

EXOSTIV Dashboard

Getting Started Guide

Rev. 1.0.8 - February 26, 2019



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References

[1] UG401 : EXOSTIV IP user’s guide

Revision History

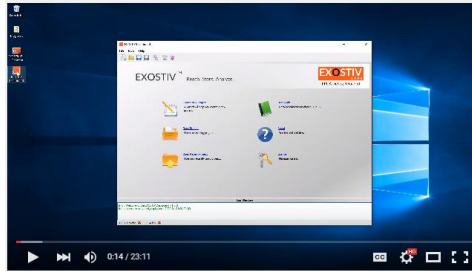
Revision	Modifications
1.0.3	<ul style="list-style-type: none"> Initial revision
1.0.4	<ul style="list-style-type: none"> Figures update / formatting update
1.0.5	<ul style="list-style-type: none"> Added software installation guide for Windows
1.0.6	<ul style="list-style-type: none"> Minor update
1.0.7	<ul style="list-style-type: none"> Added installation instructions for Linux
1.0.8	<ul style="list-style-type: none"> Legal and brand names update

EXOSTIV Dashboard – Getting Started

Introduction

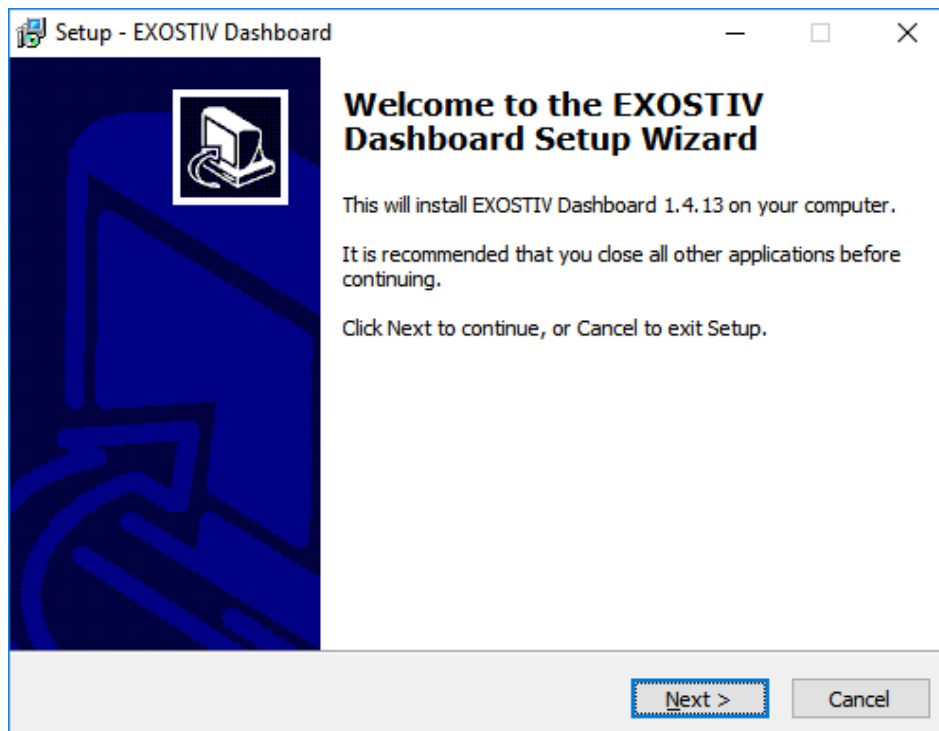
This guide provides step-by-step instructions on how to use EXOSTIV Dashboard software to set up and insert EXOSTIV IP into a target design and then use the EXOSTIV hardware Probe to extract and visualize debug trace data.

The instructions enclosed in the present guide can also be found as a video presentation on Exostiv Labs' [Youtube channel](#): [click here to access the EXOSTIV Dashboard Demonstration](#).



Installing EXOSTIV Dashboard – Windows 32/64 bit

- 1) Download the latest version of EXOSTIV Dashboard: go to: www.exostivlabs.com/download
Pick the desired version and register to request the download.
- 2) Unpack the program to start installation. Follow the installation process.

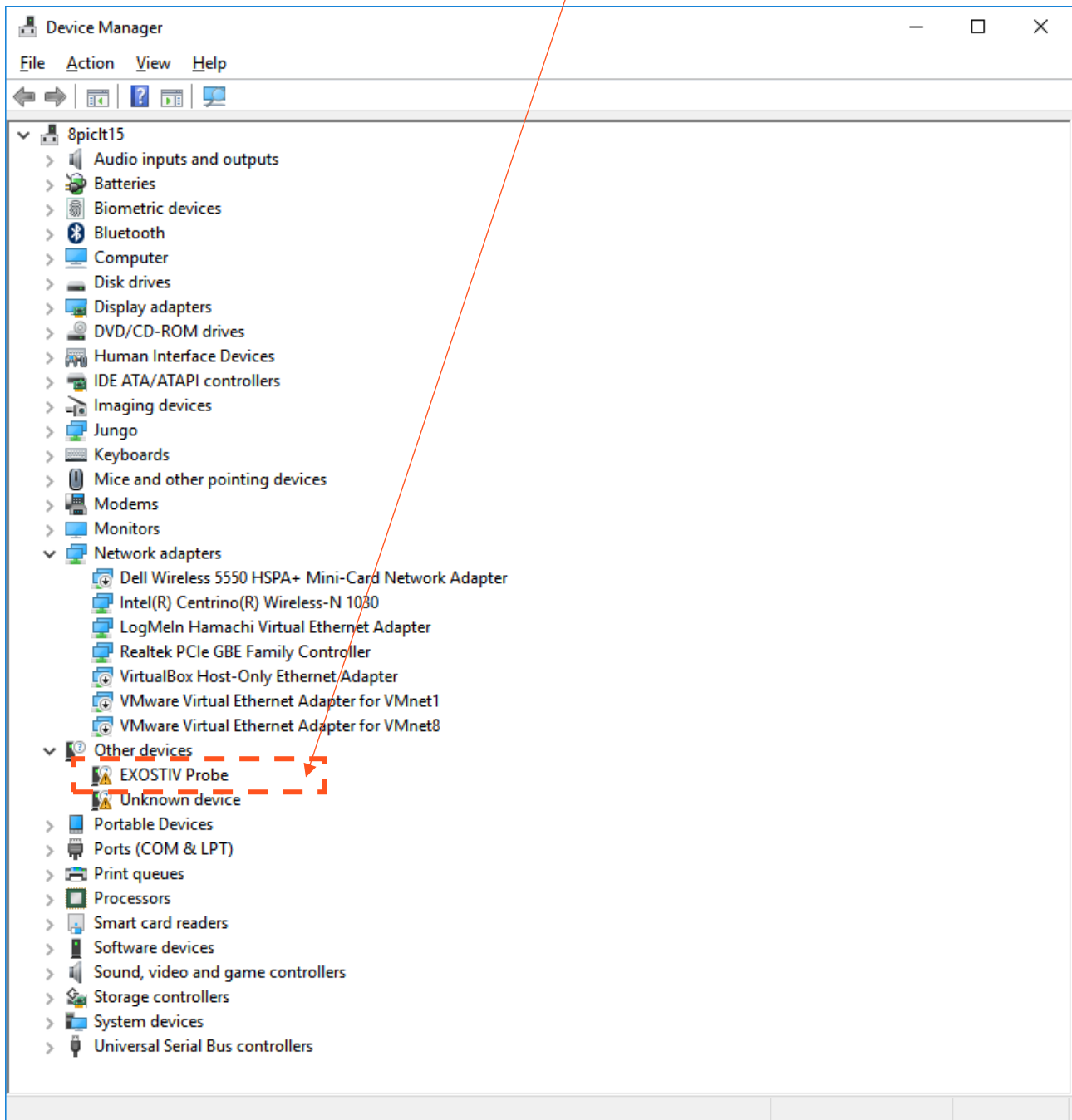


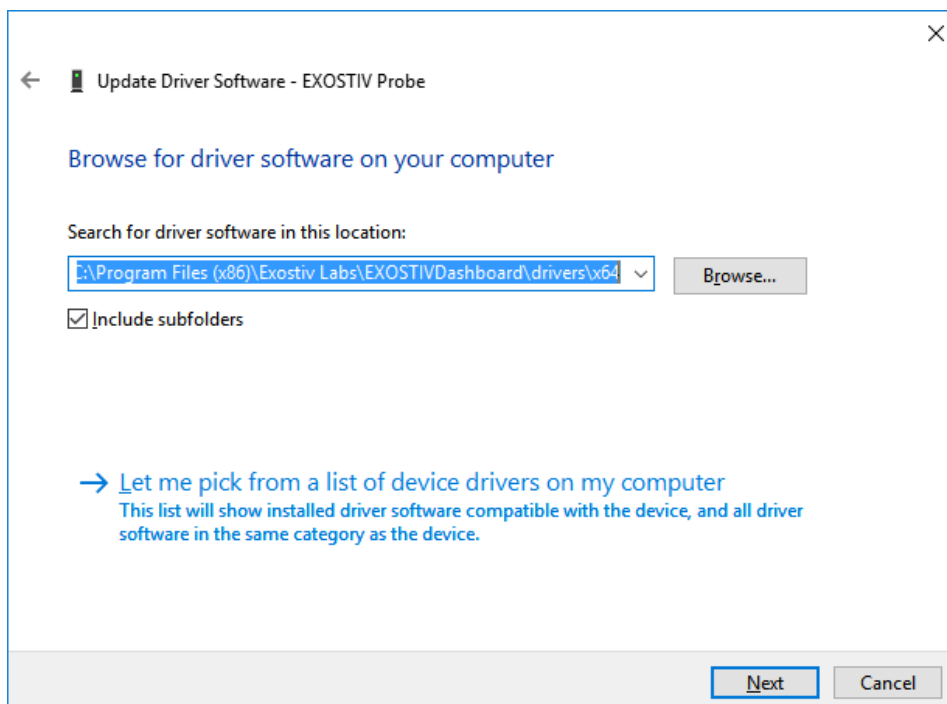
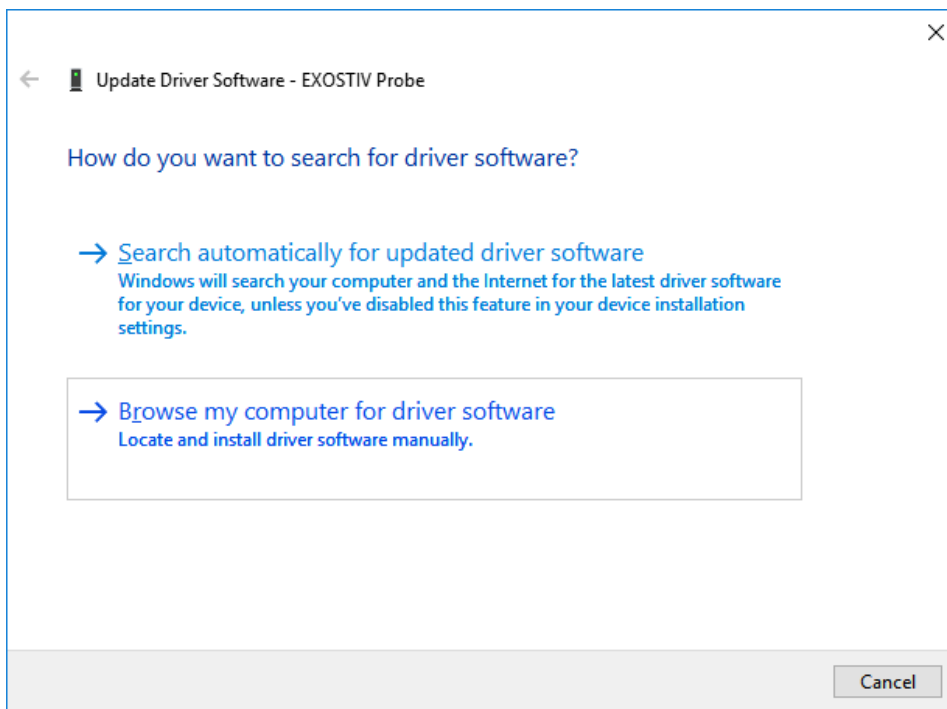
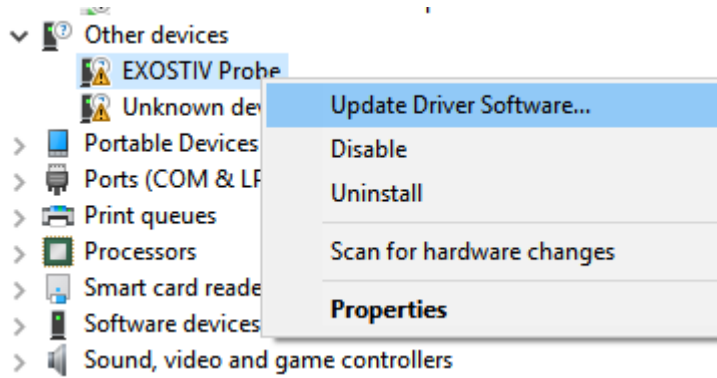
Installing the EXOSTIV Probe USB driver

The EXOSTIV probe requires a USB driver to be installed:

- 1) Connect the EXOSTIV Probe to the PC with the USB cable and power it on.
- 2) If not automatically prompted to install a driver, start Windows' Device Manager and locate the EXOSTIV Probe in the list:

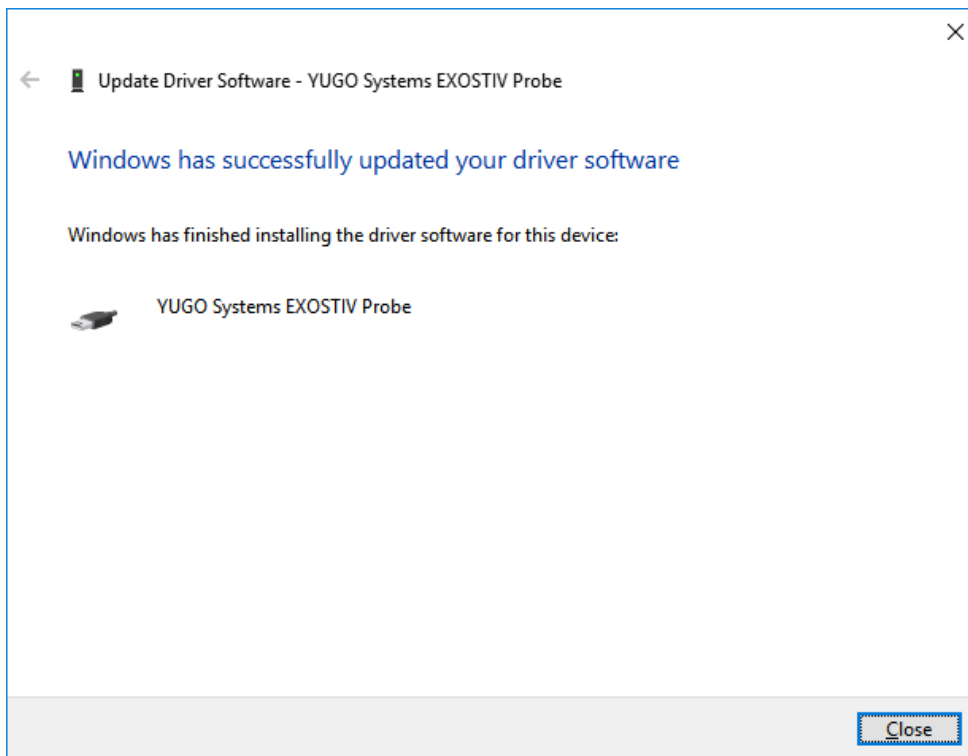
Right-click on 'EXOSTIV Probe' and select 'Update Driver Software...'





Select **'Browse my computer for driver software'** and specify the right location of the driver.

- For 32 bits windows, the default directory is **C:\Program Files\Exostiv Labs\EXOSTIVDashboard\drivers\x86**
- For 64 bits windows, the default directory is **C:\Program Files (x86)\Exostiv Labs\EXOSTIVDashboard\drivers\x64**



Installing the EXOSTIV Dashboard button in Vivado

Linking EXOSTIV Dashboard to Vivado for Core Insertion requires using a shortcut to a script in Vivado's toolbar. This shortcut is automatically added at the end of the EXOSTIV Dashboard software installation.

In cases where the installation program fails to locate the Vivado installation properly, it is possible that no button gets inserted in the Vivado toolbar.

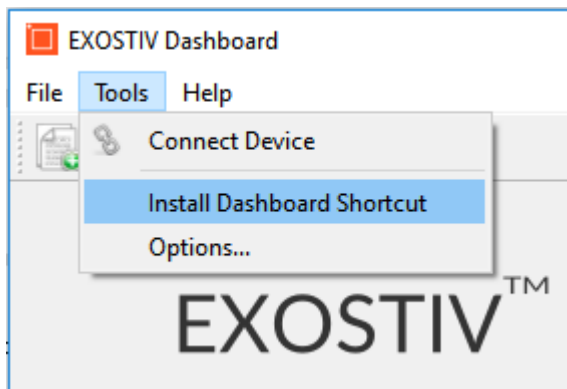
Please check your Vivado toolbar. If the EXOSTIV icon is NOT visible, then you have to install it manually:



To install the EXOSTIV Dashboard shortcut into Vivado, please use one of the following procedures:

Procedure #1 – Through EXOSTIV Dashboard menu (semi-automatic).

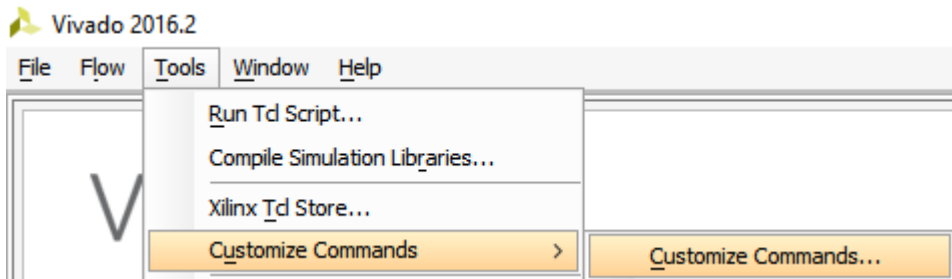
1. Close Vivado.
2. Start EXOSTIV Dashboard
3. Click on the following menu item: **Tools > Install Dashboard Shortcut**



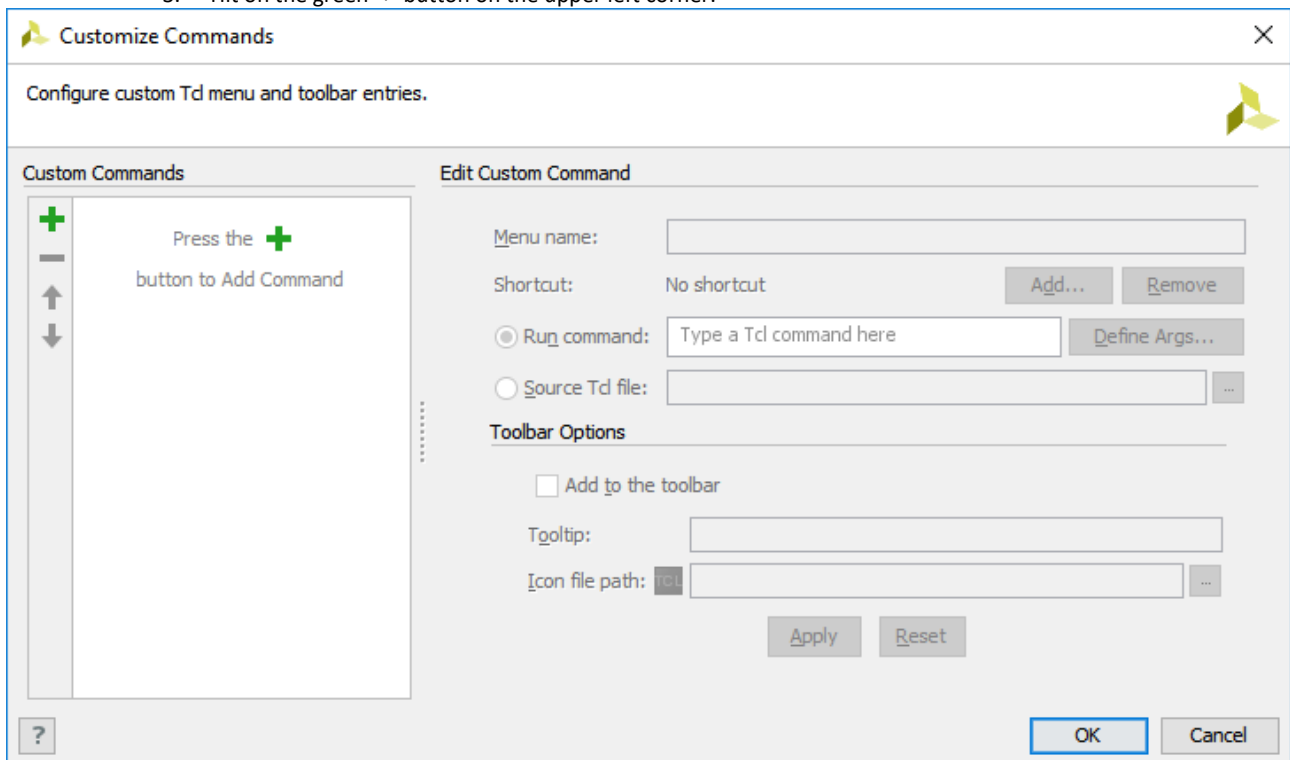
4. You should receive the message: 'Integration with Vivado succeeded'.

Procedure #2 – Setting it up from Vivado

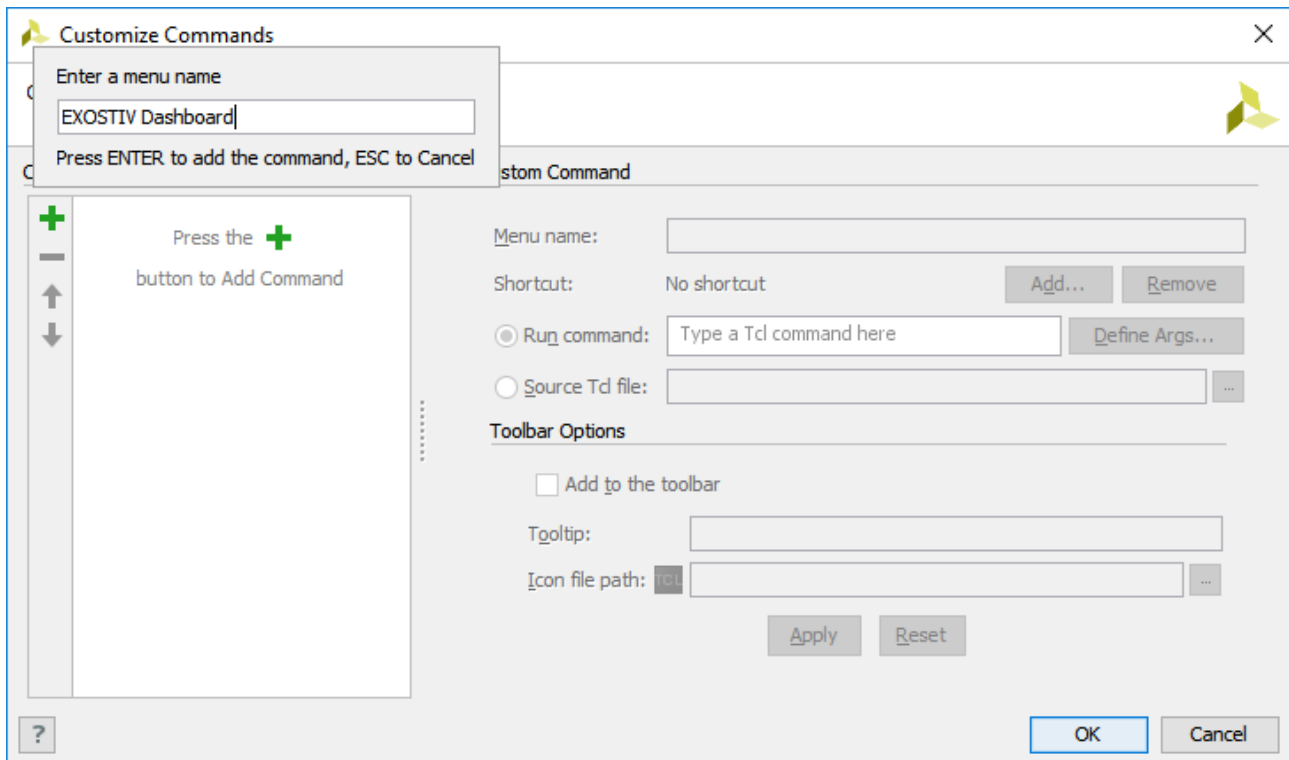
1. Start Vivado
2. Click on the following meny item: **Tools > Customize Commands > Customize commands...**



3. Hit on the green '+' button on the upper left corner:



4. Type 'EXOSTIV Dashboard' in the dialog that opens. Press **ENTER**.



5. Enter the following lines in the main dialog window:
 - Run command: `source "C:/Program Files (x86)/Exostiv Labs/EXOSTIVDashboard/vivado_server.tcl" -notrace`
 - Select 'Add to the toolbar'
 - Optionally add the following tooltip: Start EXOSTIV Dashboard
 - Icon file path: `C:/Program Files (x86)/Exostiv Labs/EXOSTIVDashboard/Exostiv-icon_32x32.png`

Please replace 'C:/Program Files (x86)/Exostiv Labs/EXOSTIVDashboard' with the alternate path that you used for installing the EXOSTIV Dashboard software.

Installing EXOSTIV Dashboard – Linux

Supported Linux distributions:

CentOS 6.7 & 6.8

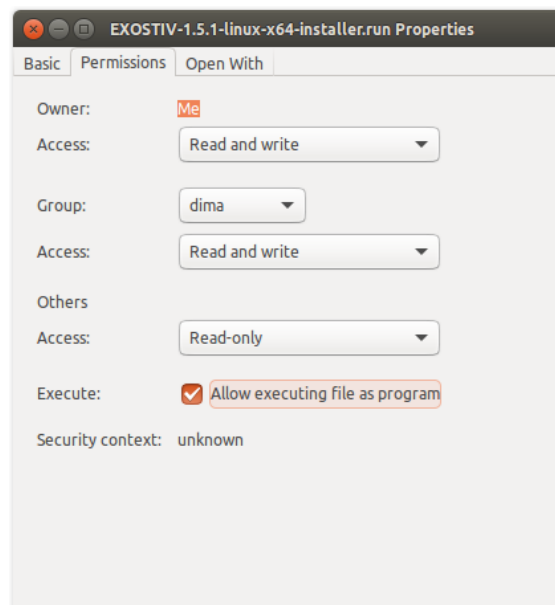
RHEL 6.4 & 6.5

Ubuntu from 16.04.

1. **Download** the latest version of EXOSTIV Dashboard: go to: www.exostivlabs.com/download
Pick the desired version and register to request the download.

2. **Make the installer executable**

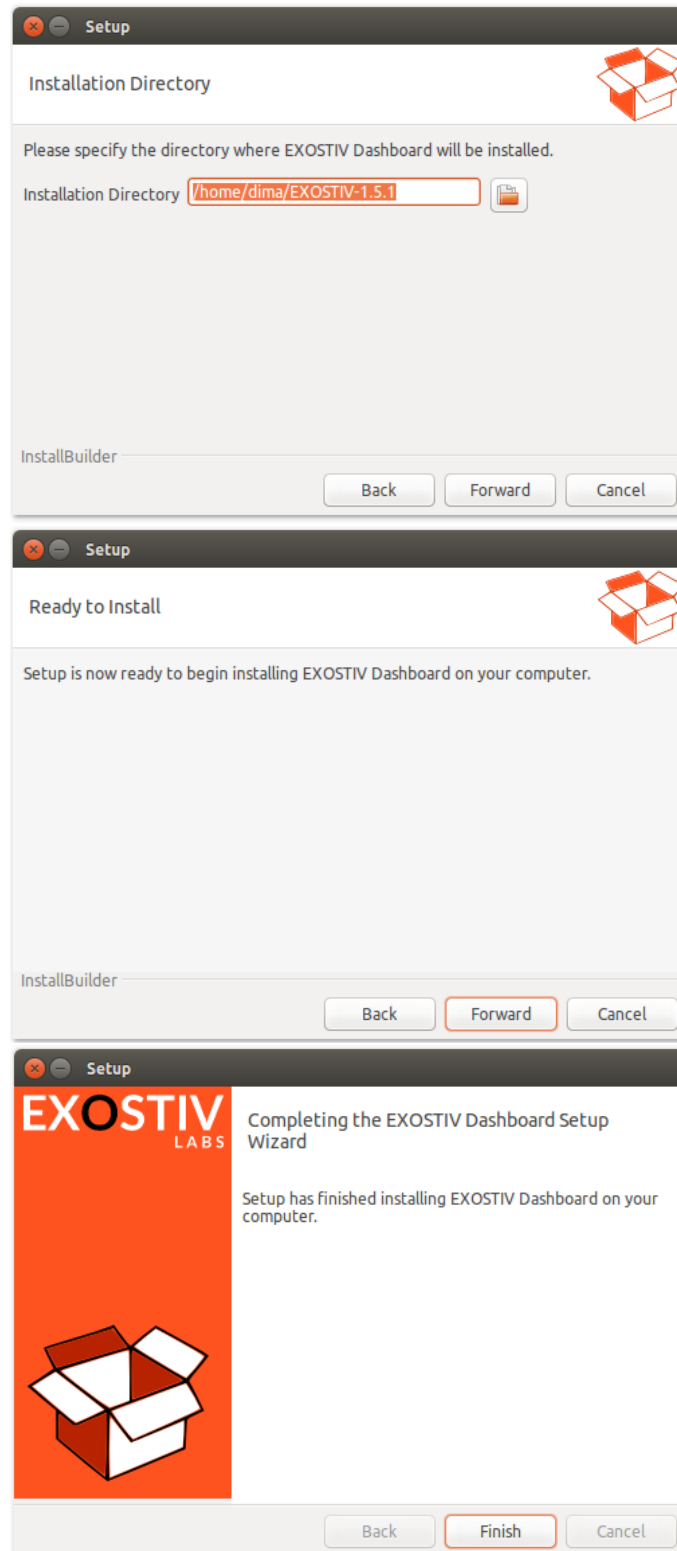
In the window manager, right-click on the installer. Select the “Permissions” tab and enable the “Allow executing file as program” checkbox.



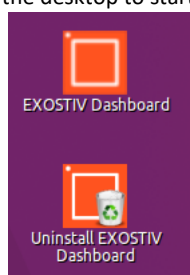
3. **Run the installer**

Double click on the installer to start the software installation. Click three times on “Forward”, then on “Finish”.





At the end of the installation, two new icons appear on the desktop to start and uninstall the application.



Before running the application

EXOSTIV Dashboard requires libusb-1.0-0 to access the probe. Type following command to install libusb:

- **sudo apt-get install libusb-1.0-0**

Enter the administrator password to complete the installation.

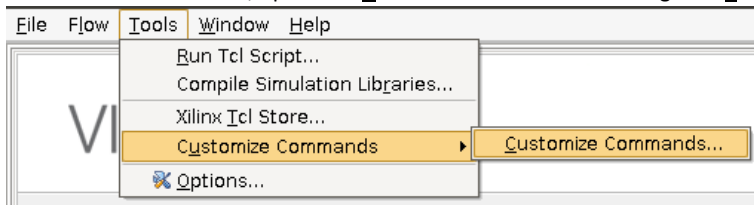
Libusb requires administrator privilege to use the USB bus. To remove this limitation, proceed as follows:

- **Open file** `"/lib/udev/rules.d/50-udev-default.rules"` in a text editor like gedit with administrator rights.
- **Search for the following line in the file:**
`SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device", MODE="0664"`
- **Replace with this line:**
`SUBSYSTEM=="usb", ENV{DEVTYPE}=="usb_device", MODE="0666"`
- **Save the file.**

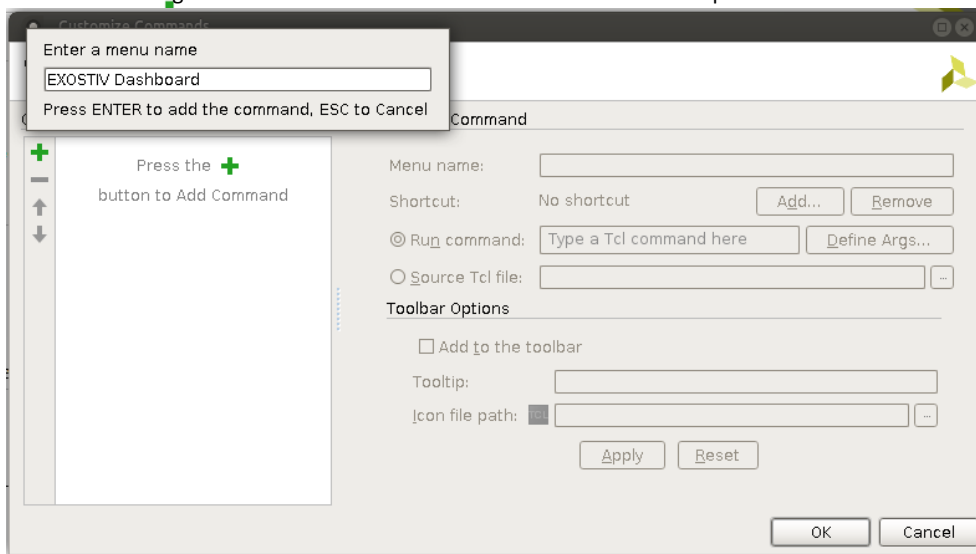
Integration with Vivado

Linking EXOSTIV Dashboard to Vivado for Core Insertion requires using a shortcut to a script in Vivado's toolbar.

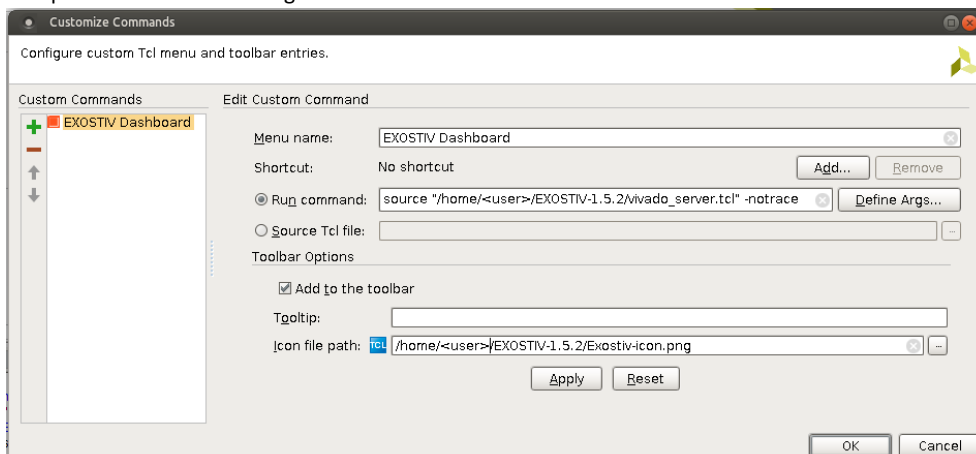
In Vivado, open the "Customize Commands..." dialog with **T**ools > **C**ustomize Commands > **C**ustomize Commands...



Click on the **sign** and enter "EXOSTIV Dashboard" as menu name and press Enter.



Complete the fields on the right side as follows:

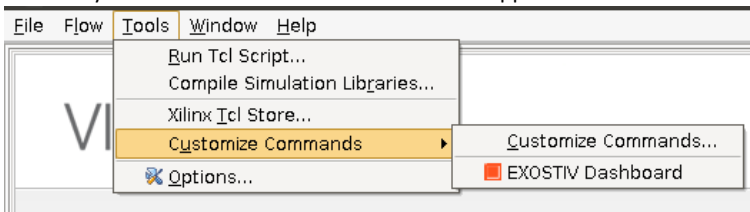


- Run command : `source "/home/<user>/<EXOSTIV installation directory>/vivado_server.tcl" -notrace`

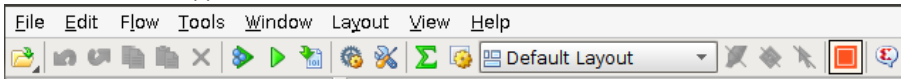
- Icon file path : /home/<user>/<EXOSTIV installation directory>/Exostiv-icon.png

Replace <user> with the user name. Or adapt the path according to the installation folder. Click on “OK” to validate the changes and close the dialog box.

The newly created custom command should now appear in the menu.



A new button will appear in the toolbar.



The new menu entry and the new button can now be used to start EXOSTIV Dashboard.

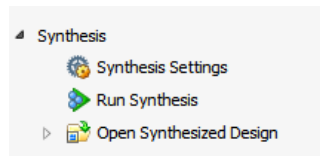
Using the application from a command prompt

The EXOSTIV Dashboard can be started from a command prompt. First go to the install folder, typically “cd ./EXOSTIV-1.5.4” and execute command “./ExostivDashboard.sh”.

Using EXOSTIV – Step by step guide

1. Load Synthesized design into Xilinx Vivado¹.

Open Vivado and load an existing design after synthesis. EXOSTIV IP core connects to nodes extracted from a netlist and is inserted into it with the FPGA vendor tool.



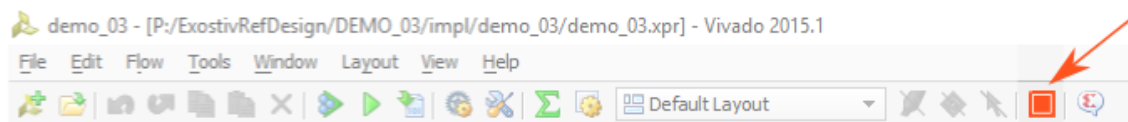
2. Start EXOSTIV Dashboard.



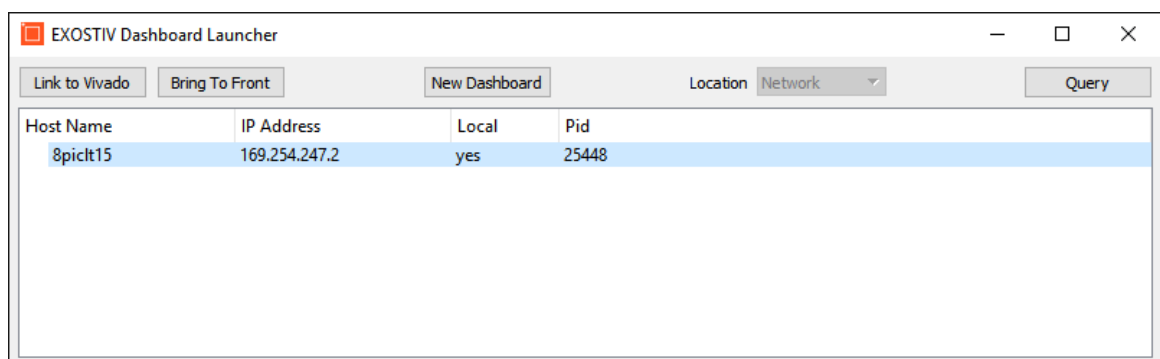
3. Establish a link between Vivado and EXOSTIV Dashboard.

This step is not necessary if you started EXOSTIV from the FPGA vendor tool.

To establish a link between the FPGA vendor tool and EXOSTIV Dashboard, click on the shortcut installed in Vivado toolbar.



A window opens, where you can select the running EXOSTIV Dashboard instance that you wish to link with Vivado. Select it and click on 'Link to Vivado'.



4. Use EXOSTIV Core Inserter to set up EXOSTIV IP.

Click on the 'Core Inserter' icon on the EXOSTIV Dashboard toolbar:



Set up EXOSTIV IP: refer to [Chapter 1 of UG601 – EXOSTIV Dashboard User's Guide](#).

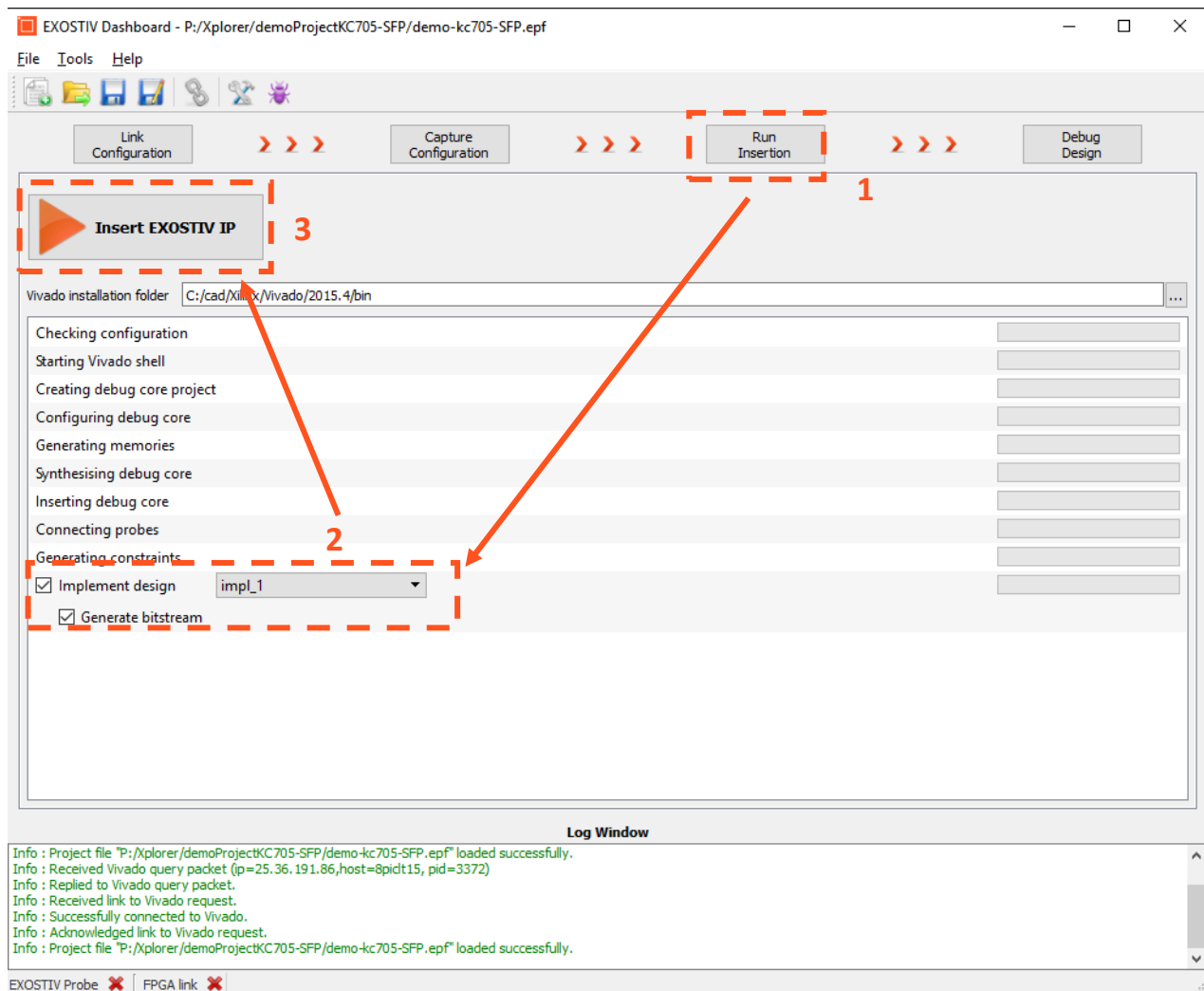
5. Use EXOSTIV Core Inserter to synthesize IP, insert it into the target design, run implementation and generate bitstream.

From the EXOSTIV Core Inserter, click on 'Run Insertion'.

Select whether you want to run implementation and bitstream generation.

¹ Xilinx and Vivado are trademarks of Xilinx, Inc. (www.xilinx.com).

Then click on 'Insert EXOSTIV IP button' on the top of the window.



6. Load target FPGA with the generated bitsream.

Use you preferred programming tool to upload the generated bitstream into the target FPGA.

7. Connect EXOSTIV Probe to the target FPGA board and start using EXOSTIV Analyzer.

Once the EXOSTIV Probe is connected to your PC with the USB cable, and powered-on, click on the 'Connect'

icon on the EXOSTIV Dashboard toolbar:

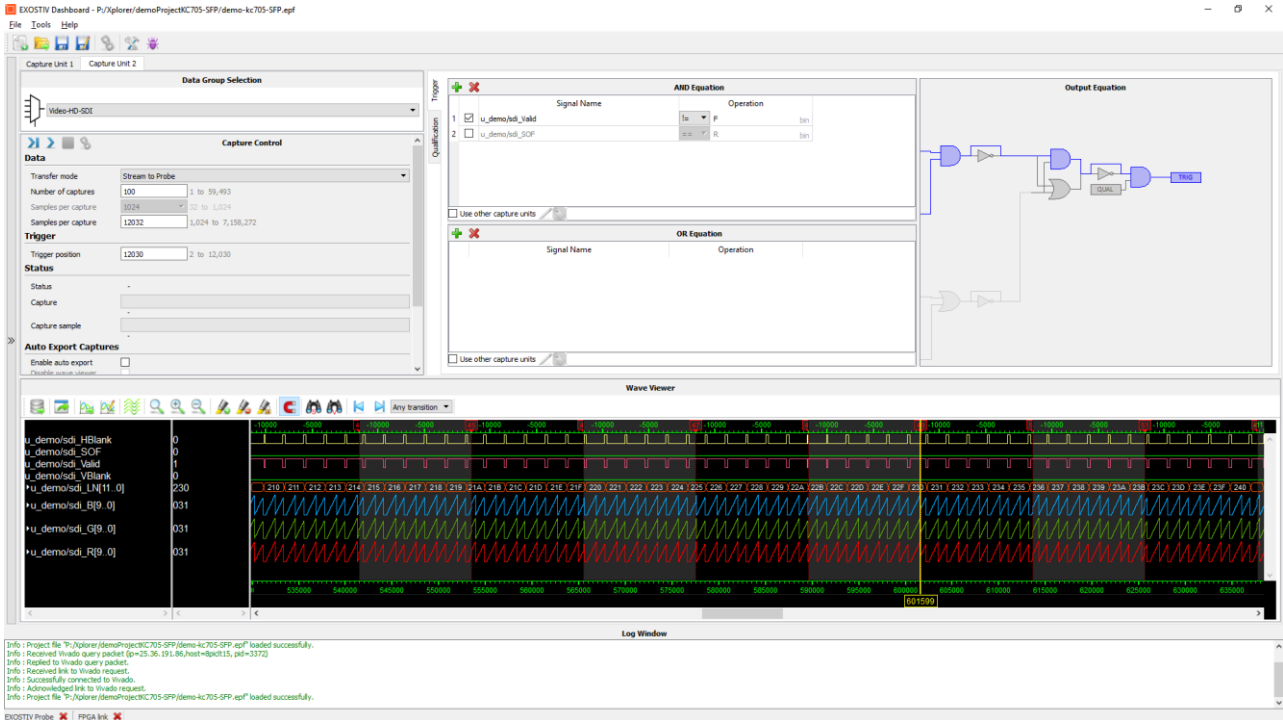


Once the EXOSTIV Probe is detected and connected, click on the 'Analyzer' icon on the EXOSTIV Dashboard

toolbar:

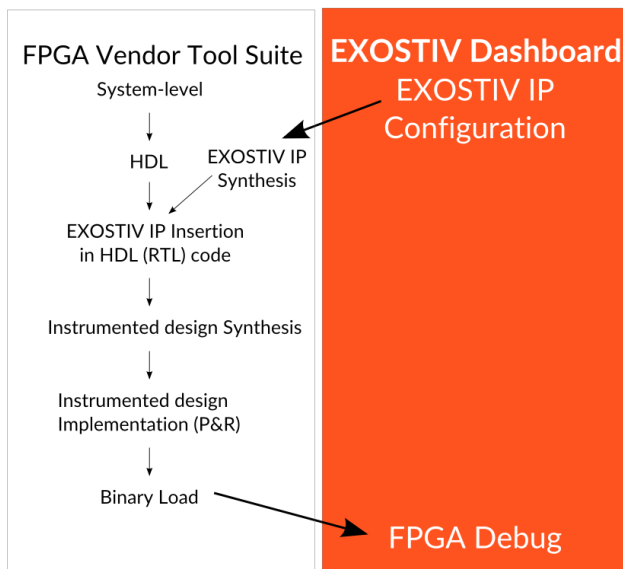


... and there you go for analyzing and debugging your target design!

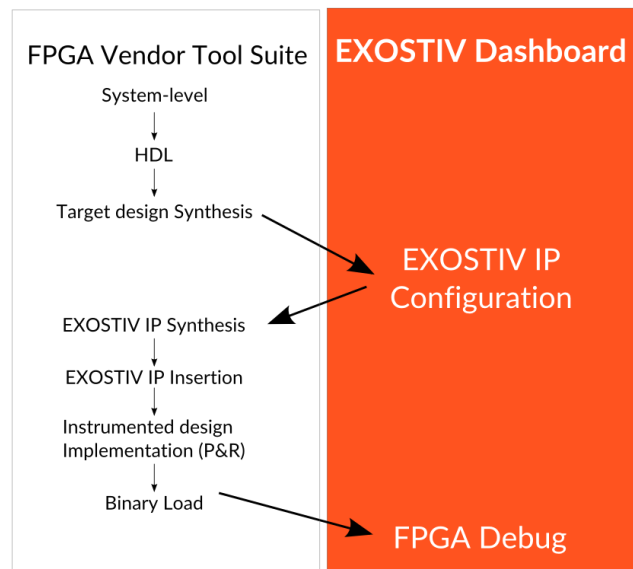


EXOSTIV for Xilinx FPGA – Overview

RTL flow



Netlist flow



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