

# Lab 0 – Vivado Installation

Instructor: Prof. Donghwa Shin

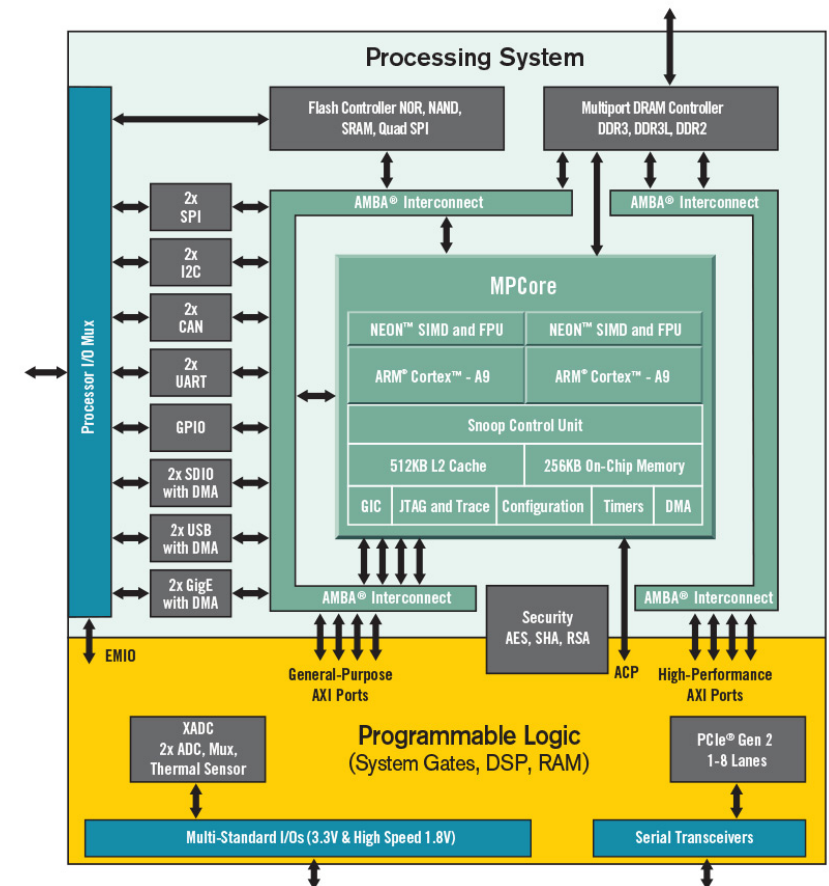
## Lab's Objectives

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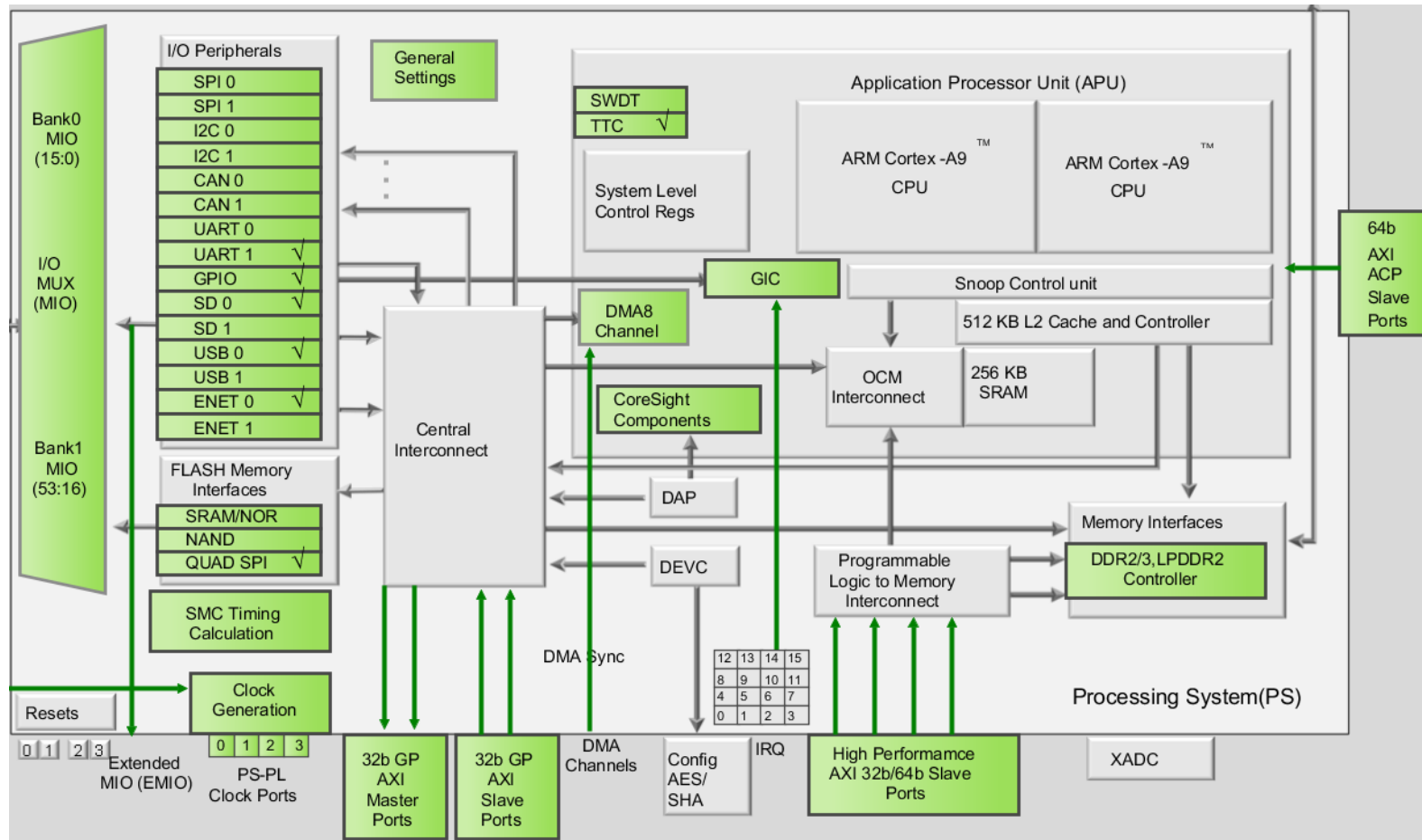
- ❑ ZYNQ Introduction
- ❑ Vivado Installation Step-by-Step

## Zynq ARM Core Introduction

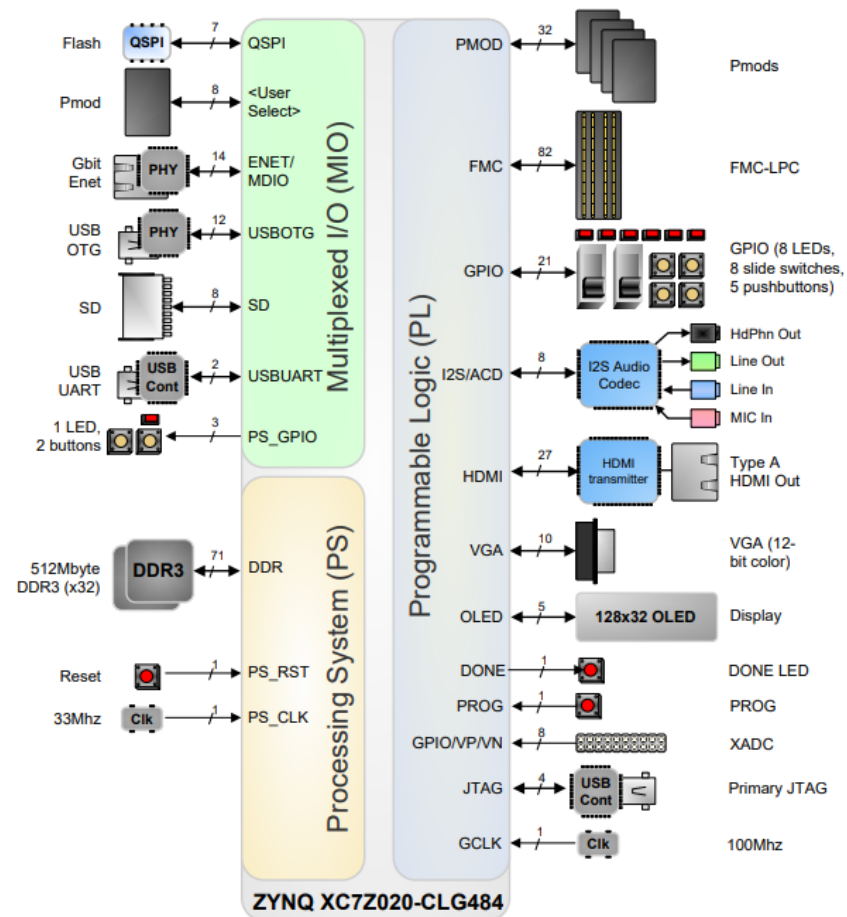
- ❑ **Processing System (PS):** dual Corex-A9 Processing System
- ❑ **Caches:** 32 KB Level 1 4-way set-associative instruction and data caches, 512 KB 8-way set-associative Level 2 cache
- ❑ **On-Chip Memory:** On-chip boot ROM, 256 KB on-chip RAM, Byte-parity support
- ❑ **Interconnection:** High-bandwidth connectivity within PS and between PS and PL, ARM AMBA® AXI based
- ❑ **Programmable Logic (PL):** 85000 Series-7 Programmable Logic Cells (FPGA)



## Processing System in Zynq FPGA



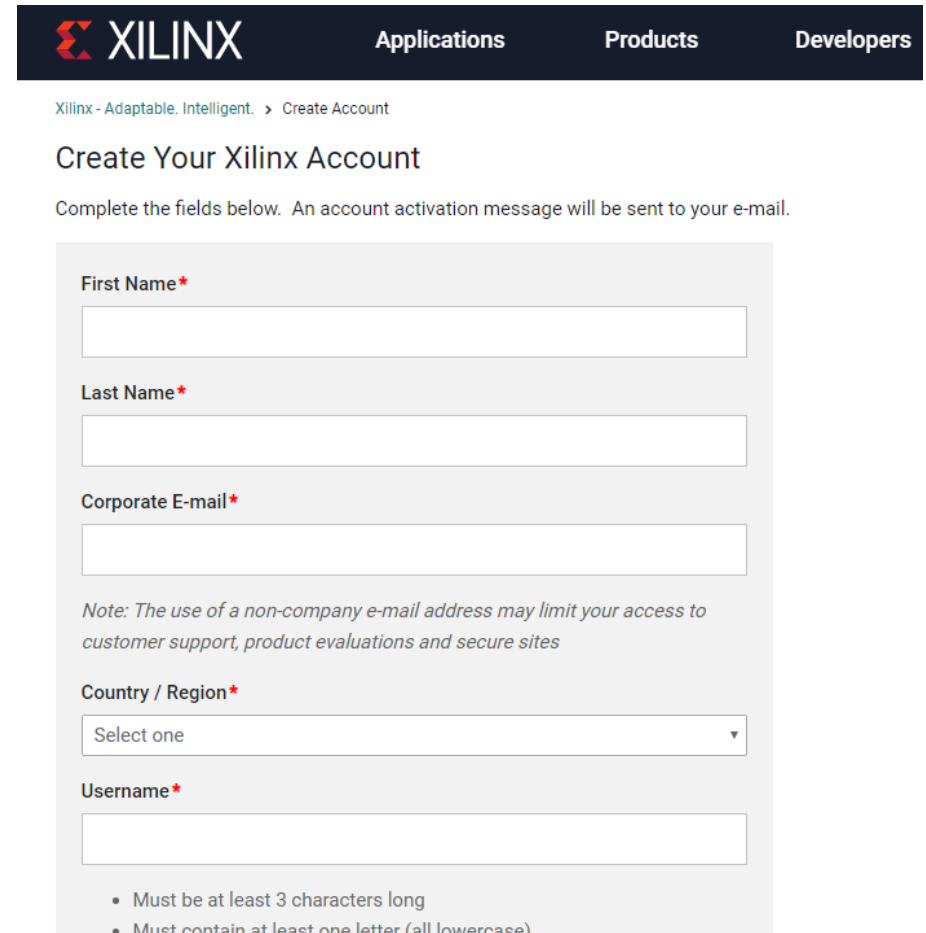
## Zynq FPGA Interfaces



## Vivado Installation

### ❑ Create a new account at Xilinx

- URL: <https://www.xilinx.com/registration/create-account.html>
- Username must be at least 3 characters long and contain at least one letter
- Password is from 8 to 32 characters
- Password must contain at least 1 letter, 1 number and 1 special character(such as @,#,\$...)
- Check for the activation message from Xilinx in email's inbox (sometime in spam folder)



The screenshot shows the Xilinx website's registration page. At the top is a dark blue navigation bar with the Xilinx logo and links for Applications, Products, and Developers. Below the navigation bar, the page title is 'Create Your Xilinx Account'. A sub-header reads: 'Complete the fields below. An account activation message will be sent to your e-mail.' The registration form is a light gray box containing several fields: 'First Name \*', 'Last Name \*', 'Corporate E-mail \*', 'Country / Region \*' (a dropdown menu), and 'Username \*'. Below the 'Username \*' field, there are two bullet points: '• Must be at least 3 characters long' and '• Must contain at least one letter (all lowercase)'. A note at the bottom of the form states: 'Note: The use of a non-company e-mail address may limit your access to customer support, product evaluations and secure sites'.

XILINX Applications Products Developers

Xilinx - Adaptable. Intelligent. > Create Account

### Create Your Xilinx Account

Complete the fields below. An account activation message will be sent to your e-mail.

**First Name \***

**Last Name \***

**Corporate E-mail \***

*Note: The use of a non-company e-mail address may limit your access to customer support, product evaluations and secure sites*

**Country / Region \***

Select one ▼

**Username \***

- Must be at least 3 characters long
- Must contain at least one letter (all lowercase)

## Vivado Installation

### ❏ Download Vivado Design Suite

- Access Xilinx's download site at: <https://www.xilinx.com/support/download.html>
- Select “Vivado HLx 2019.1: WebPACK and Editions - Windows Self Extracting Web Installer”
- Website will redirect us to the information page

The screenshot shows the Xilinx website's download page for the Vivado Design Suite - HLx Editions - 2019.1 Full Product Installation. The page features a dark navigation bar with the Xilinx logo and links for Applications, Products, Developers, Support, and About. The main content area is divided into two columns. The left column contains an 'Important' section with a warning about using web installers, a note about download verification, and two download links: 'Vivado HLx 2019.1: WebPACK and Editions - Windows Self Extracting Web Installer (EXE - 64.62 MB)' and 'Vivado HLx 2019.1: WebPACK and Editions - Linux Self Extracting Web Installer (BIN - 115.05 MB)'. Below these links are MD5 SUM values and a 'Download Verification' section with buttons for 'Digests', 'Signature', and 'Public Key'. The right column contains a table with download information.

Vivado Design Suite - HLx Editions - 2019.1 Full Product Installation	
<b>Important</b> We strongly recommend to use the web installers as it reduces download time and saves significant disk space. Please see <a href="#">Installer Information</a> for details.  Note: Download verification is only supported with Google Chrome and Microsoft Internet Explorer web browsers.	<b>Download Includes</b> Vivado Design Suite HLx Editions (All Editions)
<b>Download Type</b> Full Product Installation	<b>Last Updated</b> May 29, 2019
<b>Answers</b> <a href="#">2019.x - Vivado Known Issues</a>	<b>Documentation</b> <a href="#">Release Notes</a> <a href="#">What's New in Vivado</a>
<b>Support Forums</b> <a href="#">Installation and Licensing</a>	

## Vivado Installation

### Download Vivado Design Suite

- Xilinx wants to collect some information from users
- Filling in the required information
- All information should be in English (or Latin alphabet)
- We can use the University's address to fill this form
- Finally, click on "Download" button

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#### Download Center - Name and Address Verification

##### 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\*

Your given name

Last Name\*

Your Family name

Corporate E-mail\*

Your Email

Company Name\*

Soongsil University

Please enter your company's name, or "None" if not affiliated.

Address 1\*

Soongsil University, 369 Sangdo-ro, Dongjak-gu, Seoul

Address 2

City\*

Seoul

State\*

Seoul

Please use 2-letter code for your US state or Canadian province.

Country / Region\*

Korea, Republic Of

Zip Code\*

06978

Phone

Your phone number

Job Function\*

Student

Primary Market\*

High Performance Computing

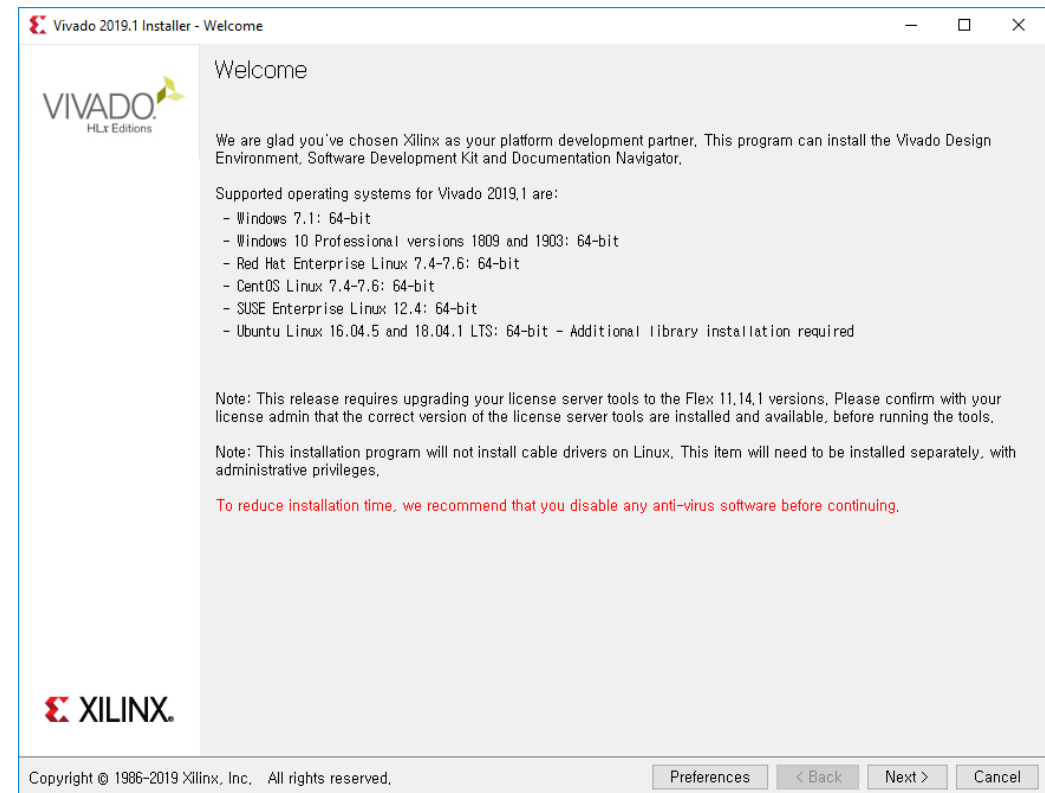
For more information about how we process your personal information, please see our [privacy policy](#).

Download



## Vivado Installation

- ❑ Run file that was downloaded from Xilinx website
- ❑ Considering disable all anti-virus program during installing process
- ❑ Click “Next” to continue



## Vivado Installation

- ❑ Login with the account that you created in the previous step
- ❑ Select the option of “Download and Install Now”
- ❑ Click “Next” to continue

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

## Vivado Installation

- ☐ Review the information again, then accept License Agreements
- ☐ Click “Next” to continue

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](#).

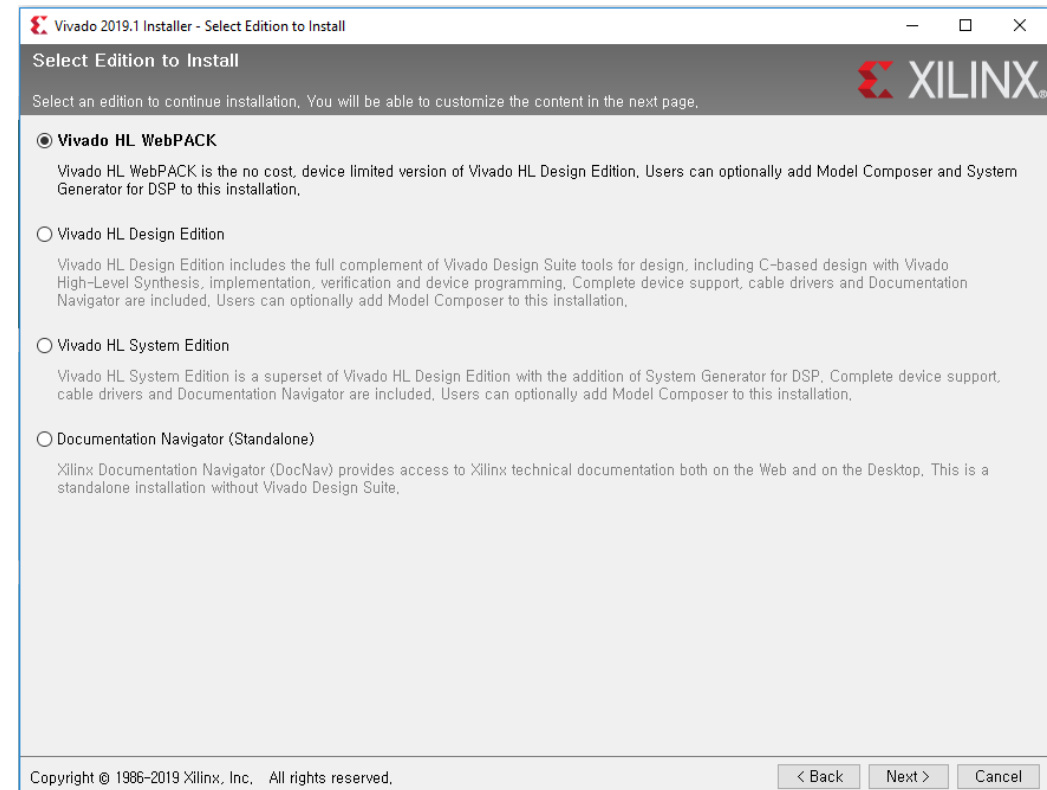
☒ I Agree

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< Back   Next >   Cancel

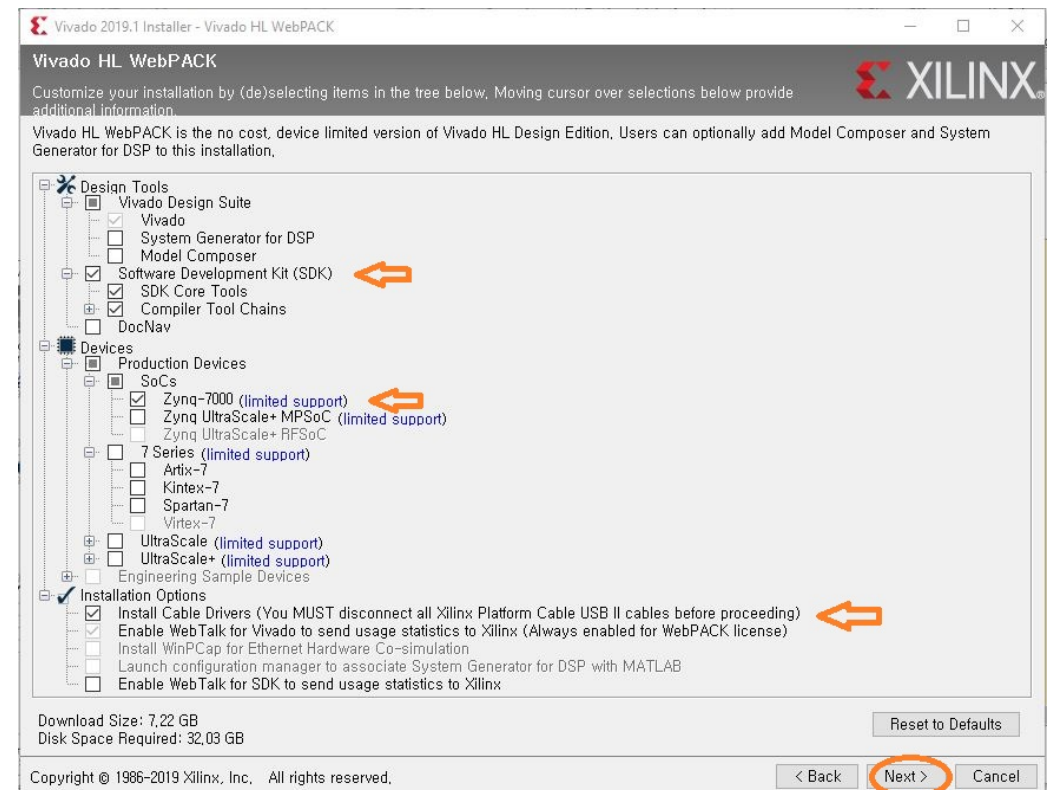
## Vivado Installation

- ❑ Select the option “Vivado HL WebPACK”
- ❑ Click “Next” to continue



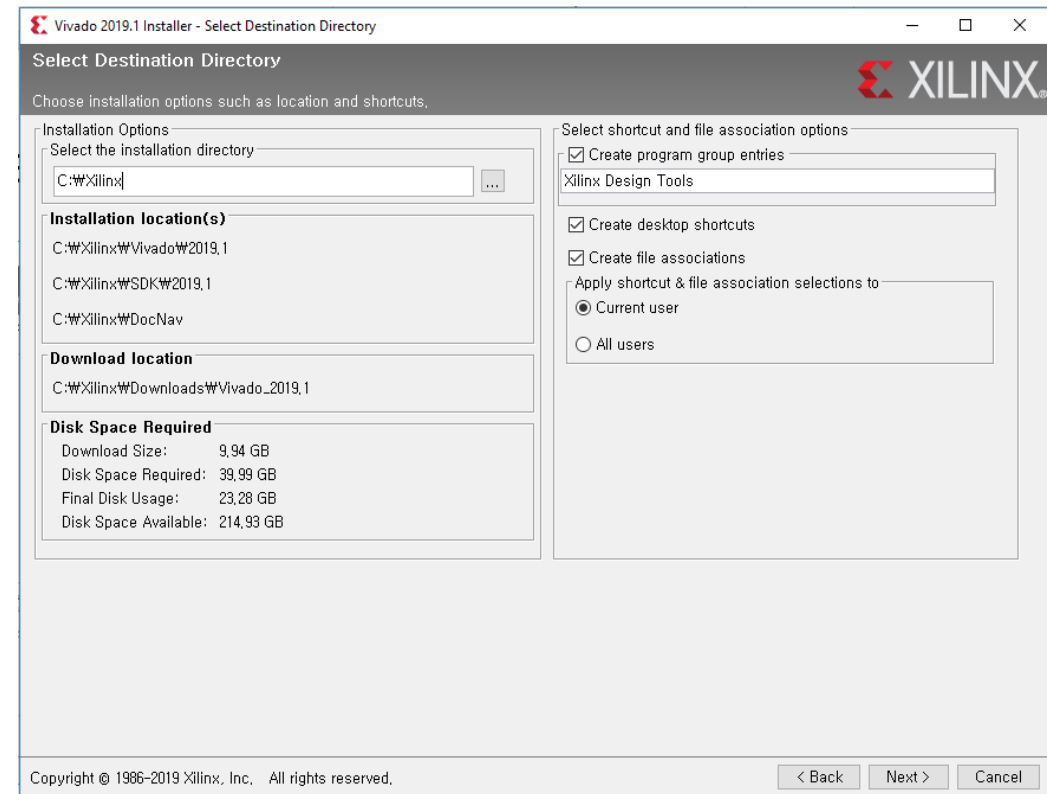
## Vivado Installation

- ❑ Un-check all available option
- ❑ Only keep the options:
  - SDK
  - Zynq-7000
  - Install Cable Drivers
- ❑ Click “Next” to continue



## Vivado Installation

- ❑ Keep the default installation directory and download location as illustrated figure
- ❑ Click “Next” to continue



## Vivado Installation

- ❑ The Installer will download and install Vivado Design Suite and all related software automatically



## Vivado Installation

- ❑ The installation often takes up to 2 hours to complete.

