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## **Preface**

This document lists the following videos that are accessible from Cadence Help.

- Videos included in the Virtuoso installation
- Recommended videos available on Cadence Online Support

View these videos in conjunction with the relevant user guide.

This preface contains the following topics:

- Scope
- Playing Videos from Cadence Help
- Additional Learning Resources
- Customer Support
- Feedback about Documentation

## 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, ICADVM18.1) release.

Label	Meaning
(ICADVM18.1 Only)	Features supported only in the ICADVM18.1 advanced nodes and advanced methodologies release.
(ICADVM18.1 EAD Only)	Features supported only in the ICADVM18.1 release and which require the Virtuoso_Layout_Suite_EAD license (95600).
(IC6.1.8 Only)	Features supported only in mature node releases.
(ICADVM18.1 Virtuoso RF Solution Only)	Features supported only in the ICADVM18.1 release releases and which require the Virtuoso_RF_Option (95560) license.

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(ICADVM18.1 Virtuoso MultiTech Framework Only)	Features supported only in the ICADVM18.1 release and which require the Virtuoso_MultiTech_Framework (95022) license.
(ICADVM18.1 Photonics Only)	Features supported only in the ICADVM18.1 release and which require the Virtuoso_Photonics_Option license (95550).

#### For IC6.1.8 Only Books

The functionality described in this guide can be used only in mature nodes, such as IC61.8.

#### For ICADVM18.1 Only Books

The functionality described in this guide can be used only in ICADVM18.1 advanced nodes and advanced methodologies releases.

## **Playing Videos from Cadence Help**

Cadence Help includes videos that demonstrate how various tasks are performed in Virtuoso. These videos are listed in the section <u>"Videos Available with Virtuoso"</u>.

This document also highlights other recommended videos available in the <u>Cadence Video Library</u> on Cadence Online Support. You must have Internet access to view these videos. When you choose to play a video available on Cadence Online Support, Cadence Help launches a web browser window or tab to access that video. These videos are listed in the section <u>"Recommended Videos Available in the Cadence Video Library"</u>.

**Note:** The videos are best viewed with a screen resolution of 1280 x 768.

#### **Playing Videos on the Linux Platform**

You can play a video available with Virtuoso in the Cadence Help window. To see the full-screen view of the video, click the expand button on the video control panel. To access the control panel when the video is playing in expanded mode, press  ${\tt Esc}$  and then use this panel in the Cadence Help window.

You can choose to play a video available with Virtuoso in an external web browser, outside Cadence Help. See <u>"Setting Cadence Help to Play Videos in an External Web Browser"</u>.

**Note:** If you set Cadence Help to play videos in an external web browser, you must ensure that your web browser has the required plugin to play MP4 videos. For details about this plugin, check the support portal of your browser.

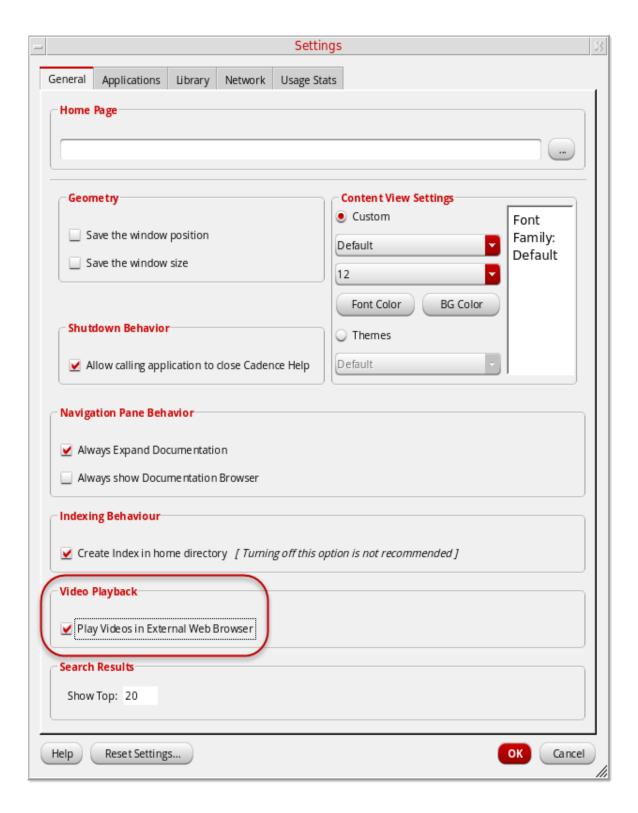
Preface

#### Playing Videos on the IBM AIX Platform

On the IBM AIX platform, Cadence Help launches a new browser window to play a video available with Virtuoso. You can set the default web browser to play videos from Cadence Help. See <u>"Setting the Default Web Browser"</u>.

**Note:** Ensure that your web browser has the required plugin to play MP4 videos. For details about this plugin, check the support portal of your browser.

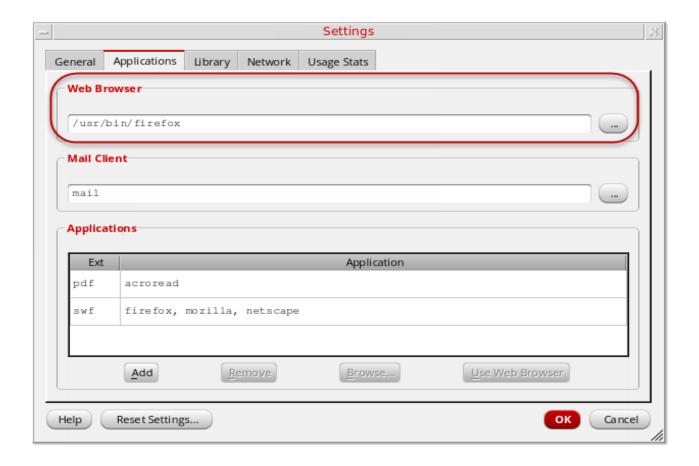
#### **Setting Cadence Help for Videos**



#### **Setting the Default Web Browser**

To set the web browser to play videos:

- **1.** Choose *Edit Settings* in Cadence Help. The Settings form displays.
- **2.** Click the *Applications* tab.



**3.** Specify the video extension and the web browser path where the video with that extension must play.

The web browser you specify must have the required plugin to play videos. For details about this plugin, check the support portal of your browser.

4. Click OK.

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#### Setting Cadence Help to Play Videos in an External Web Browser

To set Cadence Help to play videos available with Virtuoso in an external browser instead of Cadence Help:

- **1.** Choose *Edit Settings* in Cadence Help. The Settings form displays.
- 2. Click the General tab.
- **3.** Enable the option *Play Videos in External Web Browser*.
- 4. Click OK.

## **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*.

#### **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 Cadence Training 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.

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#### **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 <a href="https://www.cadence.com/support">https://www.cadence.com/support</a>.
- Log on to Cadence Online Support
  - Customers with a maintenance contract with Cadence can obtain the latest information about various tools at <a href="https://support.cadence.com">https://support.cadence.com</a>.

#### **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

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■ 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.

## **Virtuoso Video Library**

#### Videos Available with Virtuoso

The following table summarizes the videos with narration that are accessible from Cadence Help. These videos are applicable to the IC6.1.8 and ICADVM18.1 releases unless stated otherwise.

For a more comprehensive set of videos, see the <u>Cadence Video Library</u> on <u>Cadence Online Support</u>.

#### **Notes:**

- The Cadence Help links of the following videos work when you access this document from Cadence Help. Use the Online Support links to access these videos on Cadence Online Support.
- Intermittent issues have been encountered playing certain videos from Cadence Help. If you face such issues, you can use their *Online Support* links.
- The following table includes the new videos created for the current releases. The videos that were previously available with Virtuoso are now listed in <u>"Recommended Videos Available in the Cadence Video Library"</u>.

Virtuoso RF	
Virtuoso RF Solution: Using the interactive routing commands to Push and Shove	Exporting the Shape-Based Die  Cadence Help   Online Support   3 mins   Virtuoso RF
Cadence Help   Online Support   7 mins   Virtuoso	
Running an Electromagnetic Extraction using AXIEM	Using the Edit-in-Concert Mode to Edit Die Packages and Layouts
Cadence Help   Online Support   7 mins   Virtuoso	Cadence Help   Online Support   3 mins   Virtuoso RF
Creating TILP by Exporting the Die	
Cadence Help   Online Support   2 mins   Virtuoso	
Virtuoso Schematic Editor	

Probing and Calculating the Area of a Net using schTraceNet	Virtuoso System Design Platform - Analysis Flow
Cadence Help   Online Support   3 mins   Schematics L	Cadence Help   Online Support   6 mins   Virtuoso System Design Platform
Identifying Net Connections  Cadence Help   Online Support   3 mins   Schematics L	Virtuoso System Design Platform - Implementation Flow Cadence Help   Online Support   4 mins   Virtuoso System Design Platform
VSDP: Single Schematic Flow <u>Cadence Help   Online Support   8 mins   Virtuoso</u> System Design Platform	Using the Search Functionality in Hierarchy Editor <u>Cadence Help   Online Support   6 mins   Schematics L</u>
Editing Enhancements in Virtuoso Schematic Editor Cadence Help   Online Support   5 mins   Schematics L	Creating Net Class Hier Group Constraints  Cadence Help   Online Support   5 mins   Schematics  XL, Layout XL
Using the Enhanced Navigator Assistant  Cadence Help   Online Support   7 mins   Schematics L	
Virtuoso Analog Design Environment	
Using the calcValForRel Function in Reliability Analysis	Reusing a Stress File in a Reliability Setup
Cadence Help   Online Support   3 mins   ADE Explorer and ADE Assembler	Cadence Help   Online Support   5 mins   ADE Explorer, ADE Assembler
Managing Histories in ADE Explorer and ADE Assembler	SKILL Functions to Work with Plotting Templates
Cadence Help   Online Support   5 mins   ADE Explorer and ADE Assembler	Cadence Help   Online Support   7 mins   ADE Explorer, ADE Assembler
Exporting Simulation Results in a Pivot Ready Format	Mixed-Signal Design Verification with ADE Verifier and vManager
Cadence Help   Online Support   5 mins   ADE Assembler	Cadence Help   Online Support   8 mins   ADE Verifier

Using Snapshots in ADE Verifier	What's New in Reliability Setup
Cadence Help   Online Support   7 mins   ADE Verifier	Cadence Help   Online Support   7 mins   ADE Assembler
Running AMS Simulation In ADE Explorer	Using Smart View in the ADE Flow
Cadence Help   Online Support   7 mins   ADE L	Cadence Help   Online Support   7 mins   ADE L, ADE XL, ADE Explorer, ADE Assembler
Using Multi-Test Editor in Virtuoso ADE Assembler	Setting up and Running AMS EM/IR Analysis in ADE
Cadence Help   Online Support   6 mins   ADE Assembler	Cadence Help   Online Support   10 mins   ADE L, ADE XL, ADE Explorer, ADE Assembler
Reintroducing ADE Verifier	Results Annotation flow in ADE Assembler
Cadence Help   Online Support   7 mins   ADE Verifier	Cadence Help   Online Support   14 mins   ADE Assembler
Introducing AMS EM/IR Analysis  Cadence Help   Online Support   3 mins   ADE L,  ADE XL, ADE Explorer, ADE Assembler	Configuring IE Card Information Using IE Card Setup  Cadence Help   Online Support   9 mins   ADE Explorer
Parametric Sets in Design Variables  Cadence Help   Online Support   7 mins   ADE  Explorer, ADE Assembler	Virtuoso ADE Verifier Flow for Multiple Requirement Owners Cadence Help   Online Support   9 mins   ADE Verifier
Enhanced hb and hbnoise Analyses Options Cadence Help   Online Support   6 mins   ADE Explorer	Saving and Importing a Setup  Cadence Help   Online Support   6 mins   ADE Explorer
Filtering Data on the Outputs Setup and Results Pane  Cadence Help   Online Support   6 mins   ADE Explorer, ADE Assembler	Generating and Using Batch Scripts  Cadence Help   Online Support   5 mins   ADE Verifier
Introducing ADE Assembler  Cadence Help   Online Support   6 mins   ADE Assembler	Getting Started with Virtuoso ADE Explorer  Cadence Help   Online Support   11 mins   ADE  Explorer

Tips and Tricks: Markers  Cadence Help   Online Support   7mins   Virtuoso Visualization and Analysis XL  Introducing Virtuoso ADE Verifier  Cadence Help   Online Support   5 mins   ADE Verifier  Migrating ADE XL Setup to ADE Assembler	Configuring IE Card Information Using IE Card Setup  Cadence Help   Online Support   6 mins   ADE L  Migrating an ADE L Setup to ADE Explorer  Cadence Help   Online Support   6 mins   ADE Explorer, ADE L  Transitioning Between ADE Assembler and ADE Explorer
Cadence Help   Online Support   6 mins   Assembler, ADE XL	Cadence Help   Online Support   6 mins   ADE Assembler, ADE Explorer
Virtuoso Layout Suite	
Viewing the Design In Smart Display Modes	Cycling Through Selected Shapes using a Bindkey
Cadence Help   Online Support   3 min   Layout XL	Cadence Help   Online Support   2 min   Layout L
Using the Merge Command in Pre-select and Post-select Modes <u>Cadence Help   Online Support   1 min   Layout L</u>	Introducing the New XOasis GUI  Cadence Help   Online Support   6 mins   XOasis
Using the DRD Incremental Violation Display Feature  Cadence Help   Online Support   3 mins   Layout XL	Verifying Nets in DRD  Cadence Help   Online Support   3 mins   Layout XL
Virtuoso Techfile IDE	Using the Deferred Post Edit Mode in DRD
Cadence Help   Online Support   5 mins   Techfile	Cadence Help   Online Support   2 mins   Layout XL
Using the DRD Sliding Window	Using the Relaxed Enforce Mode in DRD
Cadence Help   Online Support   2 mins   Layout XL	Cadence Help   Online Support   2 mins   Layout XL
Introduction to the New DRD User Interface	Toggling Shapes in EIP and Descend Edit/ Read Mode
Cadence Help   Online Support   5 mins   Layout XL	Cadence Help   Online Support   3 mins   Layout XL

Interactive Colored Routing - Part1 (Using the Create Wire Command)  Cadence Help   Online Support   6 mins   Layout XL   ICADVM18.1 ONLY	Using the Hierarchical Color Locking Check <u>Cadence Help   Online Support   11 mins   Layout XL   ICADVM18.1 ONLY</u>
Using Info Balloons to View Resistance on Nets <u>Cadence Help   Online Support   6 mins   Layout XL</u>	WSP Manager: Generating WSPs from Shapes  Cadence Help   Online Support   3 mins   Layout XL   ICADVM18.1 ONLY
Introducing WSP Manager <u>Cadence Help   Online Support   5 mins   Layout XL   ICADVM18.1 ONLY</u>	WSP Manager: Generating WSPs from Shapes  Cadence Help   Online Support   3 mins   Layout XL   ICADVM18.1 ONLY
WSP Manager: Importing WSPs from Another Cellview Cadence Help   Online Support   2 mins   Layout XL   ICADVM18.1 ONLY	Staying XL - Compliant by Manipulating the Layout Hierarchy - Part 1  Cadence Help   Online Support   5 mins   Layout XL
Extending Trunks  Cadence Help   Online Support   9 mins   Layout XL	Staying XL - Compliant by Manipulating the Layout Hierarchy - Part 3 (Using the Make Cell Command)  Cadence Help   Online Support   9 mins   Layout XL
Staying XL - Compliant by Manipulating the Layout Hierarchy - Part 2 (Using the Flatten Command)  Cadence Help   Online Support   5 mins   Layout XL	Using User-defined Abutment and Callback Functions in SPD  Cadence Help   Online Support   8 mins   Layout XL
Pin Group and Guide (PGG) Support in VFP  Cadence Help   Online Support   5 mins   Layout GXL	Net Process Rule Overrides (PRO) in VFP  Cadence Help   Online Support   6 mins   Layout GXL
Performing Multirow Placement in SPD  Cadence Help   Online Support   4 mins   Layout XL	Creating Signal Trunks in SPD for Pin-to-Trunk Routing Cadence Help   Online Support   4 mins   Layout XL
Debugging Hierarchical Pcells <u>Cadence Help   Online Support   3 mins   Layout XL</u>	Demonstrating Flexible Connectivity Support of Dummy Instances  Cadence Help   Online Support   4 mins   Layout XL

#### Virtuoso Video Library

Getting Started with Symbolic Placement of Devices <u>Cadence Help   Online Support   7 mins   Layout XL</u>	Highlighting Trunks  Cadence Help   Online Support   5 mins   Layout XL	
Using the Area and Density Calculator <u>Cadence Help   Online Support   3 mins   Layout XL</u>	Using the Modgen Editor Assistants <u>Cadence Help   Online Support   10 mins   Layout XL</u>	
Using the Net-based Pre-coloring Flow Cadence Help   Online Support   6 mins   Layout XL   ICADVM18.1 ONLY	Using the Palette MPT Feature  Cadence Help   Online Support   7 mins   Layout XL   ICADVM18.1 ONLY	
Other Virtuoso Videos		
Analyzing Your Code Using SKILL Profiler Assistant Cadence Help   Online Support   6 mins   Cadence Help	Introducing the Redesigned Virtuoso Forms  Cadence Help   Online Support   5 mins   Virtuoso GUI	
Browsing Your Code Using SKILL Code Browser Cadence Help   Online Support   5 mins   SKILL		

# Recommended Videos Available in the Cadence Video Library

The following table lists the recommended videos that you can access from the <u>Cadence Video Library</u> on Cadence Online Support. These videos that are applicable to the IC6.1.8 and ICADVM18.1 releases unless stated otherwise.

General Virtuoso Videos		
Improving Your Code with SKILL Lint Manager	Using the New Help Menu in Virtuoso	
Using the License UI to Retrieve Diagnostic Information		
Virtuoso Schematic Editor		
Introducing Design Intent Flow	Removing Devices from Netlists	
Using PIEA for Automatic Extraction of Power Intent	Supporting Pspice Views	

Using SMG with VSE and amsDmv	
Virtuoso Analog Design Environment	
VIVA-XL Direct Measurement Assistant New	Net Capacitance in ADE New
Using the calcValForRel Function in Reliability  Analysis  Analysis	Reusing a Stress File in a Reliability Setup New
Save & Plot operating parameters for transient & dc sweep analysis from ADE Explorer and Assembler	VIVA-XL Direct Measurement Assistant New
Virtuoso Floorplanner Auto-Generate Hierarchy functionality	Virtuoso Abstract Generator: Creation of Routing Channels when Generating Cover Blockage
Virtuoso Visualization and Analysis Legend Filter	Virtuoso Abstract Generator: Blockage Creation using Cut Same, Cut Below and Cut Above
Introducing the ADE Stimuli Form	Checks/Asserts Summary Table and Status Display
Assigning Stimuli to Pins or Global Nets	ADE Stimuli Authoring
Using the Enhancement Virtuoso ADE Product Suite and MATLAB Integration: A Practical Guide	Introduction to Spectre Interactive Environment
Setup Library Assistant in ADE Verifier	Setup Library Assistant in ADE Assembler
ViVA XL - New Subwindow Layout	Simulation Planning and Coverage Environment using Setup Library Assistant
ViVA XL – History, Test and Corner Name on Plots	ViVA XL - Plotting Templates
Running AMS Simulation in ADE L Using AMS UNL	Distributed Processing in ADE L
Working with the Transient Measurement Assistant	Job Policy Setup for Distributed Processing in ADE XL
Virtuoso Layout Suite	
Pin Tool: Electrically Aware Pin Violation Finder and Automatic Fixer New	EAD: EM analysis for wide pins using multiple injection points
Viewing the Design In Smart Display Modes	Automatic Trunk Generation using Pin To Trunk (P2T) Route Flow in Wire Assistant

Trunk To Trunk Mesh Routing using Pin To Trunk (P2T) Route Flow	Virtuoso Concurrent Layout Editing Flow
Trunk To Trunk Mesh Routing using Pin To Trunk (P2T) Route Flow	FAQs on Advanced Edit Commands
Pin Tool - Create Pin From Net Shapes	VLS-XL Schematic Driven Layout
Virtuoso Floorplan: Block Annotations	VSR Pin To Trunk Router
Virtuoso Floorplan: Pin Tool	Multi-Patterning Technology - Color Checks
VLS-XL Schematic Driven Layout	IxShapeSlotting() SKILL function enhancement in IC617ISR22
Crosstalk Constraint and Routing	Multi-Patterning Technology - "Fully Colored And Locked" Flow Overview
lxShapeSlotting() SKILL API	Multi-Patterning Technology - What's new
Multi-Patterning Technology - Methodology Compliance Checker	Multi-Patterning - Predefined Flows
Multi-Patterning Technology - Status Button	Digitize Multi-Layer Bus
Multi-Patterning - Observability Tools	Fixing Virtuoso Layout XL Check Against Source Mismatches Using Canvas Glyphs
Create Multi Layer Bus	IC6.1.8 Net Tracer: Logical Tracing
Array Support in VLS XL - Convert Mosaic to Modgen	Introduction to the New DRD User Interface
Hierarchical Floorplanning Using Design Planner & Congestion Analysis to optimize placement	Metal Density Toolbar for handling maxDensity checks, analysis and fixing by slotting shapes
IC6.1.8 Net Tracer: Physical Tracing – Step By Step mode	Using the DRD Incremental Violation Display Feature
Introduction to the On demand Coloring	Using the Relaxed Enforce Mode in DRD
Using the Deferred Post Edit Mode in DRD	Virtuoso Custom Digital Placer :Boundary Cell Placement
Using the DRD Sliding Window	Debugging Abutment Using Pcell IDE ICADVM18.1 ONLY

Virtuoso Custom Placer (VCP): Constraint-Based Standard Cell Placement	Using Design Rule Driven Editing
Entering Points for Create and Edit Commands	Comparing Constraints Between Schematic and Layout
Understanding the GDS Merge Flow in XStream	Creating a Block Ring Using Power Router
Using the DRD Compactor	Comparing Parasitics and Resolving Electrical Violations
Creating a Pad Ring Using Power Router	Verifying the Parasitic Information for a Partial Layout
Creating a Core Ring Using Power Router	

## **Training Bytes Videos**

The following table lists the recommended videos that are part of the <u>Cadence Training</u> <u>courses</u>. These videos are known as Training Bytes and are applicable to the IC6.1.8 and ICADVM18.1 releases unless stated otherwise.

To view the entire list of the Training Bytes videos on <u>Cadence Online Support</u>, choose *Self Learning – Training Bytes (Videos)*. You can filter the search results using one of the following options:

- Use the *Filter Results* feature available in the left pane to view a list of product-specific or platform-specific videos.
- Type keywords in the *Search in Training Bytes (Videos)* search box.

SKILL Training Bytes	
Legend: *: New videos since the base release New: New videos added in the current release	
Use SKILL Commands to Locate Terminals and Pins*	Debugging a Variable Scope Error in a SKILL Program *
Add a Custom SKILL Function to Dynamic Display Info Balloon in Virtuoso Layout XL	Use SKILL Database Queries to locate Shapes in a Cellview
Locate Cellview Data Using a SKILL Program *	Calculate Shape Area with a SKILL Program *
SKILL++: Methods Introduction *	SKILL++: Classes and Objects Introduction *
SKILL++: Define a class and create instances of the class	SKILL++: Exploring Methods *
Using the hi.*Layout Functions to Create Modular and Resizable Forms	Documenting Your SKILL Functions within the SKILL API Finder Using the Finder Manager*
Using the More Info Option in the SKILL API Finder to Quickly Locate Detailed Documentation	SKILL++ Packages*
Locating SKILL Information on Cadence Online Support (COS) 2.0*	Set the Symmetry Routing Axis Coordinate using a SKILL program*

Locating SKILL Information in the Cadence  Community Technical Forums  *	
Virtuoso Analog Design Environment Training Byte	es
Legend: *: New videos since the base release New: New videos added in the current release	
Adding Multiple Signals and Creating Expressions New	ADE Assembler Plotting/Printing Options Form <sup>New</sup>
Advantages of ADE Assembler Over ADE XL New	Assistants and Workspaces in ADE Assembler New
Choosing a Simulator in the Data View Assistant New	Choosing Simulator and Setting up Multi-Technology Simulations New
Creating Datasheet and Documents in ADE New	Creating Netlist and Running Simulation in ADE  Assembler New
Explore Run Toolbar and Run Options for Multiple Runs New	Exploring History Checkpoints in Data View Assistant New
Exploring Output types and Column Filters on Output Setup tab New	Exploring the Results Tab Toolbar New
Exploring Toolbar of the Output Setup tab and Creating User-defined Columns	Exporting Results Data New
How to Add a Test in the ADE Assembler? New	How to Copy a maestro View? New
How to Filter Information on the Outputs Setup  Tab?  New	How to Set the Model Library Path and Simulation Files?
How to Set Up a Job Policy for a Test? New	How to set viewSubType property for opening maestro view with single test using ADE Explorer New
How to Specify Signals to Plot/Save in the ADE Explorer Editing Window? New	How to start and create a new maestro view? New

Import/Export Output Measures in ADE Assembler New	Incremental Simulations Using Reference History after Comparing Setups New
Interpreting Results, Spec Markers and Spec summary New	Multi-Test Editor New
Multiple Independent Tests in Assembler New	Opening the Job Log and setting Debug Options New
Rerunning Error points and Identifying Read only  Maestro view  New	Restoring and Deleting Checkpoints New
Run Preview tab and Run Summary Assistant New	Saving and Loading your Simulation Setup New
Saving and Overwriting History checkpoints New	Setting up Test, Analyses and Simulation Information in ADE Assembler New
Spec Comparison for Histories and Design Points New	Spec-Related Features on the Outputs Setup Tab New
Specifying the Run modes and location of Simulation Results	Stimuli Assignment form New
The ADE Explorer Editing Window New	Using the ADE Explorer Editing Window to Configure Analyses New
<u>Virtuoso ADE Assembler</u> New	What is Run Summary Assistant? New
What is Outputs Setup, Run Preview, Diagnostics tab and Status Bar in ADE Explorer?	What is the Data View Assistant? New
Saving and Restoring a Session	Setting Environment Options
Setting Nodesets and Initial Conditions in ADE	Specifying Output Data and Adding Expressions
Toolbars in ADE Explorer	Using MATLAB Expressions and Scripts
Virtuoso ADE Explorer	Virtuoso ADE Explorer Graphical User Interface
How to Switch Between Explorer and Assembler?	Importing and Exporting Output Data
Introducing the maestro cellview	Netlisting and Running Simulations in ADE

Operating Point Parameters	Save Options for Outputs
Saving an OCEAN Script	Saving and Deleting Results in ADE Explorer
Analog Simulation Flow	Annotating Simulation Results, Printing Results and Plotting Signals
Assistants in ADE Explorer and Schematic	Creating a Datasheet in ADE
How to set Design Variables in ADE Explorer?	How to start the Simulation Environment?
How to include Model Files and Simulation Files in ADE Explorer?	How to Open Virtuoso ADE Explorer?
How to run Automatic Disk Space Checks?	How to select simulator and set simulator options?
How to choose Analyses in ADE Explorer	How to find out the resistor or capacitor value in each Monte Carlo run in ADE Assembler
The Axis Related Options	The Visualization and Analysis XL Graphical User Interface
Toggling Grids, Accessing Strip Mode and Tracking Cursor	Trace Properties and Customize Trace Groups Assistant
Using Subwindows in ViVA	Zooming and Panning Options
Launching Virtuoso ADE Explorer/Assembler From a Schematic	Simulation History in the Virtuoso ADE Assembler
Setting Up a Single Test in the Virtuoso ADE Assembler	Setting Up and Running EMIR Analysis in Virtuoso
Performing Fault Simulation in Virtuoso ADE  Assembler using Legato™ Reliability Solution*	Overriding the ADE XL Setup with a Submit Point*
Performing Static EMIR Analysis in the Virtuoso ADE*	Understanding the ADE XL Debug Environment *
Debug Issues in Sweeping Design Variables in ADE XL*	Run a Standard Monte Carlo Simulation in the ADE  Assembler

Troubleshooting ADE XL Results using Troubleshoot  Point Option*	Create Statistical Corners after a Monte Carlo Run in the Virtuoso ADE Assembler
Evaluate Mismatch Contribution In the Virtuoso ADE  Assembler after a Monte Carlo Analysis  *	Create Statistical Corners Using the VVO license in Virtuoso ADE Assembler
Exporting and Importing Outputs in ADE XL *	Setting up Spec Markers in ADE XL *
Estimate Yield Greater than 3-Sigma Using the VVO	Enabling AHDL Linter in the Virtuoso ADE  Environment
VSDP – Design implementation*	Creating Batch Scripts for Regression Runs in the Virtuoso ADE Verifier
Adding Requirements in the Virtuoso ADE Verifier	Running Simulations in the Virtuoso ADE Verifier*
Mapping Verification Requirements to Design Implementations in the Virtuoso ADE Verifier	Analyzing Verification Results in the Virtuoso ADE Verifier
Invoking the Virtuoso ADE Verifier*	Creating Implementation Run Sets in the Virtuoso  ADE Verifier
Adding Design Implementations in the Virtuoso ADE Verifier*	Creating Verification Reports in the Virtuoso ADE Verifier*
Creating Custom Fields in the Virtuoso ADE Verifier*	Creating Multiple Owner Cellviews in the Virtuoso  ADE Verifier*
Custom Calculator Functions *	Waveform Thumbnails *
Setting Up Checks and Assertions *	Filtering and Viewing the Violations of Checks and Assertions
Virtuoso Schematic Editor Training Bytes	
Legend: *: New videos since the base release New: New videos added in the current release	
SKILL Data Structures	SKILL File IO

#### Virtuoso Video Library

SKILL List Construction	Toggling Assistants and Saving Workspaces
The Probe Assistant, Property Editor Assistant and Explore Workspace	Virtuoso Command Interpreter Window
Verilog A, Verilog In and Spice In options in Schematic L & XL	What are Inherited Connections?
Virtuoso Schematic Editor	Wire Mode, Rotate and Flip Components
What is cds.lib, .cdsinit, .cdsenv and .cadence directory?	VSDP Pin Swapping
Creating the part_table view in VSDP	

#### **Virtuoso Layout Suite Training Bytes**

#### Legend:

- T1: Virtuoso Layout Pro: Environment and Basic Commands (L)
- T2: Virtuoso Layout Pro: Create and Edit Commands (L)
- T3: Virtuoso Layout Pro: Basic Commands (XL)
- T4: Virtuoso Layout Pro: Advanced Commands (XL)
- T5: Virtuoso Layout Pro: Interactive Routing (XL)
- T6: Virtuoso Layout Pro: Constraint-Driven Flow and Power Routing (XL)
- \*: New videos since the base release
- New: New videos added in the current release

Defining the Device Correspondence and Cloning the Mapped Structure New	Deleting the Instances New
Generating and Mirroring the Devices New	Generating Components Using GSFS Command New
Grouping and Renaming the Devices Using the Propery Editor Assistant New	Aligning Objects by Using the Align Toolbar and the Quick Align Command New
Abutting and Wiring the Devices New	Cloning and Copying in VLS-XL New
Checking Against Source and Generating the Missing Transistors New	Creating the Groups of Selected Objects New
Copying the Group of Devices New	Using the Update Clone Families Form New

Updating the Layout/Schematic Parameters in the Design New	What Is Cloning? New
Verifying the Design New	Invoking and Using the Update Connectivity Reference Form
What Is Synchronous Copying? New	Setting the Snap Modes in the Display Options Form New
Invoking and Using the Update Components and Nets Form	Updating Connectivity and Nets in VLS-XL New
Probing, Placing, and Wiring the Devices New	Updating the Components and Nets in the Design New
Synchronous Copy/Create Synchronous Copy Features in Copy/Repeat Copy Forms  New	Cloning Functionality and Synchronous Copying in VLS-XL
Updating the Clone Families New	How to Update the Connectivity Reference New
Clone Non-Checked Objects & Copied Objects New	How to Use the Layout XL Options Form New
Generating a Synchronous Copy New	Invoking and Using the Layout XL Options Form New
How to Use the Generate Clones Form New	How to Generate Clones as Free Objects vIC6.1.8
Invoking and Using the Generate Clones Form New	How to Generate Clones as Synchronized Family vIC6.1.8
Advanced Commands in Virtuoso Layout Suite XL vIC6.1.8	How to Generate Synchronous Copy Clones of Modgen and Examine its Synchronous Behavior vIC6.1.8
How to Generate Clones as Grouped Objects vIC6.1.8	How to Update the Net and the Pin Names and Implement the Schematic Changes in the Layout vIC6.1.8
How to Generate Mutant Clones with Exact Connectivity turned ON / OFF with Relax Match Options vIC6.1.8	Virtuoso Layout Design Basics

How to Generate Synchronous Copy Clones of Wires and Examine its Synchronous Behavior vIC6.1.8	FAQs on Hierarchical Editing*
Virtuoso Floorplan: Pin Tool - Create Pin From Label	Quiz on Advanced Edit Commands*
Writing Good SKILL Code	Quiz on Hierarchical Editing*
FAQs on Create and Edit Commands*	Performing ESD Effective Resistance Checks in Voltus-Fi-XL
Frequently Asked Questions and Quiz on Create and Edit Commands	Quiz on Basic Layout Commands*
Quiz on Create and Edit Commands*	Quiz on The Design Environment*
Setting Up ESD Analysis in Voltus-Fi XL*	Quiz on User Interface*
FAQs on Basic Layout Commands*	How to Use Smart Snapping of Ruler in the Quick Align Command*
FAQs on The Design Environment	Dynamic Measurement in Create/Edit Commands*
FAQs on User Interface*	How to Use Dynamic Measurement Feature to  Measure Distance*
Frequently Asked Questions and Quiz on Environment and Basic Commands*	Quick Align and Align Toolbar*
DFII Environment Features and Commands in Virtuoso Layout Suite	Undocked Assistants*
How to Create and Use New Sets in the Navigator*	True Color Probe – Overview*
Navigator Changes – Overview*	How to Use Edit Soft Blocks Command? *
Selecting Objects*	How to Use Remove Blocks Overlap Command?
Navigator Changes – Overview*	How to get XL Compliance using Complex Binding?
How to Use Pull Soft Blocks Inside PR Boundary Command? *	How to get XL Compliance using Manual Binding? *

How to Use Pull Soft Blocks Inside PR Boundary Command?	How to get XL Compliance?
How to edit the modgen size using Grid Pattern Editor (GPE)	Virtuoso Custom Digital Placer and Insert/Delete  * Filler Cells – Overview*
How to Use Snap Soft Blocks to Grid Command *	Simulation Driven Routing (SDR) *
How to get XL Compliance using Incremental  Binding?	An Overview of Floorplanner & How to Invoke and Use the Annotation Browser Assistant *
How to get XL Compliance using Update Binding?	An Overview on Soft Block Attributes in CPH *
Introduction to Simulation Driven Routing (SDR) *	Configuring the Physical Hierarchy *
Usage of Simulation Driven Routing (SDR) *	Controlling Which Blocks Are Editable *
How to Create Label Using Current Entry Layer in Layout?	Creating Soft Pins *
Component Types Mode in CPH *	Data Generation Using GPH: Soft Layout & Soft  Abstract *
Constraint Group Lookup Precedence	Generating and Placing the Physical Hierarchy *
Counting Interconnect Between Two Blocks *	How to Create Net Priority Constraint *
Data Generation Using Generate Physical Hierarchy (GPH) *	How to Generate Physical Hierarchy (GPH) *
Enabling Level-1 Editing *	How to Place the Blocks Using the Block Placer in Virtuoso Floorplanner
Hierarchy Configuration Mode in CPH *	How to Review the Technology File Requirements *
How to Define/Edit Soft Block Parameters in CPH? *	I/O Placer: Row Creation, PAD Placement, Filler Cells, and Corner Cells
How to Load the Solutions in Virtuoso Floorplanner *	Level-1 Editing *

How to Reinitialize the Design in Virtuoso Floorplanner*	Loading the Physical View *
How to set the Cell Type from the CPH? *	Overview on Floorplan Commands, Floorplan  Toolbar, Floorplan Workspace *
Launching the Configure Physical Hierarchy Utility *	Pin Optimizer: Constraints *
Level-1 Editing Commands: Move, Stretch, Reshape, and Chop	Placing the Blocks Using the Block Placer *
Optimizing the Top-Level & Level-1 Pins *	Saving CPH Information *
Pin Optimization *	Setting the Cell Type from the CIW *
Place and Route Constraints: Blockage *	Software Product License Management *
Saving a Copy *	Starting the Virtuoso Floorplanner – Licensing *
Setting Floorplan Global Options *	Using cdnshelp and Floorplanner Features *
Soft Block Mode in CPH *	Using Pin Planner Tab in Pin Placement Form *
Starting the Virtuoso Floorplanner *	Using the Cadence Help (cdnshelp) Documentation  System *
Updating Soft Blocks: Push Pre-Routes, Adjust Blocks, Remove Blocks Overlap, Snap Soft Blocks to Grid, Pull Soft Blocks Inside PR Boundary, and Edit Soft Blocks	FAQs on Configuring the Physical Hierarchy*
Using Pin Optimization Tab in Pin Placement Form *	FAQs on Generating and Placing the Physical Hierarchy*
FAQs on API/SKILL Based Flow for Virtuoso Floorplanner*	FAQs on Pin Optimization*
How to Create GDS File From Virtuoso Layout Cellview Without Opening XStream Out GUI?	FAQs on Using cdnshelp and Floorplanner Features*

FAQs on Floorplanner Environment*	Placing the Blocks Using the Block Placer & Reporting Placement Statistics*
FAQs on Level-1 Editing*	SKILL API-Based Command-Line Flow to Generate the Physical Hierarchy*
FAQs on Top-Down Floorplanning*	Updating the Pin Labels*
Frequently Asked Questions on Virtuoso Floorplanner	Virtuoso IPVS (VIPVS) 15.10*
API/SKILL Based Command-Line Flow for Virtuoso Floorplanner	Virtuoso Layout Suite - How to find the Signal Type of the pin and change it?
SKILL API-Based Command-Line Flow to Configure the Physical Hierarchy*	XStream Out: Elapsed Time, User Time and CPU Time in XStream Out Report - Overview
SKILL API-Based Command-Line Flow to Optimize the Pins*	Create PG-able text on a VIA layer*
VIPVS 15.1 - An introduction to the Advanced Tool- bar	Performing Pin-to-Pin Resistance Check (Pin2PinR)  Using Voltus-Fi*
Debugging in Virtuoso Environment*	Performing Structural Analysis Using Voltus-Fi*
How to Generate xDSPF Using Quantus in Voltus-Fi?*	Viewing the EM Analysis Results in Voltus-Fi*
Viewing the IR Drop Analysis Results in Voltus-Fi*	Debug Issues in Sweeping Design Variables in ADE XL*
Performing LRP Analysis Using Voltus-Fi*	Understanding the ADE XL Debug Environment *
Performing What-If Analysis Using Voltus-Fi*	How to automatically minimize the schematic or layout window when it is opened
Overriding the ADE XL Setup with a Submit Point*	Stranded Wire Support in Virtuoso and Virtuoso  Advance Nodes
Stranded Wire Additional Editing Features*	Use the Search Assistant to Locate Terminals and Pins*

Stranded Wire Advance Node Editing Features*	How to locate a particular .cdsenv environment variable from a UNIX or LINUX shell*
Locating Pin Information*	leSearchHierarchy Overivew*
Export Die Abstract from Virtuoso*	Using the Area and Density Calculator *
leSearchHierarchy Example to Locate Bondpad Shapes*	Locating Cellview Data *
Measuring Shapes Using the Ruler and Info Balloons	Selecting Objects *
How to make the Library Manager reset changes done on Copy form during the virtuoso session	Undocked Assistants *
Net tracer Features *	Presets Review *
Find and Replace Menu Enhancement *	Usability Improvements in Constraint Manager: Show Selected, Constraint Names, Axis*
Electrically Aware Design Flow in Virtuoso *	Full P2T Routing and EM Optimization Flow *
Constraint-Driven Flow *	Advanced Node Electromigration *
Finding and Fixing EM Violations *	Creating Rail Constraint *
Advanced EM Optimization Options *	Rail Constraint Implementation Using Analog Auto Placer*
Constraint Implementation Using Constraint Aware Editing	Creating Cell Boundary Constraint *
Rail Constraint Modification & Re-Implementation *	Launching The Integrated Abstract Generator *
Customizing the Abstract Generator Flow Steps –  Overview *	Generating Abstract Using Integrated Abstract Generator*
Customizing The User Interface In Integrated Abstract Generator	Load WSP into the design *

#### **Virtuoso Videos** Virtuoso Video Library

Create Wires on WSP *	PreColoring *
Color Locking and Color Aware Xstream *	Coloring Utilities Property EditorColoring Utilities Property Editor*
Dynamic Coloring (Interactive and Managed) *	Basic Interactive (Manual) Coloring *
Coloring Utilities Layer Palette *	Interactive Abutment (Non-Connectivity Based) *
Place As In Schematic *	DRD for Advanced Node Design *
Rule Based Gravity *	Snap Pattern Definition in the Technology File *
Dynamic Coloring (Interactive and Managed Mode)	Fill Utilities*
Interactive Placement*	Fill Utilities*
Interactive Placement*	Edge Constraints*
Custom Digital Rows*	Add Wire Mode*
Tap Cell and Fill Cell Insertion*	Command Buffering*
Add Array Instances*	Move Instances*
Implied Wire*	Multiple Instance Selection*
Multiple Editing Object Properties*	Generating the Physical Hierarchy*
Introduction to creating and aligning shapes using ROD functions*	I/O Planning and Placement Using the I/O Placer*
Configuring the Physical Hierarchy*	Placing the Blocks Using the Block Placer*
Creating Feed Through Terminal Pins*	Aligning the Soft Block Pins with the Top Level Pins*
Updating Connectivity and Nets in Virtuoso*	Selecting Layer when Creating Wires*
Overview of Types of Wires*	Modifying the Wires after Interactive Routing*

#### Virtuoso Videos Virtuoso Video Library

DRD Interactive Compactor*	Routing With Dynamic Abstract Generation*
Wire Editing Options With Create Wire Command*	Features of Pin-to-Trunk Routing*
Wire Assistant User Interface*	Features of Point-to-Point Routing*
Placing vias when Creating Wires*	Features of Guided Routing*
Routing Without Dynamic Abstract Generation*	Using the Auto Router with Route With Default  Lookup & Route With WA Overrides*
Highlighting Unabstracted Pcells*	Create Synchronous Copy Feature*
Features of Point-to-Point Routing*	Clone Non-Checked Objects*
Features of Bus Routing*	Verifying the Geometry of Abstract*
Features of Finish Wire & Finish Bus*	Finding the Number of Licenses Checked Out during  Spectre Simulation*
Exporting LEF File*	Post-Layout Settings in Spectre APS*
Generate Clones Form – Overview*	DRD Editing*
Mutant Clones Feature*	Device Level Pin to Trunk Routing*
Launching and Generating the Abstract in Standalone  Mode *	Creating Custom ModGens*
DRD Options – Enforce, Notify, Post-Edit Modes*	Coloring Utilities Property Editor (ICADVM18.1 Only)*
Creating a Simple ModGen*	DRD for Advanced Node Design (ICADVM18.1 Only)*
Route with Symmetry in Virtuoso Layout Suite XL*	Snap Pattern Definition in the TechFile (ICADVM18.1 Only)*
Routability Check in Virtuoso Layout Suite XL*	Basic Interactive Coloring (ICADVM18.1 Only)*

Pin to Trunk Routing Usage*	Place As In Schematic (ICADVM18.1 Only)*
Introduction to Pin to Trunk Routing in Virtuoso Layout Suite XL*	Color Locking and Color Aware Xstream (ICADVM18.1 Only)*
Guided Routing*	Using Dynamic Measurement to Measure Distance *
Bus Routing in Virtuoso Layout Suite XL*	Creating and Using New Sets in Navigator *
Auto Via Preview and Smart Auto Via*	Using the Copy Connectivity Option in the Copy Command *
Coloring Utilities Dynamic Selection Assistant (ICADVM18.1 Only)	Using Smart Snapping of Ruler in the Quick Align Command *
Snap Pattern Enabling (ICADVM18.1 Only)*	Creating and Editing a Modgen *
Coloring Utilities Layer Palette (ICADVM18.1 Only)*	Using the Pin To Trunk Feature *
Lock Propagation (ICADVM18.1 Only)*	Color Locking and Color Aware Xstream (ICADVM18.1 Only)
Dynamic Coloring Utilities-Interactive and Managed (ICADVM18.1 Only)	Understanding the Find and Replace Enhancements
Interactive Abutment (Non Connectivity Based) (ICADVM18.1 Only)*	Using the leRepeatCopyMoveStretch() API *
Overview: Dynamic Measurement in Create and Edit Commands	Introducing the Pin To Trunk Feature *
Overview: True Color Probe *	Aligning Objects T1
Overview: Navigator Changes *	Generating Selected Objects From Source T3
Understanding the Top-Down Floorplanning Flow T2	Working with Complex Binding T3

Creating Vias T2	Using Valid Layers Properly to Avoid Shorts T3
Using the Copy and Repeat Copy Features T2	Using Free Objects, Grouped Objects, Synchronized Family, and Create Synchronous Copy Features
Controlling the Via Layers for Tracing Nets T2	Implementing an Engineering Change Order (ECO) T4
Generating and Sizing Layers T2	Creating Mutant Clones T4
Using Search and Navigator Assistants, Save-Restore Options, and Overlaying a Cell to Use as a Template T2	Updating the Net and Pin Names T4
Searching the Database T2	Verifying a Design Using the Batch Checker <sup>T4</sup>
Generating All Objects From Source and Using Pin Placer	Performing Design-Rule-Driven Editing T4
Generating Labels Using the Auto-Label Feature T2	Introduction to Presets T5
Marking Nets for Tracing T2	Using Override Constraints in the Wire Assistant T5
Using stopLayer when Marking Nets to Avoid Reporting False Shorts T2	Using Design-Rule-Driven Enforce to Push Existing Wires
Stretching Objects <sup>T2</sup>	Using Guided Routing T5
Working with Groups T2	Using the Auto Router on Selected Nets T5
Remastering Instances T2	Using Point-to-Point Routing Feature T5
Using Analog Auto Placer T3	Connecting to Target Pins with Create Wire T5
Performing Manual Binding T3	Using the Wire Editing Options With Create Wire T5
Using Virtuoso Custom Digital Placer T3	
Performing Incremental Binding T3	