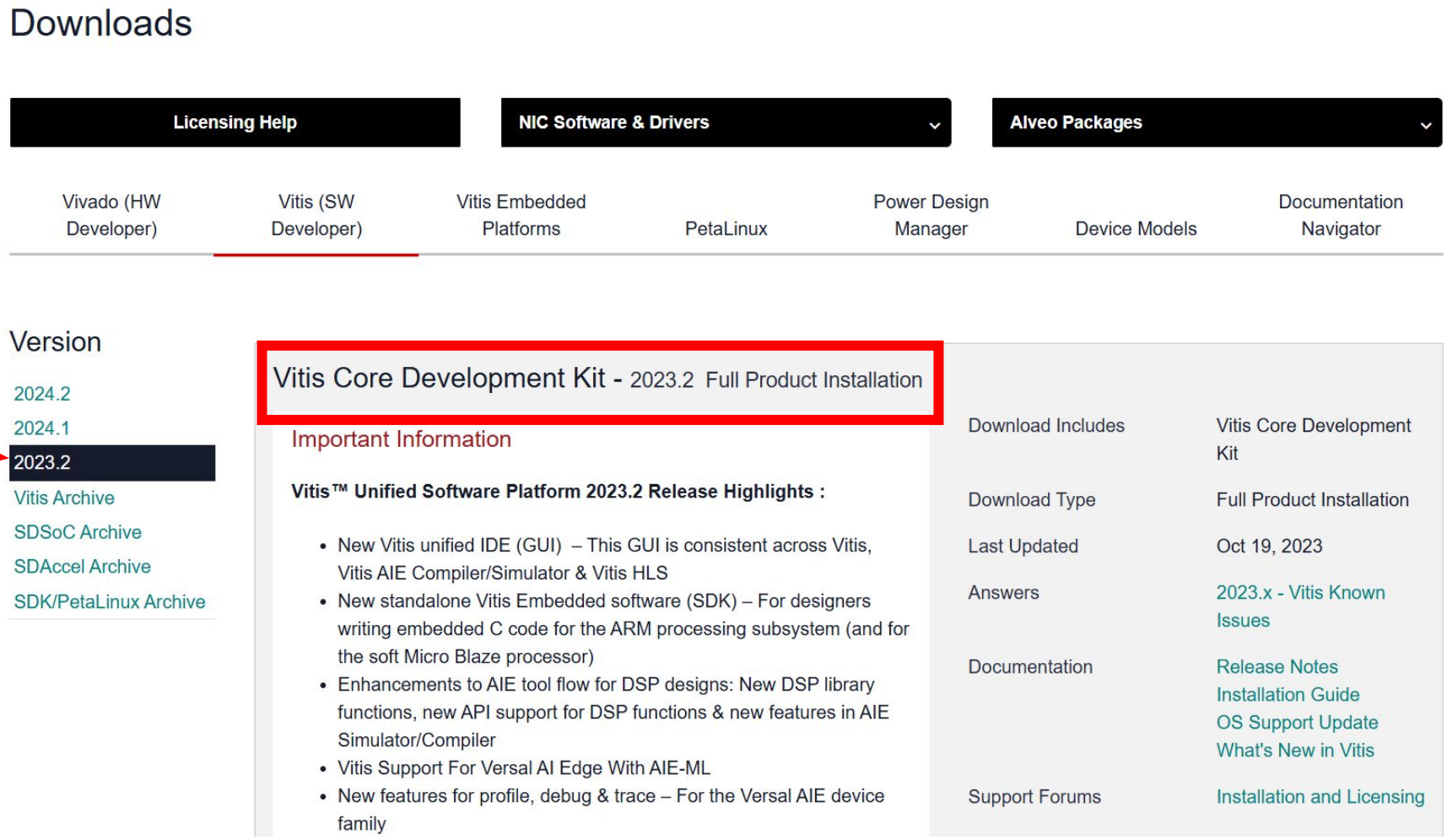
Vitis hls install tutorial

Step 1. Go to the download website

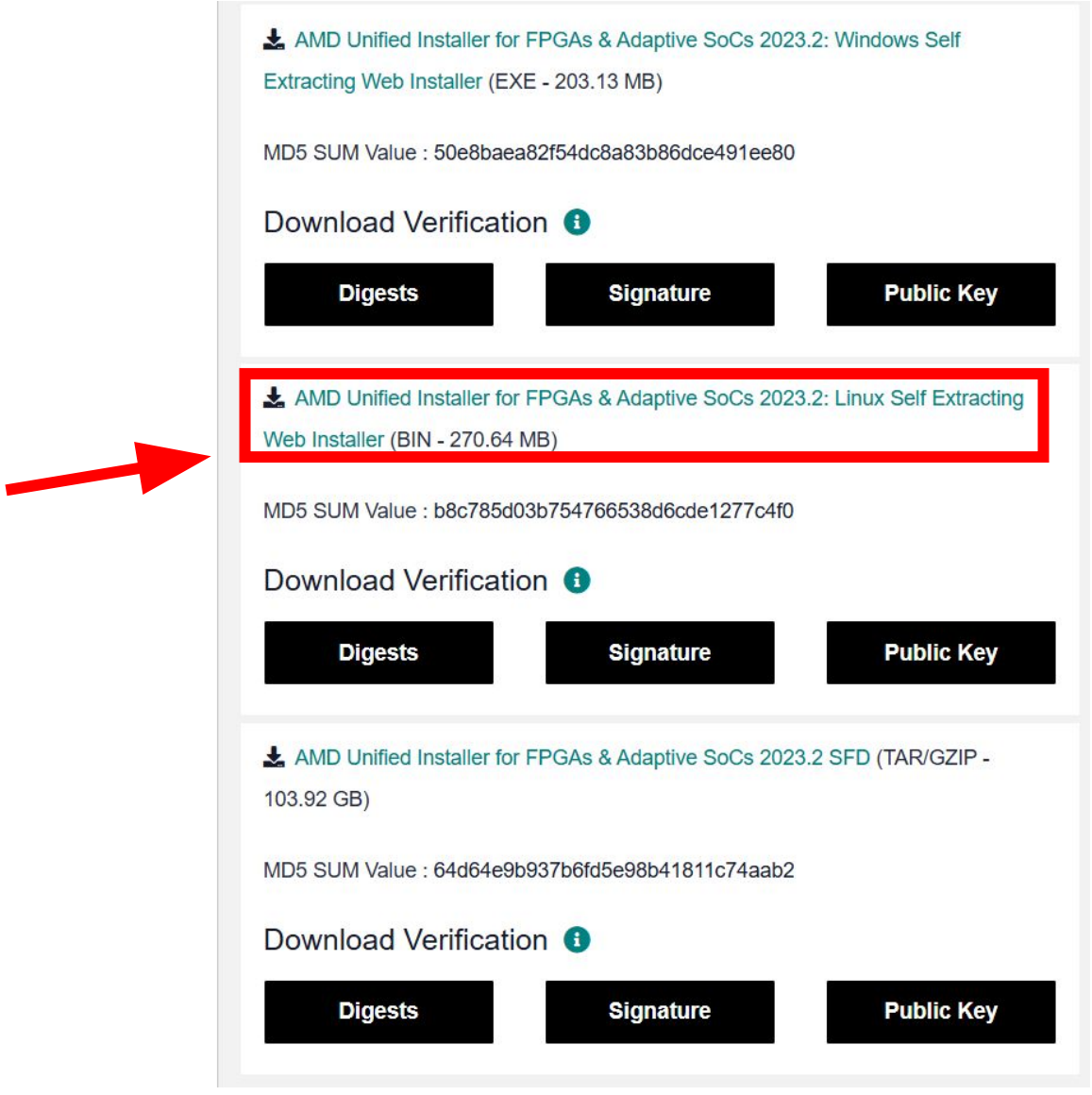
https://www.xilinx.com/support/download/index.html/content/xilinx/en/downloadNav/vitis/2023-2.html

Choose 2023.2
Full Product Installation



Step 2. Choose Linux version

Scroll down and choose the linux one, and it will ask you to log in



Step 3. Create an account and log in

Parallel Computing System Lab

AMD 賬戶創建

如需創建帳戶，請填寫以下表格。

帶有**訪問令牌**的帳戶激活消息將通過電子郵件發送至您在下方預留的電子郵箱地址。

名 *

姓 *

電子郵件 *

對於商業用戶，請提供您公司的電子郵件地址，以便完全訪問許可、技術支持和服務等專區內容。對於其他用戶，請使用您的個人電子郵件地址。

语言首选项 *

英文

居住地 *

選擇一個

創建帳戶即表示您同意 AMD 使用條款和隱私政策。

我不是機器人

reCAPTCHA

隱私權 - 條款

Submit

下一步 - 啟用帳戶

請檢查您的電子郵件以取得 AMD 帳戶啟用訊息。

若要啟用您的帳戶，請輸入帳戶啟用電子郵件訊息中的**存取權杖**並建立密碼。

存取權杖 *

密碼 *

- 密碼必須包含至少 10 個字符，最多 72 個字符
- 至少包含 1 个小写字母，1 个大写字母，1 个数字和 1 个特殊字符 (!@#$%^&*+=)
- 不得包含部分電子郵件地址、名字或姓氏
- 不可為常用密碼

確認密碼 *

我不是機器人

reCAPTCHA

隱私權 - 條款

啟用帳戶

重新傳送啟用電子郵件

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 AMD 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 *

[redacted]

Last Name *

[redacted]

E-mail *

[redacted]

Company Name *

Address 1 *

Address 2

Location *

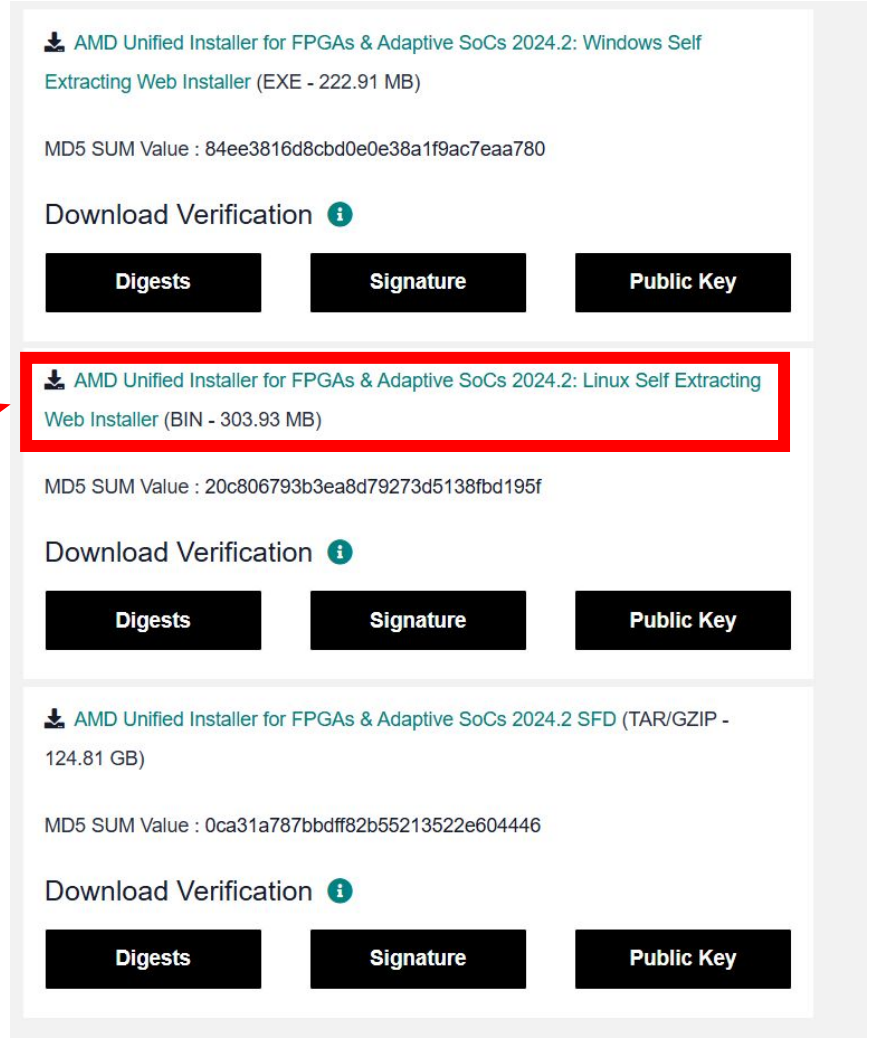
Taiwan

State/Province

Step 4. Download the bin file

After registering you can download the bin file

Linux version



Step 5. Execute the bin file


```
[huyuhao1011@PCSLasVegas ~]$ sudo chmod +x FPGAs_AdaptiveSoCs_Unified_2023.2_1013_2256_Lin64.bin
[huyuhao1011@PCSLasVegas ~]$ sudo ./FPGAs_AdaptiveSoCs_Unified_2023.2_1013_2256_Lin64.bin
```

If you meet the problem like the picture below

```
INFO Could not detect the display scale (hDPI).
      If you are using a high resolution monitor, you can set the installer scale factor like this:
      export XINSTALLER_SCALE=2
      setenv XINSTALLER_SCALE 2
MoTTY X11 proxy: No authorisation provided
MoTTY X11 proxy: No authorisation provided
ERROR: Installer could not be started. Could not initialize class java.awt.GraphicsEnvironment$LocalGE
java.lang.NoClassDefFoundError: Could not initialize class java.awt.GraphicsEnvironment$LocalGE
        at java.desktop/java.awt.GraphicsEnvironment.getLocalGraphicsEnvironment(GraphicsEnvironment.java:106)
        at java.desktop/java.awt.Window.initGC(Window.java:492)
        at java.desktop/java.awt.Window.init(Window.java:512)
        at java.desktop/java.awt.Window.<init>(Window.java:554)
        at java.desktop/java.awt.Frame.<init>(Frame.java:428)
        at java.desktop/java.awt.Frame.<init>(Frame.java:393)
        at java.desktop/javax.swing.JFrame.<init>(JFrame.java:180)
        at h.b.<init>(Unknown Source)
        at com.xilinx.installer.gui.F.<init>(Unknown Source)
        at com.xilinx.installer.gui.InstallerGUI.<init>(Unknown Source)
        at com.xilinx.installer.gui.InstallerGUI.<clinit>(Unknown Source)
        at com.xilinx.installer.api.InstallerLauncher.main(Unknown Source)
Caused by: java.lang.ExceptionInInitializerError: Exception java.awt.AWTError: Can't connect to X11 window server using 'localhost:10.0' as the
 value of the DISPLAY variable. [in thread "main"]
        at java.desktop/sun.awt.X11GraphicsEnvironment.initDisplay(Native Method)
        at java.desktop/sun.awt.X11GraphicsEnvironment$1.run(X11GraphicsEnvironment.java:105)
        at java.base/java.security.AccessController.doPrivileged(AccessController.java:319)
        at java.desktop/sun.awt.X11GraphicsEnvironment.initStatic(X11GraphicsEnvironment.java:64)
        at java.desktop/sun.awt.X11GraphicsEnvironment.<clinit>(X11GraphicsEnvironment.java:59)
        at java.desktop/sun.awt.PlatformGraphicsInfo.createGE(PlatformGraphicsInfo.java:37)
        at java.desktop/java.awt.GraphicsEnvironment$LocalGE.createGE(GraphicsEnvironment.java:93)
        at java.desktop/java.awt.GraphicsEnvironment$LocalGE.<clinit>(GraphicsEnvironment.java:84)
        at java.desktop/java.awt.GraphicsEnvironment.getLocalGraphicsEnvironment(GraphicsEnvironment.java:106)
        at com.xilinx.installer.gui.F.c(Unknown Source)
        at com.xilinx.installer.gui.F.<clinit>(Unknown Source)
        ... 1 more
[huyuhao1011@PCSLasVegas ~]$
```

Try this

```
[huyuhao1011@PCSLasVegas ~]$ ./FPGAs_AdaptiveSoCs_Unified_2023.2_1013_2256_Lin64.bin --target vitis_2023.2
```

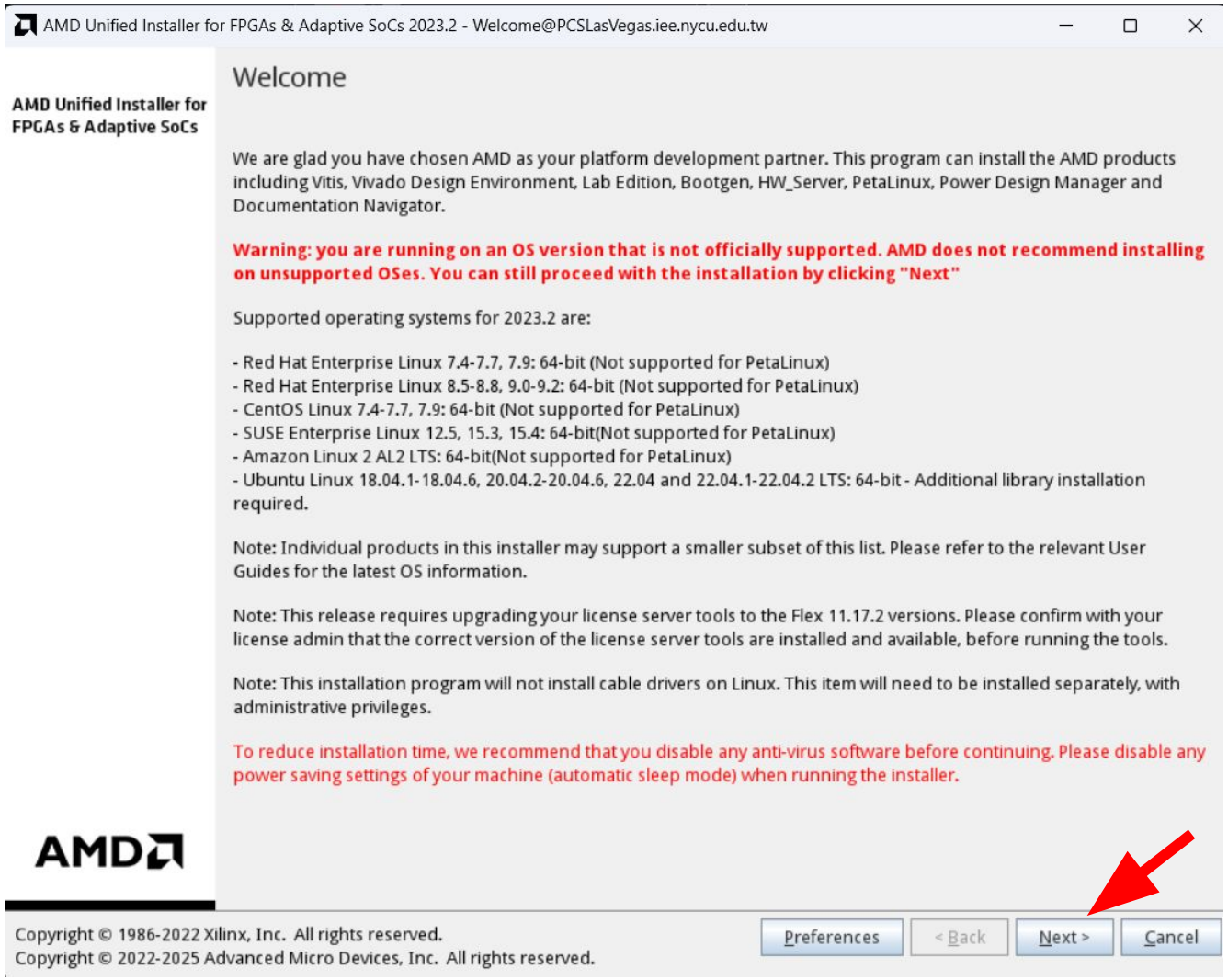
Or

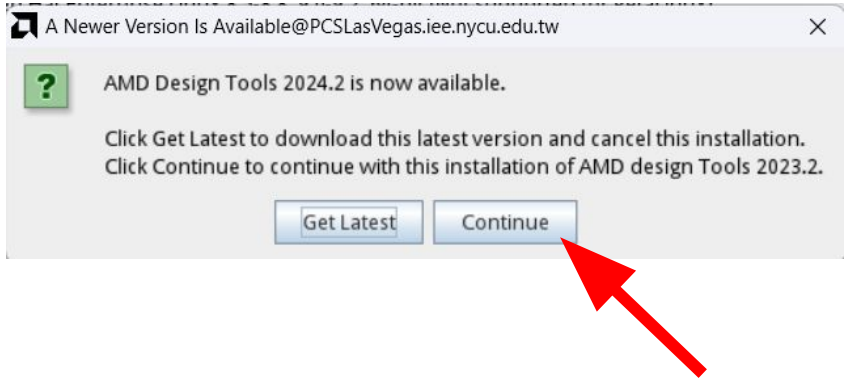
```
[huyuhao1011@PCSLasVegas ~]$ sudo ./FPGAs_AdaptiveSoCs_Unified_2023.2_1013_2256_Lin64.bin --target vitis_2023.2
```

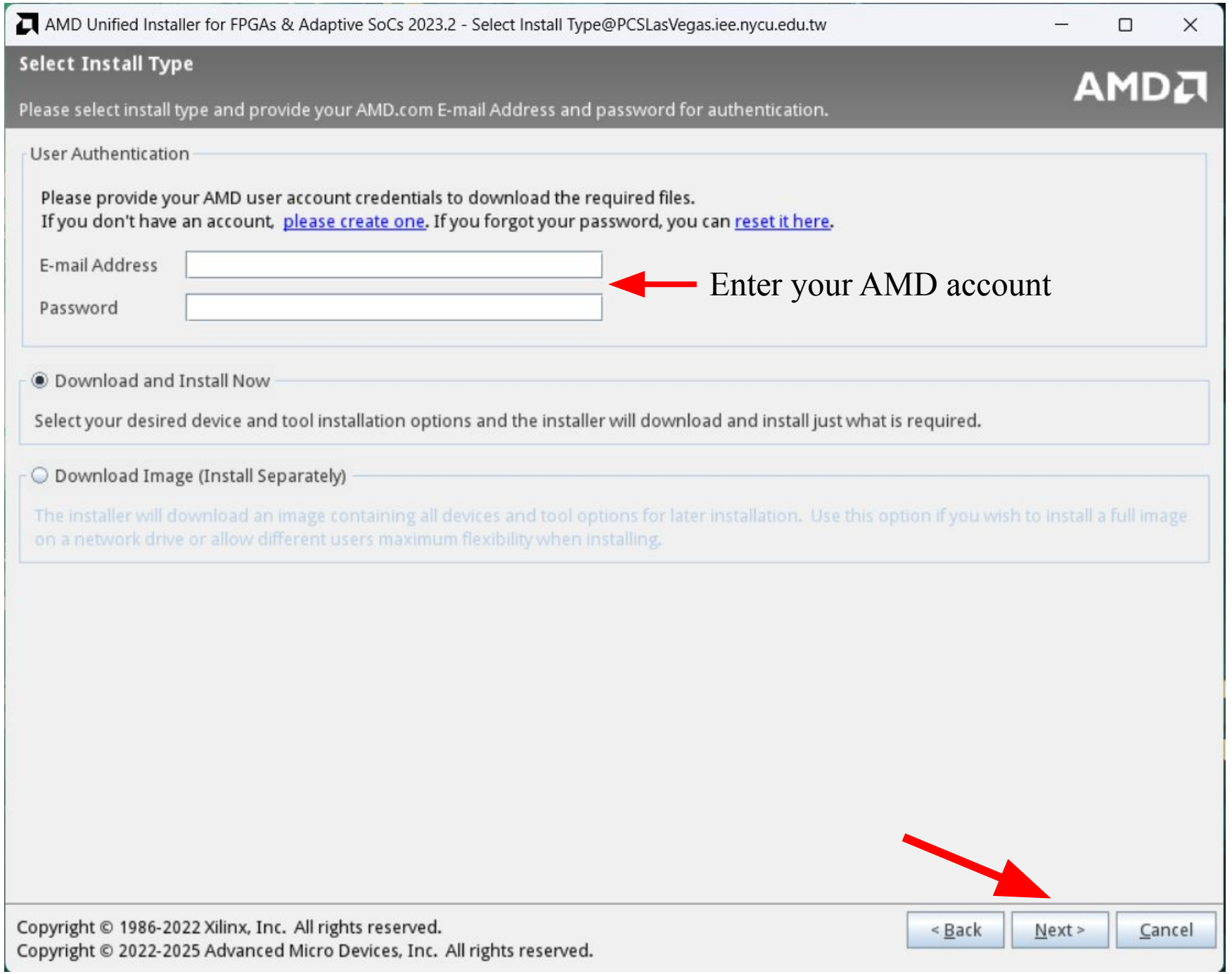
It will create a directory named vitis_2023.2 and extract the .bin in it.

(you can change the dir name to whatever you want)

Step 6. Install the Vitis






AMD Unified Installer for FPGAs & Adaptive SoCs 2023.2 - Select Install Type@PCSLasVegas.iee.nycu.edu.tw
Select Install Type
Please select install type and provide your AMD.com E-mail Address and password for authentication.
AMD
User Authentication
Please provide your AMD 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.
E-mail Address
Password
Enter your AMD account
Download and Install Now
Select your desired device and tool installation options and the installer will download and install just what is required.
Download 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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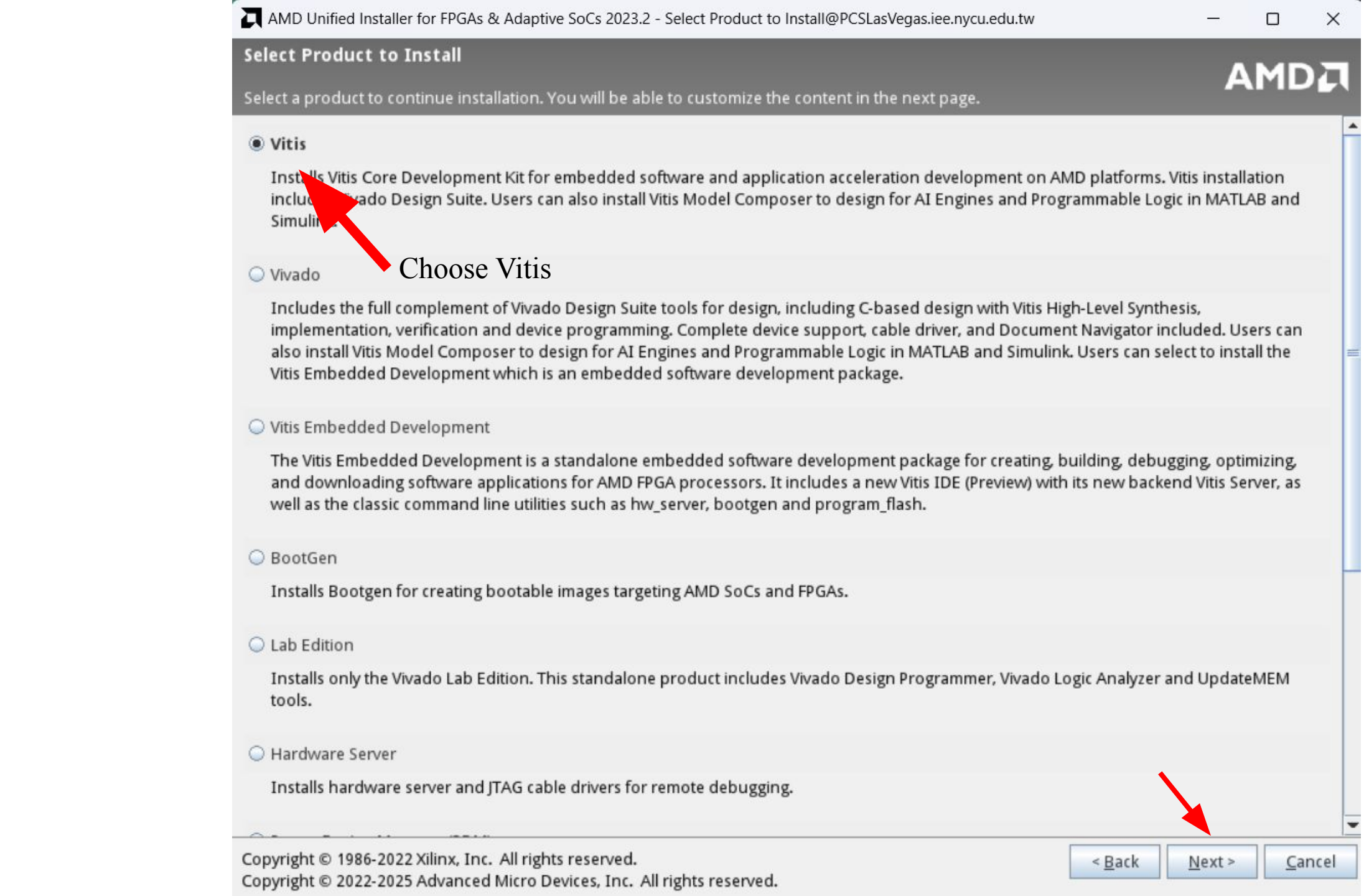

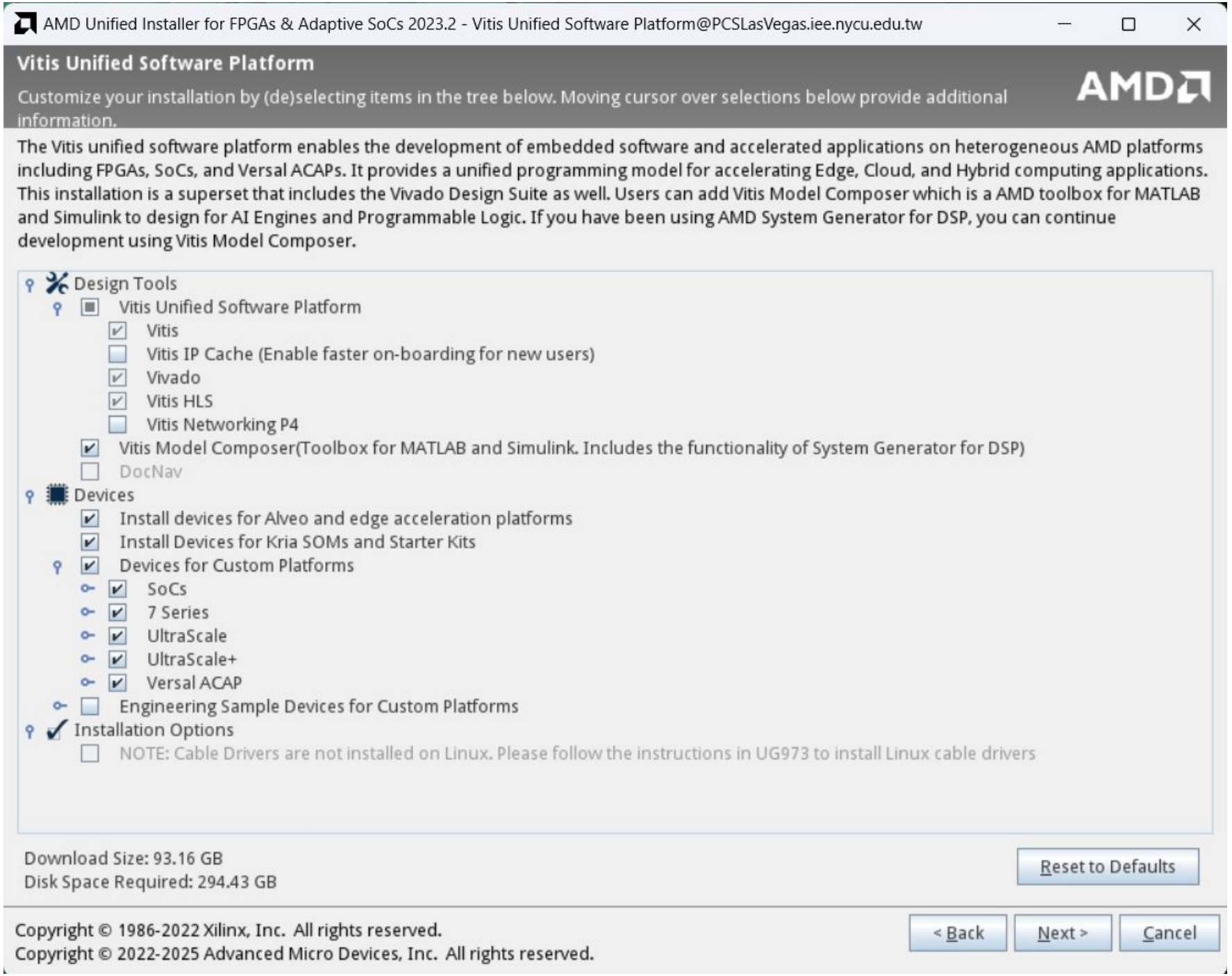
AMD Unified Installer for FPGAs & Adaptive SoCs 2023.2 - Vitis Unified Software Platform@PCSLasVegas.iee.nycu.edu.tw
Vitis Unified Software Platform
Customize your installation by (de)selecting items in the tree below. Moving cursor over selections below provide additional information.
AMD
The Vitis unified software platform enables the development of embedded software and accelerated applications on heterogeneous AMD platforms including FPGAs, SoCs, and Versal ACAPs. It provides a unified programming model for accelerating Edge, Cloud, and Hybrid computing applications. This installation is a superset that includes the Vivado Design Suite as well. Users can add Vitis Model Composer which is a AMD toolbox for MATLAB and Simulink to design for AI Engines and Programmable Logic. If you have been using AMD System Generator for DSP, you can continue development using Vitis Model Composer.
Design Tools
Vitis Unified Software Platform
Vitis
Vitis IP Cache (Enable faster on-boarding for new users)
Vivado
Vitis HLS
Vitis Networking P4
Vitis Model Composer(Toolbox for MATLAB and Simulink. Includes the functionality of System Generator for DSP)
DocNav
Devices
Install devices for Alveo and edge acceleration platforms
Install Devices for Kria SOMs and Starter Kits
Devices for Custom Platforms
SoCs
7 Series
UltraScale
UltraScale+
Versal ACAP
Engineering Sample Devices for Custom Platforms
Installation Options
NOTE: Cable Drivers are not installed on Linux. Please follow the instructions in UG973 to install Linux cable drivers
Download Size: 93.16 GB
Disk Space Required: 294.43 GB
Reset to Defaults
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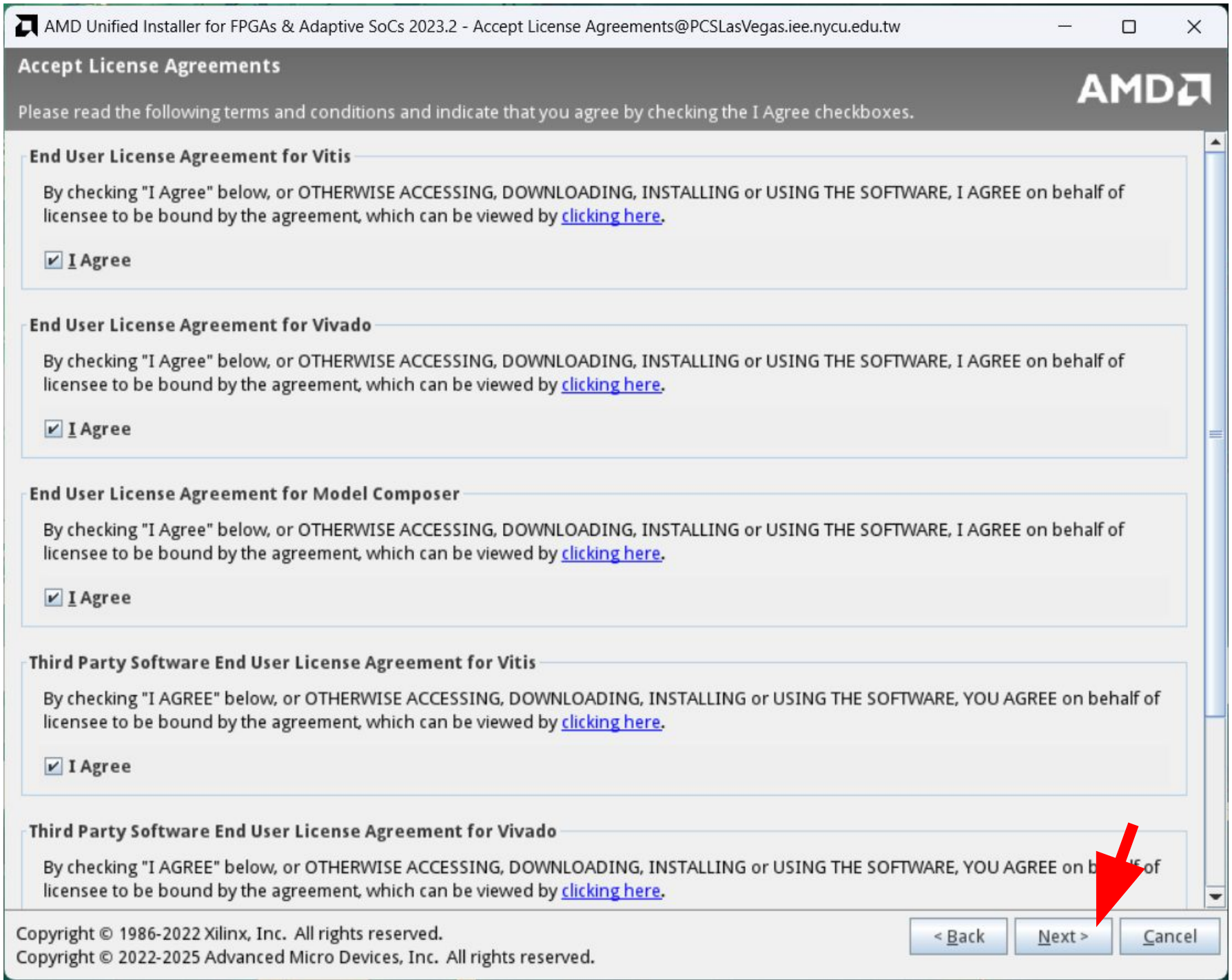
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Please read the following terms and conditions and indicate that you agree by checking the I Agree checkboxes.
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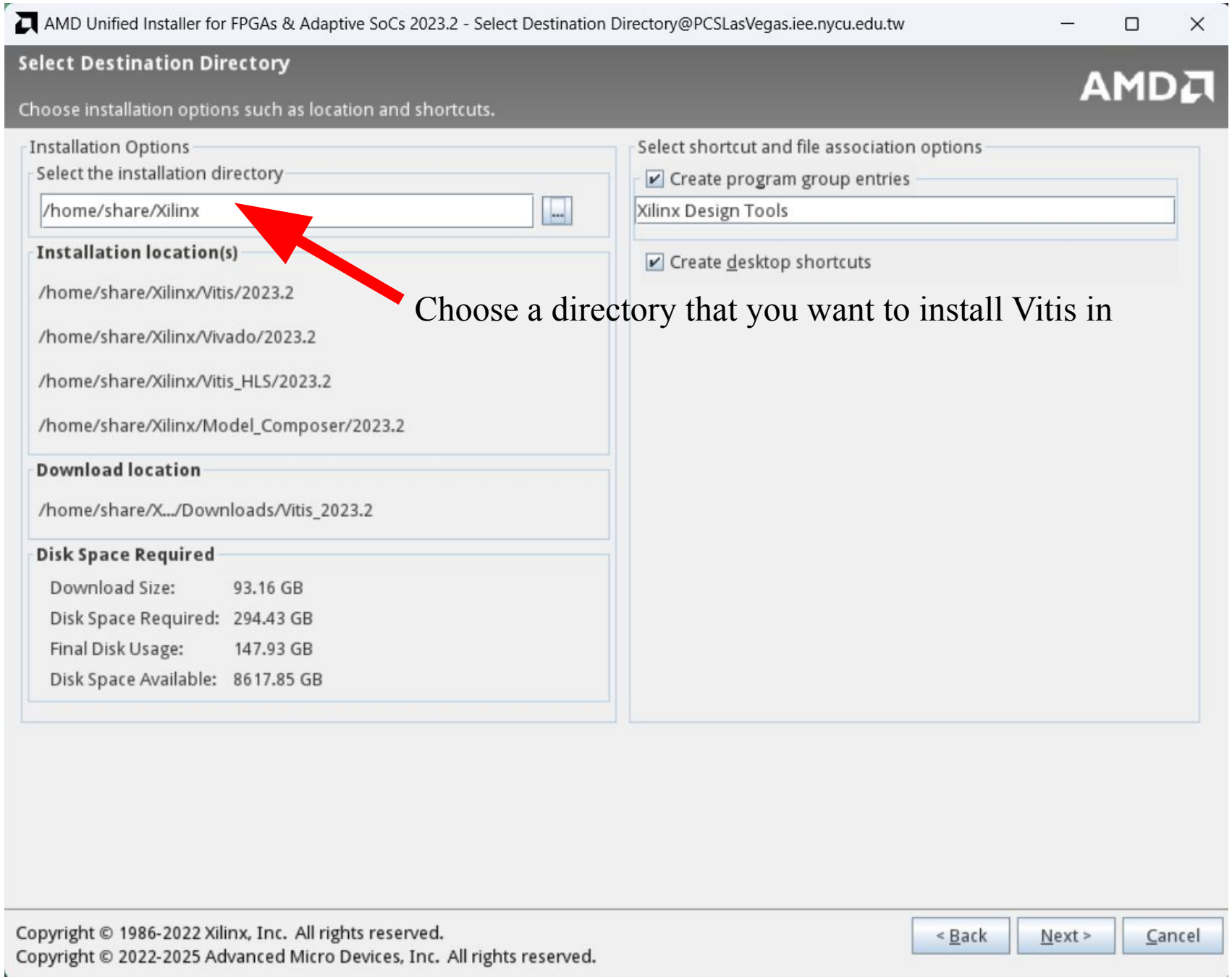
AMD Unified Installer for FPGAs & Adaptive SoCs 2023.2 - Select Destination Directory@PCSLasVegas.iee.nycu.edu.tw
Select Destination Directory
Choose installation options such as location and shortcuts.
AMD
Installation Options
Select the installation directory
/home/share/Xilinx
Installation location(s)
/home/share/Xilinx/Vitis/2023.2
/home/share/Xilinx/Vivado/2023.2
/home/share/Xilinx/Vitis_HLS/2023.2
/home/share/Xilinx/Model_Composer/2023.2
Download location
/home/share/X.../Downloads/Vitis_2023.2
Disk Space Required
Download Size: 93.16 GB
Disk Space Required: 294.43 GB
Final Disk Usage: 147.93 GB
Disk Space Available: 8617.85 GB
Select shortcut and file association options
Create program group entries
Xilinx Design Tools
Create desktop shortcuts
Choose a directory that you want to install Vitis in
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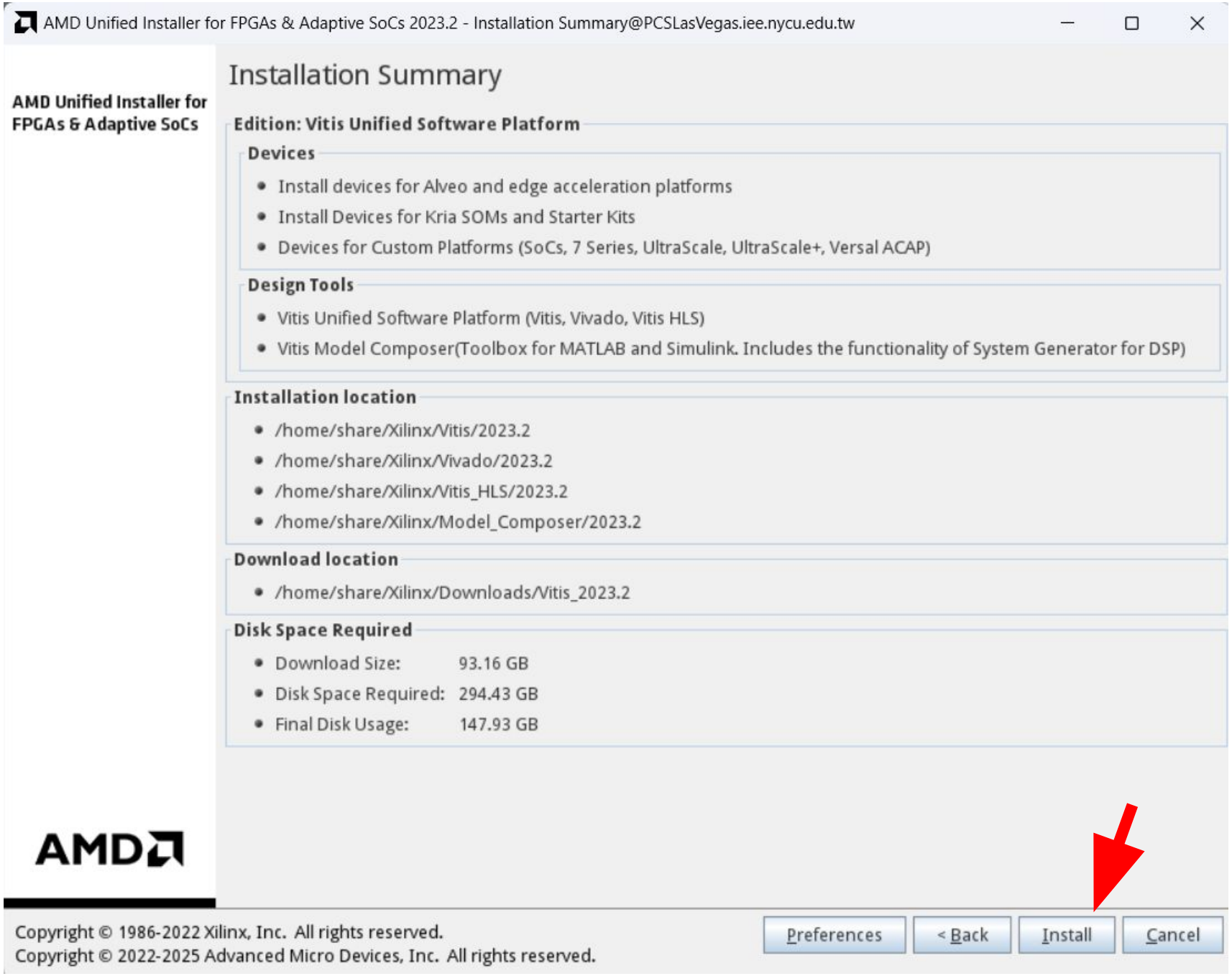
AMD Unified Installer for FPGAs & Adaptive SoCs 2023.2 - Installation Summary@PCSLasVegas.iee.nycu.edu.tw
AMD Unified Installer for FPGAs & Adaptive SoCs
Installation Summary
Edition: Vitis Unified Software Platform
Devices
Install devices for Alveo and edge acceleration platforms
Install Devices for Kria SOMs and Starter Kits
Devices for Custom Platforms (SoCs, 7 Series, UltraScale, UltraScale+, Versal ACAP)
Design Tools
Vitis Unified Software Platform (Vitis, Vivado, Vitis HLS)
Vitis Model Composer(Toolbox for MATLAB and Simulink. Includes the functionality of System Generator for DSP)
Installation location
/home/share/Xilinx/Vitis/2023.2
/home/share/Xilinx/Vivado/2023.2
/home/share/Xilinx/Vitis_HLS/2023.2
/home/share/Xilinx/Model_Composer/2023.2
Download location
/home/share/Xilinx/Downloads/Vitis_2023.2
Disk Space Required
Download Size: 93.16 GB
Disk Space Required: 294.43 GB
Final Disk Usage: 147.93 GB
AMD
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Preferences
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Install
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AMD Unified Installer for FPGAs & Adaptive SoCs 2023.2 - Installation Progress@PCSLasVegas.iee.nycu.edu.tw

Installation Progress

AMD

Downloading files (835.09 MB / 93.16 GB)

60 minutes left at 31 MB/sec.

Install...

Final Processing...

AMD Zynq™ SoCs enable the development of smarter systems

< Back | Install | Cancel

Step 7. Install Verification

source the vitis hls tool

```
[huyuhao1011@PCSLasVegas ~]$ source /home/share/Xilinx/Vitis_HLS/2023.2/settings64.sh
```

This is where you install Vitis

type vitis_hls to open GUI

```
[huyuhao1011@PCSLasVegas ~]$ vitis_hls
```

then you should see the GUI like below