

## CMPE 140 Lab 0 Assignments

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### EDA Tool Downloading and Installation

CMPE140 labs require the use of Xilinx's Vivado design tool suite for hardware description and functional verification (simulation), as well as synthesis and implementation targeted to FPGA devices. A restricted version of the Vivado suite can be obtained for free by downloading Vivado from Xilinx's website ( [Xilinx download page](http://www.xilinx.com/support/download.html)). As the first assignment, you will follow the instructions below to download and install the Vivado design tool suite on your computer.

#### 1. The Download Procedure

**Step 1:** Open the Xilinx web page at <http://www.xilinx.com/support/download.html>.

**Version**

- 2020.1
- 2019.2
- 2019.1**
- 2018.3
- Vivado Archive
- ISE Archive
- CAE Vendor Libraries Archive

**Vivado Design Suite - HLx Editions - 2019.1 Full Product Installation**

**Important**

We strongly recommend to use the web installers as it reduces download time and saves significant disk space.

Please see [Installer Information](#) for details.

Note: Download verification is only supported with Google Chrome and Microsoft Internet Explorer web browsers.

**Download Includes**

- Download Type: Full Product Installation
- Last Updated: May 29, 2019
- Answers: [2019.x - Vivado Known Issues](#)
- Documentation: [Release Notes](#), [What's New in Vivado](#)
- Support Forums: [Installation and Licensing](#)

**Vivado HLx 2019.1: WebPACK and Editions - Windows Self Extracting Web Installer (EXE - 64.62 MB)**

MD5 SUM Value : 743003070fb77857ad098bd6873bdf0b

**Vivado HLx 2019.1: WebPACK and Editions - Linux Self Extracting Web Installer (BIN - 115.05 MB)**

MD5 SUM Value : 533000dc5324be422915eb4e93f9ce59

**Download Verification**

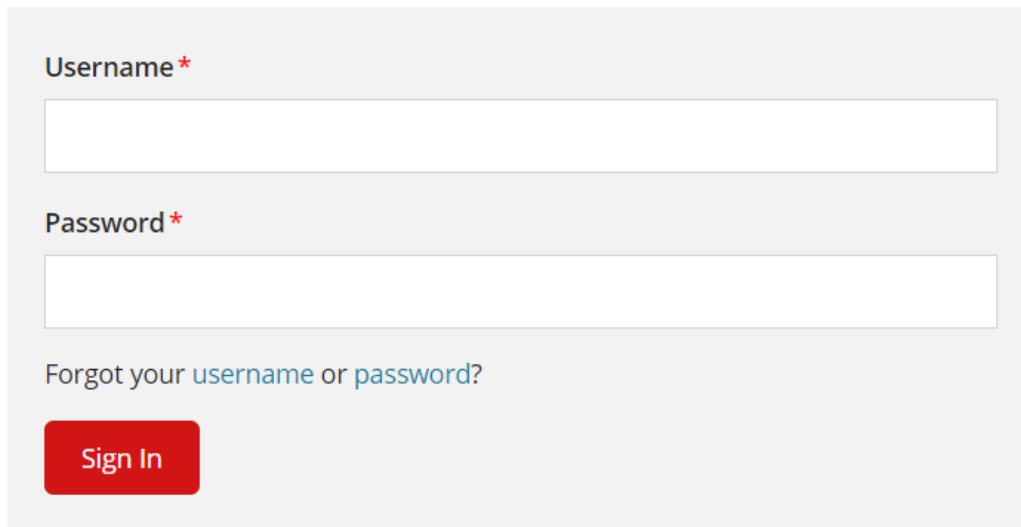
[Digests](#) [Signature](#) [Public Key](#)

On this page, go to Vivado Archive (above image) and ensure version “2019.1” of the software has been selected. This version contains the WebPACK that is free.

For Windows users, choose “**Vivado HLx 2019.1: WebPACK and Editions - Windows Self Extracting Web Installer**” (above image).

**Step 2:** Create an account for Xilinx. After you have finished, use your username and password to log in.

## Sign In

A sign-in form with a light gray background. It contains two input fields: 'Username \*' and 'Password \*'. Below the password field is a link 'Forgot your username or password?'. At the bottom is a red 'Sign In' button.

Username \*

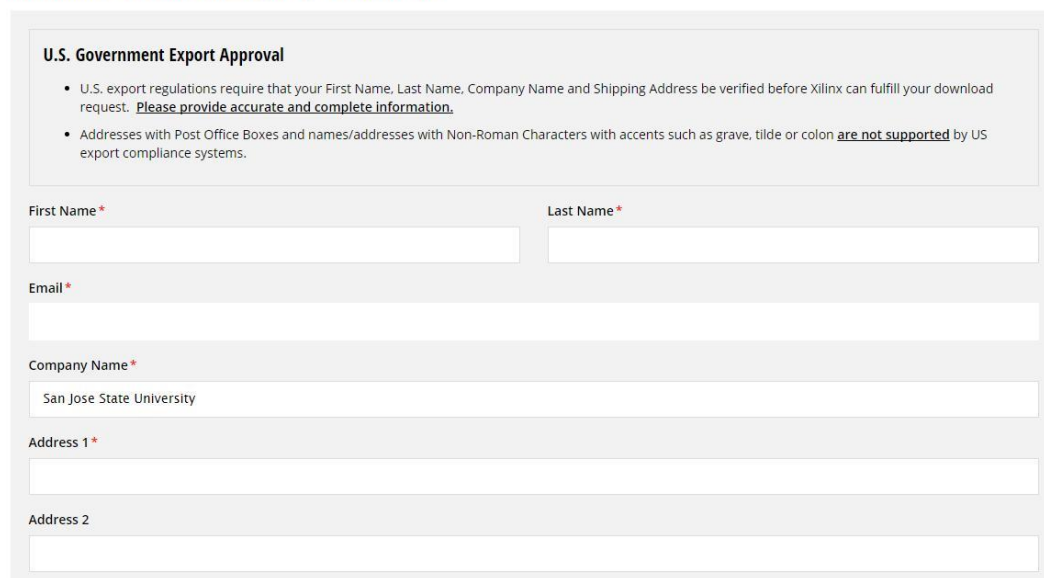
Password \*

Forgot your [username](#) or [password](#)?

Sign In

At the Download Center page, fill out the following form.

### Download Center - Name and Address Verification

A form titled 'Download Center - Name and Address Verification'. It includes a section for 'U.S. Government Export Approval' with two bullet points. Below this are input fields for 'First Name \*', 'Last Name \*', 'Email \*', 'Company Name \*' (with 'San Jose State University' entered), 'Address 1 \*', and 'Address 2'.

**U.S. Government Export Approval**

- U.S. export regulations require that your First Name, Last Name, Company Name and Shipping Address be verified before Xilinx can fulfill your download request. Please provide accurate and complete information.
- Addresses with Post Office Boxes and names/addresses with Non-Roman Characters with accents such as grave, tilde or colon are not supported by US export compliance systems.

First Name \*

Last Name \*

Email \*

Company Name \*

San Jose State University

Address 1 \*

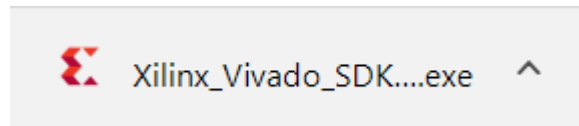
Address 2

For “**Company/Organization**” you can use “**San Jose State University**”.

For “**Job Function**” pick “**Student**”.

For “**Primary Market**” pick “**Consumer**”

**Step 3:** After clicking “Next” your download will automatically begin.



**Step 4 (OPTIONAL):**

If the download fails to start you can download the software manually.

Return to the download page (<http://www.xilinx.com/support/download.html>) and scroll down to the “**Vivado HLx 2019.1: All OS Installer Single-File Download**” link and click it, as shown below.

### Vivado Design Suite - HLx Editions - 2019.1 Full Product Installation

**Important**

We **strongly recommend** to use the web installers as it reduces download time and saves significant disk space.

Please see **Installer Information** for details.

Note: Download verification is only supported with Google Chrome and Microsoft Internet Explorer web browsers.

**Download Includes**

Vivado Design Suite HLx Editions (All Editions)

**Download Type**

Full Product Installation

**Last Updated**

May 29, 2019

**Answers**

[2019.x - Vivado Known Issues](#)

**Documentation**

[Release Notes](#)

[What's New in Vivado](#)

**Support Forums**

[Installation and Licensing](#)

**Vivado HLx 2019.1: WebPACK and Editions - Windows Self Extracting Web Installer (EXE - 64.62 MB)**

MD5 SUM Value : 743003070fb77857ad098bd6873bdf0b

**Vivado HLx 2019.1: WebPACK and Editions - Linux Self Extracting Web Installer (BIN - 115.05 MB)**

MD5 SUM Value : 533000dc5324be422915eb4e93f9ce59

**Download Verification** ⓘ

Digests

Signature

Public Key

**Vivado HLx 2019.1: All OS installer Single-File Download (TAR/GZIP - 21.39 GB)**

MD5 SUM Value : 47388a71dc5962a4b8d76e752928616e

**Download Verification** ⓘ

Digests

Signature

Public Key

**Mac users**

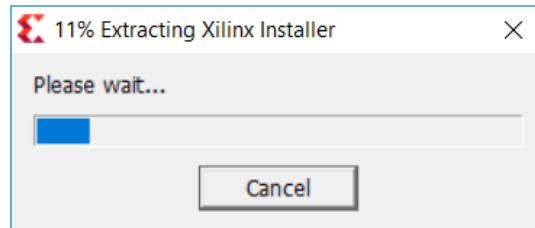
Some students have had success using the Windows version of Vivado through virtualization software, as well as dual-booting into a native Windows environment. Please note that you are responsible for working around any issues that may come up using Vivado in this way. Use the Discussion Forums on Canvas to share your solutions with other students that are using similar environments.

## 2. The Installation Procedure

**Step 1:** Double-click the installer file you downloaded, which is called “**Xilinx\_Vivado\_SDK\_Web\_2019.1\_0524\_1430\_Win64.exe**”.

You may be prompted to confirm if you want to run the file. Click “**Run**” to confirm.

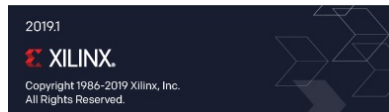
Afterwards the installer will decompress the installation files.



You may be prompted once again during installation. Click “**Yes**” to continue installation.

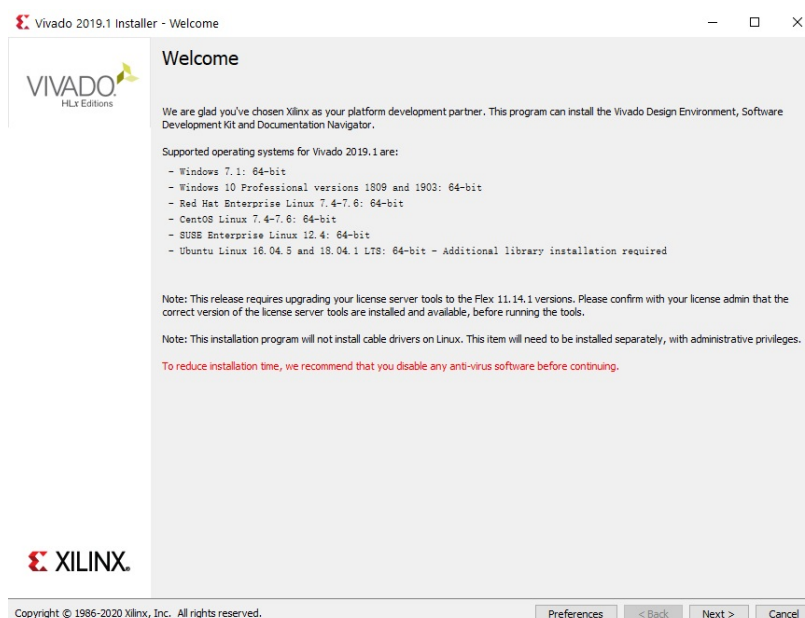
During installation you may be prompted to give permission for the Vivado software components or Java components to access the Internet or local network. You should permit access in these cases (choose to unblock).

The installer will start up next. This may take a while, so please be patient.



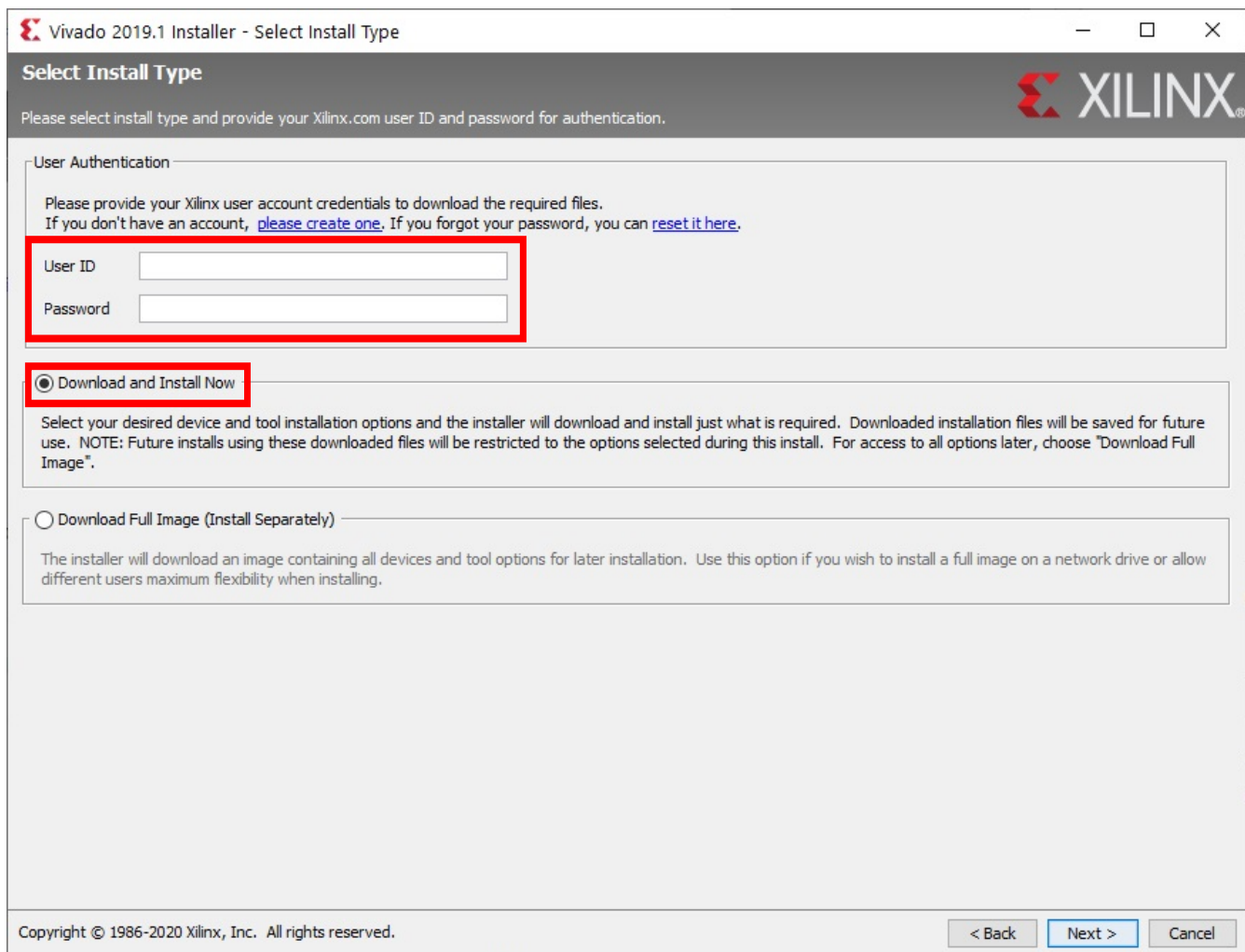
The installer will present you with a welcome screen. Click “**Next**” to proceed.

Note: At this point you may choose to disable anti-virus software to speed up installation. However doing that is *not* required.



**Step 2:** Enter the User ID and Password you created when you registered an account with Xilinx.

Choose **“Download and Install Now”** and click **“Next”**.



**Vivado 2019.1 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

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.

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< Back Next > Cancel

Click “**I Agree**” for all license agreements and click “**Next**”.

Vivado 2019.1 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.

**Xilinx Inc. End User License Agreement**

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

☒ **I Agree**

**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**

**Third Party Software End User License Agreement**

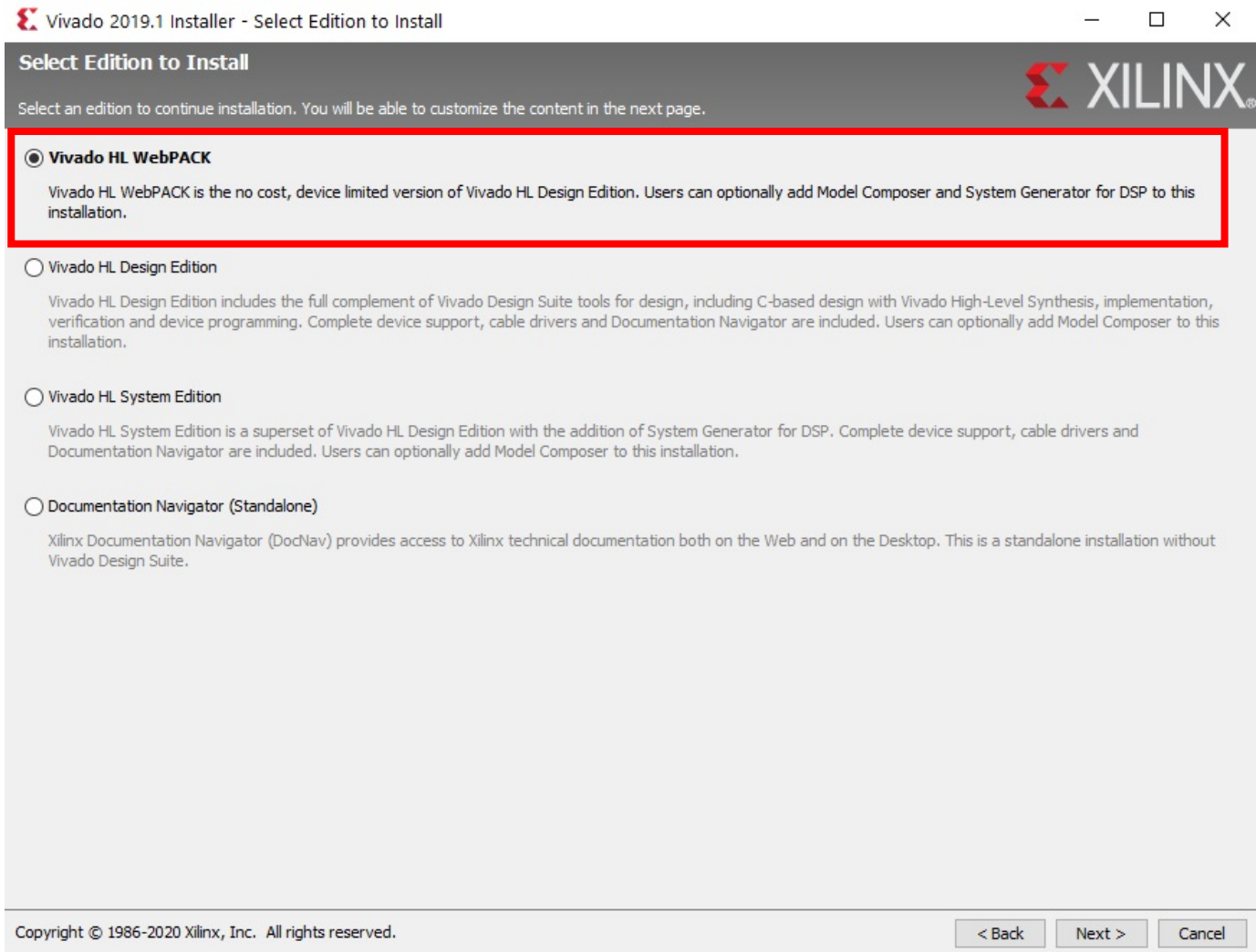
By checking "I Agree" below, or OTHERWISE ACCESSING, DOWNLOADING, INSTALLING or USING THE SOFTWARE, I AGREE on behalf of licensee to be bound by the agreement, which can be viewed by [clicking here](#).

☒ **I Agree**

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< Back   Next >   Cancel

**Step 3:** Select “**Vivado HL WebPACK**” and then click “**Next**”.



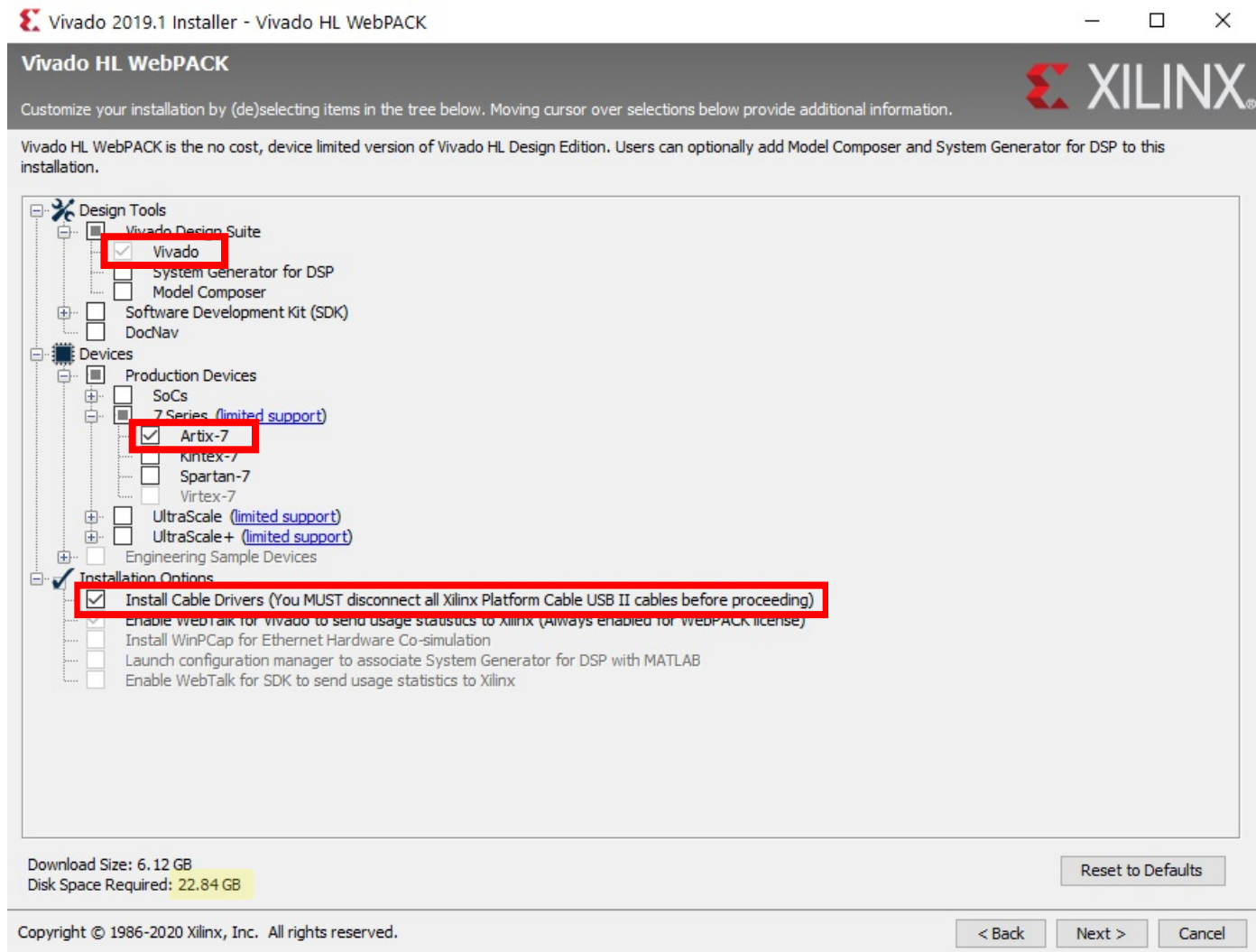


**Step 4:** You may use the default settings. Click “**Next**” to continue.

If you decide to customize the installation, ensure the following options are selected:

- Design Tools: **Vivado Design Suite**.
- Devices: Within “**7 Series**” select “**Artix-7**”.
- Installation Options: “**Install Cable Drivers**”

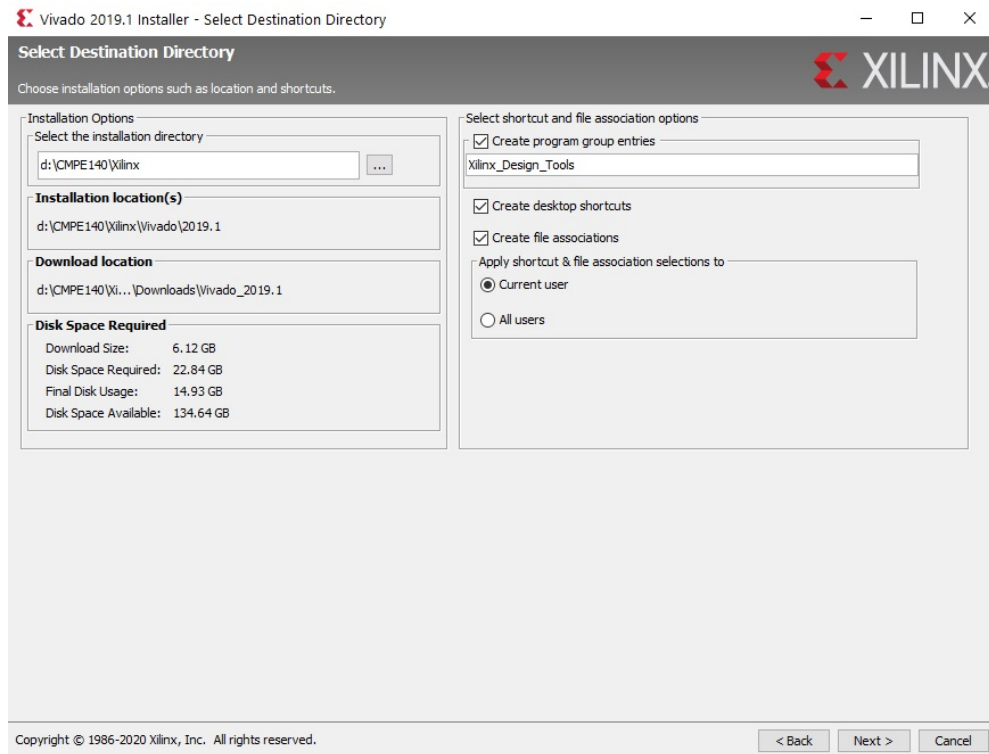
**By only selecting these options, the installation size should decrease considerably.**



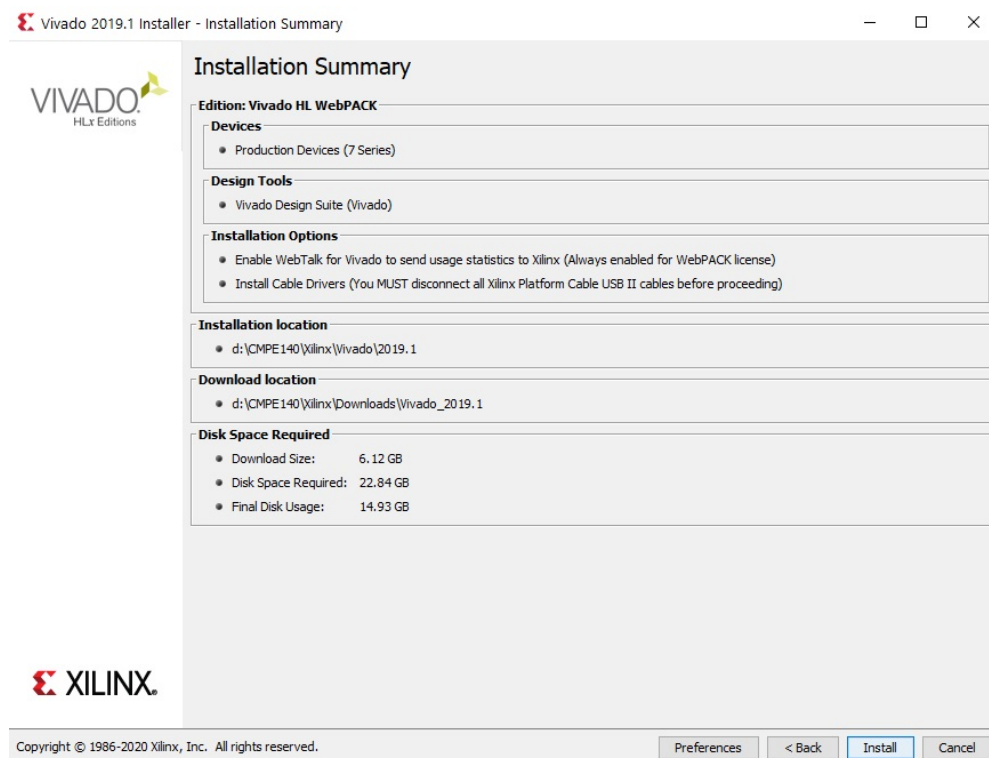


**Step 5:** Select the directory where Vivado will be installed.

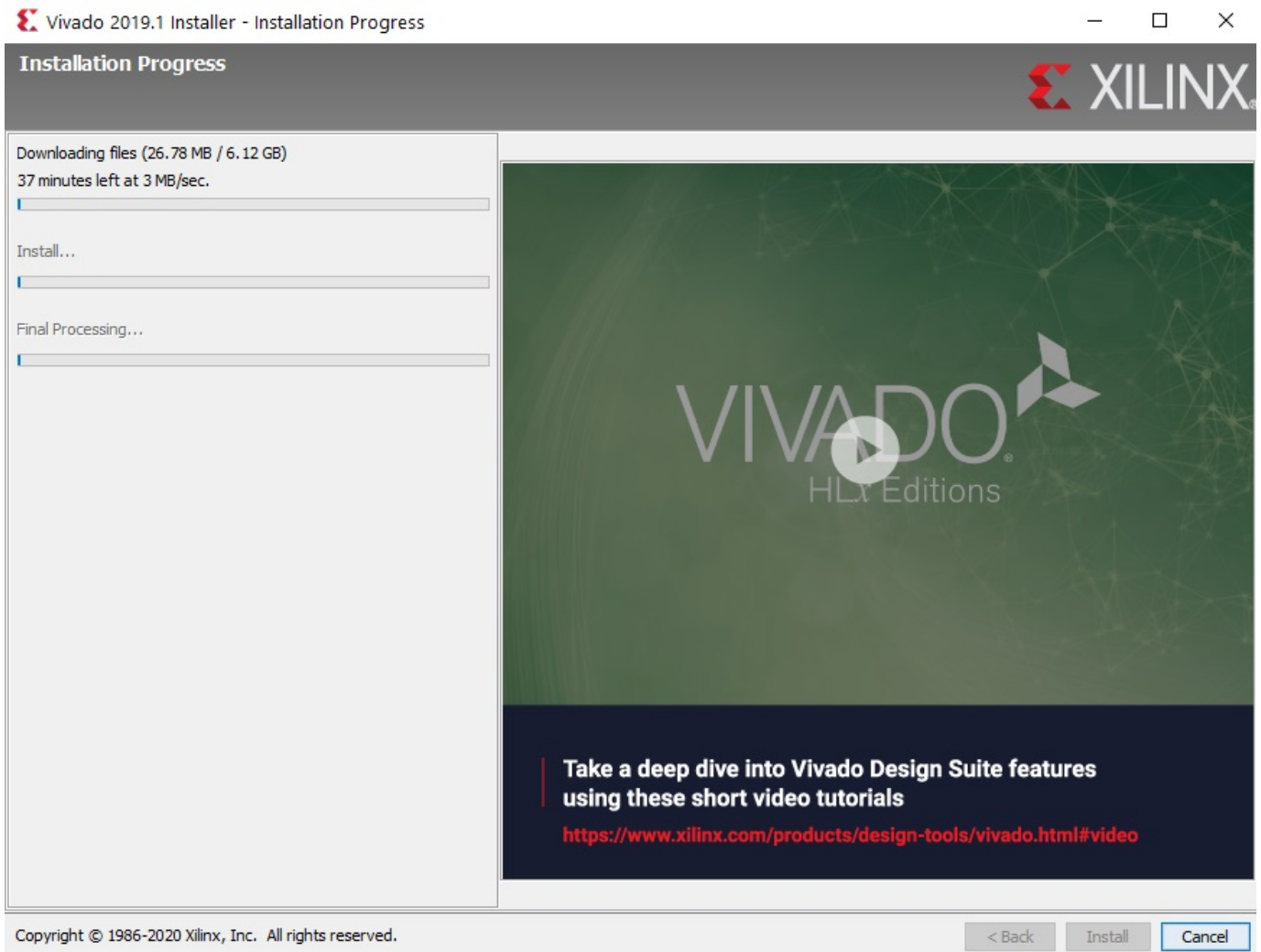
For example you may use “C:\CMPE140\Xilinx” as the destination directory.



You will be presented with a summary of the options you have selected so far. If you’ve customized your installation the summary may look different. Click “**Install**” to begin installation.



The software will begin to install. This may take a long time to complete.



### Possible Bugs During Installation:

During installation you may get a message about internet connectivity. This happens on slow connections because the installer will not throttle download speeds and will completely saturate your internet connection. It is strongly recommended to download where you have access to a fast and reliable internet connection.

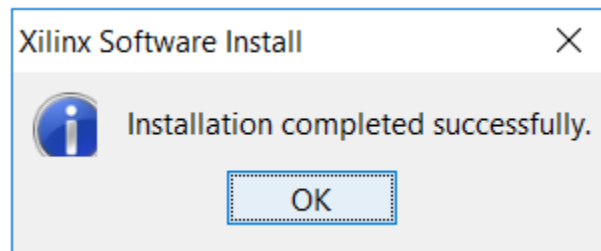
When you see an error message about **Internet Connectivity**, you may have to repeatedly click “**Retry**” until the download resumes. This prompt may not go away even after internet connectivity is restored. If that should happen you can simply ignore the message while the download continues.

Near the end, sometimes the installer will warn about incomplete downloads. In this case you need to keep clicking “**Yes**” until the download finishes.

Eventually the download and installation procedure will start. This also takes a considerable amount of time to finish. If you get a message about unplugging cable drivers to install the software, make sure you haven’t already plugged your Nexys4 DDR board’s USB cable into your PC.

Furthermore Vivado may erroneously report an installation bug which you can ignore. Just click “OK”.

Finally, Vivado will indicate that installation was successful



At this point Vivado has been successfully installed.

**Step 6:** Once the installation is completed, the Vivado 2019.1 icon will be on your desktop.

