Tutorial (Lab5): Creating a Custom IP Block in Vivado

In this week, you will learn how to create an IP block and to use it as a component in a bigger circuit.

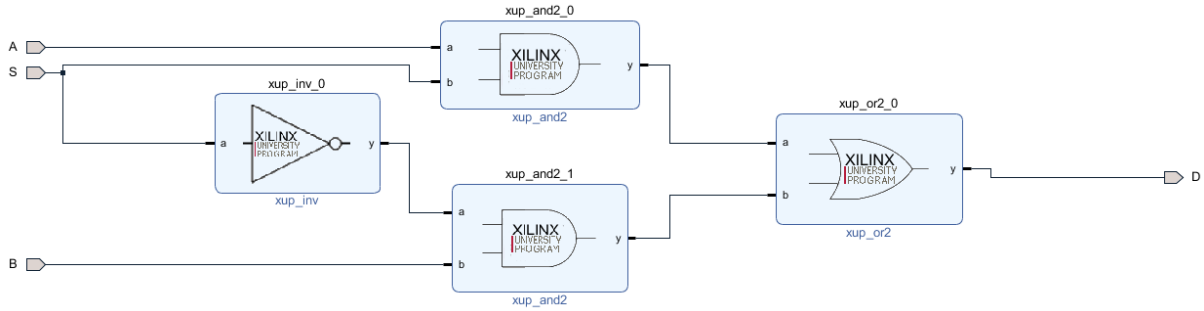
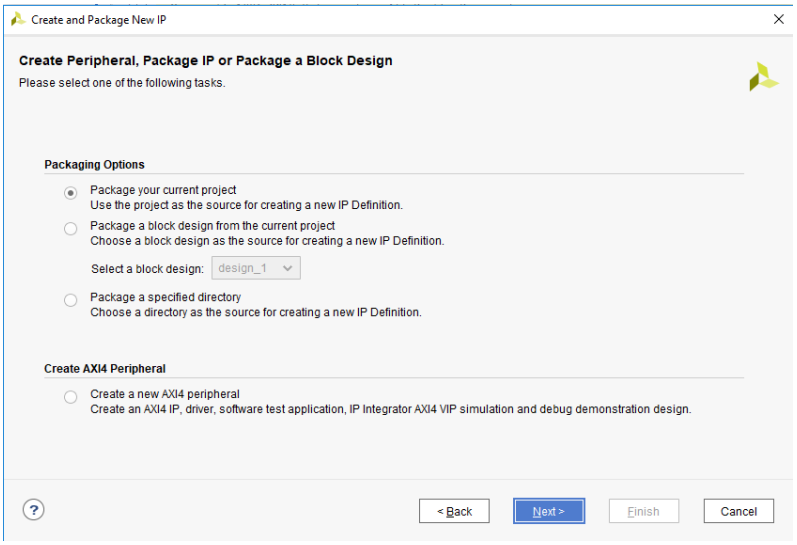


Figure 1 A circuit schematic diagram for an IP creation.

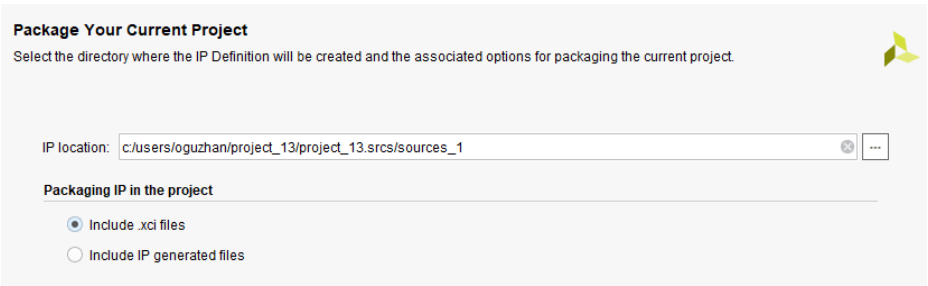
We will create an IP from a circuit in Figure 1. Although creating such a circuit in Vivado is a relatively simple task, if the same circuit is used in a bigger circuit many times as a basic block, it makes it very efficient to create an IP out of it, and to call the IP at the bigger circuit.

Step 1) Create a circuit of Figure 1, and its VHDL wrapper.

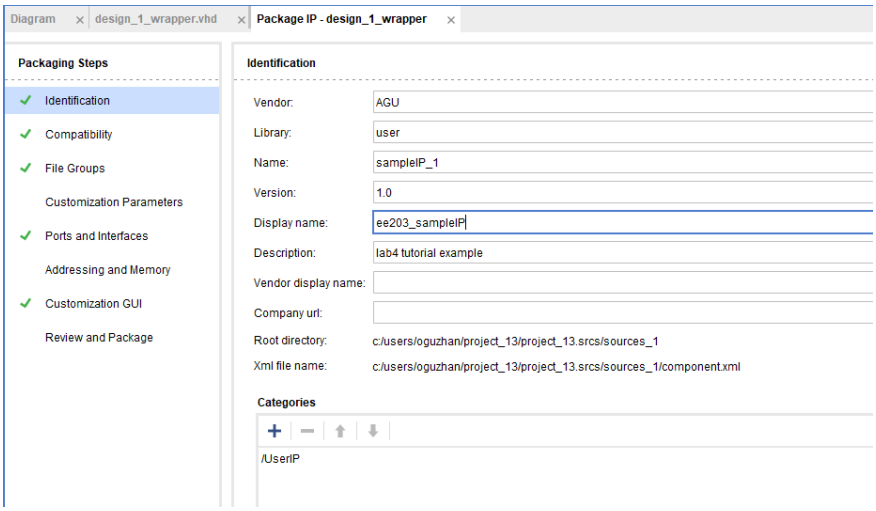
Step 2) Under **Tools,** choose **Create** and **Package New IP**.



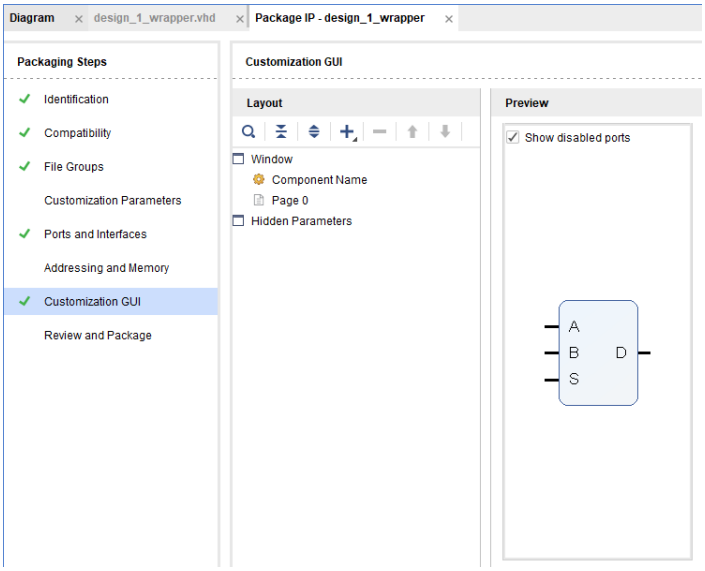
Step 3)



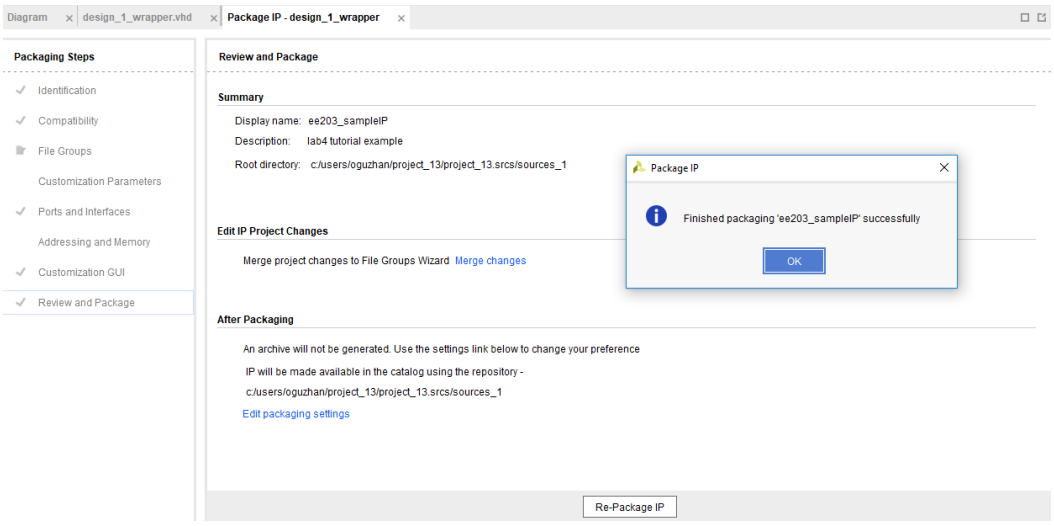
Step 4) Rename the IP and add some explanations. Make a note of the location of the IP.



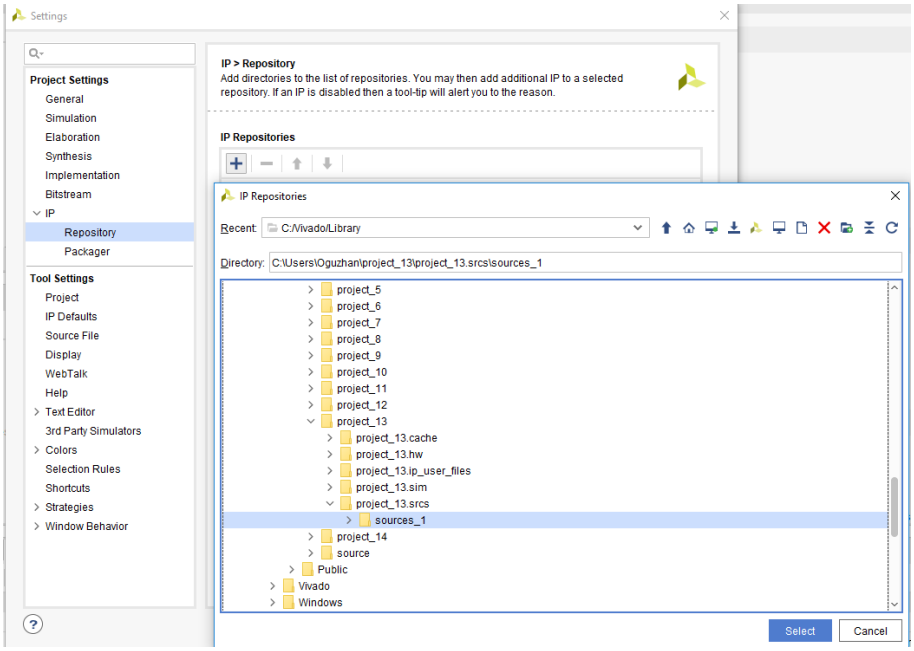
Step 5) Now, you can see the preview of the IP.

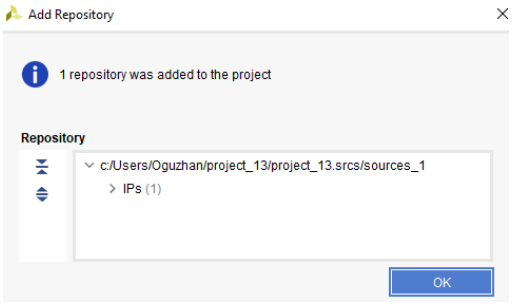


Step 6) Under the **Review and Package**, click on **Package**.



Step 7) Create a new project. Add the new IP to the IP repositories. Add XUP libraries as well, if you have not done it yet.





Step 8) Now, you can use the new IP to create a more complicated circuit as given below.