



Bridge of Life
Education

安裝Xilinx Vitis在 Ubuntu VM開發機

2023/06

Xilinx Vitis安裝

- Xilinx官網安裝說明

<https://docs.xilinx.com/r/2022.1-English/ug1400-vitis-embedded/Installation-Requirements>

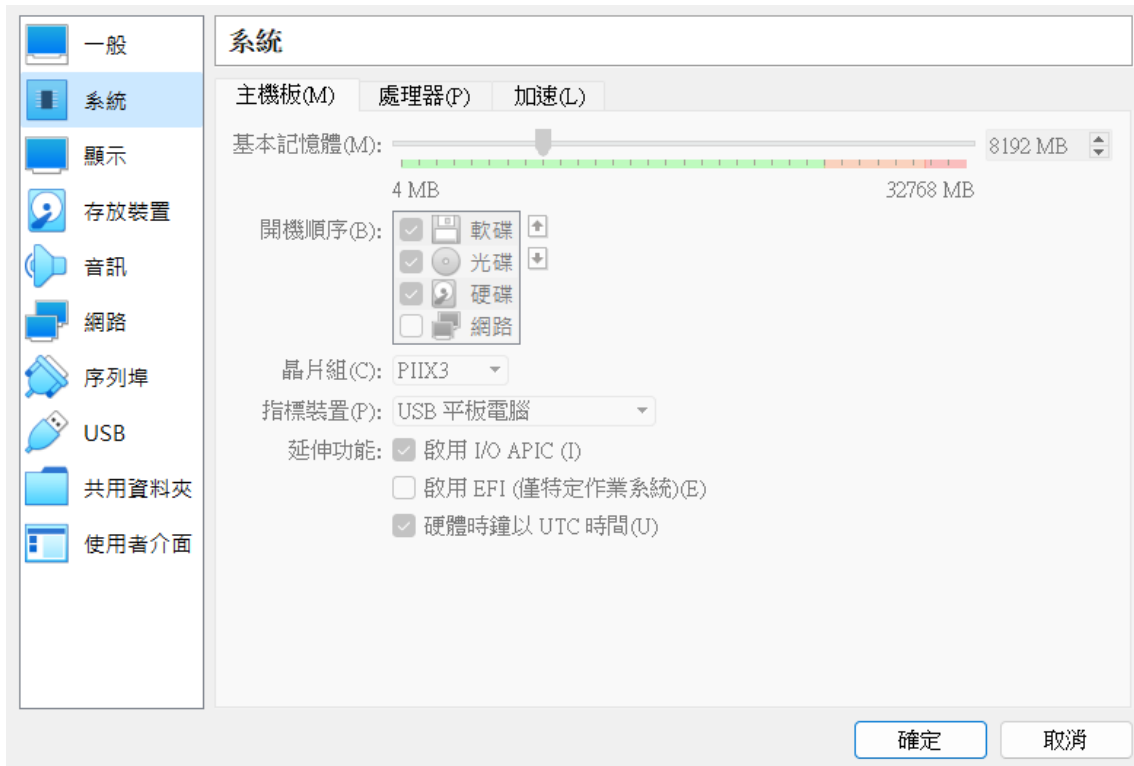
- Xilinx官網註冊後下載安裝檔案

<https://www.xilinx.com/support/download/index.html/content/xilinx/en/downloadNav/vitis/2022-1.html>

- Xilinx Unified Installer 2022.1 SFD (TAR/GZIP - 73.81 GB)

Ubuntu VM開發機設置

- 建議最低系統記憶體及CPU



Xilinx Vitis安裝 - 儲存空間配置

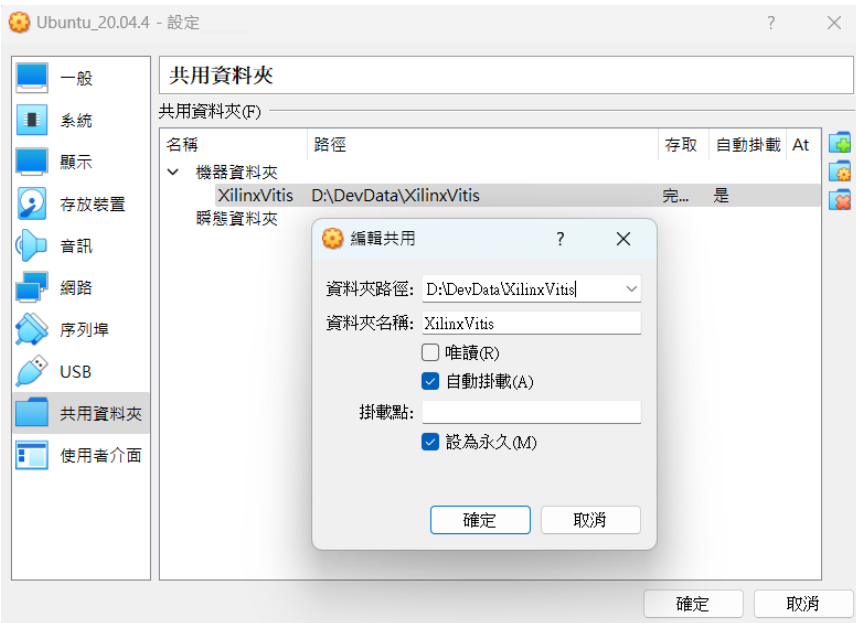
Xilinx Vitis安裝 - 儲存空間配置

- Ubuntu VM系統碟 50GB

- Ubuntu 20.04+ 預設系統資料

- Xilinx Unified Installer 73GB

- 解壓縮後放置Windows資料夾XilinxVitis再使用分享資料夾與Ubuntu VM共用
- `sudo mount -t vboxsf XilinxVitis /home/kevin/vitis_install` (在Ubuntu VM裡執行掛載)

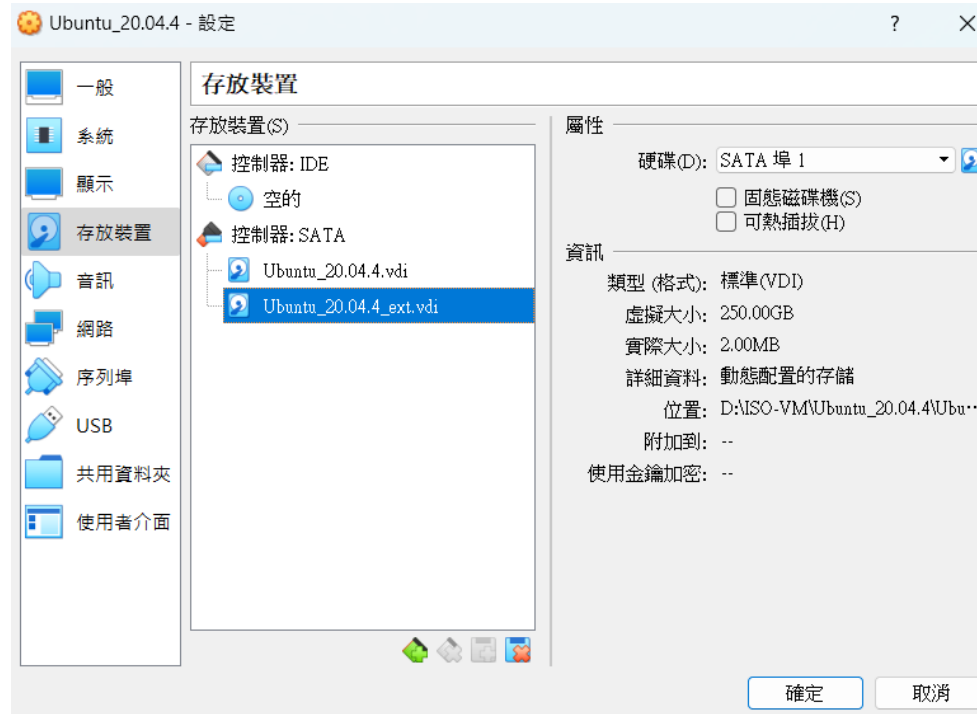


```
kevin@kevin:~$ ls vitis_install/Xilinx_Unified_2022.1_0420_0327/
api-ms-win-core-console-l1-1-0.dll      api-ms-win-core-processthreads-l1-1-0.dll  api-ms-win-crt-locale-l1-1-0.dll      msvcp140_1.dll
api-ms-win-core-datetime-l1-1-0.dll    api-ms-win-core-processthreads-l1-1-1.dll  api-ms-win-crt-math-l1-1-0.dll        msvcp140_2.dll
api-ms-win-core-debug-l1-1-0.dll        api-ms-win-core-profile-l1-1-0.dll         api-ms-win-crt-multibyte-l1-1-0.dll   msvcp140.dll
api-ms-win-core-errorhandling-l1-1-0.dll api-ms-win-core-rtlsupport-l1-1-0.dll      api-ms-win-crt-private-l1-1-0.dll    payload
api-ms-win-core-file-l1-1-0.dll         api-ms-win-core-string-l1-1-0.dll         api-ms-win-crt-process-l1-1-0.dll     scripts
api-ms-win-core-file-l1-2-0.dll         api-ms-win-core-synch-l1-1-0.dll          api-ms-win-crt-runtime-l1-1-0.dll    tps
api-ms-win-core-file-l2-1-0.dll         api-ms-win-core-synch-l1-2-0.dll          api-ms-win-crt-stdio-l1-1-0.dll      ucrtbase.dll
api-ms-win-core-handle-l1-1-0.dll       api-ms-win-core-sysinfo-l1-1-0.dll        api-ms-win-crt-string-l1-1-0.dll     vccorlib140.dll
api-ms-win-core-heap-l1-1-0.dll         api-ms-win-core-timezone-l1-1-0.dll       api-ms-win-crt-time-l1-1-0.dll       vcruntime140_1.dll
api-ms-win-core-interlocked-l1-1-0.dll  api-ms-win-core-util-l1-1-0.dll           api-ms-win-crt-utility-l1-1-0.dll    vcruntime140.dll
api-ms-win-core-libraryloader-l1-1-0.dll api-ms-win-crt-conio-l1-1-0.dll            bin                                    xsetup
api-ms-win-core-localization-l1-2-0.dll api-ms-win-crt-convert-l1-1-0.dll         concrt140.dll                        xsetup.exe
api-ms-win-core-memory-l1-1-0.dll       api-ms-win-crt-environment-l1-1-0.dll     data                                  installlibs.sh
api-ms-win-core-namedpipe-l1-1-0.dll    api-ms-win-crt-filesystem-l1-1-0.dll     lib
api-ms-win-core-processenvironment-l1-1-0.dll api-ms-win-crt-heap-l1-1-0.dll
```

Xilinx Vitis安裝 - 儲存空間配置

- Xilinx Vitis安裝碟 250GB

- 新增第2顆磁碟配置給Ubuntu VM
- 需在Ubuntu VM裡執行格式化後再掛載到對應目錄
- 之後Xilinx Vitis安裝可指定安裝到此磁碟對應目錄



Xilinx Vitis安裝 - 儲存空間配置

- Xilinx Vitis安裝碟 250GB - Partition、格式化及掛載目錄

- 執行lsblk找到250GB對應到/dev/sdb

```
sdb          8:16    0   250G    0 disk
sr0         11:0    1   1024M    0 rom
```

- 執行sudo fdisk /dev/sdb -> n (add new partition) -> p (primary) -> 1 (partition num) -> default sector -> w (write table to disk)
- 再執行lsblk確認建立partition sdb1成功

```
對應
sdb          8:16    0   250G    0 disk
└─sdb1      8:17    0   250G    0 part
sr0         11:0    1   1024M    0 rom
```

- 執行格式化sudo mkfs.ext4 /dev/sdb1
- 掛載到目錄
 - sudo mkdir /tools
 - sudo mount /dev/sdb1 /tools
- 使用df確認250GB已掛載到/tools

```
tmpfs          402020    24   401996    1% /run/user/1000
/dev/sdb1     256980420 61468 243795420 1% /tools
```

安裝Xilinx Vitis

安裝Xilinx Vitis

- Xilinx Vitis的前置安裝設置

- `sudo apt install libtinfo5 libncurses5 -y`
- `sudo cp ~/.Xauthority /root` (使用MobaXterm SSH連線到Ubuntu VM並執行`sudo ./xsetup`前需要此動作)

- 安裝Xilinx Vitis

- 到Vitis安裝目錄，範例目錄為`/home/kevin/vitis_install/Xilinx_Unified_2022.1_0420_0327/`
- 執行`sudo ./xsetup`

UNIFIED Xilinx Installer

Welcome

We are glad you have chosen Xilinx as your platform development partner. This program can install the Xilinx products including Vitis, Vivado Design Environment, Lab Edition, Bootgen, HW_Server, PetaLinux, and Documentation Navigator.

Supported operating systems for 2022.1 are:

- Red Hat Enterprise Linux 7.4-7.9: 64-bit
- Red Hat Enterprise Linux 8.1-8.5: 64-bit (Not supported for PetaLinux)
- CentOS Linux 7.4-7.9: 64-bit
- SUSE Enterprise Linux 12.4, 15.2: 64-bit(Not supported for PetaLinux)
- Amazon Linux 2 AL2 LTS: 64-bit(Not supported for PetaLinux)
- Ubuntu Linux 18.04.1, 18.04.2, 18.04.3, 18.04.4, 18.04.5, 20.04, 20.04.1, 20.04.2 and 20.04.3 LTS: 64-bit -

A Newer Version Is Available@kevin

Xilinx Design Tools 2022.2 is now available.

Click Get Latest to download this latest version and cancel this installation.
Click Continue to continue with this installation of Xilinx design Tools 2022.1.

To reduce installation time, we recommend that you disable any anti-virus software before continuing. Please disable any power saving settings of your machine (automatic sleep mode) when running the installer.



Select Product to Install



Select a product to continue installation. You will be able to customize the content in the next page.

 Vitis

Installs Vitis Core Development Kit for embedded software and application acceleration development on Xilinx platforms. Vitis installation includes Vivado Design Suite. Users can also install Vitis Model Composer to design for AI Engines and Programmable Logic in MATLAB and Simulink.

 Vivado

Includes the full complement of Vivado Design Suite tools for design, including C-based design with Vitis High-Level Synthesis, implementation, verification and device programming. Complete device support, cable driver, and Document Navigator included. Users can also install Vitis Model Composer to design for AI Engines and Programmable Logic in MATLAB and Simulink.

 On-Premises Install for Cloud Deployments

Install on-premises version of tools for cloud deployments.

 BootGen

Installs Bootgen for creating bootable images targeting Xilinx SoCs and FPGAs.

 Lab Edition

Installs only the Xilinx Vivado Lab Edition. This standalone product includes Vivado Design Programmer, Vivado Logic Analyzer and UpdateMEM tools.

 Hardware Server

Installs hardware server and JTAG cable drivers for remote debugging.

 PetaLinux

PetaLinux SDK is a Xilinx development tool that contains everything necessary to build, develop, test, and deploy embedded Linux systems.

 Documentation Navigator (Standalone)

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Cancel

Vitis Unified Software Platform

Customize your installation by (de)selecting items in the tree below. Moving cursor over selections below provide additional information.



The Vitis unified software platform enables the development of embedded software and accelerated applications on heterogeneous Xilinx 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 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

- Vitis Unified Software Platform
 - Vitis
 - Vitis IP Cache (Enable faster on-boarding for new users)
 - Vivado
 - Vitis HLS
 - Vitis Model Composer(Xilinx Toolbox for MATLAB and Simulink. Includes the functionality of System Generator for DSP)
 - DocNav
- ☰ Devices
 - Install devices for Alveo and Xilinx 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: NA

Disk Space Required: 206.71 GB

Reset to Defaults

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Xilinx Unified 2022.1 Installer - Accept License Agreements@kevin

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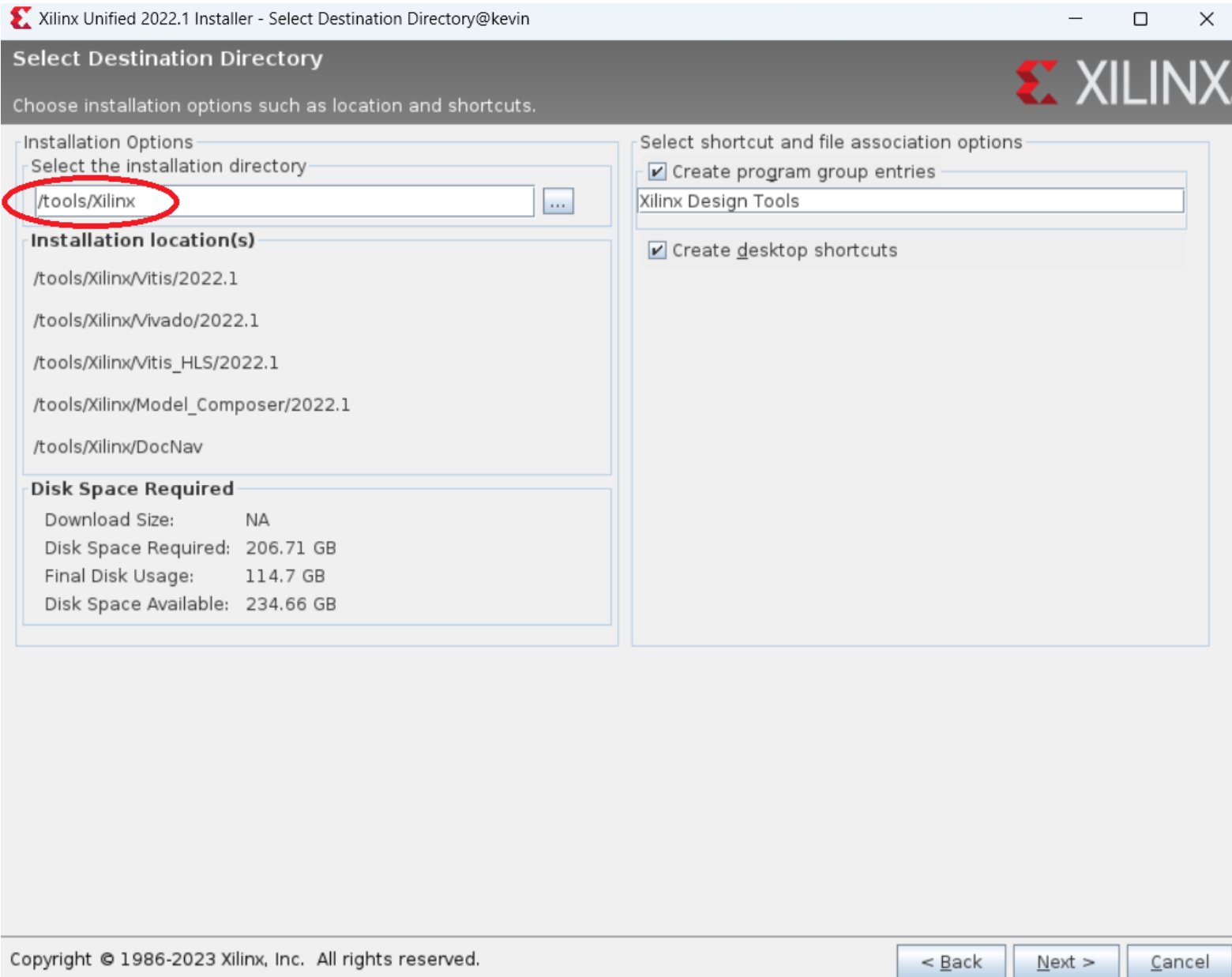
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UNIFIED Xilinx Installer

Installation Summary

Edition: Vitis Unified Software Platform

Devices

- Install devices for Alveo and Xilinx 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, Vitis IP Cache (Enable faster on-boarding for new users), Vivado, Vitis HLS)
- Vitis Model Composer(Xilinx Toolbox for MATLAB and Simulink. Includes the functionality of System Generator for DSP)
- DocNav

Installation location

- /tools/Xilinx/Vitis/2022.1
- /tools/Xilinx/Vivado/2022.1
- /tools/Xilinx/Vitis_HLS/2022.1
- /tools/Xilinx/Model_Composer/2022.1
- /tools/Xilinx/DocNav

Disk Space Required

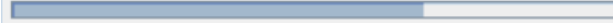
- Download Size: NA
- Disk Space Required: 206.71 GB
- Final Disk Usage: 114.7 GB



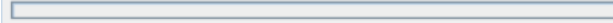
Installation Progress



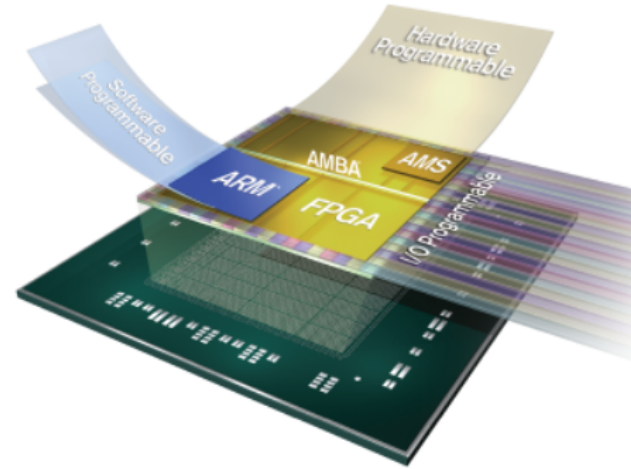
Installing files, 68% completed.



Final Processing...




ZYNQ.



Zynq SoCs enable the development of smarter systems


Xilinx Unified 2022.1 Installer - Installation Progress@kevin

Installation Progress



✓ It took 4 h and 43 m(s) to install files.

✓ Done Final Processing.



features
do/vivado-ml.html#videos

Xilinx Software Install@kevin

i Installation completed successfully.
For the complete setting to use Versal ACAP tools, please run the script "installLibs.sh" under /tools/Xilinx/Vitis/2022.1/scripts, which requires the root privilege.

OK

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安裝Xilinx Vitis

- 安裝Xilinx Vitis

- 到目錄/home/kevin/vitis_install/Xilinx_Unified_2022.1_0420_0327/
- 執行sudo ./installLibs.sh
- 加入source /tools/Xilinx/Vitis/2022.1/settings64.sh 到~/.bashrc最後一行

```
# enable programmable completion features (you don't need to enable
# this, if it's already enabled in /etc/bash.bashrc and /etc/profile
# sources /etc/bash.bashrc).
if ! shopt -oq posix; then
  if [ -f /usr/share/bash-completion/bash_completion ]; then
    . /usr/share/bash-completion/bash_completion
  elif [ -f /etc/bash_completion ]; then
    . /etc/bash_completion
  fi
fi
source /tools/Xilinx/Vitis/2022.1/settings64.sh
```

- 設定開機時自動掛載/dev/sdb1到目錄/tools
 - echo '/dev/sdb1 /tools ext4 defaults 0 0' | sudo tee -a /etc/fstab
- 執行sudo reboot
- 安裝完成