Windows 11 and Radio SkyPipe on a Raspberry RPi400
An Experimental Project
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INTRODUCTION

This paper describes "simple" instructions on how to download and install a modified version of Windows 11 (WIN11) on a Raspberry Pi400 or a Raspberry RPi4B to run Radio SkyPipe. Previously this was a very complicated, technical, and trouble-laden process that was hard to follow by non-coders. It is still "highly" experimental so do this <u>entirely at your own risk</u>. This procedure requires entering only two lines of provided code into the Raspberry Pi Terminal.

PREREQUISITES

1. You must be very familiar with using your working raspberry RPi400 or RPi4B.
2. You must have a keyboard, mouse, and HDMI Monitor attached and working.
3. A USB hub is highly recommended. There is a Raspberry Pi model that is ideal.
4. You must have a USB SD/microSD card reader and a blank 32GB or larger card.
5. Spend the better part of a day downloading and installing the software.
6. Patience is required because loading even the small, modified Windows 11 on a USB SD chip is a very slow process. You may have to repeat a process often to finally get it to finish. I tried to use an SSD drive initially but never got it to work. Driver issues, I'm sure. It worked fine downloading and installing on a USB microSD card. Your experience may be different due to the hardware you choose to use. Keep at it and it will work. If you have trouble along the way, start over. It may work the second or third time you try. This is an experimental project. Try other hardware if you wish. Troubleshoot errors, fix, reboot and try again.
7. This simple process requires no Windows 10 desktop. You do all the work and processing on the Raspberry Pi400/Pi4B.
8. Connect a wired ethernet cable to your Pi for continuous fast internet connectivity.
9. Read all the instructions before you start, at least once.
10. It is expected you are familiar with installing Windows 10 on a computer. The WIN11 process is similar. After you download WIN11 just follow the standard Windows installation prompts. Details for doing the WIN11 installation are not provided in this paper. It is straightforward by following the on-screen prompts. After WIN11 is installed check for new Windows updates in settings.
11. Use of an external simple USB Audio module is recommended.

PROCEDURE

1. Boot your Raspberry RPi400 or RPi4B to its normal desktop. Connect the external USB microSD card or other memory devices that will end up containing the bootable WIN11 operating system (OS). The storage device's data will be erased so be sure you don't need any data that may be on it.

2. Click on the red Raspberry Pi icon in the upper left corner of the screen. Select Accessories then Terminal. Very carefully type lower case and capitals exactly as shown below into the terminal window following the $ that will already be there. Select the ENTER key after each line is entered. Instructions in *RED* italics are there only so you know what is happening. You type just type the black print characters into the RPi terminal window. (The fun starts here.)

git clone https://github.com/Botspot/wor-flasher
(Hit ENTER to download the Wor-flasher GUI tool.)

~/wor-flasher/install-wor-gui.sh
(Hit Enter to open the Wor GUI. Verify Windows 11 and your model of Raspberry Pi, i.e. Pi4/400.)

Select NEXT
Click, en-us for USA English.
Select NEXT
Click, O /dev/sda USB Storage
(May read differently depending on your storage device. Click on the O)
Select NEXT
Select FLASH – *(Do not select advanced.) Flash puts a bootable WIN11 version on the storage memory.*

Let the process proceed. It will take a LONG time perhaps one to three hours depending on your internet speed. Do not interrupt any step by typing on your keyboard or you will have to start the whole process over. When completed a bootable WIN11 will be installed on your memory card or device of choice. When it says the script has been completed, close down (power off) the Raspberry Pi computer. Remove the microSD card that contains the Raspberry Pi Operating System and put it in a safe location for later use. Leave the USB Flash Drive or SD

card that now contains the bootable Windows 11 installation program connected to its USB port. Power up the Raspberry Pi and wait for the Windows 11 Raspberry logo to appear. It may take 5 minutes or more for this to complete so patience is required. Don't give up on it just let it do its slow thing however long it takes. Don't hit any keys while this process is in progress. In the bottom right corner select install. Be aware that from an SD card or Flash drive it will take a long time to load Windows 11 so again wait until it completes. Follow the Windows 11 installation steps. Be prepared for a long slow process. After it is finished installing, reboot. Now you can re-start WIN11 and download Radio Skypipe and install it.

You will be happy when you realize you have Windows 11 on your Raspberry Pi.

Testing to date: Windows 11 is working as expected on a Raspberry Pi400 computer. Installed Radio SkyPipe attached to a Radio Jove Receiver and Dick Flagg's calibrator. The system is operational as expected. Installed SDR Console. Installed SDRuno. Win11 did not recognize SDRplay receivers plugged into the USB port. This is due to driver issues as noted in the Device Manager window. Additional troubleshooting is necessary to fix this issue.

CONCLUSION
The goal of downloading, installing, and running a modified WIN11 on a Raspberry RPi400 and running SkyPipe was successful. Further testing of other features, programs, and capabilities is ongoing. One caution here, do not expect the RPi to multitask with any great efficiency. Tackle one experimental operation at a time.

IMAGES

Raspberry Pi400 Running RPi OS

Rpi400, Windows 11, Running Skypipe

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