

The Vivado/Vitis tools from Xilinx are available for Windows and Linux. Historically, driver support (amongst other issues) have been better resolved in the Windows version. In COMP4601 we can only support the Windows install of the 2020.1 toolset. If you don't have a machine configured with Windows 10¹, we suggest using a virtual machine, such as vmware, which you are entitled to use through the School's license – see https://taggi.cse.unsw.edu.au/FAQ/Getting_Software/

The following guide assumes that you have an up-to-date version of Windows 10 installed on your machine. The installation, as outlined here, requires 76GB disk space during installation, and 44GB are needed to store the installation.

If you experience difficulties in following the instructions provided here, please [email both Oliver \(o.diessel@unsw.edu.au\)](mailto:o.diessel@unsw.edu.au) and [Junning \(junning.fan@student.unsw.edu.au\)](mailto:junning.fan@student.unsw.edu.au) to let us know about it.

A. Download Vivado 2020.1

1. Navigate to the [2020.1 Xilinx Vivado Archive download page \(https://www.xilinx.com/support/download/index.html/content/xilinx/en/downloadNav/vivado-design-tools/archive.html\)](https://www.xilinx.com/support/download/index.html/content/xilinx/en/downloadNav/vivado-design-tools/archive.html).
2. For Windows 10, download “Xilinx Unified Installer 2020.1: Windows Self Extracting Web Installer” under “Vivado Design Suite - HLx Editions - 2020.1 Full Product Installation” section.

Vivado Design Suite - HLx Editions - 2020.1 Full Product Installation

Important Information

Vivado® Design Suite 2020.1 is now available:

- Ability to select the full image or selected products as part of Web installer
- Address map enhancements provide Realtime error highlighting and cross probing
- Nested DFX further extends the flexibility of DFX solutions
- Report QoR Suggestions predicts up to 3 custom strategies for Improved performance
- Power Rail based reporting now available

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 Edge web browsers.
- Beginning this release, the Single File Download and the Webinstaller supports all products. Vivado Lab Solutions and Document Navigator are included in both the Single File Download and Webinstaller packages.

[Xilinx Unified Installer 2020.1: Windows Self Extracting Web Installer \(EXE - 66.73 MB\)](#)

MD5 SUM Value : e4339ae3bcad478d7130edd669aac786

Download Verification ⓘ

Digests Signature Public Key

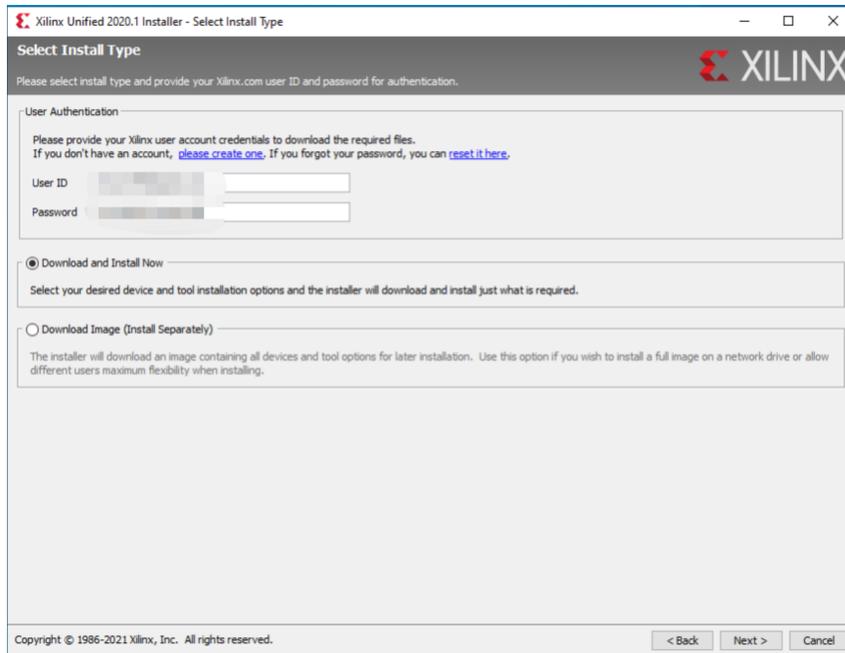
¹ Windows 11 should support Vivado HLS 2020.1 equally well. Some minor but obvious changes to the instructions below may need to be made for a Windows 11 installation.

Alternatively, you can download " Vivado HLx 2020.1: All OS installer Single-File Download", this is an offline installer to try if you have connection issue when using the Web installer.

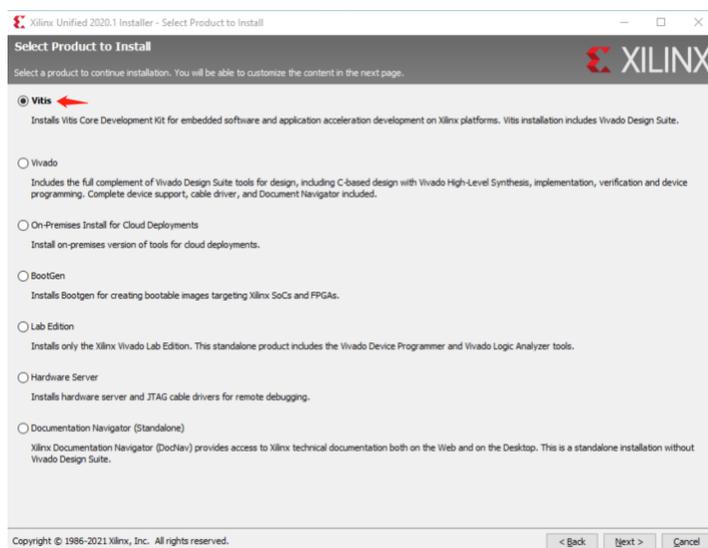
3. Downloading content from Xilinx requires you to have a Xilinx account, register your account as directed by the website.
4. Once you have logged in, fill the U.S. Government Export Approval form, then click the download button.

B. Install Vivado 2020.1

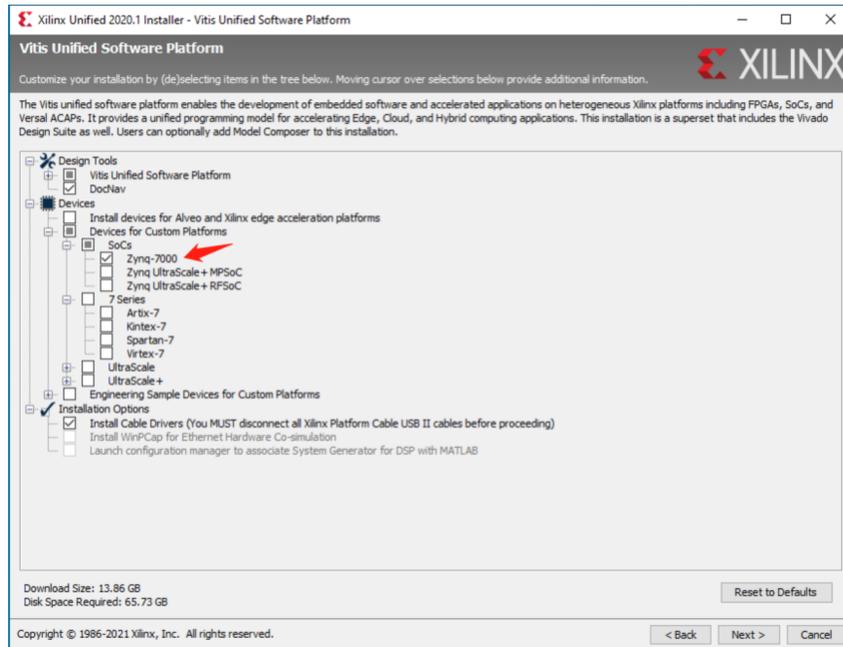
1. Login to the Xilinx Unified 2020.1 Installer, select Download and Install Now.



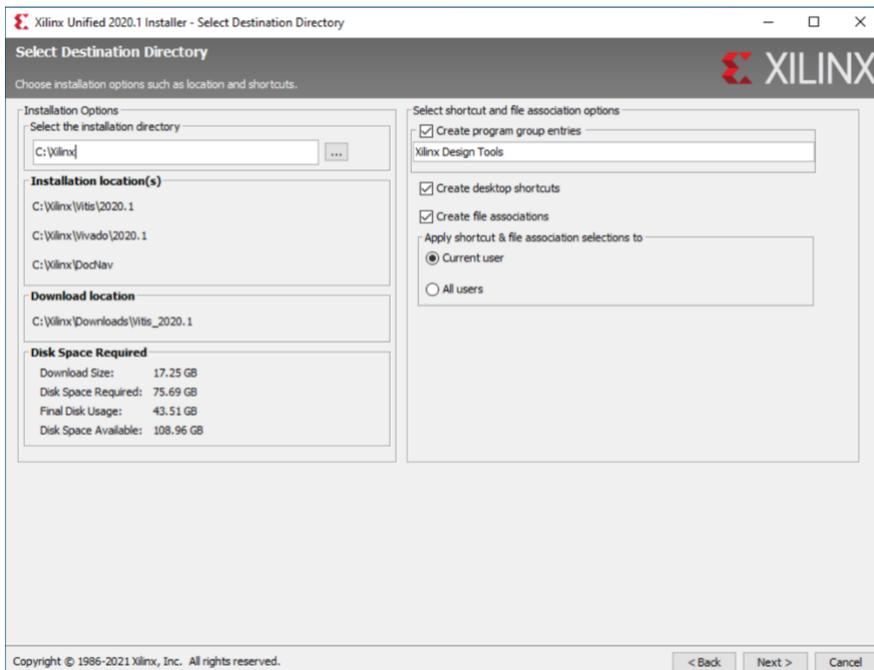
2. Continue, Agree terms. In the select product to install page, **select Vitis** to install. This option will install Vitis, Vivado and Vivado HLS.



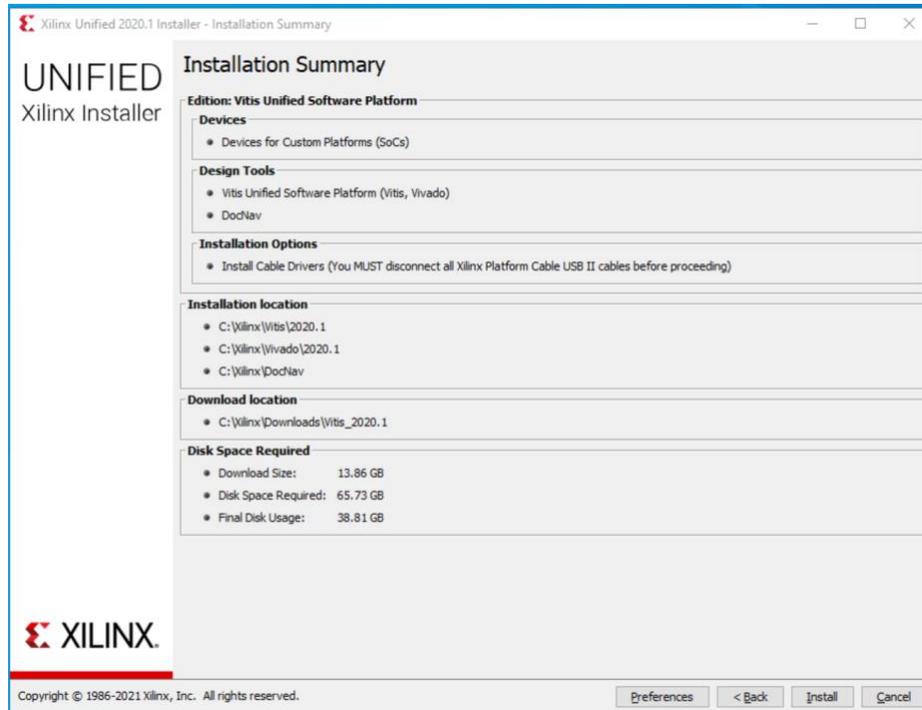
- On the next page, tick to install Zynq-7000 and Zynq Ultrascale + MPSoC devices as shown below (note that the Zynq Ultrascale + MPSoC devices should also be selected).



- Select the installation directory, remember the path to this directory for system environment variable configuration later. Click next, and choose to create the path. (Note that if this path is NOT empty, the installer will refuse to continue. You'll have to manually delete the contents of this directory.)

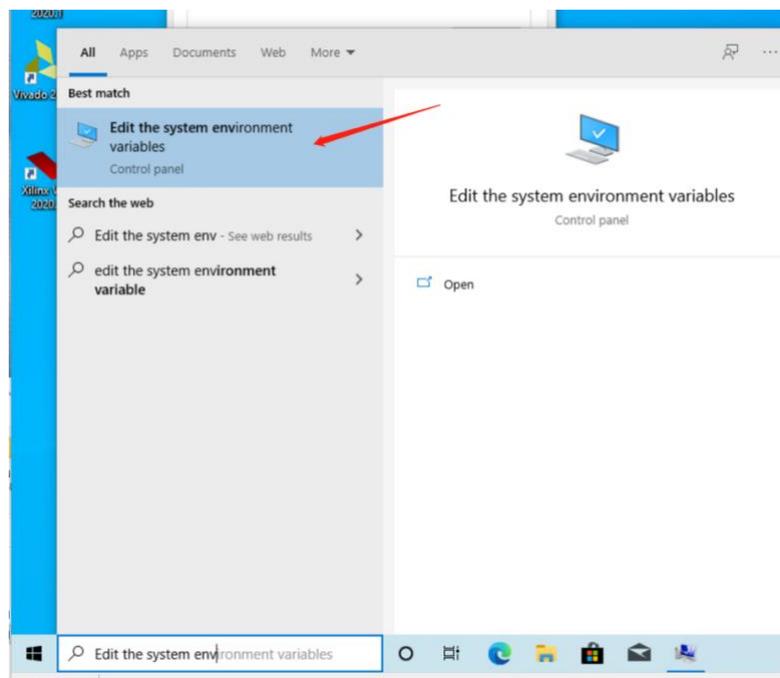


5. Check the installation summary. Then click install, wait for the download to complete.

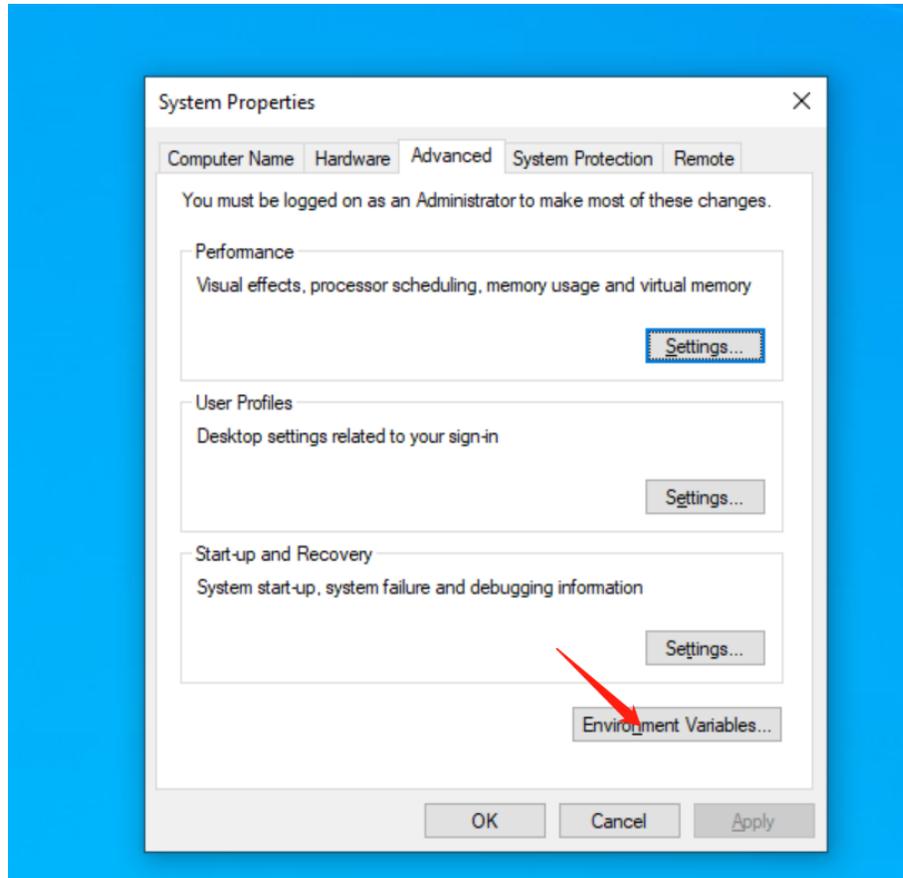


C. Add the Vivado and Vitis binary directories to the system environment variable list

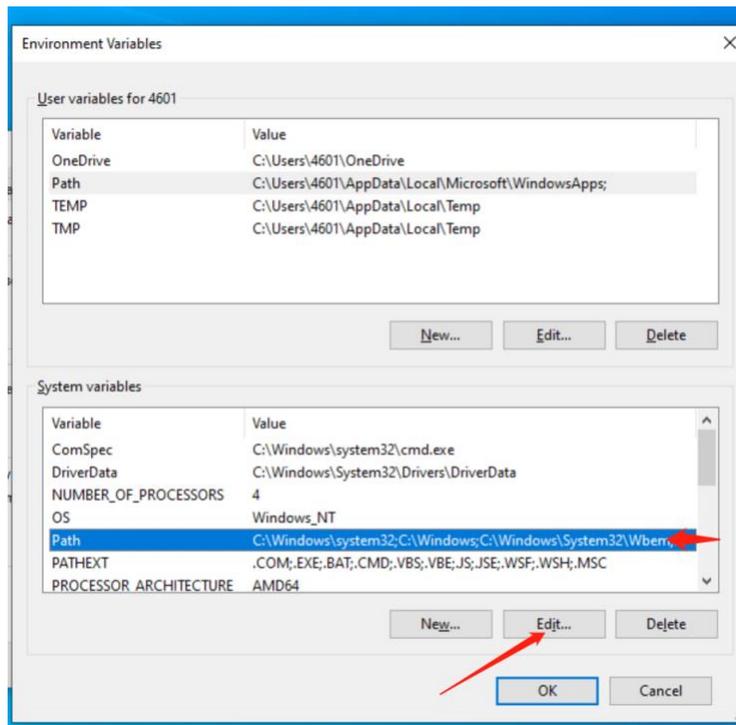
1. Search for the term "change the system environment variables" in Start.



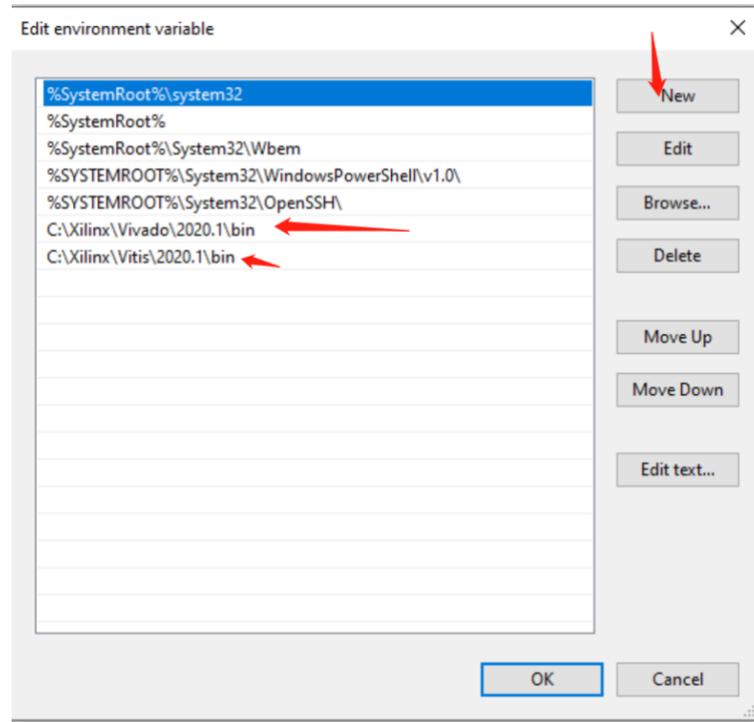
2. Click "Environment Variables" in the System Properties window.



3. In the System variables section, highlight PATH, click edit.



- In the Edit environment variable window, click new, set a new variable entry with C:\Xilinx\Vivado\2020.1\bin. Then create another entry with C:\Xilinx\Vitis\2020.1\bin. Click OK in the Edit environment variable window, Click OK in the Environment Variable, Click OK in the Environment Variables window.



- Reboot the system.
- Now, let's verify the command line tools (CMD and powershell) can find the Vivado, Vivado HLS and Vitis executables. Open CMD or powershell. Type vivado (note the command is case sensitive), verify the vivado GUI can be called this way. Exit Vivado, type vivado_hls, verify the Vivado HLS GUI can be called this way. Exit Vivado HLS, type vitis, verify the Vitis GUI can be called this way.

D. Apply the Vivado 2020.1 patch for the Y2K22 bug

- Like many developers, Xilinx were affected by the Y2K22 bug. You will need to patch your installation for this bug in order to be able to export designs for synthesis and implementation.
- Search for "xilinx y2k22" in your search bar and select the topmost entry [Export IP Invalid Argument / Revision Number Overflow Issue \(Y2K22\)](https://support.xilinx.com/s/article/76960?language=en_US) (https://support.xilinx.com/s/article/76960?language=en_US)
- Follow the instructions given in the Solution section, making sure that after the extraction the y2k22_patch folder is under C:\Xilinx, i.e : C:\Xilinx\y2k22_patch
- When the patch is successfully applied, you should be able to **Export RTL**, as described in Step 5 of Lab 1 in Chapter 2 of the 2020.1 Vivado HLS Tutorial, which you will complete in order to familiarize yourself with the design tool.