

Windows

[Windows 11 ARM on Orange Pi 5](#)

How-to install the latest Windows 11 ARM image on an Orange Pi.

This guide describes how to install the latest Windows 11 ARM image on an Orange Pi 5.

Hardware Requirements

- Orange Pi 5 ([OPi5](#)) and newer devices support ARMv8.2 Windows 11 requires ARMv8.1 As of June 2024, Orange Pi 5 Pro is not supported
- USB hub ([uni USB C to USB Hub 4 Ports](#)) USB hub is requires as only the vertical USB-A ports will work for keyboard and mouse. Any USB hub may work, this is just what I had.
- USB-C to USB-A adapter for hub
- NVMe drive ([SABRENT 1TB Rocket NVMe PCIe M.2 2242](#)) Must be NVMe M.2. Some NVMe drives do not have driver support. All M.2 SATA drives do not have driver support.
- [M.2 SSD Screw Set](#)
- USB keyboard and mouse

Install UEFI firmware to SPI NOR flash

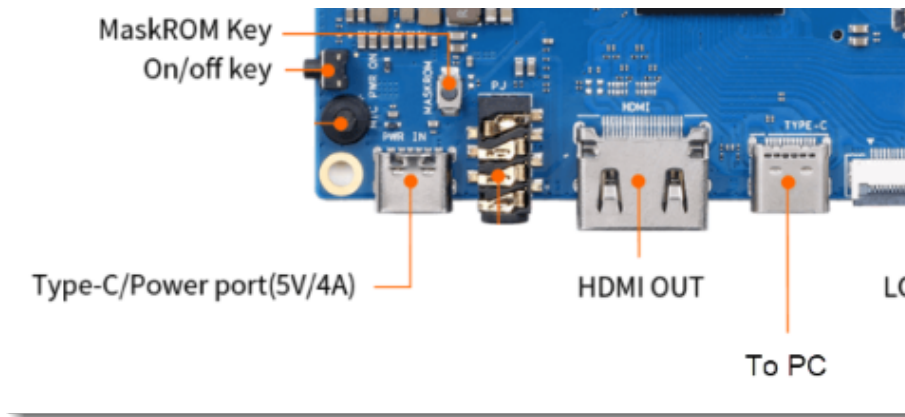
Reference: <https://wiki.radxa.com/Rock5/install/spi> (section 4, option 2)

- Download rkdevtools and install driver
 - <https://wiki.radxa.com/Rock5/install/rockchip-flash-tools>
- Download latest EDK2 UEFI firmware for Orange Pi 5 0.9.1 does not support built-in GMAC ethernet, use a newer build.
- Open <https://github.com/edk2-porting/edk2-rk3588/actions/workflows/build.yml>
- Sign in to GitHub
- Select latest successful build
- Download orangepi-5 UEFI Debug image
- Extract download

Write firmware

- Open RKDevTool as Administrator
- Right-click and select Load Config
 - Select rock-5b-spinor.cfg
 - Click empty box under ... to select file
 - Rk3588_spl_loader.bin for Loader

- OrangePi-5_UEFI.img for Image
- Check Write by Address
- Connect OPi5 from USB-C port to PC
- Hold down MASKROM button and connect USB-C power, wait a few seconds and release button



- Status in RKDevTool should change from No Devices Found to Found One MASKROM Device
- Click Run
- Process is done when "Download image OK" is displayed in the logging pane.

OPi5 will restarts by itself and exits MASKROM mode

- Disconnect from PC

Download Drivers

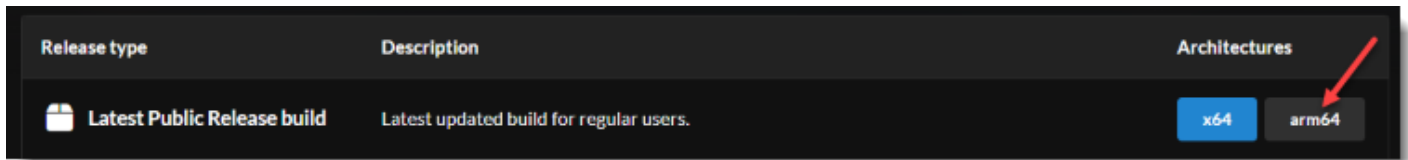
Driver download messages are pinned in the #development channel

- Download and extract RK3588 signed drivers
 - <https://discord.com/channels/1082772881735438346/1082848823233216532/1236925998696763392>
- Download updated storage driver (pdb, inf, and sys)
 - <https://github.com/worproject/Rockchip-Windows-Drivers/tree/storportDriver/drivers/storage>
- Download updated USB driver (inf and sys)
 - https://github.com/worproject/Rockchip-Windows-Drivers/tree/master/drivers/usb/usbehci_nointerlocked
- Add updated drivers to rk3588_drivers zip file

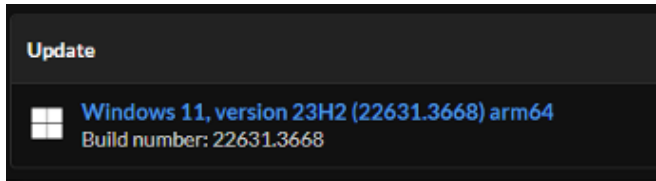
Download Windows arm64 release package

- Open <https://uupdump.net/>

- Select arm64 build, typically choose the latest public release build



- Select update



- Choose language and click Next
- Uncheck Windows Home and click Next
- Select Download, add additional editions and convert to ISO
- Check only Windows Enterprise
- Click Create download package file to download package
- Extract package to a folder that does not contain spaces in the path

Generate Windows ISO

- Run uup_download_windows.cmd
- Wait 60-minutes for files to be downloaded, processed, and ISO generated

Install Windows onto NVMe Drive

- Download and extract imager

Ignore that it says Raspberry. This was original built for Raspberry Pi devices, but developer has been extended support to Orange Pi devices)

- <https://worproject.com/downloads#windows-on-raspberry-imager>
- Plug the NVMe drive into your PC
- Run WoR.exe as an Administrator
 - Set wizard mode = Select show all options
 - Select storage device and device type = Raspberry Pi 2/3
 - Select ISO image and Windows Pro build
 - For drivers, select the downloaded rk3588_drivers-v2.zip file

- For UEFI firmware, leave use the latest firmware. This doesn't really apply to OPi5.
- Leave defaults for configuration
- Click Install
- Wait for the Windows offline install to complete
- Click Finish

Windows Setup

- Install NVMe drive into the bottom of your OPi5
- Power-on OPi5
- Wait 30+ minutes for Windows to finish setup

System may be slow while .NET optimization runs


- Disable Windows Search service
- Disable Print Spooler service
- Uninstall all unused apps
- Open Microsoft Store and update all. Might need to be run multiple times
- Configure and run Windows Updates
- Rename device

Installing and Configuring Hyper-V

- Create C:\Hyper-V folder
- Open Control Panel > Uninstall a program > Turn Windows features on or off
 - Check Hyper-V
 - Uncheck Windows PowerShell 2.0
 - Uncheck Work Folder Client
 - Click OK
- Configure Hyper-V Settings
- Configure Hyper-V external virtual switch

Thank you

This guide wouldn't have been possible without Mario Bălănică, the developers, and the community that supports the Windows on R project.

- [Windows on R Project](#) 
- [Windows on R Community Discord](#) 