3	lightsteelblue2	mistyrose4
lemonchiffon4	lightsteelblue3	moccasin
lightblue	lightsteelblue4	navajowhite
lightblue1	lightyellow	navajowhite1
lightblue2	lightyellow1	navajowhite2
lightblue3	lightyellow2	navajowhite3
lightblue4	lightyellow3	navajowhite4
lightcoral	lightyellow4	navy
lightcyan	limegreen	navyblue
lightcyan1	linen	oldlace
lightcyan2	magenta	olivedrab
lightcyan3	magenta1	olivedrab1
lightcyan4	magenta2	olivedrab2
lightgoldenrod	magenta3	olivedrab3
lightgoldenrod1	magenta4	olivedrab4
lightgoldenrod2	maroon	orange
lightgoldenrod3	maroon1	orange1
lightgoldenrod4	maroon2	orange2
lightgoldenrodyellow	maroon3	orange3
lightgray	maroon4	orange4
lightgreen	mediumaquamarine	orangered
lightgrey	mediumblue	orangered1
lightpink	mediumorchid	orangered2
lightpink1	mediumorchid1	orangered3

Table B-2. Color Names Allowed by the Calibre DESIGNrev (cont.)

orangered4	purple1	skyblue1
orchid	purple2	skyblue2
orchid1	purple3	skyblue3
orchid2	purple4	skyblue4
orchid3	red	slateblue
orchid4	red1	slateblue1
palegoldenrod	red2	slateblue2
palegreen	red3	slateblue3
palegreen1	red4	slateblue4
palegreen2	rosybrown	slategray
palegreen3	rosybrown1	slategray1
palegreen4	rosybrown2	slategray2
paleturquoise	rosybrown3	slategray3
paleturquoise1	rosybrown4	slategray4
paleturquoise2	royalblue	slategrey
paleturquoise3	royalblue1	snow
paleturquoise4	royalblue2	snow1
palevioletred	royalblue3	snow2
palevioletred1	royalblue4	snow3
palevioletred2	saddlebrown	snow4
palevioletred3	salmon	springgreen
palevioletred4	salmon1	springgreen1
papayawhip	salmon2	springgreen2
peachpuff	salmon3	springgreen3
peachpuff1	salmon4	springgreen4
peachpuff2	sandybrown	steelblue
peachpuff3	seagreen	steelblue1
peachpuff4	seagreen1	steelblue2
peru	seagreen2	steelblue3
pink	seagreen3	steelblue4
pink1	seagreen4	tan
pink2	seashell	tan1
pink3	seashell1	tan2
pink4	seashell2	tan3
plum	seashell3	tan4
plum1	seashell4	thistle
plum2	sienna	thistle1
plum3	sienna1	thistle2
plum4	sienna2	thistle3
powderblue	sienna3	thistle4
purple	sienna4	tomato
	skyblue	

Table B-2. Color Names Allowed by the Calibre DESIGNrev (cont.)

tomato1
tomato2
tomato3
tomato4
turquoise
turquoise1
turquoise2
turquoise3
turquoise4
violet
violetred
violetred1
violetred2
violetred3
violetred4
wheat
wheat1
wheat2
wheat3
wheat4
white
whitesmoke
yellow
yellow1
yellow2
yellow3
yellow4
yellowgreen

Appendix C

Layout Viewer Key Bindings

A set of default key bindings is provided with the layout viewers. When creating custom key bindings, you should be careful not to overwrite the default key bindings.

The “bindKey Function Targets” column in [Table C-1](#) lists the specific key function targets used to implement the default Calibre DESIGNrev key bindings.

You can use the [\\$cwb bindKey](#) command to create custom key or mouse wheel bindings.

Table C-1. Default Calibre DESIGNrev Key Bindings

Key Name	bindKey Function Targets	Menu Item	Target Description
Function Keys			
F1	cwbHelp	Help > Open User Manual	Opens up the documentation.
F2	cwbSaveLayout	File > Save	Performs a file save on the current layout.
F5	cwbOpenLayout	File > Open Layout Files	Opens the Choose Layout File dialog box.
F9	cwbPreferences	Options > Layout View	Opens the Preferences dialog box.
F12	cwbRealTimeRunDRC	Verification > RealTime > Run DRC	Starts a Calibre RealTime run.
Control Key Bindings			
Ctrl + a	cwbZoomAll	View > Zoom All	Zooms to view the entire layout.
Ctrl + c	cwbCopy	Edit > Copy	Copies the selected item to the copy buffer for later pasting.
Ctrl + e	cwbDuplicate	Edit > Duplicate	Makes a duplicate of the selected item.
Ctrl + f	cwbSetDepthZero		Sets the current view depth to 0.
Ctrl + g	cwbToggleUserGrid		Toggles grid one and off.
Ctrl + l	cwbSelectAllLayers	Layer > Select All Layers	Selects all layers in Layers palette.

Table C-1. Default Calibre DESIGNrev Key Bindings (cont.)

Key Name	bindKey Function Targets	Menu Item	Target Description
Ctrl + n	cwbViewForth		Displays the next view (must have viewed back at least once). This and the backward button, switch the display back and forth.
Ctrl + o	cwbOpenLayout	File > Open Layout Files	Opens the Choose Layout File dialog box.
Ctrl + p	cwbViewBack		Displays the previous view.
Ctrl + q	cwbExitApplication	File > Exit	Exits the layout viewer.
Ctrl + r	cwbLoadDefaultLayer Properties	Layer > Restore Defaults	Refreshes the display.
Ctrl + t	cwbObjectProperties	Object > Properties	Opens the Object Properties dialog box.
Ctrl + u	cwbOpenPrevCell	View > Open Previous Cell	Opens the previous cell.
Ctrl + v	cwbPaste	Edit > Paste	Pastes the contents of the copy buffer to the current location.
Ctrl + w	cwbCloseWindow	File > Close Window	Closes the currently active window. If this was the only window open, Calibre exits.
Ctrl + x	cwbCut	Edit > Cut	Cuts the selected object from the layout and places it in the copy buffer.
Ctrl + z	cwbZoomIn	View > Zoom In	Zooms in by 50 percent.
Ctrl + . (period)	cwbGoTo	View > GoTo	Goto location.
Ctrl + ↑ (up arrow)	cwbPanUp_small		Incrementally pans the layout view up by the percentage specified in the preferences.

Table C-1. Default Calibre DESIGNrev Key Bindings (cont.)

Key Name	bindKey Function Targets	Menu Item	Target Description
Ctrl + → (right arrow)	cwbPanRight_small		Incrementally pans the layout view right by the percentage specified in the preferences.
Ctrl + ↓ (down arrow)	cwbPanDown_small		Incrementally pans the layout view down by the percentage specified in the preferences.
Ctrl + ← (left arrow)	cwbPanLeft_small		Incrementally pans the layout view left by the percentage specified in the preferences.
Ctrl + T	cwbToggleLayouts		Toggle layouts.
Shift Key Bindings (Uppercase)			
C	cwbToggleCellOutline		Toggle cell outline.
E	cwbPreferencesView	Options > Layout View	Opens the Preferences dialog box, switching to the View tab.
F	cwbSetDepthMax		Sets the current view depth to the maximum.
G	cwbPreferencesGrid	Options > Grid Setting	Opens the Preferences dialog box, switching to the Grid tab.
K	cwbPreferencesRuler		Clears all rulers.
L	cwbHideAllLayers		Hide all layers.
O	cwbRotate	Edit > Rotate	Rotates the selected item counterclockwise by 90 degrees.
R	cwbPreferencesRuler	Options > Ruler	Opens the Preferences dialog box, switching to the Rulers tab.
Z	cwbZoomOut	View > Zoom Out	Zooms out by 50 percent.
Straight Key Bindings (Lowercase)			
b	cwbSetDrawBoxMode		Sets Box mode.
d	cwbOpenCell	View > Open Cell	Opens selected cell in current layout.

Table C-1. Default Calibre DESIGNrev Key Bindings (cont.)

Key Name	bindKey Function Targets	Menu Item	Target Description
m	cwbSetMoveMode		Selects Move mode.
n	cwbUpdateDisplay	View > Update Display	Refreshes the display.
p	cwbSetDrawPolygonMode		Sets Poly(gon) mode.
r	cwbSetDrawRulerMode		Sets Ruler mode.
s	cwbSetSelectMode		Sets Select mode.
u	cwbUnselectAll		Unselects any currently selected objects.
Delete	cwbDeleteSelected		Deletes the selected item.
Esc	cwbCancel		Cancel incomplete command. Note that if you press Esc a second time (after cancelling an incomplete command), the layout viewer mode reverts to Select mode.
↑ (up arrow)	cwbPanUp	View > Pan > Up	Pans layout view up by the percentage specified in the View preferences.
→ (right arrow)	cwbPanRight	View > Pan > Right	Pans layout view right by the percentage specified in the View preferences.
↓ (down arrow)	cwbPanDown	View > Pan > Down	Pans layout view down by the percentage specified in the View preferences.
← (left arrow)	cwbPanLeft	View > Pan > Left	Pans layout view left by the percentage specified in the View preferences.
Alt Key Bindings — If one of your keyboard's Alt keys doesn't work, try the other one.			
Alt + C	cwbClearContext	Edit > Clear Context	Clear context.
Alt + N	cwbDuplicateWindow		Duplicate window.
Alt + R	cwbAddClip		Add clip region.

Table C-1. Default Calibre DESIGNrev Key Bindings (cont.)

Key Name	bindKey Function Targets	Menu Item	Target Description
Alt + s	cwbSelectRegion	Edit > Select Region	Selects objects in a drawn rectangle that defines the region.
Alt + c	cwbSetContex		Set context.
Alt + p	cwbSetDrawPolygonMode		Sets Poly(gon) mode.
Alt + r	cwbReloadLayout		Reloads the layout.

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Third-Party Information

Details on open source and third-party software that may be included with this product are available in the `<your_software_installation_location>/legal` directory.

