cadence®

Cadence Library Path Editor User Guide

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Introduction to Library Path Editor

The library path editor enables you to view and edit the information in a `cds.lib` library definition file.

A `cds.lib` file is needed to point to the reference and design libraries you want to use in your design.

When you run the library path editor, a log file called `cdsLibEditor.log` is created in your current working directory. This file records the commands used in your library path editor session.

Opening the Library Path Editor

The Library Path Editor window opens from the UNIX command line and Cadence® tools such as the Virtuoso Studio design environment Command Interpreter Window (CIW).

To open the library path editor from the UNIX command line,

➡ Type

```
cdsLibEditor [ -namespace namespace ] &
```

where *`namespace`* is the set of rules defining valid identifier and keyword types for the design tool in use (the default is `CDBA`).

To open a `cds.lib` library definition file in the library path editor, use the following commands:

```
cdsLibEditor -cdslib cds.lib
```

To open the library path editor from the CIW,

➡ Choose *Tools – Library Path Editor*.

The Library Path Editor window opens and presents library path information in one of the following ways:

- Displays the libraries and their paths that are defined in `cds.lib` files.
- Displays the Select New File Format form because a `cds.lib` file does not exist in your design hierarchy. In this situation a library definition file needs to be created.

The applications, such as Library Manager, Library Selector, and Library Path Editor, will start with the same font as Virtuoso. Though, it may not be noticeable unless the default font is changed using the Set Fonts dialog box. Once you choose the font using the Set Fonts dialog box, the font of these applications will change accordingly.

Closing the Library Path Editor

To close the library path editor,

1. Choose *File – Exit*.

   If you have not saved changes, a dialog box asks you whether you want to save your changes.

2. Do one of the following:
   - Click *Yes* to save your changes and exit.
   - Click *No* to discard your changes and exit.
   - Click *Cancel* to dismiss the form without exiting.

Related Topics

Creating Library Definitions File

Select New File Format Form

Adding Library to a Library Definition File

Including an Existing Library Definitions File

Viewing the Font List and Setting Fonts using the .cdsinit File

Creating Library Definitions File

If your design directory does not contain library definitions file, you can do the following:

Creating a New File

To use the *File – New* command in the library path editor

1. In the Select New File Format form, choose one of the following:
   - *Cadence "cds.lib"*
   - *OpenAccess "lib.defs"*
2. Click *OK*.
3. The library path editor displays blank *Library* and *Path* fields.
4. Add libraries using the *Edit – Add Library* command.
5. Locate the library to be added and then click *OK*.
6. Create the missing file by choosing *File – Save As*.
7. Click *OK* to create the library.

Copying an Existing cds.lib file

To copy an existing `cds.lib` file,

➡ Copy the Cadence-supplied `cds.lib` file found at the specified location to your work directory. For example, if the location is `$CDS_INST_DIR/share/cdssetup/cds.lib`, you can copy the existing `cds.lib` file from this location to your current directory.

Creating a cds.lib file

To create a `cds.lib` using a text editor.

1. Specify the include statement using the path `INCLUDE` *`your_install_dir`*`/share/cdssetup/cds.lib`, where *`your_install_dir`* is the path to the installation directory.
2. Specify the library information where you want to add the `cds.lib` file using the path `DEFINE` *`yourLibraryName your_install_dir`*`/tools/etc/cdslib/`

libraryName, where *yourLibraryName* is the name you wish to apply to the library, *your_install_dir* is the path to your installation directory, and *libraryName* is the name of the library you are adding to the new `cds.lib` file.

Note: Names must follow namespace rules. See Name Spaces for Different Data Types for details.

Related Topics

Select New File Format Form

Add Library Form

Save As Form

Viewing the cds.lib Updates

Deleting Libraries From the Library Path Editor

Adding Library to a Library Definition File

Displaying Multiple Library Definitions File

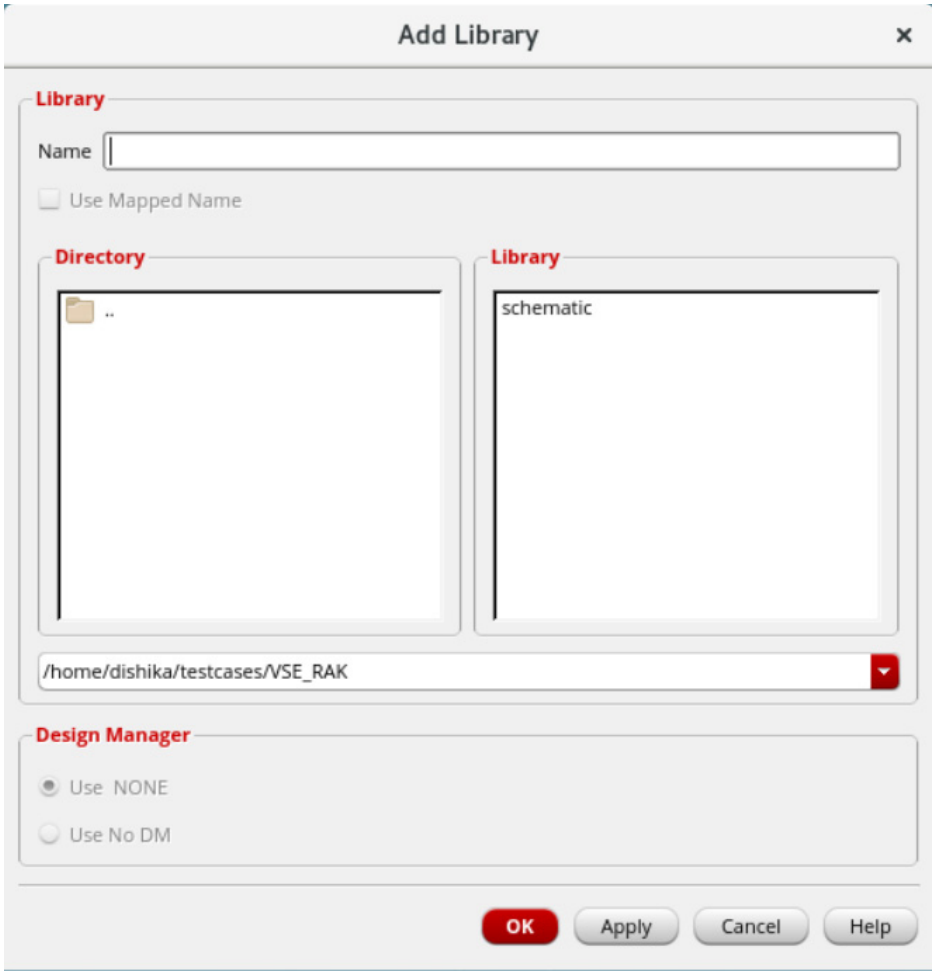
Adding Library to a Library Definition File

To add a library to a library definition file:

1. Choose *File – Open* in the Library Path Editor window.
2. Select the *cds.lib* file in the File Open form.
3. Click *OK*.

   The library path editor displays the contents of the files.
4. Choose *Edit – Add Library*.

   The Add Library form appears.



5. In the *Name* field, type the name of the existing or new library you want to add.
6. Select the path to the library using the *Directory* and *Library* list boxes or type the path into the type-in field below the list boxes.

You can click the directory names in the *Directory* list box to move up and down in the directory hierarchy. Only library directories containing a valid `cdsinfo.tag` file appear in the *Library* scrolling list box.

The library added is the library specified in the *Name* field with the path shown in the *Directory* list box. Be sure that the path shown in the field below the *Directory* list box does not include the library name; if it does, the library path editor will create a directory with the same name as the library, plus the library. For example, if you specify the path `/usr1/lib_dir/lib1` where `lib1` is the library name you specify in the *Name* field, the library path editor will create the library `/usr1/lib_dir/lib1/lib1`.

7. Select *Use Mapped Name* if you want to map a directory name that appears in the *Library* list back to the application's name space. The mapped name is displayed in the *Name* field. If this option is not selected, the directory name is added the way it is.

   The directory name must be a valid name for it to be mapped.

   For example, if you created a library `sample.lib` with a Cadence application, it would have been mapped to `sample#2elib` in the file system. When you try to add that library in the Add Library form, the *Library* list box displays the file system name: `sample#2elib`. If you select the *Use Mapped Name* option, the library is mapped back and is added as `sample.lib`; otherwise, the library is added as `sample#2elib`.

8. In the *Design Manager* section, select a design management system or *Use No DM* if you do not want the library to be managed.

   If you are not running the software from a design-managed workarea, the *Design Manager* field is grayed-out. If you are running the software from a design-managed workarea, the appropriate design management system is listed as a choice.

9. Click *OK*.

   The library name and path appear in the library path editor window.

10. Choose *File – Save As*.

    Ensure that the `cds.lib` file has a check mark next to it in the Save As form.

    - Click *OK*.
    - Click *Yes* in the dialog box to overwrite the existing files.

Related Topics

Add Library Form

File Open Form

Importing a lib.defs File

To import a `lib.defs` file, select *File – Import "lib.defs"*. This displays the Import lib.defs form.

From here, you can continue to choose to import a `lib.defs` file, but are warned that the `lib.defs` file content may be obsolete and that it would also override any content from the `cds.lib` file.

If you choose to open both the `cds.lib` and `lib.defs` file in the File Open form, it displays the Open Both Library Definitions Files form. From here you will be asked to confirm that action.

Related Topics

Opening the Library Path Editor

Creating Library Definitions File

Deleting Libraries From the Library Path Editor

To delete a library from the Library Path Editor window,

1. Choose *File – Open* in the library path editor form.
2. Select the file from the File Open form.
3. Click *OK*.
4. Click a library name you want to delete.
5. Choose *Edit – Remove Library Definition*.

   The library is deleted from the library path editor window
6. Choose *File – Save As*.

   Ensure that the `cds.lib` file has a check mark next to it in the Save As form.

   - Click *OK*.
   - Click *Yes* in the dialog box to overwrite the existing files.

The library data itself is not being removed here (from the file system), rather its entry in the `cds.lib` is being removed. This action will however prevent the library from being accessed from other tools that use the same `cds.lib`. Other tools, or sessions, can continue to use the same library data if they are using a different definitions file, or if the `cds.lib` is re-edited to again have access to the library data.

Related Topics

File Open Form

Save As Form

Locking the cds.lib File for Editing

Creating Library Definitions File

Adding Library to a Library Definition File

Including an Existing Library Definitions File

To include another library definitions file in your library definitions file,

1. Choose *View – Include Files*.
   An *Include Files* list box appears at the bottom of the library path editor window, which displays the names of all library definitions files currently referenced by the library path editor.
2. Click the plus (+) sign to open the Include cds.lib File form.
3. In the form, specify the library definitions file that you want to include by selecting it or by typing its path in the *File name* field or by a combination of the two.

   The file you specify must be a regular ASCII file.
4. Click *Open*.

   The name of the file appears in the Include Files list box in the library path editor window. The libraries defined in the file appear in the *Libraries* list.
5. Choose *File – Save As*.

Ensure that the `cds.lib` file has a check mark next to it in the Save As form.

- Click *OK*.
- Click *Yes* in the dialog box to overwrite the existing files.

Displaying Duplicate Library Entries

If you use `include` statements, you might have the same library defined multiple times in your library definition files, which can cause some applications to generate error or warning messages. Because inclusion can be nested, it is simple to accidentally set up the system to define a library more than once. For example:

```
INCLUDE locationA/global.libs
INCLUDE locationB/global.libs
```

Every library is defined at least twice in the above example.

To display duplicate entries,

➡ Choose *View – Duplicate Entries* in the library path editor.

The duplicate entries are displayed in the library path editor window. You can use this feature to trace multiple entries to their sources.

This feature does not remove the multiple entry.

Deleting Included Library Definition Files

To delete an included file from the library path editor and from your library definition files,

1. Choose *View – Include Files*.
2. In the *Include Files* list box, click a path.
3. Click the minus sign.

   The path to the included file is removed from the *Include Files* list box and the names and paths of libraries in the included file are removed from the *Library* and *Path* list boxes.
4. Choose *File – Save As*.

   Ensure that the `cds.lib` file has a check mark next to it in the Save As form.

   - Click *OK*.
   - Click *Yes* in the dialog box to overwrite the existing files.

     The `include` statement is removed from the library definitions file; the included file is unaffected.

The included file itself is not being removed here (from the file system), rather it is the included entry.

Listing Locally Defined Libraries

To list only locally defined libraries in the *Library* column in the Library Path Editor,

➡ Choose *View – Local Defines Only*.

The names of libraries listed in any included files are not displayed in the *Library* list box in the library path editor window.

Locking the cds.lib File for Editing

Important

Locking a `cds.lib` file can create confusion for other Cadence applications that have not been designed to handle, or are aware of, any file modifications directly. For example, the creation, deletion or renaming of a library requires re-write access to the `cds.lib`, and the operation will likely fail if the `cds.lib` is locked by an active Library Path Editor session over a long period.

You can lock the `cds.lib` file that is currently open in the library path editor to prevent other users from modifying it while you are editing it.

To lock the file,

➡ Choose *Edit – Exclusive Lock*.

The file is locked. The window banner indicates that it is locked. Also, the *File – Save* command is now available (this command is usually grayed-out when the file is not locked and you need to use *File – Save As* instead.)

To release the lock,

➡ Choose *Edit – Exclusive Lock* again.

Viewing the cds.lib Updates

To view the updated libraries after making the changes manually to `cds.lib` file, you need to refresh the current Virtuoso session by performing one of the following:

➡ In the CIW, select *File – Refresh.*

➡ In the CIW, choose *Tools – Library Manager* and select *View – Refresh.*

Related Topics

autoExclEdit

transientSaveLocks

warnExclLock

Creating Library Definitions File

Adding Library to a Library Definition File

Displaying Multiple Library Definitions File

To display another `cds.lib` file in the library path editor window,

1. Choose *File – Open*.

   The `cds.lib` files in your working directory are displayed. These are the default selections. To look in another directory for a different `cds.lib`, click the *Browse* button.

   The Select cds.lib File To Open form is displayed.

2. In the form, specify the library definitions file that you want to include by selecting it or by typing its path in the *File name* field or by a combination of the two.

   You can use the *Files of type* field to filter files—you can choose to display only library definition files in the selected directory or all files.

3. Click *Open*.

   The file you choose appears in the Library Path Editor window. This file is used in your design session.

   If you do not have permission to write to the library definitions file, a message appears, indicating that the file you specified is in read-only mode and you cannot make any changes to it.

Using Included Files

You can open included `cds.lib` files for use in your design. Included files are other library definitions files that have been included in your library definitions files.

To open an included library definitions file in the library path editor,

1. Choose *File – Open Include*.

   The Open Included File form lists the files included in your `cds.lib` file.

2. Select an included file.

3. Click *OK*.

   The file you select appears in the Library Path Editor window as the current library definition file.

Switching Between Library Definitions Files

Every library definition file that you have called up in a design session is available for editing during that design session.

To edit a `cds.lib` file that you have viewed previously in a design session,

1. Choose *File – File History*.

   The `cds.lib` file you have called up in the current design session appear in a submenu.

2. Select the file you want to use.

   The Library Path Editor window changes to display the file you select.

Viewing Full Paths

To display the full path of libraries in the Library Path Editor window,

➡ Choose *View – Full Paths*.

The paths from the `cds.lib` files are expanded to absolute paths and displayed.

This is a toggle command; choose *View – Full Paths* again to deselect the command.

Finding Library Path information

To locate information about a library name or library path,

1. Click the library name or path you want information on.
2. Choose *View – Library Info*.

   The Info For Library form appears, and shows the library name and path, whether the path is correct, and the line in the library definitions file where the library is defined.

3. Click *Close* to exit the form.

Viewing File Status

You can view the managed status of the `cds.lib` files that are currently open in the Library Path Editor.

To view the file status,

1. Choose *Design Manager – Show File Status*.

   The form displays information about each file: whether it is managed by a design management system, whether it is locked, and whether you have write permission for the file.

2. (Optional) Click *Clear* if you want to clear the status information of the files and close the form. By default, the status information is retained and every time you display the form, the new status information is appended to the existing information.

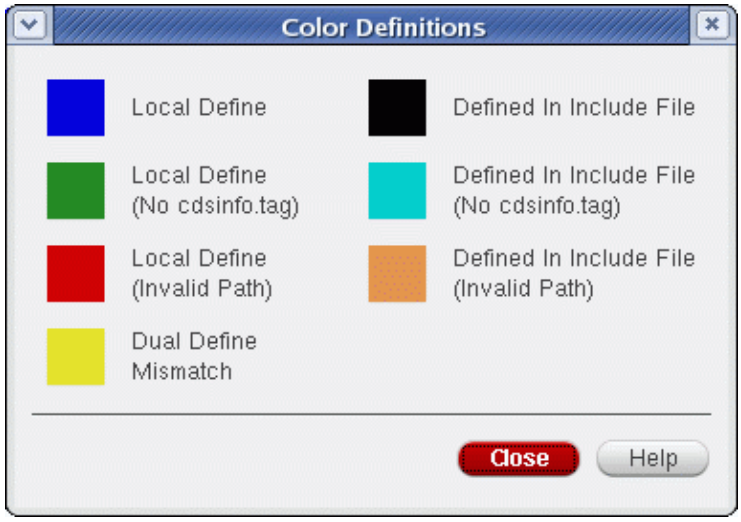
3. Click *Close* to close the form. The status information of the files is retained. The next time you display the form, the new status information is appended to the existing information.

Viewing Color Definition

The color legend is the key to what the colors represent in the library path editor.

➡ Choose *View – Color Legend*.

The Color Definitions form appears.



Related Topics

File Open Form

Color Definitions Form

Select cds.lib File To Open

A

Library Path Editor Forms

This section lists the forms that can either be opened only through the Library Path Editor or forms that can also be opened outside but have options that are related to the Library Path Editor tool.

Add Library Form

Color Definitions Form

File Open Form

Library Path Editor Window

Save As Form

Select cds.lib File To Open

Select lib.defs File To Open

Select New File Format Form

Add Library Form

Use this form to add a new or existing library.

Field	Description
Library	Specifies the library name and path.
Name	Specifies the library name, whether adding an existing library or adding a new library.
Use Mapped Name	when marked, maps a directory name that appears in the *Library* list back to the application's name space. The mapped name is displayed in the *Name* field. If this option is not selected, the directory name is added the way it is. The directory name must be a valid name for it to be mapped. For example, a directory name `sample#2elib` is mapped to `sample.lib` when this option is selected.
Directory	lets you select the directory that contains the library or the directory into which you want to put the new library (not applicable when using Virtuoso with design management).
Library	Lists directories containing a valid `cdsinfo.tag` file. The library added is always the library specified by Name with the path shown at the bottom of the *Directory* list box.
Design Manager	Specifies the design management setup. If you are not running the software from a design-managed workarea, the Design Manager field is grayed-out. If you are running the software from a design-managed workarea, the appropriate design management system is listed as a choice.
Use <DesignManagementSystem>	Specifies the design management system to use for the library.
Use No DM	Specifies that the library should not be managed.

Related Topics

Adding Library to a Library Definition File

File Open Form

Library Path Editor Window

Color Definitions Form

Use this form to check the definition of each color in the library path editor.

Color	Definition
	A valid path to a locally-defined library (a library defined in the current `cds.lib` file)
	A valid path to a locally-defined library with no `cdsinfo.tag` file
	An invalid path to a locally-defined library
	A path found in only one of the two library definitions files indicating that the `lib.defs` and `cds.lib` files are not synchronized
	A valid path to an included library
	A valid path to an included library with no `cdsinfo.tag` file
	An invalid path to an included library

Related Topics

Library Path Editor Window

Select New File Format Form

File Open Form

Use this form to open both the `cds.lib` and the `lib.defs` files for editing. The contents of both files are displayed in the library path editor window with the paths that are not common to both files highlighted in yellow.

To open one of the two files, deselect the check next to the file name you do not want to open. The file you want to open should have a check next to its name.

Field	Description
Default	Displays the `cds.lib` or `lib.defs` in the directory from which the library path editor was started. To open a file from another directory, click *Browse*.
Browse	Opens a file from another directory. You can access one of the following forms: ■ Select cds.lib File To Open ■ Select lib.defs File To Open

Related Topics

Select cds.lib File To Open

Select lib.defs File To Open

Library Path Editor Window

Use this form to check the file which is currently open, the namespace it is in, and whether the file is locked.

Field	Description
Library	Displays libraries listed in the `lib.defs` or `cds.lib` file, or both, if both exist in your design hierarchy or have been explicitly opened with the *File – Open* command.
Path	Displays the path to the library in the library column.

Related Topics

Color Definitions Form

Displaying Multiple Library Definitions File

Save As Form

Use this form to save both the `cds.lib` and the `lib.defs` files at the same time. Save As updates both files so they contain the same library path information. Save As removes duplicate entries and adds a date stamp to the ASCII version of both files.

Field	Description
Files to Save	Specifies the file to save.To save both files, ensure the checks appear next to both the file names. To save just one of the two files, deselect the check next to the file you do not want to save. The file you want to save should have a check next to its name.
Default	Displays the `cds.lib` or `lib.defs` in the directory from which the library path editor was started. To open a file from another directory, click *Browse*.
Browse	Opens a file from another directory. You can access one of the following forms: ■ Select cds.lib File To Open ■ Select lib.defs File To Open
Format Conversion Options	To save just one of the two files, deselect the check next to the file you do not want to save. The file you want to save should have a check next to its name.
File Content	This option is available when you are saving only one file.
Minimize	Creates a `cds.lib` or `lib.defs` file from the merging of the two files, taking only the necessary data from both files. Duplicate library paths are removed if the two files contain the same path information, and a date stamp is added for reference. Select this option if you intend to use both files.
Maximize for Solo Use	Creates a `cds.lib` or `lib.defs` file from the union of the two files but takes all the information from the files and is therefore potentially larger. The extra data is usually comments. Select this option if you want to use only the selected file, not both files.
Solo Content Options	Enables editing option for the saved file.
Insert Extra Comments	Adds extra comments to the saved file. This option is used with the Maximize for Solo Use option.

Related Topics

Select cds.lib File To Open

Select lib.defs File To Open

Select cds.lib File To Open

Use this form to select `cds.lib` files from other locations.

Field	Description
Look in	Displays the currently selected directory.
The list box	Displays the directories and files available in the currently selected directory, it is filtered by the value of the *Files of type* field.
File name	Specifies the name (and path) to the file you want to open.
Files of type	Filters the files displayed in the list box.
Open	Opens the path of the selected file in the File Open form.

Related Topics

Select lib.defs File To Open

Displaying Multiple Library Definitions File

Select lib.defs File To Open

Use this form to select `lib.defs` files from other locations.

Field	Description
Look in	Displays the directory currently selected.
The list box	Displays the directories and files available in the directory currently selected (filtered by the value of the *Files of type* field).
File name	the name (and path) to the file you want to open.
Files of type	filters the files displayed in the list box.
Open	puts the path of the selected file in the File Open form.

Related Topics

Select cds.lib File To Open

Select New File Format Form

Use this form to create either or both library definitions files listed in the *Edit Format* section.

Use the *Save As* command to save both files at the same time. Failure to keep these two files synchronized can cause limited interoperability.

Field	Description
Edit Format	Lists all the available library definition files.
Cadence "cds.lib"	Creates a standard `cds.lib` file.
OpenAccess "lib.defs"	Creates a standard `lib.defs` file.

Related Topics

Creating Library Definitions File

B

Library Path Editor Environment Variables

This section provides information on the names, descriptions, and graphical user interface equivalents for the Library Path Editor environment variables.

autoExclEdit

transientSaveLocks

warnExclLock

autoExclEdit

```
cdsLibEditor.main autoExclEdit boolean { t | nil }
```

Description

It is not recommended to set the `autoExcl` lock to `t` because other Cadence programs malfunction when the `cds.lib` file is locked.

Sets the exclusive lock for the `cds.lib` file that is currently open in the library path editor. The default value is `nil`.

GUI Equivalent

None

Examples

```
envGetVal("cdsLibEditor.main" "autoExclEdit")
envSetVal("cdsLibEditor.main" "autoExclEdit" 'boolean t)
```

Related Topics

Locking the cds.lib File for Editing

transientSaveLocks

```
cdsLibEditor.main transientSaveLocks boolean { t | nil }
```

Description

Enables the new transient edit lock mode for the `cds.lib` file that is currently open in the library path editor. The default value is `t`.

GUI Equivalent

None

Examples

```
envGetVal("cdsLibEditor.main" "transientSaveLocks")
envSetVal("cdsLibEditor.main" "transientSaveLocks" 'boolean nil)
```

Related Topics

Locking the cds.lib File for Editing

warnExclLock

```
cdsLibEditor.main warnExclLock boolean { t | nil }
```

Description

Disables the popup messages. The default value is `nil`.

GUI Equivalent

None

Examples

```
envGetVal("cdsLibEditor.main" "warnExclLock")
envSetVal("cdsLibEditor.main" "warnExclLock" 'boolean t)
```

Related Topics

Locking the cds.lib File for Editing