EE 115B: Digital Circuits

VHDL Tutorial 1

Vivado

Installation

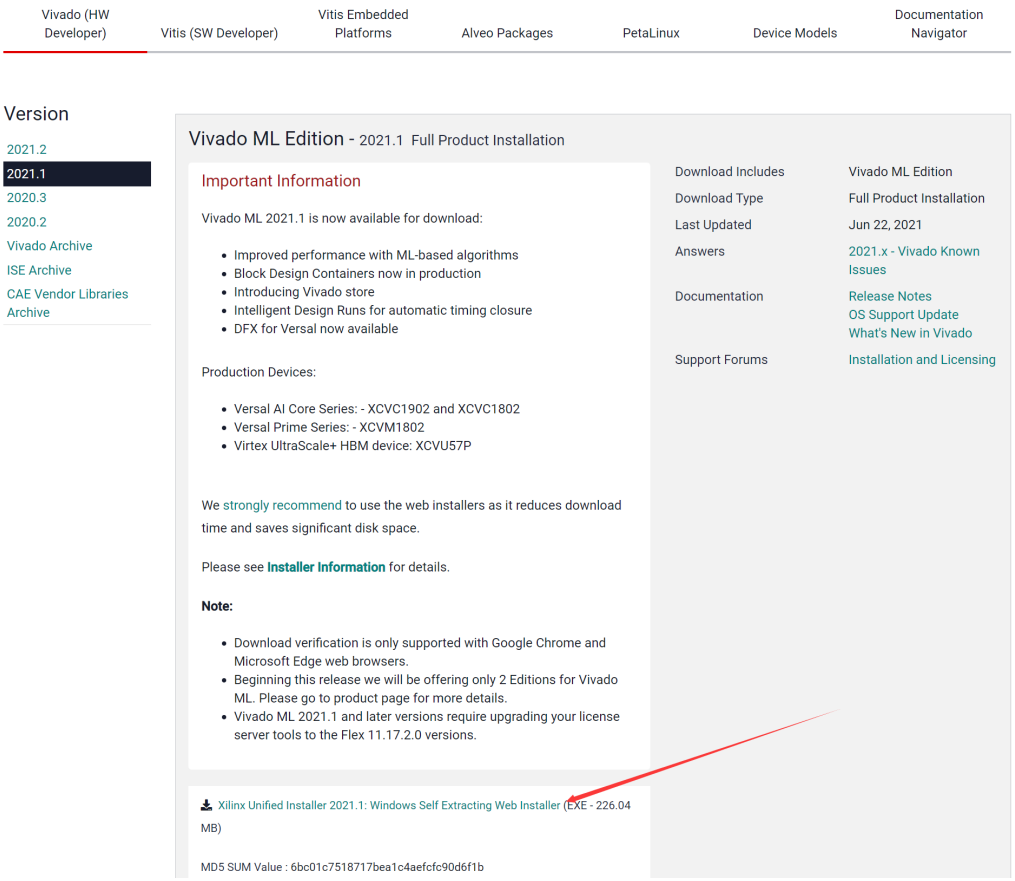
School of Information Science and Technology

ShanghaiTech University

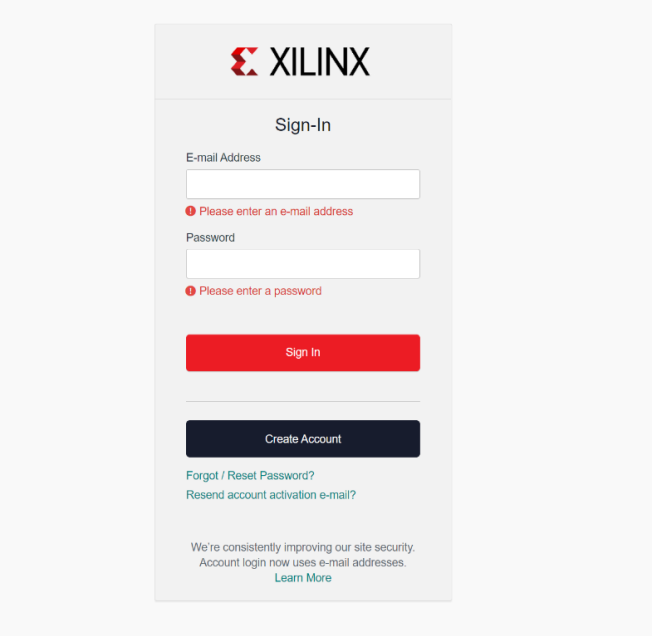
Fall 2021

Step 1: Download & Unzip the Vivado Package

1. **Download** the Vivado installer from: Downloads (xilinx.com). For convenience, please download the 2021.1 version of vivado

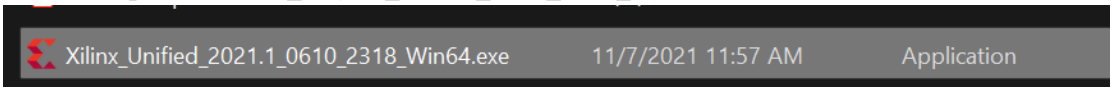


2. It will ask you to register an account to access the download source, use your ADAMEDIC email to register and activate your account.

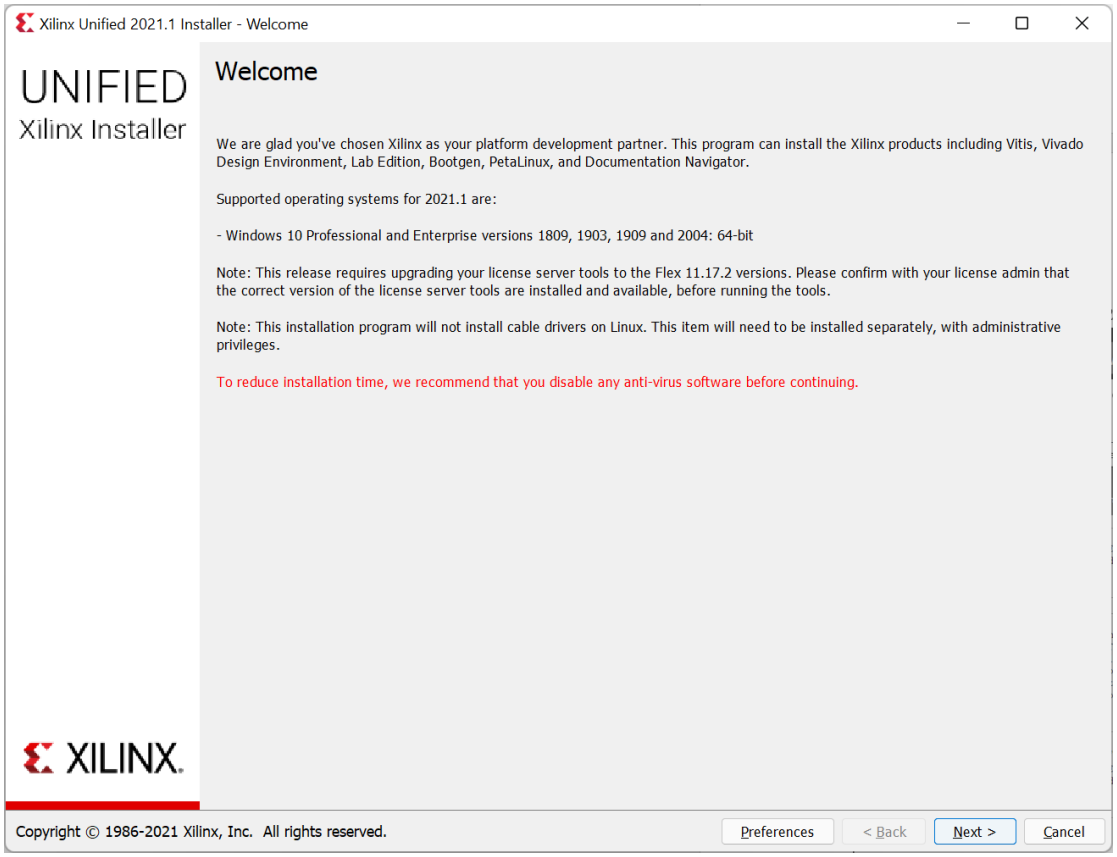


Step 2: Install the Vivado

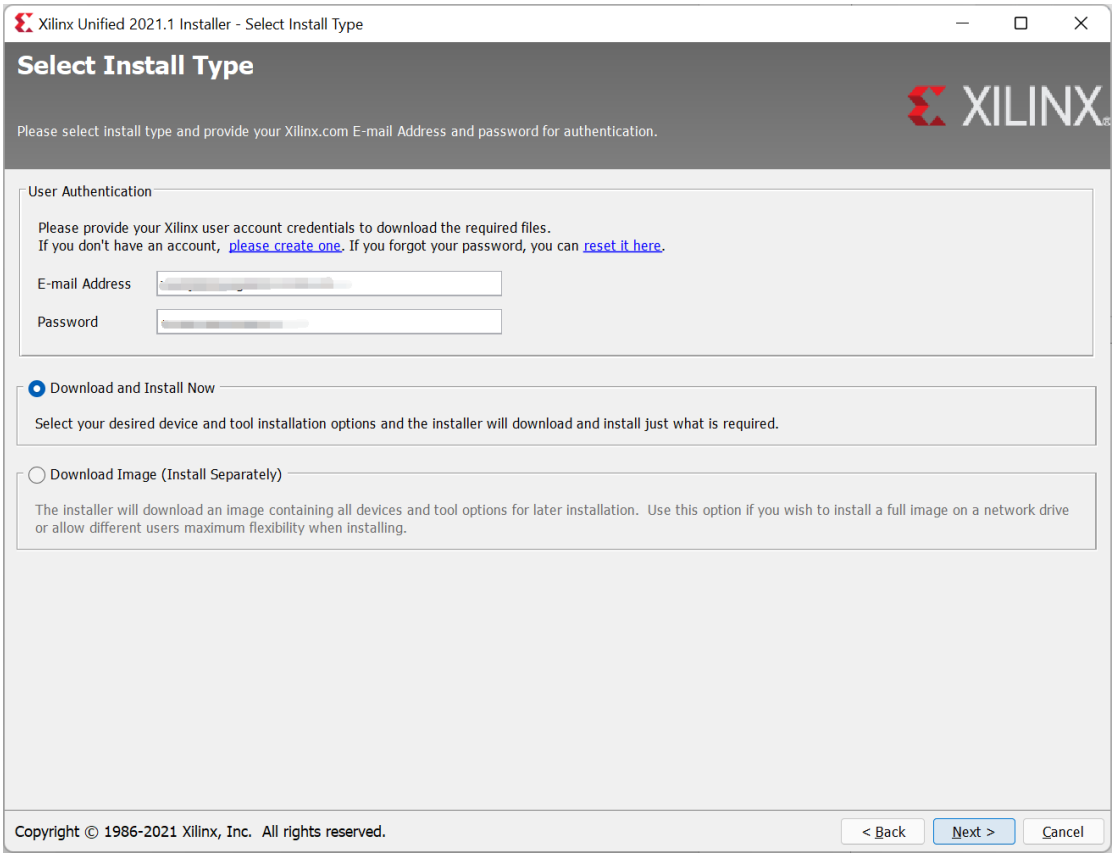
1. **Open** the *Xilinx_Unified_2021.1_0610_2318_Win64.exe*.

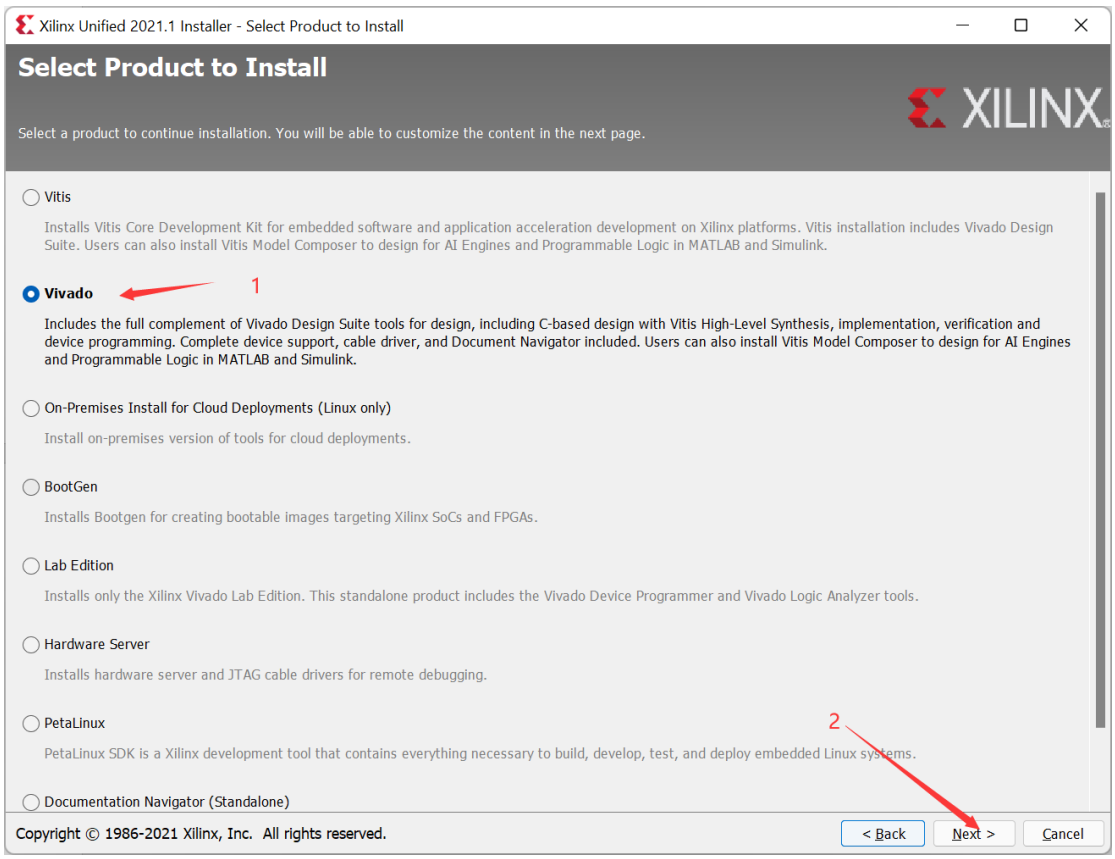


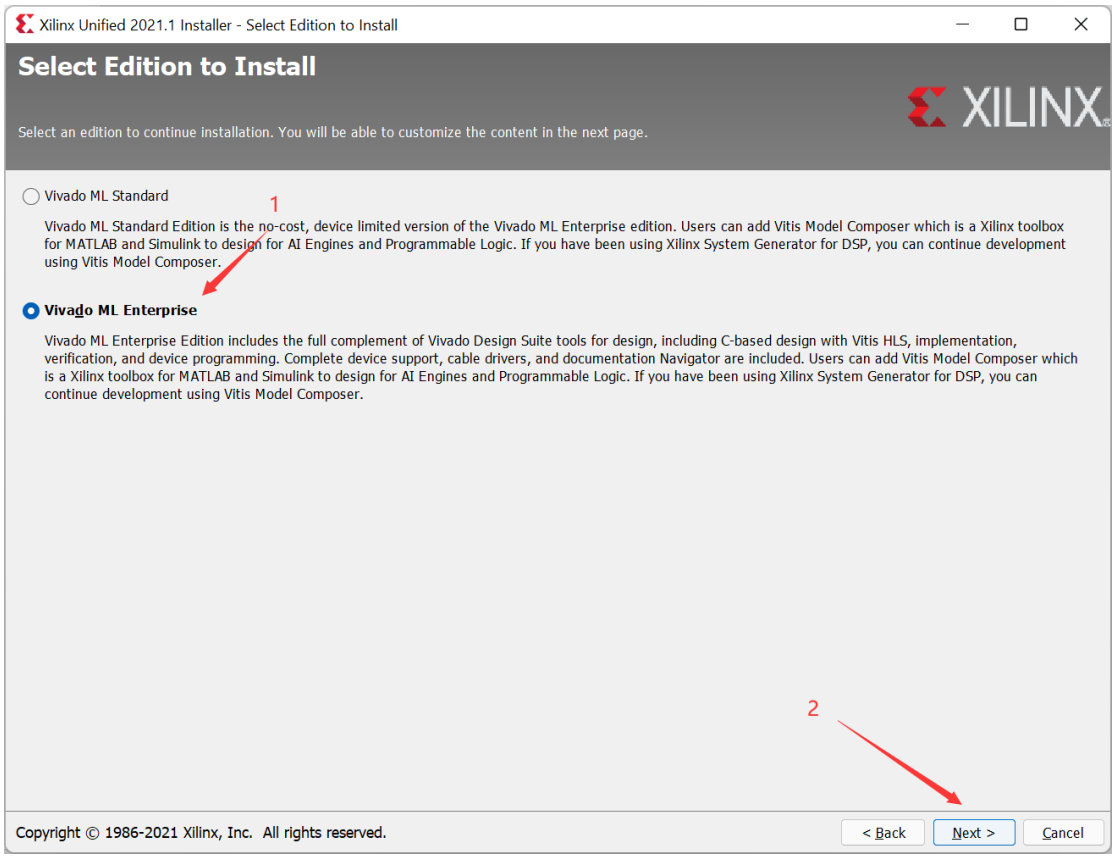
2. Wait for a while, you will see the following dialog and click ***Next***.



3. Type in your activated account and choose ***Download and Install Now***.






Xilinx Unified 2021.1 Installer - Select Edition to Install
Select Edition to Install
Select an edition to continue installation. You will be able to customize the content in the next page.
XILINX
Vivado ML Standard
Vivado ML Standard Edition is the no-cost, device limited version of the Vivado ML Enterprise edition. Users can add Vitis Model Composer which is a Xilinx toolbox for MATLAB and Simulink to design for AI Engines and Programmable Logic. If you have been using Xilinx System Generator for DSP, you can continue development using Vitis Model Composer.
1
Vivado ML Enterprise
Vivado ML Enterprise Edition includes the full complement of Vivado Design Suite tools for design, including C-based design with Vitis HLS, implementation, verification, and device programming. Complete device support, cable drivers, and documentation Navigator are included. Users can add Vitis Model Composer which is a Xilinx toolbox for MATLAB and Simulink to design for AI Engines and Programmable Logic. If you have been using Xilinx System Generator for DSP, you can continue development using Vitis Model Composer.
2
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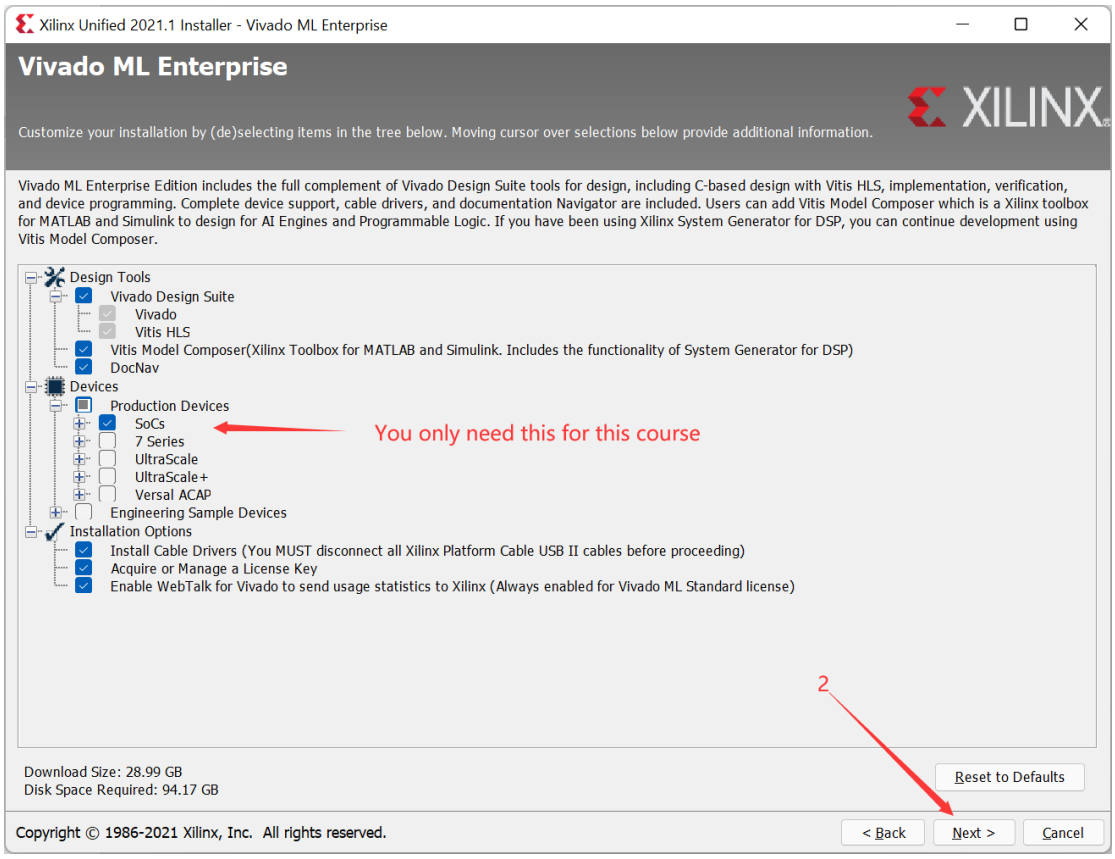
Xilinx Unified 2021.1 Installer - Vivado ML Enterprise
Vivado ML Enterprise
Customize your installation by (de)selecting items in the tree below. Moving cursor over selections below provide additional information.
XILINX
Vivado ML Enterprise Edition includes the full complement of Vivado Design Suite tools for design, including C-based design with Vitis HLS, implementation, verification, and device programming. Complete device support, cable drivers, and documentation Navigator are included. Users can add Vitis Model Composer which is a Xilinx toolbox for MATLAB and Simulink to design for AI Engines and Programmable Logic. If you have been using Xilinx System Generator for DSP, you can continue development using Vitis Model Composer.
Design Tools
Vivado Design Suite
Vivado
Vitis HLS
Vitis Model Composer(Xilinx Toolbox for MATLAB and Simulink. Includes the functionality of System Generator for DSP)
DocNav
Devices
Production Devices
SoCs
7 Series
UltraScale
UltraScale+
Versal ACAP
Engineering Sample Devices
You only need this for this course
Installation Options
Install Cable Drivers (You MUST disconnect all Xilinx Platform Cable USB II cables before proceeding)
Acquire or Manage a License Key
Enable WebTalk for Vivado to send usage statistics to Xilinx (Always enabled for Vivado ML Standard license)
2
Download Size: 28.99 GB
Disk Space Required: 94.17 GB
Reset to Defaults
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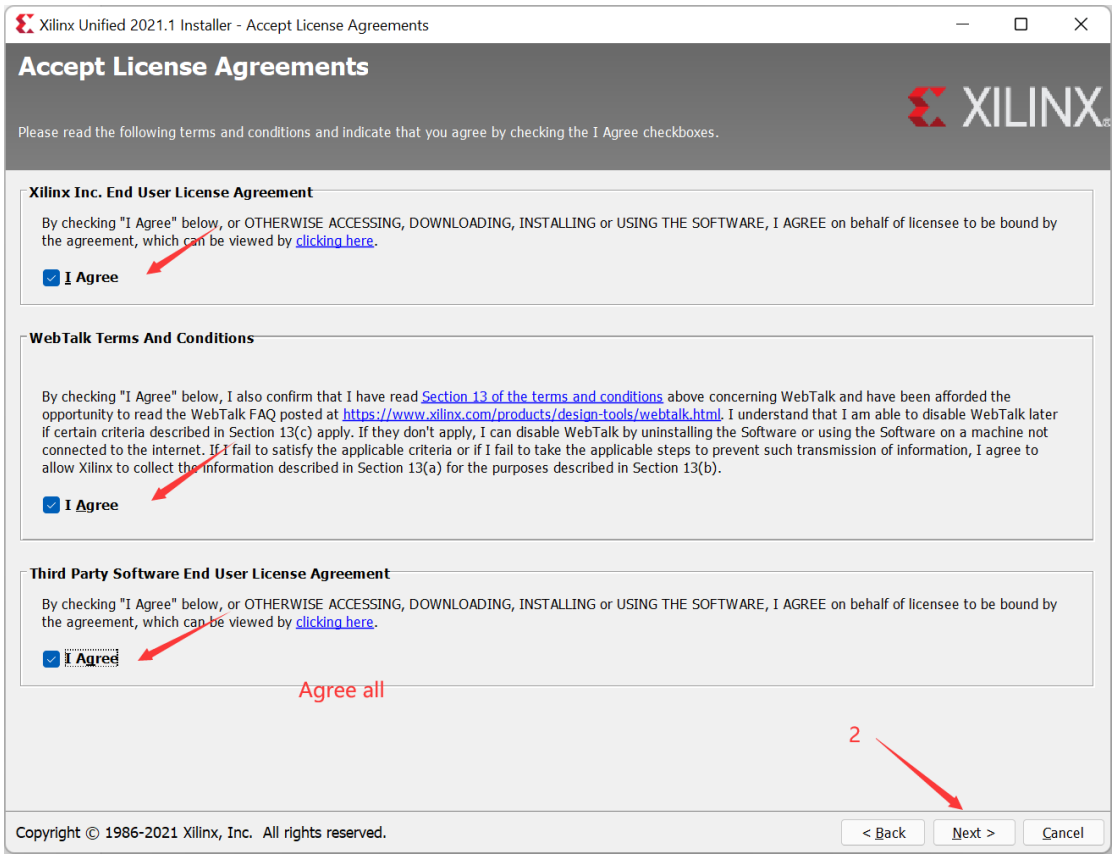
Xilinx Unified 2021.1 Installer - Accept License Agreements
Accept License Agreements
Please read the following terms and conditions and indicate that you agree by checking the I Agree checkboxes.
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Xilinx Inc. End User License Agreement
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By 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).
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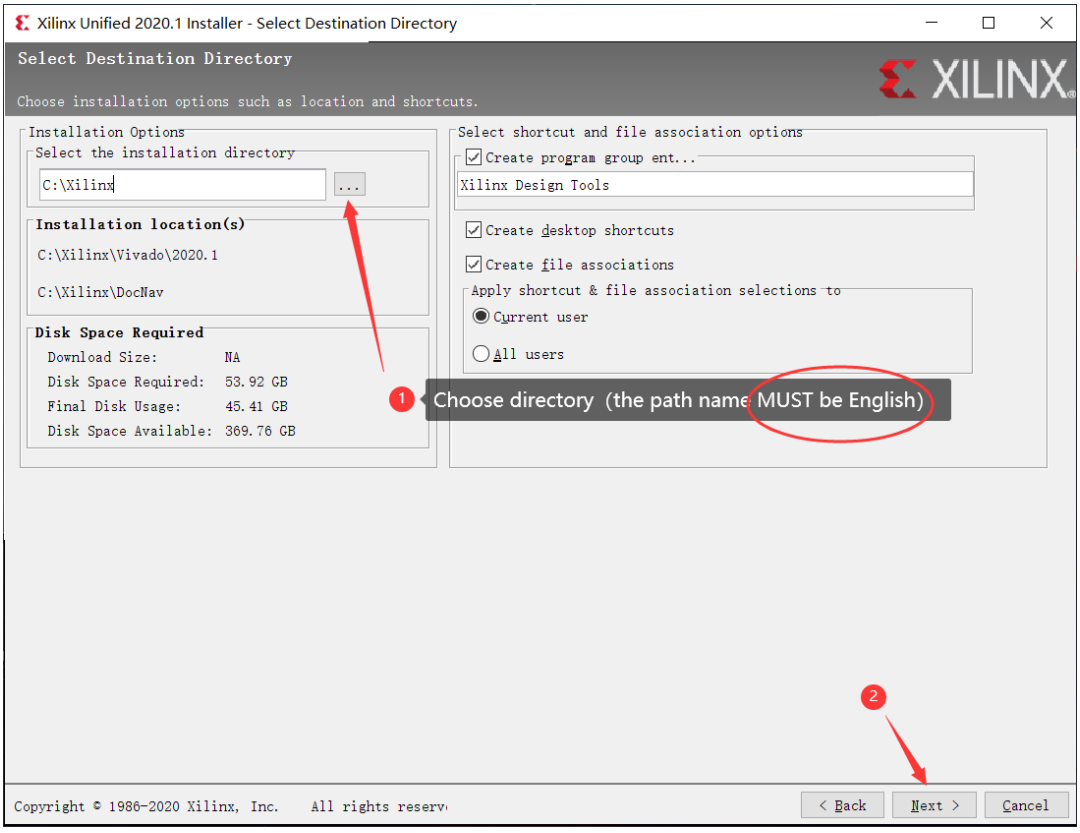
Xilinx Unified 2020.1 Installer - Select Destination Directory
Select Destination Directory
Choose installation options such as location and shortcuts.
XILINX
Installation Options
Select the installation directory
C:\Xilinx
...
Installation location(s)
C:\Xilinx\Vivado\2020.1
C:\Xilinx\DocNav
Disk Space Required
Download Size: NA
Disk Space Required: 53.92 GB
Final Disk Usage: 45.41 GB
Disk Space Available: 369.76 GB
Select shortcut and file association options
Create program group ent...
Xilinx Design Tools
Create desktop shortcuts
Create file associations
Apply shortcut & file association selections to
Current user
All users
1
Choose directory (the path name MUST be English)
2
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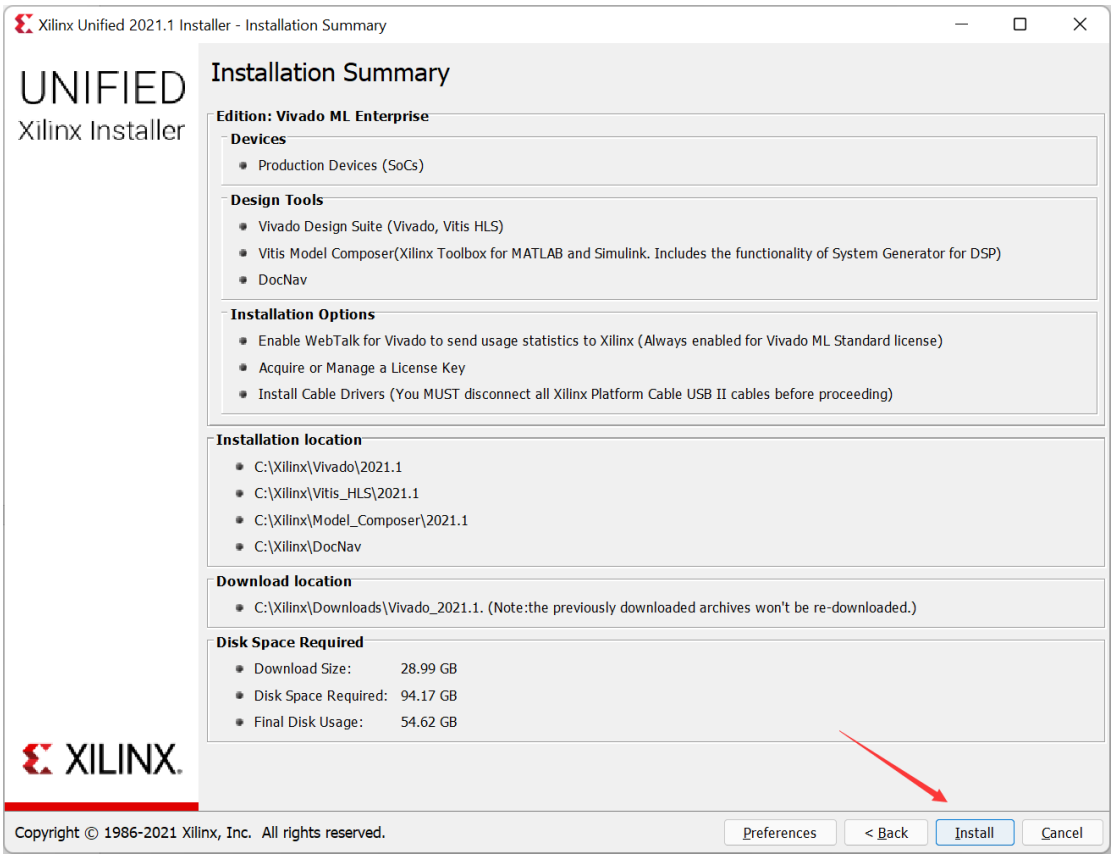
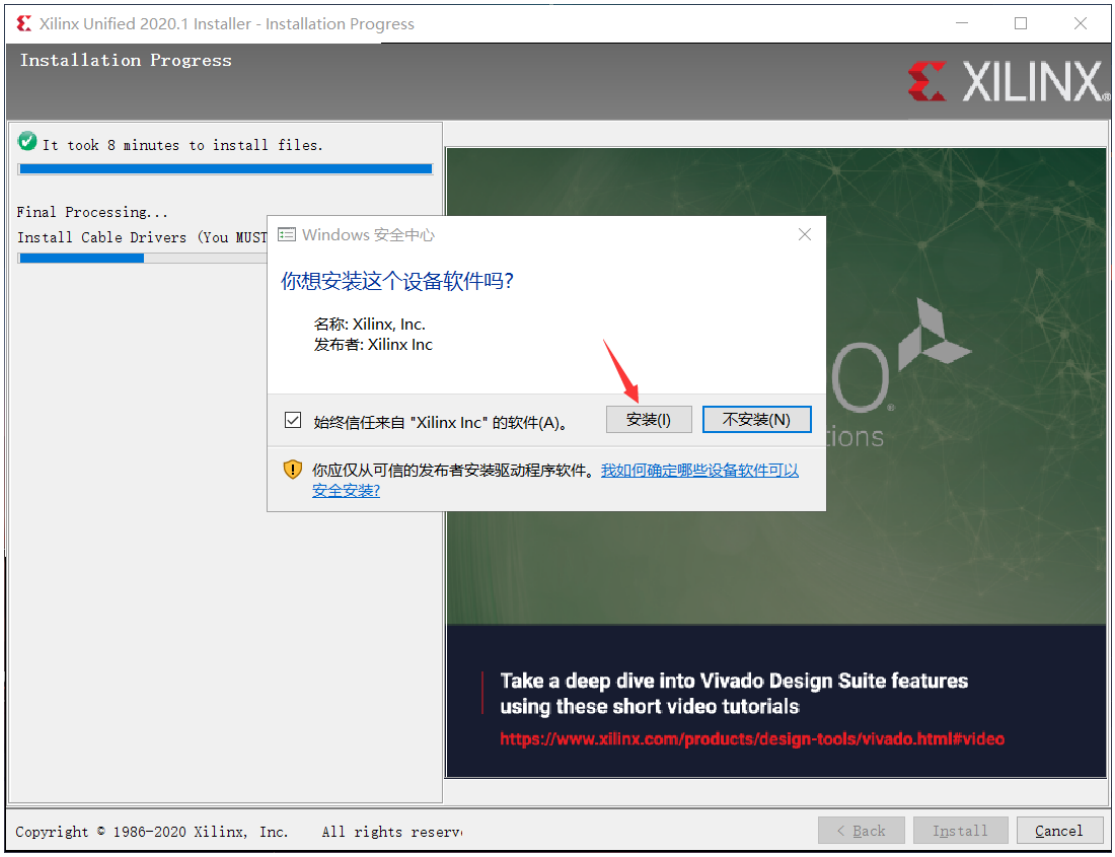
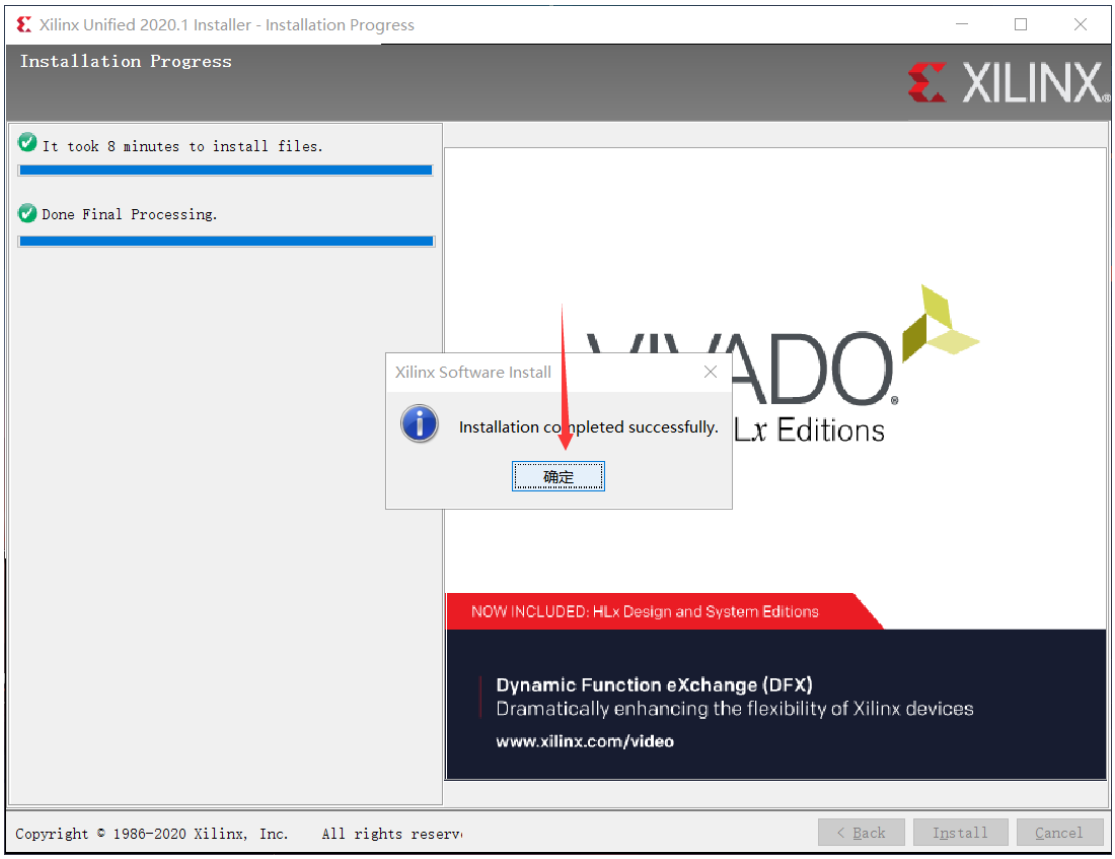


It may take hours to download and install the EDA, so be patient and make your device always connect to the internet.




Xilinx Unified 2020.1 Installer - Installation Progress
Installation Progress
XILINX
It took 8 minutes to install files.
Done Final Processing.
Xilinx Software Install
Installation completed successfully.
确定
Lx Editions
NOW INCLUDED: HLx Design and System Editions
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Dramatically enhancing the flexibility of Xilinx devices
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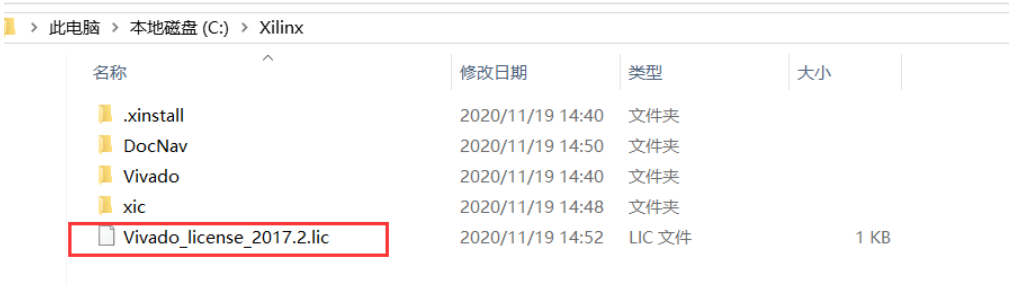
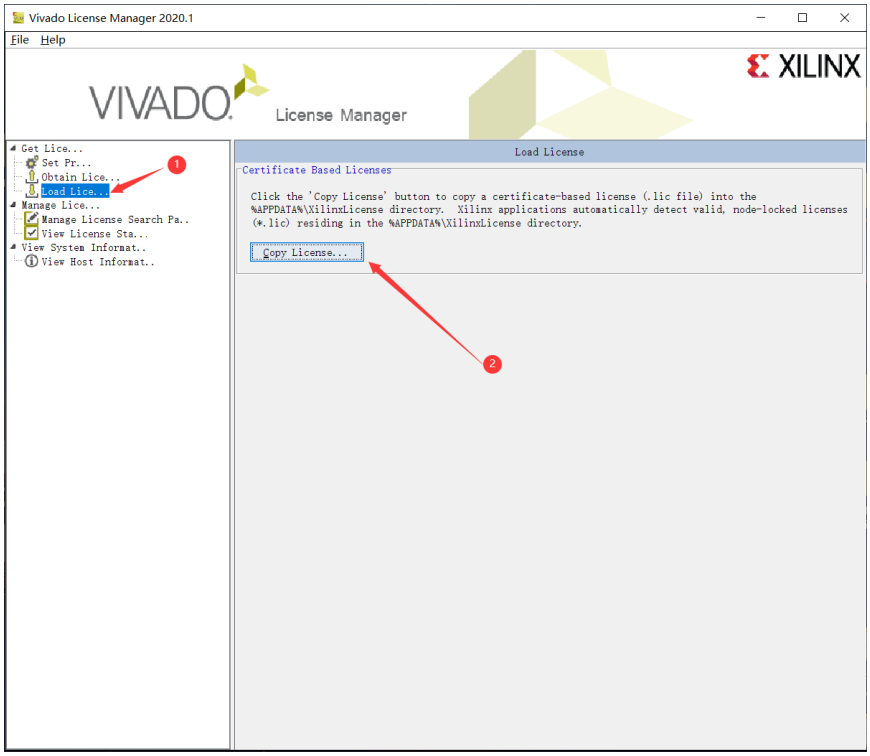
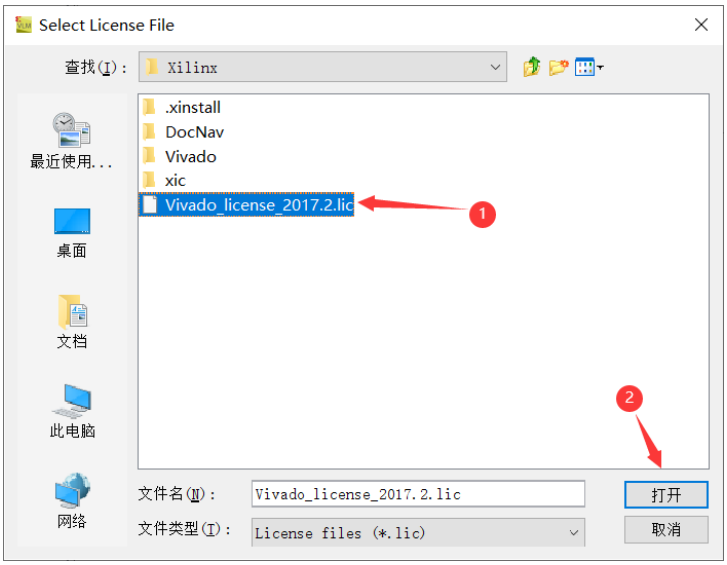
Step 3: Licensing

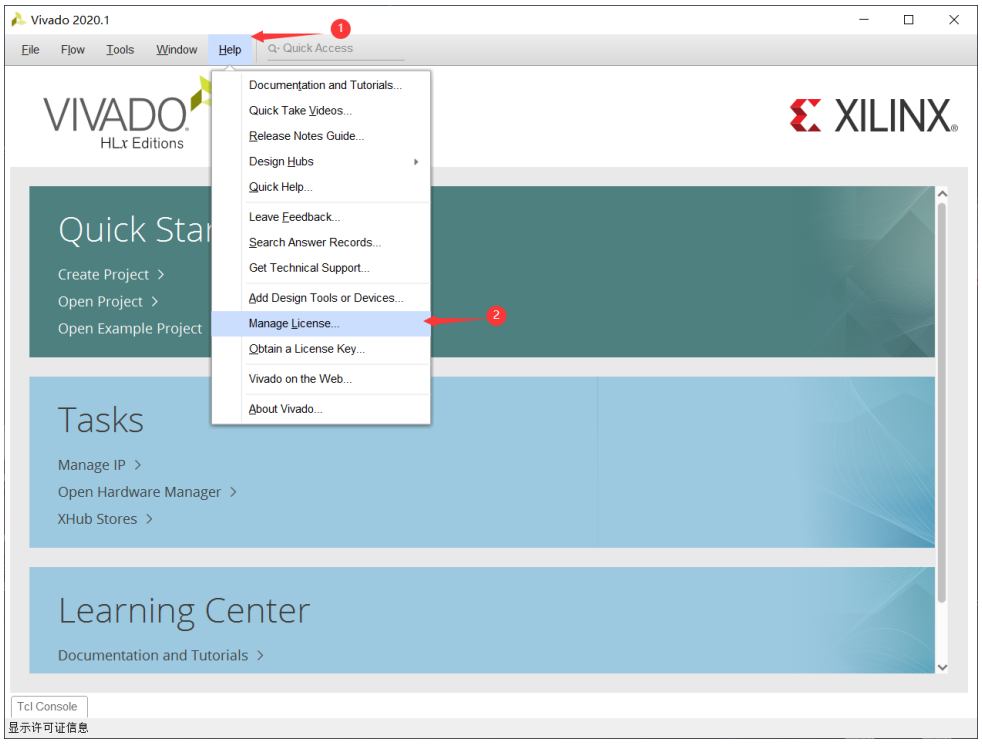
1. Download the license file from blackboard into the installation directory (In this tutorial, our installation directory is *C:\Xilinx*)。

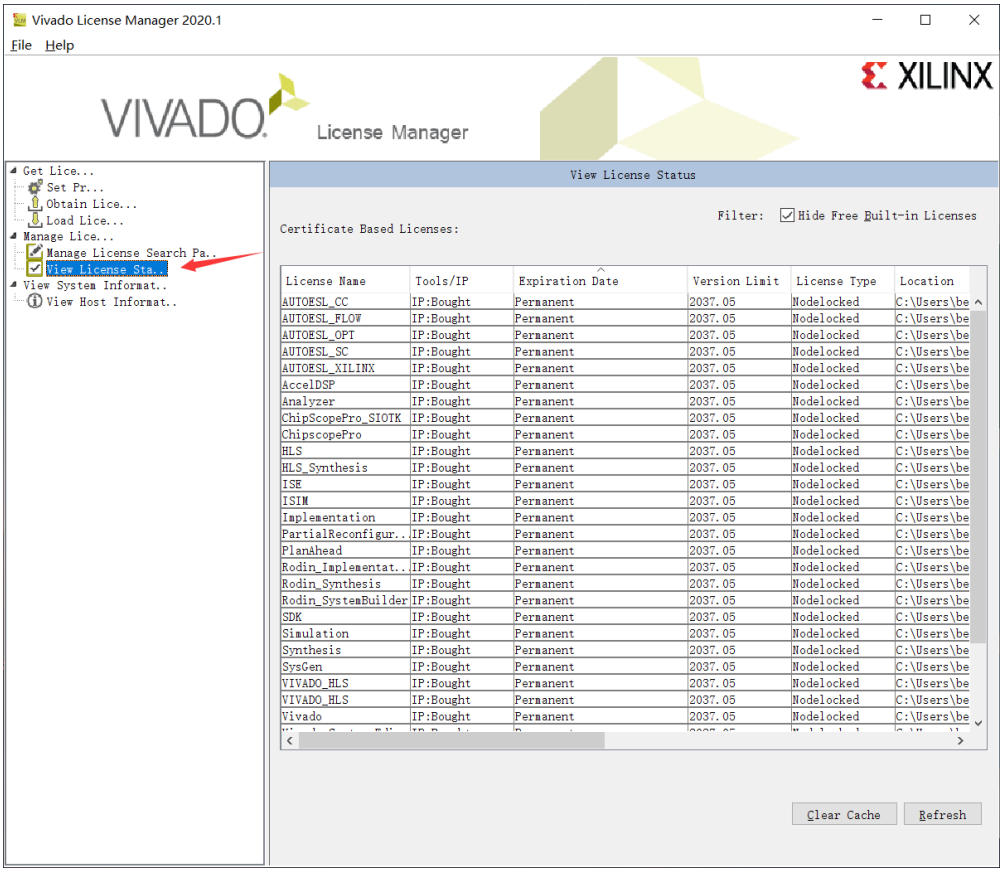


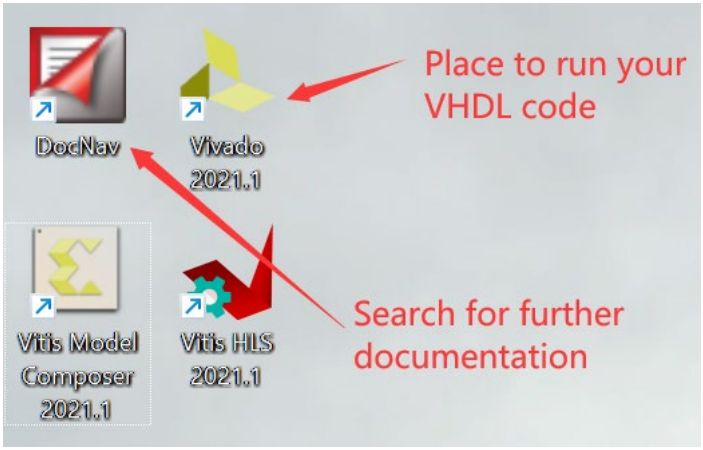




Hint: If you cannot find the license manager, just obey the operation Vivado 2021.1 >> Help >> Manage License:






DocNav
Vivado
2021.1
Place to run your
VHDL code
Vitis Model
Composer
2021.1
Vitis HLS
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documentation