Tips and Tricks for IP Integrator

Presented By

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The Evolution of IP Integrator

2013 - IPI
IP Integrator debut – replaces XPS

2015 - HLx
Vivado HLx Methodology –
IP Integrator for shell
SDx / HLS for differentiation

Next – ACAP
Versal ACAP debut –
IP Integrator enables H/W shell with Versal heterogeneous features
IP Integrator improves WYSIWYG RTL
What You’ll See in this Presentation

> Technical, demo centric, methodology tips presentation
  >> Helpful today
  >> Needed for tomorrow

> We’ll see, using a real-world design
  >> Features of IP Integrator to rapidly build designs with complex IP
  >> New Ease-of-Use features (Find, Pinning)
  >> New Design Migration capabilities
  >> New Design Differencing
Most Common Requests for IP Integrator

> **Ease-of-Use**
  >> Finding IP, Freezing IP
  >> Example Designs in IP Integrator

> **Migration Hurdles**
  >> Selectively updating IP
  >> Migrating to next generation devices

> **Team Based Design**
  >> Enable teams to work in tandem (Spring 2019)
  >> Visualize differences between Block Diagrams
Visual Walkthrough

> Start to End

1. Creating a new design for the KCU105
2. Creating an example design for HDMI
3. Using Find and hierarchical partitioning
4. Migrating from ProjectA.bd to ProjectB.bd
5. Cross Probing with timing closure
6. The toolbar review
--- 2018.3 Preview ---
7. Selective migration from Vivado 2018.1 to 2018.3
8. What changed during upgrade in the block diagram
9. Migrating to the Versal NoC
1. Ease of Use – Designer Assistance

> Board, Block, and Connectivity Automation helps to put together systems
2. Example – Example Designs

Example Designs can be launched from IP Integrator or IP Catalog
3. Ease of Use – “Super Find” in IP Integrator

> Find items on the canvas based on connectivity, naming, or properties

![Find dialog box](image)
4. Migration – From One Block Diagram to Another

Block diagrams should be in the same project
5. Ease of Use – Cross Probe from Timing Analysis

> Quickly find areas that need improvement
6. Ease of Use – Stop Squirming - Pin IP on Canvas

> A review of the toolbar actions

Pin blocks and ports to location. "Pins" the location of blocks on the canvas.
A Preview of IP Integrator’s Migration Assistance in 2018.3
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--- 2018.3 Preview ---
7. Selective migration from Vivado 2018.1 to 2018.3
8. What changed during upgrade in the block diagram
9. Migrating to the Versal NoC
7. Migration – Vivado Versions via Partial Update

> Keep the blocks which have been previously validated in-system
8. What Changed In the Upgrade?

> New interactive report shows differences between block diagrams
Preview: Versal NoC!
9. Migrating to Versal ACAP

> Upgrading our current project to reduce programmable logic resources (area)
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Changes to Our Release Schedule

- Vivado previously had four full releases per year
  - 2017.1 & 2017.3 introduced new features
  - 2017.2 & 2017.4 improved quality – Many users installed only the even releases

- In 2018, we will have three full releases
  - 2018.3 is coming soon

- And two in 2019
  - Spring and Fall – No more wait states for new features or quality
  - Quality is our top priority
Key Concepts: Vivado IP Integrator 2018.3

Board, Block, Connectivity, and Migration Assistance

- Take advantage of IP Integrator’s built in assistance to create your ideal processing system -- including adding customized interfaces for networking, video, and DSP

Getting ready to migrate to Versal ACAP

- The migration to Versal ACAP will continue to add new assistance features and increase the traceability of IP Integrator