



VIVADO Simulator

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TA : Po-Ta, Chen



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2. Click “Downloads”
3. Click “Select Vivado”
4. Choose Version “2020.2”



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Version

2022.1

2021.2

2021.1

Vivado Archive

ISE Archive

CAE Vendor Libraries
Archive

We strongly recommend using the latest releases available.


2020

2020.3

2020.2

Vivado Design Suite - HLx Editions - 2020.2 Full Product Installation

Click

 Xilinx Unified Installer 2020.2: Windows Self Extracting Web Installer (EXE - 248.44 MB)

MD5 SUM Value : 102bb67c6806a6667dc7176be7997475

Download Verification 

Digests

Signature

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2. Sign In

1. Create Account



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Create Account

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User ID *

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Your Xilinx.com account has been created but not activated. An E-mail has been sent to wendyfang1028@gmail.com. Please follow the instructions in the E-mail to activate your account and continue with the registration process.

Thank you,
Xilinx, Inc.

Xilinx Registration: Account Activation



收件匣 x



login_help@xilinx.com

寄給我



英文



中文 (繁體)



翻譯郵件

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To activate your Xilinx.com account, visit the following link within 30 days and log in with your User ID:
<https://secure.xilinx.com/webreg/activate.do?languageID=1&key=dne1f258ff3>

User ID: fangfang1028

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Sincerely,
Xilinx Customer Service

3.Authenticate E-mail



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My Profile

Please update your profile information by expanding the selections below.

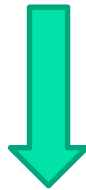
Fields marked with an asterisk * are required.

1.Full

- ☐ Personal Information
- ☐ Documentation and Design Advisory Alerts
- ☐ E-mail Announcements, Xcell Journal, and monthly Newsletter

Save Profile

2.Click



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Last Name*

Email*

Company Name*

Address 1*

Address 2

City*

State*

Country*

Zip Code*

Phone

Job Function*

Primary Market*

Next

2.Back to Download

Xilinx_Vivado_SD....exe



Install Xilinx VIVADO

Vivado 2017.2 Installer - Welcome



Welcome

We are glad you've chosen Xilinx as your platform development partner. This program can install the Vivado Design Environment, Software Development Kit and Documentation Navigator.

Supported operating systems for Vivado 2017.2 are:

- Windows 7.1: 64-bit
- Windows 10.0 Anniversary Update: 64-bit
- Red Hat Enterprise Linux 6.6-6.8: 64-bit
- Red Hat Enterprise Linux 7.2-7.3: 64-bit
- CentOS Linux 6.7-6.8: 64-bit
- CentOS Linux 7.2-7.3: 64-bit
- SUSE Enterprise Linux 11.4: 64-bit
- SUSE Enterprise Linux 12.2: 64-bit
- Ubuntu Linux 16.04.1 LTS: 64-bit - Additional library installation required

Note: 32-bit machine support is now only available through HW Server standalone product installers

Note: This installation program will not initialize trusted storage or install cable drivers on Linux. These items will need to be installed separately, with administrative privileges.

To reduce installation time, we recommend that you disable any anti-virus software before continuing.



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Preferences

< Back

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Install Xilinx VIVADO

Vivado 2017.2 Installer - Select Install Type

Select Install Type

Please select install type and provide your Xilinx.com user ID and password for authentication.

User Authentication

Please provide your Xilinx user account credentials to download the required files.
If you don't have an account, [please create one](#). If you forgot your password, you can [reset it here](#).

User ID: husky7854

Password: ●●●●●●●●

☒ Download and Install Now

Select your desired device and tool installation options and the installer will download and install just what is required. Downloaded installation files will be saved for future use.
NOTE: Future installs using these downloaded files will be restricted to the options selected during this install. For access to all options later, choose "Download Full Image".

☐ Download Full Image (Install Separately)

The installer will download an image containing all devices and tool options for later installation. Use this option if you wish to install a full image on a network drive or allow different users maximum flexibility when installing.

< Back Next > Cancel



Install Xilinx VIVADO

Vivado 2017.4 Installer - Accept License Agreements

Accept License Agreements

Please read the following terms and conditions and indicate that you agree by checking the I Agree checkboxes.

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By checking "I AGREE" below, or OTHERWISE ACCESSING, DOWNLOADING, INSTALLING or USING THE SOFTWARE, YOU AGREE on behalf of licensee to be bound by the agreement, which can be viewed by [clicking here](#).

☒ I Agree **1.Choose**

WebTalk Terms And Conditions

By checking "I AGREE" below, I also confirm that I have read [Section 13 of the terms and conditions](#) above concerning WebTalk and have been afforded the opportunity to read the WebTalk FAQ posted at <https://www.xilinx.com/products/design-tools/webtalk.html>. I understand that I am able to disable WebTalk later if certain criteria described in Section 13(c) apply. If they don't apply, I can disable WebTalk by uninstalling the Software or using the Software on a machine not connected to the internet. If I fail to satisfy the applicable criteria or if I fail to take the applicable steps to prevent such transmission of information, I agree to allow Xilinx to collect the information described in Section 13(a) for the purposes described in Section 13(b).

☒ I Agree **2.Choose**

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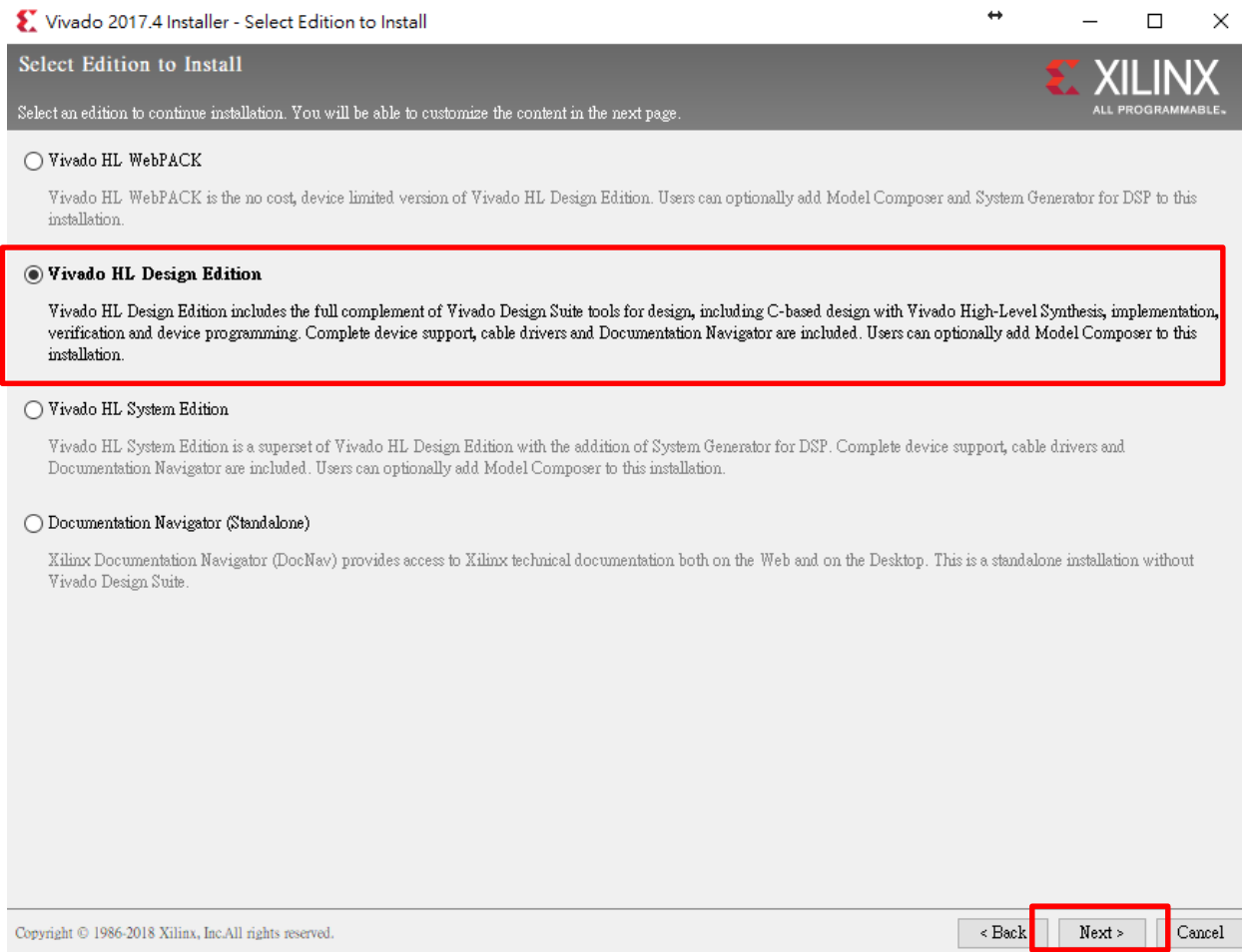
☒ I Agree **3.Choose**

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Install Xilinx VIVADO





Install Xilinx VIVADO

Vivado HL Design Edition 

Customize your installation by (de)selecting items in the tree below. Moving cursor over selections below provide additional information.

Vivado HL Design Edition includes the full complement of Vivado Design Suite tools for design, including C-based design with Vivado High-Level Synthesis, implementation, verification and device programming. Complete device support, cable drivers and Documentation Navigator are included. Users can optionally add the Software Development Kit to this installation.

- ☒ Design Tools
 - ☐ Vivado Design Suite
 - ☐ Software Development Kit (SDK)
 - ☒ DocNav
- ☒ Devices
 - ☒ Production Devices
 - ☒ SoCs
 - ☒ 7 Series
 - ☒ UltraScale
 - ☒ UltraScale+
 - ☐ Engineering Sample Devices
- ☒ Installation Options
 - ☒ Install Cable Drivers
 - ☒ Acquire or Manage a License Key
 - ☒ Enable WebTalk for Vivado to send usage statistics to Xilinx (Always enabled for WebPACK license)
 - ☐ Install WinPCap for Ethernet Hardware Co-simulation
 - ☐ Launch configuration manager to associate System Generator for DSP with MATLAB
 - ☐ Enable WebTalk for SDK to send usage statistics to Xilinx

Download Size: 12.95 GB
Disk Space Required: 43.29 GB

[Reset to Defaults](#)

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[< Back](#) [Next >](#) [Cancel](#)



Install Xilinx VIVADO

Select Destination Directory

Choose installation options such as location and shortcuts.

Installation Options
Select the installation directory
C:\Xilinx| ...

Installation location(s)
C:\Xilinx\Vivado\2017.2
C:\Xilinx\Vivado_HLS\2017.2
C:\Xilinx\DocNav

Download location
C:\Xilinx\Downloads\Vivado_2017.2

Disk Space Required
Download Size: 12.95 GB
Disk Space Required: 43.29 GB
Disk Space Available: 235.03 GB

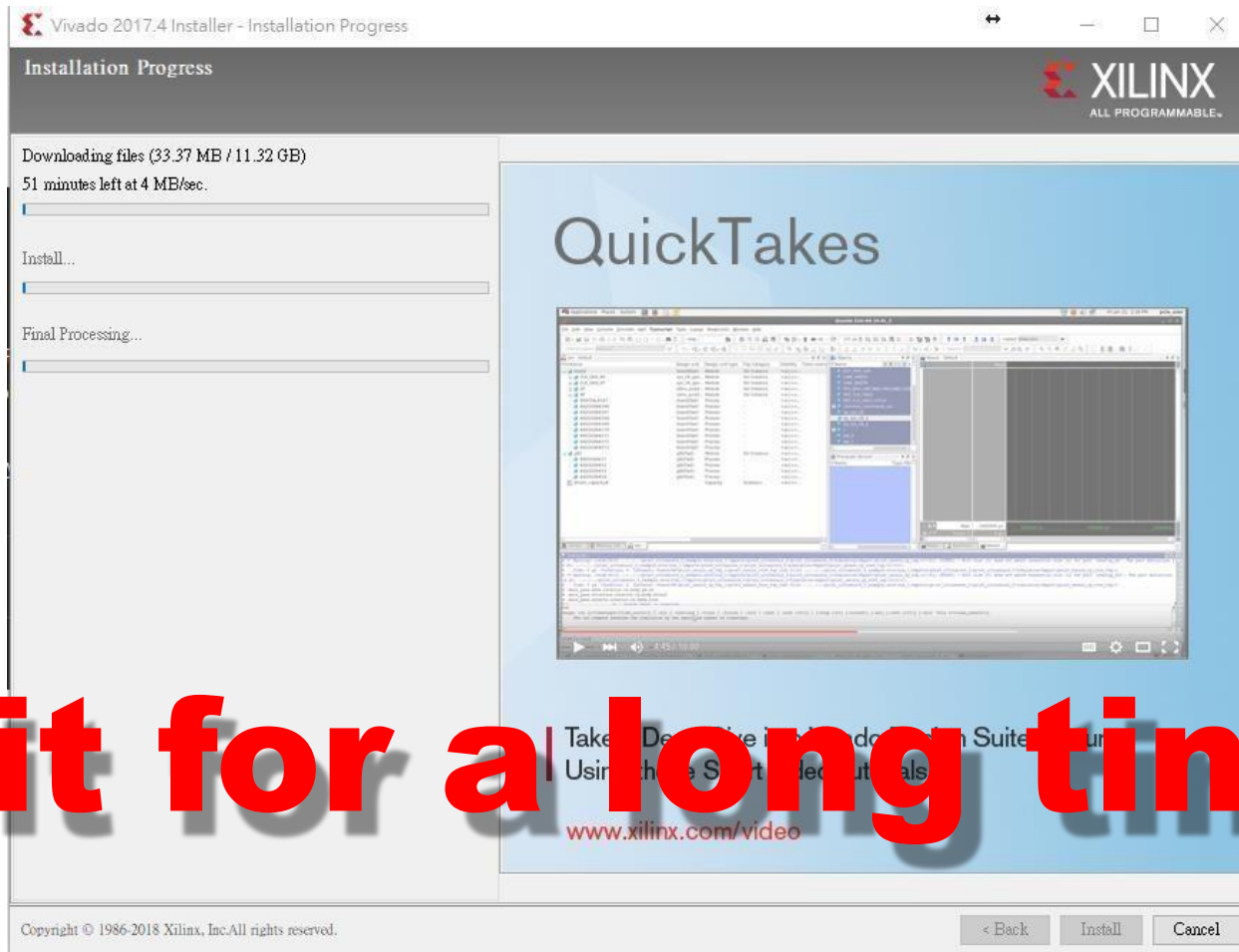
Select shortcut and file association options
☒ Create program group entries
Xilinx Design Tools
☒ Create desktop shortcuts
☒ Create file associations
Apply shortcut & file association selections to
☒ Current user
☐ All users

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< Back **Next >** Cancel



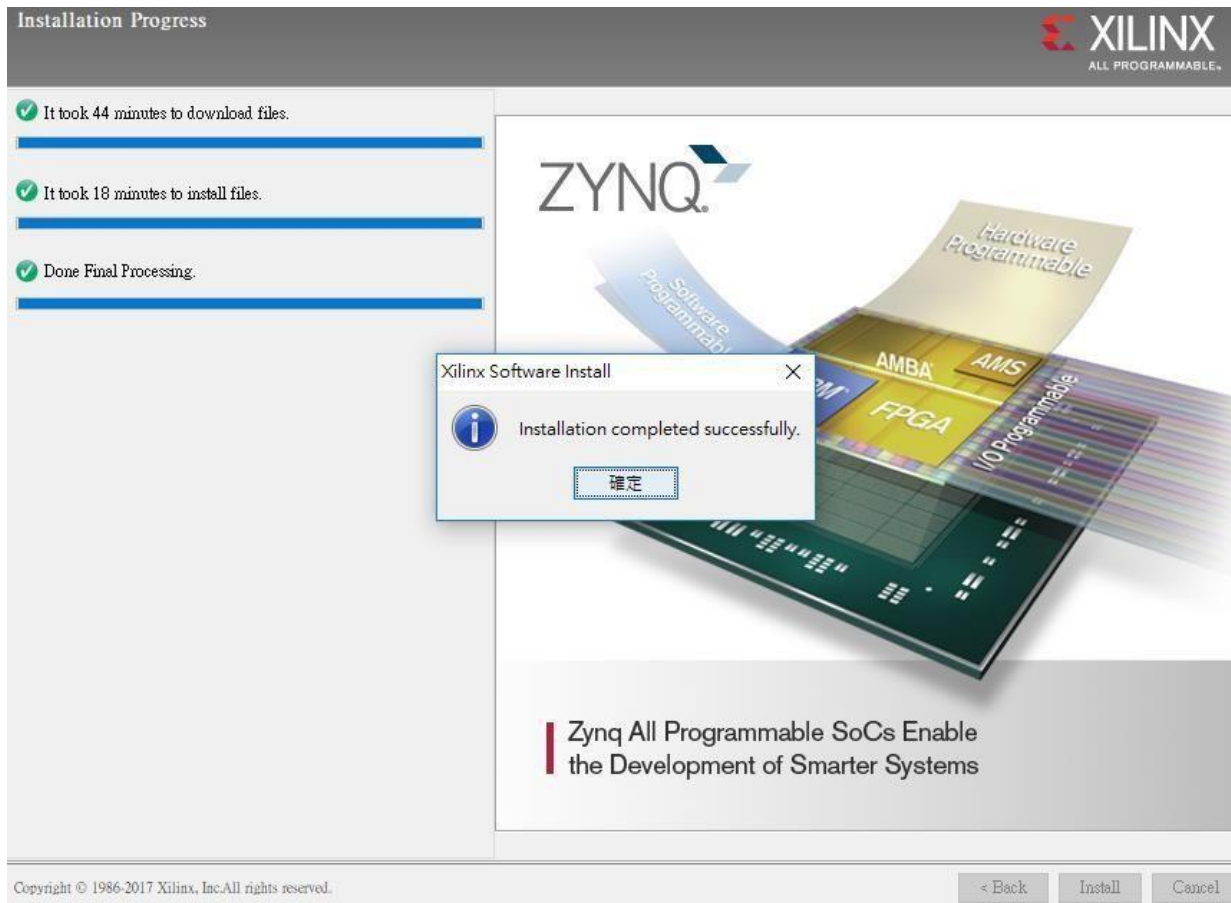
Install Xilinx VIVADO



Wait for a long time...



Finish





Setting license

File Help

VIVADO.

License Manager

XILINX
ALL PROGRAMMABLE.

- Get License
 - Set Proxy
 - Obtain License
 - Load License
- Manage License
 - Manage License Search Paths
 - View License Status
 - Borrow/Restore License Seat
 - Return License to Xilinx
- View System Information
 - View Host Information

2.Click

Obtain License

Select one of the following options

- ☐ Start Now! 30 Day Trial (No Bitstream)
- ☐ Get Vivado or IP Evaluation Licenses
- ☒ Get Free ISE WebPACK, ISE/Vivado IP or PetaLinux Licenses
- ☐ Get My Full or Purchased Certificate-Based License
- ☐ Get My Full or Purchased Activation-Based License

1.Choose

Connect Now

Save Link As...

Description of the above selected option

Get a free ISE WebPACK, PetaLinux or 180-day IP evaluation license (valid for either ISE or Vivado). You will be taken to the Xilinx website where you can generate a license. After generation, the license file is sent to your e-mail. Once you have saved this file to your machine, click on the Load License selection to copy your .lic file to a default location.



Setting license

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Password *

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*Fields marked with an asterisk * are required.*

First Name *	<input type="text"/>
Last Name *	<input type="text"/>
Address 1 *	<input type="text"/>
Address 2	<input type="text"/>
City *	<input type="text"/>
Postal/Zip Code *	<input type="text"/>
Country *	<input type="text" value="Taiwan"/>
State/Province	<input type="text" value="Select One"/> <input type="text"/>
	help
Phone (include area code) *	<input type="text"/>
Corporate Email	<input type="text" value="wendyfang1028@gmail.co"/>
Company/Organization *	<input type="text"/>
	Update profile
Job Function *	<input type="text" value="Select one"/>
Primary Market *	<input type="text" value="Select one"/>

1.Full

Next

2.Click



Setting license

Create a New License File

Create a new license file by making your product selections from the table below. ?

Certificate Based Licenses

	Product	Type	License	Available Seats	Status	Subscription End Date	
<input type="checkbox"/>	SDSoC Environment, 60 Day Evaluation License	Certificate - Evaluation	Node	1/1	Current	60 days	^
<input type="checkbox"/>	Model Composer : 90-day Evaluation License	Certificate - Evaluation	Node	1/1	Current	90 days	
<input type="checkbox"/>	Vivado Design Suite (No ISE): 30-Day Evaluation License	Certificate - Evaluation	Node	1/1	Current	30 days	
<input checked="" type="checkbox"/>	Vivado Design Suite: HL WebPACK 2015 and Earlier License	Certificate - No Charge	Node	1/1	Current	None	
<input type="checkbox"/>	PetaLinux Tools License	Certificate - Evaluation	Node	1/1	Current	365 days	
<input type="checkbox"/>	Vivado HLS Evaluation License	Certificate - Evaluation	Node	1/1	Current	30 days	

Next Next Next Next

Generate Node-Locked License



Setting license

Generate Node License

*Fields marked with an asterisk * are required.*

1 PRODUCT SELECTION

Product Selections *	Product	Type	Available Seats	Subscription End Date	Requested Seats	Borrowed Seats
<input checked="" type="checkbox"/>	Vivado Design Suit...	No Charge	1/1	None	1	

2 SYSTEM INFORMATION

License	Node
Host ID *?	Any

3 COMMENTS

Comments ?	
------------	--

Next [Cancel](#)

Generate Node License

4 REVIEW LICENSE REQUEST

[Product Selections](#)

Product	Subscription End Date	Available Seats	Requested Seats
Vivado Design Suite: HL WebPACK 2015 and E...		1/1	1

[System Information](#)

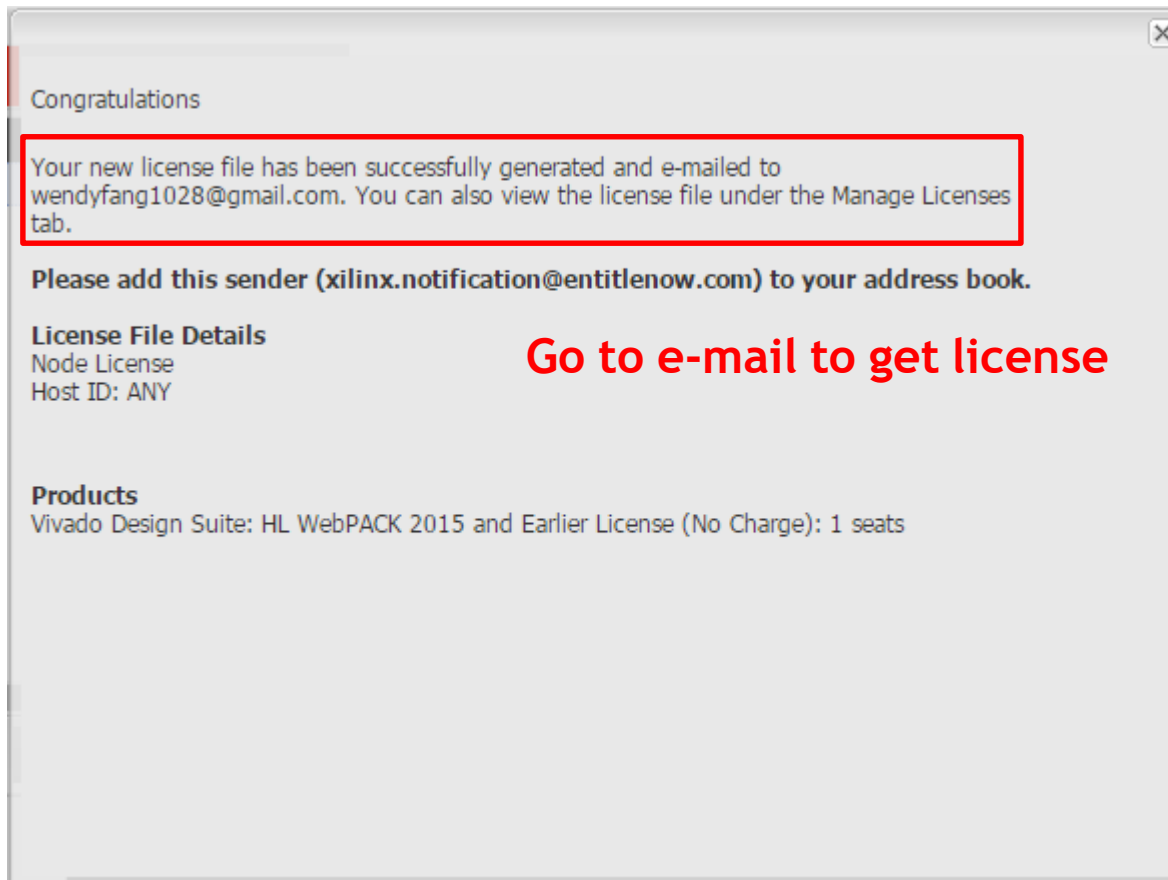
License	Node
Host ID	ANY

Note: WebTalk is always enabled for WebPACK users. WebTalk ignores user and install preference when a bitstream is generated using the WebPACK license. If a design is using a device contained in WebPACK and a WebPACK license is available, the WebPACK license will always be used. To get additional information on WebTalk, go to www.xilinx.com/webtalk.

[Previous](#) **Next** [Cancel](#)



Setting license





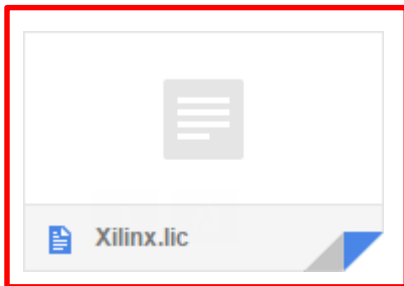
Setting license

Dear **FANG LUO**:

Thank you for licensing your Xilinx® design tool or IP core product. This email includes the certificate license file to enable your product.

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<http://www.xilinx.com/getlicense>





Setting license

Vivado License Manager 2017.2

File Help

VIVADO License Manager

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- Set Proxy
- Obtain License
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Manage License

- Manage License Search Paths
- View License Status
- Borrow/Restore License Seat
- Return License to Xilinx

View System Information

- View Host Information

Load License

Certificate Based Licenses

Click the 'Copy License' button to copy a certificate-based license (.lic file) into the %HOMEDRIVE%\Xilinx directory. Xilinx applications automatically detect valid, node-locked licenses (*.lic) residing in the %HOMEDRIVE%\Xilinx directory.

Copy License...

Select License File

Click the 'A' button to activate the license.

Activate

Search (I): Xilinx_Vivado

Files:

- .xinstall
- DocNav
- Downloads
- Vivado
- Vivado_HLS
- xic
- Xilinx.lic**

File name (N):

File type (T): License files (*.lic)

開啟

取消

Vivado License Manager



License installation was successful: C:\Xilinx\Xilinx.lic

確定



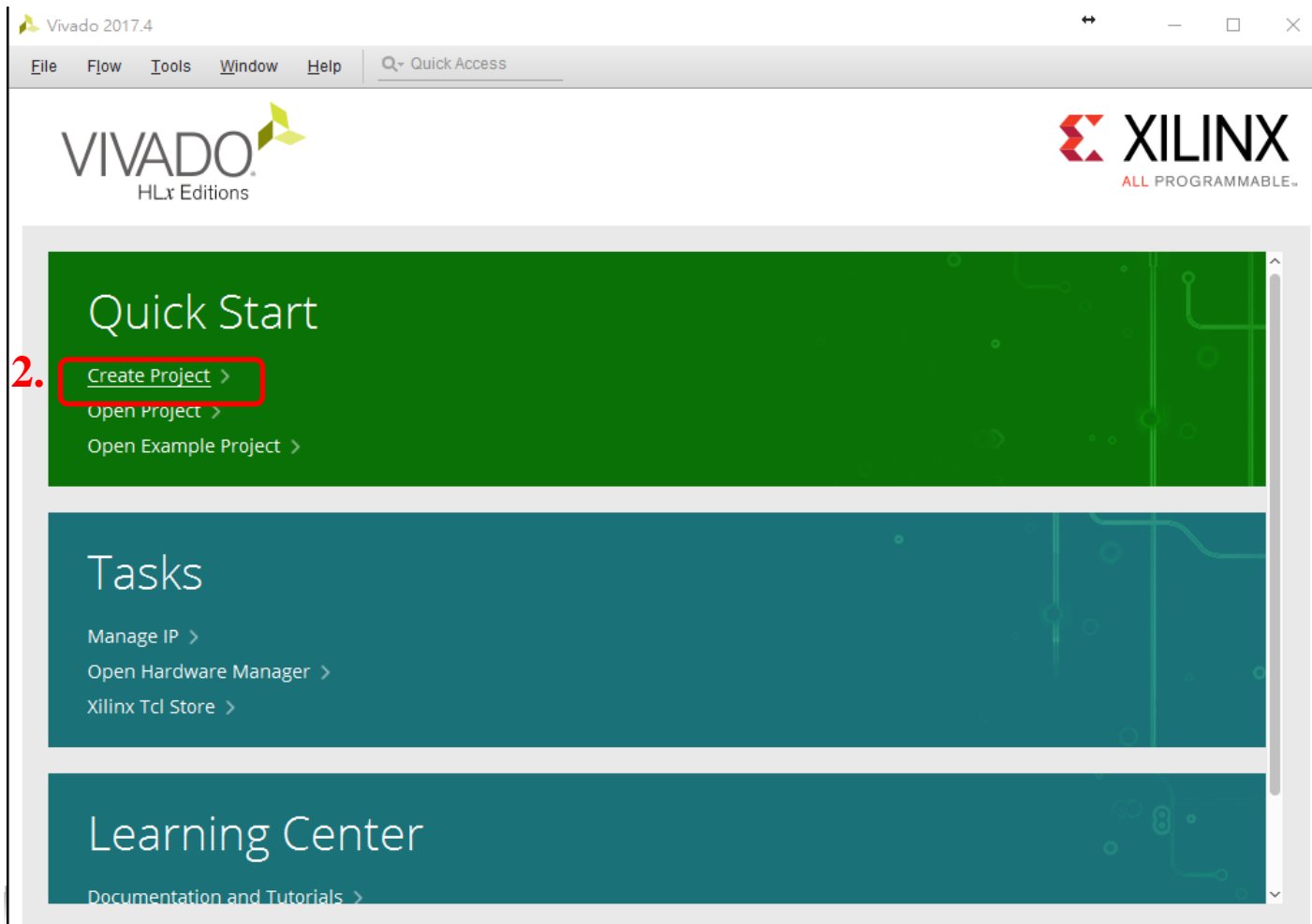


Create a New Project(1 / 5)

1.



2.





Create a New Project(2/5)

1. Project name

New Project

Project Name
Enter a name for your project and specify a directory where the project data files will be stored.

Project name:

Project location: ...

☒ Create project subdirectory

Project will be created at: D:/DCCL/project_1

2.





Create a New Project(3/5)

New Project

Project Type

Specify the type of project to create.

☒ **RTL Project**
You will be able to add sources, create block designs in IP Integrator, generate IP, run RTL analysis, synthesis, implementation, design planning and analysis.

☐ Do not specify sources at this time

☐ **Post-synthesis Project** You will be able to add sources, view device resources, run design analysis, planning and implementation.

☐ Do not specify sources at this time

☐ **I/O Planning Project**
Do not specify design sources. You will be able to view part/package resources.

☐ **Imported Project**
Create a Vivado project from a Synplify, XST or ISE Project File.

☐ **Example Project**
Create a new Vivado project from a predefined template.

? < 上一步(B) Next > Finish Cancel



Create a New Project(3/5)

New Project

Add Sources

Specify HDL, netlist, Block Design, and IP files, or directories containing those files, to add to your project. Create a new project if you do not have an existing project. You can also add and create sources later.

Add Constraints (optional)

Specify or create constraint files for physical and timing constraints.

Use Add Files or Create File buttons below

Use Add Files or Create File buttons below

language: Mixed

< Back Next > Finish Cancel

< Back Next > Finish Cancel



Create a New Project(4/5)

New Project

Default Part
Choose a default Xilinx part or board for your project.

1. **Parts** Boards

Reset All Filters

Category: All Package: All Temperature: All
Family: All Speed: All Static power: All

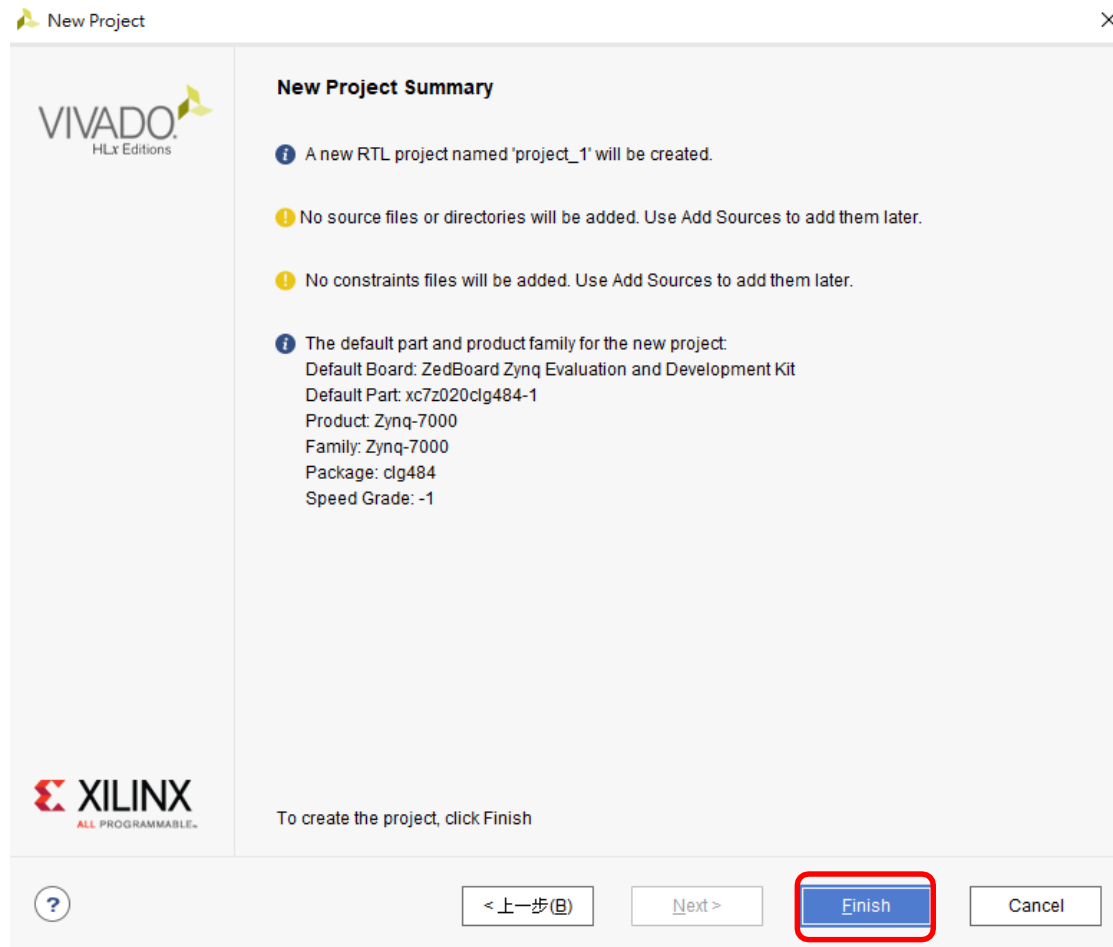
2. Search: XC7a200Tfbg676 (4 matches)

Part	I/O Pin Count	Available IOBs	LUT Elements	FlipFlops	Block RAMs	Ultra RAMs	DSPs	Gt
xc7a200tfbg676-3	676	400	134600	269200	365	0	740	8
xc7a200tfbg676-2	676	400	134600	269200	365	0	740	8
xc7a200tfbg676-2L	676	400	134600	269200	365	0	740	8
3. xc7a200tfbg676-1	676	400	134600	269200	365	0	740	8

4. < Back Next > Finish Cancel



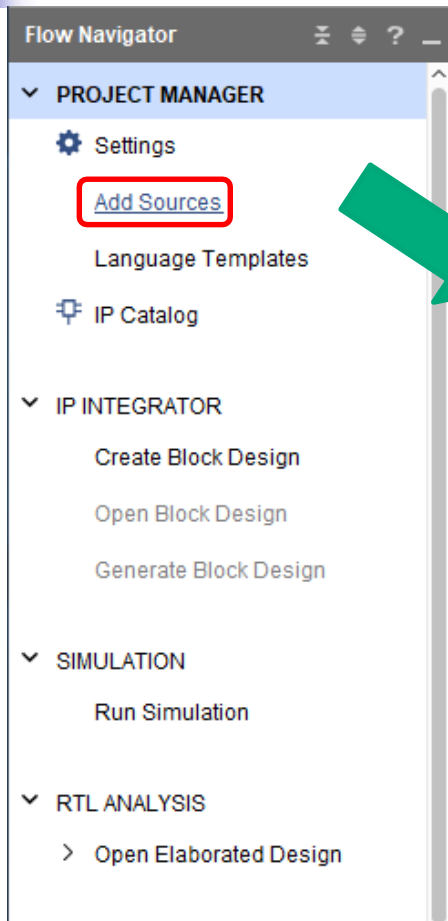
Create a New Project(5/5)





Add Sources(1 / 3)

1. click



Add Sources

This guides you through the process of adding and creating sources for your project

- ☐ Add or create constraints
- ☒ Add or create design sources
- ☐ Add or create simulation sources

2.



Add Sources(2/3)

Add Sources

Add or Create Design Sources

Specify HDL, netlist, Block Design, and IP files, or directories containing those file types to add to your project. Create a new source file on disk and add it to your project.

Index	Name	Library	Location
1	Lab_1.v	xil_defaultlib	<Local to Project>

1. **Create File**

2. **Create Source File**

Create a new source file and add it to your project.

File type: Verilog

File name: Lab_1

File location: <Local to Project>

3. **Finish**

Buttons: Add Files, Add Directories, Create File, OK, Cancel, < 上一步(B), Next >, Finish, Cancel



Add Sources(3/3)

Define Module

Define a module and specify I/O Ports to add to your source file.
For each port specified:
MSB and LSB values will be ignored unless its Bus column is checked.
Ports with blank names will not be written.

Module Definition

Module name: Lab_1

I/O Port Definitions

Port Name	Direction	Bus	MSB	LSB
	input	<input type="checkbox"/>	0	0

?

OK Cancel



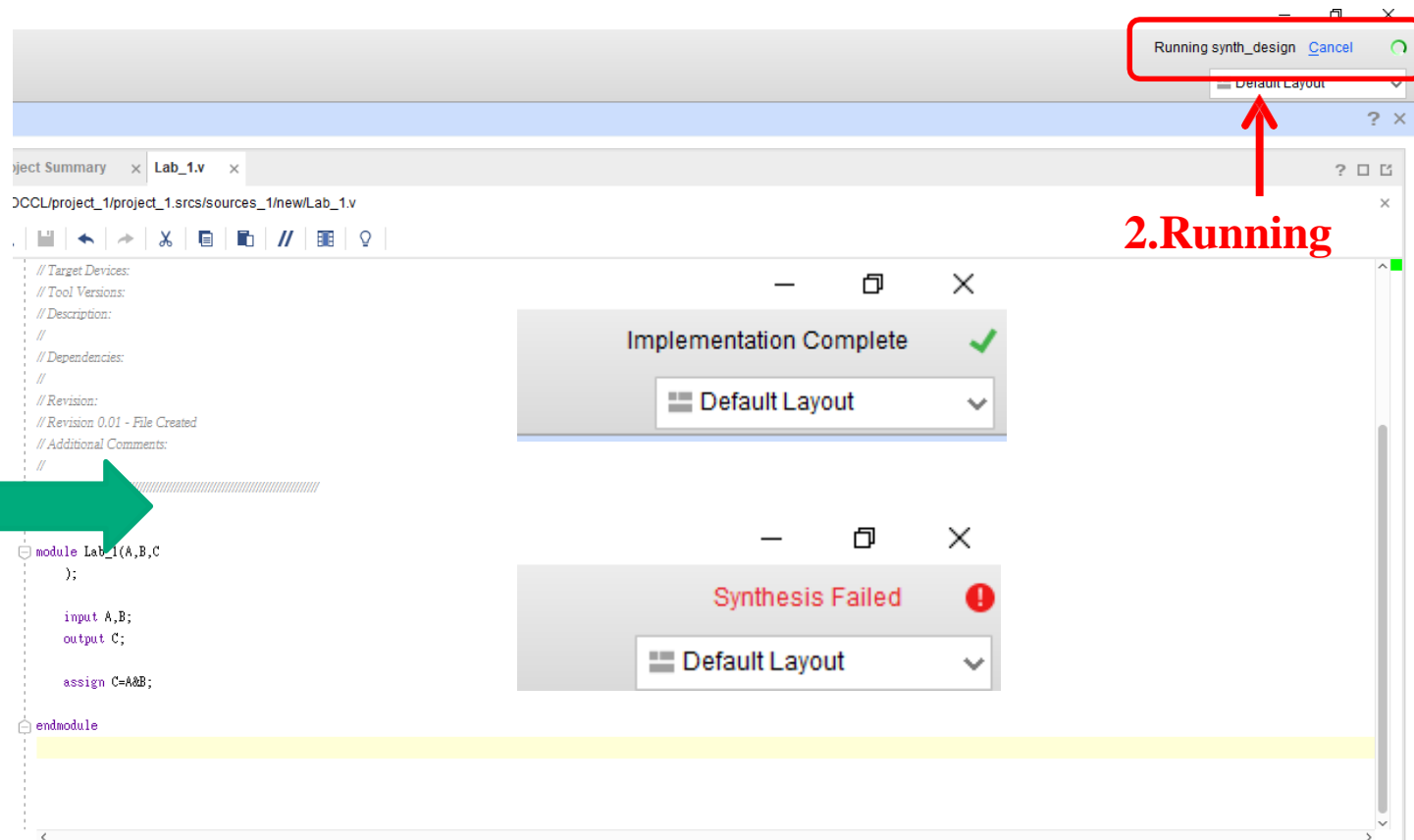
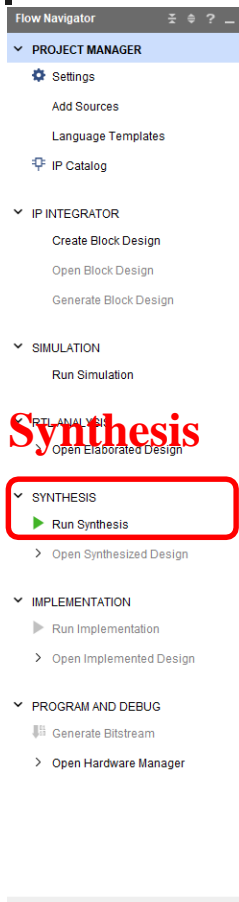
Example for TEST.V

```
module TEST(A,B,C);  
input A,B;  
output C;  
assign  
C=A&B;  
endmodule
```



After complete TEST.V

1.Run Synthesis

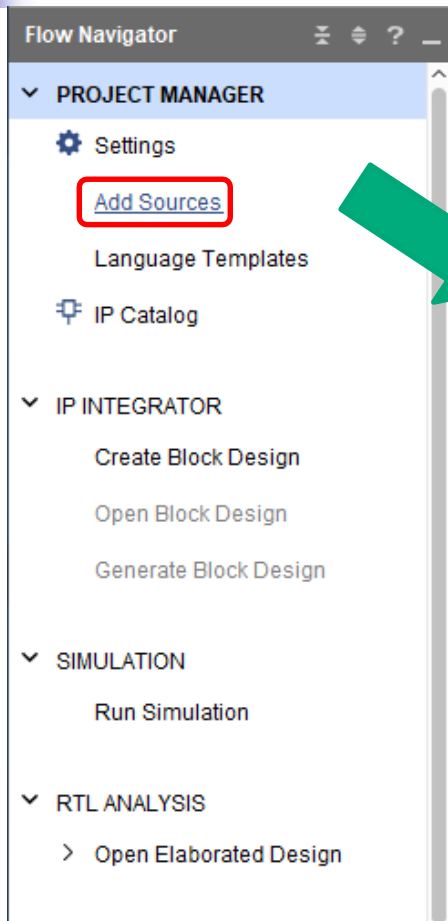


2. Running



Add TESTBENCH.V(1/2)

1. click



Add Sources

This guides you through the process of adding and creating sources for your project

- ☐ Add or create constraints
- ☐ Add or create design sources
- ☒ Add or create simulation sources

2.



Add TESTBENCH.V(2/2)

Add Sources

Add or Create Simulation Sources

Specify simulation specific HDL files, or directories containing HDL files, to add to your project. Create a new source file on disk and add it to your project.

Specify simulation set: sim_1

Index	Name	Library	Location
1	Lab_1_tb.v	xil_defaultlib	<Local to Project>

Add Files

Add Directories

Create File

☐ Scan and add RTL include files into project

☐ Copy sources into project

☒ Add sources from subdirectories

☒ Include all design sources for simulation

?

< 上一步(B)

Next > 4.

Finish

Cancel

Create Source File

Create a new source file and add it to your project.

File type: 2. Verilog

File name: Lab_1_tb

File location: <Local to Project>

?

3. OK

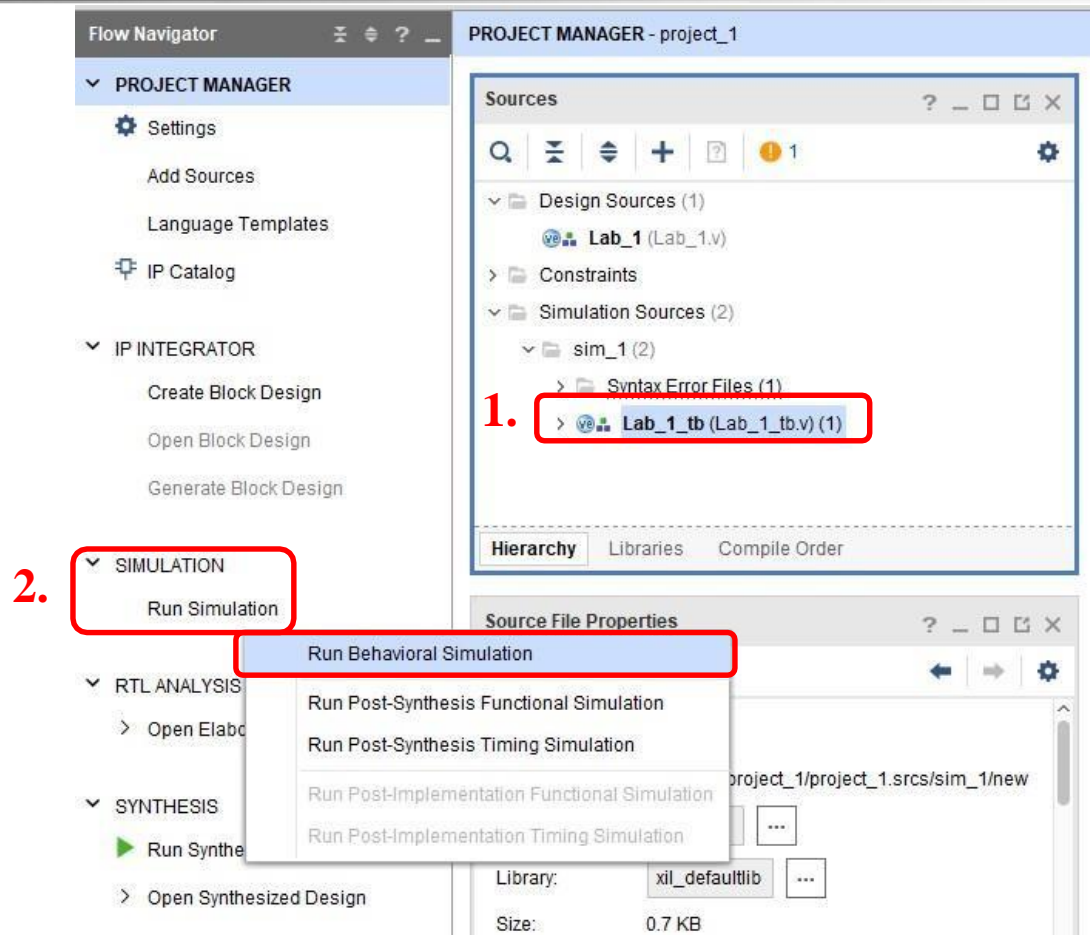
Cancel

Digital System Research Laboratory

38



Run Behavioral Simulation





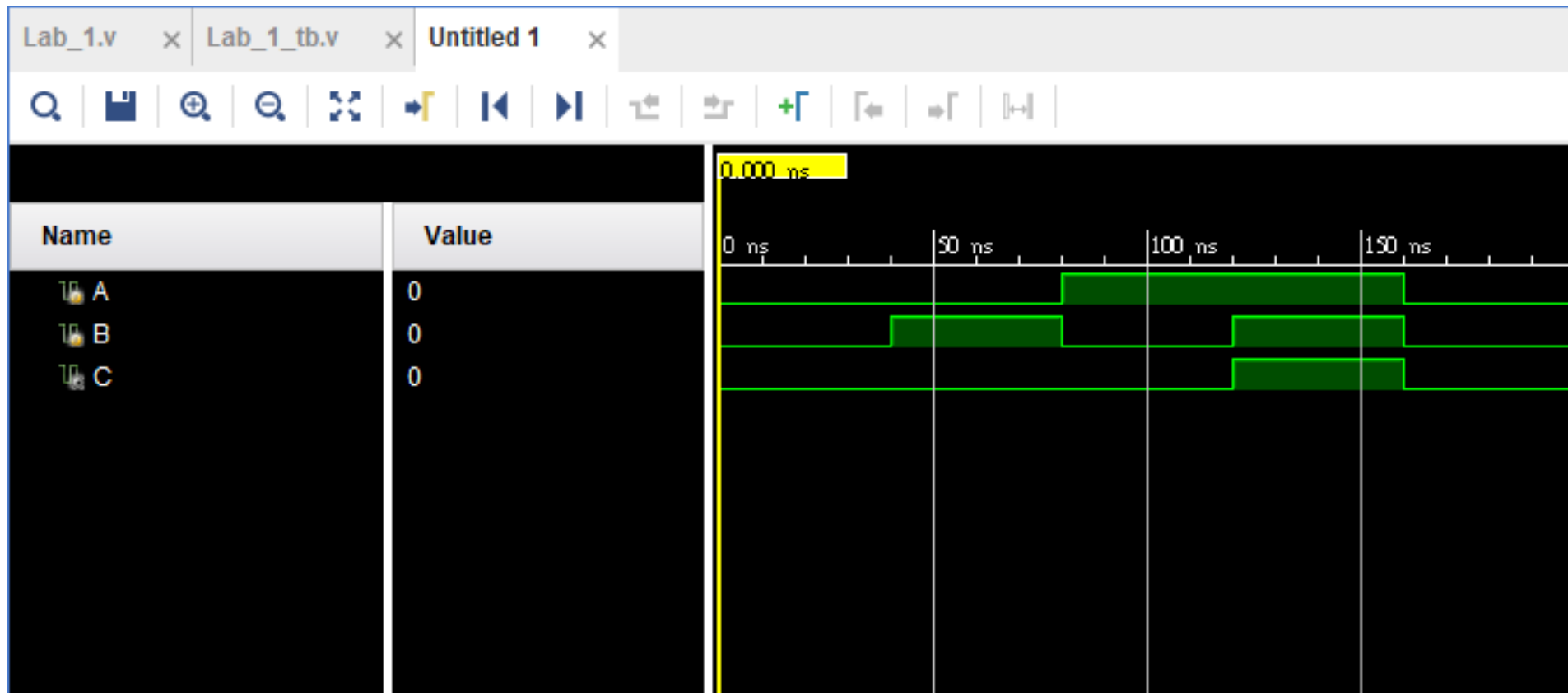
Example for TESTBENCH.V

```
module testbench;  
    // Inputs  
    reg A;  
    reg B;  
    // Outputs  
    wire C;  
    // Instantiate the Unit Under Test (UUT)  
    Lab_1 uut (  
        .A(A),  
        .B(B),  
        .C(C)  
    );
```

```
    initial begin // Initialize Inputs  
        A = 0; B = 0;  
        // Wait 100 ns for global reset to finish  
  
        // Add stimulus here  
        A=0; B=0;  
        #40; A=0; B=1;  
        #40; A=1; B=0;  
        #40; A=1; B=1;  
        #40; A=0; B=0;  
    end  
  
endmodule
```




Behavioral Simulation Result





Related Links

- Xilinx, <http://www.xilinx.com>



Note

New Project

Default Part

Choose a default Xilinx part or board for your project.

Parts | Boards

[Reset All Filters](#)

Category: All Package: All Temperature: All

Family: All Speed: All Static power: All

Search: XC7a200Tfbg676 (4 matches)

Part	I/O Pin Count	Available IOBs	LUT Elements	FlipFlops	Block RAMs	Ultra RAMs	DSPs	Gt
xc7a200tfbg676-3	676	400	134600	269200	365	0	740	8
xc7a200tfbg676-2	676	400	134600	269200	365	0	740	8
xc7a200tfbg676-2L	676	400	134600	269200	365	0	740	8
xc7a200tfbg676-1	676	400	134600	269200	365	0	740	8

< Back Next > Finish Cancel