Product Version ICADVM20.1 October 2020 © 2020 Cadence Design Systems, Inc. All rights reserved.

Printed in the United States of America.

Cadence Design Systems, Inc. (Cadence), 2655 Seely Ave., San Jose, CA 95134, USA.

Open SystemC, Open SystemC Initiative, OSCI, SystemC, and SystemC Initiative are trademarks or registered trademarks of Open SystemC Initiative, Inc. in the United States and other countries and are used with permission.

Trademarks: Trademarks and service marks of Cadence Design Systems, Inc. contained in this document are attributed to Cadence with the appropriate symbol. For queries regarding Cadence's trademarks, contact the corporate legal department at the address shown above or call 800.862.4522. All other trademarks are the property of their respective holders.

Restricted Permission: This publication is protected by copyright law and international treaties and contains trade secrets and proprietary information owned by Cadence. Unauthorized reproduction or distribution of this publication, or any portion of it, may result in civil and criminal penalties. Except as specified in this permission statement, this publication may not be copied, reproduced, modified, published, uploaded, posted, transmitted, or distributed in any way, without prior written permission from Cadence. Unless otherwise agreed to by Cadence in writing, this statement grants Cadence customers permission to print one (1) hard copy of this publication subject to the following conditions:

- 1. The publication may be used only in accordance with a written agreement between Cadence and its customer.
- 2. The publication may not be modified in any way.
- 3. Any authorized copy of the publication or portion thereof must include all original copyright, trademark, and other proprietary notices and this permission statement.
- 4. The information contained in this document cannot be used in the development of like products or software, whether for internal or external use, and shall not be used for the benefit of any other party, whether or not for consideration.

Disclaimer: Information in this publication is subject to change without notice and does not represent a commitment on the part of Cadence. Except as may be explicitly set forth in such agreement, Cadence does not make, and expressly disclaims, any representations or warranties as to the completeness, accuracy or usefulness of the information contained in this document. Cadence does not warrant that use of such information will not infringe any third party rights, nor does Cadence assume any liability for damages or costs of any kind that may result from use of such information.

Restricted Rights: Use, duplication, or disclosure by the Government is subject to restrictions as set forth in FAR52.227-14 and DFAR252.227-7013 et seq. or its successor

Contents

D (
<u>Preface</u>	11
<u>Scope</u>	12
Licensing Requirements	12
Related Documentation	12
What's New and KPNS	12
Installation, Environment, and Infrastructure	12
Technology Information	13
Additional Learning Resources	13
Video Library	13
Virtuoso Videos Book	13
Rapid Adoption Kits	13
Help and Support Facilities	14
Customer Support	14
Feedback about Documentation	14
Typographic and Syntax Conventions	16
<u>1</u>	
Library Manager Overview	17
What You Can Do with the Library Manager	
Opening the Library Manager	
Changing How You View Library Information	
Viewing Categories and Files in View – Lists Mode	
Viewing Categories and Files in View – Tree Mode	
Using the Library Manager Menus	
File Menu	
Edit Menu	
View Menu	
Design Manager Menu	
Pop-Up Menus	
Help and Support Facilities	
Selecting and Moving Data in the Library Manager	

Selecting Items in Library Manager
Deselecting Items in Library Manager List Boxes
Using Drop-down List
Moving Data in List Boxes
Viewing and Changing File Permissions
Opening a UNIX Window
Exiting the Library Manager
Understanding Files and File Extensions
C-level Database Access (CDBA) File Extensions41
OpenAccess (OA) File Extensions
prop.xx, dd.db, or data.dm File
<u>pc.db File</u>
master.tag File
<u>2</u>
Working with Libraries 45
Opening the Library Path Editor
Opening a Cellview
Creating a New Cellview
Using the Filter and Search Options
Using the Filter Combo Box
Using the Search Option
Refreshing the View and Data
Viewing the Current Cellview Status
Renaming Libraries
Renaming Cells
Renaming Views
Renaming Files
Renaming Design-Managed Objects
Renaming Reference Libraries
Change Library References
Deleting a Library
Deleting a Cell
Deleting a View 79
Deleting Cells Using Filters

Deleting Library or Cell Files
Hiding a Cell 86
Showing Hidden Cells
Working with Text Cellviews
Editing Properties
Editing Library Properties92
Edit Cell Properties94
Editing View Properties95
Adding Properties
Modifying Properties
Updating Managed Files
Customizing Library Display Settings
About Library Display Settings104
Setting Display Options for Libraries104
Creating New Library Attributes110
Setting Attributes on a Library113
Overriding Customized Library Display Settings
Saving Your Override Selections118
Saving Your DM Sync Selections
Creating Combined Libraries
<u>3</u>
Using the Library Browser Form 123
Opening the Library Browser Form
Selecting a View Using the Library Browser
Setting the Cell Filter Mode
Opening the Libary Browser Form Automatically
<u>4</u>
Copying Data129
<u>Using the Copy Function</u>
, ,
Copying a Library
Copying a Cell
Copying a View

Copying a Library File
Copying a Cell File
Using the Copy Wizard Form
Selecting Text in the Copy Wizard159
Editing Text in the Copy Wizard 162
Performing a Simple Copy165
Copying a Hierarchy167
Copying an Exact Hierarchy17
Copying by View
Copying by Configuration
Setting Copy and Rename Preferences
<u>5</u>
Managing Designs189
<u>Checking In Designs</u>
Checking Out Designs
Canceling Check-Outs for Designs
Checking In Properties
Checking Out Properties
Canceling Check-Outs for Properties
Checking In Categories
Checking Out Categories
Canceling the Check-Out of a Category
Using the Automatic Check-In Process
Controlling Automatic Check-In Behavior
Changing Auto Check-In Environment Variable Settings
Using the Automatic Check-Out Process
Controlling Automatic Check-Out Behavior
Changing Auto Check-Out Environment Variable Settings
Submitting Changes
Updating Workareas
<u> Design Manager – Update</u>
<u>Design Manager – Update Workarea</u>
<u>Versioning</u>
Using the Version Information Form

Copying a Version of a Cellview or File Viewing Design Management File Status DM Status Settings Displaying the Update Needed Icon Check In, Check Out, and Cancel Check Out Using the DM Status Form	239 243 243
<u>6</u>	
Creating a Library	. 249
Creating a New Library in the Library Manager	
Creating a New Library Using the CIW	
Supporting the oazip Utility to Compress/Decompress Databases	
Supporting OA Compressed Data Using Library Manager	259
Compiling an ASCII Technology File	. 264
Referencing Existing Technology Libraries	265
Attaching to an Existing Technology Library	
Excluding Process Information	266
7 Changing Files to Read-Only Mode Trying to Check In a Locked File Getting a List of Locked Cellviews Making Cellviews Read-Only	. 270 . 271
<u>8</u>	
Managing Categories	273
Viewing Categories	. 274
Creating a Category	
Editing a Category	. 277
Deleting a Category	278
Renaming a Category	. 279
Creating a Subcategory	279
Creating a New Category That Includes Subcategories	
Creating a Subcategory in an Existing Category	
Modifying a Category to Include a Subcategory	. 282

9	
Setting UNIX Environment Variables	283
Editing the File	
Specifying the Location of Help Files	
Adding the Installation Directory to the Search Path	
Specifying the CDS.log File Name	
Specifying Check-In and Check-Out Policies	285
Other Variables You Might Want to Change	287
10	
 Customizing the Library Manager	289
Using SKILL to Customize the Library Manager	290
About cdsLibMgr.il File	
Using the cdsLibMgr.il File to Customize Menus	293
Triggering Callback Functions	293
Using the Library Manager in Stand-Alone Mode While Customizing	294
Library Manager Customization with Other Processes	294
Restrictions on the Library Manager Customization File	295
Allowed Actions in the Customization File	295
GUI Objects Supported in the Customization File	
Using the .cdsenv File to Customize the Library Manager	297
.cdsenv File Search Path Order	298
Using UNIX to Add Settings to .cdsenv	298
Using the Library Manager to Save Settings to .cdsenv	313
Loading Settings from .cdsenv	314
Using the .libsel File to Customize the Library Manager	
Customizing the Library Manager Location and Size	316
Specifying Settings in the .Xdefaults file	
Specifying Settings in the .libmgr file	317
<u>11</u>	
Library Manager Forms	319
Access Permission Form	322
Add Library Display Attribute Form	322

Rename Reference Library Form	353
Change Library References Form	353
Rename View Form	354
Save Library Manager Defaults Form	354
Select an icon Form	355
Submit Form	356
Technology File for New Library Form	356
Version Information Form	357
View Property Editor Form	357

Preface

The Cadence[®] Library Manager helps you manage your libraries. You can create, add, copy, delete, and organize libraries and cellviews in a design project with the Library Manager.

This user guide describes how to use the Library Manager. It assumes that you are familiar with the Virtuoso[®] design environment and the Cadence[®] SKILL programming language.

This user guide is aimed at developers and designers of integrated circuits and assumes that you are familiar with:

- The Virtuoso design environment and application infrastructure mechanisms designed to support consistent operations between all Cadence[®] tools.
- The applications used to design and develop integrated circuits in the Virtuoso design environment, notably, the Virtuoso Layout Suite, and Virtuoso Schematic Editor.
- The Virtuoso design environment technology file.
- Component description format (CDF), which lets you create and describe your own components for use with Layout XL (and higher tiers).

This preface contains the following topics:

- Scope
- Licensing Requirements
- Related Documentation
- Additional Learning Resources
- Customer Support
- Feedback about Documentation
- Typographic and Syntax Conventions

Scope

Unless otherwise noted, the functionality described in this guide can be used in both mature node (for example, IC6.1.8) and advanced node and methodologies (for example, ICADVM20.1) releases.

Label	Meaning
(ICADVM20.1 Only)	Features supported only in ICADVM20.1 advanced nodes and advanced methodologies releases.
(IC6.1.8 Only)	Features supported only in mature node releases.

Licensing Requirements

For information on licensing in the Virtuoso design environment, see the <u>Virtuoso Software</u> <u>Licensing and Configuration Guide</u>.

Related Documentation

What's New and KPNS

- Cadence Library Manager What's New
- Cadence Library Manager Known Problems and Solutions

Installation, Environment, and Infrastructure

- Library Manager SKILL Functions
- Cadence Installation Guide.
- <u>Virtuoso Design Environment User Guide</u>
- Cadence Application Infrastructure User Guide
- Cadence Library Path Editor User Guide
- Cadence Application Infrastructure User Guide

- Cadence User Interface SKILL Reference
- Cadence SKILL Language User Guide
- Cadence SKILL Language Reference

Technology Information

■ <u>Virtuoso Technology Data User Guide</u>

Additional Learning Resources

Video Library

The <u>Video Library</u> on the Cadence Online Support website provides a comprehensive list of videos on various Cadence products.

To view a list of videos related to a specific product, you can use the *Filter Results* feature available in the pane on the left. For example, click the *Virtuoso Layout Suite* product link to view a list of videos available for the product.

You can also save your product preferences in the Product Selection form, which opens when you click the *Edit* icon located next to *My Products*.

Virtuoso Videos Book

You can access certain videos directly from Cadence Help. To learn more about this feature and to access the list of available videos, see Virtuoso Videos.

Rapid Adoption Kits

Cadence provides a number of <u>Rapid Adoption Kits</u> that demonstrate how to use Virtuoso applications in your design flows. These kits contain design databases and instructions on how to run the design flow.

To explore the full range of training courses provided by Cadence in your region, visit <u>Cadence Training</u> or write to training enroll@cadence.com.

Note: The links in this section open in a separate web browser window when clicked in Cadence Help.

Help and Support Facilities

Virtuoso offers several built-in features to let you access help and support directly from the software.

- The Virtuoso *Help* menu provides consistent help system access across Virtuoso tools and applications. The standard Virtuoso *Help* menu lets you access the most useful help and support resources from the Cadence support and corporate websites directly from the CIW or any Virtuoso application.
- The Virtuoso Welcome Page is a self-help launch pad offering access to a host of useful knowledge resources, including quick links to content available within the Virtuoso installation as well as to other popular online content.

The Welcome Page is displayed by default when you open Cadence Help in standalone mode from a Virtuoso installation. You can also access it at any time by selecting *Help – Virtuoso Documentation Library* from any application window, or by clicking the *Home* button on the Cadence Help toolbar (provided you have not set a custom home page).

For more information, see Getting Help in Virtuoso Design Environment User Guide.

Customer Support

For assistance with Cadence products:

- Contact Cadence Customer Support
 - Cadence is committed to keeping your design teams productive by providing answers to technical questions and to any queries about the latest software updates and training needs. For more information, visit https://www.cadence.com/support.
- Log on to Cadence Online Support
 - Customers with a maintenance contract with Cadence can obtain the latest information about various tools at https://support.cadence.com.

Feedback about Documentation

You can contact Cadence Customer Support to open a service request if you:

- Find erroneous information in a product manual
- Cannot find in a product manual the information you are looking for

■ Face an issue while accessing documentation by using Cadence Help

You can also submit feedback by using the following methods:

- In the Cadence Help window, click the *Feedback* button and follow instructions.
- On the Cadence Online Support <u>Product Manuals</u> page, select the required product and submit your feedback by using the <u>Provide Feedback</u> box.

Typographic and Syntax Conventions

The following typographic and syntax conventions are used in this manual.

text	Indicates names of manuals, menu commands, buttons, and fields.
text	Indicates text that you must type exactly as presented. Typically used to denote command, function, routine, or argument names that must be typed literally.
z_argument	Indicates text that you must replace with an appropriate argument value. The prefix (in this example, z_{-}) indicates the data type the argument can accept and must not be typed.
	Separates a choice of options.
{ }	Encloses a list of choices, separated by vertical bars, from which you must choose one.
[]	Encloses an optional argument or a list of choices separated by vertical bars, from which you may choose one.
[?argName t_arg]	
	Denotes a <i>key argument</i> . The question mark and argument name must be typed as they appear in the syntax and must be followed by the required value for that argument.
• • •	Indicates that you can repeat the previous argument.
	Used with brackets to indicate that you can specify zero or more arguments.
	· · · · · · · · · · · · · · · · · · ·
, · · ·	arguments. Used without brackets to indicate that you must specify at least
/····	arguments. Used without brackets to indicate that you must specify at least one argument. Indicates that multiple arguments must be separated by

If a command-line or SKILL expression is too long to fit within the paragraph margins of this document, the remainder of the expression is moved to the next line and indented. In code excerpts, a backslash (\) indicates that the current line continues on to the next line.

Library Manager Overview

This chapter covers the following topics:

- What You Can Do with the Library Manager on page 18
- Opening the Library Manager on page 20
- Changing How You View Library Information on page 21
- <u>Using the Library Manager Menus</u> on page 24
 - □ File Menu on page 24
 - □ Edit Menu on page 25
 - □ <u>View Menu</u> on page 26
 - □ <u>Design Manager Menu</u> on page 27
 - □ Pop-Up Menus on page 30
- Selecting and Moving Data in the Library Manager on page 34
- Viewing and Changing File Permissions on page 37
- Opening a UNIX Window on page 39
- Exiting the Library Manager on page 40
- Understanding Files and File Extensions on page 41

Library Manager Overview

What You Can Do with the Library Manager

You can use the Library Manager to create, add, copy, delete, and organize libraries and views in a design project. More specifically, you can

- Import and access design data in libraries under design management control (check out, check in, and version control)
- Define the path to the libraries you want your Cadence design software to access in the cds.lib file (see the *Cadence Library Path Editor Help*)

Important

From IC614, lib.defs library definition files are no longer supported in Virtuoso. The only supported format now being cds.lib. A new CdsLib plugin (release 31.09) allows for OpenAccess applications to read cds.lib files, where previously they required to use lib.defs.

Caution

Virtuoso hangs while launching library manager, if there is a inaccessible path in the cds.lib. Virtuoso process would be unresponsive to mpsImport requests initiated by Library Manager. You need to remove or modify the cds.lib entry to proceed.

- Create new libraries in your directories
- Copy data into libraries
- Delete libraries
- Rename libraries, cells, views, files, or reference libraries
- Edit library, cell, and view properties
- Organize cells into categories to help you quickly locate them
- Change permissions for files and views
- Open a UNIX window to locate files and hierarchies
- Customize the colors of the Library Manager user interface using commands in the .Xdefaults file
- Navigate libraries, cells, views, files, and categories

Library Manager Overview

A record of the commands used during your Library Manager session is stored in the libManager.log file in your current working directory.

Important

The Library Manager only lets you edit and manage OpenAccess libraries. You need to convert a CDB library to OpenAccess before you can use it with the Library Manager. Contact Cadence Customer Support to discuss how to migrate CDB data to OpenAccess.

A CDB library has a library-level prop.xx file. Such libraries are grayed-out in the Library Manager and their contents are not displayed. None of the Library Manager commands can be used on the library. For example, you cannot copy the library or delete it. Cell-level prop.xx files are also grayed out. Library Manager commands cannot be used on these files. When you copy libraries or cells, the prop.xx file is not copied. Copy commands can also fail if you have prop.xx files.

Note: If an OpenAccess library erroneously contains a prop.xx file, you need to delete the file.

Library Manager Overview

Opening the Library Manager

You can open the Library Manager form in stand-alone mode from an xterm or command tool window or in integrated mode from the Command Interpreter Window (CIW).

➤ To open the Library Manager from an xterm or command tool window, type the following command:

libManager &

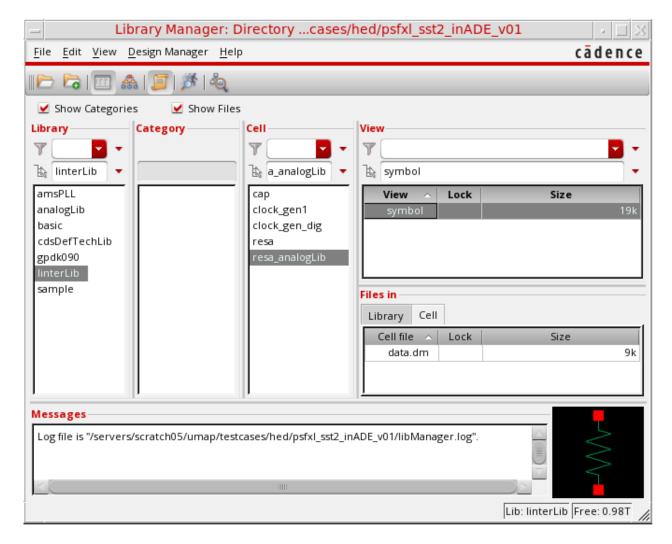
The Library Manager appears as a stand-alone application (that is, not integrated with a design environment application).

Note: In stand-alone mode, you cannot open cellviews.

Library Manager Overview

➤ To open the Library Manager form from the CIW, choose *Tools – Library Manager*.

The Library Manager form is displayed (see <u>"Library Manager Form"</u> on page 346).



Note: The applications, such as Library Manager, Library Selector, and Library Path Editor, will start with the same font as Virtuoso. Once you choose the font using the Set Fonts dialog box, the font of these applications will change accordingly.

Changing How You View Library Information

You can choose to display library information (library, cell, view, file, category) using list boxes (in *View – Lists* mode) or using a hierarchical tree structure (in *View – Tree* mode).

Note: See "View Menu" on page 26 to see the *View* menu.

Library Manager Overview

➤ To display information in list boxes, choose *View - Lists* or click the *View Lists* icon from the Library Manager toolbar.

See also "Viewing Categories and Files in View - Lists Mode" on page 22.

➤ To display information in tree mode, choose *View - Tree* or click the View Tree icon from the Library Manager toolbar.

See also <u>"Viewing Categories and Files in View – Tree Mode"</u> on page 23.

You can right-click over the table header of the *Libraries* section to display a pop-up menu that will allow you to customize the information displayed in the tree table.



Viewing Categories and Files in View - Lists Mode

To view categories and files in View - Lists mode, do the following:

1. Select the Show Categories check box.

The *Category* list box appears between the *Library* and *Cell* list boxes.

Note: See <u>Chapter 8, "Managing Categories"</u> for more information about categories.

2. Select the *Show Files* check box. The *Files in* list box is displayed under *View* box.

This section shows the *Library* and *Cell* tabs, each of these tabs show the list of files under library and cells respectively.

Library Manager Overview

Viewing Categories and Files in View – Tree Mode

View – Tree mode shows you libraries, cells, views, categories, and files in a hierarchical tree structure:

```
| libName | categoryName | subcategoryName | cellName | cellName | libelnView | libelnCell | fileInLibrary
```

To view categories and files in *View - Tree* mode, do the following:

➤ Click the right-facing arrow to the left of each level to expand that branch of the tree.

The right-facing arrow becomes a down-facing arrow. The contents of the expanded branch appear.

Categories and subcategories (if there are any) appear at the top levels of the library branch. Files appear at the top of the expanded branches for libraries and cells:

- Files in libraries appear beneath either categories, if there are any, or cells if there are no categories.
- Files in cells appear beneath views.

Using the Library Manager Menus

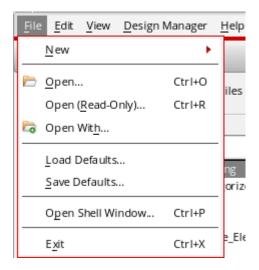
You can access Library Manager commands by clicking the following menus on the banner:

- File Menu, next
- Edit Menu on page 25
- View Menu on page 26
- <u>Design Manager Menu</u> on page 27
- Pop-Up Menus on page 30

See also "Pop-Up Menus" on page 30.

File Menu

These are the File menu commands.

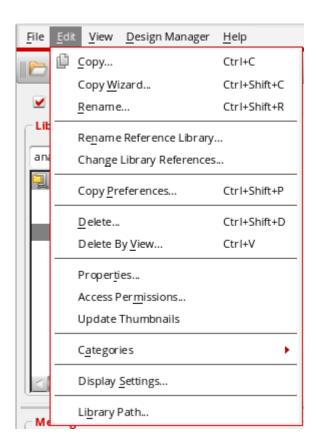


Note: When you open Library Manager in stand-alone mode, you can select the *Open* and *Open (Read-Only)* commands only after you select a view either in the tree (in *View – Tree* mode) or in the *View* list box (in *View – Lists* mode). See <u>"View Menu"</u> on page 26 for information about *View* menu commands.

Library Manager Overview

Edit Menu

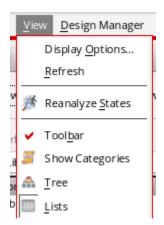
These are the *Edit* menu commands.



Library Manager Overview

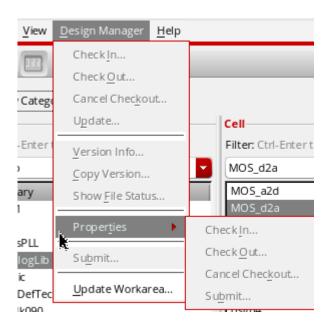
View Menu

These are the *View* menu commands.



Design Manager Menu

These are the *Design Manager* menu commands.



Library Manager Toolbar

Selecting *View – Toolbar* will display a *Library Manager Toolbar* below the menu bar that provides quick access to a number of useful commands that are also found in the Library Manager menus.

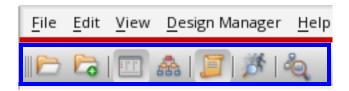


Figure 1-1 Library Manager Toolbar

The *Library Manager Toolbar* contains the following short-cut tools:

- Open For EditOpens a selected View in the appropriate application for edit.
- Open With

Library Manager Overview

Displays the Open File form where you can select what particular application that you want to open a selected view with.

■ View Lists

Displays library, cell and view content in a list format.

■ View Tree

Displays library, cell, and view content in a hierarchical tree format.

■ Show Categories

Toggles on and off the display of the *Catergories* column list or tree information.

■ Reanalyze States

Select so that the Library Manager retrieves and displays the latest file states when selecting a new cell in the *List* view, or an *Open/Close* of a cell in the tree view. This command works similarly to the *View – Refresh* menu option but has lower overhead as it does not regenerate the library file contents.

Note: File states will not be tracked until this option is selected.

Show open cellviews in use

Reloads the lists in the window with icons next to names to indicate if a library, cell, or view is opened in read mode or edit mode.

Library Manager Overview

Thumbnail Images of Cellviews

Cellview previews are provided in the lower right area of the Library Manager window, in both the tree and list views.

These thumbnail images are an approximate representation of a cellview, with some details that can not be appropriately displayed removed. Thumbnail cellview previews can however aid selection before opening a view.

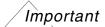
You can update displayed thumbnail images by selecting *Edit – Update Thumbnails* or right-clicking in the Library Manager and selecting *Update Thumbnails* from the context-menu presented.

Note: Thumbnail images that represent Pcells can be identified with a 'Pcell' watermark in the lower left corner of the image.

Note: See also <u>hiGenerateThumbnails</u> in the *Cadence User Interface SKILL Reference*.

Thumbail Variables in .cdsenv

The following thumbnail environment variables are defined in tools/dfII/etc/tools/ui/.cdsenv.



These variables should only be considered for use if you run into performance issues on thin clients (where the creation of pixmaps for thumbnail display could cause a slowdown or X resource problem).

ui.thumbnails enable boolean t

If enable is set to nil, thumbnails will not be displayed or generated. This variable also overrides the display and generate variable settings (see below).

ui.thumbnails display boolean t

Disables thumbnail display in both the Libary Manager and *File – Open* forms.

ui.thumbnails generate boolean t

Disables auto-generation of thumbnails.

ui.thumbnails verbose boolean nil

Turns on verbose mode which prints the location of a saved file when a thumbnail is saved.

Library Manager Overview

Pop-Up Menus

To display pop-up menus for libraries, cells, views, files, or categories, do the following:

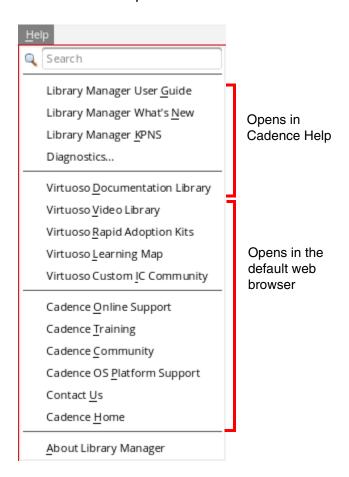
- ➤ If you are in *View Lists* mode, right-click an item in any of the Library Manager list boxes.
- ➤ If you are in *View Tree* mode, right-click an item anywhere in the tree.

The appropriate pop-up menu for that item appears.

Help and Support Facilities

For help with various Virtuoso products, do the following:

1. Choose Help.



2. Choose one of the following menu options:

Help menu option	Description
Search	A text field that lets you enter a search string. Press ${\tt Enter}$ to view the search results.
	Note: Do not enclose the search string in double quotes.
User Guide	Opens Virtuoso Design Environment User Guide (at the section that provides information about using CIW) in Cadence Help.
What's New	Opens the Virtuoso What's New document in Cadence Help.

Library Manager Overview

Known Problems and Solutions

Opens the Virtuoso Known Problems and Solutions document in Cadence Help.

Virtuoso Documentation Library Opens the Cadence Help home page, which provides quick access links to the following local and online resources:

- What's New
- Video Demos and Tutorials
- Featured Content
- Known Problems and Solutions
- Other web resources

Virtuoso Video Library

Opens the Video Library page available on Cadence Online Support (COS). This page lists the videos available for various Virtuoso products.

Note: You must have a COS account to access the content available on COS.

Note: Contact your IT support to ensure that the Internet ports required for video playback are enabled.

Virtuoso Rapid Adoption Kits

Opens the Rapid Adoption Kits page on COS. This page lists Rapid Adoption Kits (RAKs) available for various Virtuoso products. A RAK contains design databases and instructions on how to run the design flow.

Virtuoso Learning Map

Lists domain-specific training available on Cadence Training Services.

Cadence Training Services learning maps provide a comprehensive visual overview of the learning opportunities for Cadence customers. They provide recommended course flows as well as tool experience and knowledge levels to guide customers through a complete learning plan.

Virtuoso Custom IC Community

Opens the Virtuoso Custom IC Community web page. This page provides access to the latest blogs and discussion threads on various Virtuoso products and design topics, information about software downloads and support and training, and other related information. You too can contribute to the community forum by creating a Cadence account. This gives you additional benefits such as alerts about topics of interest and access to online webinars.

Library Manager Overview

Cadence Online Support

Opens COS, which you can use to access information about Cadence products, documentation, videos, RAKs, application notes, troubleshooting information, alerts, and so on. Improvements are regularly made to COS so that you can get the information you want. We recommend that you bookmark this web site and use it as your first point of reference for any Virtuoso-related information.



You can also access COS by clicking the Cadence logo available in the upper-right banner in each Virtuoso window.

cādence

Cadence Training Opens the Cadence training web page. You can find on this

page information about the training courses available in different regions. Information is available about both classroom

and online courses.

Cadence Community Opens the Cadence Community web page. This page provides

access to the latest blogs and discussion threads on various Cadence products and solutions, and EDA Industry Insights. You too can contribute to the community forum by creating a Cadence account. This gives you additional benefits such as alerts about topics of interest and access to online webinars.

Cadence OS Platform

Support

Provides information about the current Cadence software

releases and the supported platforms.

Contact Us Opens the Cadence Customer Support web page, which

provides customer support contact information for different

regions.

Cadence Home Opens the Cadence corporate web site.

About Virtuoso Displays Virtuoso Design Environment version information.

Library Manager Overview

Selecting and Moving Data in the Library Manager

The following tasks cover ways you can use the Library Manager forms and list boxes to manipulate data:

- Selecting Items in Library Manager, next
- <u>Deselecting Items in Library Manager List Boxes</u> on page 34
- <u>Using Drop-down List</u> on page 35
- Moving Data in List Boxes on page 36

Selecting Items in Library Manager

➤ To select a library, category, cell, view, or file on the Library Manager form (whether in *View - Lists* mode or in *View - Tree* mode), click the item name.

You cannot select multiple items of the same kind.

- To select a library, category, cell, view, or file and display a pop-up menu, right-click the item name.
- ➤ If you are in *View Lists* mode, you can select a specific item not visible in the list box by typing the first part of the name in the active field at the top of the list box. As you type, the list scrolls to any matching names.

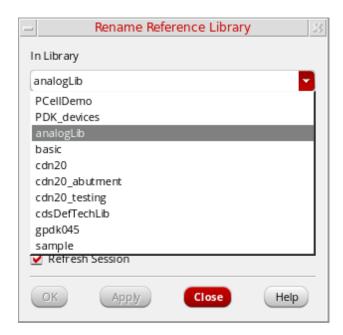
Deselecting Items in Library Manager List Boxes

>	lo deselect an item, click the item name.		
		If you deselect a cell, any selected view is also deselected.	
		If you deselect a category, any selected cell and view are also deselected.	
		If you deselect a library, any selected item in that library is also deselected.	

Library Manager Overview

Using Drop-down List

A drop-down list displays a list of values you can select to fill in a text field. A down arrow on the right side of a text field indicates that you can select from a list of values as an alternative to typing the text.



To select from a drop-down list, do the following:

1. Click the down arrow to the right of the text field.

The list box displays all current values for this text field. In some cases, these are the only valid choices.

2. Select an item from the list.

The selected item appears in the text field.

Note: The list box may have scroll bars to help you navigate. If you do not want to select an item from the list, click the up arrow to close the list box.

Library Manager Overview

Moving Data in List Boxes

Some forms, such as Delete forms and Category forms, use "Do" and "Don't Do" list boxes. You can move data from one list box to the other to specify a group of items affected by the action.



To move items from one list box to the other, do the following:

1. Select the item or items you want to move.

Note: You can select multiple items by Shift-clicking, Control-clicking, clicking and dragging, or using filters.

2. Click the arrow that points in the direction you want to move the items.

The items move from one list box to the other.

Viewing and Changing File Permissions

If you or your group own a library, cell, view, or file, you can change the permissions to control access. These are the same read, write, execute (x permissions you can change from a UNIX command line.

To view or change the access permissions for an item, follow these steps:

- 1. On the Library Manager form, select the item from the tree or appropriate list box.
- **2.** Choose *Edit Access Permissions*.

Note: If the item you select is under design management and is either checked in or checked out to someone other than you, you cannot select the *Access Permissions* command.

The Access Permission form appears (see "Access Permission Form" on page 322).



The item you chose appears at the top of the form. The specified owner and group for the selected item appear in the corresponding fields.

- **3.** Select check boxes for the permission values you want to set.
 - □ By default, the owner has read, write, and execute permissions.
 - By default, the owner must have write permission before group or others can have write permission.

Library Manager Overview

- By default, if group or others have write or execute permission, they must also have read permission.
- 4. Click Apply.
- 5. Click Close.

The Library Manager changes the permissions for the selected item.

Notes about permissions:

- If the software cannot find the item, it generates an error message telling you that the permissions could not be changed.
- As the owner of an item, you can change the permissions, but you cannot change the ownership.

Library Manager Overview

Opening a UNIX Window

If you want to create or edit a cds.lib file, display a directory structure, display information in man pages, or use other UNIX functions, you can open an xterm (UNIX shell) window from the Library Manager.

To open an xterm window, do the following:

➤ Choose File – Open Shell Window.

An xterm window appears. The working directory is the one from which you started either the Library Manager or your design environment application.

Library Manager Overview

Exiting the Library Manager

To exit the Library Manager, do the following:

➤ Choose File – Exit.

The Library Manager closes. Your design environment application does not close.

/Important

Clicking the *Close* button does not close the Library Manager window, instead it minimizes the window. If needed, you can restore this window from the Status bar.

Library Manager Overview

Understanding Files and File Extensions

You can read this section for information about the following files and file extensions:

- C-level Database Access (CDBA) File Extensions on page 41
- OpenAccess (OA) File Extensions on page 42
- prop.xx, dd.db, or data.dm File on page 43
- pc.db File on page 43
- master.tag File on page 44

See also Chapter 8, "Managing Categories" for information about . TopCat and . Cat files.

C-level Database Access (CDBA) File Extensions

A C-level Database Access (CDBA) file has five possible extensions as follows:

Extension	Description
.cdb	Normal CDBA file
	This file contains design data, whether it is schematic, layout, behavioral, or user-customized. For example, Cadence software reads the $sch.cdb$ file when you open a schematic for editing. To open this file using SKILL, you can use the $dbOpenCellViewByType$ function.
.cd%	Backup CDBA file - DO NOT MODIFY THIS FILE
	This file contains cellview information between saves.
.cd+	Temporary auto-save CDBA file - DO NOT MODIFY THIS FILE
	The system maintains this file.
.cd-	Panic CDBA file
	This file contains panic information in the case of a program crash. You can access this file using the <code>dbOpenPanicCellView</code> SKILL function.
.cd?	Corrupted CDBA file

The library directory might also contain a techfile.cds file, which is the technology database if the library is a technology library.

Library Manager Overview

OpenAccess (OA) File Extensions

An OpenAccess (OA) file has a .oa extension. This file contains design data, whether it is schematic, layout, behavioral, or user-customized. For example, Cadence software reads the sch.oa file when you open a schematic for editing. To open this file using SKILL, you can use the dbOpenCellViewByType function.

The library directory might also contain a tech. db file, which is the technology database if the library is a technology library.

Library Manager Overview

prop.xx, dd.db, or data.dm File

The *property bag* file contains object properties.

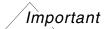
- For CDBA, the file is called prop.xx.
- For OpenAccess 2.0, the file is called dd.db.
- For OpenAccess 2.2, the file is called data.dm.

The contents of this file depend on its location as follows:

Location	Contents
library directory	Properties that affect the entire library, such as the technology binding
cell directory	Cell properties, such as CDF descriptions
view directory	Cellview properties

You can use the SKILL functions described under "Property Bag Functions" in the Database Access chapter of the <u>Virtuoso Design Environment SKILL Reference</u> to access property bag data.

pc.db File



Do not modify this file.

The pc.db file contains on-disk parent/child relationship information for a cellview (that is, information as of the last dbSave, as opposed to what might be in virtual memory). The following tasks and applications use the pc.db file:

- Hierarchical copy
- Hierarchy Editor
- Schematic editor's hierarchy traversal function, which many applications use

If pc. db file exists, hierarchical copy reads the pc. db file to get the parent-child information. Otherwise, hierarchical copy extracts the parent-child information directly from OpenAccess database.

Library Manager Overview

The pc. db file allows the traverser to navigate through other non-CDBA data descriptions such as VHDL and Verilog while avoiding the differences in VM CDBA.

Only the super master (<library>.<default_subcell>) is physically saved on disk. Therefore, when the copy command is executed using Library Manager, only that subcell is copied to the destination library.

master.tag File

Important

Do not modify this file.

The master.tag file contains master information for a cellview. The master information determines what tool to use when you edit a cellview. The master.tag file might contain any of the following (these are examples):

sch.cdb (sch.oa for OpenAccess)

layout.cdb (layout.oa for OpenAccess)

text.txt

verilog.v

Working with Libraries

This chapter covers the following topics:

- Opening the Library Path Editor on page 47
- Opening a Cellview on page 48
- Creating a New Cellview on page 50
- Using the Filter and Search Options on page 52
- Refreshing the View and Data on page 58
- Viewing the Current Cellview Status on page 59
- Renaming Libraries on page 60
- Renaming Cells on page 62
- Renaming Views on page 64
- Renaming Files on page 66
- Renaming Design-Managed Objects on page 69
- Renaming Reference Libraries on page 70
- Deleting a Library on page 75
- <u>Deleting a Cell</u> on page 77
- <u>Deleting a View</u> on page 79
- Deleting Cells Using Filters on page 81
- <u>Deleting Library or Cell Files</u> on page 84
- Hiding a Cell on page 86
- Showing Hidden Cells on page 89
- Working with Text Cellviews on page 90

Working with Libraries

- Editing Properties on page 92
- Adding Properties on page 98
- Modifying Properties on page 102
- Updating Managed Files on page 103
- Customizing Library Display Settings on page 104
- Overriding Customized Library Display Settings on page 114
- Creating Combined Libraries on page 119

Important

The Library Manager only lets you edit and manage OpenAccess libraries. You need to convert a CDB library to OpenAccess before you can use it with the Library Manager. Contact Cadence Customer Support to discuss how to migrate CDB data to OpenAccess.

A CDB library has a library-level prop.xx file. Such libraries are grayed-out in the Library Manager and their contents are not displayed. None of the Library Manager commands can be used on the library. For example, you cannot copy the library or delete it. Cell-level prop.xx files are also grayed out. Library Manager commands cannot be used on these files. When you copy libraries or cells, the prop.xx file is not copied. Copy commands can also fail if you have prop.xx files.

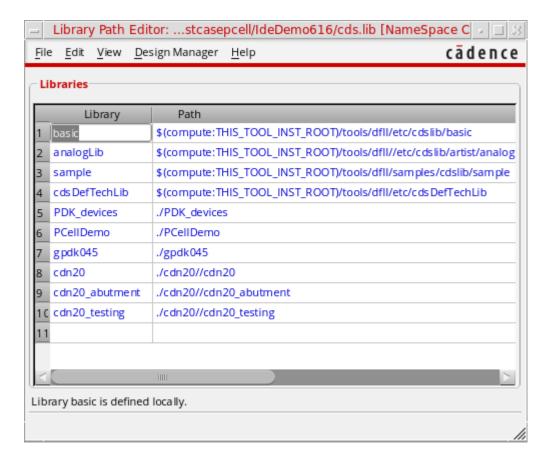
Note: If an OpenAccess library erroneously contains a prop.xx file, you need to delete the file.

Opening the Library Path Editor

To open the Library Path Editor, do the following:

- 1. Open the Library Manager (see "Opening the Library Manager" on page 20).
- **2.** Choose *Edit Library Path*.

The Library Path Editor form appears.



The <u>Library Path Editor</u> lets you view and edit the information in your cds.lib file, which defines the location of the reference and design libraries you want to use in your design.

Working with Libraries

Opening a Cellview

To open a cellview, follow these steps:

1. In the CIW, choose *Tools – Library Manager*.

Libraries defined in your cds.lib file and the default technology library cdsDefTechLib appear on the Library Manager form.

Note: When you open the Library Manager in stand-alone mode, you cannot open cellviews, so the *Open* and *Open* (*Read-Only*) commands are not selectable.

2. In the *Library* list box, choose a library name.

The cells in the selected library appear in the *Cell* list box.

Note: To deselect a highlighted library, click the library name.

3. Select *Show Categories*.

The *Category* list box appears between the *Library* and *Cell* list boxes.

The *Category* list box displays the default categories (*Everything* and *Uncategorized*) plus any categories you have added to this library. By default, the *Everything* category is selected.

4. Highlight the category name.

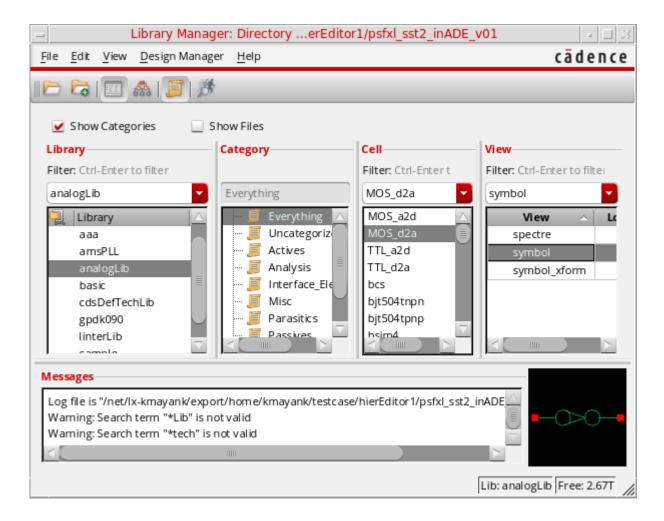
The category name is highlighted. The cells included in that category appear in the *Cell* list box. Hidden cells do not appear in the list. See <u>Hiding a Cell</u> for more information.

Note: To deselect a highlighted category, click the category name.

5. Choose a cell name.

Working with Libraries

The cell name is highlighted. The views associated with the cell appear in the *View* list box.



Note: To deselect a highlighted cell, click the cell name.

6. Choose the view name of the cellview you want to open.

The view name is highlighted.

Note: To deselect a highlighted view, click the view name.

7. Choose File – Open or File – Open (Read-Only).

The Library Manager opens the selected cellview. In this context, see also cdsLibManager.open windowBehavior.

Creating a New Cellview

To create a new cellview, follow these steps:

1. Open the Library Manager.

Note: You can also create a new cellview from the CIW by following the same instructions.

2. Choose File – New – Cell View. Alternatively, you can click inside the Cell or View list box and press Ctrl+N on the keyboard.

The New File form is displayed.



Note: See also "New File Form" on page 350.

You can also type the name of the cell in the Cell field and press Ctrl+N to open the New File form. In this case, the Cell field in the New File form is automatically populated with the name that you have entered in the Cell field of the Library Manager form.

- **3.** In the *Library* drop-down list, choose the name of the library in which you want to create a new cellview.
- **4.** In the *Cell* field, type a cell name for the new cellview.

You can set the maximum cell name length allowed by using the CDS_MAX_CELL_NAME_LENGTH environment variable.

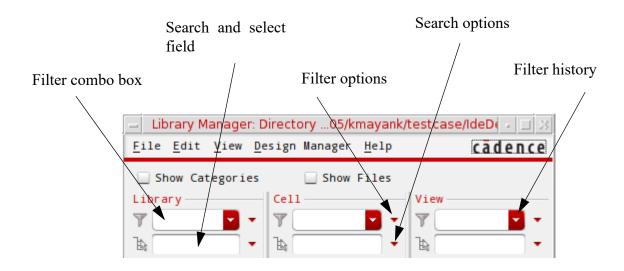
Working with Libraries

- **5.** In the *View* field, type a view name for the new cellview.
- **6.** In the *Type* drop-down list, choose the type of view to be opened.
- **7.** In the *Application* section, select the application that should be invoked to display this type of selected cellview.
- **8.** (Optionally) check to always open this application when the selected view type is opened.
- 9. Click OK.

The new cellview appears in a window of the specified product.

Using the Filter and Search Options

In the Library Manager window, the *Filter* combo box and the *Select and search* field are provided at the top of the *Library*, *Cell*, and *View* list boxes. Use the *Filter* combo box to specify a filter pattern and accordingly display only a subset of libraries, cells, or views. The *Search and select* field lets you search and select a particular library, cell, or view by specifying a search string.



Using the Filter Combo Box

The Filter combo box supports use of patterns containing wildcard characters or regular expressions in the specified input. Use of wildcard characters is the preferred and recommended mode of specifying filter patterns. It provides to you advantages that are similar to filtering a list of files from a directory. For example, if you specify *Lib*, the corresponding items, such as Lib1, Lib2, and Mylib, will be displayed.

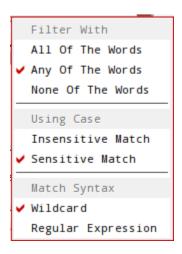
To apply filters, specify a filter pattern in the *Filter* combo box and press the *Enter* or *Tab* key. However, if the *Wildcard* option is selected, there is no need to press the *Enter* or *Tab* key. In this case, when you pause, the filter pattern is applied and the *Library*, *Cell*, or *View* list box is updated dynamically.

Note: If the *Regular Expression* option is selected, you need to press the *Enter* or *Tab* key to apply filters.

Working with Libraries

Pressing the *Enter* or *Tab* key applies the filter pattern and saves it to the *Filter history* list. If you press the *Tab* key, the cursor moves to the *Search and select* field below the *Filter* combo box.

You can set the filter criteria by selecting the required options from the filter options menu, as shown below.



Filter With

The options under *Filter With* let you filter the instances based on one or more specified patterns, as follows:

- All Of The Words: Sets the filters to display the items that contain all the specified words. For example, if you specify Ana**cell (separated by space), the corresponding item such as Analog_res_cell will be displayed in the list box.
- Any Of The Words (default): Sets the filters to display all items that have at least one of the specified words. For example, if you specify the filter pattern *mos*, all the corresponding items, such as nmos, pmos_hivT, and DMOS, will be displayed in the list box.
- None Of The Words: Sets the filter by specifying the filter pattern that you want to exclude from the list box. For example, if you specify mos, it will exclude all the items, such as mos, Mos, and Mos; whereas, pmos will not be excluded.

Using Case

The options under *Using Case* let you determine whether the filter results must be case sensitive (*Sensitive Match*) or any text case is acceptable (*Insensitive Match*).

Working with Libraries

- Insensitive Match: Sets the filter to display a subset of items, irrespective of casing. For example, if you specify the text string *mos, all the corresponding items, such as Nmos and CMOS, will be displayed in the list box.
- Sensitive Match (default): Sets the filter to display a subset of items with the exact casing. For example, if you specify the text string *mos, only the lowercase items such as, Nmos and Cmos, will be displayed in the list box.

M

latch Syntax			
he options under <i>Match Syntax</i> let you choose the syntax that is used to interpret a pattern lter.			
l		Wildcard (default): Sets the filter by specifying an item using the following wildcard characters:	
		* (asterisk): Matches zero or more characters. For example, if you specify $mos*$, all the corresponding items starting with mos such as, mos_t and Mos_hiVT , will be displayed in the list box.	
		? (question mark): Matches any single character. For example, if you specify mos ?, only the items followed by a single character such as, $mos1$ and $Mos2$, will be displayed.	
		[] (square brackets): Represents a set of characters enclosed within the square brackets. For example, if you want to filter the items starting with a or \mathbb{A} and containing the substring nalog, specify [aA]nalog as a search string. It will display the matching items, such as analog and Analog.	
		\ (backslash): Escapes any wildcard character. For example, if you want to filter out the results containing "*" (asterisk), you need to add "\" (backslash) before the "*" symbol. For example, if you specify $my \ensuremath{\texttt{my}}\ensuremath{\texttt{cell*}}$, all corresponding items, such as $my \ensuremath{\texttt{my}}\ensuremath{\texttt{cellA}}$, will be displayed in the list box.	
l	Regular Expressions: Sets the filter to use regular expressions to interpret the meaning of a pattern. Following are some examples:		
		. (dot): If you specify $sa.ple$, it matches a single character and the corresponding item such as $sample$ will be displayed in the list box.	
		.* (dot and asterisk): If you specify $mos.*$, all the corresponding items, such as mos_t , $mosA$, and Mos_hiVT , will be displayed in the list box.	
		$\$ (backslash): If you want to filter out the results containing "*" (asterisk), add "\" (backslash) before the "*" symbol. For example, if you specify my*cell*, all	

Working with Libraries

corresponding items, such as my*cell and my*cellA, will be displayed in the list box.

- ^ (caret): If you want to filter the items starting with cds, specify ^cds. It will display all the items, such as cdsDefTechLib, cdsDefLibTechview, and cdslibtechView.
- \$ (dollar): If you want to filter the items ending with Lib, specify .*Lib\$. It will display all the items, such as analogLib and cdsLib, in the list box.
- [] (square brackets): If you specify Lib[1-3], it will display all the corresponding items, such as Lib1, Lib2, and Lib3, in the list box.
- ☐ | (pipe): If you want to filter all the items starting with Lib or cds, specify Lib.* | cds.*. It will display all the items, such as Lib1, Lib2, and cdsLib.
- [^] (caret in square brackets): If you want to filter all the items starting with Lib and want to exclude the items containing 3, specify ^Lib[^3]*. It will display all the items, such as Lib1, Lib2, and Libmgr, except Lib3.

Some important points to remember:

To record the history of previously applied filter patterns, press the *Enter* or *Tab* key after specifying the text in the *Filter* combo box. The history of previously filtered items is saved at the following location:

\$CWD/.cadence/<userID>/libManager

- To view the history of previously applied filter patterns, click the drop-down button of the *Library*, *Cell*, or *View* combo box. It will display the list of filter pattern history from where you can reapply any of the filters.
- The drop-down list maintains a list of the last 50 filtered patterns. The history is valid for all subsequent Virtuoso sessions.

By View Names

This section is included only in the Views filter options menu.

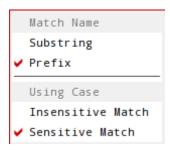
■ Filter Cells by View Names: Sets the filter to display only those cells that match the filtered views. It is not selected by default.

Working with Libraries

Using the Search Option

To search for a specific library, cell, or view, specify a text string in the respective *Search and select* field. To select the instance, press the *Enter* or *Tab* key.

Note: If you have already applied a filter, you can only search for the instances from the available subset of library, cell, or view. You can set the search criteria by selecting the required options from the *Search options* menu, as shown below.



Match Name

The options under *Match Name* allow you to search for an instance either by specifying a substring or a prefix.

- Substring: Searches the first instance in the list box that contains the specified text string. For example, if you specify mos, the Nmos instance will be selected in the list box.
- *Prefix* (default): Searches the first instance in the list box that starts with the specified text string. For example, if you specify mos, the mosView instance will be selected in the list box.

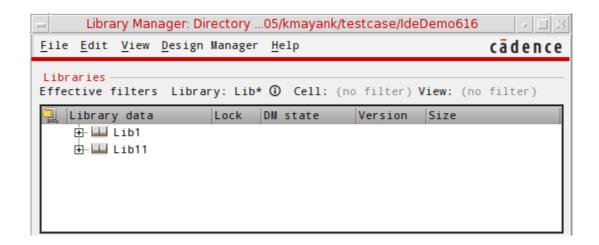
Using Case

The options under *Using Case* let you determine whether search results must be case sensitive (*Sensitive Match*) or any text case is acceptable (*Insensitive Match*).

- Insensitive Match: Searches the first instance in the list box irrespective of casing. For example, if you specify the text string mos, the Mos instance will be selected in the list box.
- Sensitive Match (default): Searches the first instance with the exact casing. For example, if you specify the text string mos, only the lowercase items, such as Nmos or Cmos, will be selected in the list box and items like CMOS will not be matched.

Working with Libraries

Once you set the filter in the *List* mode, the *Tree* mode will only display the items matching the filter criteria.



To view the results in the *Tree* mode, select *View – Tree*. In this mode:

- When you choose a library, only the libraries matching your filter string appear in the expanded branch.
- When you choose a cell, only the cells matching your filter string appear in the expanded branch.
- When you choose a view, only the views matching your filter string appear in the expanded branch.

Refreshing the View and Data

To refresh the view, do the following:

1. Choose *View – Refresh* in the Library Manager window.



By default, all modified libraries appear selected. If a cellview is opened in the edit mode, the corresponding entry will not be listed.

2. Deselect any libraries that you do not want to update in the view and click *OK*.

The selected libraries are reloaded from the library definitions.

To refresh design data, technology files, and CDF data in the current session, do the following:

Select File − Refresh in the Virtuoso Command Interpreter Window (CIW).

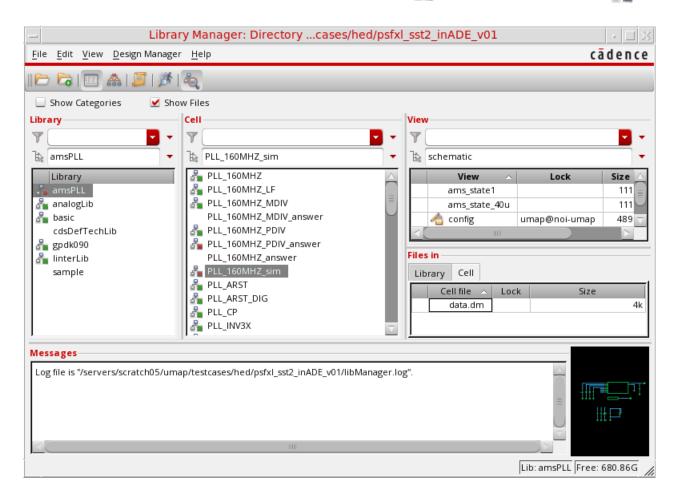
If there is no new data to refresh, an appropriate message appears.

Viewing the Current Cellview Status

To view the current cellview status:

Click the Show open cellviews in use button on the Library Manager toolbar.

The lists in the window are reloaded with icons next to names. The icons indicate whether a library, cell, or view is opened in read mode (green icon \mathbb{A}_{\bullet}) or edit mode (red icon \mathbb{A}_{\bullet}).



You can click the toggle button *Show open cellviews in use* to hide the status icon indicators.

Working with Libraries

Renaming Libraries

To rename a library, follow these steps:

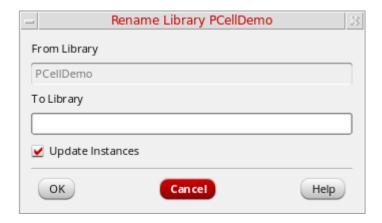
- 1. Open the Library Manager (see "Opening the Library Manager" on page 20).
- 2. Select the library you want to rename.

Make sure no cell name or view name is selected. To deselect all cells and views, right-click in the *Library* list box.

To set preferences for *Edit – Copy* and *Edit – Rename*, see <u>"Setting Copy and Rename"</u> Preferences" on page 181.

3. Choose *Edit – Rename*.

The Rename Library form appears (see "Rename Library Form" on page 352).



The name of the selected library appears in the *From Library* field. The *Update Instances* check box is selected by default.

□ When *Update Instances* is selected, the Library Manager replaces all instances by the name in the *From Library* field with the name in the *To Library* field.

For example, with *Update Instances* selected, an instance of .../projectLib/iopin/symbol is renamed to .../myLib/iopin/symbol. (All instances of projectLib are changed to myLib.)

□ When *Update Instances* is unselected, the software leaves references to the *From Library* name unchanged.

If you rename projectLib to myLib with *Update Instances* unselected, instances of .../projectLib/iopin/symbol (for example) remain the same such that they become unbound instances unless you replace the projectLib library.

Working with Libraries

4. In the *To Library* field, type a new name for the library.

Note: The library name cannot duplicate another library name. If the name you type in the *To Library* field already exists (such as analogLib), an error message appears.

5. Click OK.

The system changes the name of the selected library (*From Library*) to the new name (*To Library*).

Note: If the destination library already contains the tech.db file, the source library's tech.db is not copied. Otherwise, while copying a source library to an existing library, the tech.db file associated with the source library will also be copied to the destination library.

If you are working with a design-managed library, the Rename Library dialog box shows an additional section. For information, see Renaming Design-Managed Objects on page 69.

Renaming Cells

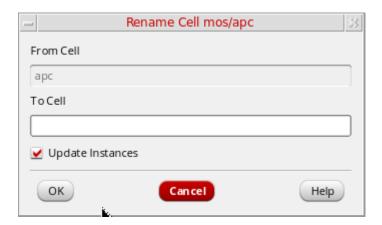
To rename a cell, follow these steps:

1. Select the cell you want to rename.

Make sure no view name is selected. (If you are in *View – Lists* mode, you can deselect all views by right-clicking in the *Cell* list box.)

2. Choose *Edit – Rename*.

The Rename Cell form appears (see "Rename Cell Form" on page 352).



The name of the selected cell appears in the *From Cell* field.

Note: If the selected cell is a combined cell, the *Edit – Rename* command is not available. See <u>"Creating Combined Libraries"</u> on page 119 for more information.

3. In the *To Cell* field, type the new name for the cell.

The cell name cannot duplicate an existing cell name in the library.

You can set the maximum cell name length allowed by using the CDS_MAX_CELL_NAME_LENGTH environment variable.

- **4.** (Optional) Deselect *Update Instances*.
 - □ When *Update Instances* is selected (the default), the Library Manager replaces all instances having the *From Cell* name with the *To Cell* name.
 - When *Update Instances* is unselected, the Library Manager keeps references to the *From Cell* name such that all placed instances of the *From Cell* continue to reference that name: Instances using the old (*From Cell*) name are unbound instances unless you replace them with the new (*To Cell*) cell.

Working with Libraries

5. Click *OK*.

The Library Manager changes the name of the selected cell (*From Cell*) to the new name (*To Cell*).

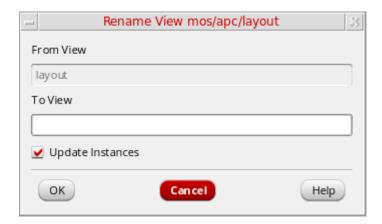
If you are working with a design-managed cell, the Rename Cell dialog box shows an additional section. For information, see <u>Renaming Design-Managed Objects</u> on page 69.

Renaming Views

To rename a view, follow these steps:

- 1. Select the view you want to rename.
- **2.** Choose *Edit Rename*.

The Rename View form appears (see "Rename View Form" on page 354).



The name of the view you selected appears in the *From View* field. The entire cellview path appears in the title banner of the form.

3. In the *To View* field, type the new name for the view.

The new view name cannot duplicate an existing view name for the cell.

- 4. (Optional) Deselct Update Instances.
 - □ When *Update Instances* is selected, the Library Manager overwrites any occurrences of the *From View* name with the *To View* name.

```
If you rename symbol to symbol (for example), all instances of .../projectLib/buff/symbol are changed to .../projectLib/buff/symbolA.
```

□ When Update Instances is unselected, the Library Manager keeps references to the From View name.

If you rename symbol to symbolA with *Update Instances* unselected, instances of .../projectLib/buff/symbol (for example) remain the same such that they become unbound instances unless you replace the symbol view.

5. Click OK.

Working with Libraries

The Library Manager changes the name of the selected view (*From View*) to the new name (*To View*).

If you are working with a design-managed view, the Rename View dialog box shows an additional section. For information, see <u>Renaming Design-Managed Objects</u> on page 69.

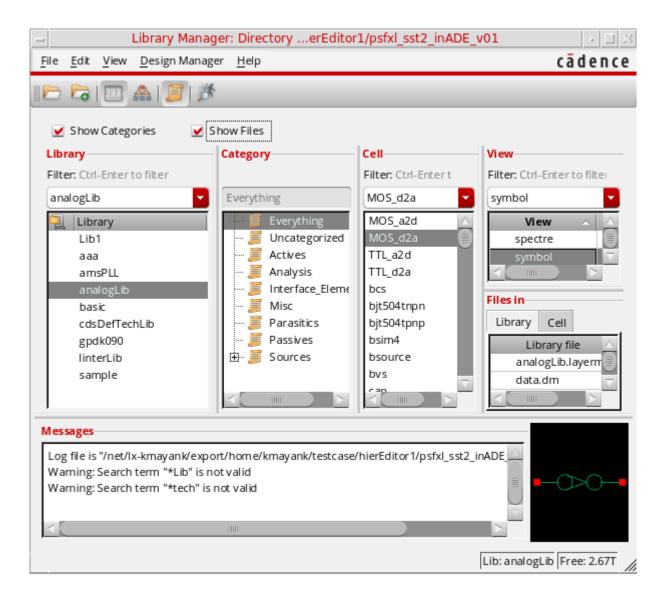
Working with Libraries

Renaming Files

To rename a file, follow these steps:

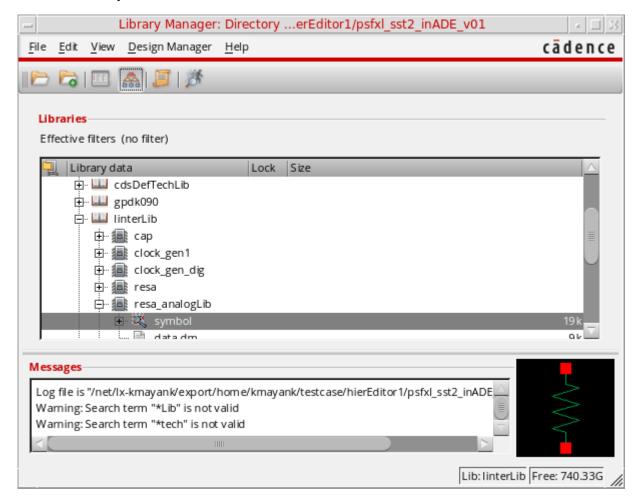
- **1.** Depending on your viewing mode (see <u>"Changing How You View Library Information"</u> on page 21), do one of the following:
 - **a.** If you are in *View Lists* mode, select the *Show Files* check box.

The Files In Library and Files In Cell list boxes appear on the Library Manager form.



Working with Libraries

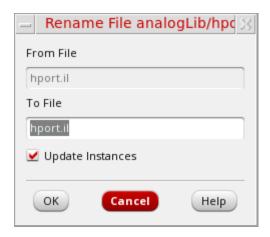
b. If you are in *View – Tree* mode, expand the branches of the tree until you can see the file you want to rename.



- 2. Select the file you want to rename.
- 3. Choose Edit Rename.

Working with Libraries

The Rename File form appears (see <u>"Rename File Form"</u> on page 352). The name of the file you selected appears in the *From File* field.



- 4. In the *To File* field, type the new name for the file.
 - The new file name cannot duplicate an existing file name in the library.
- 5. Click OK.

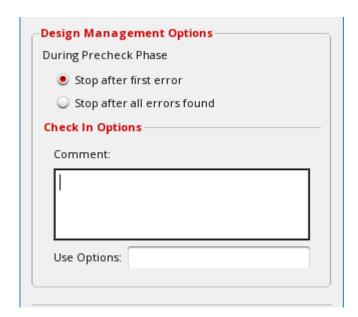
The Library Manager changes the name of the selected file (*From File*) to the new name (*To File*).

If you are working with a design-managed file, the Rename Cell File dialog box shows an additional section. For information, see Renaming Design-Managed Objects on page 69.

Renaming Design-Managed Objects

If you are working with a design-managed (DM) system, the Rename dialog box for libraries, cells, views, and files shows an additional section. The options appear enabled only when the DM system supports renaming.

You can rename libraries, cells, views and files for libraries and cells, preserving their history.



- You can specify the following options:
 - The process will stop if errors are found in the precheck phase. You can specify whether it should stop after the first error is found or after all errors are found.
 - □ In *Check In Options*, you may specify comments in the *Comment* box or an options file in the *Use Options* field.

Important

If you are using a design management system that does not support GDM rename, the Library Manager renames design-managed objects with only the version available for its cellviews and files.

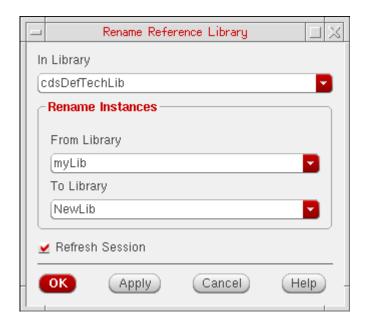
Renaming Reference Libraries

You can change the reference library for instances in your design library. For example, if your design library, newLib, contains via cells from the reference library basic, you can change the reference library from the basic library to the analogLib library so that the via cells, and any other cells in your design library that reference the basic library, now reference the analogLib library. This assumes that the analogLib library contains a via cell.

To change a reference library for a design library, follow these steps:

- 1. Select the library that contains references you want to rename.
- **2.** Choose *Edit Rename Reference Library*.

The Rename Reference Library form appears (see <u>"Rename Reference Library Form"</u> on page 353).



3. In the *In Library* drop-down list, select or type the name of the design library that uses a reference library whose name you want to change.



See "Using Drop-down List" on page 35 for information about using drop-down list.

4. In the *From Library* drop-down list, select or type the name of the current reference library.

Working with Libraries

- **5.** In the *To Library* drop-down list, select or type the name of the new reference library.
- **6.** Click *OK* to save the changes and close the Rename Reference Library form.

Note: To apply changes and keep the form open, click *Apply*.

The system changes the name of the current reference library to the name of the new reference library for all instances in the specified design library.

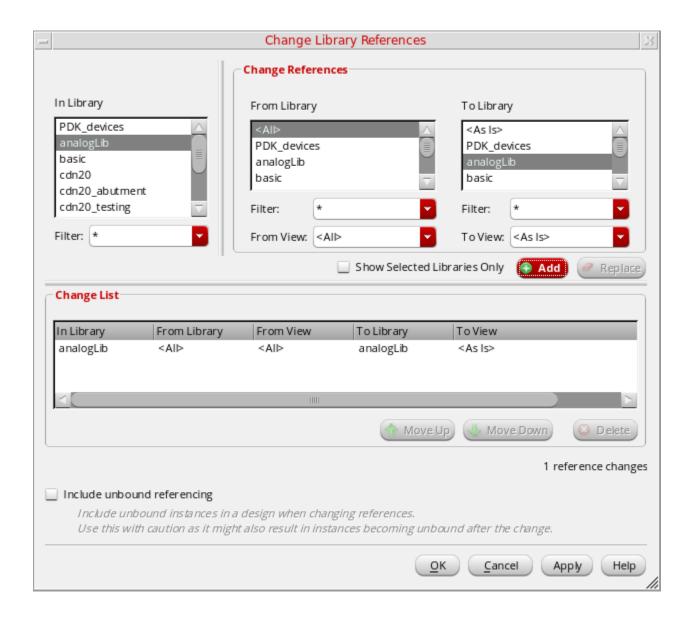
If you cannot rename the reference library, it might be for one of the following reasons:

- An input parameter is invalid.
- The system cannot automatically open the design library for writing.
- You cannot get access permission to the design library (see <u>"Viewing and Changing File Permissions"</u> on page 37).

Change Library References

There might be instances where you need to map all the instance from multiple libraries to a specified destination library. In such cases, you can use the *Change Library References* feature that enables you to map multiple libraries to the specified destination library at once.

For example, in design library, test, you can change the references of libraries, cdsDefTechLib and pc to the pc destination library, as shown below:



Working with Libraries

To change a reference library for a design library, follow these steps:

- 1. Select the library that contains references you want to change.
- **2.** Choose *Edit Change Library Reference*.

The Change Library References form appears (see <u>"Change Library References Form"</u> on page 353).



- **3.** In the *In Library* list box, select the name of the design library that uses a reference library whose name you want to change.
- **4.** In the From Library list box, select the name(s) of the current design libraries.

Working with Libraries

5. In the From Library list box, select the name of the new reference library.



See <u>"Using Drop-down List"</u> on page 35 for information about using the drop-down list.

- 6. Click Add. The change list will be added in the Change List area.
- **7.** Click *OK*.

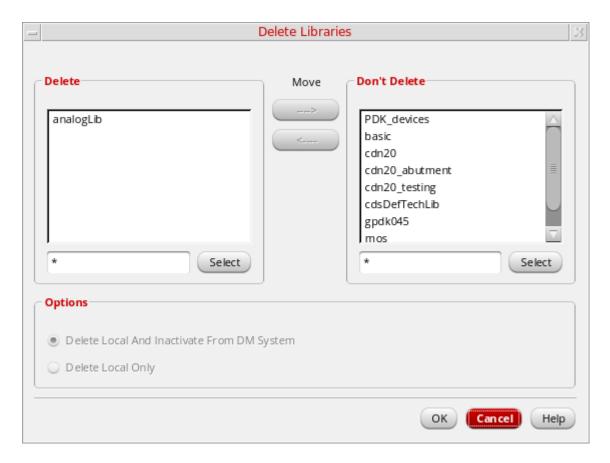
The system changes the references of the current libraries to the name of the new reference library for all instances in the specified design library.

Deleting a Library

To delete a library from the Library Manager, follow these steps:

- **1.** Select the library you want to delete.
- **2.** Choose *Edit Delete*.

The Delete Libraries form appears (see <u>"Delete Libraries Form"</u> on page 341). The selected library appears in the *Delete* list box.



3. (Optional) To delete additional libraries, follow these steps:



You can double-click a single item in the *Don't Delete* list box to move it over to the *Delete* list box. You can select multiple items by Shift-clicking, Ctrl-clicking, clicking and dragging, or using the *Select* filter.

a. Select a library from the *Don't Delete* list box.

Working with Libraries

- **b.** Click the left-facing *Move* arrow to move the selected libraries to the *Delete* list box.
- **4.** Select one of the following *Options*:
 - □ Delete Local And Inactivate From DM System: Deletes a local copy of a library and the copy in the design management repository.
 - □ Delete Local Only: Deletes only your local copy of a library (not the checked in copy in the design management repository).

5. Click OK.

The Delect confirmation form appears.



6. Click *Yes* to perform the specified delete operation.

For more information on deleting a cell, view, cell (using filters), and library/cell files, see the following topics:

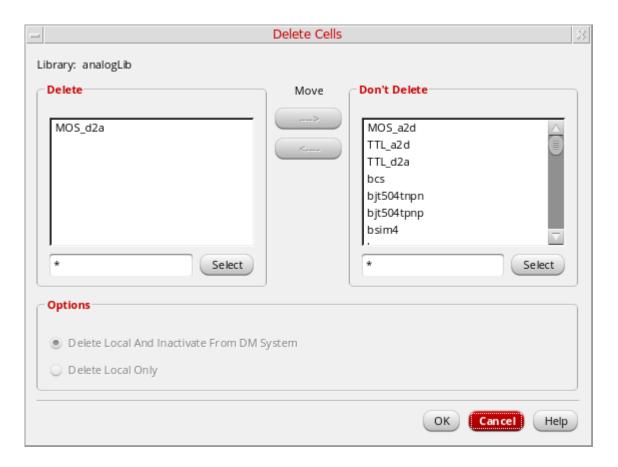
- Deleting a Cell
- Deleting a View
- Deleting Cells Using Filters
- Deleting Library or Cell Files

Deleting a Cell

To delete a cell from the Library Manager, follow these steps:

- 1. Select the cell you want to delete.
- **2.** Choose *Edit Delete*.

The Delete Cells form appears (see "Delete Cells Form" on page 340). The selected cell appears in the Delete list box.



Note: If the cell is selected from a combined library, then it does not appear by default in the *Delete* list. The cell appears in the *Don't Delete* list and the cell name indicates the physical library that it belongs to. If you want to delete the cell, move it to the *Delete* list. Also, the cell will be deleted from the physical library to which it belongs. If the cell appears in multiple libraries under the combined library, the *Don't Delete* list displays an entry for each library (the library name is displayed with the cell name to identify the library), so that you can select the ones you want to delete. However, if the cell is physically in the top-level combined library, then it does appear in the *Delete* list and all the other cells that are in that library are displayed in the *Don't Delete* list. For more

Working with Libraries

information about combined libraries, see "Creating Combined Libraries" on page 119.

3. (Optional) To delete additional cells, follow these steps:



You can double-click a single item in the *Don't Delete* list box to move it over to the *Delete* list box. You can select multiple items by Shift-clicking, Ctrl-clicking, clicking and dragging, or using the *Select* filter.

- a. Select a cell from the *Don't Delete* list box.
- **b.** Click the left-facing *Move* arrow to move the selected cells to the *Delete* list box.
- **4.** Select one of the following *Options*:
 - □ Delete Local And Inactivate From DM System: Deletes a local copy of a cell and the copy in the design management repository.
 - □ Delete Local Only: Deletes only your local copy of a cell (not the checked in copy in the design management repository).
- 5. Click OK.

The Delete confirmation form appears.

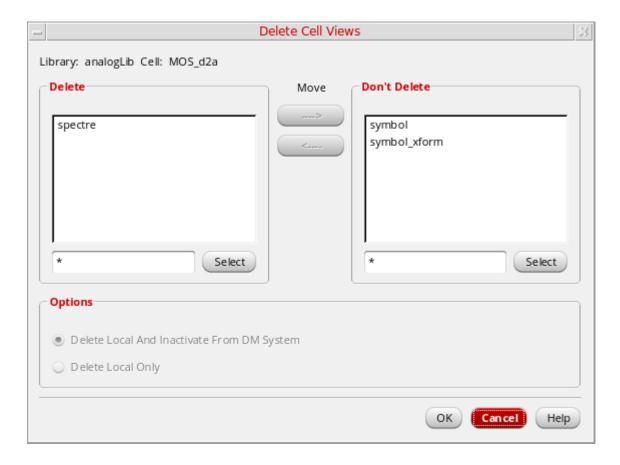
6. Click *Yes* to perform the specified delete operation.

Deleting a View

To delete a view from the Library Manager, follow these steps:

- 1. Select the view you want to delete.
- **2.** Choose *Edit Delete*.

The Delete Cell Views form appears (see <u>"Delete Cell Views Form"</u> on page 340). The selected view appears in the *Delete* list box.



Note: If the view is selected from a combined library, then it does not appear by default in the *Delete* list. It appears in the *Don't Delete* list and its name indicates the physical library that it belongs to. If you want to delete the view, move it to the *Delete* list. In addition, the view will be deleted from the physical library to which it belongs. If the view is part of a combined cell (that is, a cell that is found in more than one library in the combined library), the *Don't Delete* list displays an entry for each library, so that you can select the ones you want to delete. However, if the cell is a part of the top-level combined library, then the view does appear in the *Delete* list and all the other views of that cell are displayed in the *Don't Delete* list. For more information about combined libraries, see

Working with Libraries

"Creating Combined Libraries" on page 119.

3. (Optional) To delete additional views, follow these steps:



You can double-click a single item in the $Don't\ Delete$ list box to move it over to the Delete list box. You can select multiple items by Shift-clicking, Ctrl-clicking, clicking and dragging, or using the Select filter.

- **a.** Select a view from the *Don't Delete* list box.
- **b.** Click the left-facing *Move* arrow to move the selected views to the *Delete* list box.
- **4.** Select one of the following *Options*:
 - □ Delete Local And Inactivate From DM System: Deletes a local copy of a view and the copy in the design management repository.
 - □ Delete Local Only: Deletes only your local copy of a view (not the checked in copy in the design management repository).
- 5. Click OK.

The Delete confirmation form appears.

6. Click *Yes* to perform the specified delete operation.

See also "Deleting Cells Using Filters" next.

Deleting Cells Using Filters

You can delete cellviews or group of cells from your local directory or from both the local directory and the current design management repository. You can delete all views for a cell or only those views for versions you have copied.

To delete views for a given cell, follow these steps:

- 1. Select the view you want to delete.
- **2.** Choose *Edit Delete By View*.

The Delete By View form appears (see "Delete By View Form" on page 339). The name of the selected library appears in the *Library Name* field.



3. In the *Cell Filter* field, type a filter string for the cells you want to delete.

For example, type * to indicate all cells or p* to indicate all cells beginning with a lowercase p.

4. In the *View Filter* drop-down list, type a filter string for the views of these cells you want to delete, or select a view name from the drop-down list.



To add a new view name to the View Filter drop-down list selection list, do the following:

a. Select the Add View Name To Selection List check box.

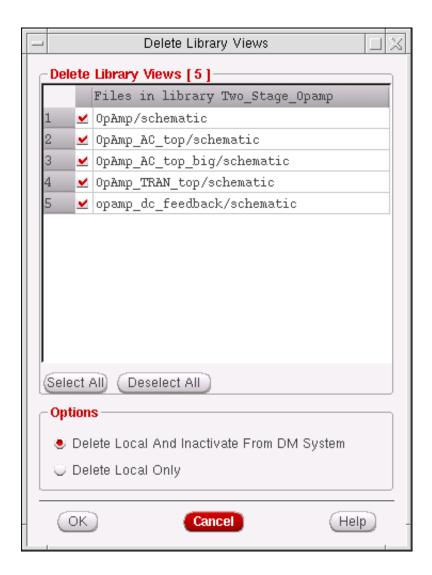
Working with Libraries

b. Click Apply.

The new name is added to the bottom of the *View Filter* drop-down list.

- **5.** (Optional) If you want to delete only cells and views that you copied previousy, select the *Find Copied Versions Only* check box.
- 6. Click OK.

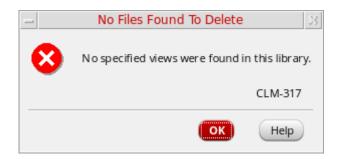
The Delete Library Views form appears. The cellviews that match the criteria you specified on the Delete By View form (see "Delete Library Views Form" on page 341).



Note: If no cellviews that match the criteria are found, the No Files Found To Delete form appears. Click *OK* to close this form and return to the Delete By View form to specify new

Working with Libraries

criteria.



- **7.** On the Delete Library Views form, select one of the following *Options*:
 - □ Delete Local Only: Deletes the local copy of a cellview only.
 - □ Delete Local And Inactivate From DM System: Deletes the local copy of a cellview and the copy in the current design management repository.
- 8. Click OK.

The selected cellviews are deleted.

The following are some possible circumstances that might generate error messages when you try to delete a cellview from a library:

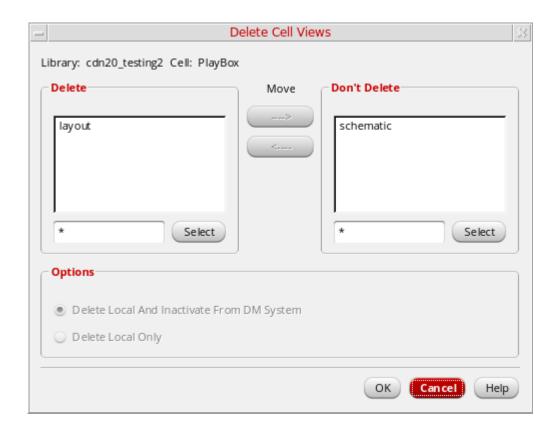
- If you try to delete a read-only library, an error message appears, indicating that the process of deleting by view failed.
- In rare instances, the MPS (Message Passing Subsystem) server (used by the Virtuoso design environment) that stores the directory for the library you specified might be down. In this case, an error message appears, indicating that the library from which you want to delete a view is not found.
- If you do not specify a cell or view in the *Cell Filter* or *View Filter* fields, an error message appears, indicating that a cell or view name is missing.
- If you specify a name for a library, cell, or view that does not exist, an error message appears, indicating that no files were found.

Deleting Library or Cell Files

To delete library-level or cell-level files from the Library Manager, follow these steps:

- 1. Select the file you want to delete in the *Files in Library* or *Files in Cell* list box.
- **2.** Choose *Edit Delete*.

The Delete Library Files or Delete Cell Files form appears. The selected file appears in the *Delete* list box.



Note: If the file is selected from a combined library, then it does not appear by default in the *Delete* list. It appears in the *Don't Delete* list and its name indicates the physical library that it belongs to. If you want to delete the file, move it to the *Delete* list. Also, the file will be deleted from the physical library to which it belongs. If the file is found in multiple libraries, the *Don't Delete* list displays an entry for each library, so that you can select the ones you want to delete. However, if the file is part of the top-level combined library, then it does appear in the *Delete* list and all the other files in the library (or cell) are displayed in the *Don't Delete* list. For more information about combined libraries, see "Creating Combined Libraries" on page 119.

Working with Libraries

3. (Optional) To delete additional files, follow these steps:



You can double-click a single item in the *Don't Delete* list box to move it over to the *Delete* list box. You can select multiple items by Shift-clicking, Ctrl-clicking, clicking and dragging, or using the *Select* filter.

- a. Select a file from the *Don't Delete* list box.
- **b.** Click the left-facing *Move* arrow to move the selected files to the *Delete* list box.
- **4.** Select one of the following *Options*:
 - □ Delete Local And Inactivate From DM System: Deletes the local copy of the file and the copy in the design management repository.
 - □ Delete Local Only: Deletes only your local copy of the file (not the checked in copy in the design management repository).
- 5. Click OK.

The Delete confirmation form appears.

6. Click *Yes* to perform the specified delete operation.

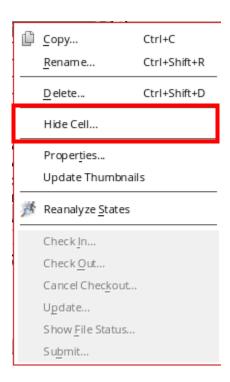
Working with Libraries

Hiding a Cell

You can hide a cell from the *Cell* list box of the Library Manager window. To do this, you need to perform the following steps:

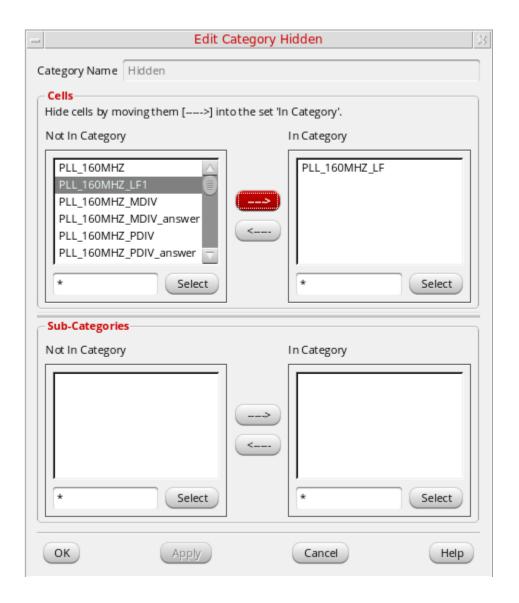
1. Right-click the cell and select the *Hide Cell* option from the context-sensitive menu. Alternatively, you can select *Edit – Hide Cell*.

Note: The *Hide Cell* command appears disabled if the library is in the read-only mode.



2. The Edit Category Hidden window is displayed. In the *Cells* section of this window, move the cell from *Not in Category* list box to *In Category* list box using the right arrow button.

Working with Libraries



3. Click OK.

The new *Hidden* category is created in the *Category* list box of the Library Manager window.

Another way to hide cells is by using the SKILL function ddRegHiddenCellsFunc.

The hidden cells are not visible in the forms mentioned in the table below:

Working with Libraries

Tools	Forms Impacted
Library Manager	CIW – Tool – Library Manager
	List View
	Tree View
CIW	
	XStream Out
	XOasis Out
Layout Editor	
	Open File
	Edit Properties
	Create Instance
	Remaster Instances
	Property Editor Assistant
Layout XL (and higher tiers)	
	Update Connectivity Reference
	Configure Physical Hierarchy Editing
	Property Editor Assistant
Schematic	
	Create Instance
	Add Block
	Cellview From Cellview
	Cellview From Pin List
	Create a Mapping Schematic
	Property Editor Assistant

In case you hide the cells that are already placed in a design, you still can:

■ Edit the existing instances

Working with Libraries

- Descend the existing instances
- View the existing instances in the netlist
- View the existing instances in LVS

Showing Hidden Cells

If you have the required permissions, you can show the hidden cells by performing the following steps:

- **1.** Right-click the *Hidden* category and select *Modify* from the context-sensitive menu. The Edit Category Hidden window is displayed.
- **2.** In the *Cells* section, move the cell from *In Category* list box to *Not In Category* list box using the left arrow button.
- 3. Click OK.

Working with Text Cellviews

While copying or renaming a text cellview, the corresponding module name in the HDL file can be updated automatically using the following autoModuleNameUpdate cdsenv variables.

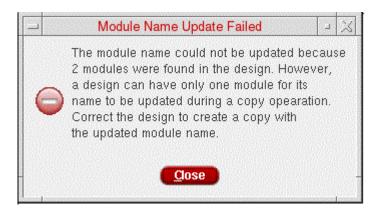
```
envSetVal("hdl" "autoModuleNameUpdate" 'boolean t)
envSetVal("ahdl" "autoModuleNameUpdate" 'boolean t)
```

Note: This variable is set to true by default.

For example, if you rename functional text cellview myVerilogCell, with the module by the same name, to myNewVerilogCell, the module name updates in the Verilog file automatically.

While copying or renaming a text cellview, the match is done only till the first uncommented <module_name> is found instead of matching till " (; ".

The module name will not be updated automatically if there are HDL file parsing errors or multiple modules are existing in the HDL file of the associated cell. In case the HDL file has multiple modules, copying or renaming the associated cell displays the following error message and the module name will not get updated.



If this variable is set to nil, then after each copy or rename operation the application asks whether you want to update the module name automatically or not.



The feature to update the module name in the HDL file automatically is available for Verilog, SystemVerilog, Verilog-A, or Verilog-AMS views.

Working with Libraries

For Verilog-A views, matching of cell names and module names is not done by default. However, you can reconfigure this behavior by setting the following cdsenv variable:

```
envSetVal("ahdl" "matchModuleNameCellName" 'string "error" "warning"
"ignore")
```

When this variable is set, an appropriate message is displayed if there is a mismatch between the cell name and module name. The default value for matchModuleNameCellName is ignore.

Editing Properties

You can edit properties for libraries, cells, or views on the Library Manager form.

The following tasks are presented:

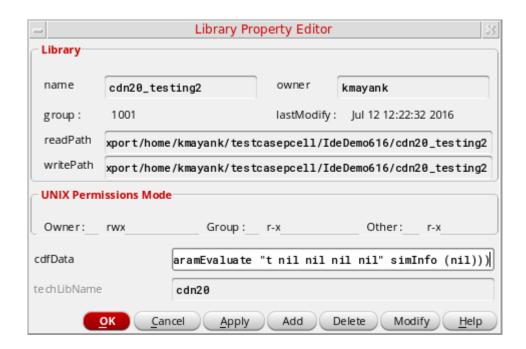
- Editing Library Properties on page 92
- Edit Cell Properties on page 94
- Editing View Properties on page 95

Editing Library Properties

To edit the properties associated with a library, follow these steps:

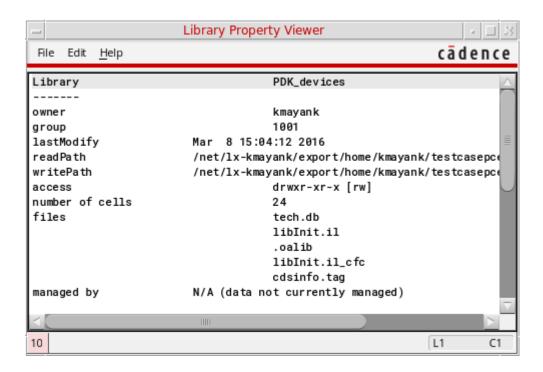
- **1.** In the CIW, choose *Tools Library Manager*.
 - The <u>Library Manager form</u> appears.
- 2. Select the library whose properties you want to edit.
- **3.** Choose *Edit Properties*.

The Library Property Editor form appears (see "Library Property Editor Form" on page 348). The properties of the selected library appear at the bottom of the form.



Working with Libraries

Note: If you do not have write permission for the selected library, you can display but not edit the properties. The Library Property Viewer appears instead of the Library Property Editor.



- **4.** On the Library Property Editor form, you can add, delete, and modify library properties:
 - □ To add a property, click *Add* (see <u>"Adding Properties"</u> on page 98).
 - □ To delete a property, select the property and click *Delete*.

The selected property is removed from the form.

- □ To modify a property, select the property and click *Modify* (see <u>"Modifying Properties"</u> on page 102).
- 5. After you have made changes, do one of the following:
 - □ To apply changes and keep the form open, click *Apply*.
 - \Box To save changes and close the form, click OK.
 - □ To discard changes and close the form, click *Cancel*.

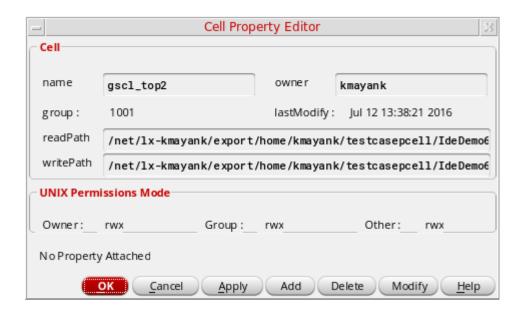
Working with Libraries

Edit Cell Properties

To edit the properties associated with a cell, follow these steps:

- 1. On the Library Manager form, select the cell whose properties you want to edit.
- **2.** Choose *Edit Properties*.

The Cell Property Editor form appears (see <u>"Cell Property Editor Form"</u> on page 324). The properties of the selected cell appear at the bottom of the form.



Note: If you do not have write permission for the selected cell, you can display but not edit the properties. The Cell Property Viewer appears instead of the Cell Property Editor.

- 3. On the Cell Property Editor form, you can add, delete, and modify cell properties:
 - ☐ To add a property, click *Add* (see <u>"Adding Properties"</u> on page 98).
 - □ To delete a property, select the property and click *Delete*.
 - The selected property is removed from the form.
 - ☐ To modify a property, select the property and click *Modify* (see <u>"Modifying Properties"</u> on page 102).
- **4.** After you have made changes, do one of the following:
 - □ To apply changes and keep the form open, click *Apply*.
 - \Box To save changes and close the form, click OK.

Working with Libraries

□ To discard changes and close the form, click *Cancel*.

Editing View Properties

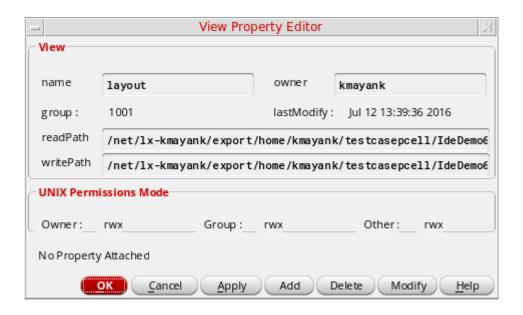
To edit the properties associated with a view, follow these steps:

- 1. On the Library Manager form, select the view whose properties you want to edit.
- **2.** Choose *Edit Properties*.

The View Property Editor form appears (see "View Property Editor Form" on page 357).

Note: If you do not have write permission for the selected cell, the View Property Viewer appears instead of the View Property Editor. You can display but not edit the properties.

Working with Libraries



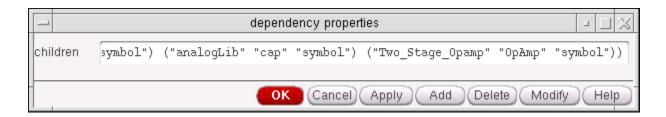
The properties of the selected view appear at the bottom of the form.

- **3.** On the View Property Editor form, you can add, delete, and modify view properties:
 - □ To add a property, click *Add* (see "Adding Properties" on page 98).
 - □ To delete a property, select the property and click *Delete*.

The selected property is removed from the form.

□ To modify a property, select the property and click *Modify* (see <u>"Modifying Properties"</u> on page 102).

Note: The dependency property shown above has an *Expand* button. If you click *Expand*, the dependency properties form appears. You can perform similar operations to those outlined above on this form.



- **4.** After you have made changes, do one of the following:
 - □ To apply changes and keep the form open, click *Apply*.

Cadence Library Manager User Guide Working with Libraries

To save changes and close the form, click OF
--

To discard changes and close the form, click Cancel.

Working with Libraries

Adding Properties

You can add properties to a library, cell, or view from the Library/Cell/View Property Editor form that appears when you choose *Edit – Properties*. See <u>"Editing Properties"</u> on page 92 for information about the *Edit – Properties* command.

To add properties, follow these steps:

1. On the Library/Cell/View Property Editor form, click *Add*.

The Add Property form appears (see "Add Property Form" on page 323).



- **2.** In the *Name* field, type a name for the property.
- **3.** In the *Type* drop-down list, select from the set of available property types.

The type you select determines the fields that appear on the Add Property form:

- ☐ If you select *int*, *float*, or *time* from the *Type* field, the subsequent fields are *Value*, *Minimum Value*, and *Maximum Value*.
- ☐ If you select *string* from the *Type* field, the subsequent fields are *Value* and *Possible Choices*.
- □ If you select *boolean*, *ILExpr*, *ILList*, *NLPExpr*, *netSet*, *fileName*, or *hierProp* from the *Type* field, the subsequent field is *Value*.

For more information about these type selections, see <u>"Object and Cellview Property Types and Values"</u> in the <u>"Editing Properties"</u> chapter and <u>"Adding netSet Properties to Create an Inherited Connection"</u> in the <u>"Creating Schematics"</u> chapter of the <u>Virtuoso Schematic Editor User Guide</u>.

Working with Libraries

4. Type appropriate values in the remaining field or fields that appear based on the *Type* you selected in the previous step.

Туре	Field(s)	Valid Values
int	Value Minimum Value Maximum Value	Any integer value
float	Value Minimum Value Maximum Value	Any floating-point value
time	Value Minimum Value Maximum Value	Time and date values (see "Object and Cellview Property Types and Values" in the "Editing Properties" chapter of the Virtuoso Schematic Editor User Guide for more information)



The values specified in the *Minimum Value* and *Maximum Value* fields define an inclusive range for a property value. The *Value* is the default value and must be in the specified range. You can specify infinity (no limit over 0), -infinity (no limit under 0), or leave the field blank to reflect no limit on the value.

Cadence Library Manager User Guide Working with Libraries

Туре	Field(s)	Valid Values
string	Value	Any string (no quotation marks) or no string
	Possible Choices	Additional comma-separated list of strings (no quotation marks) or no strings
		Note: You can force a double quotation mark to appear as part of a choice by typing a backslash in front of each quotation mark. For example:
		\"string\"
		If you leave the Value field blank, you must also leave the Possible Choices field blank; the result is that any string can be specified as a valid value for this property
		You may specify <i>Value</i> without specifying <i>Possible Choices</i> ; the result is that <i>Value</i> is the default string and any other string can be specified as a valid value for this property
		If you specify strings in both the <i>Value</i> and the <i>Possible Choices</i> fields, the result is a a drop-down list containing the only valid values for the property with <i>Value</i> as the default selection
		Note: You cannot leave the <i>Value</i> field blank and type a string in the <i>Possible Choices</i> field.
boolean	Value	TRUE, true, t, yes, FALSE, false, nil, or no
ILExpr	Value	SKILL expression
ILList	Value	SKILL list
NLPExpr	Value	Expression evaluated by the netlister substitution language
netSet	Value	See "Adding netSet Properties to Create an Inherited Connection" in the "Creating Schematics" chapter of the Virtuoso Schematic Editor User Guide
fileName	Value	Any valid file name string

Working with Libraries

Туре	Field(s)	Valid Values
hierProp	Value	A valid list of properties

5. Click *OK*.

The added property name and its value or values appear at the bottom of the Library/Cell/View Property Editor form as follows:

Value Set	Appearance	
Value Minimum Value Maximum Value	The value you specified in the <i>Value</i> field appears in an editable field to the right of the property name at the bottom of the Property Editor form; the value range defined by <i>Minimum Value</i> and <i>Maximum Value</i> appear between the property name and the field like this:	
	<pre>propertyName (minVal:maxVal) [_value]</pre>	
	Note: Value must fall within the range defined by Minimum Value and Maximum Value, inclusive.	
Value and	The appearance depends on what you typed in the fields as follows:	
Possible Choices	If you left the <i>Value</i> field blank, a blank field appears to the right of the property name at the bottom of the Property Editor form	
	■ If you specified a <i>Value</i> and left the <i>Possible Choices</i> field blank, the value appears in a field tothe right of the property name at the bottom of the Property Editor form	
	If you specified both a <i>Value</i> and <i>Possible Choices</i> , these values appear in a drop-down list to the right of the property name at the bottom of the Property Editor form with <i>Value</i> as the default selection	
Value alone	The value appears in an editable field to the right of the property name at the bottom of the Library/Cell/View Property Editor form	

Working with Libraries

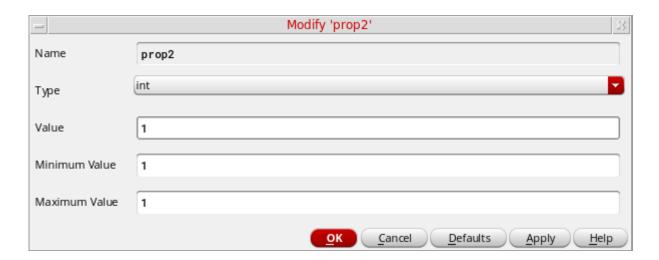
Modifying Properties

You can modify properties of a library, cell, or view from the Library/Cell/View Property Editor form that appears when you choose *Edit – Properties*. See <u>"Editing Properties"</u> on page 92 for information about the *Edit – Properties* command.

To modify properties, follow these steps:

1. On the Library/Cell/View Property Editor form, click *Modify*.

The Modify 'propertyName' form appears (see Modify 'propertyName' Form on page 349).



The name of the selected property appears in the title of the form.

- **2.** Make your desired changes on the form. (See also <u>"Adding Properties"</u> on page 98 for information about *Type*, *Value*, and other fields on the form.)
- 3. Click OK.

Working with Libraries

Updating Managed Files

Changes made to a design or component are not visible to members of the design team in a managed design until the design or component is checked in. If you need to use the latest version of an item (for example, a view or the base level CDF properties of a view) checked out to another designer, do the following:

- 1. On the Library Manager form, select an item (library, cell, or view).
- **2.** Choose *Design Manager Update*.

The Update Library, Update Cell, or Update View form appears.

This form runs the gdmupdate command (see "Generic Design Management (GDM) Commands" in the Cadence Application Infrastructure User Guide).

- **3.** (Optional) To pass a string to the -name argument of the gdmupdate command, do the following:
 - a. Select the *Update From* check box.
 - **b.** In the *Update From* field, type a valid tag specification or TDM release name.
- **4.** (Optional) To pass a string to the -xtra argument of the gdmupdate command, do the following:
 - a. Select the Use Options check box.
 - **b.** In the *Use Options* field, type a valid string for the -xtra argument.

The software checks the cds.lib file to ensure it has the latest information and then reads the latest edits made to a view or the base level CDF properties of a view into virtual memory, even if the item is checked out to another user. Status messages appear in the *Messages* scrolling area at the bottom of the form.

Note: This command also redraws opened designs affected by edits to a view or its properties.

Working with Libraries

Customizing Library Display Settings

About Library Display Settings

You can customize the display of libraries in the Library Manager. For example, you can specify that certain libraries be hidden or displayed in a different color or with a particular icon. You do this by setting attributes on libraries.

Cadence provides a set of predefined attributes. You can also add custom attributes.

Attributes are saved in <code>displayPrefs</code> files. The Library Manager displays all attributes defined in any <code>displayPrefs</code> file found by the Cadence Search File mechanism (CSF). All directories listed in your <code>setup.loc</code> file are searched for a

.cadence/libManager/displayPrefs file. The directories are read in the reverse order in which they are listed in the setup.loc file. If an attribute is defined multiple times, the value from the last definition read is used.

The Library Manager's Display Settings form enables you to view the list of existing attributes (predefined as well as custom), modify the display settings of these attributes, and define new attributes. To define an attribute, you specify an attribute name and choose the display settings, such as a specific color or icon, that will apply to all libraries tagged with that attribute. Any changes you make are always saved to the current_working_dir/.cadence/libManager/displayPrefs file.

You can then set any of these attributes on libraries. To set an attribute on a library, you need to edit your library definition file and add an ASSIGN statement for the library.

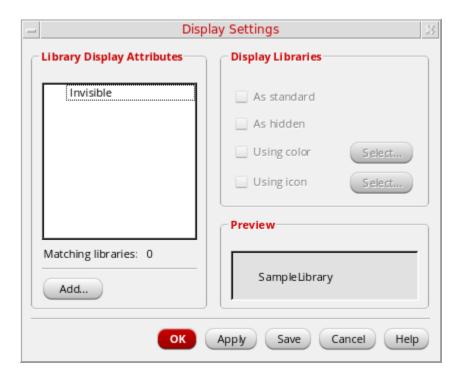
Setting Display Options for Libraries

To set display options for libraries,

1. Select Edit - Display Settings.

The Display Settings form appears.

Working with Libraries

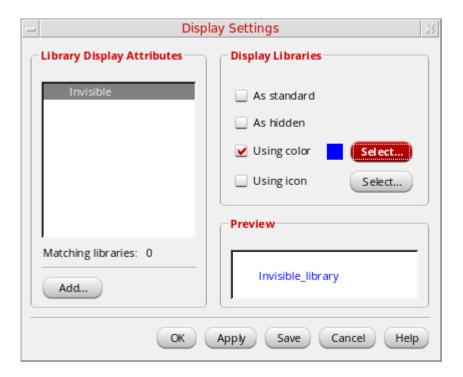


The Library Display Attributes list box displays all predefined and custom attributes. It also displays any attributes that have been set on libraries in your cds.lib file but that have not yet been defined in a displayPrefs file.

To create a new attribute, see "Creating New Library Attributes" on page 110.

Working with Libraries

2. Select an attribute.



The *Matching libraries* field under the *Library Display Attributes* listbox displays the number of libraries on which the selected attribute is currently set.

The *Display Libraries* section shows you the current display settings for the attribute.

The *Preview* field shows you a sample library name with these display settings.

3. Select the new display settings for the attribute:

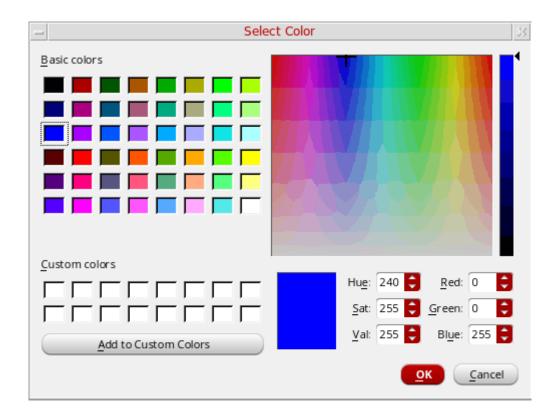
As standard: The libraries will be displayed in the default way.

As hidden: The libraries will not be displayed.

Using color: Sets the color in which the libraries will be displayed.

Working with Libraries

Click *Select* and select a color from the Select color dialog box that appears:



In the Select color dialog, you can pick a color from the *Basic colors* or *Custom colors* table, or create a custom color by moving the cross in the color spectrum to the color you want and then clicking *Add to Custom Colors*.

The color you select is displayed next to the *Using color* option.

Using icon: Sets the icon that will be displayed with the libraries.

Follow the steps in <u>"Selecting an Icon for a Library Display Attribute"</u> on page 108 to select an icon.

The icon you select is displayed next to the *Using Icon* option.

The *Preview* field shows a sample library name with the display settings that you have selected.

4. Click OK/Apply/Save.

OK applies your changes and closes the form.

Apply applies your changes and leaves the form open for you to make further changes.

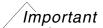
Working with Libraries

Save applies your changes and also saves them to the displayPrefs file immediately.

Libraries tagged with the attibutes you changed are now displayed in the new settings. To set the attributes on other libraries, see <u>"Setting Attributes on a Library"</u> on page 113.

The new or modified attribute definitions are saved in the

current_working_dir/.cadence/libManager/displayPrefs file. If this file does not exist, it is created. If you clicked *Save*, your changes are saved to this file immediately; if you clicked *OK* or *Apply*, the file is updated when you exit the Library Manager.



Do not edit the displayPrefs file manually.

Selecting an Icon for a Library Display Attribute

You can select icons for library display attributes. The Library Manager uses the Cadence Search File mechanism (CSF) to find icons—both Cadence application icons as well as any custom icons that you or your site have added.

Specifically, the Library Manager looks for the following two directories:

```
icons/library/16x16
icons/16x16
```

in every location specified in your setup.loc file. For every location in the setup.loc file, the following subdirectories are searched:

```
.cadence
. (the exact location)
cdssetup
```

Also, from every location, the first subdirectory that contains an icons directory is used. For example, if an icons directory is found in locationA/.cadence, then locationA and locationA/cdssetup are not searched.

If multiple definitions are found for an icon, that is, a file of the same base name is found in multiple locations, the definition from the location that has higher precedence in the setup.loc file is used, as per CSF rules.

Cadence application icons are placed in icons/16x16 directories.

If you create custom icons, place them in the following sub-directory of any directory that is listed in your setup.loc file, such as \$HOME:

```
icons/library/16x16
```

Working with Libraries

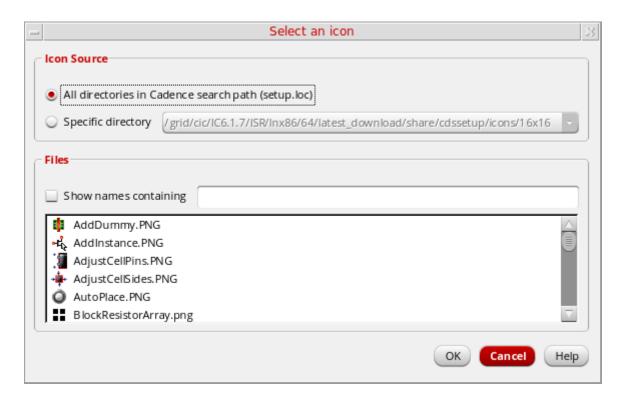
Note: If an icon is defined in both an icons/16x16 directory and an icons/library/16x16 directory, the defintion in the icons/library/16x16 directory is used.

For more information about CSF search, see the <u>Cadence Application Infrastructure</u> User Guide.

To select an icon for a library display attribute,

- 1. In the Display Attribute form, select an attribute.
- 2. In the *Display Libraries* section, select *Using Icon*, then click *Select*.

The Select an icon form appears.



- **3.** In the form's *Icon Source* field, select the directories from which you want to display icons in the *Files* list.
 - □ All directories in Cadence search path (setup.loc)

Displays icons from all icon directories found by CSF search in the *Files* list. Specifically, icons from the following sub-directories of every location specified in your setup.loc file are displayed:

icons/library/16x16

Working with Libraries

icons/16x16

If an icon definition is found in multiple locations, the definition from the location that has higher precedence in the setup.loc file is used. If an icon is found in both an icons/library/16x16 and an icons/l6x16 directory, the icon from the icons/library/16x16 directory is used.

You can place your cursor over an icon file name in the *Files* list to see which directory it is obtained from.

□ Specific directory

Displays icons only from the specific directory you select. The drop-down list includes all directories found by CSF search that contain an icons/library/16x16 or an icons/16x16 subdirectory.

Note: Until you add custom icons to other locations in your setup. loc file, the only directories listed in this field are those containing Cadence application icons, such as the $your_install_dir/share/cdssetup/icons/16x16$ icon directory.

4. (Optional) Select *Show names containing* and specify a pattern to filter icon file names.

Only the file names containing the pattern are displayed. For example, ibr displays only those file names that contain ibr, such as NewLibrary.png.

5. From the *Files* list, select the icon that you want to use for the attribute.

You can place your cursor over an icon file name to view the directory from which it is obtained.

6. Click OK.

The icon you selected is displayed next to the *Using Icon* field in the Display Settings form. The *Preview* field also displays the icon next to the sample library name.

Creating New Library Attributes

You can create new library display attributes and define the display settings for them. Attributes that you add are saved in the

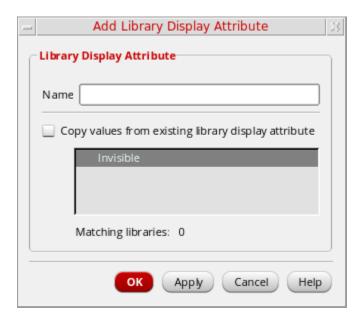
current_working_dir/.cadence/libManager/displayPrefs file. You can add
any number of attributes.

To create new library display attributes,

1. Select Edit - Display Settings.

Working with Libraries

2. In the Display Settings form, in the *Library Display Attributes* section, click *Add*. The Add Library Display Attribute form appears.



- **3.** In the *Name* field, specify a name for the attribute. Names cannot include spaces.
- **4.** (Optional) If you want to copy display settings from another attribute, select *Copy values* from existing library attribute, then select the attribute from the available list.
- **5.** Click one of the following:

OK: Adds the attribute and closes the form.

Apply: Adds the attribute and leaves the form open for you to add more attributes. When you are finished adding attributes, click *OK*.

The new attributes are listed in the *Library Display Attributes* listbox in the Display Settings form.

- **6.** If you did not copy display settings from another attribute, select them in the *Display Libraries* section of the Display Settings form. For more information, see <u>"Setting Display Options for Libraries"</u> on page 104.
- 7. Click OK/Apply/Save.

OK: Applies your changes and closes the form.

Apply: Applies your changes and leaves the form open for you to make further changes.

Save: Saves your changes to the displayPrefs file immediately.

Working with Libraries

The new attributes are saved in the

current_working_dir/.cadence/libManager/displayPrefs file. If the file does not exist, it is created. If you clicked *Save*, your changes are saved to this file immediately; if you clicked *OK* or *Apply*, the file is updated when you exit the Library Manager.

If you want to customize attributes on a per-site or per-project basis, you can copy the displayPrefs file to the appropriate directories. The Library Manager uses CSF search to find attributes; see <u>"About Library Display Settings"</u> on page 104 for more information.



Do not edit the displayPrefs file manually.

You can now apply the new attribute to libraries. See <u>"Setting Attributes on a Library"</u> on page 113 for more information.

Working with Libraries

Setting Attributes on a Library

To set attributes on libraries, you need to edit your cds.lib file.

To set an attribute on a library,

1. In your cds.lib file, add the following:

ASSIGN libName DISPLAY attributeName

where <code>libName</code> is the library on which you want to set the attribute and <code>attributeName</code> is the name of the attribute.

Note: The library must be already defined with the DEFINE statement earlier in the file, otherwise the ASSIGN statement is ignored.

The next time you start the Library Manager, the library will appear in the display settings specified for the attribute (for example, in a specific color). For information on how to modify these display settings, see <u>"Setting Display Options for Libraries"</u> on page 104.

Note: In the cds.lib file, you can also set a new attribute that is as yet undefined in a displayPrefs file. The next time you start the Library Manager, this new attribute will appear in the *Library Attributes* list in the Display Settings form. You can then define the display options for the attribute.

Working with Libraries

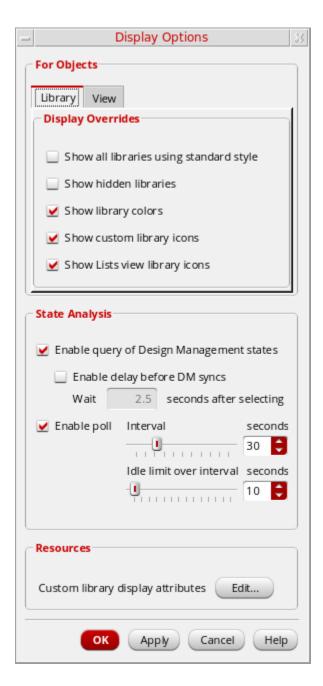
Overriding Customized Library Display Settings

The Display Options form lets you override any of the custom display settings that you have set on libraries. Overrides apply to the current session only.

To override custom library display settings,

1. Select *View – Display Options*.

The Display Options form appears.



2. In the *Library* tab *Display Overrides* section, select or deselect any of the following options:

Show all libraries using standard style: When selected, displays all libraries in the default style, overriding any custom settings.

Working with Libraries

Show hidden libraries: When selected, displays all libraries, overriding any invisible settings on libraries.

Show library colors: When deselected, overrides any custom colors and shows all libraries in default black text.

Show custom library icons: When deselected, hides any custom icons (in both the Tree view and Lists view).

Show Lists view library icons: When deselected, hides custom icons only in the Lists view. The Tree view continues to display custom icons.

3. In the *View* tab, the only option currently in the *For Objects* section is *Show extended states*. This option allows DM tables to be shown in any viewing mode.

It should be used along with the *Enable query of Design Management states* option in the Library page.

4. In the *State Analysis* section, select or deselect any of the following options:

Enable query of Design Management states: Enables the querying of DM data and shows DM states in the main Library Manager window, when Show extended states in the View page of the Display Options form is also selected.

Enable delay before DM syncs: Enables quicker browsing when slower DM integrations for GDM are in use and you do not want to turn off the DM display feature entirely. The value in the Wait field (in seconds) comes from the .cdsenv DB setting. By default, the value is 2.5 seconds. The accepted values are 0 through 999 seconds

Enable poll this option should be enabled for the Library Manager to automatically reanalyze states periodically, based on the two slider and spin-box value settings for the related options, as follows:

Interval set the number of seconds to determine the time setting between successive reanalyze state queries.

Idle limit over interval determines how long the polling should continue after the last UI interaction (that is, a mouse-click or key press). The seconds value set here is added to the interval seconds set.

Note: Polling features enable state change detections without external notification channels, such as DM check out from another system, workarea, and/or user. Some common edit operations in Virtuoso will also notify the Library Manager. In such cases however, the polling settings are not used to update values.

5. (Optional) To edit library display settings, in the *Custom library display attributes* field, click *Edit*.

Working with Libraries

The Display Settings form appears. For information about how to use this form, see "Customizing Library Display Settings" on page 104.



6. Click *OK/Apply/Cancel*:

OK sets your selections and closes the form.

Apply sets your selections and leaves the form open.

Cancel cancels your changes and closes the form.

Working with Libraries

Saving Your Override Selections

When you set an override with the Display Options form, your selection applies to the current session only. If you want to save your selections for future sessions, you need to save your defaults.

For information about saving defaults, see <u>"Using the Library Manager to Save Settings to .cdsenv"</u> on page 313.

The following environment variables are saved to your <code>.cdsenv</code> file for the display override settings:

```
cdsLibManager.displayOptions showHiddenLibraries cdsLibManager.displayOptions showLibraryColors cdsLibManager.displayOptions showLibraryCustomIcons cdsLibManager.displayOptions showListViewIcons
```

Saving Your DM Sync Selections

The following environment variables are saved to your . cdsenv file for the DM Sync settings:

```
cdsLibManager.displayOptions dmSyncDelay float 2.5
```

The dmSyncDelay variable specifies the number of seconds to set for the delay period, when the feature is enabled.

```
cdsLibManager.displayOptions enableDmSyncDelay boolean nil
```

The enableDmSyncDelay variable allows you to enable or disable this feature depending on whether you specify the boolean value as t or nil. By default the feature is disabled.

Working with Libraries

Creating Combined Libraries

The Library Manager allows you to group a set of libraries and display them as a *combined* library.

A combined library is a virtual library made up of other libraries. The data is not physically moved or copied; it is just displayed in consolidated form under the combined library.

This feature helps you manage the display of libraries for your needs by letting you group together libraries for a specific purpose or to reduce the number of libraries displayed in the *Library* list box. For example, if you use a base set of libraries with some additional libraries for one process and with another set of libraries for another process, you could group the relevant libraries together for each process.

Creating Combined Libraries

Combined libraries are created by setting an ASSIGN statement with a COMBINE attribute in your cds.lib file.

To create a combined library

- 1. Create a new directory for the combined library.
- **2.** In your cds.lib, add the following statement:

```
ASSIGN combinedLibName COMBINE libA libB ...
```

where combinedLibName is the name of the top-level library and libA and libB are the libraries that comprise the combined library.

Note: All the libraries specified in the statement must exist, otherwise the statement is ignored. This means that the combined library must have a physical representation, even if it is an empty directory.

3. Ensure that a DEFINE statement for the new combined library is included in cds.lib.

All the libraries specified in the statement must already be defined with the DEFINE statement earlier in the file, otherwise the ASSIGN statement is ignored.

A library can be placed in more than one combined library.

With the ASSIGN statements, you can build up a hierarchy of libraries.

For example:

DEFINE analogLib /home/libs/analogLib

Working with Libraries

```
DEFINE sbalib /home/libs/sbalib

DEFINE demoLib /home/libs/demoLib

DEFINE newLib /home/libs/newlib

DEFINE testLib /home/libs/testLib

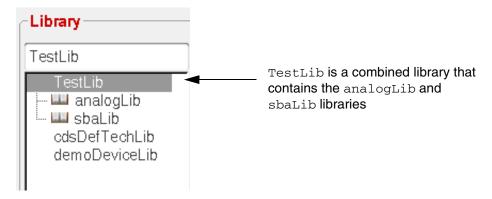
ASSIGN newLib COMBINE analogLib sbalib

ASSIGN testLib COMBINE newLib demoLib
```

Displaying Combined Libraries

In the Library Manager, combined libraries are displayed in the *Library* list just like any other library. Combined libraries are displayed in a tree form. A + icon next to a library name indicates that it is a combined library and has a hierarchy under it. Double-clicking on the library or clicking the + icon displays the libraries it contains. The individual libraries that comprise a combined library are not displayed at the top-level; they are only displayed under the combined library.

Tooltips for combined libraries also indicate that they are combined: the tooltip displays the library name followed by [COMBINED].

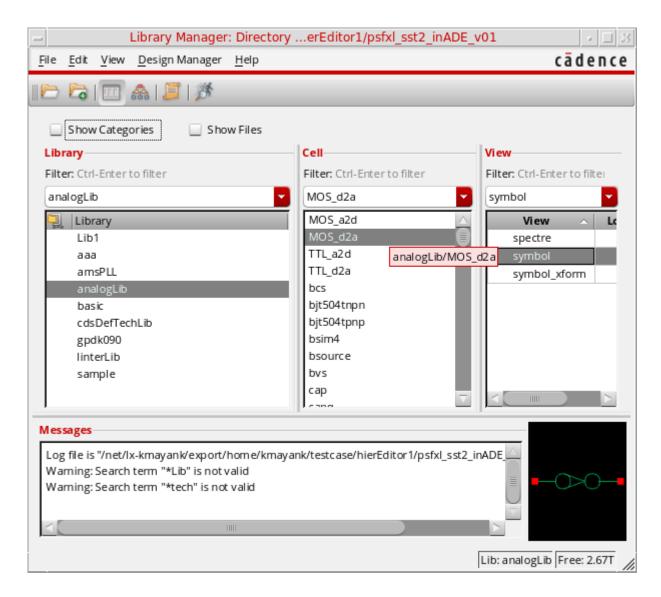


When a combined library is selected in the *Library* list, the other list boxes display composite data from all the libraries that comprise the combined library.

The *Cell* list box displays all the cells from all the libraries under the combined library. The tooltip for each cell shows the same library to which it belongs.

Working with Libraries

Similarly, the *Files in Library* list box displays library-level files from all the libraries in the combined library. Files that are found in more than one library are listed with the library name displayed in brackets after the file name to differentiate them. Tooltips display the origin of the other files.



When you select a cell in the *Cells in Library* list box, its views and files are displayed as usual. Tooltips indicate the library and cell information for the view or file.

However, if a cell of the same name is found in two libraries, consolidated data for both cells is displayed when you select the cell. The *Views in Cell* list box displays the views found in both cells, with the library name in brackets to differentiate them. Similarly, the *Files in Cell* list box displays cell-level files for both cells, with the library name in brackets. Also, the tooltip for the cell indicates that the cell is combined, for example: TestLib/n2port[COMBINED].

Working with Libraries

For combined libraries, categories are also merged—the *Category* list box displays all categories for all libraries in the combined library. Selecting a category that is common to two libraries displays data from both libraries that belongs to that category.

/Important

Libraries are combined for display purposes only. Any edit commands, such as modifying categories, copying, or renaming libraries or cells apply to the physical library only, not to the combined library. For example, if you copy a combined libraryA that contains its own data as well as libraryB and libraryC, only the contents of libraryA are copied to the new library.

The forms for these commands also display information about the physical library only.

The only exception to this is the *Delete* command, which displays information about the combined data and gives you the option of deleting from multiple locations, if applicable. See the descriptions of the *Delete* commands earlier in this chapter for more information.

Note: You cannot copy or rename a combined cell (a cell that is found in multiple libraries in a combined library) unless you select a specific view or select the cell from the library to which it belongs.

3

Using the Library Browser Form

The Library Browser form is similar to the Library Manager form, but it does not have menus and is used for displaying and selecting cellviews only. Some applications use the Library Browser form; others use the Library Manager. The Library Browser form appears when you click the *Browser* button in a Virtuoso form.

You can use the Library Browser form to perform the following tasks:

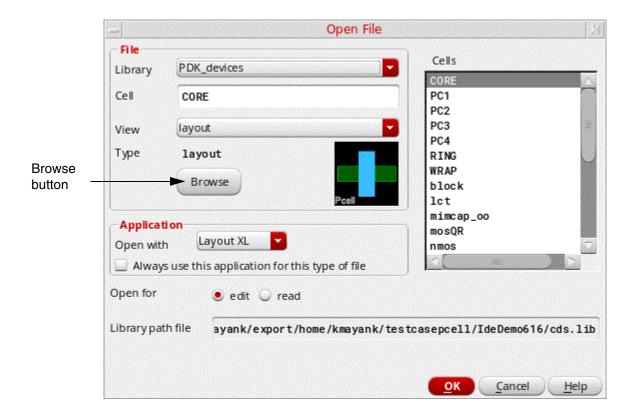
- Display and select libraries, categories, cells, and views specified in your cds.lib file.
- Filter libraries, categories, cells, and views to narrow your selection

The following topics are discussed:

- Opening the Library Browser Form on page 124
- Selecting a View Using the Library Browser on page 126
- Setting the Cell Filter Mode on page 127
- Setting the Cell Filter Mode on page 127
- Opening the Libary Browser Form Automatically on page 128

Opening the Library Browser Form

➤ To open the Library Browser form, click *Browse* on any form that has a *Browse* button. For example, click *Browse* on the CIW's Open File form:

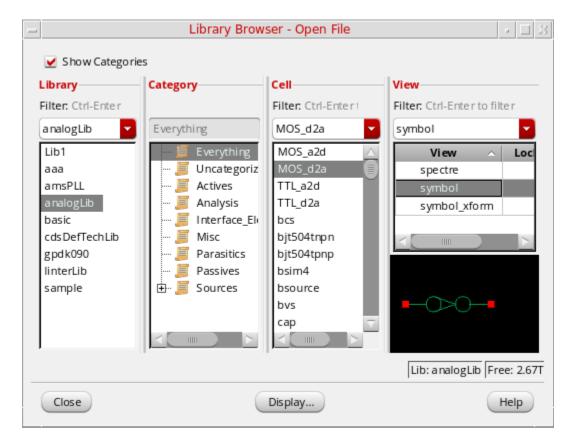


The cells in the *Cells* list box of the Open File form are displayed in the alphanumeric order. To use the same sort order as used in Library Manager, you need set the following environment variable:

```
(envSetVal "designEditor.fileSpec" "sortCellNameCompareFn"
'string "naturalStrLessp")
```

Using the Library Browser Form

The Library Browser form appears (see "Library Browser Form" on page 345).



Using the Library Browser Form

Selecting a View Using the Library Browser

To select a cellview using the Library Browser form, follow these steps:

- **1.** In the *Library* list box, select a library.
 - The cells contained in that library appear in the *Cell* list box.
- 2. To display the views associated with a cell, select the cell name.
 - The names of the views for that cell appear in the *View* list box.
- **3.** In the *View* list box, double-click a view name.

The Library Browser form closes. The selected library, cell, and view names appear in the appropriate fields on the parent form (from which you opened the Library Browser form).

Using the Library Browser Form

Setting the Cell Filter Mode

You can control the Library Browser form's cell filter mode by setting a variable in your .cdsenv file. You can choose to make the cell filtering faster by preventing the view filter from being applied to it or you can choose to make it more accurate but slightly slower by letting the view filter affect the list of cells displayed.

To set the cell filter mode.

➤ In your .cdsenv file, set the following variable:

```
\label{thm:constraint} $$\operatorname{cdsLibManager.filter\ libSelectCellViewCombineMode\ cyclic\ "$value$"}$$ where value is either "never" or "always".
```

If you set the variable to "never", when you click a library in the Library Browser form, only the cell filter is applied before the list of cells is displayed; the view filter is ignored. This means that even cells that do not contain any views matching the view filter are displayed. As a result, the list of cells is displayed much faster. "never" is the default setting.

If you set the variable to "always", when you click a library in the Library Browser form, both the cell filter and view filter are applied before the list of cells is displayed. Only cells containing views that match the view filter are displayed. With this setting, while the results are more accurate, it takes longer to display the list of cells in the library.

Note: If you access the Library Browser form from Virtuoso, place your .cdsenv in your \$HOME directory; unlike the Library Manager, Virtuoso does not look for the .cdsenv file in your current working directory.

Opening the Libary Browser Form Automatically

To set the Library Browser form to open automatically from specific forms, follow these steps:

1. From the CIW, choose *Options – File Preferences*.

The File Preferences form appears.



2. In the *Open Browser Automatically For* group box, select *yes* for the forms from which you want the Library Browser form to open automatically.

Note: You can select any or all form types.

3. Click OK.

The next time you open any of the selected types of forms, the Library Browser form appears automatically. You do not have to restart the software for your preferences to take effect.

Copying Data

You can use Library Manager copy functions to assemble design and reference libraries by copying cells or views from libraries (specified in your cds.lib file) into other libraries.

Copy Function	Lets you copy a library, cell, view, or file
	Opens the Copy Library, Copy Cell, Copy View, or Copy Library File form
Copy Wizard Function	Lets you copy a library, cell, or view; copy hierarchically; copy by view; or copy by configuration
	Opens a dynamic form that lets you choose how you want to copy

Note: Because the Library Manager only lets you edit and manage OpenAccess libraries, any library that has a library-level prop.xx file is grayed-out and cannot be copied. Cell-level prop.xx files are not copied when you copy the cell. Copy commands can also fail if you have prop.xx files.

The following topics are discussed:

- Using the Copy Function on page 131
 - □ Pre-Copy Checks on page 131
 - □ Copying a Library on page 133
 - □ Copying a Cell on page 138
 - □ Copying a View on page 146
 - □ Copying a Library File on page 153
 - □ Copying a Cell File on page 155
- Using the Copy Wizard Form on page 158
 - Performing a Simple Copy on page 165
 - □ Copying a Hierarchy on page 167

Copying Data

- □ Copying an Exact Hierarchy on page 171
- □ Copying by View on page 175
- □ Copying by Configuration on page 177
- Setting Copy and Rename Preferences on page 181

Copying Data

Using the Copy Function

The Copy function opens the Copy Library, Copy Cell, Copy View, Copy Library File, or Copy Cell File form depending on what you have selected on the Library Manager form.

- Copy Library lets you copy a single library to a new library name (see "Copying a Library", next).
- Copy Cell lets you copy a cell to a new cell name or into another library (see <u>"Copying a Cell"</u> on page 138). You also have the option to copy cells hierarchically (see <u>"Copying a Cell Hierarchy"</u> on page 140).
- Copy View lets you copy a view to a new view name or into another cell or library (see "Copying a View" on page 146). You also have the option to copy views hierarchically (see "Copying a View Hierarchy" on page 150).
- Copy Library File lets you copy a single library file to a new name or a new library (see <u>"Copying a Library File"</u> on page 153).
- Copy Cell File lets you copy a single cell file to a new name, a new cell, or a new library (see <u>"Copying a Cell File"</u> on page 155).

Pre-Copy Checks

Certain checks are performed prior to copying data. The Library Manager invokes any pre-copy checks defined by applications.

To ensure technology database compatibility between source and destination libraries, the following checks are performed:

- Ensure that the names of files to be copied do not have a space in them. Files with names that have spaces will not be copied.
- If the source library contains a local technology database file (tech.db file), then check if the destination library associates with a technology database, either through attachment or by containing a tech.db file in the library. If the destination library associates with a technology database, then the copy command is aborted.
- If the above check succeeds, then the following additional checks are performed for compatibility of design data:
 - **a.** Compatibility Check: Check for compatibility between the technology databases of the source and destination library and do the following:
 - If the source and destination technology databases are equal, then proceed to the existence check.

Copying Data

- O If the source technology database is a subset of the technology database of the destination library, then proceed to the existence check.
- O If there are any conflicts with a severity level of "Error" between the technology databases, then abort the copy command. The following table lists the checking criteria:

Technology objects	Checking criteria for compatibility
oaLayers (oaPhysicalLayers / oaDerivedLayers)	same name then same number, same number then same name
oaPurposes	same name then same number, same number then same name
oaStdViaDefs	same viaDef name, two compatible layers and a cutLayer in the viaParameter
oaCustomViaDefs	same viaDef name and two compatible layers
oaScalarSiteDefs	same name, same width, and same height
oaArraySiteDefs	no compatibility checking; check that there is no siteDef of the same name but a different type
dbuPerUU (technology attribute)	same value
For view types of dbcMaskLayout, dbcSchematic, dbcSchematicSymbol, and dbcNetlist	
userUnits (technology attribute)	same unit name
For view types of dbcMaskLayout, dbcSchematic, dbcSchematicSymbol, and dbcNetlist	

b. Existence Check: If the source technology database and the destination technology database are compatible, then check for the existence of technology objects in the destination technology database. If there are any missing technology objects for a cellview, that cellview is still copied and warning messages are issued.

Copying Data

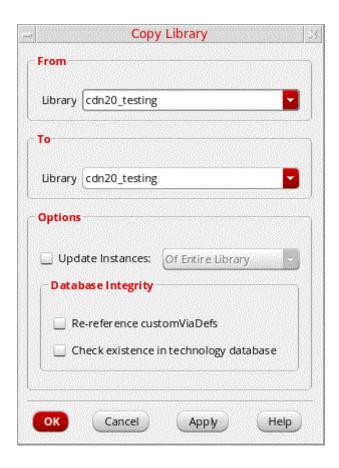
Information about errors is displayed in the CIW. Modify your source data accordingly and then try to copy it again.

Copying a Library

To copy a library to another name, follow these steps:

- **1.** In the *Library* list box, select a library.
- **2.** Choose *Edit Copy*.

The Copy Library form appears (see "Copy Library Form" on page 328).



- **3.** In the *To Library* field, type a destination library name or select a library name from the drop-down list. You can type a new name or select an existing library.
- **4.** (Optional) Select the *Update Instances* check box to update the cells and views in the destination library with the new library name.

The drop-down list to the right becomes active giving you the following choices:

Copying Data

Of Entire Library: The software overwrites occurrences of the From Library name
with the <i>To Library</i> name.

For example, all instances of .../oldLib/NAND/symbol are renamed to .../newLib/NAND/symbol.

☐ Of New Copies Only: The software overwrites only the cellview references you copied from the original library.

For example, only cellview instances of .../oldLib/NAND/symbol are renamed to .../newLib/NAND/symbol.

Note: When the *Update Instances* check box is not selected, the software leaves references to the *From Library* name unchanged.

For example, all instances of .../oldLib/NAND/symbol continue to reference the original library and remain .../oldLib/NAND/symbol.

- **5.** (Optional) Select the options in the *Database Integrity* field if you want to update and validate technology data in the destination library after the copy command is completed.
 - □ Re-reference customViaDefs updates custom via definitions to point to cellviews in the destination library.
 - □ Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

6. Click OK.

Note: If the destination library already contains the tech.db file, the source library's tech.db is not copied. Otherwise, while copying a source library to an existing library, the tech.db file associated with the source library will also be copied to the destination library.

In case you selected an existing library, the Copy Problems form appears. See <u>"Viewing and Resolving Copy Problems"</u> on page 136.

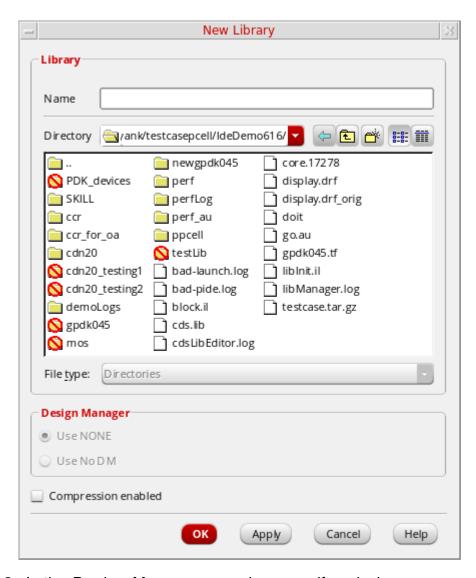
Note: When you copy a source library to a destination library using Library Manager, the entire library is copied (including data.dm), irrespective of how the variables of addPropFiles, addLibPropFiles, and addCellPropFiles are set.

Copying Data

Copying to a New Library

When you are copying to a new library and you click *OK* on the Copy Library form (see <u>"Copying a Library"</u> on page 133), the New Library form appears (see <u>"New Library Form"</u> on page 350). To complete the copy operation to a new library, do the following:

1. On the New Library form, use the *Directory* navigation tools (list box and toolbar buttons) to specify the destination directory into which you want to copy the new library. You can also type a directory path in the *Directory* field.



2. In the *Design Manager* group box, specify a design management option (if one is available to you).

Note: If there is a design management system available to you and you choose *Use No*

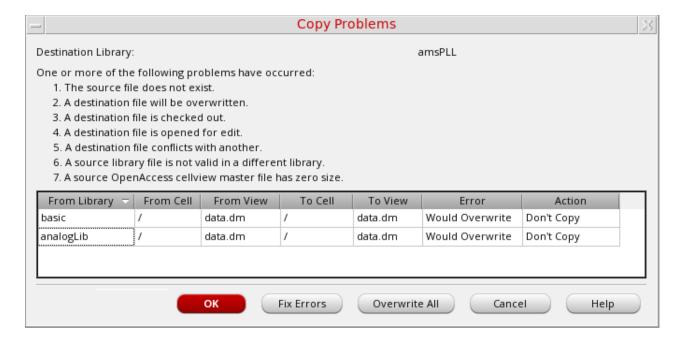
Copying Data

DM now, you can still decide to check it in later on.

3. Click OK.

Viewing and Resolving Copy Problems

When copying to an existing library, you click *OK* on the Copy Library form (see <u>"Copying a Library"</u> on page 133), the Copy Problems form appears listing the copy problems in a sortable table.



To resolve copy problems, do the following:

- **1.** In the *Error* column for each item, view the error.
- **2.** (Optional) In the *Action* column for each item, select an action.

For example, the following actions are available for the *Would Overwrite* error:

- □ *Don't Copy*: Does not copy the item to the *Destination Library*.
- Overwrite: Writes the item to the *Destination Library*, overwriting the item of the same name.
- Auto Rename: Appends the From Cell name (if different) and the From Library name (if different), to the final cell name by adding an underscore prefix. If a destination cell with the same name already exists, an underscore and a number (for example, _01) is automatically added to the name.

Copying Data

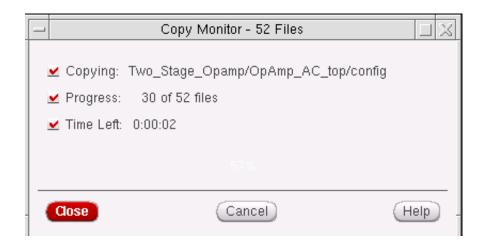
- **3.** (Optional) Select one of the following options as an action for all items:
 - ☐ Fix Errors selects the software's choice for fixing the problem for all items (for example, using Auto Rename to fix the Would Overwrite error).
 - □ Overwrite All selects Overwrite for all items.



You can click *Fix Errors* or *Overwrite All* first and then select a different action for some individual items.

4. Click OK.

The Copy Monitor status window is displayed.



The copy operation completes using the specified actions.

Cadence Library Manager User Guide Copying Data

Copying a Cell

To copy a cell to another name or into another library, follow these steps:

- 1. Select a cell.
- **2.** Choose *Edit Copy*.

The Copy Cell form appears (see "Copy Cell Form" on page 326).



Copying Data

The selected library and cell appear in the *Library* and *Cell* fields in the *From* group box. They also appear in the *Library* and *Cell* fields in the *To* group box. You can change any or all of these values.

You can set the maximum cell name length allowed by using the CDS_MAX_CELL_NAME_LENGTH environment variable.

- **3.** To complete the copy cell operation, follow the steps for one of the following tasks:
 - Copying a Cell to Another Name in the Same Library on page 139
 - Copying a Cell to Another Library

Copying a Cell to Another Name in the Same Library

To copy a cell to another name in the same library, do the following:

- **1.** Follow the steps from "Copying a Cell" on page 138.
- **2.** In the *To* group box in the *Cell* field, type a destination cell name.
- 3. Click OK.

The *From* cell name is copied to the *To* cell name in the same library.

See also

- Copying a Cell Hierarchy on page 140
- <u>Updating Cell Instances</u> on page 143
- Validating Database Integrity on page 143
- Adding a Copied Cell to a Category on page 144
- Using Skip Libraries Together with Update Instances on page 145

Copying a Cell to Another Library

To copy a cell to another library, do the following:

- **1.** Follow the steps from "Copying a Cell" on page 138.
- **2.** In the *To* group box in the *Library* field, type or select a destination library name.

You can type a new library name or select an existing library from the drop-down list.

3. (Optional) In the *To* group box in the *Cell* field, type a destination cell name.

Copying Data

If you do not change the cell name in the *To* group box, the copied cell will have the same name as the original cell.

4. Click OK.

The From Cell is copied to the To Cell in the To Library. If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

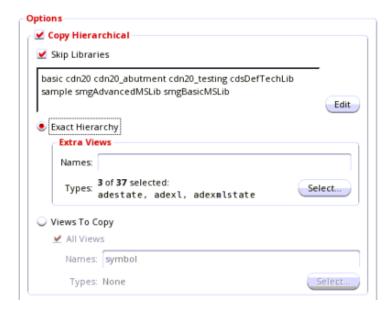
See also

- Copying a Cell Hierarchy on page 140
- <u>Updating Cell Instances</u> on page 143
- Validating Database Integrity on page 143
- Adding a Copied Cell to a Category on page 144
- Using Skip Libraries Together with Update Instances on page 145

Copying a Cell Hierarchy

To traverse the design hierarchy and copy all referenced cells in your design to the destination library, follow these steps:

1. In the *Options* group box, select the *Copy Hierarchical* check box.

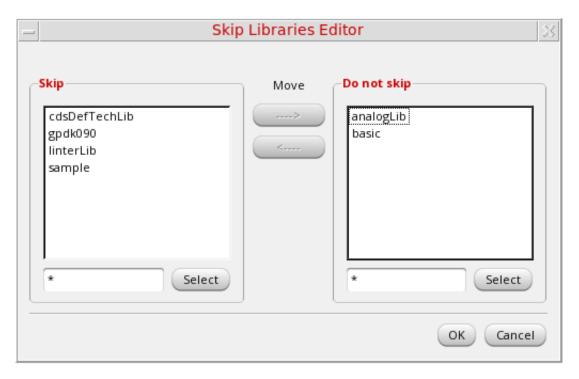


Copying Data

2. By default, the *Skip Libraries* check box is also selected. When this check box is selected, cells in the named libraries are not copied and continue to reference their original library. You might want to skip libraries such as reference libraries of contacts, vias, and so on.

You can type the names or click the *Edit* button to open the Skip Libraries Editor dialog box as follows:

- **a.** Click library names in the *Skip* list and click the move button in the center to move them to the *Do not skip* list.
- **b.** Click OK.



Your <u>.cdsenv file</u> contains the list of libraries to include in the *Skip Libraries* field using the following format:

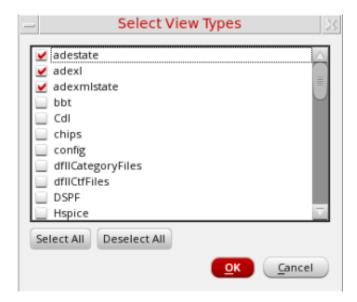
```
cdsLibManager.copy skipLibsText string "lib1 lib2"
```

3. To limit the search to your design's exact hierarchy when collecting the cellview list for copying, select the *Exact Hierarchy* check box. When this check box is selected, only those cellviews found in the design hierarchy are included in the copy operation.

The *Extra Views* box becomes active. If you include additional view names or view types, the operation includes matching views found in your design hierarchy in the copy operation. If any of these matching views have their own hierarchies, those additional hierarchies are also included.

Copying Data

In the *Names* field, type the names of one or more space-separated views to copy. You can also type a valid filter string (for example, s^*). Additionally, or optionally, use the *Select* button to select specific view types.



4. By default, the *All Views* check box is selected and the *Views To Copy* option appears deselected. If you leave this check box selected, the copy operation will copy all views of the specified cell. Further, if you copy the cell hierarchically, the copy operation also copies all views of cells instantiated in the specified cell.

To copy a particular set of views, follow these steps:

- **a.** Deselect the All Views check box.
 - The *Views To Copy* field becomes active.
- **b.** In the *Names* field, type the names of one or more space-separated views to copy. You can also type a valid filter string (for example, s^*).

Additionally, or optionally, use the *Select* button to select specific view types.

5. Click OK.



For an overview on how to reset the changes done on the Copy Cell form, see the How to make the Library Manager reset changes done on Copy form during the Virtuoso session video.

Copying Data

Updating Cell Instances

You can use the *Update Instances* check box in the *Options* group box on the Copy Cell form to update the instances in the destination library to use only the copied cells (instead of referencing the entire original library and cell names). If you leave the *Update Instances* check box unselected, references to the *From Cell* name are unchanged. For example, all instances of .../lib/oldCell/symbol continue to reference the original library and remain .../lib/oldCell/symbol.

To update instances in the destination cell to use only the copied cellviews, do the following:

1. In the *Options* group box on the Copy Cell form, select the *Update Instances* check box.

The drop-down list becomes active.

- **2.** From the drop-down list, select one of the following choices:
 - Of Entire Library: The software overwrites instances of the From Cell name with the To Cell name. For example, all instances of .../lib/oldCell/symbol are renamed to .../lib/newCell/symbol.
 - Of New Copies Only: The software overwrites only the cellview references you copied from the original library. For example, only cellview instances of .../oldCell/symbol are renamed to .../newCell/symbol.
- 3. Click OK.

The Library Manager performs the specified copy operation.

Validating Database Integrity

You can select the options in the *Database Integrity* field if you want to update and validate technology data in the destination cell after the copy command is completed. You can do the following:

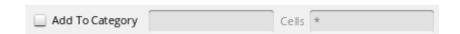
- Select Re-reference customViaDefs to update custom via definitions to point to cellviews in the destination library.
- Select Check existence in technology database to validate the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Copying Data

Adding a Copied Cell to a Category

To add a copied cell to a category, do the following:

1. Select the *Add To Category* check box.



The Add To Category and Cells fields become active.

- 2. In the Add To Category field, type a new or existing category name.
- **3.** (Optional) In the *Cells* field, type a valid filter string against which to match the cell name that you want to add to the specified category.

By default, * appears in the *Cells* field, thus matching any copied cell name.

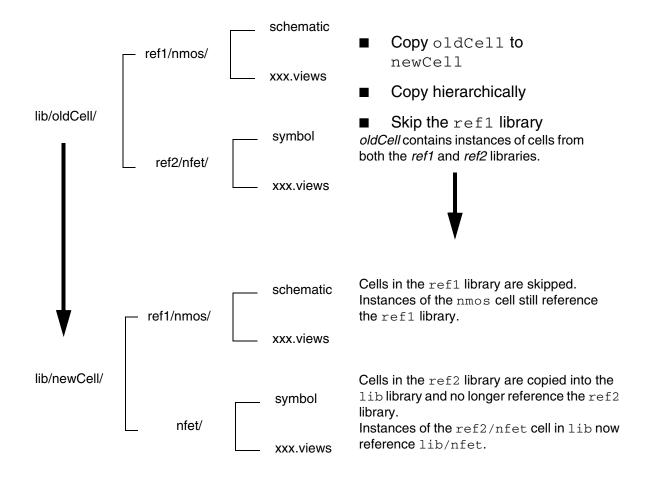
4. Click OK.

The copied cell is added to the specified category. If the category does not already exist, it is created. See <u>Chapter 8</u>, "<u>Managing Categories</u>" for more information about categories.

Copying Data

Using Skip Libraries Together with Update Instances

The following example shows what happens when you specify a reference library to be skipped in a hierarchical cell copy with the *Update Instances* option enabled.



Copying Data

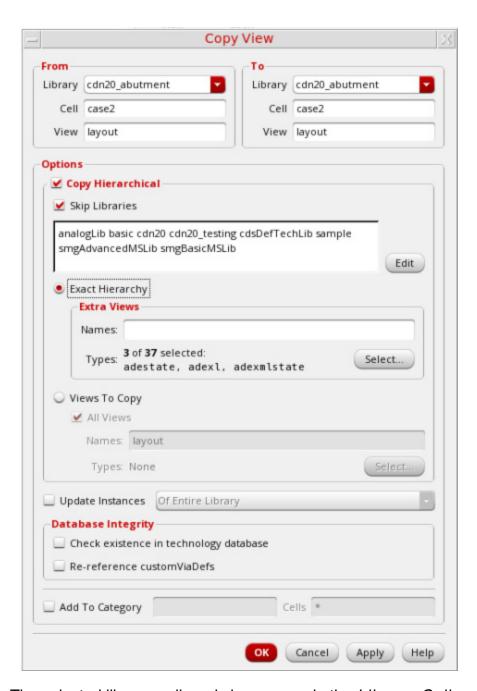
Copying a View

To copy a view to another name or location, follow these steps:

- 1. Select a view.
- 2. Choose *Edit Copy*.

The Copy View form appears (see "Copy View Form" on page 330).

Cadence Library Manager User Guide Copying Data



The selected library, cell, and view appear in the *Library*, *Cell* and *View* fields in the *From* group box. They also appear in the *Library*, *Cell* and *View* fields in the *To* group box. You can change any or all of these values.

- **3.** In the *To* group box, type the destination library, cell, and view names.
- **4.** To complete the copy view operation, follow the steps for one of the following tasks:

Copying Data

- Copying a View to Another Name or Cell in the Same Library on page 148
- □ Copying a View to Another Library on page 149

Note: The copy operation does not stop with an error if the zero-sized views are not copied.

Copying a View to Another Name or Cell in the Same Library

Within the same library, you can

- Copy a view to another name for the same cell
- Copy a view to the same name for a different cell
- Copy a view to another name for a different cell

To copy a view to another name for the same cell in the same library, do the following:

- **1.** Follow the steps from <u>"Copying a View"</u> on page 146.
- **2.** In the *To* group box in the *View* field, type a destination view name.
- **3.** Click *OK*.

The *From* view name is copied to the *To* view name for the same cell in the same library.

To copy a view to the same name for a different cell in the same library, do the following:

- 1. Follow the steps from "Copying a View" on page 146.
- **2.** In the *To* group box in the *Cell* field, type a destination cell name.
- 3. Click OK.

The view is copied to the specified *To* cell name in the same library.

To copy a view to another name for a different cell in the same library, do the following:

- 1. Follow the steps from "Copying a View" on page 146.
- **2.** In the *To* group box in the *Cell* field, type a destination cell name.
- **3.** In the *To* group box in the *View* field, type a destination view name.
- 4. Click OK.

The *From* view name is copied to the specified *To* cell and view name in the same library.

Copying Data

See also

- Copying a View Hierarchy on page 150
- Updating View Instances on page 151
- Validating Database Integrity on page 152

Copying a View to Another Library

To copy a view to another library, do the following:

- **1.** Follow the steps from "Copying a View" on page 146.
- **2.** In the *To* group box in the *Library* field, type or select a destination library name.

You can type a new library name or select an existing library from the drop-down list.

- **3.** (Optional) In the *To* group box in the *Cell* field, type a destination cell name.
 - If you do not change the cell name in the *To* group box, the copied cellview will have the same cell name as the original cell.
- **4.** (Optional) In the *To* group box in the *View* field, type a destination view name.
 - If you do not change the view name in the *To* group box, the copied view will have the same name as the original view.
- 5. Click OK.

The *From* cellview is copied to the *To* cellview in the *To Library*. If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

See also

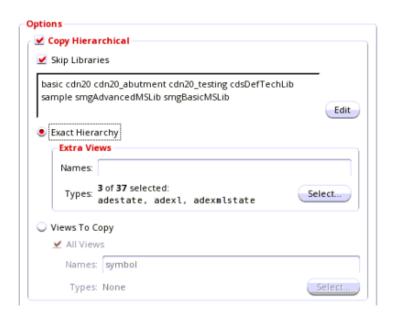
- Copying a View Hierarchy on page 150
- Updating View Instances on page 151

Copying Data

Copying a View Hierarchy

To traverse the design hierarchy and copy all views referenced in your design to the destination library, follow these steps:

1. In the *Options* group box, select the *Copy Hierarchical* check box.



2. By default, the *Skip Libraries* check box is also selected. When this check box is selected, cells in the named libraries are not copied and continue to reference their original library. You might want to skip libraries such as reference libraries of contacts, vias, and so on. You can add their names in the text box or click the *Edit* button to open the Skip Libraries Editor dialog box and select the libraries to skip.

Your <u>.cdsenv file</u> contains the list of libraries to include in the *Skip Libraries* field using the following format:

```
cdsLibManager.copy skipLibsText string "lib1 lib2"
```

3. To limit the search to your design's exact hierarchy when collecting the cellview list for copying, select the *Exact Hierarchy* check box. When this check box is selected, only those cellviews found in the design hierarchy are included in the copy operation.

The *Extra Views* box becomes active. If you include additional view names or view types in this box, the search is expanded to include any matching views found in your design hierarchy in the copy operation. If any of these matching views have their own hierarchies, those additional hierarchies are also included.

In the *Names* field, type the names of one or more space-separated views to copy. You can also type a valid filter string (for example, s*).

Copying Data

Additionally, or optionally, use the *Select* button to select specific view types.

4. The *Views To Copy – All Views* check box appears selected by default. The *Views To Copy* option appears deselected until you deselect the *All Views* check box. If you leave the check box selected, the copy operation will copy all views of the specified cell. Further, if you copy the cell hierarchically, the copy operation also copies all instantiated views.

To copy a particular set of views (instead of all views), follow these steps:

a. Deselect the All Views check box.

The *Views To Copy* option becomes active.

b. In the *Names* field, type the names of one or more space-separated views to copy. You can also type a valid filter string (for example, s*).

Additionally, or optionally, use the *Select* button to select specific view types.

All referenced views that match a specified view name or selected view type are copied to the destination.

Updating View Instances

You can use the *Update Instances* check box in the *Options* group box on the Copy View form to update the instances in the destination library to use only the copied views (instead of referencing the entire original library, cell, and view names). If you leave the *Update Instances* check box unselected, references to the *From View* name are unchanged. For example, all instances of .../oldLib/oldCell/symbol continue to reference the original library and remain .../oldLib/oldCell/symbol.

To update instances in the destination cell to use only the copied cellviews, do the following:

1. In the *Options* group box on the Copy Cell form, select the *Update Instances* check box.

The drop-down list becomes active.

- 2. From the drop-down list, select one of the following choices:
 - Of Entire Library: The software overwrites instances of the From View name with the To View name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
 - Of New Copies Only: The software overwrites only the cellview references you copied from the original library. For example, only cellview instances of .../oldCell/oldView are renamed to .../newCell/newView.

Copying Data

3. Click OK.

The Library Manager performs the specified copy operation.

Validating Database Integrity

You can select the options in the *Database Integrity* field if you want to update and validate technology data in the destination cellview after the copy command is completed. You can do the following:

- Select *Re-reference customViaDefs* to update custom via definitions to point to cellviews in the destination library.
- Select Check existence in technology database to validate the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Copying a Library File

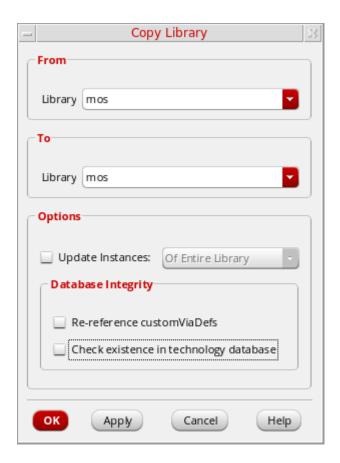
To copy a library file, follow these steps:

1. Select a library file.

Note: If you are viewing library information in *View – Lists* mode, make sure the *Show Files* check box is selected. See also:

- Changing How You View Library Information on page 21
- □ <u>Viewing Categories and Files in View Lists Mode</u> on page 22
- □ <u>Viewing Categories and Files in View Tree Mode</u> on page 23
- 2. Choose Edit Copy.

The Copy Library File form appears (see Copy Library File Form on page 328).



The selected library file appears in the *Library* and *File* fields in the *From* group box. It also appears in the *Library* and *File* fields in the *To* group box. You can change any or all of these values.

Copying Data

- **3.** To complete the copy library file operation, follow the steps for one of the following tasks:
 - Copying a Library File to Another Name in the Same Library on page 154
 - Copying a Library File to Another Library on page 154

Copying a Library File to Another Name in the Same Library

To copy a library file to another name in the same library, do the following:

- 1. Follow the steps from "Copying a Library File" on page 153.
- **2.** In the *To* group box in the *File* field, type a destination file name.
- 3. Click OK.

The *From* file name is copied to the *To* file name in the same library.

Copying a Library File to Another Library

To copy a library file to another library, do the following:

- 1. Follow the steps from "Copying a Library File" on page 153.
- **2.** In the *To* group box in the *Library* field, type or select a destination library name.

You can type a new library name or select an existing library from the drop-down list.

- **3.** (Optional) In the *To* group box in the *File* field, type a destination file name.
 - If you do not change the file name in the *To* group box, the copied file will have the same name as the original file.
- 4. Click OK.

The *From File* is copied to the *To File* in the *To Library*. If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

Copying a Cell File

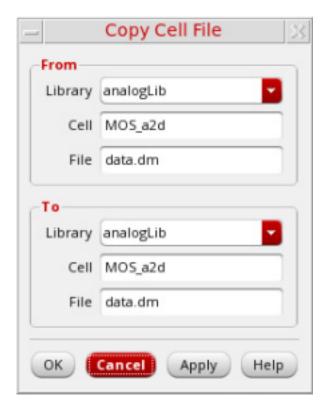
To copy a cell file, follow these steps:

1. Select a cell file.

Note: If you are viewing library information in *View – Lists* mode, make sure the *Show Files* check box is selected. See also

- Changing How You View Library Information on page 21
- □ <u>Viewing Categories and Files in View Lists Mode</u> on page 22
- □ <u>Viewing Categories and Files in View Tree Mode</u> on page 23
- **2.** Choose *Edit Copy*.

The Copy Cell File form appears (see "Copy Cell File Form" on page 325).



The selected cell file appears in the *Library*, *Cell*, and *File* fields in the *From* group box. It also appears in the *Library*, *Cell*, and *File* fields in the *To* group box. You can change any or all of these values.

3. To complete the copy cell file operation, follow the steps for one of the following tasks:

Copying Data

- Copying a Cell File to Another Name or Cell in the Same Library on page 156
- □ Copying a Cell File to Another Library on page 157

Copying a Cell File to Another Name or Cell in the Same Library

Within the same library, you can

- Copy a cell file to another name for the same cell
- Copy a cell file to the same name for a different cell
- Copy a cell file to another name for a different cell

To copy a cell file to another name for the same cell in the same library, do the following:

- **1.** Follow the steps from <u>"Copying a Cell File"</u> on page 155.
- **2.** In the *To* group box in the *File* field, type a destination cell file name.
- 3. Click OK.

The *From* file name is copied to the *To* file name for the same cell in the same library.

To copy a cell file to the same name for a different cell in the same library, do the following:

- **1.** Follow the steps from "Copying a Cell File" on page 155.
- **2.** In the *To* group box in the *Cell* field, type a destination cell name.
- 3. Click OK.

The cell file is copied to the specified *To* cell name in the same library.

To copy a cell file to another name for a different cell in the same library, do the following:

- 1. Follow the steps from "Copying a Cell File" on page 155.
- **2.** In the *To* group box in the *Cell* field, type a destination cell name.
- **3.** In the *To* group box in the *File* field, type a destination cell file name.
- **4.** Click *OK*.

The *From* file name is copied to the specified *To* cell and file name in the same library.

Copying Data

Copying a Cell File to Another Library

To copy a cell file to another library, do the following:

- 1. Follow the steps from "Copying a Cell File" on page 155.
- **2.** In the *To* group box in the *Library* field, type or select a destination library name.

You can type a new library name or select an existing library from the drop-down list.

- **3.** (Optional) In the *To* group box in the *Cell* field, type a destination cell name.
 - If you do not change the cell name in the *To* group box, the copied cellview will have the same cell name as the original cell.
- **4.** (Optional) In the *To* group box in the *File* field, type a destination cell file name.
 - If you do not change the cell file name in the *To* group box, the copied file will have the same name as the original file.
- 5. Click OK.

The *From* cell file is copied to the *To* cell file in the *To* Library. If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

Copying Data

Using the Copy Wizard Form

Unlike the other copy forms, the Copy Wizard form lets you use the hierarchies in the configuration file of the Hierarchy Editor to view, select, and edit individual cellviews you want to copy, instead of being constrained by standardized database hierarchies.

Like the other copy forms, the Copy Wizard form gives you the copy options of *Simple*, *Hierarchical*, *Exact Hierarchy*, *By View*, and *By Configuration* (see "Copy Wizard Form (By Configuration)" on page 338). See

- "Performing a Simple Copy" on page 165 for information on using the Simple tab to specify the libraries, cells, and views to copy
- "Copying a Hierarchy" on page 167 for information on using the Hierarchical tab to specify a hierarchical design (a hierarchy of libraries, cells, and views) or part of a hierarchical design to copy
- "Copying an Exact Hierarchy" on page 171 for information on using the Exact Hierarchy tab to specify an exact hierarchy to copy
- "Copying by View" on page 175 for information on using the By View tab to specify particular views to copy
- "Copying by Configuration" on page 177 for information on using the By Configuration tab to specify a previously defined configuration of cells to copy

See also

- "Selecting Text in the Copy Wizard" on page 159
- "Editing Text in the Copy Wizard" on page 162

Copying Data

Selecting Text in the Copy Wizard

You can use the Copy Wizard feature to select or deselect items for editing and to select items for copying. The following tasks are described:

- Selecting Items for Editing in the Copy Wizard on page 159
- Deselecting Items for Editing in the Copy Wizard on page 160
- Selecting Items for Copying in the Copy Wizard on page 160

Selecting Items for Editing in the Copy Wizard

The Copy Wizard table automatically selects multiple cell items that need to be updated whenever a *To Cell* (destination) entry is selected for editing. It selects all the rows that specify the views and files of the associated *From Cell* (source) and changes their *To Cell* values together.

Note: The mandatory cell selection behavior is performed by Library Manager and cannot be disabled.

You can select for editing in the following ways:

- ➤ To select a single library, cell, or view, click the item name.
- To select more than one contiguous item in a row, click and drag the cursor across all the items.
- ➤ To select more than one item in a column, do one of the following:
 - Click and drag the cursor across all the items.
 - □ Right-click in the column and choose *Select column* from the pop-up menu.
- ➤ To select more than one item not in the same row or column, hold the Ctrl key and click each item. See also "Deselecting Items for Editing in the Copy Wizard" on page 160. Any item not already selected is added to the selection set.

To edit the selected items, see <u>"Editing Text in the Copy Wizard"</u> on page 162. For more information about the Copy Wizard form, see <u>"Using the Copy Wizard Form"</u> on page 158.

Copying Data

Deselecting Items for Editing in the Copy Wizard

To deselect a selected library, cell, or view, do the following:

Click the item.

To deselect a single item in a group of selected items, do the following:

1. Right-click the item.

A pop-up menu appears.

2. Choose Deselect.

Note: Clicking on one of the selected items deselects all except the item you clicked.

To deselect an entire selected column, do the following:

1. Right-click in the column.

A pop-up menu appears.

2. Choose Deselect column.

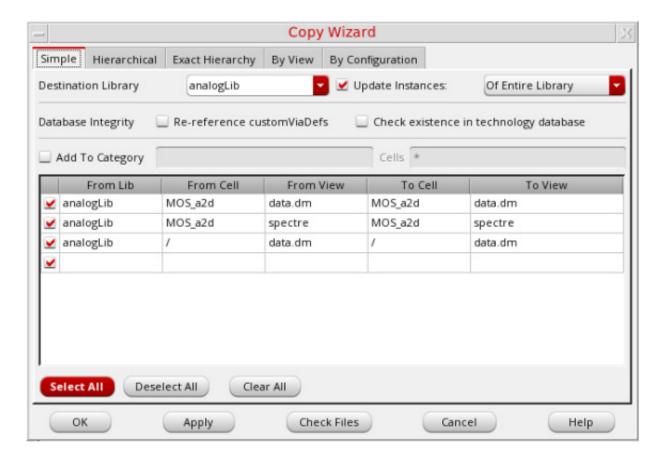
Selecting Items for Copying in the Copy Wizard

Each row in the Copy Wizard represents a cellview or a cell file. A selected check box indicates a selected row.

To select or deselect a cellview for copying (not for editing), do the following:

Copying Data

Select or deselect the check box to the left of the row.



To select all items for copying, do the following:

Click Select All.

To remove all items from the selection set, do the following:

Click Deselect All.

Note: Items are selected or deselected for copying, not for editing.

Copying Data

Editing Text in the Copy Wizard

/Important

You cannot undo changes in the Copy Wizard. If you make a mistake, click *Cancel* to discard changes, then open the Copy Wizard form anew.

You can edit text on the Copy Wizard form in the following ways:

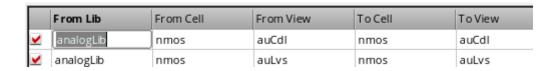
- One item at a time (see <u>"Editing a Single Item"</u>, next)
- All items in a selected set of items at the same time (see <u>"Editing All Items in a Selected Set"</u> on page 163)
- All items in a selected column (see <u>"Editing All Items in a column"</u> on page 163)

Editing a Single Item

To change a library, cell, or view name, do the following:

1. Click the item name.

The item is highlighted.



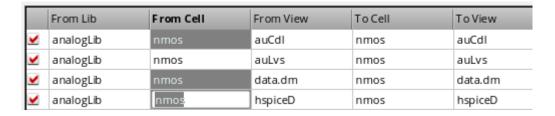
- 2. Place the cursor where you want to add or delete text, or drag the cursor across the text to highlight it.
- 3. Type your changes.
- 4. Press Return.

Copying Data

Editing All Items in a Selected Set

To change all items a selected set, do the following:

1. Select all the items you want to change (see <u>"Selecting Items for Editing in the Copy Wizard"</u> on page 159).



2. Type your changes.

Only the last item added to the selection set reflects your changes.

3. Press Enter.

Note: Alternatively, right-click and choose *Apply Changes* from the pop-up menu.

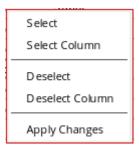
Your edits appear for all selected items.

Editing All Items in a column

To copy text from one item to all items in the same column, do the following:

1. Right-click the item you want to copy.

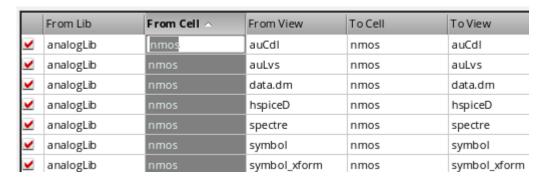
The pop-up menu appears.



2. Choose Select column.

Copying Data

All items in the column are selected.



- 3. Type your changes.
- 4. Right-click in the column to display the pop-up menu.
- 5. Choose Apply Changes.

Your changes are applied to all items in the selected column.

/Important

While you can make global changes across rows or columns, you are more likely to make global changes across columns.

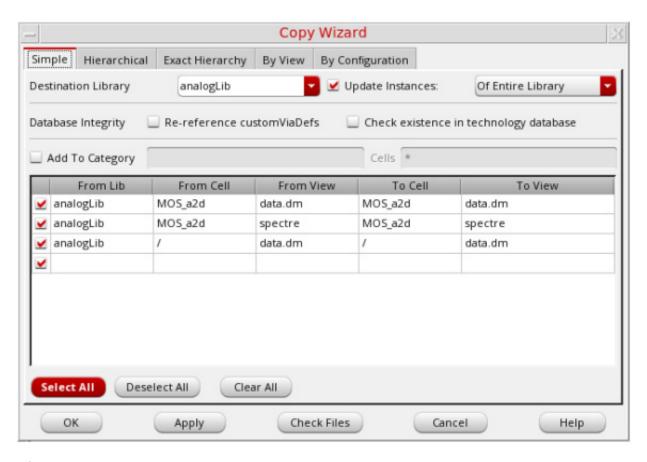
Copying Data

Performing a Simple Copy

To perform a simple copy operation, follow these steps:

- 1. In the Library Manager window, select a library, cell, or view.
- **2.** Choose *Edit Copy Wizard*.

The Copy Wizard form appears. The default copy option is *Simple*.



If you selected only a library, all cells and views associated with this library appear in the Copy Wizard window.

If you selected a library and a cell, all views associated with this library and cell appear in the Copy Wizard window.

If you selected a library, cell, and view, information for the selected cellview only appears in the Copy Wizard window.

Copying Data

3. (Optional) Deselect the check box to the left of any item you do not want to include in the copy list.

Note: You can click *Select All* to select all check boxes or *Deselect All* to deselect all check boxes.

- **4.** Change one or more of the following to specify your copy operation:
 - **a.** In the *Destination Library* field, type or select a new destination library name to copy the selected cellviews to a different library.
 - If the destination library does not already exist, Library Manager creates it in your working directory during the copy procedure.
 - **b.** In the *To Cell* list box, edit the contents to copy the selected cellviews to another name.
 - **c.** In the *To View* list box, edit the contents to copy the selected views to another name.

For information about editing and copying using the Copy Wizard, see <u>"Editing Text in the Copy Wizard"</u> on page 162.

- **5.** (Optional) Select the *Update Instances* check box and select one of the following choices from the drop-down list:
 - Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
 - Of New Copies Only: The software overwrites only the cellview references you copied from the original library. For example, only cellview instances of .../oldCell/oldView are renamed to .../newCell/newView.
- **6.** (Optional) Select the options in the *Database Integrity* field if you want to update technology data in the destination library after the copy command is completed.
 - Re-reference custom ViaDefs updates custom via definitions to point to cellviews in the destination library.
 - Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.
- **7.** (Optional) See <u>"Adding a Copied Cell to a Category"</u> on page 144 for information on adding the copied cells to a category.
- **8.** (Optional) Click *Check Files* to preview any copy problems.

Any problems appear on the Copy Problems form.

Copying Data

When there are no problems, the Check is OK prompt appears. Click *OK* to dismiss the prompt and return to the Copy Wizard window.

9. Click OK.

The Library Manager performs the specified copy operation.

Copying a Hierarchy

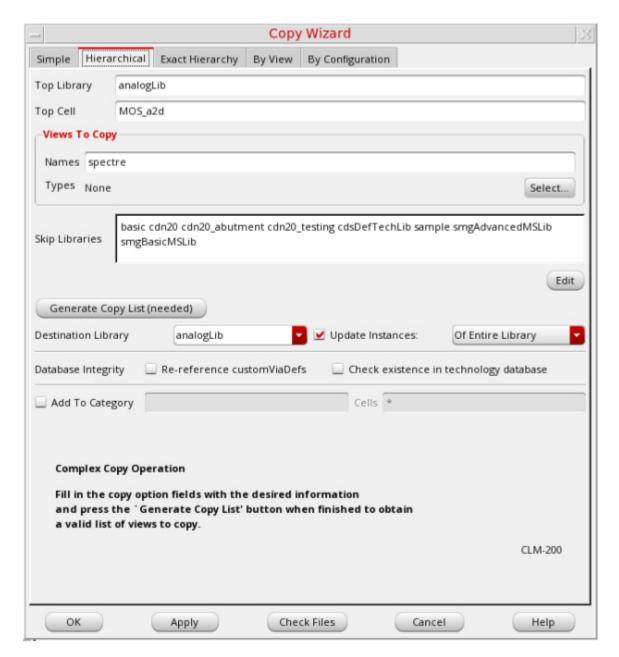
To copy a hierarchy of libraries, cells, and views into another library, follow these steps:

- 1. Select a library, cell, or view.
- 2. Choose Edit Copy Wizard.

The Copy Wizard form appears.

Copying Data

3. Select the Hierarchical tab.



- ☐ The selected library name appears in the *Top Library* field.
- ☐ If you selected a cell, the cell name appears in the *Top Cell* field.
- ☐ If you selected a view, the view name appears in the *Views To Copy Names* field.

You can change any or all of these values.

Copying Data

4. If the *Top Cell* field is empty, type a valid cell name.

If the *Views To Copy – Names* field is empty, type one or more (space-separated)

names of views to copy. You can also type a valid filter string. For example, s* (to indicate all view names beginning with s) or * (to indicate all views). Alternatively, or optionally, use the *Select* button to select specific view types.



5. (Optional) In the *Skip Libraries* field, add or remove names of any libraries whose cellviews you want to skip or to copy into the destination library. Alternatively, click the *Edit* button to open the Skip Libraries Editor dialog box and select the libraries to skip.

Cellviews in the libraries named in the *Skip Libraries* field are not copied and continue to reference their original library. (You probably want to skip libraries such as reference libraries of contacts, vias, and so forth.) Your <u>.cdsenv file</u> contains the list of libraries to include in the *Skip Libraries* field using the following format:

```
cdsLibManager.copyWizard skipLibsText string "lib1 lib2"
```

6. Click Generate Copy List.

The cellviews to copy appear in the copy list. By default, all cellviews are selected for copying. See also <u>"Selecting Text in the Copy Wizard"</u> on page 159.

Note: If the Library Manager finds referenced items whose view names are not specified in the *Views To Copy* field or whose libraries are called out in the *Skip Libraries* field, the View File Summary window appears.

7. In the View File Summary window, click Yes.

The list of cellviews not included in the copy list appear on the Referenced Files form.

Copying Data

8.	(Optional) If you want to move one or more of the referenced files to the copy list, do one
	of the following:

- In the *Copy* list box, click *No* to change the entry to *Yes* for each referenced file you want to move to the copy list, then click *OK*.
- □ Click *Copy All Files* to move all referenced files to the copy list.

The specified cellviews appear in the copy list on the Copy Wizard form.

- **9.** (Optional) In the *Destination Library* field, type or select a new destination library name to copy the selected cellviews to a different library.
- **10.** (Optional) Select the *Update Instances* check box and select one of the following choices from the drop-down list:
 - Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
 - Of New Copies Only: The software overwrites only the cellview references you copied from the original library. For example, only cellview instances of .../oldCell/oldView are renamed to .../newCell/newView.
- **11.** (Optional) Select the options in the *Database Integrity* field if you want to update and validate technology data in the destination library after the copy command is completed.
 - □ Re-reference customViaDefs updates custom via definitions to point to cellviews in the destination library.
 - Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.
- **12.** (Optional) See <u>"Adding a Copied Cell to a Category"</u> on page 144 for information on adding the copied cells to a category.
- 13. Click OK.

Library Manager copies the cells in the copy list to the destination library. If the destination library is the same as the top library, Library Manager copies the cells or views to the new names you specified.

If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

Copying Data

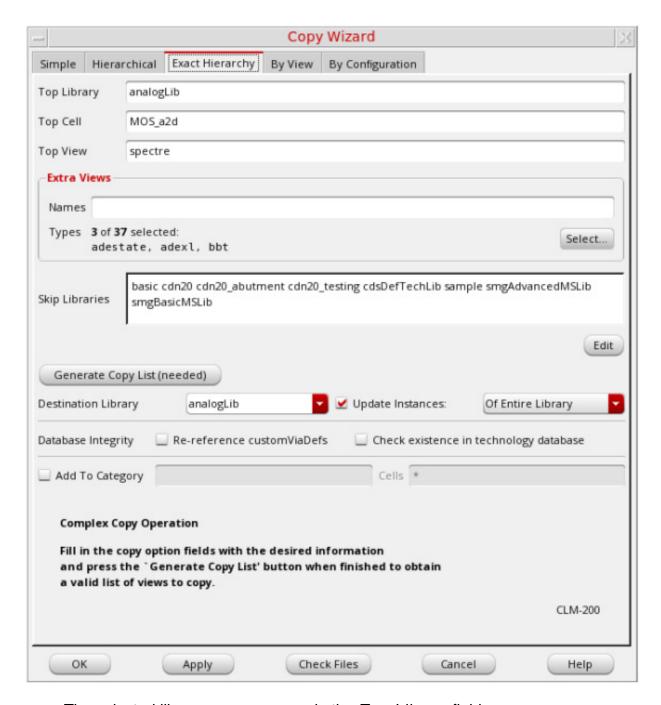
Copying an Exact Hierarchy

To copy an exact hierarchy of libraries, cells, and views into another library (such that only those cellviews found in the design hierarchy are included in the copy operation), follow these steps:

- **1.** Select a library, cell, or view.
- 2. Choose Edit Copy Wizard.

The Copy Wizard form appears.

3. Select the *Exact Hierarchy* tab.



- ☐ The selected library name appears in the *Top Library* field.
- ☐ If you selected a cell, the cell name appears in the *Top Cell* field.
- ☐ If you selected a view, the view name appears in the *Top View* field.

Copying Data

You can change any or all of these values.

- **4.** If the *Top Cell* field is empty, type a valid cell name.
- **5.** If the *Top View* field is empty, type a valid view name or a list of names separated by spaces.
- **6.** (Optional) In the *Extra Views Names*, specify additional space-separated view names or expressions to expand the search to include any matching views found in your design hierarchy in the copy operation. You can also type a valid filter string (for example, s*).

Additionally, or optionally, use the *Select* button to select specific view types.

Note: If any of these matching views have their own hierarchies, those additional hierarchies are also included.

7. (Optional) In the *Skip Libraries* field, add or remove names of any libraries whose cellviews you want to skip or to copy into the destination library. Alternatively, click the *Edit* button to open the Skip Libraries Editor dialog box and select the libraries to skip.

Cellviews in the libraries named in the *Skip Libraries* field are not copied and continue to reference their original library. (You might want to skip libraries such as reference libraries of contacts, vias, and so forth.) Your <u>.cdsenv file</u> contains the list of libraries to include in the *Skip Libraries* field using the following format:

```
cdsLibManager.copyWizard skipLibsText string "lib1 lib2"
```

8. Click Generate Copy List.

The cellviews to copy appear in the copy list. By default, all cellviews are selected for copying. See also <u>"Selecting Items for Copying in the Copy Wizard"</u> on page 160.

Note: If the Library Manager finds referenced items whose view names are not specified in the *Views To Copy* field or whose libraries are called out in the *Skip Libraries* field, the View File Summary window appears.

9. In the View File Summary window, click *Yes*.

The list of cellviews not included in the copy list appear on the Referenced Files form.

- **10.** (Optional) On the Referenced Files form, do one of the following if you want to move one or more of the referenced files to the copy list:
 - □ In the *Copy* list box, click *No* to change the entry to *Yes* for each referenced file you want to move to the copy list, then click *OK*.
 - □ Click *Copy All Files* to move all referenced files to the copy list.

The specified cellviews appear in the copy list on the Copy Wizard form.

Copying Data

- **11.** (Optional) In the *Destination Library* field, type or select a new destination library name to copy the selected cellviews to a different library.
- **12.** (Optional) Select the *Update Instances* check box and select one of the following choices from the drop-down list:
 - Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
 - Of New Copies Only: The software overwrites only the cellview references you copied from the original library. For example, only cellview instances of .../oldCell/oldView are renamed to .../newCell/newView.
- **13.** (Optional) Select the options in the *Database Integrity* field if you want to update and validate technology data in the destination library after the copy command is completed.
 - □ Re-reference customViaDefs updates custom via definitions to point to cellviews in the destination library.
 - Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.
- **14.** (Optional) See <u>"Adding a Copied Cell to a Category"</u> on page 144 for information on adding the copied cells to a category.
- **15.** Click *OK*.

Library Manager copies the cells in the copy list to the destination library. If the destination library is the same as the top library, Library Manager copies the cells or views to the new names you specified.

If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

Copying Data

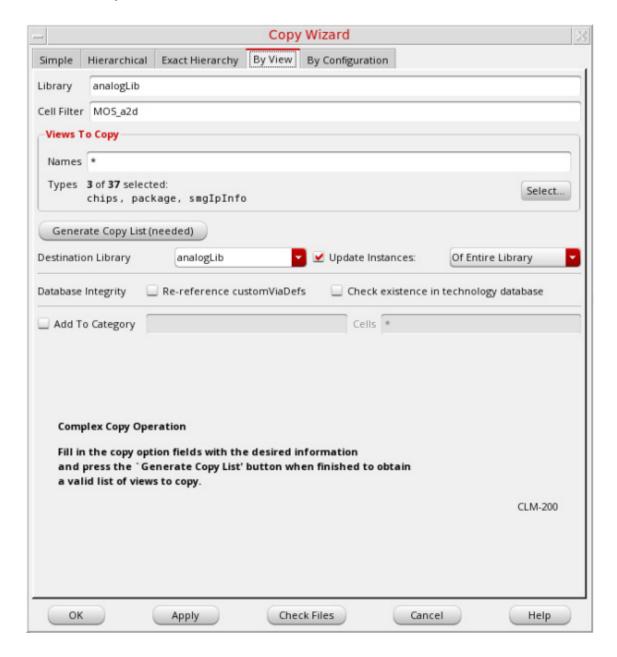
Copying by View

To copy only specific views to a different library, follow these steps:

- 1. Select a library.
- 2. Choose Edit Copy Wizard.

The Copy Wizard appears.

3. Select the By View tab.



Cadence Library Manager User Guide Copying Data

		The selected library name appears in the <i>Library</i> field.	
		If you selected a cell, the cell name appears in the Cell Filter field.	
		An asterisk appears in the Names field in Views To Copy.	
	You	can change any or all of these values.	
4.	In the Cell Filter field, type the name of the cell you want to copy.		
	You can type a specific cell name or a character string to filter patterns in cell names, such as cc^* or $*a2d$.		
5.	You	ne $Views\ To\ Copy-Names$ field, specify the names of the views you want to copy. can type a specific view name or a character string to filter patterns in view names, a as s *.	
	Alternatively, or optionally, use the Select button to select specific view types.		
6.	Click Generate Copy List.		
	The cellviews that match the cell and view filter strings appear in the copy list. Cell files are not affected by the <i>Views To Copy</i> filter, so all cell files are included in the copy list. By default, all items are selected for copying. See also <u>"Selecting Items for Copying in the Copy Wizard"</u> on page 160.		
7.	. (Optional) In the <i>Destination Library</i> field, type or select a new destination library name to copy the selected cellviews to a different library.		
8.	(Optional) Select the <i>Update Instances</i> check box and select one of the following choices from the drop-down list:		
		Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of/oldLib/oldCell/oldView are renamed to/newLib/newCell/newView.	
		Of New Copies Only: The software overwrites only the cellview references you copied from the original library. For example, only cellview instances of/oldCell/oldView are renamed to/newCell/newView.	
9.	(Optional) Select the options in the <i>Database Integrity</i> field if you want to update technology data in the copied library after the copy command is completed.		
		$\label{lem:Re-reference} \textit{Re-reference customViaDefs} \ \text{updates custom via definitions to point to cellviews in the destination library}.$	
		Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.	

Copying Data

- **10.** (Optional) See <u>"Adding a Copied Cell to a Category"</u> on page 144 for information on adding the copied cells to a category.
- 11. Click OK.

Library Manager copies the cells in the copy list to the destination library. If the destination library is the same as the top library, Library Manager copies the cells or views to the new names you specified.

If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

Copying by Configuration

To copy cells in a configuration file to another library, follow these steps:



For information about configuration files refer to the *Cadence Hierarchy Editor User Guide*.

- 1. Select the item you want to copy.
- 2. Choose Edit Copy Wizard.

The Copy Wizard form appears.

3. Select the *By Configuration* tab.



- ☐ The selected library name appears in the *Library* field.
- ☐ If you selected a cell, the cell name appears in the *Cell* field.
- ☐ If you selected a configuration view, the view name appears on the *Config View* field.

Copying Data

You can change any or all of these values.

- **4.** If the *Cell* field is empty, type a valid cell name.
- **5.** If the *Config View* field is empty, type a valid configuration view name.

(Optional) In the *Skip Libraries* field, add or remove names of any libraries whose configuration you want to skip or to copy into the destination library. Alternatively, click the *Edit* button to open the Skip Libraries Editor dialog box and select the libraries to skip.

Configuration views in the libraries named in the *Skip Libraries* field are not copied and continue to reference their original library. You might want to skip libraries such as reference libraries of contacts, vias, and so on. Your <u>.cdsenv file</u> contains the list of libraries to include in the *Skip Libraries* field using the following format:

cdsLibManager.copyWizard skipLibsText string "lib1 lib2"

6. Click Generate Copy List.

The configuration views to copy appear in the copy list. By default, all items are selected for copying. See also <u>"Selecting Items for Copying in the Copy Wizard"</u> on page 160.

- **7.** (Optional) In the *Destination Library* field, type or select a new destination library name to copy the selected configuration views to a different library.
- **8.** (Optional) Select the *Update Instances* check box and select one of the following choices from the drop-down list:
 - Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
 - Of New Copies Only: The software overwrites only the view references you copied from the original library. For example, only view instances of .../oldCell/oldView are renamed to .../newCell/newView.
- **9.** (Optional) Select the options in the *Database Integrity* field if you want to update technology data in the destination library after the copy command is completed.
 - □ Re-reference customViaDefs updates custom via definitions to point to cellviews in the destination library.
 - Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.
- **10.** (Optional) See <u>"Adding a Copied Cell to a Category"</u> on page 144 for information on adding the copied cells to a category.

Copying Data

11. Click OK.

Library Manager copies the cells in the copy list to the destination library. If the destination library is the same as the top library, Library Manager copies the cells or views to the new names you specified.

If the destination library does not already exist, the New Library form appears (see "Copying to a New Library" on page 135) so that you can specify a location (and design management option) for the new library.

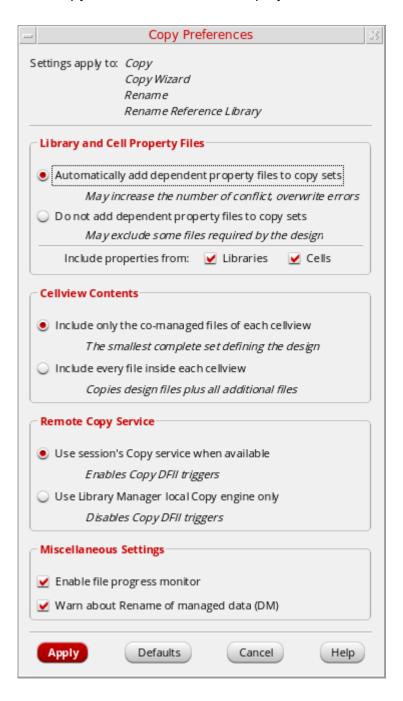
Note: If the Library Manager cannot open or read the configuration file, check the file permissions on the files making up the configuration or check the configuration using the Hierarchy Editor. For more information, see "Viewing and Changing File Permissions" on page 37 or the <u>Cadence Hierarchy Editor User Guide</u>.

Setting Copy and Rename Preferences

To set preferences for copy and rename operations, do the following:

1. Choose *Edit – Copy Preferences*.

The Copy Preferences form is displayed.

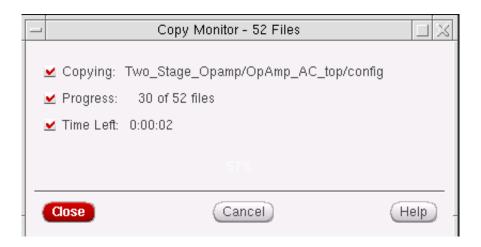


Cadence Library Manager User Guide Copying Data

2.	Choose one of the following <i>Library and Cell Property Files</i> settings, which apply to copy operations only:				
		Aut	omatically add dependent property files to copy sets		
			tional) If you choose this setting, you can also select or deselect one or both of following <i>Include properties from</i> check boxes (which are both selected by ault):		
		О	Libraries, when selected, indicates that you want to add dependent library property files to a copy set		
		О	Cells, when selected, indicates that you want to add dependent cell property files to a copy set		
		Do	not add dependent property files to copy sets		
3.	Choose one of the following Cellview Contents settings, which apply to copy operations only:				
		Inc	lude only the co-managed files of each cellview		
		Inc	lude every file inside each cellview		
4.	I. Choose one of the following Remote Copy Service settings, which apply to both coand rename operations:				
		Use	e session's Copy service when available		
	□ Use Library Manager local Copy engine only				
Note: For more information about remote copy services, see the description cdsLibManager.copyGlobals mpsRadio toggle in "Using UNIX to Auto.cdsenv" on page 298.					
5.	Choose Miscellaneous Settings:				

Cadence Library Manager User Guide Copying Data

□ *Enable file progress monitor* causes the Copy Monitor form to appear during the copy operation.



Note: If you click Cancel, the Confirm Cancellation form appears.

Warn about Rename of manage data (DM) causes the Warning: Renaming Managed Data form to appear whenever any part or all of the library you are renaming is under design management (DM).

Cadence Library Manager User Guide Copying Data

Managing Designs

Generic Design Management (GDM) is the Cadence[®] design management layer that interfaces with the particular design management system you are using. The GDM layer allows applications to interface with different design management systems using a set of basic commands (see "Generic Design Management (GDM) Commands" in the Cadence Application Infrastructure User Guide).

Note: When using any design management system that interfaces with GDM, you can optimize the performance of check-in and check-out operations by setting the DD_GDM_OPTIMIZE environment variable to yes before you start Virtuoso.

The following tasks are discussed in this chapter:

- Checking In Designs on page 187
- Checking Out Designs on page 193
- Canceling Check-Outs for Designs on page 197
- Checking In Properties on page 200
- Checking Out Properties on page 204
- Canceling Check-Outs for Properties on page 206
- Checking In Categories on page 207
- Checking Out Categories on page 209
- Canceling the Check-Out of a Category on page 211
- Using the Automatic Check-In Process on page 212
- Using the Automatic Check-Out Process on page 218
- Submitting Changes on page 224
- <u>Updating Workareas</u> on page 227
- Versioning on page 231

Cadence Library Manager User Guide Managing Designs

Viewing	Design	Manager	ment File	Status	on page 239

Checking In Designs

To check in a design, select the item in the Library Manager that you want to check in (for example a library, cell, view, or file, and then choose *Design Manager – Check In* to display the Check In form.



Figure 5-1 Check In Form

Both the check-in and <u>check-out</u> processes control access to the design data files that design team members store in a project design management repository, so that:

Managing Designs

- When you **check out** a file, the software copies the file from the project design management repository to your current workarea.
- When you **check in** a file, the software copies the file, as a completed version, from your workarea to the project design management repository and assigns the next version number.

Note: You can optimize the performance of check-in operations by setting the DD_GDM_OPTIMIZE environment variable to yes before you start Virtuoso.

/Important

Cadence recommends that you do not check in design data files that are locked. A locked design data file is one that someone else is currently editing. If you try to check in a locked file, you will get an error message. To resolve the error, close design windows or change the files to read-only mode before you check them in. For more information, see <u>Chapter 7</u>, "Changing Files to Read-Only Mode."

Cadence Library Manager User Guide Managing Designs

The Check In form contains the following options:

Form Option	Description			
Show	A filter pull-down which can change the selection set to display one of the following as current status:			
	Checked Out changes the selection set to list all files that are currently checked out (and by who).			
	 Unmanaged changes the selection set to list all files that are not in the design management workarea 			
	 Checked In Writable changes the selection set to list all files that have been checked in and are writable 			
	■ All restores the original selection set: all files			
	The filters options that are enabled will be restricted dependent upon the Check command that is current, mirroring the behavior described for the <i>Check In</i> tab below.			
	Note: Click <i>Deselect All</i> to deselect all currently selected files.			
Select	Adds files to the selection set.			
	For more information about selecting and deselecting items, see also <u>"Selecting Items for Copying in the Copy Wizard"</u> on page 160.			
Deselect All	Remove all files from the selection set.			
Invert All	Toggles each checked box to the opposite checked setting.			

Managing Designs

Comment

Enter the text to describe the check-in.

When you add the details, such as version information, about a library or cell check-in, the software attaches a copy of the comment to every cellview in the library.

You cannot edit or delete the comment after you close the Check In form.

Check In tab

When the *Check In* command is directly invoked, the Check In form format that is displayed is the same as that for the Check Out form and the Cancel Checkout form. However, the ability to switch command tabs, in the respective forms, is restricted to the command action that is currently applicable, as the legal file sets are mutually exclusive.

The only exception is in relation to the *Cancel Check Out* and *Check In* tabs, when using the *Check Out* command, as either of these actions could be applied to checked out files.

The *Check In* command also handles new, or un-managed files, but these file sets would be inappropriate in the context of, for example, a *Cancel* command.

■ Use Options

Optionally, select the *Use Options* check box and type any check-in options specific to the particular design management system you are using.

Performs the check-in.

For certain DM systems, an e-mail message is also sent, to notify team members that a new file is checked in.

Note: When you check in a library for the first time, you must add the library name to the project.lib (cds.lib may also be used) file before team members can share the data.

OK

Managing Designs

Refresh Status

Refreshes the current status of items (view, files, and so on) saving you from having to reload the form.

Note: The use of the *Show* drop-down, to change filtering display, does not automatically refresh status states. The *Refresh Status* applies any updates without impacting the current filter setting, or check box status.

Manage Set tab

■ Reinitialize Retrieves the file set that was extracted from the

original library manager design management

command. All rows being selected.

Refine Removes any unchecked rows.

Managing Designs

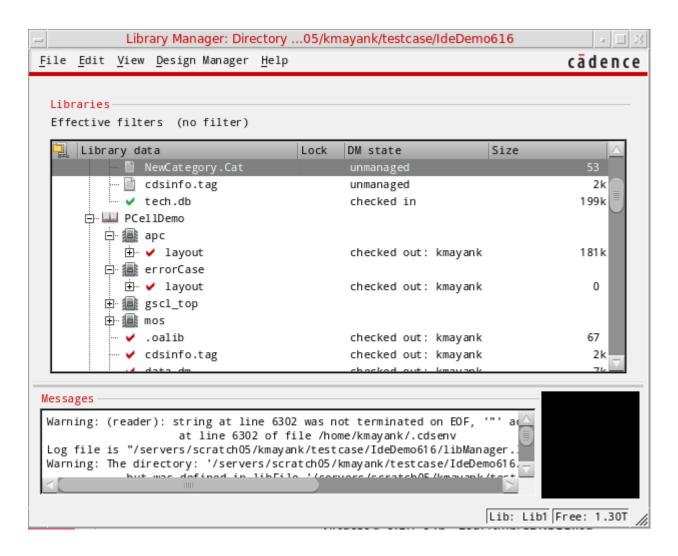


Figure 5-2 Library Manager (Tree View) Showing Mix of Checked In/Out DM States
See also:

- Controlling Automatic Check-In Behavior on page 213
- Changing Auto Check-In Environment Variable Settings on page 214

Checking Out Designs

To check out a design, select the item (library, cell, view, or file) that you want to check out in the Library Manager, then select *Design Manager – Check Out*. All files that are associated with the selected item will now be listed in the displayed Check Out form.

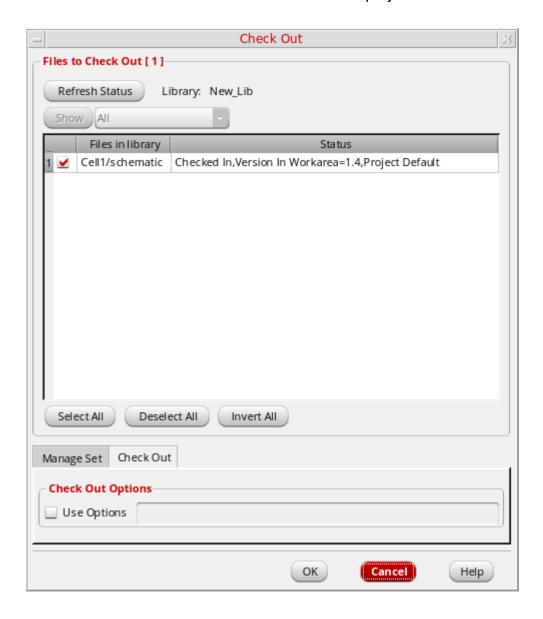


Figure 5-3 Check Out Form

Managing Designs

Both the check-out and <u>check-in</u> processes control access to the design data files that design team members store in a project design management repository, so that:

- When you **check out** a file, the software copies the file from the project design management repository to your workarea.
- When you **check in** a file, the software moves the file, as a completed version, from your workarea to the project design management repository and assigns the next version number.

Note: You can optimize the performance of check-out operations by setting the DD_GDM_OPTIMIZE environment variable to yes before you start Virtuoso.

Cadence Library Manager User Guide Managing Designs

The Check Out form contains the following options:

Form Option	Description		
Refresh Status	Refreshes the current status of items (view, files, and so on), saving you from having to reload the form.		
	Note: The use of the <i>Show</i> drop-down, disabled in the Check Out form, to change filtering display, does not automatically refresh status states. The <i>Refresh Status</i> applies any updates without impacting the current filter setting, or check box status.		
Show	A filter pull-down, which is disabled in the Check Out form, as there are no other filter states which can be applied to re-filter and create a different, valid, set.		
Select All	Adds all files to the selection set.		
	For more information about selecting and deselecting items, see also <u>"Selecting Items for Copying in the Copy Wizard"</u> on page 160.		
Deselect All	Remove all files from the selection set.		
	Note: To remove a single file from the selection set for check-out, deselect the check box to the left of the file name.		
Invert All	Toggles each checked box to the opposite checked setting.		

Managing Designs

Check Out tab

When the *Check Out* command is directly invoked, the Check Out form format that is displayed, is the same as that for the Check In form and the Cancel Checkout form. However, the ability to switch command tabs, in the respective forms, is restricted to the command action that is currently applicable, as the legal file sets are mutually exclusive.

The only exception is in relation to the *Cancel Checkout* and *Check In* tabs, when using the *Check Out* command, as either of these actions could be applied to checked out files.

Note: Although all DM systems must return the DM checkout lock, some can perform the checkout again. Additionally, most, if not all, DM systems will return the checked-in version to the workarea. Some DM systems may restore the exact version that you had previously, while others may only return the latest version. That is, some DM systems will track the workarea's older version before the checkout in order to restore it.

Use Options

Optionally, select the *Use Options* check box and type any check out options specific to the particular design management system that you want to use.

OK

Performs the check out.

See also

- Canceling Check-Outs for Designs, next
- Controlling Automatic Check-Out Behavior on page 218
- Changing Auto Check-Out Environment Variable Settings on page 220

Canceling Check-Outs for Designs

To cancel a check out operation for a library, cell, view, or file, select the item you want to cancel check out of in the Library Manager, and then choose *Design Manager – Cancel Checkout* to display the Cancel Checkout form listing the selected library, cell, view, or file.



Figure 5-4 Cancel Check Out Form

Note:

☐ If another team member working in your workarea has locked a file, you cannot cancel the check-out. Consequently, the Cancel Checkout form will not be displayed.

Managing Designs

If you locked a file, the software prompts you to confirm that you do not want to save any changes.

When you cancel a check-out operation, the software restores your workarea and the project design management repository to the states they were in prior to the check-out. You can cancel a check-out operation if you have not made any changes to the checked-out files or do not want to save any changes you made to checked-out files.

Important

Cadence recommends that you do not cancel check-out for design data files that are locked. A locked design data file is one that someone else is currently editing. If you try to cancel check-out for a locked file, you will get an error message. To resolve the error, close design windows or change the files to read-only mode before you cancel check-out. For more information, see Chapter 7, "Changing Files to Read-Only Mode."

The Cancel Checkout form contains the following options:

Form Option	Description		
Refresh Status	Refreshes the current status of items (view, files, and so on) saving you from having to reload the form.		
Show	Select the library files to be displayed.		
Select All	Adds all files to the selection set.		
	For more information about selecting and deselecting items, see also <u>"Selecting Items for Copying in the Copy Wizard"</u> on page 160.		
Deselect All	Remove all files from the selection set.		
	Note: For individual files, deselect the check box to the left of the file name for each file you want to remove from the selection set for canceling check-out.		
Invert All	Toggles each checked box to the opposite checked setting.		

Managing Designs

Cancel Check Out tab

When the *Cancel Checkout* command is directly invoked, the Cancel Checkout form format that is displayed, is the same as that for the Check In form and the Cancel Out form. However, the ability to switch command tabs, in the respective forms, is restricted to the command action that is currently applicable, as the legal file sets are mutually exclusive.

The only exception is in relation to the *Cancel Checkout* and *Check In* tabs, when using the *Check Out* command, as either of these actions could be applied to checked out files.

Optionally, enter any check-out cancellation options specific to the particular design management system you want to use.

Cancels the check out.

Note: The software cancels the check-out operation for each selected file. Files that are not selected remain checked out.

Use Options

OK

Managing Designs

Checking In Properties

A property file is treated the same way as any other design file, and the procedure for checking it in is the same as for any other design file (see "Checking In Designs" on page 187).

There are two methods of property and auto-checkin (and out), each with its own associated forms.

Managing Designs

 One version (as described in the steps below) is accessible directly from the Library Manager via the selection of *Design Manager – Properties – Check In*. It is this version we will focus on in this context.

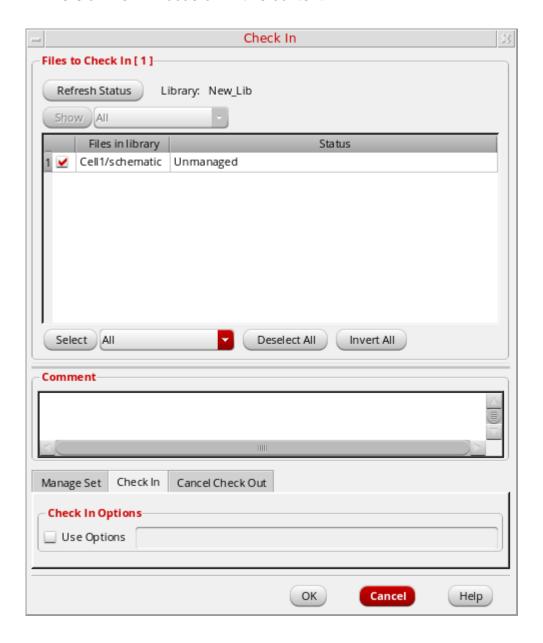


Figure 5-5 Properties Auto-Check In Form Accessible from Design Manager Menu in Library Manager

A second version of property and auto-checkin (and out) can also however be accessed from within Virtuoso itself, as a result of when object properties are being edited.

Managing Designs

Properties are checked in and out in Virtuoso as per current auto var settings

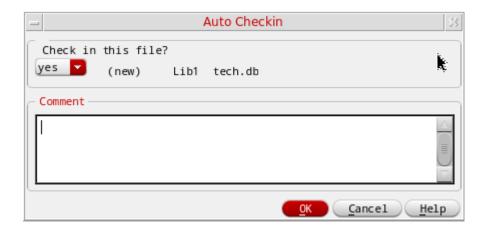


Figure 5-6 Properties Auto Checkin Form Displayed During Object Property Edit in Virtuoso

Note: Library Manager auto-checkin (and out) forms will be displayed for category editing and copy operations.

To check in a property file, follow these steps:

- 1. Select the item whose property file you want to check in.
- **2.** Choose Design Manager Properties Check In.

The property file associated with the selected item appears on the Check In form.

- **3.** (Optional) Follow the remaining steps in <u>"Checking In Designs"</u> on page 187.
- 4. Click OK.

Managing Designs

The following table summarizes the shell environment variable settings you type in the .cdsenv file to control automatic check-in behavior.

CDS_PROMPT_CKIN

	all	views	file (default)	none
all	Prompt displayed after you close properties, files, or views.	Prompt displayed after you close a view.	Prompt displayed after you close files or properties.	Prompt not displayed.
	Auto check in files, properties, and views.	Auto check in files, properties, and views.	Auto check in files, properties, and views.	Auto check in files, properties, and views.
views	Prompt displayed after you close properties, files, or views.	Prompt displayed after you close a view.	Prompt displayed after you close files or properties.	Prompt not displayed.
	Auto check in views only.	Auto check in views only.	Auto check in views only.	Auto check in views only.
files (default)	Prompt displayed after you close properties, files, or views	Prompt displayed after you close a view.	Prompt displayed after you close files or properties.	Prompt not displayed.
	Auto check in files and properties only.	Auto check in files and properties only.	Auto check in files and properties only.	Auto check in files and properties only.
none	Prompt displayed after you close properties, files, or views.	Prompt displayed after you close a view.	Prompt displayed after you close properties or files.	Prompt not displayed.
	Never auto check in properties, files, or views.	Never auto check in properties, files, or views.	Never auto check in properties, files, or views.	Never auto check in properties, files, or views.
	views files (default)	all Prompt displayed after you close properties, files, or views. Auto check in files, properties, and views. Views Prompt displayed after you close properties, files, or views. Auto check in views only. Frompt displayed after you close properties, files, or views Auto check in files and properties only. Prompt displayed after you close properties only. Prompt displayed after you close properties, files, or views. Never auto check in properties, files, or	all Prompt displayed after you close a files, or views. Auto check in files, properties, and views. Prompt displayed after you close a view. Prompt displayed after you close a files, properties, and views. Prompt displayed after you close a view. Auto check in views after you close a view. Auto check in views only. Prompt displayed after you close a view. Auto check in views only. Prompt displayed after you close a view. Auto check in files and properties only. Auto check in files and properties only. Prompt displayed after you close a view. Auto check in files and properties only. Never auto check in properties, files, or views. Never auto check in properties, iles, or Never auto check in properties, files, or views.	all Prompt displayed after you close properties, files, or views. Auto check in files, properties, and views. Prompt displayed after you close a view. Auto check in files, properties, and views. Prompt displayed after you close a view. Auto check in views only. Auto check in views only. Prompt displayed after you close a view. Auto check in views only. Prompt displayed after you close a view. Auto check in views only. Auto check in views only. Prompt displayed after you close a view. Auto check in views only. Prompt displayed after you close a view. Auto check in files or properties. Auto check in files and properties only. Prompt displayed after you close a view. Auto check in files and properties only. Prompt displayed after you close a view. Auto check in files and properties only. Prompt displayed after you close a view. Never auto check in properties, files, or views. Never auto check in properties, in p

Managing Designs

Checking Out Properties

See also Checking In Properties.

Each library, cell, and cellview can have a property file associated with it. Usually, you check out and check in the property files along with the other design data files, although you might want to check out the property files without the associated design data files; for example, when you want to edit the CDF information for a library or cell.

A property file is treated the same way as any other design file, and the procedure for checking it out is the same as for any other design file (see <u>"Checking Out Designs"</u> on page 193). To check out a property file, follow these steps:

- 1. Select the item whose property file you want to check out.
- 2. Choose Design Manager Properties Check Out.

The property file for the selected item appears on the Check Out form.



Figure 5-7 Check Out Properties Form

- 3. (Optional) Follow the remaining steps in "Checking Out Designs" on page 193.
- 4. Click OK.

See also "Canceling Check-Outs for Properties" on page 206.

Managing Designs

Canceling Check-Outs for Properties

When you cancel a check-out operation, the software restores your workarea and the project design management repository to the states they were in prior to the check-out. You can cancel a check-out operation if you have not made any changes to a checked-out file or do not want to save any changes you made to a checked-out file.

To cancel a check-out operation, follow these steps:

- 1. Select the item whose property file check-out operation you want to cancel.
- 2. Choose Design Manager Properties Cancel Checkout.

The property file associated with the selected item appears on the Cancel Check Out form.

- **3.** (Optional) Follow the remaining steps in <u>"Canceling Check-Outs for Designs"</u> on page 197.
- 4. Click OK.

The software cancels the check-out operation for each selected file.

Checking In Categories

A category is treated the same way as any other design item, and the procedure for checking it in is the same as for any other design item (see <u>"Checking In Designs"</u> on page 187).

To check in a category, follow these steps:

- **1.** Make sure you can see the category names (see <u>"Changing How You View Library Information"</u> on page 21).
- 2. Right-click a category name.

A pop-up menu appears.

3. Choose Check In.

The files associated with the selected category appear on the Check In form.



Managing Designs

Figure 5-8 Check In Categories Form

- 4. (Optional) Follow the remaining steps in "Checking In Designs" on page 187.
- 5. Click OK.

For more information on using categories, see Chapter 8, "Managing Categories."

Checking Out Categories

A category is treated the same way as any other design item, and the procedure for checking it out is the same as for any other design item (see "Checking Out Designs" on page 193).

To check out a category, follow these steps:

- **1.** Make sure you can see the category names (see <u>"Changing How You View Library Information"</u> on page 21).
- 2. Right-click a category name.

A pop-up menu appears.

3. Choose Check Out.

The files associated with the selected category appear on the Check Out form.



Managing Designs

Figure 5-9 Check Out Categories Form

- 4. (Optional) Follow the remaining steps in "Checking Out Designs" on page 193.
- **5.** Click *OK*.

For more information on using categories, see Chapter 8, "Managing Categories."

Managing Designs

Canceling the Check-Out of a Category

You can cancel the check-out of categories that you have checked out so that no changes you might have made to your files are saved.

To cancel a check-out, follow these steps:

1. Right-click a category name.

A pop-up menu appears.

2. Choose Cancel Check Out.

The files associated with the selected category appear on the Cancel Check Out form.

- **3.** (Optional) Follow the remaining steps in <u>"Canceling Check-Outs for Designs"</u> on page 197.
- 4. Click OK.

Managing Designs

Using the Automatic Check-In Process

By default, when you close properties or files that were automatically checked out, or try to exit a session without closing properties or files that were automatically checked out, the Auto Checkin form appears.

To complete the automatic check-in process, do the following:

- **1.** In the drop-down list to the left of the item name, select *yes*.
- 2. Add the text in the *Comment* text box to specify relevant information about the check-in.

Note: When you add the information, such as version information, about a library or cell check-in, the software attaches a copy of the comment to every cellview in the library.

3. Click OK.

To stop the automatic check-in process, do the following:

- **1.** In the drop-down list to the left of the item name, select *no*.
- **2.** Click *OK*.

Alternatively, you can click *Cancel* to stop the automatic check-in process.

To cancel a check-out, do the following:

- 1. In the drop-down list to the left of the item name, select *cancel checkout*.
- 2. Click OK.

See also

- Controlling Automatic Check-In Behavior on page 213
- Changing Auto Check-In Environment Variable Settings on page 214

Managing Designs

Controlling Automatic Check-In Behavior

To control automatic check-in behavior, do the following:

➤ On the Auto Checkin form, click Show Auto Checkin Preferences.

Automatic check-in preferences appear at the bottom of the Auto Checkin form.

You can set automatic check-in options separately for cellviews and for properties and files.

To display these preferences from the CIW, do the following:

➤ Choose Options – Checkin Preferences.

The Auto Checkin Preferences form appears.

The following automatic check-in settings are described:

- Always Ask Me on page 213
- Never Ask Me on page 213



See also "Changing Auto Check-In Environment Variable Settings" on page 214.

Always Ask Me

To force the software to prompt you whenever the automatic check-in process is triggered, do the following:

- **1.** In the drop-down list, select always ask me.
- 2. Click OK.

You will always be prompted for automatic check-in. Your changes take effect immediately.

Never Ask Me

To set the automatic check-in behavior so that you are never prompted, do the following:

1. In the drop-down list, select *never ask me*.

A new drop-down list appears to the right of the original drop-down list.

Managing Designs

Whenever you select *never ask me* in either of the *When auto checking in* drop-down lists, you must also select an automatic check-in option.

2. In the drop-down list to the right of *never ask me*, select one of the following choices:

Choice	Behavior
always auto checkin	Always check in the item automatically when closing it
never auto checkin	Do not perform automatic check-in when closing the item

3. Click OK.

Your changes take effect immediately.

Note: The cellviews are not automatically checked in by default. If you need all the cellviews to be checked-in in the batch mode, then in the *When auto checking in cellViews* section of the Auto Checkin Preferences form, you need to choose the *never ask me* option from the first drop-down list and then choose the *always auto checkin* option from the second drop-down list. Auto checkin of cellview in the batch mode is also possible using the ddAuto* SKILL API irrespective of the GUI setting.

Changing Auto Check-In Environment Variable Settings

You can set the CDS_PROMPT_CKIN and CDS_AUTO_CKIN shell environment variables to control the prompting and automatic check-in behavior. See

- CDS_PROMPT_CKIN (next)
- CDS_AUTO_CKIN on page 215
- Summary Table of Automatic Check-In Settings on page 216

CDS_PROMPT_CKIN

CDS_PROMPT_CKIN controls whether the Auto Checkin form appears when you close properties or files that were automatically checked out, or if you try to exit a session without closing properties or files that were automatically checked out, while using a Virtuoso design environment product that has both a graphical user interface and automatic check-in capability.

Note: This variable works with <u>CDS AUTO CKIN</u>.

Managing Designs

Valid values are as follows:

all specifies that the form appears when either cellview or noncellview data is still checked out.

none specifies that the form never appears automatically.

views specifies that the form appears only when cellview data is still checked out.

files (default) specifies that the form appears only when noncellview data is still checked out.

CDS_AUTO_CKIN

CDS_AUTO_CKIN controls whether the software automatically checks in data files when you close properties or files that were automatically checked out or when you exit a Virtuoso session without closing properties or files that were automatically checked out.

- If an application has a graphical user interface, this variable works with CDS_PROMPT_CKIN is set to display the Auto Checkin form, the software seeds the form to reflect the value of CDS_AUTO_CKIN. When CDS_PROMPT_CKIN is not set to display the Auto Checkin form, the software performs the check-in action specified by the value of CDS_AUTO_CKIN.
- If the application does not have a graphical user interface, the software ignores CDS_PROMPT_CKIN and performs the specified automatic check-in action.

Value values are as follows:

all specifies automatic check-in for both cellview and noncellview data.

none specifies no automatic check-in operations.

views specifies an automatic check-in for cellview data only.

files (default) specifies an automatic check-in for noncellview data only.

Managing Designs

Summary Table of Automatic Check-In Settings

The following table summarizes the shell environment variable settings you type in the .cdsenv file to control automatic check-in behavior.

CDS_PROMPT_CKIN

		all	views	file (default)	none
	all	Prompt displayed after you close properties, files, or views.	Prompt displayed after you close a view.	Prompt displayed after you close files or properties.	Prompt not displayed.
CKIN		Auto check in files, properties, and views.	Auto check in files, properties, and views.	Auto check in files, properties, and views.	Auto check in files, properties, and views.
CDS_AUTO_CKIN	views	Prompt displayed after you close properties, files, or views.	Prompt displayed after you close a view.	Prompt displayed after you close files or properties.	Prompt not displayed.
S					Auto check in views only.
		Auto check in views only.	Auto check in views only.	Auto check in views only.	·

Cadence Library Manager User Guide Managing Designs

CDS_PROMPT_CKIN

		OD3_i i			
		all	views	file (default)	none
CDS_AUTO_CKIN	files (default)	Prompt displayed after you close properties, files, or views	Prompt displayed after you close a view.	Prompt displayed after you close files or properties.	Prompt not displayed.
		Auto check in files and properties only.	Auto check in files and properties only.	Auto check in files and properties only.	Auto check in files and properties only.
	none	Prompt displayed after you close properties, files, or views.	Prompt displayed after you close a view.	Prompt displayed after you close properties or files.	Prompt not displayed. Never auto check
		Never auto check in properties, files, or views.	Never auto check in properties, files, or views.	Never auto check in properties, files, or views.	in properties, files, or views.

Managing Designs

Using the Automatic Check-Out Process

By default, when you try to open properties, files, or cellviews that you have not checked out, the Auto Checkout form appears.

To complete the auto check-out process, do the following:

- **1.** In the drop-down list to the left of the item name, select *yes*.
- 2. Click OK.

To stop the automatic check-out process, do the following:

- **1.** In the drop-down list to the left of the item name, select *no*.
- 2. Click OK.

Alternatively, you can click *Cancel* to stop the automatic check-out process.

See also

- Controlling Automatic Check-Out Behavior (next)
- Changing Auto Check-Out Environment Variable Settings on page 220

Controlling Automatic Check-Out Behavior

To control automatic check-out behavior, do the following:

On the Auto Checkout form, click Show Auto Checkout Preferences.

Automatic check-out preferences appear at the bottom of the Auto Checkout form.

To display these preferences from the CIW, do the following:

Choose Options – Checkout Preferences.

The Auto Checkout Preferences form appears.

Managing Designs

The following automatic check-out settings are described:

- Always Ask Me (next)
- Never Ask Me on page 219



See also "Changing Auto Check-Out Environment Variable Settings" on page 220.

Always Ask Me

To force the software to prompt you whenever the automatic check-out process is triggered, do the following:

- 1. In the drop-down list, select always ask me.
- 2. Click OK.

You will always be prompted for automatic check-out. Your changes take effect immediately.

Never Ask Me

To set the automatic check-out behavior so that you are never prompted, do the following:

1. In the drop-down list, select *never ask me*.

A new drop-down list appears to the right of the original drop-down list.

Whenever you select *never ask me* in either of the *When auto checking out* drop-down lists, you must also select an automatic check-out option.

2. In the drop-down list to the right of *never ask me*, select one of the following choices:

Choice	Behavior
always auto checkout	Always check out the item automatically when opening it
never auto checkout	Do not perform automatic check-out when opening the item

3. Click OK.

Your changes take effect immediately.

Managing Designs

Changing Auto Check-Out Environment Variable Settings

To change the default behavior of the Auto Checkout form, reset the CDS_PROMPT_CKOUT and CDS_AUTO_CKOUT shell environment variables. See

- CDS PROMPT CKOUT (next)
- CDS_AUTO_CKOUT on page 221
- Summary Table of Automatic Check-In Settings on page 216

CDS_PROMPT_CKOUT

CDS_PROMPT_CKOUT controls whether the Auto Checkout form automatically appears when you open data files using a Virtuoso design environment product that has a graphical user interface and automatic check-out capability.

Note: This variable works with CDS_AUTO_CKOUT (see "CDS_AUTO_CKOUT," next).

Valid values for CDS_PROMPT_CKOUT are as follows:

Value	Description
all	(Default) The form appears when you open either cellview or noncellview data
none	The form never appears automatically
views	The form appears only when you open cellview data
files	The form appears only when you open noncellview data

Managing Designs

CDS_AUTO_CKOUT

CDS_AUTO_CKOUT controls whether the software automatically checks out a file when you open it with a Virtuoso product.

- If an application has a graphical user interface, this variable works with CDS_PROMPT_CKOUT. When CDS_PROMPT_CKOUT is set to display the Auto Checkout form, the software seeds the form to reflect the value of CDS_AUTO_CKOUT. When CDS_PROMPT_CKOUT is not set to display the Auto Checkout form, the software performs the check-out action specified by the value of CDS_AUTO_CKOUT.
- If the application does not have a graphical user interface, the software ignores CDS_PROMPT_CKOUT and performs the check-out action specified by the value of CDS_AUTO_CKOUT.

Valid values for CDS_AUTO_CKOUT are as follows:

Value	Description	
all	(Default) Automatic check-out for cellview and noncellview data	
none	No automatic check-out operations	
views	Automatic check-out for cellview data only	
files	Automatic check-out for noncellview data only	

Managing Designs

Summary Table of Automatic Check-Out Settings

The following table summarizes the environment variable settings you type in the .cdsenv file to control automatic check-out behavior.

CDS PROMPT CK	CDS	S PRO	MPT	CKOUT
---------------	-----	-------	-----	-------

		all (default)	views	file	none
CDS_AUTO_CKOUT	all (default)	Prompt displayed when you open files, properties, or	Prompt displayed when you open a view.	Prompt displayed when you open files or properties.	Prompt not displayed.
		views. Auto check out files, properties, and views.	properties,	Auto check out files, properties, and views.	Auto check out files, properties, and views.
	views	Prompt displayed when you open files, properties, or views.	Prompt displayed when you open a view.	Prompt displayed when you open files or properties. Auto check out views	Prompt not displayed.
		Auto check out views only.	Auto check out views only.		Auto check out views only.

Cadence Library Manager User Guide Managing Designs

CDS PROMPT CKOUT

CD3_PROMPT_CROUT		701			
		all (default)	views	file	none
CDS_AUTO_CKOUT	files	Prompt displayed when you open files, properties, or	Prompt displayed when you open a view.	Prompt displayed when you open files or properties.	Prompt not displayed.
		views. Auto check out files and properties only.	files and properties	Auto check out files and properties only.	Auto check out files and properties only.
	none	Prompt displayed when you open files, properties, or	Prompt displayed when you open a view.	Prompt displayed when you open files or properties.	Prompt not displayed.
		Never auto check out properties, files, or views.	Never auto check out properties, files, or views.	Never auto check out properties, files, or views.	Never auto check out properties, files, or views.

Managing Designs

Submitting Changes

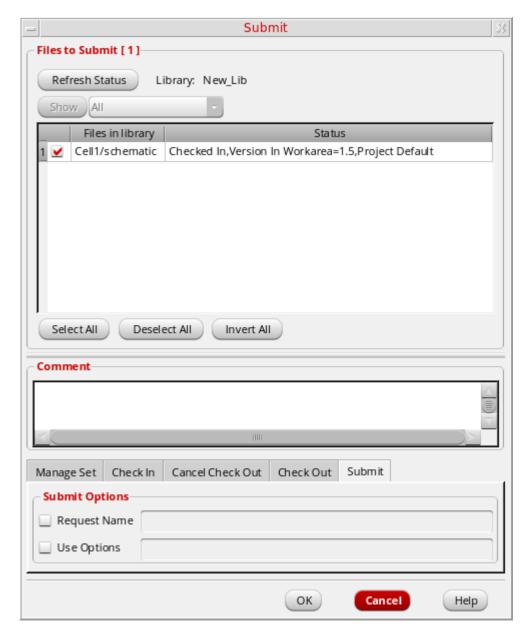
If you are using a design management system that supports the submit operation¹, then you can use the *Submit* command to submit items to your project design management repository when you are ready to integrate your design changes into a release as follows:

- 1. Select a library, cell, view, or file.
- 2. Choose Design Manager Submit.

^{1.} VersionSync does not support submit.

Managing Designs

If the design management system determines that a submit is needed¹, the Submit form appears (see <u>"Submit Form"</u> on page 356).



3. (Optional) To remove a file from the selection set for the submit operation, deselect the check box to the left of the file name.

Note: You can remove all files from the selection set by clicking Deselect All. You can

^{1.} Depending on your design management system, a submit may be needed after you check in a new version so that all users can update to it, or perhaps to have it included as part of a versioned release set.

Managing Designs

select all files by clicking *Select All*. For more information about selecting and deselecting items on this form, see also <u>"Selecting Items for Copying in the Copy Wizard"</u> on page 160.

- **4.** (Optional) In the *Comment* field, type text (maximum 100 characters) to describe the design changes associated with this submit operation.
- **5.** (Optional) In the *Submit Options* group box, select the *Request Name* check box and type a name you want to assign as the Integration Request (IR) name.
 - If you do not select this box and type a name, the design manager generates a name based on its DM integration behavior, comparable to the gdmsubmit Unix command.
- **6.** (Optional) In the *Submit Options* group box, select the *Use Options* check box and type any submit options specific to your particular design management system you want to use.
- 7. If you want to use specific options for the IR, turn on *Use Options* and type your options.
- 8. Click OK.

The system submits an IR for your files and notifies you by e-mail (certain DM systems only).

Note: This form runs the gdmsubmit command (see <u>"Generic Design Management (GDM)</u> <u>Commands"</u> in the *Cadence Application Infrastructure User Guide*).

Managing Designs

Updating Workareas

You can update an item or workarea with the latest design data changes that team members have checked in to the project design management repository using the following commands:

- <u>Design Manager Update</u> on page 228
- Design Manager Update Workarea on page 229

Managing Designs

Design Manager – Update

You can update libraries, cells, views, or files with the latest design data checked in by team members. The *Update* command is active if the selected item can be updated. If an item is checked out, it cannot be updated. The procedure is the same for libraries, cells, views, and files.

To update an item, follow these steps:

- 1. Select the item you want to update.
- 2. Choose Design Manager Update.

The appropriate Update form appears.

- **3.** (Optional) In the *Update Options* group box, select the *Update From* check box and type the name of a configuration in the field to update your workarea relative to the specified design management configuration.
 - For information about the types of configurations you can specify, see the documentation for your design management system.
- **4.** (Optional) In the *Update Options* group box, select the *Use Options* check box and type any update options specific to your particular design management system you want to use.
- 5. Click OK.

Your workarea is updated with the latest design data for the selected item.

Managing Designs

Design Manager – Update Workarea

You can update your entire workarea with the latest design data checked in by team members.

Note: The *Update Workarea* option can always be run, even when no DM system has been setup, however this will be limited.

To update your workarea with the latest design changes, follow these steps:

1. Choose *Design Manager – Update Workarea*.

The Update Workarea form appears.

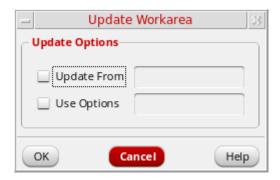


Figure 5-10 Update Workarea Form

- **2.** (Optional) In the *Update Options* group box, select the *Update From* check box and type the name of a configuration in the field to update your workarea relative to the specified design management configuration.
 - For information about the types of configurations you can specify, see the documentation for your design management system.
- **3.** (Optional) In the *Update Options* group box, select the *Use Options* check box and type any update options specific to your particular design management system you want to use.
- 4. Click OK.

The software updates all the files in your workarea.

Managing Designs

Note: The length of time required to update your workarea depends on the number of cellviews you are updating. Because an update could take a long time, you should choose an appropriate time to run the procedure.

When team members check in a library for the first time, they must also add the library to the project.lib file (or cds.lib) before team members can share the data.

Versioning

To access the version information for a cellview or file, follow these steps:

- 1. In the Library Manager, select the cellview or file for which you want to access the version information.
- 2. Choose Design Manager Version Info.

The Version Information form is displayed:

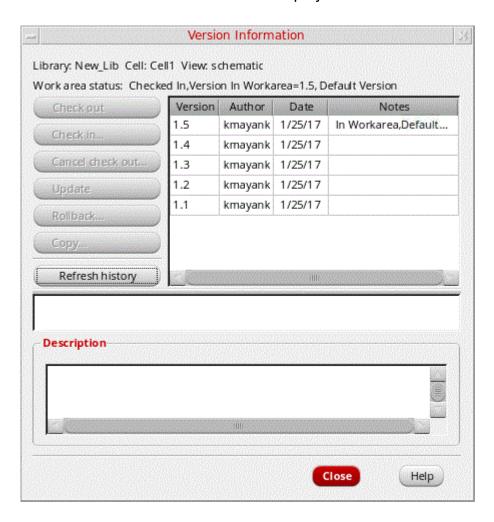


Figure 5-11 The Version Information Form

The Version Information form above shows the version (revision) history of a single cellview or file. *Status* is limited only to the DM state, which can also be inferred from the set of DM sub-commands that are automatically enabled within the form.

Managing Designs

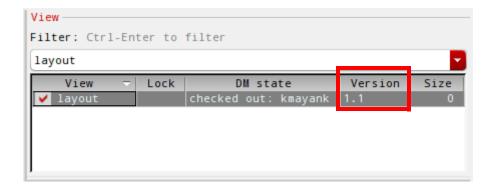
Version information is indicated in the table as follows:

- *Version*: The version of the cellview or file.
- Author: The ID of the user who checked in the version.
- Date: The date when the version was checked in.
- *Notes*: Any details about the version. The term *Default Version* indicates the most recent version checked in by the user. If the user rolls back the cellview or file to a lower version, it is indicated as *Default Version*.

Alternatively, right-click the title bar of the *View* list box in the Library Manager form and choose *Version* from the pop-up menu.



The *Version* column is added to the *View* list box of the Library Manager form.



Managing Designs

Using the Version Information Form

Perform the required action based on the Version Information form options and descriptions detailed below:

Form Option	Use/Description
Check Out	To check out the project default version of a file or cellview (already checked in) to your workarea:
	 Select the version in the list box for a file that has been checked in.
	2. Click Check Out (For Edit).
	The selected version is checked out.
Check In	To check in a file or cellview:
	1. Select the version in the list box to be checked in.
	2. Click Check In.
	The selected version is checked in.
Cancel Check Out	To cancel the check out of a file or cellview:
	 Select the version in the list box to have its checked out canceled.
	2. Click Cancel Check Out.
	The selected version check out is canceled.
Update	To specify a version (other than the project default version) as the version the software will open when you open a file in read-only mode:
	1. Select the version in the list box.
	2. Click Update (Read Only)
	The software updates the workarea with the specified version.

Managing Designs

Rollback

To specify an earlier version as the project default version:

- 1. Select the earlier version in the list box.
- 2. Click Rollback.

The Version Rollback prompt appears.

3. Click Yes.

The software performs the following tasks:

- Performs the rollback operation
- Updates the Version Information form to reflect the rollback

See Copying a Version of a Cellview or File.

Displays the description associated with the action performed.

Performs another query of the DM system for the current history and status, and then updates the form displayed.

Note: This is the same behavior as when a new cellview is selected in the Library Manager main window.

Copy

Description

Refresh History

Managing Designs

Copying a Version of a Cellview or File

The Copy Cellview Version form is used to copy (export) a specific cellview version in the library database, primarily so that it can be viewed side-by-side with another (latest) version of the cellview that is currently being edited in Virtuoso.

Note: You can also access this form directly by selecting *Design Manager – Copy Version*.

To copy a version of a cellview or file:

- 1. Select a cellview that has been checked in.
- 2. Choose Design Manager Version Info.

The Version Information form appears.

3. Select the version you want to copy.

Managing Designs

4. Click Copy.

The Copy Cellview Version form appears.

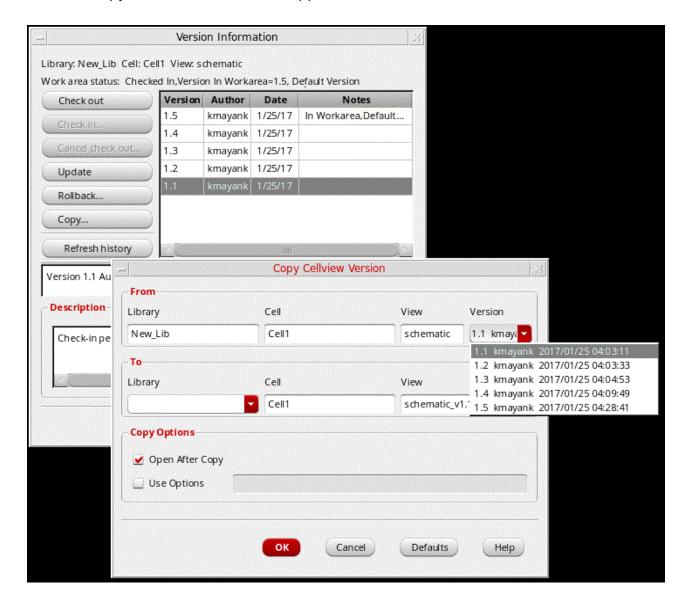


Figure 5-12 Copy Cellview Version Form

The name of the source *Library*, *Cell*, *View*, and *Version* number display in the fields of the *From* group box.

Some default information appears in the fields of the *To* group box. You can change any or all of the *To* values. The default destination view name is the original view name with the version number appended using the format <code>originalViewName_v#</code>. For example, <code>schematic_v1.1</code>.

Managing Designs

- **5.** Select the Lib/Cell/View version to be copied from the *Version* pull-down.
- **6.** In the *Library* drop-down field, in the *To* group box, type or select a destination library.
- **7.** (Optional) In the *Copy Options* group box, select the *Open After Copy* check box to open the copied cellview after the copy operation.
- **8.** (Optional) In the *Copy Options* group box, select the *Use Options* check box and type any copy options specific to your particular design management system you want to use.
- **9.** Click *OK*.
- **10.** The software will copy the cellview dependent upon the rules detailed below.

Copying Cellview Version Rules

The software copies the cellview to the specified destination according to the following guidelines:

- If you type a new library name in the Library field, the New Library form appears followed by the Technology File for New Library form. See "Copying to a New Library" on page 135.
- If you type an existing cellview name in the *View* field, the Confirm Overwrite form appears.
 - □ Click *Yes* to complete the copy operation by overwriting the existing cellview.
 - □ Click *No* to cancel the copy operation.
 - The Destination Already Exists message prompt appears.
 - Click *OK* and type a different destination on the Copy Cellview Version form.
- If you leave any of the fields blank in the *To* group box, the Missing Destination Name message prompt appears.
 - To resolve the error, click *OK* and type the missing destination library, cell, or view name.
- If the information you type in the fields of the *To* group box is that same as what appears in the fields of the *From* group box, the Illegal Destination message prompt appears.
 - To resolve the error, click *OK* and type a valid destination library, cell, and view name.
- If you type an invalid destination name (for example, one containing an illegal character), the Invalid Copy Version Destination Name message prompt appears.
 - Examples of illegal characters include space, backslash (\setminus), slash (/), and punctuation marks such as period (.) and comma (.).

Managing Designs

- If you try to copy a cellview version that is being edited by someone else, the message Is currently edit locked appears.
- If you try to copy a cellview version for which you do not have file permission, a message prompt to that effect appears.
- If you try to copy a read-only version of a cellview (or any other file), the Copy Cellview Version Failed message prompt appears.

You cannot overwrite a read-only version of a file. To make the file writable, you must change the access permissions.

Viewing Design Management File Status

You can view the design management status of all cells in a library, all views for a cell, and individual files by selecting *Design Manager – Show File Status*.

Note: Additionally, you can view the current status of a design managed library in the *View* list box of the Library Manager. The current DM/lock state will be updated when, for example, a cellview is opened (checked out). For design managed libraries, the *View* collumn also displays applicable status icons as visual updates of the current library/cell/view state. For more information on current state, you can also float your cursor over the icon to view an associated tooltip. For example, the tooltip may inform that the current status is that a view has been modified and requires to be checked in.

Important

Interactive performance of Library Manager integrated with the Data Management (DM) system has been improved. Now, while browsing libraries, cells, or views in Library Manager, you will not experience the typical lag that comes from Library Manager while communicating with the DM system to obtain the status information.



Figure 5-13 Possible DM Status Icons that can be seen in the Library Manager View list box

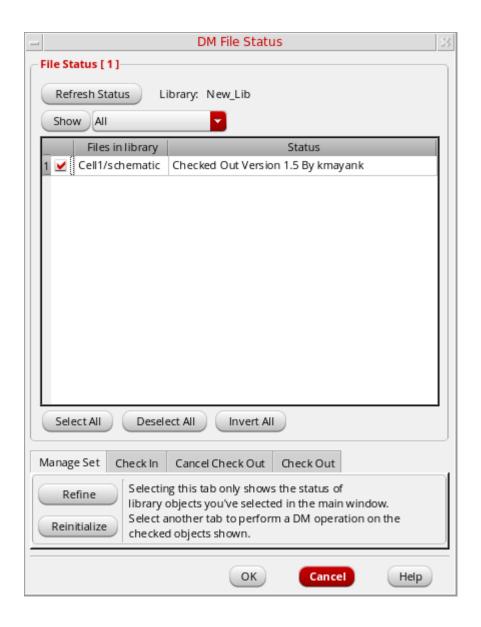


Figure 5-14 DM File Status Form

Managing Designs

Note: The displayed DM File Status form accumulates the DM status for every separate view or file (above the view) for any selected 5.x object. It also provides for limited filtering on the status of items for a small set of DM states, using the *Show* drop-down.

The DM File Status form contains the following options:

Form Option	Description
Refresh Status	Refresh the current status of items (view, files, and so on) saving you from having to reload the form.
	Note: The use of the <i>Show</i> drop-down, to change filtering display, does not automatically refresh status states. The <i>Refresh Status</i> applies any updates without impacting the current filter setting, or check box status.
Show	A filter pull-down, which is only enabled if the <i>Status</i> tab is current in the DM File Status form. Here, you can choose to filter and refine the content of the <i>Status Command</i> section.
	Note: This option is not enabled for other DM commands, such as <i>Check In</i> and <i>Check Out</i> , as their initial input sets are pre-defined by one or more specific states which only apply to that command.
Select All	Adds all files to the selection set.
Deselect All	Remove all files from the selection set.
Invert All	Toggles each checked box to the opposite checked setting.
Manage Set tab	
■ Reinitialize	Retrieves the file set that was extracted from the original library manager design management command. All rows being selected.
■ Refine	Removes any unchecked rows.

Managing Designs



Figure 5-15 DM File Status Form Showing Checked Out Status

Managing Designs

DM Status Settings

The following status can be set for an item

- Checked In specifies that a file is available for check-out to a workarea. The form also shows the project default version number and who created the version.
- Checked Out specifies that a file has been checked out to a workarea. The form displays who has checked out the file.
- Locked specifies that a file has been locked by you or someone who shares your workarea (sandbox model). The form shows who locked the file and the machine that person is working on. Do not check in a locked file.

Displaying the Update Needed Icon

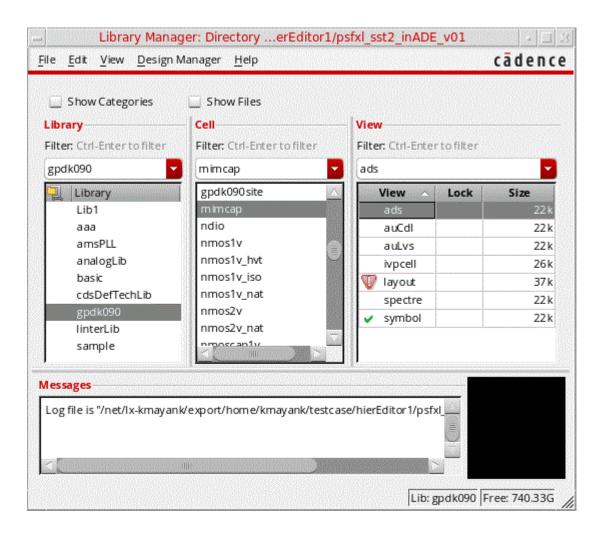
The *update needed* icon is displayed in the Library Manager window in the following scenarios:

- If the DM status of view files is checked in within your workarea, and an update needs to be applied in the cellview.
- If the DM status of view files is checked in within your workarea but is checked out by another user in another workarea, and an update needs to be applied in the cellview.

Note: In this case, a different icon is displayed if either the update is not needed, or the

Managing Designs

update needed feature is not available in your DM.



To update the content in the cellview, you need to select the *Design Manager – Update* option from the Library Manager window, or run the gdmupdate command from the shell terminal.

After the update is successful, the *updated needed* icon is replaced with either the *checked in* icon, or the *checked out by others* icon in the Library Manager window.

For more information on the related GDM command, see gdmstatus in Cadence Application Infrastructure User Guide.

For more information on the related GDM SKILL function, see gdmstatus in Cadence Application Infrastructure SKILL Reference.

Check In, Check Out, and Cancel Check Out Using the DM Status Form

To save you from having to run the separate *Check In, Check Out*, and *Cancel Checkout* options in the *Design Manager* menu, these actions can also be performed in the DM Status form.

In the DM Status form, you have the ability to perform these actions for any files shown in the list, which are either from the full list, or from one of the applicable filtered lists.

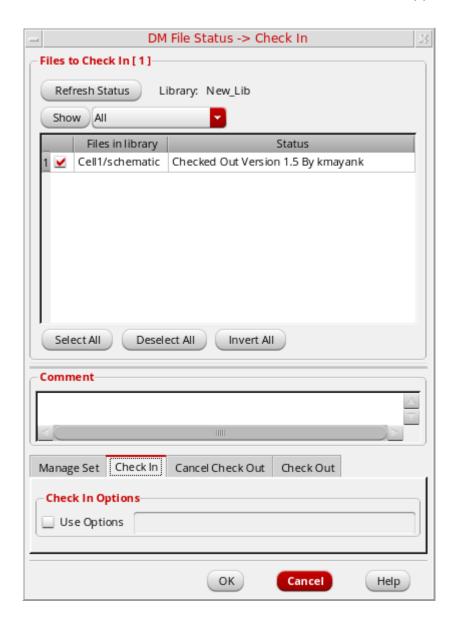


Figure 5-16 DM File Status - Check In Form

Managing Designs

These check in/out actions, along with the *Refresh Status* command, are also contained in a common tabbed structure in the Check In, Check Out and Cancel Checkout forms. However, when a specific check command is selected, the other command tabs will be unavailable. For example, if you choose the *Check In* menu option to display the Check In form, then the *Check Out* and *Cancel Check In* tabs contained therein will be disabled. This does not however apply to the Status form which allows you to invoke all of these actions.

Note: When you perform a check in, check out, or cancel check out from the DM File Status form, a *Substitute DM Command* message will be displayed requesting confirmation of that action. You can however to choose that you do not want this message to be re-displayed in

Managing Designs

future. In doing so, the .cdsenv file will be updated and your preference registered for future actions in this area.



Figure 5-17 Showing Checked Out Files in the DM File Status Form

Cadence Library Manager User Guide Managing Designs

6

Creating a Library

Library Manager helps you in creating new libraries in a design project. You can create a library using any of the following methods:

- Creating a New Library in the Library Manager
- Creating a New Library Using the CIW

Creating a New Library in the Library Manager

To create a new library using the Library Manager, follow these steps:

1. In the Library Manager, choose File - New - Library. Alternatively, you can click inside the *Library* list box and press Ctrl+N on the keyboard.

You can also type the name of the library in the Library field of the Library Manager window and press Ctrl+N to open the New Library form. In this case, the Name field in the New Library form is automatically populated with the name that you have entered in the Library field of the Library Manager window.

Creating a Library

The New Library Form is displayed.



Note: Creating a new or temporary library within an existing library is not allowed. This is because any directories within a library are handled as cells.

2. In the *Name* field, type the name of the library you want to create.

The new library name cannot be the same as another library.

3. Use the *Directory* navigation tools (list boxes and toolbar buttons) to specify the destination directory in which you want to create the new library. You can also type a

Creating a Library

directory path in the *Directory* field. You must have <u>write permission</u> in the directory where you want to create a library.

Note: If you want the library to be under design management control, you must create it in a managed project area. For additional information about creating managed libraries, see the <u>Virtuoso Software Licensing and Configuration Guide</u>.

- **4.** In the *Design Manager* group box, specify whether you want to use a design management system.
 - ☐ If you want to use your design management system, select *Use <design management system>* (the default).

When you have the Design Management setup for the new library, the default DM choice can be specified by a cdsenv variable, "ddserv.lib" "dmChoice". If that value matches one of the DM specifications given for the DMTYPE in the cdsinfo.tag file, then the cdsenv value is picked as the default in the New Library form.

The software suggests a design management system if it has been specified with the DMTYPE property in a cdsinfo.tag file that is not library-specific but included in the search path. For information about the locations at which this file can reside and how the search mechanism determines the value, see The cdsinfo.tag File Location in the The cdsinfo.tag File Location in the Cadence-Application-Infrastructure-User-Guide.

Note: While creating a new library, the design management (DM) information is stored in the cdsinfo.tag file by default when the DM tool is installed.

☐ If you do not want to use design management, select *Use No DM*.

Note: These options will be grayed out unless a design management system is available for selection.

- **5.** You can select the *Compression Enabled* check box to write OpenAccess data to this library in a compressed format. For more information, see <u>Supporting OA Compressed Data Using Library Manager</u>.
- 6. Click OK.

Creating a Library

The Technology File for New Library form is displayed (see <u>"Technology File for New Library Form"</u> on page 356).



- **7.** Choose one of the following technology file options:
 - □ Compile an ASCII technology file
 - Reference existing technology libraries
 - Attach to an existing technology library
 - □ <u>Do not need process information</u>

For more information about technology files, see <u>Referencing or Attaching a Technology Library</u> in the *Virtuoso Technology Data User Guide*.

Creating a New Library Using the CIW

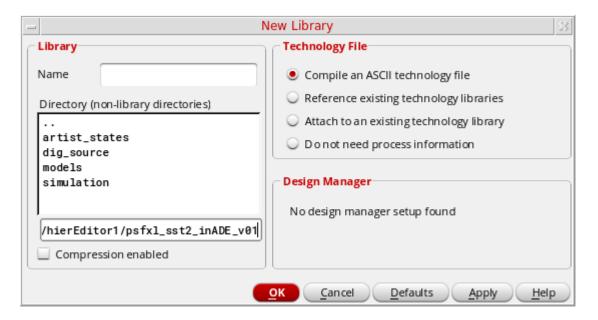
The process for creating a new library from the CIW is different from creating a new library directly from the Library Manager.

To create a new library from the CIW, follow these steps:

1. From the CIW, select *File – New – Library*.

Creating a Library

The New Library form is displayed.



Note: Creating a new or temporary library within an existing library is not allowed. This is because any directories within a library are handled as cells.

- **2.** Enter a *Name* for your new library.
- **3.** (Optionally) Choose the name of the *Directory (non-library directories)* that you want to store your library. Otherwise, you can specify the library path in the text box under the *Directory (non-library directories)* section.

Note: By default, the library will be created and stored in the current directory.

- **4.** Choose one of the following *Technology File* options:
 - □ Compile an ASCII technology file
 - □ Reference existing technology libraries
 - Attach to an existing technology library
 - Do not need process information
- **5.** (Optionally) If available, select the <u>Design Manager</u> to use.

A list box will be displayed offering you the design management systems available if there is more than one that can be selected.

When you have the Design Management setup for the new library, the default DM choice can be specified by a cdsenv variable, "ddserv.lib" "dmChoice". If that value matches

Creating a Library

one of the DM specifications given for the DMTYPE in the cdsinfo.tag file, then the cdsenv value is picked as the default in the New Library form.

The software suggests a design management system if it has been specified with the DMTYPE property in a cdsinfo.tag file that is not library-specific but included in the search path. For information about the locations at which this file can reside and how the search mechanism determines the value, see <u>The cdsinfo.tag File Location</u> in the Cadence Application Infrastructure User Guide.

If there is no design management system available, *No design manager setup found* will be displayed.

- **6.** You can select the *Compression Enabled* check box to write OpenAccess data to this library in a compressed format. For more information, see <u>Supporting OA Compressed Data Using Library Manager</u>.
- 7. Click the OK button.
- 8. Depending on the *Technology File* option you selected above, you will be displayed with either: the Load Technology File form (see <u>Compiling an ASCII Technology File</u> on page 264), the Reference Existing Technology form (see <u>Referencing Existing Technology Libraries</u> on page 265), or the Attach Library to an Existing Technology File form (see <u>Attaching to an Existing Technology Library</u> on page 266).

Alternatively, if no technology file is be associated with the new library, the library will automatically be listed in the *Library* list box of the Library Manager.

Creating a Library

Supporting the oazip Utility to Compress/Decompress Databases

OpenAccess 22.42 and later releases support the ability to save the design databases in a library in a compressed form. Tools based on OpenAccess 22.41 or earlier releases (such as IC6.1.5), may need to have the designs in the library decompressed with the oazip utility before the designs can be accessed.

This utility provides the following functionality:

- It processes the OpenAccess databases in a library and compresses them. The compression control value of the library is updated.
- It processes the OpenAccess databases in a library and decompresses the ones that are in compressed form. The compression control value of the library is reset or updated.
- It provides the value of the compression control attribute of a library.
- It scans the OpenAccess databases in a library and reports the databases that do not match the compression control attribute of the library.
- It scans the OpenAccess databases in a library and updates any databases that did not match the compression control attribute of the library.

Command Syntax

To run oazip, enter the following:

oazip -lib library {-compress|-decompress|-check|-query|-update} [Optional
Arguments]

Arguments

You can use the -help or -h argument to display command line help. The command line arguments are described in the table below.

Required Argument	
-lib <name></name>	This required argument specifies the name of the library to process. If this argument is not specified, an error message will be displayed.

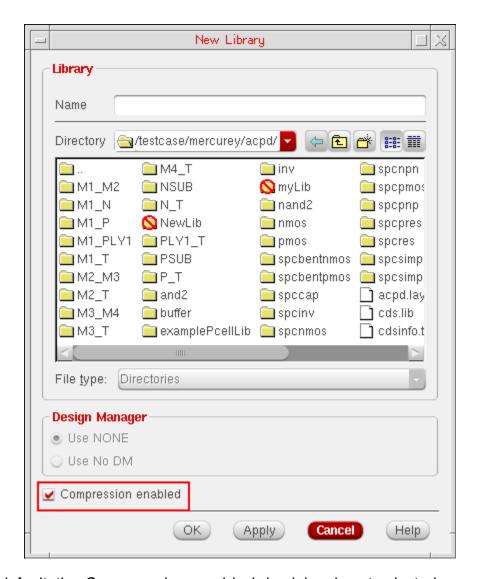
One of the Following	Arguments is Required
-compress	If this option is specified, the utility will process the OpenAccess databases in a library, compress the ones in uncompressed form, and reset the compression control value of the library.
-decompress	If this option is specified, the utility will process the OpenAccess databases in a library, decompress the ones in compressed form, and reset the compression control value of the library.
-query	If this option is specified, the utility will report whether the compression control is specified for the library and what level it is set to.
-check	If this option is specified, the utility will report the OpenAccess databases in the library that are inconsistent with the compression control setting of the library. If there is no compression control specified, the utility will list the databases that are in compressed form. If the compression control is specified, the utility will list those databases that are either in uncompressed form or were written using a compression level different than what the compression control is set to.
-update	If this option is specified, the utility will process the OpenAccess databases in a library and update the ones that are inconsistent with the compression control value of the library.
Optional Arguments	
-h or -help	Display usage information.
-compressLevel <level></level>	This option specifies the compression level to use for the library. Compression levels refer to the amount of effort the compression algorithm will use to when compressing data. Higher values do not necessarily correspond to better compression efficiency. Compression levels are specified by an integer value between 1 and 9, inclusive. The default value of 1 is suitable for most applications.
-logFile <file></file>	Specifies the log filename. If this option is omitted, the log filename defaults to oazip.log.

-noInfo <msgids></msgids>	Suppresses the specified INFO messages. msgIds is a quoted, space separated list of numbers. Each number in the list represents the numerical portion of the ID for the message you want to suppress. None of the numbers in the list may be zero. Suppressed messages do not appear on the terminal or in the log file.
-noWarning <msgids></msgids>	Suppresses the specified WARNING messages. msgIds is a quoted, space separated list of numbers. Each number in the list represents the numerical portion of the ID for the message you want to suppress. None of the numbers in the list may be zero. Suppressed messages do not appear on the terminal or in the log file and are not included in the total of WARNING messages displayed in the summary.
-templateFile <file></file>	Specifies a file containing arguments to oazip. You can specify a template file instead of entering a string of arguments on the command line.
	If you specify a template file, arguments on the command line have precedence over arguments specified in the file. So, if the same argument exists in the template file and in the command line, the translator uses the argument on the command line.
	Specify arguments in a template file as follows:
	■ Enter arguments in the template file without a dash (-) before the argument.
	■ Enter each argument and value pair on a single line.
	Separate the argument from its value using a space or a tab.
	Designate comment lines with a # sign as the first character in the line.
	Sample Template File
	# oazip command line arguments:
	lib libName
	logFile myoazip.log
	compress

- V	Prints tool, format, and library version information.
-version	Prints tool and format version information.

Supporting OA Compressed Data Using Library Manager

While creating a library, you can select the *Compression enabled* check box to compress the library, which, in turn, reduces disk storage space, offers faster load, and saves transfer time.

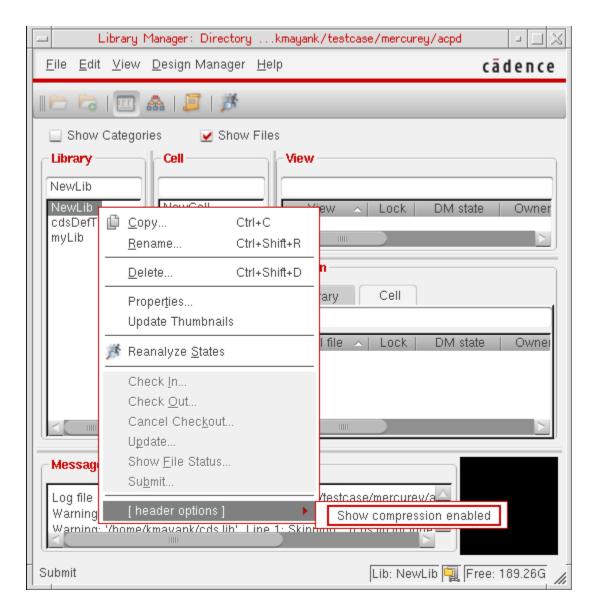


Note: By default, the *Compression enabled* check box is not selected.

Once a new library is created with the *Compression enabled* check box selected, the Library Manager window shows a new compression $\cite{3}$ icon corresponding to the compressed libraries.

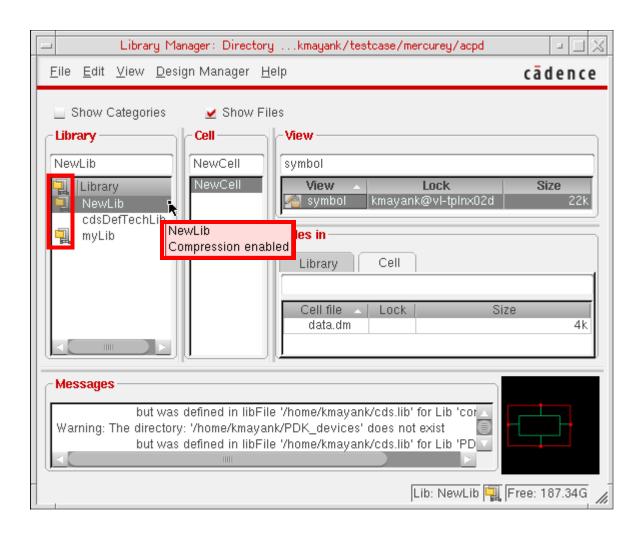
Creating a Library

To view this icon, right-click the first library in the *Library* list box and select the *[header options] – Show compression enabled* option.



The compression icon is displayed for compressed libraries. Placing the pointer on a compressed library displays a tooltip indicating the compression status as enabled.

Creating a Library



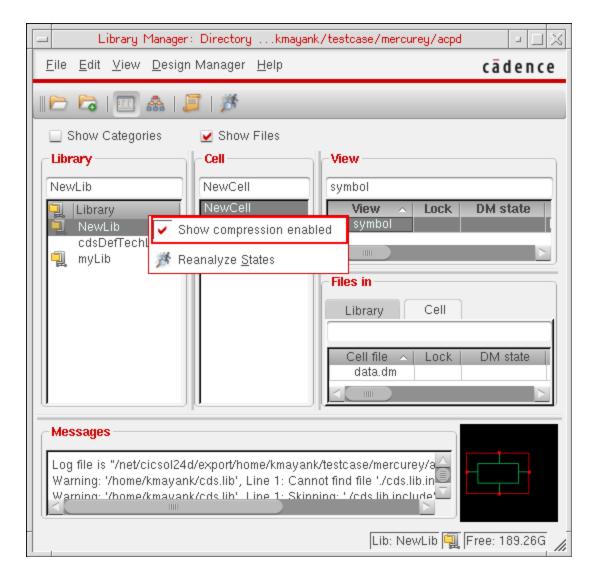
Important

The <code>showCompressionDefault</code> value in .cdsenv sets the compression zip icon to be displayed as default if the <code>\$HOME/.libmgr</code> file is either missing or has no <code>showCompression</code> value. For example, <code>cdsLibManager.showCompression</code>: 1.

Once the value in the \$HOME/.libmgr file is saved as either 0 or 1, then that value is considered instead of the .cdsenv value.

To remove the compression icon from the Library Manager window, you need to right-click the Library header and deselect the *Show compression enabled* option.

Creating a Library



Apart from this, there has been the following enhancements made to the Library Manager window.

Status Bar Notification

Status bar displays a name of the currently selected library, whether compressed or not, and the approximate free disk space of the volume holding the library at the lower-right corner of the window. For example, values in Megabytes (MB), Gigabytes (GB), or Terabytes (TB) of the free space is displayed.

Resizable list boxes

Creating a Library

You can also resize all the list boxes together by pressing and holding the Ctrl key and dragging the mouse pointer on one of the new list box divider. However, without using the Ctrl key pressed, only two adjacent list boxes would be sized at a time.

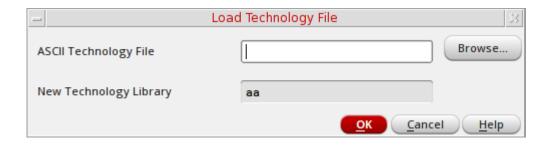
Creating a Library

Compiling an ASCII Technology File

To compile a new technology file and attach it to your new library, follow these steps:

- **1.** From the Technology File for New Library form, select *Compile an ASCII technology file*.
- 2. Click OK.

The Load Technology File form appears.



Your new library name appears in the New Technology Library field.

3. In the ASCII Technology File field, type the path to a technology file.

You can use your own technology file or one of the following templates from the sample technology files shipped with all Virtuoso applications:

```
install_dir/tools/dfII/samples/default.tf
install_dir/tools/dfII/samples/mpu.tf
```

where install dir is the directory in which you installed the Cadence software.

If you want to create a design library with a special technology file but do not know the path to the technology file, type the full hierarchical path to the default technology file default.tf. Later, you can use the *Load* command to modify the technology file information. The default.tf file acts as a placeholder for your technology file.

4. Click OK.

Note: If you click *Cancel* instead, the library is created but a technology file is not loaded.

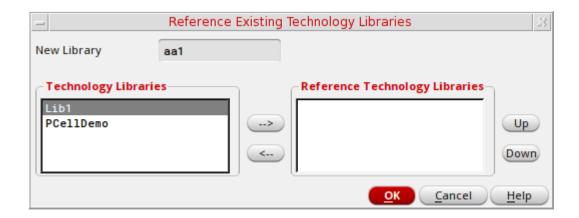
The new design library is created in the specified directory.

Referencing Existing Technology Libraries

To create a new technology file and reference it to an existing technology library, follow these steps:

- **1.** From the Technology File for New Library form, select *Reference existing technology libraries.*
- 2. Click OK.

The Reference Existing Technology Libraries form appears.



3. Using the arrow buttons (-->, <--), or by double clicking, move the technology libraries that you want your new library to reference from the *Technology Libraries* section to the *Reference Technology Libraries* section.

Note: Only libraries with a local technology library will be listed. If cdsDefTechLib exists, it will be removed as this library is used as the basic, default technology library.

4. You can change the technology library reference priority by selecting a library in the *Reference Technology Libraries* section and choosing to the *Up* or *Down* buttons to change its priority position.

Note: The library at the top of the list has the highest priority when applying rules and constraints to a design.

5. Click OK.

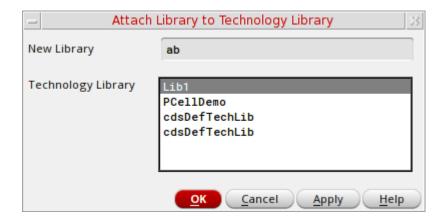
Your new library will now be created, referencing the selected technology libraries.

Attaching to an Existing Technology Library

To attach your new library to a specific technology file, follow these steps:

- **1.** On the Technology File for New Library form, select *Attach to an existing technology library.*
- 2. Click OK.

The Attach Library to Technology Library form appears. The new library name appears in the *New Design Library* field. Technology libraries in your library path appear in the *Technology Library* list box.



3. In the *Technology Library* list box, choose the technology library to which you want to attach your new library.

If the <u>defaultAttachTech</u> environment variable specifies a valid technology library, it appears selected by default in the list.

4. Click OK.

The new library is attached to the specified technology library.

Excluding Process Information

If you do not plan to design layouts, you do not need a technology file.

To create a new library without specifying a technology file, do the following:

- **1.** On the Technology File for New Library form, select *Do not need process information*.
- 2. Click OK.

Creating a Library

Library Manager creates the specified new library. (Although you will not use a technology file, the system automatically attaches the default technology file <code>default.tf</code> when you open the library with a Virtuoso product.)

7

Changing Files to Read-Only Mode

When you open a cellview in edit mode or edit the properties of a cellview, the software locks the file to prevent another member of your design team from opening the same file for modification.

When you are working in a design-managed environment or when you have more than one copy of a cellview open, these protective locks sometimes prevent you or other team members from checking in your design or canceling a checkout, even though you have finished your editing and have closed or iconified the cellview.

The following topics are discussed:

- Trying to Check In a Locked File on page 270
- Getting a List of Locked Cellviews on page 271
- Making Cellviews Read-Only on page 271

Changing Files to Read-Only Mode

Trying to Check In a Locked File

A file is locked when it is opened for edit by you or another user. If you try to check in a file that is locked (by you or by another member of your team), the Cannot Check In message prompt appears.

If you want to continue an ongoing process (such as checking in a library), do the following:

On the Cannot Check In message prompt, click OK.

If you want to stop the ongoing process at this point, do the following:

On the Cannot Check In message prompt, click Cancel.

Note: Clicking *OK* or *Cancel* does not let you check in the file.

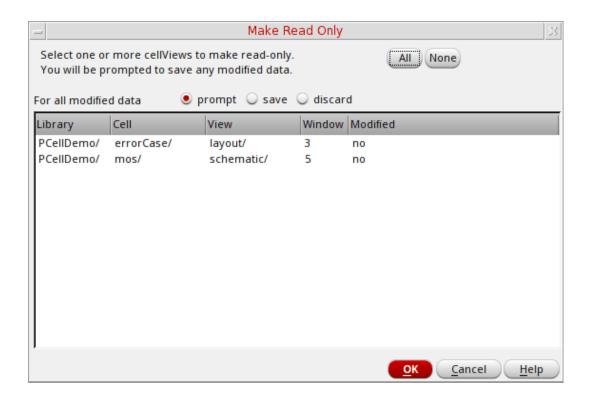
To make it possible for you to check in the locked file, the person who has the file locked must release the lock. To do this, that person can stop editing and close the file or change the file to read-only. For information about how to change a locked cellview to read-only, see "Making Cellviews Read-Only" on page 271.

Getting a List of Locked Cellviews

To get a list of locked cellviews, do the following:

➤ In the CIW, choose File – Make Read Only.

Any cellviews you have open appear on the Make Read Only form.



Making Cellviews Read-Only

In order to check in a locked file or open a locked file for editing, the lock on the file must be released. To change files that are open in edit mode to read-only mode so the locks on them are released, follow these steps:

- **1.** Get a list of the cellviews you have locked (see <u>"Getting a List of Locked Cellviews"</u> on page 271).
- 2. On the Make Read Only form, select the cellviews you want to change to read-only.
 - □ To select all listed cellviews, click *All*.
 - □ To deselect all cellviews, click *None*.

Changing Files to Read-Only Mode

		To select a specific cellview, click the line displaying the cellview name.	
		To select more than one cellview from the list, hold down the <code>Control</code> key when you click the line displaying the second and subsequent cellview names.	
		To deselect cellview names, hold down the Control key when you click the selected cellview.	
3.	Clic	Click OK.	
Note: If you had unsaved changes in the cellview, the Save Cellview messagappears.		e: If you had unsaved changes in the cellview, the Save Cellview message prompt ears.	
		Click Yes to save changes	
		Click No to discard changes	
- he	Mal	ke Read Only form closes and the software changes the selected cellview to be	

The Make Read Only form closes and the software changes the selected cellview to be read-only.

Note: This command works only on cellviews, not on property files.

8

Managing Categories

To manage a large number of cells in a library, you can assign them to categories. You must have <u>write permission</u> for the library before you can create categories, assign cells to categories, or modify the categories to which the cells belong.

The following topics are discussed:

- <u>Viewing Categories</u> on page 274
- Creating a Category on page 274
- Editing a Category on page 277
- <u>Deleting a Category</u> on page 278
- Creating a Subcategory on page 279
 - Creating a New Category That Includes Subcategories on page 280
 - Creating a Subcategory in an Existing Category on page 280
 - Modifying a Category to Include a Subcategory on page 282

Note: If you have any categories defined in a library, your library directory will contain a <code>libraryName.TopCat</code> file. The <code>libraryName.TopCat</code> file contains a list of all the category files (<code>categoryName.Cat</code>) defined in that library. Each .Cat file contains a list of cells that are in that category.

Managing Categories

Viewing Categories

How you view categories depends on whether you are using Library Manager in *View – Lists* mode or in *View – Tree* mode. See

- "Viewing Categories and Files in View Lists Mode" on page 22
- "Viewing Categories and Files in View Tree Mode" on page 23

Creating a Category

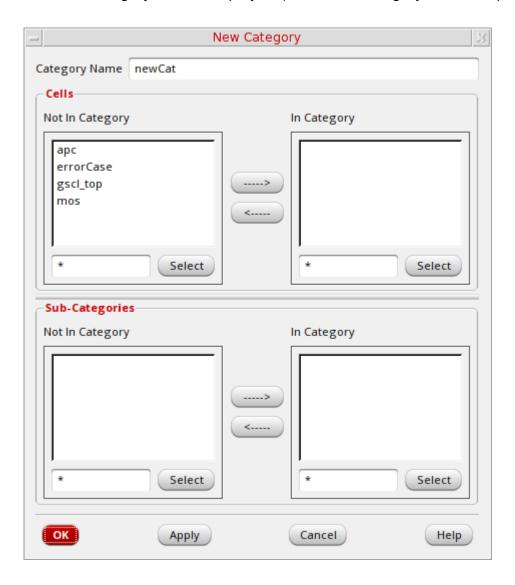
To create a new category, follow these steps:

Note: You must have <u>write permission</u> for the library to create a category.

- 1. Select a library.
- **2.** Choose File New Category.

Managing Categories

The New Category form is displayed (see "New Category Form" on page 349).



3. In the *Category Name* field, type the name of the new category.

Category names must be unique and legal in the *namespace* where you are working.

4. In the *Cells* group box, in the *Not In Category* list box, select the cells you want to include in this category.

You can use Shift-click and Control-click to modify your selection set (see also "Moving Data in List Boxes" on page 36).

Managing Categories



Use the field to the left of the *Select* button to type a filter string. For example, if you type buf* and click *Select*, all cells that start with buf are selected.

5. Click the right arrow to move them to the *In Category* list box.

If an error message stating that the software cannot open or cannot write to the category appears, make sure you have <u>write permission</u> for the category files.

6. Click OK.

If your library is under design management, the Auto Check In form appears. You can click *OK* to check in the new category.

The New Category form closes and the new category appears in the Library Manager. If this is the first category you are creating in your library, the *Everything* and *Uncategorized* categories are also created.

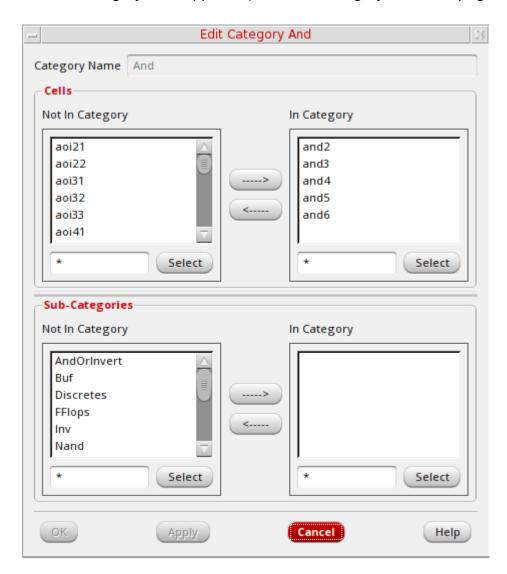
Editing a Category

To change the contents of a category, follow these steps:

- **1.** Select the *Category* you want to change.
- **2.** Choose *Edit Categories Modify*.

Note: If your library is under design management, the Auto Check Out form appears. You can click OK to check out the category.

The Edit Category form appears (see "Edit Category Form" on page 345).



The contents of the category you specified appear in the *In Category* list box.

Managing Categories

- **3.** In the *Cells* group box, do at least one of the following:
 - **a.** In the *Not In Category* list box, select additional cells you want to include in this category and click the right arrow to move them to the *In Category* list box.
 - **b.** In the *In Category* list box, select cells you want to remove from this category and click the left arrow to move them to the *Not In Category* list box.

Note: See <u>"Moving Data in List Boxes"</u> on page 36 for information about moving data from one list box to the other.

If an error message stating that the software cannot open or cannot write to the category appears, make sure you have <u>write permission</u> for the category files.

4. Click OK.

If your library is under design management, the Auto Check In form appears. You can click *OK* to check in the category.

The Library Manager saves the modifications you made to the category.

Deleting a Category

To delete a category, follow these steps:

- **1.** Select the category you want to delete.
- **2.** Choose *Edit Categories Delete*.

The Delete Category message prompt appears.



3. Click Yes.

The Library Manager deletes the category.

Renaming a Category

To rename a category, follow these steps:

- **1.** Select the category you want to rename.
- **2.** Choose *Edit Categories Rename*.

The Rename Category message prompt appears.



- **3.** Specify the new category name in the *To Category* text box.
- 4. Click OK.

The Library Manager renames the category.

Creating a Subcategory

You can group cells into subcategories within a category. For instance, a pins category might be too inclusive, and subcategories of bidirectional, input, and output pins might be more manageable.

You can use any of the following methods to create subcategories:

- Creating a New Category That Includes Subcategories on page 280
- Creating a Subcategory in an Existing Category on page 280
- Modifying a Category to Include a Subcategory on page 282

Managing Categories

Creating a New Category That Includes Subcategories

To create a new category that includes subcategories, follow these steps:

- **1.** Select a library.
- **2.** Create each of the <u>categories</u> (such as *inputs* and *outputs*) that you want to specify as subcategories by doing the following:
 - **a.** Choose *File New Category*.

The New Category form appears (see "New Category Form" on page 349).

b. In the *Category Name* field, type the name of the new category.

Note: You do not have to add any cells to the new categories at this time.

The new categories appear in the Library Manager.

- **3.** After you have created all the categories that will be specified as subcategories, create the top-level category in the following way:
 - **a.** Choose File New Category.

The New Category form appears (see "New Category Form" on page 349).

- **b.** In the *Category Name* field, type the name of the new category.
- **c.** In the *Sub-Categories* group box, move the categories you want to be subcategories (such as *Inputs* and *Outputs*) to the *In Category* list box.
- d. Click OK.

The New Category form closes. The new category has the specified subcategories.

For more information about viewing categories and subcategories, see <u>"Viewing Categories and Files in View – Lists Mode"</u> on page 22 and <u>"Viewing Categories and Files in View – Tree Mode"</u> on page 23.

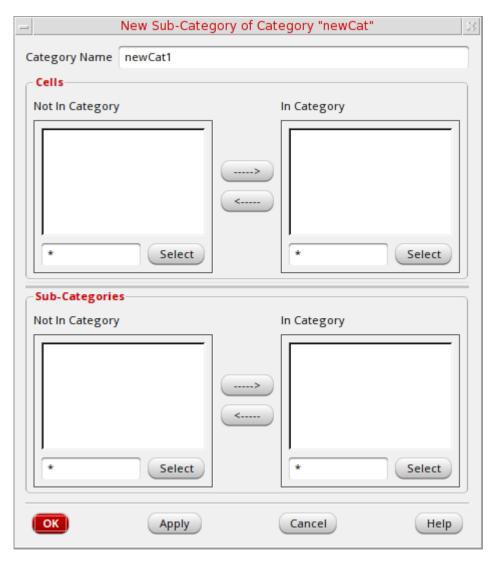
280

Creating a Subcategory in an Existing Category

To create a new subcategory in an existing category, follow these steps:

- 1. Select the category for which you want to create a subcategory.
- **2.** Choose *Edit Categories New Sub-Category*.

The New Sub-Category form appears.



- 3. In the Category Name field, type the name of the new subcategory.
- **4.** In the *Cells* group box, in the *Not In Category* list box, select the cells you want to include in this subcategory.
- **5.** Click the right arrow to move them to the *In Category* list box.
- 6. Click OK.

The New Sub-Category form closes. The Library Manager creates a subcategory in the selected category.

Managing Categories

For more information about viewing categories and subcategories, see <u>"Viewing Categories and Files in View – Lists Mode"</u> on page 22 and <u>"Viewing Categories and Files in View – Tree Mode"</u> on page 23.

Modifying a Category to Include a Subcategory

To modify a category to include another category, follow these steps:

- **1.** Select the category in which you want to include a subcategory.
- **2.** Choose *Edit Categories Modify*.

The Edit Category form appears.

- **3.** In the *Sub-Categories* group box, in the *Not In Category* list box, select the category you want included as a subcategory.
- **4.** Click the right arrow to move the selected subcategory to the *In Category* list box.
- **5.** Click *OK*.

The Edit Category form closes. The category you moved is now a subcategory of the modified category.

For more information about viewing categories and subcategories, see <u>"Viewing Categories and Files in View – Lists Mode"</u> on page 22 and <u>"Viewing Categories and Files in View – Tree Mode"</u> on page 23.

Setting UNIX Environment Variables

The following topics are presented:

- Editing the File (next)
- Specifying the Location of Help Files on page 284
- Adding the Installation Directory to the Search Path on page 284
- Specifying the CDS.log File Name on page 284
- Specifying Check-In and Check-Out Policies on page 285
- Other Variables You Might Want to Change on page 287

Editing the File

To make UNIX-level changes affecting file locations, paths, display devices, and so forth, edit your .cshrc file, .login file, or .profile file in your home directory. (A home directory is specified by a tilde, such as ~/.cshrc.)

- 1. Open the file in vi, emacs, or another text editor.
- 2. Type your changes.
- 3. Save the file.
- **4.** Source the file so new changes are incorporated.

When the Cadence[®] software loads, it reads the site-specific settings first and the individual settings last, so settings in your home directory override system and group settings.

The Cadence software includes commented sample files in $install_dir/tools/dfII/samples$. (The $install_dir$ directory is the directory where the Cadence software is installed.) You can use these files as guides to modify UNIX environment variables.

Setting UNIX Environment Variables

Specifying the Location of Help Files

To specify the location of your Cadence help files, add the following command to your .cshrc file, .login file, or .profile file:

```
setenv HELPDIR install dir/tools/dfII/myHelp
```

Where $install_{dir}$ is the path to the directory in which the Cadence software is installed and myHelp is the name of the Help directory you want.

Adding the Installation Directory to the Search Path

To add the installation directory to your UNIX search path, use one of the following commands:

```
set path = ($PATH install_dir/tools/dfII/bin)
setenv PATH $PATH:install_dir/tools/dfII/bin
```

where *install_dir* is the path to the directory in which the Cadence software is installed.

Specifying the CDS.log File Name

To specify a unique log file name using the CDS_LOG_VERSION environment variable, set the variable before starting the Cadence software or include the seteny command in your .cshrc file:

```
setenv CDS_LOG_VERSION {sequential|pid}
```

where

- sequential adds a sequential number to the name of the log file, such as CDS.log.1 or CDS.log.2
- pid adds the number of the UNIX process to the name of the log file, such as CDS.log.1719 or CDS.log.2250

Setting UNIX Environment Variables

Specifying Check-In and Check-Out Policies

The following four environment variables control the behavior of automatic check out and automatic check in of Virtuoso design environment files:

- CDS_PROMPT_CKOUT
- CDS_PROMPT_CKIN
- CDS_AUTO_CKOUT
- CDS_AUTO_CKIN

Each of these four variables can have one of the following four values:

- all: Perform behavior for cellviews and other files (on Auto Checkout/in Preferences form: always ask me)
- none: Do not perform behavior for cellivews or other files (on Auto Checkout/in Preferences form: never ask me)
- files: Perform behavior for non cellview files only (on Auto Checkout/in Preferences form: properties and files).
- views: Perform behavior for cellviews only, not for other files (on Auto Checkout/in Preferences form: cellviews)

Setting UNIX Environment Variables

Set these variables in your .cshrc file. You can set these variables in any combination; however, some combinations are not useful.

Variable	Description
CDS_PROMPT_CKOUT	Default is all.
	This variable controls whether the Auto Check Out form appears when you attempt to check out data files using a Virtuoso product that has a graphical user interface and automatic check-out capability.
	The default value all causes all such applications to display the Auto Check Out form before performing an automatic checkout for both cellviews and non cellview files (such as property bags) regardless of the values of the other variables controlling check-out or check-in behavior.
	Products that have no automatic check-out capability will not automatically check out data (unless the CDS_AUTO_CKOUT variable is also set).
CDS_AUTO_CKOUT	For a more information about check-out environment variables, see <u>Chapter 5, "Managing Designs."</u> Default is all.
	If CDS_PROMPT_CKOUT is set to all, then CDS_AUTO_CKOUT has no effect on Virtuoso products with graphical user interface and automatic check-out capability. Otherwise, this variable, set to all, causes Virtuoso products with automatic check-out capability to automatically check out both cellview and non cellview files for modification.
	For a more information about check-out environment variables, see Chapter 5, "Managing Designs."

Setting UNIX Environment Variables

Variable	Description
CDS_PROMPT_CKIN	Default is files.
	The default value causes all Virtuoso-based products that have a graphical user interface and automatic check-out capability to display the Auto Check In form before performing an automatic check-out for non cellview files (such as property bags) regardless of the values of the other variables controlling check-out or check-in behavior. Such applications will not display the Auto Check In form for cellviews. Applications that do not have a graphical user interface are not affected by this variable.
	For a more information about check-in environment variables, see Chapter 5, "Managing Designs."
CDS_AUTO_CKIN	Default is files.
	If an application has a graphical user interface and CDS_PROMPT_CKIN is set to all, then CDS_AUTO_CKIN has no effect. Otherwise, this variable, when set to the default, causes all Virtuoso-based products to automatically check in any file it automatically checked out.
	For a more information about check-in environment variables see Chapter 5, "Managing Designs."

Other Variables You Might Want to Change

You can also set these variables in your .cshrc file.

Variable	Description
CDS_COLOR_MODE	Monochrome display of Cadence software. Value: BlackAndWhite
CDS_LOG_VERSION	Suffix for the Cadence log file. Value: sequential or pid
DISPLAY	Where you see the visual display of the X Window System

Cadence Library Manager User Guide Setting UNIX Environment Variables

Variable	Description
FMHOME	Path to FrameMaker product directory if not in the default directory
HELPDIR	Path to Cadence help files if not in the default directory
PATH	Path to UNIX commands

10

Customizing the Library Manager

You can customize the menus on the Library Manager form as follows:

- Using SKILL to Customize the Library Manager on page 290
- Using the .cdsenv File to Customize the Library Manager on page 297
- Using the .libsel File to Customize the Library Manager on page 316
- Customizing the Library Manager Location and Size on page 316

Customizing the Library Manager

Using SKILL to Customize the Library Manager

To customize the Library Manager when you use the Cadence SKILL language, you need the following:

- The cdsLibMgr.il file, which contains the following:
 - Callback definition list (see "Callback Definition List" on page 291)
 - □ Callback options and return values (see <u>"Callback Options and Return Values"</u> on page 291)
 - Current selection list (see "Current Selection List" on page 292)
- Corresponding SKILL callback functions defined in the Virtuoso design environment

About cdsLibMgr.il File

The extension definition file, cdsLibMgr.il, is the starting point for the Library Manager customization. This file defines SKILL extensions specific to the Library Manager and specifies the name of the startup customization file.

The Library Manager cdsLibMgr.il file contains the following:

- Callback definition list (see <u>"Callback Definition List"</u> on page 291)
- Callback options and return values (see <u>"Callback Options and Return Values"</u> on page 291)
- Current selection list (see "Current Selection List" on page 292)

The file is written using the SKILL language. You can use the core Cadence SKILL language as described in the <u>Cadence SKILL Language Reference</u> as well as the Library Manager API functions described in this chapter. The file can alter existing menus and menu items (including removal and change of appearance), as well as add new menus and menu items. You can add menu items to start a SKILL callback in Virtuoso.

Note: A mechanism to start a SKILL callback within the internal Library Manager SKILL interface is not currently provided.

Customizing the Library Manager

The file is loaded from the first location in the order defined in the Cadence setup search file (setup.loc) as described in the <u>Cadence Application Infrastructure User Guide</u>. The typical order used to load this file is:

- the current working directory
- the home directory
- the install_dir/share file

When a file is found from one of these locations, the file is loaded and the search stops.

You can customize the name for the cdsLibMgr.il file using a default setting in your .cdsenv file (see "Using UNIX to Add Settings to .cdsenv" on page 298).

Callback Definition List

The <code>lmgrDefineInits()</code>, <code>lmgrCreateMenu()</code>, and <code>lmgrCreateMenuItem()</code> functions in the <code>cdsLibMgr.il</code> file define callbacks that are started on the Virtuoso design environment program. These functions all use the same syntax for describing the callbacks.

A callback is a list of strings. The first element in the list must be a valid SKILL procedure name in the Virtuoso session. The rest of the list consists of option strings. The following is an example of a callback:

```
'( "myDeleteObject" "refreshIf")
```

This callback starts the SKILL procedure myDeleteObject in the associated Virtuoso session, which must accept the standard set of arguments described with a single option. The Library Manager redisplays its data if the return value is valid (t).

You can define only one list for every callback or map callback function.

The arguments to the callback SKILL procedure include the name of the menu object that this callback is registered with, followed by five arguments representing the current Library Manager selection. The five selection arguments are described in the next section. Init and Close callbacks defined by <code>lmgrDefineInits()</code> do not get passed any arguments.

Callback Options and Return Values

The option names for a callback function are

■ noOpts. Use this optional placeholder when you want to use no options. You can also use this option to reset preceding options.

Customizing the Library Manager

- refresh. Use this option to tell the Library Manager to always regenerate its data display after it runs the callback.
- refreshIf. Use this option to tell the Library Manager to regenerate its data display after it runs the callback if the return value of the callback indicates success.
- update. Use this option to tell the Library Manager to always regenerate its own data display and that of Virtuoso after it runs the callback.
- updateIf. Use this option to tell the Library Manager to regenerate its own data display and that of Virtuoso after executing the callback if the return value of the callback indicates success.

These options can each appear zero or more times. The rightmost options override any to the left, except where noted above. If a sequence ends with noOpts, then the entire sequence is interpreted as having no options.

The return value for a correctly run SKILL callback procedure is t for success and nil if an error occurred.

Note: The Library Manager cannot continue processing if the Library Manager cannot understand the return value of the callback function, such as a database object, a design data (dd) object, or an IPC handle.

Current Selection List

SKILL callback procedures always receive the argument list selection currently specified on the Library Manager form. This list might correspond to a new data object you create, rather than an existing object. The Library Manager sends the data selection specification fully corresponding to the 5.X architecture as a list of five strings:

LIBNAME CELLNAME VIEWNAME FILENAME CATEGORY.

If any component of the selection is not specified, it is passed as a string value of "". For example, if nothing at all is selected, then the selection list consists of five empty strings.

Names for a library, cell, and view are located within the designated namespace such as CDBA. A file name is always in the file system namespace.

In addition, the current 5.X category in use is sent as the fifth string in the list, which can be a zero length string if categories are disabled in the Library Manager. In general, only commands specific to library categories need to examine the CATEGORY parameter.

Examples of such commands are COPY CATEGORY, RENAME CATEGORY, or CREATE NEW CATEGORY.

Customizing the Library Manager

Using the cdsLibMgr.il File to Customize Menus

The Library Manager uses the cdsLibMgr.il extension file as follows:

- 1. The Library Manager loads the cdsLibMgr.il extensions file containing menu customization as well as any initialization and termination commands.
- 2. The Library Manager modifies its GUI menus to reflect the customization directives from the extension file.
- **3.** The Library Manager sends any defined initialization commands to the Message Passing Subsystem (MPS) client, which is Virtuoso.
- **4.** The Library Manager GUI interaction triggers MPS callbacks to SKILL routines run in Virtuoso, repeating this sequence as often as necessary.

Note: Custom SKILL routines can modify GUI menu attributes via the MPS interface. These two steps are repeated as often as necessary.

- 5. The user requests (through the GUI) to terminate the Library Manager.
- **6.** The Library Manager sends any defined termination commands to the MPS client (Virtuoso).
- 7. The Library Manager process terminates.

Triggering Callback Functions

You can trigger callbacks at either of two points in the customization process:

- When you select a menu item
- Before you map a menu

This feature allows dynamic customization of menus. It is important that you implement pre-map callbacks to be as fast as possible to avoid blocking the X Window System for too long.

Customizing the Library Manager

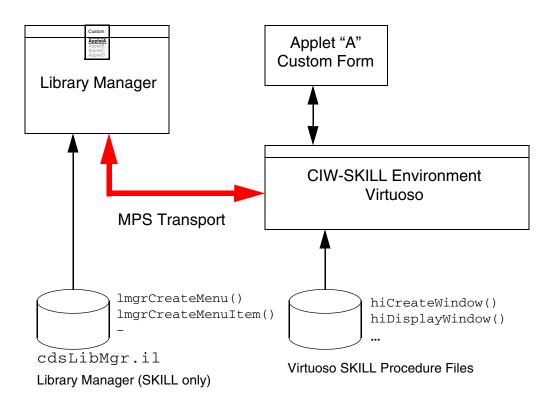
Using the Library Manager in Stand-Alone Mode While Customizing

The customization system will not work when you run the Library Manager stand alone. You must run it with a companion Virtuoso design environment process within the same MPS (Message Passing Subsystem) session.

If the customization code is loaded in the Library Manager session that is running in stand-alone mode, the Library Manager allows only attribute changes to objects such as deletion of unmanaged label attributes. The Library Manager disallows any new objects from becoming active and then issues the following warning message that you need to use a Virtuoso session:

Library Manager Customization with Other Processes

The diagram shows how customization is defined and shared among various cooperating processes.



Customizing the Library Manager

Restrictions on the Library Manager Customization File

The following are the restrictions on the Library Manager customization file, cdsLibMgr.il:

- The cdsLibMgr.il file contains static descriptions of menu customization and is read once at initialization only. Therefore, all possible menus and menu items that you might need during the life of the Library Manager session you must define at startup. Although you cannot define the menus and menu items dynamically at some later time, you can define and leave them unmanaged at startup, so that they can be made visible or invisible dynamically.
- You must define all objects with string names, which are case sensitive. There are two reserved names with special meaning: menuBar and popup. menuBar refers to the Library Manager top menu bar object, from which all pull-down menus descend. popup refers to the pop-up menu selected when you click the middle mouse button over one of the list boxes.
- You must define menus as strictly bottom-up, with a strict tree structure. You must define all menu items in a menu before adding them to a menu. You can insert menu items into only one pull-down menu. However, a menu item can appear in both a single pull-down and selected pop-up menus. A pull-down menu can appear only once in either the menu bar or in another pull-down menu.
- You can use the SKILL API to customize only menus from the menu bar and list pop-ups. No forms are affected by these customizations, although you can partially customize the forms through the .cdsenv facilities.
- Pop-up menuscannot contain any submenus. They must have a flat structure.
- You can define only a single callback on pre-map on each menu (including predefined Cadence menus). The callback process must be fast.
- You can define only a single callback on pre-map for all pop-ups. The callback process must be fast.

Allowed Actions in the Customization File

You can do the following to the cdsLibMgr.il customization file:

- Delete existing predefined (Cadence) menus and menu items from the top menu bar and the pop-up menus.
- Add custom menus to the menu bar or add menu items to predefined menus.

Customizing the Library Manager



Changing predefined menus or predefined menu items will cause unpredictable behavior.

- Determine which menu items appear in the pop-up menus for each list box on the Library Manager form (including existing menu items).
- Alter the visual attributes of existing menus and menu items (managed, sensitized, fonts, labels).
- Display anything printed to standard output, such as printf() on the Library Manager output pane.

GUI Objects Supported in the Customization File

The cdsLibMgr.il customization file supports the following objects in the graphical user interface:

- Menus, which can contain menu items, toggle items, radio buttons, or separators.
- Menu items as simple buttons. A menu item activates an action callback.
- Toggle buttons. You select a toggle button as a single on/off setting.
- Radio buttons. Radio buttons are mutually exclusive. You select one of several radio buttons displayed.

Issues with Virtuoso Design Environment SKILL

In order to perform useful custom tasks, any related task functions must be available from SKILL code executed within the Virtuoso process. In some cases, you might need to start an external UNIX process using SKILL IPC (interprocess communication) functions.

When you use a GUI to customize tasks, you must decide whether you want the Library Manager to block the input from the GUI and wait for the task to finish before proceeding. You implement this decision by using the SKILL function hiCreateAppForm() with or without the dontBlock field set, together with hiDisplayForm(). See <u>Cadence User Interface SKILL Reference</u> for more information.

When you write callback functions, take into account that the Library Manager effectively waits for the return value from the callback in Virtuoso to become available.

Customizing the Library Manager

Caution with Pre-Map Callbacks

The Library Manager calls any pre-map callbacks when a menu is to be displayed, whether or not an item is selected, provided there is a map callback function defined for the menu. The Library Manager can stop waiting for this callback to finish after a time-out period has been reached, since the screen will become locked from all access during the execution of the map callback, where X windows are blocked as well as the Virtuoso session.

Note: The map callback function must be as fast as possible to avoid time-out, which makes your workstation unusable in the interim. You can specify the time-out value in the environment customization file, .cdsenv, as a given number of seconds. In the following example, the default value is 5.0 seconds. However, this is much longer than a reasonable response time.

cdsLibManager.customize mapTimeout float 5.0

Using the .cdsenv File to Customize the Library Manager

You can use the .cdsenv file in the Library Manager as well as in Virtuoso to customize the values and settings on various forms and fields. In addition, some of the settings previously stored in the .libmgr file are now saved in the .cdsenv file instead.

Note: Library manager obtains form settings from the .cdsenv file only and not from the .cdsinit file.

The Library Manager saves only the settings that it reads from the .libmgr file: the screen location and size of the Library Manager.

You can choose *File – Save Defaults* to save settings in the .cdsenv file, as described in "Using the Library Manager to Save Settings to .cdsenv" on page 313. See also "Loading Settings from .cdsenv" on page 314 for information about loading environment settings.

See the following topics for more information:

- <u>.cdsenv File Search Path Order</u> on page 298
- Using UNIX to Add Settings to .cdsenv on page 298
- Using the Library Manager to Save Settings to .cdsenv on page 313
- Loading Settings from .cdsenv on page 314

Customizing the Library Manager

.cdsenv File Search Path Order

The Library Manager searches for the .cdsenv file in the following locations, in the specified order:

- install_dir/tools/dfII/etc/tools/cdsLibManager (This file contains the default settings.)
- install_dir/tools/dfII/local
- \$HOME
- \$CWD

Note: Currently, Virtuoso does not look for the .cdsenv file in the current directory by default, although the Library Manager does.

Using UNIX to Add Settings to .cdsenv

To add settings to your .cdsenv file, do the following:

- 1. Use a text editor to open your .cdsenv file.
- 2. Make the changes you want.
- 3. Save the file and exit the editor.

You can add Library Manager settings to your .cdsenv file using the following format:

```
cdsLibManager.partition varName varType defaultSetting
```

Note: See also *install_dir/*tools/dfII/samples/.cdsenv.

Available settings, their descriptions and default values, are listed here:

```
cdsLibManager.addDisplayAttribute boolean { t | nil }
```

Specifies whether the *Copy values from existing library display attribute* option is selected by default in the Add Library Display Attribute form.

Default value: nil

```
cdsLibManager.ckCancel useOptionText string "t_options"
```

Specifies cancel check out options. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *Use Options* field on Cancel Check Out forms.

Customizing the Library Manager

```
cdsLibManager.ckCancel useOptionsOn boolean { t | nil }
```

Specifies whether check-out cancellation options are enabled. The default is nil.

Equivalent form or menu selection: *Use Options* check box on <u>Cancel Check Out</u> forms.

```
cdsLibManager.ckIn selectMatches toggle (all checkedOut unmanaged checkedIn)
```

Specifies the selection choice for checking in an item. The choices are: all items, checked out items only, managed items only, checked in and writable items only. The default is all items: (t nil nil nil).

Equivalent form or menu selection: Select cyclic field on Check In forms.

```
cdsLibManager.ckIn useOptionText string ""
```

Specifies check in options. The default is a null string, "".

Equivalent form or menu selection: Default text that appears in <u>Use Options field</u> on Check In forms.

```
cdsLibManager.ckIn useOptionsOn boolean { t | nil }
```

Specifies whether check in options are enabled. The default is nil.

Equivalent form or menu selection: *Use Options* check box on Check In forms.

```
cdsLibManager.ckOut useOptionText string ""
```

Specifies check out options. The default is a null string, "".

Equivalent form or menu selection: Default text that appears in <u>Use Options field</u> on Check Out forms.

```
cdsLibManager.ckOut useOptionsOn boolean { t | nil }
```

Specifies whether check in options are enabled. The default is nil.

Equivalent form or menu selection: <u>Use Options</u> check box on Check Out forms.

```
cdsLibManager.copy addToCategoryName string ""
```

Specifies a category name. The default is the null string, "".

```
cdsLibManager.copy addToCategoryOn boolean { t | nil }
```

Specifies whether the add-to-category option is enabled. The default is nil.

```
\verb|cdsLibManager.copy| add To Cells Pattern string "t\_filterString"|
```

Specifies a filter string for matching a set of copied sells to add to a category. The default is all cells, "*".

```
cdsLibManager.copy allViewsOn boolean { t | nil }
```

Customizing the Library Manager

Specifies whether to copy all views during a hierarchical copy. The default is t.

```
cdsLibManager.copy exactHierOn boolean { t | nil }
```

Specifies whether to copy the exact hierarchy. The default is nil.

```
cdsLibManager.copy existenceCheck boolean { t | nil }
```

Specifies whether to select the *Check existence in technology database* check box in various Copy forms by default.

Default value: nil

```
cdsLibManager.copy extraViews string ""
```

Specifies extra view names to copy. The default is a null string, " ".

```
cdsLibManager.copy hierOn boolean { t | nil }
```

Specifies whether to copy hierarchically. The default is nil.

Equivalent form or menu selection: *Copy Hierarchical* check box on <u>various copy</u> forms.

```
cdsLibManager.copy rerefCustomVias boolean { t | nil }
```

Specifies whether to select the *Re-reference custom Via Defs* check box in various Copy forms by default.

Default value: nil

```
cdsLibManager.copy skipLibsOn boolean { t | nil }
```

Specifies whether to skip libraries during a hierarchical copy. The default is t.

Equivalent form or menu selection: *Skip Libraries* check box on <u>various copy</u> forms.

```
\verb|cdsLibManager.copy| skipLibsText| string "l_skipList"|
```

Specifies names of libraries (space-separated) to skip during the copy operation when <code>skipLibsOn</code> is t. The default is to use the generated skip list, "*". The generated skip list consists of all defined libraries (in <code>cds.lib</code>) except the one containing the source item. If exceeding the <code>.cdsenv</code> file line length limit becomes a problem, you can specify additional skip libraries using additional <code>skipLibsText</code> variables with sequential numeric suffixes as follows:

```
cdsLibManager.copy skipLibsText1 string ""
cdsLibManager.copy skipLibsText2 string ""
```

Equivalent form or menu selection: Default text that appears in the *Skip Libraries* field on <u>various copy forms</u>.

Customizing the Library Manager

```
cdsLibManager.copy updateChoice toggle (entireLib newCopiesOnly)
```

Specifies whether to update the entire library or new copies only when updating instances. The default is entire library: (t nil).

Equivalent form or menu selection: *Update Instances* list box on <u>various copy</u> <u>forms</u>.

```
cdsLibManager.copy updateOn boolean { t | nil }
```

Specifies whether to update instances during the copy operation. The default is t.

Equivalent form or menu selection: *Update Instances* check box on <u>various copy</u> forms.

```
cdsLibManager.copy viewsText string ""
```

Specifies a string of space-separated view names to copy or a valid filter string. The default is a null string, " ".

Equivalent form or menu selection: Views to Copy field on various copy forms.

```
cdsLibManager.copy addPropFiles boolean { t | nil }
```

Specifies whether to add dependent property files to a copy set. The default is t.

Equivalent form or menu selection: *Automatically add dependent property files to copy sets* radio button in *Library and Cell Property Files* group box on <u>Copy Preferences form</u>.

```
cdsLibManager.copyError overwriteAll boolean { t | nil }
```

Specifies whether overwrite is the selected action for all copy problems. The default is nil.

```
cdsLibManager.copyGlobals addCellPropFiles boolean { t | nil }
```

Specifies whether to add dependent cell property files to a copy set. The default is \pm .

Equivalent form or menu selection: *Include properties from: Cells* check box in *Library and Cell Property Files* group box on <u>Copy Preferences form</u>.

```
cdsLibManager.copyGlobals addLibPropFiles boolean { t | nil }
```

Specifies whether to add dependent library property files to a copy set. The default is t.

Equivalent form or menu selection: *Include properties from: Libraries* check box in *Library and Cell Property Files* group box on <u>Copy Preferences form</u>.

```
cdsLibManager.copyGlobals expandRadio toggle (comanaged all)
```

Customizing the Library Manager

Specifies whether the copy operation includes only comanaged files or all files for each cellview. The default is comanaged only: (t nil).

Equivalent form or menu selection: Radio buttons in *Cellview Contents* group box on <u>Copy Preferences form</u>.

```
cdsLibManager.copyGlobals mpsRadio toggle (sessionCopy libmgrCopy)
```

Specifies whether the copy operation uses the session's copy service (when available) or the Library Manager local copy engine only. The default is to use the session's copy service: $(t\ nil)$. This setting applies to both copy and rename operations.

Equivalent form or menu selection: Radio buttons in *Remote Copy Service* group box on <u>Copy Preferences form</u>.

Note: For more information, see also <u>A special note about using the ccpRegTrigger SKILL function</u>.

```
cdsLibManager.copyGlobals useMonitor boolean { t | nil }
```

Specifies whether the progress monitor appears during a copy operation. The default is $\[t \]$.

Equivalent form or menu selection: *Enable file progress monitor* check box in *Miscellaneous Settings* group box on <u>Copy Preferences form</u>.

```
cdsLibManager.copyGlobals warnRenameDM boolean { t | nil }
```

Specifies whether a design management warning appears when matching items are renamed during a copy operation. The default is t.

Equivalent form or menu selection: Warn about Rename of manage data (DM) check box in Miscellaneous Settings group box on Copy Preferences form.

```
cdsLibManager.copyVersion openView boolean { t | nil }
```

Specifies whether to open a cellview version after copying. The default is t.

Equivalent form or menu selection: *Open After Copy* check box in *Copy Options* group box on <u>Copy Cellview Version form</u>.

```
cdsLibManager.copyVersion toLibrary string ""
```

Specifies the default destination library name. The default is a null string, "".

Equivalent form or menu selection: Default text that appears in *Library* field in *To* group box on <u>Copy Cellview Version form</u>.

```
cdsLibManager.copyVersion toView string ""
```

Customizing the Library Manager

Specifies the default destination view name. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *View* field in *To* group box on <u>Copy Cellview Version form</u>.

```
cdsLibManager.copyVersion useOptionText string ""
```

Specifies default copy options when copying a cellview version.

The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *Use Options* field in *Copy Options* group box on <u>Copy Cellview Version form</u>.

```
cdsLibManager.copyVersion useOptionsOn boolean { t | nil }
```

Specifies whether copy options are enabled when copying a cellview version. The default is nil.

Equivalent form or menu selection: *Use Options* check box in *Copy Options* group box on Copy Cellview Version form.

```
cdsLibManager.copyWizard addToCategoryName string ""
```

Specifies a default category name. The default is the null string, " ".

Equivalent form or menu selection: Default text that appears in *Add To Category* field in the Copy Wizard.

```
cdsLibManager.copyWizard addToCategoryOn boolean { t | nil }
```

Specifies whether the add-to-category option is enabled. The default is nil.

Equivalent form or menu selection: <u>Add To Category</u> check box in the Copy Wizard.

```
cdsLibManager.copyWizard addToCellsPattern string "t_filterString"
```

Specifies a filter string for matching a set of copied sells to add to a category. The default is all cells, "*".

Equivalent form or menu selection: Default text that appears in the *Cells* field in the Copy Wizard.

```
cdsLibManager.copyWizard existenceCheck boolean { t | nil }
```

Specifies whether to select the *Check existence in technology database* check box in the Copy Wizard form by default.

```
Default value: ni1
```

```
cdsLibManager.copyWizard extraViews string ""
```

Customizing the Library Manager

Specifies extra view names to copy. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in the *Extra Views* field in the Copy Wizard.

```
cdsLibManager.copyWizard rerefCustomVias boolean { t | nil }
```

Specifies whether to select the *Re-reference Custom Via Defs* check box in the Copy Wizard form by default.

Default value: nil

```
cdsLibManager.copyWizard skipLibsText string "1_skipList"
```

Specifies names of libraries (space-separated) to skip during the copy operation. The default is to use the generated skip list, "*". The generated skip list consists of all defined libraries (in cds.lib) except the one containing the source item. If exceeding the .cdsenv file line length limit becomes a problem, you can specify additional skip libraries using additional skipLibsText variables with sequential numeric suffixes as follows:

```
cdsLibManager.copyWizard skipLibsText1 string ""
cdsLibManager.copyWizard skipLibsText2 string ""
```

Equivalent form or menu selection: Default text that appears in the *Skip Libraries* field on various tabs in the Copy Wizard.

```
cdsLibManager.copyWizard updateChoice toggle (entireLib newCopiesOnly)
```

Specifies whether to update the entire library or new copies only when updating instances. The default is entire library: (t nil).

Equilvalent form or menu selection: *Update Instances* list box in the Copy Wizard.

```
cdsLibManager.copyWizard updateOn boolean { t | nil }
```

Specifies whether to update instances during the copy operation. The default is t.

Equivalent form or menu selection: *Update Instances* check box on various tabs in the Copy Wizard.

```
cdsLibManager.customize mapTimeout float 5.0
```

Specifies the timeout for mapCallbacks. The default is 5.0.

Note: See also "Caution with Pre-Map Callbacks" on page 297.

```
cdsLibManager.customize showDFIIWarning boolean { t | nil }
```

Specifies whether a warning appears if a customization file is present but was not started from Virtuoso. The default is t.

```
cdsLibManager.customize startupFile string "cdsLibMgr.il"
```

Customizing the Library Manager

Specifies the name of the startup extension file. The default is "cdsLibMgr.il".

```
cdsLibManager.database addDb1 string ""
```

Not currently used. Reserved for future use.

cdsLibManager.database ddDb string "database"

Specifies the design database. The default is

"com.cadence.interfaces.libAccess.cddLib5xDatabase".

cdsLibManager.database server string "server"

Specifies the database server. The default is

"com.cadence.interfaces.libAccess.ladLibraryServer".

```
cdsLibManager.defaults fileRadio toggle (overwrite merge retain)
```

Specifies the Library Manager defaults file save action as overwrite, merge values, or retain values. The default is merge values: (nil, t, nil).

Equivalent form or menu selection: *File Status* radio buttons in *Options* group box on Save Library Manager Defaults form.

```
cdsLibManager.defaults saveAllOn boolean { t | nil }
```

Specifies whether to save all possible values to the Library Manager defaults file. The default is nil.

Equivalent form or menu selection: *Save All possible values* check box in *Options* group box on Save Library Manager Defaults form.

```
cdsLibManager.defaults saveAsText string ".cdsenv"
```

Specifies the default Save As name for the settings file. The default is .cdsenv.

Equivalent form or menu selection: Save Defaults File As field on the Save Library Manager Defaults form.

```
cdsLibManager.delete libCheckOn boolean { t | nil }
```

Specifies whether to verify that a library is valid (using its cdsinfo.tag file) prior to performing a delete operation (to prevent you from accidentally deleting data or directories that are not in a valid library). The default is t.

```
cdsLibManager.delete localRadio toggle (both local)
```

Specifies whether both local and inactive or just local items are deleted. The default is both: (t nil).

Equivalent form or menu selection: *Delete Local...* radio buttons in *Options* group box on various delete forms.

Customizing the Library Manager

```
cdsLibManager.delete regExpOn boolean { t | nil }
```

Specifies whether regular expressions are enabled for delete selection. The default is nil.

Equivalent form or menu selection: *Select* field in group boxes on various delete forms.

```
cdsLibManager.deleteTag overrideRadio toggle (no yes yesAll cancel)
```

Specifies the delete action to take when a library does not have the required cdsinfo.tag file and cdsLibManager.delete libCheckOn (above) is set to true, t. Choices are: skip this library (do not delete it), delete this library, delete all libraries (repeat the override), cancel the delete operation. The default is not to delete this library: (t nil nil nil).

Equivalent form or menu selection: *Certification Override* radio buttons on Confirm Library Directory for Delete form.

```
cdsLibManager.deleteView localRadio toggle (both local)
```

Specifies whether both local and inactive or just local views are deleted. The default is both: (t nil).

Equivalent form or menu selection: *Delete Local...* radio buttons in *Options* group box on the Delete Cell Views form.

```
cdsLibManager.deleteView viewFilterList string "t_viewFilterList"
```

```
Specifies view names to delete. The default is "'abstract', 'ahdl', 'autoLayout', 'behavior', 'cdsSpice', 'cmos_sch', 'cmos.sch', 'functional', 'hpmns', 'hspiceS', 'layout', 'libra', 'mharm', 'schematic', 'spice', 'spectreS', 'symbol', 'system', 'verilog', 'verilogNetlist'". You can specify any number of additional views using the viewFilterList variable with sequential numeric suffixes as follows:
```

```
cdsLibManager.deleteView viewFilterList1 string ""
    cdsLibManager.deleteView viewFilterList2 string ""
cdsLibManager.displayOptions enableDmQuery boolean { t | nil }
```

Enables the querying and retrieval of DM data so that state information can be shown for DM libraries. This information includes any data for the DM system if the extra columns are available.

Equivalent form selection: *Enable query of Design Management states* in the Library page of the Display Options form.

Default value: t

```
cdsLibManager.displayOptions showExtendedStates boolean { t | nil }
```

Customizing the Library Manager

Allows DM tables to be shown in any viewing mode.

Equivalent form selection: *Show extended states* in the View page of the Display Options form.

Default value: t

```
cdsLibManager.displayOptions showHiddenLibraries boolean { t | nil }
```

Specifies whether libraries that are hidden (because of a display attribute set on them) should be hidden or displayed.

Equivalent form selection: Show hidden libraries in the Display Options form.

Default value: nil

```
cdsLibManager.displayOptions showLibraryColors boolean { t | nil }
```

Specifies whether libraries should be displayed in custom colors.

Equivalent form option: *Show library colors* in the Display Options form.

Default value: t.

```
cdsLibManager.displayOptions showLibraryCustomIcons boolean { t | nil }
```

Specifies whether custom library icons should be displayed next to libraries in both the Tree view and Lists view.

Equivalent form option: *Show custom library icons* in the Display Options form.

Default value: t.

```
cdsLibManager.displayOptions showListViewIcons boolean { t | nil }
```

Specifies whether custom library icons should be displayed next to libraries in the Lists view.

Equivalent form option: Show Lists view library icons in the Display Options form.

Default value: t

```
cdsLibManager.filter cellFilter string ""
```

Specifies the default cell filter string. The default is a null string, " ".

```
cdsLibManager.filter viewFilter string ""
```

Specifies the default view filter string. The default is a null string, "".

```
cdsLibManager.filter libSelectCellViewCombineMode cyclic {"never" | "always"}
```

Specifies the cell filter mode in the Library Browser form. The default value is "never". See <u>"Setting the Cell Filter Mode"</u> on page 127 for more information.

Customizing the Library Manager

```
cdsLibManager.log addHostID boolean { t | nil }
```

Specifies whether the host name is part of the log file name. The default is nil.

Note: The log file name format is

```
baseName[.userID][.hostName][.PID][.sequenceNumber]. log. \\ \\ cdsLibManager.log addProcID boolean { t | nil } \\ \\
```

Specifies whether the process ID is part of the log file name. The default is nil.

Note: The log file name format is

```
baseName[.userID][.hostName][.PID][.sequenceNumber]. log. \\ \\ cdsLibManager.log addSequence boolean { t | nil } \\ \\
```

Specifies whether a sequence number is part of the log file name. The default is nil.

Note: The log file name format is

```
baseName[.userID][.hostName][.PID][.sequenceNumber].log.
cdsLibManager.log addUserID boolean { t | nil }
```

Specifies whether the user ID is part of the log file name. The default is nil.

Note: The log file name format is

Specifies the base name of the Library Manager log file.

The default is "libManager".

You can also prepend a directory location to the baseName; for example:

```
cdsLibManager.log baseName string "/mylibs/libManager"
```

The program appends the location you specify to the CDS_LOG_PATH location (see "Specifying Cadence Environment Variables" in the <u>Virtuoso Software</u> <u>Licensing and Configuration Guide</u>).

```
cdsLibManager.main categoryText string ""
```

Specifies a default category name for the main Library Manager window. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *Category* field.

```
cdsLibManager.main cellLevelText string ""
```

Customizing the Library Manager

Specifies a default cell name for the main Library Manager window. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *Cell* field.

```
cdsLibManager.main dblClickEditCellView boolean { t | nil }
```

Specifies whether the double-click action on a view name in the main Library Manager window opens a cellview for editing. If set to nil, the double-click action on a view name in the main Library Manager window opens a cellview in the Read-only mode.

The default is t.

```
cdsLibManager.main libraryText string ""
```

Specifies a default library name for the main Library Manager window. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *Library* field.

```
cdsLibManager.main showCategoriesOn boolean { t | nil }
```

Specifies whether categories appear in *View – Lists* mode. The default is nil.

Equivalent form or menu selection: *Show Categories* check box in the main Library Manager window.

```
cdsLibManager.main showFilesOn boolean { t | nil }
```

Specifies whether files appear in *View – Lists* mode. The default is nil.

Equivalent form or menu selection: *Show Files* check box in the main Library Manager window.

```
cdsLibManager.main viewLevelText string ""
```

Specifies a default view name for the main Library Manager windows. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *View* field.

```
cdsLibManager.newLib dmRadio toggle (useDM doNotUseDM)
```

Specifies whether to use design management for a newly created library. The default is to use it: (t nil).

Equivalent form or menu selection: *Use* <*your DM system*> and *Use No DM* radio buttons in *Design Manager* group box on the New Library form.

Customizing the Library Manager

```
cdsLibManager.newLib pathText string ""
```

Specifies a default path string for creating a new library.

The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *Directory* field on New Library form.

```
cdsLibManager.open windowBehavior cyclic { "newWindow" | "raiseExisting" }
```

Specifies whether an application always opens a cellview in a new window or brings up a window that already has the cellview open.

The default value is newWindow. In this case, the application opens the cellview in a new window.

When the value is raiseExisting, the application brings up the window that already has the cellview open, with the cellview tab as the active one.

Note: This variable applies only to layout, schematic, and symbol cellviews.

```
cdsLibManager.option forceEnv boolean { t | nil }
```

For support of older releases only. Specifies whether dialogs use .cdsenv settings instead of programmed default values. The default is nil.

```
cdsLibManager.option useDMfilter boolean { t | nil }
```

Specifies whether the *Design Manager* menu commands are sensitive to the selected item's current state in the design management system. The default is t.

Note: If you turn off the design management state check (nil), the *Design Manager* menu commands are always active (as long as the library is managed by a working design management system). Turning off the state check might help if your *Design Manager* menus and commands are slow to respond because your design management files are located across a slow network, or state queries are made using a slow network transport.

```
cdsLibManager.option useFastDM boolean { t | nil }
```

Specifies whether to use "fast design management" querying. The default is t.

Note: Fast design management (DM) querying involves checking a cellview's master.tag file instead of the master file. It is typically much faster to query the cellview's (much smaller) master.tag file.

```
cdsLibManager.rename updateOn boolean { t | nil }
```

Specifies whether to update instances when renaming an item. The default is t.

Equivalent form or menu selection: *Update Instances* check box on various rename forms.

Customizing the Library Manager

```
cdsLibManager.renameRefLib refreshSessionOn boolean { t | nil }
```

Specifies whether to refresh the session after renaming a reference library. The default is \pm .

Equivalent form or menu selection: *Refresh Session* check box on Rename Reference Library form.

```
cdsLibManager.submit useNameOn boolean { t | nil }
```

Specifies whether the submit request name is enabled. The default is nil.

Equivalent form or menu selection: *Request Name* check box in *Submit Options* group box on Submit form.

```
cdsLibManager.submit useNameText string ""
```

Specifies a default submit request name. The default is a null string, " ".

Equivalent form or menu selection: Default text that appears in *Request Name* field in *Submit Options* group box on Submit form.

```
cdsLibManager.submit useOptionText string ""
```

Specifies submit options. The default is a null string, "".

Equivalent form or menu selection: Default text that appears in *Use Options* field in *Submit Options* group box on Submit form.

```
cdsLibManager.submit useOptionsOn boolean { t | nil }
```

Specifies whether submit options are enabled. The default is nil.

Equivalent form or menu selection: *Use Options* check box in *Submit Options* group box on Submit form.

```
cdsLibManager.update useNameOn boolean { t | nil }
```

Specifies whether the update-from name is enabled. The default is nil.

Equivalent form or menu selection: *Update From* check box on various design management Update forms.

```
cdsLibManager.update useNameText string ""
```

Specifies a default update-from name. The default is a null string, "".

Equivalent form or menu selection: Default text that appears in *Update From* field on various design management Update forms.

Customizing the Library Manager

```
cdsLibManager.update useOptionText string ""
```

Specifies update options. The default is a null string, "".

Equivalent form or menu selection: Default text that appears in *Use Options* field on various design management Update forms.

```
cdsLibManager.update useOptionsOn boolean { t | nil }
```

Specifies whether update options are enabled. The default is nil.

Equivalent form or menu selection: *Use Options* check box on various design management Update forms.

```
cdsLibManager.newLib compressionOn boolean { t | nil }
```

Specifies whether the *Compression enabled* check box in the New Library form should remain selected or deselected by default. The default value of this variable in nil, which means that the check box is deselected by default.

Equivalent form or menu selection: The *Compression enabled* check box in the New Library form.

A special note about using the ccpRegTrigger SKILL function (with reference to the cdsLibManager.copyGlobals mpsradio toggle setting described above):

- You can use the *Remote Copy Service* options on the Copy Preferences form to enable and disable user copy trigger execution.
- More advanced users can use the <u>ccpRegTrigger</u> SKILL function in the .cdsinit file to register a customized post-copy trigger function as follows:

```
procedure((copyTriggerPrint copyPhaseStr checkOffList supplementList
otherFromSpecs otherToSpecs updateList retHint ctxList reserved "stggggggx")
   let((retOK)
        retOK = t
        printf("Copy phase is \"%s\"\n" copyPhaseStr)
        printf("Calling options were %L\n", ctxList)
        printf("Pre-copy set is %L\n", checkOffList)
        printf("Post-copy is from %L\n", otherFromSpecs)
        printf(" to %L\n", otherToSpecs)
        retOK
   )
)
ccpRegTrigger("ccpPostCopyTrigger" 'copyTriggerPrint t)
```

You can remove this trigger using the ccpRemoveTrigger SKILL function as follows:

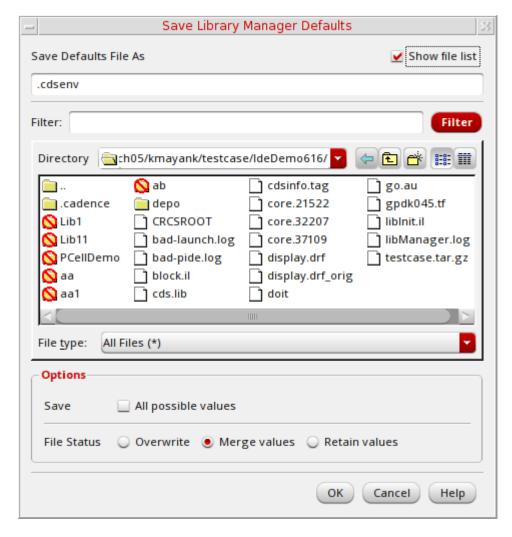
```
ccpRemoveTrigger("ccpPostCopyTrigger" 'copyTriggerPrint)
```

Using the Library Manager to Save Settings to .cdsenv

To save settings to your .cdsenv file using the Save Library Manager Defaults form, follow these steps:

1. On the Library Manager form, choose *File – Save Defaults*.

The Save Library Manager Defaults form appears (see <u>"Save Library Manager Defaults Form"</u> on page 354).



2. (Optional) Use the *Directory* navigation tools (list box and toolbar buttons) to specify the destination directory into which you want to copy the settings file.

You can also type a directory path in the Save Defaults File As field.

If you do not specify a directory path, your home directory is used.

Customizing the Library Manager

- 3. (Optional) Specify save options:
 - □ Select the *All possible values* check box (for *Save*) to save all possible settings
 - □ Select a *File Status* radio button to
 - Overwrite matching settings
 - Merge values
 - O Retain values (saved settings will not overwrite matching original settings)
- 4. Click OK.

Your settings are saved to the file you specified.

Note: The Save Library Manager Defaults form currently updates only settings that already exist in the .cdsenv file.

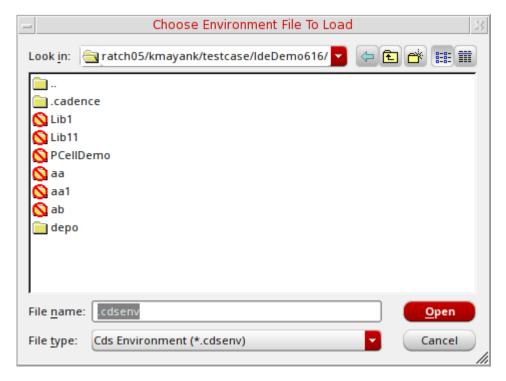
Loading Settings from .cdsenv

To load settings from an environment file (.cdsenv), follow these steps:

1. On the Library Manager form, choose *File – Load Defaults*.

Customizing the Library Manager

The Choose Environment File To Load form appears (see <u>"Choose Environment File To Load Form"</u> on page 325).



2. (Optional) Use the navigation tools (list box and toolbar buttons) to specify the source directory from which you want to load the settings file.

You can also type a directory path in the *Look in* field.

If you do not specify a directory path, your home directory is used.

- **3.** In the *File type* field, select one of the following file name filters:
 - □ Cds Environment (*.cdsenv)
 - □ All Files (*)
- **4.** In the *File name* field, type the name of the environment settings file you want to load. Alternatively, you can select the file from the list box above this field.
- **5.** Click *OK*.

The Library Manager loads environment settings from the .cdsenv file you specified.

Customizing the Library Manager

Using the .libsel File to Customize the Library Manager

The .libsel file is created by the Library Selector (the libSelect application), also known as the Library Browser. This browser appears when you click the *Browser* button in a Virtuoso form.

The .libsel file is created to store the libSelect values so that next time it is invoked it retains settings such as size, screen location, and whether the *Show Categories* check box was selected during the previous session of the Library Manager.

Customizing the Library Manager Location and Size

- Specifying Settings in the .Xdefaults file
- Specifying Settings in the .libmgr file

Specifying Settings in the .Xdefaults file

You can specify the initial location for the Library Manager by specifying the following resource in your .Xdefaults file:

```
cdsLibManager.geometry: widthxheight+x0ffset+y0ffset
```

For example:

```
cdsLibManager.geometry: 590x580+0+25
```

where width is the desired width of the window in pixels, height is the desired height of the window in pixels, and xOffset and yOffset specify the distance of the window from the edges of the screen. You can specify xOffset and yOffset as follows:

+xOffset	The left edge of the window is to be placed $xOffset$ pixels from the left edge of the screen.
-xOffset	The right edge of the window is to be placed $xOffset$ pixels from the right edge of the screen.
+yOffset	The top edge of the window is to be placed $yOffset$ pixels below the top edge of the screen.
-yOffset	The bottom edge of the window is to be placed $yOffset$ pixels above the bottom edge of the screen.

Customizing the Library Manager

Offsets must be provided as pairs, that is, if you want to specify either xOffset or yOffset, you must specify both.

To place the window in the corners of the screen, specify the offsets as follows:

+0+0	Places it in the upper left corner
-0+0	Places it in the upper right corner
-0-0	Places it in the lower right corner
+0-0	Places it in the lower left corner



To get the position and size information, you can do the following:

- a. Place the Library Manager window in the location that you want to set as the default.
- **b.** In a terminal window, type xwininfo.
- **c.** Click the Library Manager window.

The terminal window displays information about the Library Manager window, including its position and size. You can use these settings in the .Xdefaults file.

Specifying Settings in the .libmgr file

You can also specify a default location and size for the Library Manager in the .libmgr file. This file is automatically saved to your home directory each time you exit the Library Manager. The settings in the .libmgr file override the settings in the .Xdefaults file.

You can specify the following settings in the .libmgr file:

cdsLibManager.x: 0	Specifies the x-coordinate.
cdsLibManager.y: 82	Specifies the y-coordinate.
cdsLibManager.width: 608	Specifies the width of the window.
cdsLibManager.height: 469	Specifies the height of the window.
cdsLibManager*msgTextWidget.height: 106	Specifies the height of the <i>Messages</i> window.

Customizing the Library Manager

cdsLibManager.libFilePercent: 34 Specifies the percentage of total list box height used by the Files in Library pane.

cdsLibManager.cellFilePercent: 34 Specifies the percentage of total list box height used by the Files in Cell pane.

Library Manager Forms

This chapter includes descriptions of options on forms referred to in the previous chapters. For details on procedures using these forms, see the related chapters.

This chapter describes the following forms:

- Access Permission Form on page 322
- Add Library Display Attribute Form on page 322
- Add Property Form on page 323
- Attach Library to Technology Library Form on page 324
- Cell Property Editor Form on page 324
- Choose Environment File To Load Form on page 325
- Copy Cell File Form on page 325
- Copy Cell Form on page 326
- Copy Cellview Version Form on page 327
- Copy Library File Form on page 328
- Copy Library Form on page 328
- Copy Preferences Form on page 329
- Copy View Form on page 330
- Copy Wizard Form (Simple Copy) on page 331
- Copy Wizard Form (Hierarchical) on page 333
- Copy Wizard Form (Exact Hierarchy) on page 334
- Copy Wizard Form (By View) on page 336
- Copy Wizard Form (By Configuration) on page 338

Library Manager Forms

- <u>Delete By View Form</u> on page 339
- <u>Delete Cells Form</u> on page 340
- <u>Delete Cell Views Form</u> on page 340
- <u>Delete Libraries Form</u> on page 341
- Delete Library Views Form on page 341
- <u>Display Options Form</u> on page 342
- <u>Display Settings Form</u> on page 344
- Edit Category Form on page 345
- <u>Library Browser Form</u> on page 345
- <u>Library Manager Form</u> on page 346
- <u>Library Property Editor Form</u> on page 348
- Load Technology File Form on page 349
- Modify 'propertyName' Form on page 349
- New Category Form on page 349
- New File Form on page 350
- New Library Form on page 350
- Reference Existing Technology Libraries Form on page 351
- Rename Cell Form on page 352
- Rename File Form on page 352
- Rename Library Form on page 352
- Rename Reference Library Form on page 353
- Rename View Form on page 354
- Save Library Manager Defaults Form on page 354
- Select an icon Form on page 355
- Submit Form on page 356
- Technology File for New Library Form on page 356
- Version Information Form on page 357

Library Manager Forms

- <u>View Property Editor Form</u> on page 357
- <u>View Property Editor Form</u> on page 357

Library Manager Forms

Access Permission Form

Library, **Cell**, or **Cell-View** is the name of the library, cell, or cellview you selected in Library Manager.

Owner is the user ID of the owner of the file.

Group is the name of the working group to which the owner is assigned by the project leader or system administrator.

Access Permission shows the access categories:

Owner (user ID of the owner)

Group (the owner's working group)

Others (anyone who has access to the files) and the permissions they have:

Read (open and view)

Write (edit, save changes to, or delete)

Execute (run, if an executable program)

- By default, the owner has read, write, and execute permission.
- By default, the owner must have write permission before the group or others can have write permission.
- If the group or others have write or execute permission, by default they must also have read permission.

Apply sets the values you selected in the *Access Permission* group box.

Close closes the Access Permission form without changing any values.

Help opens the online help system to display information about the *Access Permissions* command.

Add Library Display Attribute Form

Library Display Attribute lets you create a new library display attribute.

Name lets you specify a name for the new attribute.

Copy values from existing library display attribute lets you copy display settings from one of the attributes in the list.

Library Manager Forms

Matching libraries specifies the number of libraries on which the selected attribute is currently set.

OK adds the new attribute to the Display Settings form and closes the Add Library Display Attribute form.

Apply adds the new attribute to the Display Settings form and keeps the Add Library Display Attribute form open.

Cancel cancels your changes and closes the form.

Help opens the online help system and displays this information.

For more information, see "Customizing Library Display Settings" on page 104.

Add Property Form

Name lets you assign a name to the property.

Type lets you choose a property type. Depending on the type you choose, the remaining fields change to prompt you for values for the property.

Value is the default value for the property.

Minimum Value is the minimum value for the property.

Maximum Value is the maximum value for the property.

Used for *int*, *float*, and *time* property types. The View Property Editor form or the Cell Property Editor form displays these minimum and maximum values next to the property name.

OK adds the specified property to the selected cellview and keeps the Add Property form open.

Cancel closes the Add Property form without adding any properties.

Defaults clears all values in the fields and sets *Type* to *int*.

Apply adds the specified property to the selected cellview and keeps the Add Property form open.

Help opens the online help system to display information about using this form.

Library Manager Forms

Attach Library to Technology Library Form

New Library displays the name of the new library to be created.

Technology Library lists the available technology libraries that can be chosen to be attached to the new library.

Cell Property Editor Form

Cell

name is the cell name of the selected cellview.

owner is the user ID of the owner of the selected cellview.

group is the group of the owner of the selected cellview.

lastModify is the date and time of the last modification to the cellview.

readPath is the path to a read-only version of the cellview.

writePath is the path to a writable version of the cellview.

UNIX Permissions Mode

You cannot change any of the values in the *UNIX Permissions Mode* group box.

Owner displays the read/write/execute permissions for the owner of the cellview.

Group displays the read/write/execute permissions for the group of the owner of the cellview.

Other displays the read/write/execute permissions for anyone who has access to the cellview.

cdfData indicates that this cellview has no attached properties. If the cellview has properties, they are listed at the bottom of the Cell Property Editor form.

OK saves any changes and closes the Cell Property Editor form.

Cancel closes the Cell Property Editor form without saving any changes.

Apply saves any changes and keeps the Cell Property Editor form open.

Add opens the Add Property form.

Library Manager Forms

Delete removes the selected property.

Modify opens the Modify 'propertyName' form.

Help opens the online help system to display information about using this form.

Choose Environment File To Load Form

Look in shows the directory you are searching for an environment file.

File name is the name of the environment file you want to load.

File Type lets you choose one of the following file types to show in the list of files:

- Cds Environment (*.cdsenv)
- □ All Files (*)

OK loads the file you selected and closes the form.

Cancel closes the form without loading a file.

Help opens the online help system to display information about using this form.

Copy Cell File Form

From

Library is the name of the library containing the cell file you want to copy. Defaults to the selected library.

Cell is the name of the cell containing the file you want to copy.

File is the name of the file you want to copy.

To

Library is the library to which the cell file is copied.

Cell is the name of the copied cell.

File is the name of the copied file.

OK copies the cell file you specify and closes the Copy Cell File form.

Library Manager Forms

Apply copies the cell file you specify to the library you specify and leaves the Copy Cell File form open.

Cancel closes the Copy Cell File form without copying any files.

Help opens the online help system to display information about the *Edit - Copy* command.

Copy Cell Form

From

Library is the name of the library from which you want to copy. Defaults to the selected library.

Cell is the name of the cell you want to copy. Defaults to the selected cell.

To

Library is the library to which the library files are copied.

Cell is the new cell name to which the specified cell is copied.

Options

Copy Hierarchical copies all referenced cells in your design to the destination library.

Skip Libraries prevents cells in the specified reference libraries from being copied. **Edit** opens a list of libraries that you can select.

Exact hierarchy limits the search to your design's exact hierarchy.

Views To Copy copies only the specified views of the selected cell. **All Views** copies all views of the specified cell. For a hierarchical copy, the *Copy* command also copies all views of cells instantiated in the specified cell. **Select** opens a list of view types that you can select from.

Update Instances updates the views in the destination cell with the new cell name as follows:

When *Update Instances* is off, the software leaves references to the *From Cell* name unchanged.

Of Entire Library

When *Update Instances* is on and the *Of Entire Library* option is selected, the software replaces the *From Cell* name with the *To Cell* name.

Library Manager Forms

Of New Copies Only

When *Update Instances* is on and the *Of New Copies Only* option is selected, the software overwrites only the cellview references you copied from the original library.

Database Integrity updates and validates technology data after the cell is copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Add To Category lets you type a new or existing category name to which to add the set of copied cells according to the filter string you type in the *Cells* field (by default, * to indicate all copied cells).

OK copies the specified cellviews to the new cell name and closes the Copy Cell form.

Apply copies the specified cellviews to the new cell name and leaves the Copy Cell form open.

Cancel closes the Copy Cell form without copying any cellviews.

Help opens the online help system to display information about the *Edit – Copy* command.

Copy Cellview Version Form

From

Library is the library containing the cellview version to be copied.

Cell is the cell containing the cellview version to be copied.

View is the name of the cellview version to be copied.

Version is the version number of the cellview to be copied.

To

Library is the library in which to copy the cellview version.

Cell is the cell in which to copy the cellview version.

View is the name of the copied cellview version.

Library Manager Forms

Copy Options

Open After Copy opens the copied cellview version for you to view.

Use Options lets you pass in options specific to your particular design management system.

OK copies the specified views to the new view name and closes the Copy Cellview Version form.

Cancel closes the Copy Cellview Version form without copying any files.

Defaults restores the default values displayed when you initially opened the form.

Help opens the online help system to display information about the *Edit - Copy* command.

Copy Library File Form

From

Library is the name of the library containing the file you want to copy. Defaults to the selected library.

File is the name of the file you want to copy.

To

Library is the library to which the library file is copied.

File is the name of the copied file.

OK copies the library file you specify and closes the Copy Library File form.

Apply copies the library file you specify to the library you specify and leaves the Copy Library File form open.

Cancel closes the Copy Library File form without copying any files.

Help opens the online help system to display information about the *Edit - Copy* command.

Copy Library Form

From Library is the name of the library you want to copy. Defaults to the selected library.

To Library is the library to which the library files are copied.

Library Manager Forms

Options

Update Instances update the cells and views in the destination library with the new library name. Choose the option *Of Entire Library* or *Of New Copies Only* in the list box to the right of *Update Instances*.

When *Update Instances* is off, the software leaves references to the *From Library* name unchanged.

Of Entire Library

When *Update Instances* is on and the *Of Entire Library* option is selected, the software replaces the *From Library* name with the *To Library* name.

Of New Copies Only

When *Update Instances* is on and the *Of New Copies Only* option is selected, the software overwrites only the cellview references you copied from the original library.

Database Integrity updates and validates technology data after the library is copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

OK copies all the files (cellviews) to the library you specify and closes the Copy Library form.

Apply copies all the files (cellviews) you specify to the library you specify and leaves the Copy Library form open.

Cancel closes the Copy Library form without copying any files.

Help opens the online help system to display information about the Edit - Copy command.

Copy Preferences Form

Library and Cell Property Files setting applies to *Copy* only.

Automatically add dependent property files to copy sets

Do not add dependent property files to copy sets

Cellview Contents setting applies to *Copy* only.

Library Manager Forms

Include only the co-managed files of each cellview

Include every file inside each cellview

Remote Copy Service setting applies to *Copy* and *Rename*.

Use session's Copy Service when available

Use Library Manager Local copy engine only

Miscellaneous Settings settings apply to *Copy* or *Rename* as indicated.

Enable file progress monitor causes the Copy Monitor form to appear during a copy operation.

Warn about Rename of managed data (DM) enables the Renaming Managed Data Warning.

Copy View Form

From

Library is the name of the library from which you want to copy a view. Defaults to the selected library.

Cell is the name of the cell from which you want to copy a view. Defaults to the selected cell.

View is the name of the view you want to copy. Defaults to the selected view.

To

Library is the library to which the specified files are copied.

Cell is the cell to which the specified view is copied.

View is the new view name to which the specified view is copied.

Options

Copy Hierarchical copies all referenced views in your design to the destination cellview.

Skip Libraries prevents views in the specified reference libraries from being copied. **Edit** opens a list of libraries that you can select.

Exact hierarchy limits the search to your design's exact hierarchy.

Library Manager Forms

Views To Copy copies only the specified views of the selected cell. **All Views** copies all views of the specified cell. For a hierarchical copy, the *Copy* command also copies all views of cells instantiated in the specified cell. **Select** opens a list of view types that you can select from.

Update Instances lets you choose one of the following options from the list box:

- Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
- Of New Copies Only: The software overwrites only the view references you copied from the original library. For example, only view instances of .../oldCell/oldView are renamed to .../newCell/newView.

Database Integrity updates and validates technology data after the view is copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Add To Category lets you type a new or existing category name to which to add the set of copied cells according to the filter string you type in the *Cells* field (by default, * to indicate all copied cells).

OK copies the specified views to the new view name and closes the Copy View form.

Apply copies the specified view to the new view name and leaves the Copy View form open.

Cancel closes the Copy View form without copying any views.

Help opens the online help system to display information about the *Edit – Copy* command.

Copy Wizard Form (Simple Copy)

Generate Copy List generates a list of source and destination files for the *Hierarchical*, *By View*, and *By Configuration* copy modes. You do not need to generate a copy list for a *Simple* copy operation.

Destination Library is the library to which the files are copied.

Update Instances lets you choose one of the following options from the list box:

Library Manager Forms

- Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
- Of New Copies Only: The software overwrites only the view references you copied from the original library. For example, only view instances of .../oldCell/oldView are renamed to .../newCell/newView.

Database Integrity updates and validates technology data after the source files are copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Add To Category lets you type a new or existing category name to which to add the set of copied cells according to the filter string you type in the *Cells* field (by default, * to indicate all copied cells).

Select All selects all cellviews displayed on the Copy Wizard form.

Deselect All deselects all cellviews displayed on the Copy Wizard. The cell names are grayed out, and the check box to the left of the row is deselected. To select an individual row, select the check box.

Clear All removes all information from the Copy Wizard. You can type new information in an empty row using one of two methods:

- ☐ Click in the table cell, click the down arrow, and choose from the pop-up menu.
- □ Click in the table cell and type your information.

OK copies the files (cellviews) you specify to the destination library and closes the Copy Wizard.

Apply copies the files (cellviews) you specify to the destination library and leaves the Copy Wizard open.

Check Files verifies that all the files (cellviews) you specify to be copied are present and have the correct permissions.

Cancel closes the Copy Wizard without copying any files.

Help opens the online help system to display information about the Copy Wizard.

Library Manager Forms

Copy Wizard Form (Hierarchical)

Top Library is the name of the library that contains the highest level of the hierarchical design to be copied.

Top Cell is the name of the cell that contains the highest level of the hierarchical design to be copied.

Views To Copy copies only the specified views of the selected cell. **All Views** copies all views of the specified cell. For a hierarchical copy, the *Copy* command also copies all views of cells instantiated in the specified cell. **Select** opens a list of view types that you can select from.

Skip Libraries lets you type the names of libraries that do not contain any elements of the hierarchy (to make the search process more efficient). **Edit** opens the Skip Libraries Editor dialog box in which you can select the libraries to skip.

Generate Copy List changes the Copy List fields to show only the cells and cellviews that are included in the specified hierarchy. The Copy List is empty until you fill in the required information in the *Copy Hierarchically* group box.

Generate Copy List changes from *(not needed)* to *(needed)* whenever you make a change to the Copy List. You must regenerate the Copy List each time you change information on the Copy Wizard form.

Destination Library is the library to which the files are copied.

Update Instances lets you choose one of the following options from the list box:

- Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
- Of New Copies Only: The software overwrites only the view references you copied from the original library. For example, only view instances of .../oldCell/oldView are renamed to .../newCell/newView.

Database Integrity updates and validates technology data after the source files are copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Library Manager Forms

Add To Category lets you type a new or existing category name to which to add the set of copied cells according to the filter string you type in the *Cells* field (by default, * to indicate all copied cells).

Select All selects all cellviews displayed on the Copy Wizard form.

Deselect All deselects all cellviews displayed on the Copy Wizard. The cell names are grayed out, and the check box to the left of the row is deselected. To select an individual row, select the check box.

Clear All removes all information from the Copy Wizard. You can type new information in an empty row using one of two methods:

- Click in the table cell, click the down arrow, and choose from the pop-up menu.
- Click in the table cell and type your information.

OK copies the files (cellviews) in the Copy List to the specified library and closes the Copy Wizard.

Apply copies the files (cellviews) in the Copy List to the specified library and leaves the Copy Wizard open.

Check Files verifies that all the files (cellviews) in the Copy List are present and have the correct permissions.

Cancel closes the Copy Wizard without copying any files.

Help opens the online help system to display information about the Copy Wizard.

Copy Wizard Form (Exact Hierarchy)

Top Library is the name of the library that contains the highest level of the hierarchical design to be copied.

Top Cell is the name of the cell that contains the highest level of the hierarchical design to be copied.

Top View is the name of the view at the highest level of the hierarchical design to be copied.

Extra Views— **Names** lets you type additional view names or expressions to expand the search to include any matching views found in your design hierarchy in the copy operation. If any of these matching views have their own hierarchies, those additional hierarchies are also included. **Select** opens a list of view types that you can select from.

Library Manager Forms

Skip Libraries lets you type the names of libraries that do not contain any elements of the hierarchy (to make the search process more efficient). **Edit** opens the Skip Libraries Editor dialog box in which you can select the libraries to skip.

Generate Copy List changes the Copy List fields to show only the cells and cellviews that are included in the specified hierarchy. The Copy List is empty until you fill in the required information in the *Copy Hierarchically* group box.

Generate Copy List changes from *(not needed)* to *(needed)* whenever you make a change to the Copy List. You must regenerate the Copy List each time you change information on the Copy Wizard form.

Destination Library is the library to which the files are copied.

Update Instances lets you choose one of the following options from the list box:

- Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
- Of New Copies Only: The software overwrites only the view references you copied from the original library. For example, only view instances of .../oldCell/oldView are renamed to .../newCell/newView.

Database Integrity updates and validates technology data after the hierarchy is copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Add To Category lets you type a new or existing category name to which to add the set of copied cells according to the filter string you type in the *Cells* field (by default, * to indicate all copied cells).

Select All selects all cellviews displayed on the Copy Wizard form.

Deselect All deselects all cellviews displayed on the Copy Wizard. The cell names are grayed out, and the check box to the left of the row is deselected. To select an individual row, select the check box.

Library Manager Forms

Clear All removes all information from the Copy Wizard. You can type new information in an empty row using one of two methods:

- □ Click in the table cell, click the down arrow, and choose from the pop-up menu.
- Click in the table cell and type your information.

OK copies the files (cellviews) in the Copy List to the specified library and closes the Copy Wizard.

Apply copies the files (cellviews) in the Copy List to the specified library and leaves the Copy Wizard open.

Check Files verifies that all the files (cellviews) in the Copy List are present and have the correct permissions.

Cancel closes the Copy Wizard without copying any files.

Help opens the online help system to display information about the Copy Wizard.

Copy Wizard Form (By View)

Library lets you type the name of the library from which you want to copy views. You can use only one name.

Cell Filter lets you type the criteria for specifying the names of cells whose views you want to copy. You can use an asterisk (*) as a wildcard character; for example, cc* or *a2d. You can specify only one string.

Views To Copy lets you specify the views to copy or criteria for specifying the names of cells whose views you want to copy. You can use an asterisk (*) as a wildcard character; for example, sym*. You can specify only one string. **Select** opens a list of view types that you can select from.

Generate Copy List changes the copy list to show only the specified cells and cellviews. None are displayed until you fill in the required information in the *Copy By View* group box.

Generate Copy List changes from *(not needed)* to *(needed)* whenever you make a change to the copy list. You must regenerate the copy list each time you change information on the Copy Wizard form.

336

Destination Library is the library to which the files are copied.

Library Manager Forms

Update Instances lets you choose one of the following options from the list box:

- Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
- Of New Copies Only: The software overwrites only the view references you copied from the original library. For example, only view instances of .../oldCell/oldView are renamed to .../newCell/newView.

Database Integrity updates and validates technology data after the source files are copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Add To Category lets you type a new or existing category name to which to add the set of copied cells according to the filter string you type in the *Cells* field (by default, * to indicate all copied cells).

Select All selects all cellviews displayed on the Copy Wizard form.

Deselect All deselects all cellviews displayed on the Copy Wizard form. The cell names are grayed out, and the check box to the left of the row is deselected. To select an individual row, select the check box.

Clear All removes all information from the Copy Wizard form. You can type new information in an empty row using one of two methods:

- Click in the table cell, click the down arrow, and choose from the pop-up menu.
- □ Click in the table cell and type your information.

OK copies the files (cellviews) in the copy list to the specified library and closes the Copy Wizard form.

Apply copies the files (cellviews) in the copy list to the specified library and leaves the Copy Wizard open.

Check Files verifies that all the files (cellviews) in the copy list are present and have the correct permissions.

Cancel closes the Copy Wizard without copying any files.

Library Manager Forms

Help opens the online help system to display information about the Copy Wizard.

Copy Wizard Form (By Configuration)

Library lets you type the name of the library from which you want to copy the configuration view. You can use only one name.

Cell lets you type the cell name of the configuration to be copied.

Config View lets you specify the name of the configuration to copy.

Skip Libraries lets you type the names of libraries that do not contain any elements of the configuration (to make the search process more efficient). **Edit** opens the Skip Libraries Editor dialog box in which you can select the libraries to skip.

Generate Copy List changes the list to show only the cells and cellviews that are included in the specified configuration. None are displayed until you fill in the required information in the fields above.

Generate Copy List changes from *(not needed)* to *(needed)* whenever you make a change to the copy list. You must regenerate the copy list each time you change information on the Copy Wizard form.

Destination Library is the library to which the files are copied.

Update Instances lets you choose one of the following options from the list box:

- Of Entire Library: The software overwrites instances of the old (library, cell, and view) name with the new name. For example, all instances of .../oldLib/oldCell/oldView are renamed to .../newLib/newCell/newView.
- Of New Copies Only: The software overwrites only the view references you copied from the original library. For example, only view instances of .../oldCell/oldView are renamed to .../newCell/newView.

Database Integrity updates and validates technology data after the configuration is copied.

Re-reference customViaDefs re-references customViaDefs to cellviews in the destination library.

Check existence in technology database validates the existence of layers, purposes, viaDefs, and siteDefs in the technology database of the destination library. Warnings, if any, are displayed in the CIW output.

Library Manager Forms

Add To Category lets you type a new or existing category name to which to add the set of copied cells according to the filter string you type in the *Cells* field (by default, * to indicate all copied cells).

Select All selects all cellviews displayed on the Copy Wizard.

Deselect All deselects all cellviews displayed on the Copy Wizard. The cell names are grayed out and the check boxes to the left of the row are deselected. To select an individual row, select the check box.

Clear All removes all information from the Copy Wizard. You can type new information in an empty row using one of two methods:

- □ Click in the table cell, click the down arrow, and choose from the pop-up menu.
- Click in the table cell and type your information.

OK copies the files (cellviews) in the copy list to the specified library and closes the Copy Wizard form.

Apply copies the files (cellviews) in the copy list to the specified library and leaves the Copy Wizard form open.

Check Files verifies that all the files (cellviews) in the copy list are present and have the correct permissions.

Cancel closes the Copy Wizard without copying any files.

Help opens the online help system to display information about the Copy Wizard.

Delete By View Form

Library Name is the library of the selected view.

Cell Filter lets you type the criteria for specifying the names of cells whose views you want to delete. You can use an asterisk (*) as a wildcard character, such as cc* or *a2d. You can specify only one string.

View Filter lets you specify the view you want to delete from the specified cell or cells, in the selected library. Click the down arrow to display a list box from which you can select a view name.

Add View Name To Selection List lets you add a view name to the *View Filter* list box.

339

Library Manager Forms

Find Copied Versions lets you delete only cellview versions you have previously copied.

OK opens the *Delete Library Views* list box and closes the Delete By View form.

Apply opens the Delete Library Views list box and keeps the Delete By View form open.

Cancel closes the Delete By View form without deleting any views.

Help opens the online help system to display information about the Delete By View form.

Delete Cells Form

Delete Cells lets you specify cells you want to delete.

Delete lists all the cells in the design that you want to delete.

Don't Delete lists all the cells in the design that you do not want to delete.

Select lets you specify a filter string for selecting all matching cell names in a list box.

Options lets you choose to delete items locally only or also from the design management repository.

Delete Local And Inactive From DM System deletes your local copy and the copy in the design management repository.

Delete Local Only deletes the specified items from your Library Manager but not from the design management repository.

OK deletes the specified cells and closes the Delete Cells form.

Cancel closes the Delete Cells form without deleting any cells.

Help opens the online help system to display information about the *Edit – Delete* command.

Delete Cell Views Form

Delete Cell Views lets you specify cellviews you want to delete.

Delete lists all the cellviews in the design that you want to delete.

Don't Delete lists all the cellviews in the design that you do not want to delete.

Library Manager Forms

Select lets you specify a filter string for selecting all matching cellview names in a list box.

Options lets you choose to delete items locally only or also from the design management repository.

Delete Local And Inactive From DM System deletes your local copy and the copy in the design management repository.

Delete Local Only deletes the specified items from your Library Manager but not from the design management repository.

OK deletes the specified cellviews and closes the Delete Cell Views form.

Cancel closes the Delete Cell Views form without deleting any views.

Help opens the online help system to display information about the *Edit – Delete* command.

Delete Libraries Form

Delete Libraries lets you type the name of the libraries you want to delete.

Delete lists all the libraries in the design that you want to delete.

Don't Delete lists all the libraries in the design that you do not want to delete.

Select lets you specify a filter string for selecting all matching library names in a list box.

OK deletes the specified libraries and closes the Delete Libraries form.

Cancel closes the Delete Libraries form without deleting any libraries.

Help opens the online help system to display information about the *Edit – Delete* command.

Delete Library Views Form

The Delete Library Views form displays a list of the paths for views you chose to delete on the Delete By View form. The name of the library containing these views is displayed above the list.

- Views with a selected check box to the left of the row are selected for deletion.
- Views with a deselected check box will not be deleted.

You can select or deselect views by clicking the toggle button to the left of the row.

Library Manager Forms

Select All selects all views (and selects the check box to the left of each row).

Deselect All deselects all views (and selects all check boxes).

Options lets you choose to delete items locally only or also from the design management repository.

Delete Local And Inactive From DM System deletes your local copy and the copy in the design management repository.

Delete Local Only deletes the specified items from your Library Manager but not from the design management repository.

OK deletes the specified views and closes the Delete Library Views form.

Cancel closes the Delete Library Views form without deleting the specified views.

Help opens the online help system to display information about the *Delete By View* option.

Display Options Form

For Objects contains two tabs, one tab for *Library* specific settings (for example, overrides and icons) and another tab for *View* specific settings.

The only option currently in the latter tab is for **Show extended states**, which turns on or off DM queries, and other information that is displayed in the tables of the Library Manager window (views and files).

Note: Switching this option off will restore the display behavior to match that prior to the IC6.1.5 release.

Display Overrides lets you override custom display settings for libraries.

Show all libraries using standard style overrides any custom display settings and displays all libraries in the default style.

Show hidden libraries overrides any invisible settings on libraries and displays all libraries.

Show library colors displays libraries in the customized colors.

Show custom library icons displays custom icons for libraries. Icons are visible in both the Tree view and Lists view.

Show Lists view library icons displays custom icons only in the Lists view of libraries. Icons are not displayed in the Tree view.

Library Manager Forms

State Analysis

Enable query of data management states: Deselect this option if your DM performance is slow and impacting library browsing speed. Consequently, DM icons will not be displayed and related DM state will be shown as empty in the Library Manager extended tables.

Note: This option and **Show extended states** (see above) must both be set to on in order to see DM states in the main Library Manager window.

The **Enable delay before DM syncs** option enables you in quicker browsing when slower DM integrations for GDM are in use and you do not want to turn off the DM display feature entirely. This option is enabled once you select the **Enable query of data management** check box.

The DM will be queried on a selected item, such as a cell, including its views and any other files, are displayed n seconds after the current cell is selected in the list. The select action loads the item's contents, which includes cell's views and files into the list display.

The value in the **Wait** field (in seconds) comes from the .cdsenv DB setting. By default, the value is 2.5 seconds. The accepted values are 0 through 999 seconds. Set the wait time value higher if you know that your DM system will be slow to respond to such queries. Once your selection/browsing has stopped, and the Wait delay time-out is reached, the DM system is then queried to update the DM status display in the window for the current library or cell contents.

Enable delay before DM syncs: Select this option to enable a delay in the time period between when a cell was selected and when the DM status requests will be called for it. A delay enables you to quickly select between several different cells in a library without the updated DM status being obtained for all of those cells. You can set the delay period by specifying the units in seconds in the *Wait ...seconds after selecting* field.

By default, the Enable delay before DM syncs check box is not selected.

Enable poll: Select this option for the Library Manager to automatically reanalyze states periodically, based on the two slider and spin-box value settings for the related options, as follows:

Interval sets the number of seconds to determine the time setting between successive reanalyze state queries.

Idle limit over interval determines how long the polling should continue after the last UI interaction (that is, a mouse-click or key press). The seconds value set here is added to the interval seconds set.

Note: The polling features enable state change detections without external notification channels, such as DM check out from another system, workarea, and/or

Library Manager Forms

user. Some common edit operations in Virtuoso will also notify the Library Manager. In such cases however, the polling settings are not used to update values.

Important

DM systems that support large number of clients should advise users to select longer poll intervals in order to prevent overwhelming shared resources. The fastest interval value is 1 second, while the default is 30 seconds. These poll settings can be obtained by referring to the <code>.cdsenv</code> file. Virtuoso edit notifications occur independently of poll settings. Fast poll intervals are therefore not necessary here and may impact all user's DM operations.

Resources

Custom library display attributes opens the <u>Display Settings form</u>, which lets you view, edit, or create library display settings.

OK sets your selections and closes the form.

Apply sets your selections and leaves the form open.

Cancel cancels your changes and closes the form.

Help opens the online help system and displays this information.

For more information, see "Overriding Customized Library Display Settings" on page 114.

Display Settings Form

Library Display Attributes lists the attributes (both predefined and custom) that you can set on libraries.

Matching libraries specifies the number of libraries on which the selected attribute is set.

Add opens the Add Display Attribute form, which lets you create new attributes.

Display Libraries displays the currently-selected display options for the selected attribute and lets you modify them.

As standard displays libraries in the default style.

As hidden makes libraries invisible.

Library Manager Forms

Using color displays libraries in the specified color. The *Select* button opens the Select color dialog box from which you can choose a color.

Using icon displays the specified icon next to libraries. The *Select* button opens the Select icon dialog box from which you can choose an icon.

Preview displays a sample library name with the display options.

For more information, see "Customizing Library Display Settings" on page 104.

Edit Category Form

Category Name displays the name of the category to be edited.

Cells

Not In Category lists all the cells in the design that are not in the selected category.

In Category lists all the cells in the design that are in the selected category.

Sub Categories

Not In Category lists all the subcategories in the library that are not in the category.

In Category lists all the subcategories that are in the category.

OK makes the specified changes to the category and closes the Edit Category form.

Apply makes the specified changes to the category and keeps the Edit Category form open.

Cancel closes the Edit Category form without changing the category.

Help opens the online help system to display information about the *Edit – Categories – Modify* command.

Library Browser Form

The Library Browser form saves the information you type and restores it every time you open and close it, even from one Virtuoso session to the next. For information on the file that stores these settings you create, see <u>Chapter 10</u>, "<u>Customizing the Library Manager</u>."

Show Categories expands the form to display categories.

Library displays the names of the libraries specified in your cds.lib file.

Library Manager Forms

Cell displays the names of the cells in the selected library.

View displays the names of the views in the selected cell.

OK opens the selected cellview and closes the Library Browser form.

Cancel closes the Library Browser form without opening a cellview.

Help opens the online help system to display information about the CIW *Options – Browser Preferences* command.

Library Manager Form

File lets you open or create libraries, cellviews, or categories or open a UNIX shell window.

Edit lets you manipulate libraries, cellviews, or categories or edit your cds.lib file.

View lets you specify filters for displaying cellviews.

Design Manager lets you access design management functions.

Commands on the *Design Manager* menu are active only if you are using a design management system.

Help opens the online help system to display information about using this form.

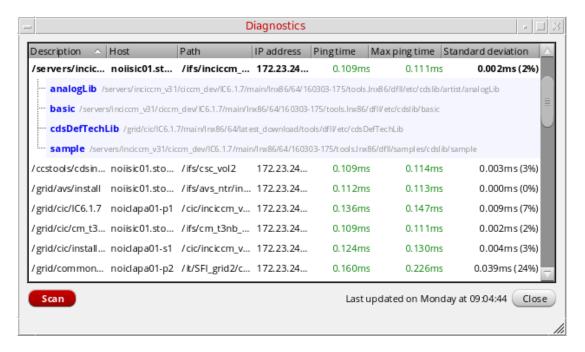
Diagnostics inspects the networked file systems and highlights the networks with performance issues, if any. For example, if a directory on a problematic file system is present in the path or library path, it is likely to slow down all programs. If a design library is on a networked file system with performance issues, only the tools using this library may appear to be impacted. The other programs, such as terminals, are not impacted unless they use this directory.

File systems are displayed at the top of the Diagnostic window that contains the design or reference libraries defined in cds.lib. A file system is displayed in bold and its related libraries are displayed in blue. The other file systems, which are currently mounted on this system, are displayed at the bottom of the window.

Although, these file systems do not affect Virtuoso's performance, attention should be given to those file systems that are used to write simulation results, or store the other temporary data. You can assess the performance by pinging the network servers hosting

Library Manager Forms

each file system several times and recording the ping response time as well as the percentage of dropped packets.



Systems with slow or inconsistent pings, or dropped packets, get highlighted. Hovering the pointer over a file system in the table displays the detailed results of the tests.

Intermittent network issues may not be a cause for concern, however, consistent issues —particularly if the mounted directory has a design library or is in the path— should be investigated because they may impact the workflow.

Show Categories lets you display the *Category* list box.

Show Files lets you display the *Files In Library* and *Files In Cell* list boxes. See <u>"View Property Editor Form"</u> on page 357 for more information.

Library displays the libraries defined in your cds.lib file.

Category displays the categories in the selected library.

Cell displays the cells in the selected library or selected category.

View displays the views in the selected cell.

Messages displays information about actions initiated from Library Manager.

Library Manager Forms

Library Property Editor Form

Library

name is the view name of the selected library.

owner is the user ID of the owner of the selected library.

group is the group of the owner of the selected library.

lastModify is the date/time stamp of the last modification to the library.

readPath is the path to a read-only version of the library.

writePath is the path to a writable version of the library.

You cannot change any of the values for the library.

UNIX Permissions Mode

Owner displays the read/write/execute permissions for the owner of the library.

Group displays the read/write/execute permissions for the group of the owner of the library.

Other displays the read/write/execute permissions for anyone who has access to the library.

You cannot change any of these permissions.

No Property Attached indicates that this library has no attached properties.

If the library has properties, they are listed at the bottom of the Library Property Editor form and you can edit them on this form.

OK saves any changes and closes the Library Property Editor form.

Cancel closes the Library Property Editor form without saving any changes.

Apply saves any changes and keeps the Library Property Editor form open.

Add opens the Add Property form.

Delete removes the selected property.

Modify opens the <u>Modify</u> 'propertyName' form.

Help opens the online help system to display information about using this form.

Library Manager Forms

Load Technology File Form

ASCII Technology File Lets you type the path to a technology file to associate with a new library. Alternatively, click the *Browse* button to locate the technology file.

New Technology Library displays the name of the new library that the technology file will be associated with.

Modify 'propertyName' Form

OK changes the property values and closes the Modify form.

Cancel closes the Modify 'propertyName' form without changing any properties.

Defaults clears all values in the fields and sets *Type* to *int*.

Apply changes the property values and keeps the Modify 'propertyName' form open.

Name is the name of the property. You cannot change this value.

Type lets you change the property type. Depending on the type you choose, the remaining fields change to prompt you for values for the property.

Value lets you change the default value for the property.

Minimum Value lets you change the minimum value for the property.

Maximum Value lets you change the maximum value for the property.

Used for *int*, *float*, and *time* property types. The View Property Editor form or Cell Property Editor form displays these minimum and maximum values next to the property name.

Possible Choices lets you change the possible property values. Used for *string* property type only. The View Property Editor form or the Cell Property Editor form creates a list box of these choices.

New Category Form

Category Name lets you type the name of the new category you want to create.

Cells

Library Manager Forms

Not In Category lists all the cells in the design that are not in the new category (initially, all the cells in the design).

In Category lists all the cells in the design that are in the new category (initially, no cells).

Sub Categories

Not In Category lists all the subcategories in the library that are not in the new category (initially, all the subcategories in the library).

In Category lists all the subcategories in the library that are in the new category (initially, no subcategories).

OK creates the category and closes the New Category form.

Apply creates the category and keeps the New Category form open.

Cancel closes the New Category form without creating a new category.

Help opens the online help system to display information about the *Edit – Categories – New* command.

New File Form

Library lets you choose the library in which you create the new cellview.

Cell is the name of the new cell.

View is the name of the new view.

Type is the type of cellview of the selected *View*.

Open with lets you choose which application should be opened to work with a particular *Type* of file.

Always use this application for this type of file sets the application currently selected in the *Open with* option to always be used when the current view *Type* is chosen.

Library path file is the path to the cds.lib file you are using. You cannot edit this field.

New Library Form

Library lets you specify a new library name and path.

Library Manager Forms

Name lets you specify a name for the new library.

Directory lists the directories in the path displayed below the list box. You can select a directory from this list or specify a path to a directory in the field below the list.

Design Manager lets you choose your design management setup. A list box will be displayed with the options if more than one exists.

Use None indicates that there is no design management system currently available to use.

Use No DM indicates that you do not want the library to be placed under design management control, whether there is a design management system available there or not, now or later. (If there is one available, you can still decide to check it in later on).

Compression enabled enables you write OpenAccess data to the library in a compressed format.

OK creates the new library in the specified path and closes the New Library form.

Cancel closes the New Library form without creating a new library.

Defaults changes the directory path to the current working directory (CWD).

Apply creates the new library in the specified path and keeps the New Library form open.

Help opens the online help system to display information about the File - New - Library command.

Reference Existing Technology Libraries Form

New Library is the new library that is to use the reference technology libraries.

Technology Libraries are the available libraries to be referenced.

--> / <-- moves technology libraries to/from the referenced libraries section.

Reference Technology Libraries are the libraries that the new library will reference for technology information.

Up moves the selected referenced technology library up the reference priority.

Down moves the selected referenced technology library down the reference priority.

Library Manager Forms

Rename Cell Form

From Cell is the original cell name.

To Cell is the new cell name that you type.

Update Instances updates all instances that reference the old name with the new name.

Design Management Options appears only when a DM system is being used. The options appear enabled only when the DM system supports renaming. You can specify the following options:

- The process will stop if errors are found in the precheck phase. You can specify whether it should stop after the first error is found or after all errors are found.
- □ In *Check In Options*, you may specify comments in the *Comment* box or specify an options file in the *Use Options* field.

Rename File Form

From File is the original file name.

To File is the new file name that you type.

Update Instances updates all instances that reference the old name with the new name.

Design Management Options appears only when a DM system is being used. The options appear enabled only when the DM system supports renaming. You can specify the following options:

- The process will stop if errors are found in the precheck phase. You can specify whether it should stop after the first error is found or after all errors are found.
- □ In *Check In Options*, you may specify comments in the *Comment* box or specify an options file in the *Use Options* field.

Rename Library Form

From Library is the original library name.

To Library is the new library name that you type.

Update Instances updates all instances that reference the old name with the new name.

Library Manager Forms

Design Management Options appears only when a DM system is being used. The options appear enabled only when the DM system supports renaming. You can specify the following options:

- The process will stop if errors are found in the precheck phase. You can specify whether it should stop after the first error is found or after all errors are found.
- □ In *Check In Options*, you may specify comments in the *Comment* box or specify an options file in the *Use Options* field.

Rename Reference Library Form

In Library is the name of the design library that uses a reference library whose name you want to change.

From Library is the name of the current reference library.

To Library is the name of the new reference library.

Refresh Session refreshes the session.

Change Library References Form

In Library is the name of the design library that uses a reference library whose name you want to change.

From Library is the name of the current reference library/libraries.

To Library is the name of the new reference library.

Show Selected Libraries Only shows only the selected libraries in *In Library*, *From Library*, and *To Library* list box.

Add displays all the selected libraries in the *In Library*, *From Library*, and *To Library* list box in the *Change List* section.

Move Up moves the entry up the order in the Change List section.

Move Down moves the entry down the order in the Change List section.

Delete deletes the entry from the Change List section.

OK submits the selected references and closes the form.

Library Manager Forms

Cancel closes the form without saving any changes.

Submit submits the selected references and keeps to form open.

Help opens the online help system to display information about using this form.

Rename View Form

From View is the original view name.

To View is the new view name that you type.

Update Instances updates all instances that reference the old name with the new name.

Design Management Options appears only when a DM system is being used. The options appear enabled only when the DM system supports renaming. You can specify the following options:

- The process will stop if errors are found in the precheck phase. You can specify whether it should stop after the first error is found or after all errors are found.
- □ In *Check In Options*, you may specify comments in the *Comment* box or specify an options file in the *Use Options* field.

Save Library Manager Defaults Form

Filter is the path and file name you type (including wildcard characters) to point to the original file you want to save from.

Directories shows the directories available at the end of the path (filtered by the character string at the end of the *Filter* path, if any).

Files shows the files available at the end of the path (filtered by the character string at the end of the *Filter* path, if any).

Save Defaults File As is the file name you type as the new file name.

Options group box

Select the *All possible values* check box for the *Save* option to save all possible values to your .cdsenv file in the directory you specified.

File Status radio buttons

Library Manager Forms

Overwrite saves the values you type by overwriting your .cdsenv file (the output file).

Merge values saves the values you modify into your .cdsenv file (the output file). However, it does not delete pre-existing unmodified values.

Retain values saves the values you specify by creating another file. You must type a different file name in the *Save Defaults File As* field.

OK submits the files you selected and closes the form.

Filter uses the path you typed in the *Filter* field as the filter for your directory search lists.

Cancel closes the form without saving any files.

Help opens the online help system to display information about using this form.

Select an icon Form

Icon Source lets you select the directories from which you want to display icon files in the *Files* list.

All directories in Cadence search path (setup.loc) displays icons from all icon directories found by CSF search. (See <u>"Selecting an Icon for a Library Display Attribute"</u> on page 108 for more information.)

Specific directory lets you select a specific directory from which to display icon files. All directories found by CSF search that contain an icons/library/16x16 or an icons/16x16 subdirectory are listed in the drop-down list. Until you create your custom icon directories, only the directories containing Cadence application icons will be listed in this field, such as the $your_install_dir/share/cdssetup/icons/16x16$ icon directory.

Files displays all icon files found in the directories specified in *Icon Source*.

Show names containing lets you specify a pattern to filter icon file names. Only the file names containing the pattern are displayed.

OK adds the icon to the attribute and closes the form.

Cancel cancels your selection and closes the form.

Help opens the online help system to display information about using this form.

Library Manager Forms

Submit Form

Files to Submit lets you select files to submit to the project design management repository.

Select All selects all files in the list for submitting.

Deselect All deselects all files in the list so that no files are submitted.

Description (Optional) lets you type a description of your design changes.

Submit Options

Request Name lets you assign a name to the integration request.

Use Options lets you specify the options you want to use for the submit operation.

OK submits the files you selected and closes the Submit form.

Cancel closes the Submit form without submitting any files.

Help opens the OpenBook online Help system to display information about the *Design Manager – Submit* command.

Technology File for New Library Form

Compile an ACII technology file attaches a specified technology file to the new library.

Reference existing technology libraries create a new technology file and reference it to an existing technology library.

Attach to an existing technologylibrary opens a form that lets you select (from a list) a technology file for the new library.

Do not need process information lets you create a new library that does not need a technology file. (By default, the system will attach the default.tf file the first time you access the library from a Virtuoso product.)

OK submits the files you selected and closes the Submit form.

Cancel closes the Technology File for New Library form without submitting any files.

356

Help opens the online help system to display information about using this form.

Library Manager Forms

Version Information Form

Check Out (For Edit) checks out the selected version for editing. The Version Information form shows that the file is checked out.

Update (Read Only) lets you specify which version, other than the project default, is read in to your workarea when you open a file in read-only mode.

Rollback lets you roll back a version so it becomes the project default version.

Description is the field in which you can type a description of the selected cellview version.

Copy lets you copy versions of a cellview that has been checked in.

Note: These commands are active only for checked-in files. You can use the Version Information form to display version information about checked-out files, but these commands are inactive.

Close closes the Version Information form without making any changes.

Help opens the online help system to display information about using this form.

View Property Editor Form

OK saves any changes and closes the View Property Editor form.

Cancel closes the View Property Editor form without saving any changes.

Apply saves any changes and keeps the View Property Editor form open.

Add opens the Add Property form.

Delete removes the selected property.

Modify opens the <u>Modify 'propertyName'</u> form.

View

name is the view name of the selected cellview.

owner is the user ID of the owner of the selected cellview.

group is the group of the owner of the selected cellview.

lastModify is the date and time of the last modification to the cellview.

Library Manager Forms

readPath is the path to a read-only version of the cellview.

writePath is the path to a writable version of the cellview.

UNIX Permissions Mode

Owner displays the read/write/execute permissions for the owner of the cellview.

Group displays the read/write/execute permissions for the group of the owner of the cellview.

Other displays the read/write/execute permissions for anyone who has access to the cellview.

No Property Attached indicates that this cellview has no attached properties. If the cellview has properties, they are listed at the bottom of the View Property Editor form.

If the cellview has properties, they are listed at the bottom of the View Property Editor form and you can edit them on this form.