



# Installing Windows 11 on MacBook M1 (ARM64)



Damilola Omoyiwola · [Follow](#)

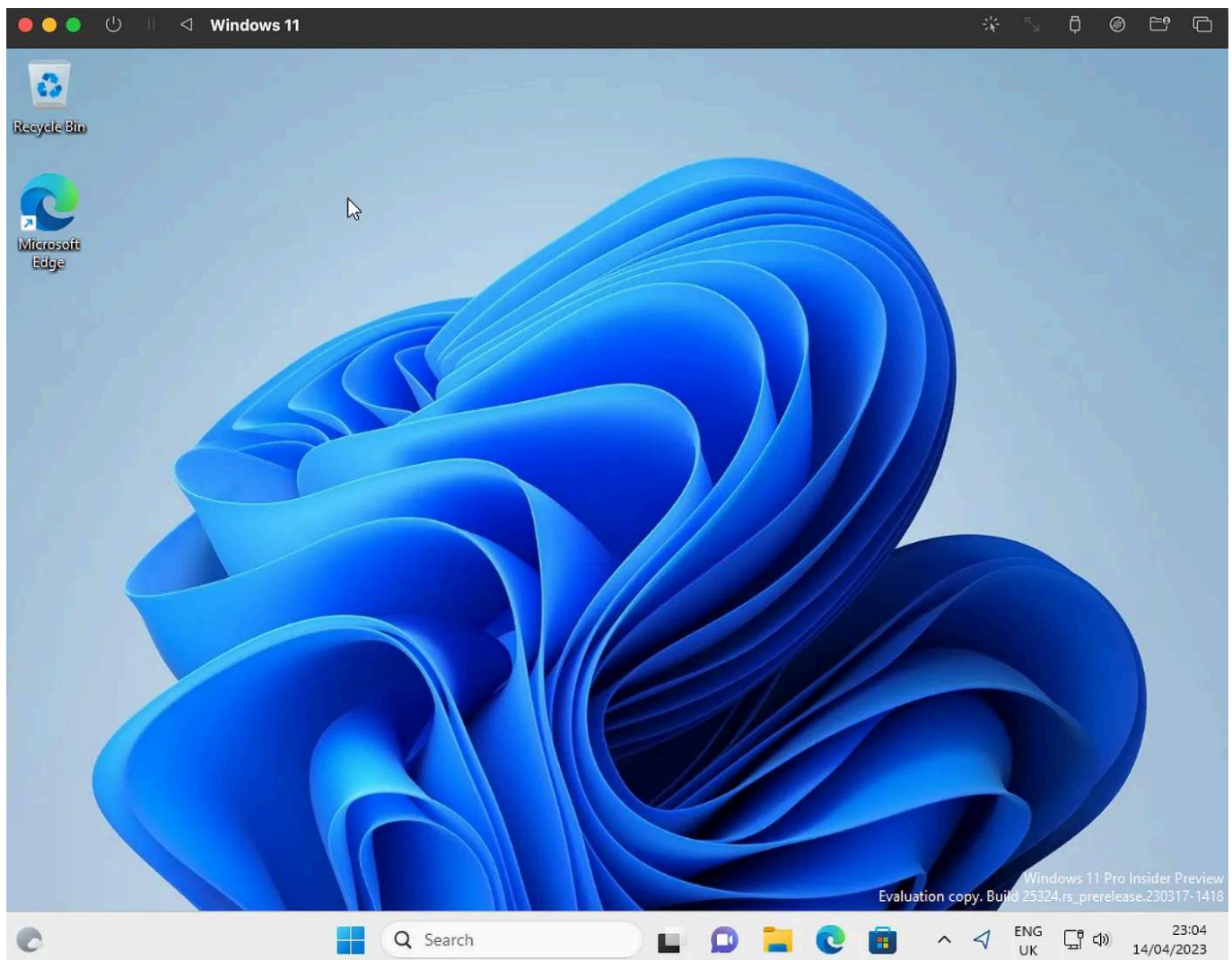
7 min read · Apr 16, 2023



106



3



Recently, I needed to set up a few virtual machines (VMs) on my Mac M1 and Windows 11 happened to be part. The very first virtualisation product that I learnt about was **VirtualBox**. While I tried to install Kali Linux—as my first VM setup, I ran into issues. I did extensive research but to no avail. Then, I discovered M1 does not support **VirtualBox** but **UTM**.

Let's understand a few terminologies before delving into the installation process.

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### *UTM*

*Employs Apple's Hypervisor virtualization framework to run ARM64 operating systems on Apple Silicon at near-native speeds. It lets you run Windows 10 or higher, Ubuntu, or macOS(\*) fully virtualized with maximum performance.*

### *QEMU*

*A machine emulator that can run operating systems and programs for one machine on a different machine. It uses the hardware virtualisation technology to virtualise guests.*

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\*In short, **UTM is the GUI on top of QEMU for MacBooks.**

## **Overview**

We need these in order to get Windows 11 running as a virtual machine:

1. Homebrew
2. QEMU
3. UTM

4. Windows 11 VHDX Image
5. Create the Windows 11 VM

## 1. Installing Homebrew

**Note:** If you have HomeBrew installed, kindly proceed to the next step.

Open your Terminal and paste the following to install Homebrew:

```
/bin/bash -c “$(curl -fsSL  
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)”
```

## 2. Installing QEMU

Once the Homebrew installation is done, paste the following into your Terminal: `brew install qemu` to install QEMU.

## 3. Installing UTM

Download the UTM .dmg file from the official website. Clicking the **Download** button gives you the free version while **Mac App Store** offers it at a price.



UTM Official Website

Double-click the downloaded file and drag the icon into the Application icon. The installation will then, proceed.

## 4. Downloading Windows 11 VHDX Image

There are a few resources where Windows 11 VHDX images can be downloaded but trust me, I found the official website more reliable and easier once you follow the process.

1. Make sure to register for the [Windows Insider Program](#)
2. Once the above step is done, click [here](#) to download the **Windows Insider Preview ARM64**
  - On the page, the default download tip is to select the **Dev Channel** version but in [this article](#), it is advised to select the **Canary Channel**. Thanks to [@wrmack](#) for pointing this out.
  - Confirm the Product Language

Select Windows 11 Client Arm64 Insider Preview Dev Channel Edition:

Select edition

Confirm

Select the product language

Choose one

Confirm

**Note:** the image size is pretty large—about 10GB. 🙄

## 5. Creating Windows 11 VM on UTM

Now, this is the real deal but please calm down 😊. I will attach images to most of the steps for better visualisation and understanding.

1. Launch your UTM application, and click “**Create a New Virtual Machine**”.
2. Select “**Virtualize**”
3. Select “**Windows**” as the Operating System
4. Make sure “**Install Windows 10 or higher**” and “**Install drivers and SPICE tools**” are checked as shown below.

# Windows

## Image File Type

☒ Install Windows 10 or higher

☒ Import VHDX Image

[Windows Install Guide](#)

## Boot VHDX Image

Windows11\_InsiderPreview\_Client\_ARM64\_en-us\_25324 [Browse...](#)

☒ Install drivers and SPICE tools

Download and mount the guest support package for Windows. This is required for some features including dynamic resolution and clipboard sharing.

[Cancel](#)

[Go Back](#)

[Continue](#)

Check the “**Import VHDX Image**”. Make sure to add the path to the downloaded Windows 11 VHDX file.

5. Increase your Memory to 4GB: 4096MB if not done automatically. Leave the CPU Cores to *Default*.

# Hardware

## Memory



## CPU

CPU Cores  Default

Cancel

Go Back

Continue

6. Leave the Shared Directory as it is. If needed, it could be modified on the Settings page later.

# Shared Directory

## Shared Directory Path

Path

Clear

Browse...

☐ Share is read only

Optionally select a directory to make accessible inside the VM. Note that support for shared directories varies by the guest operating system and may require additional guest drivers to be installed. See UTM support pages for more details.

Cancel

Go Back

Continue

7. Rename your VM and check the “**Open VM Settings**”, click “**Save**” to create the VM, and this will immediately open the settings page.



# Summary

Name Windows 11

☒ Open VM Settings

Engine QEMU

☒ Use Virtualization

Architecture ARM64 (aarch64)

System QEMU 7.2 ARM Virtual Machine (alias of virt-7.2)

RAM 4 GB

CPU Default Cores

Storage 64 GB

Operating System Windows

☒ Skip Boot Image

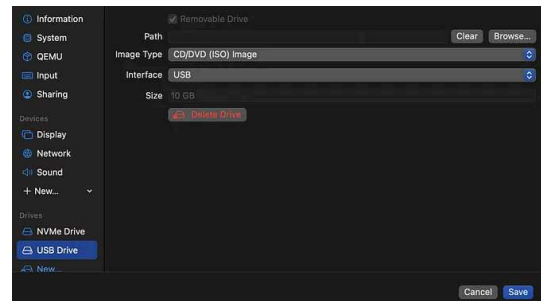
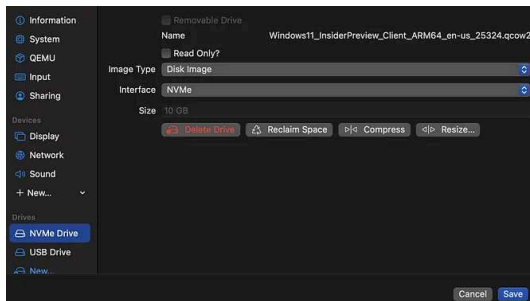
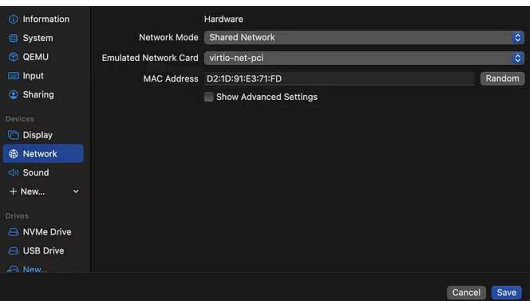
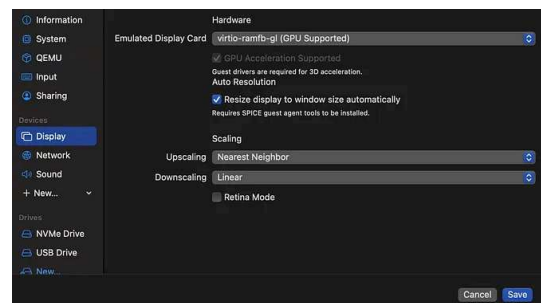
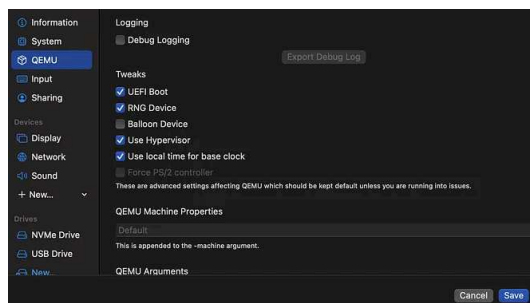
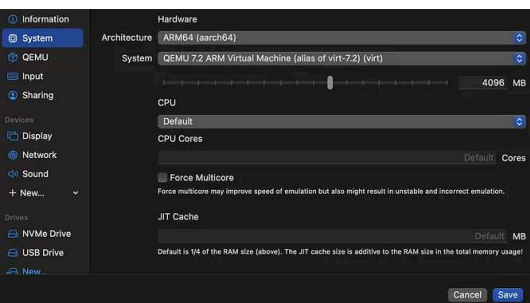
Disk Image /Users/damilolaomoyiwola/VHDX/Windows11\_Insi

Cancel

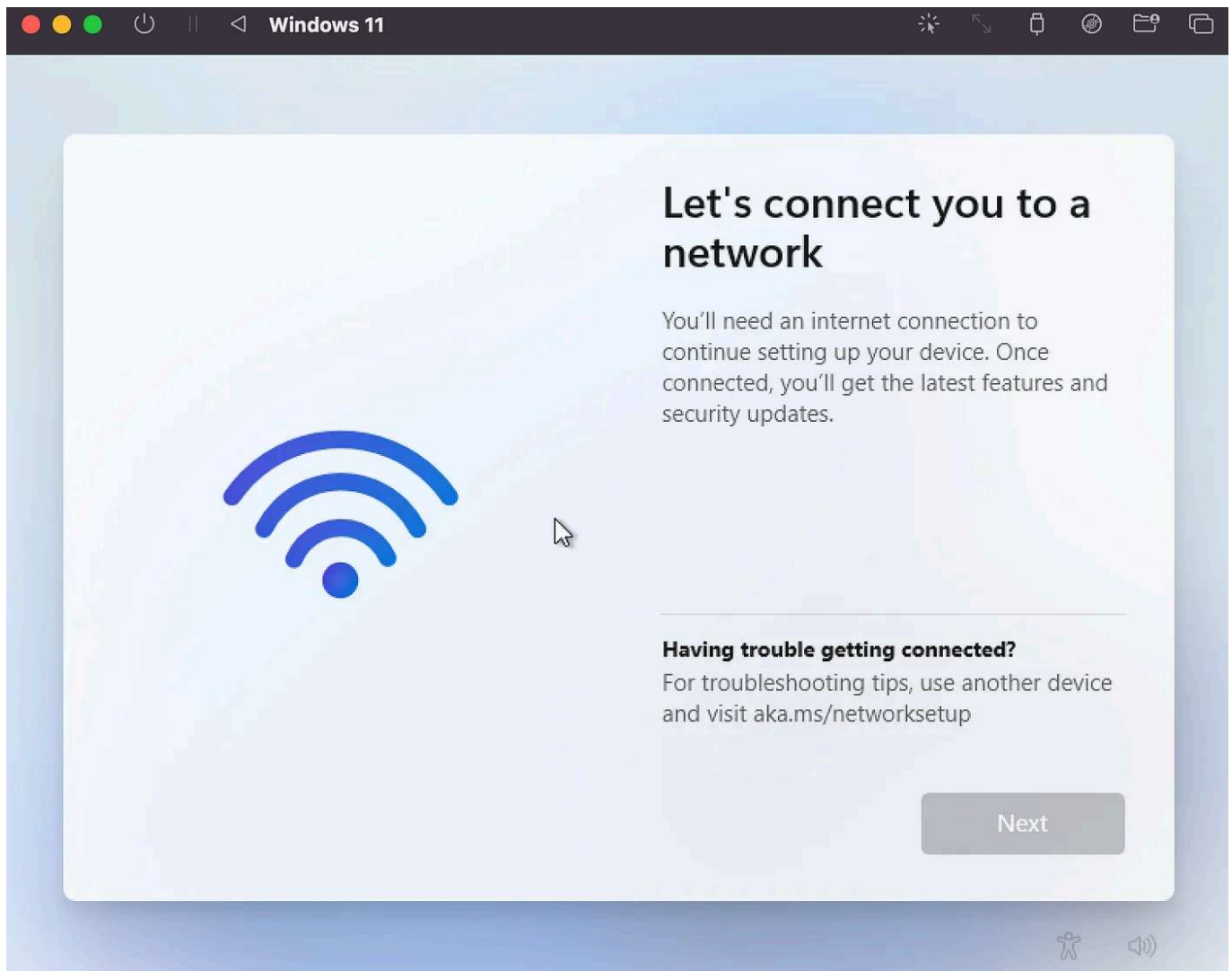
Go Back

Save

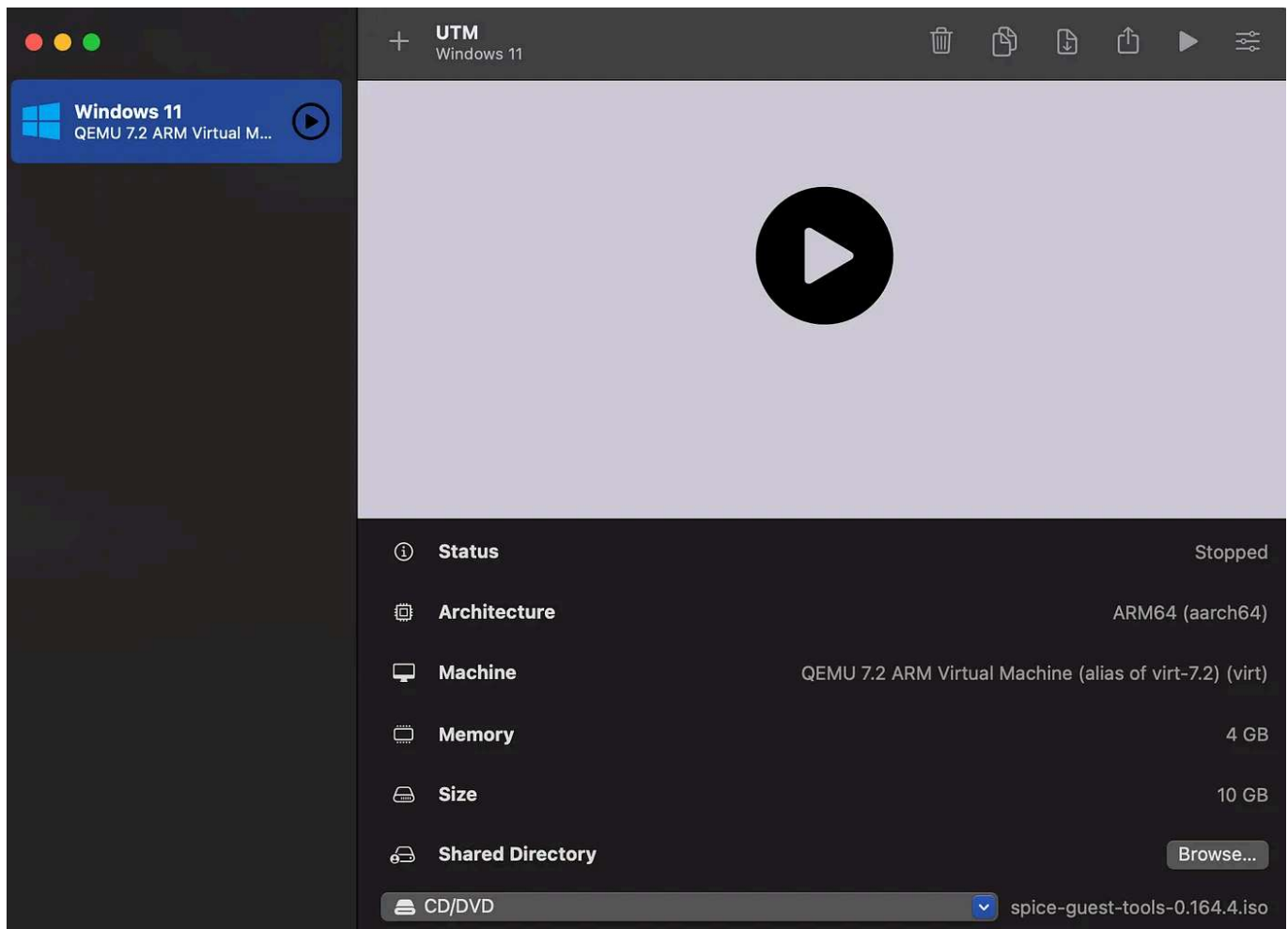
8. Make sure the contents of the images below conform with what you have especially in the *System*, *QEMU*, *Display*, *Network*, and *Drives* tabs. Click “Save” when you are done.



⚠ While Windows 11 is being installed, to avoid being stuck on the page below, please consider step 9 very carefully.



9. Click the play icon to start the VM.

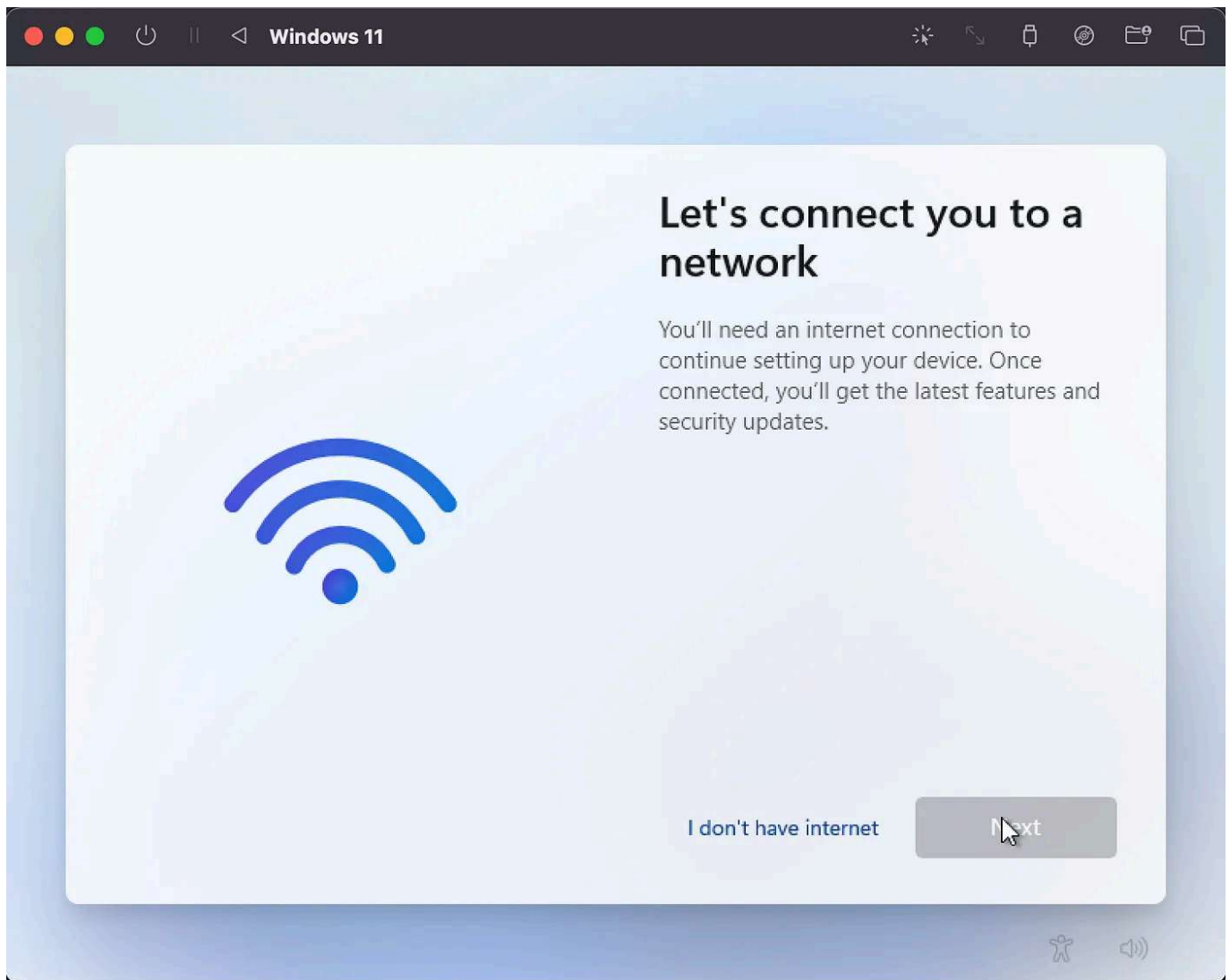


Once the VM starts to boot,

- press Shift + fn + F10 to launch the **Terminal**
- type `cd oobe` , press enter
- type `bypassnro` , press enter

You should see *Operation was completed successfully* in a flash while the Terminal exits.

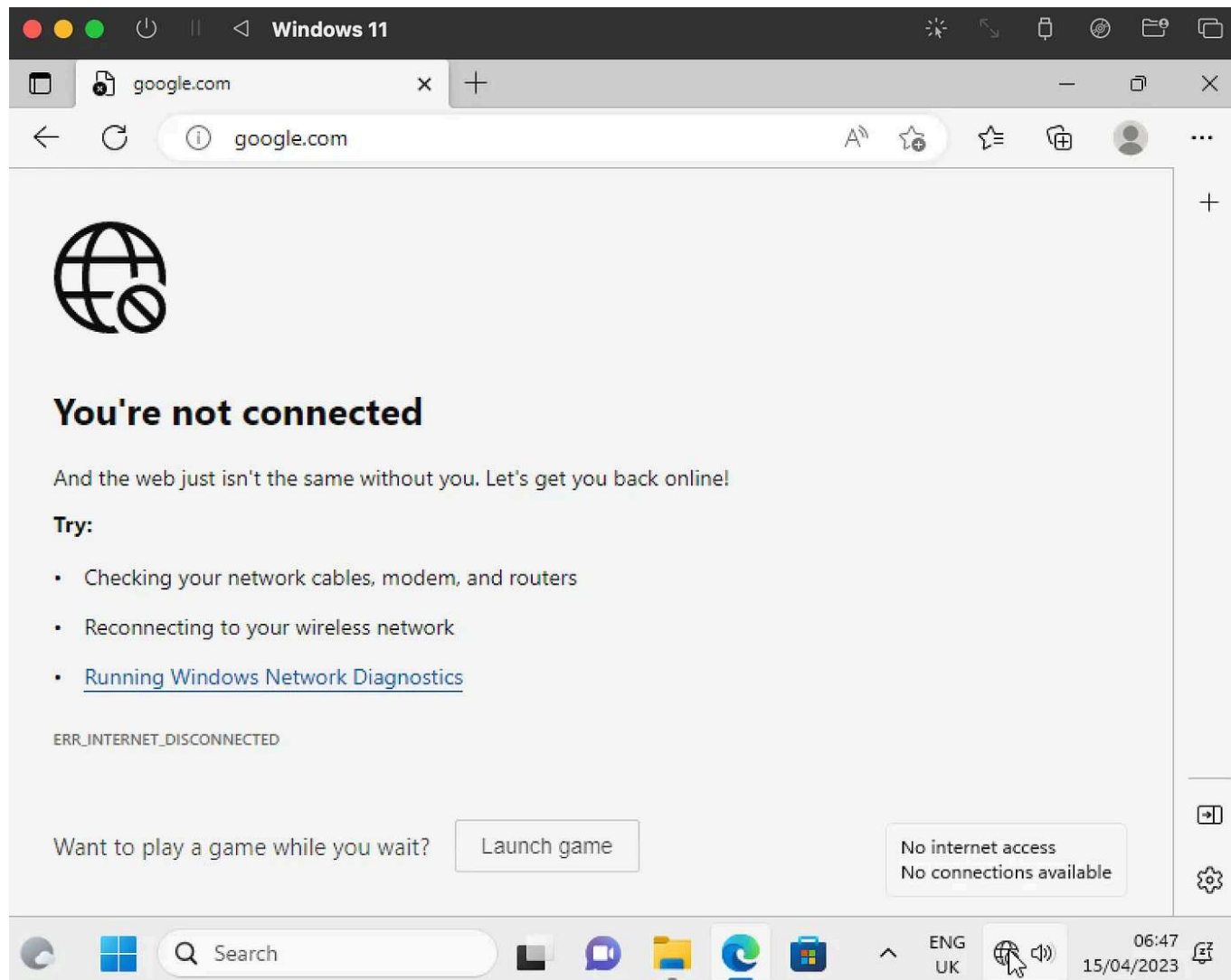
**Note:** This would show this screen while installing Windows 11 🖱️ and you would have the option to skip the **Network Connection** step. When you get to this screen, just click the “**I don’t have internet**” option to proceed.



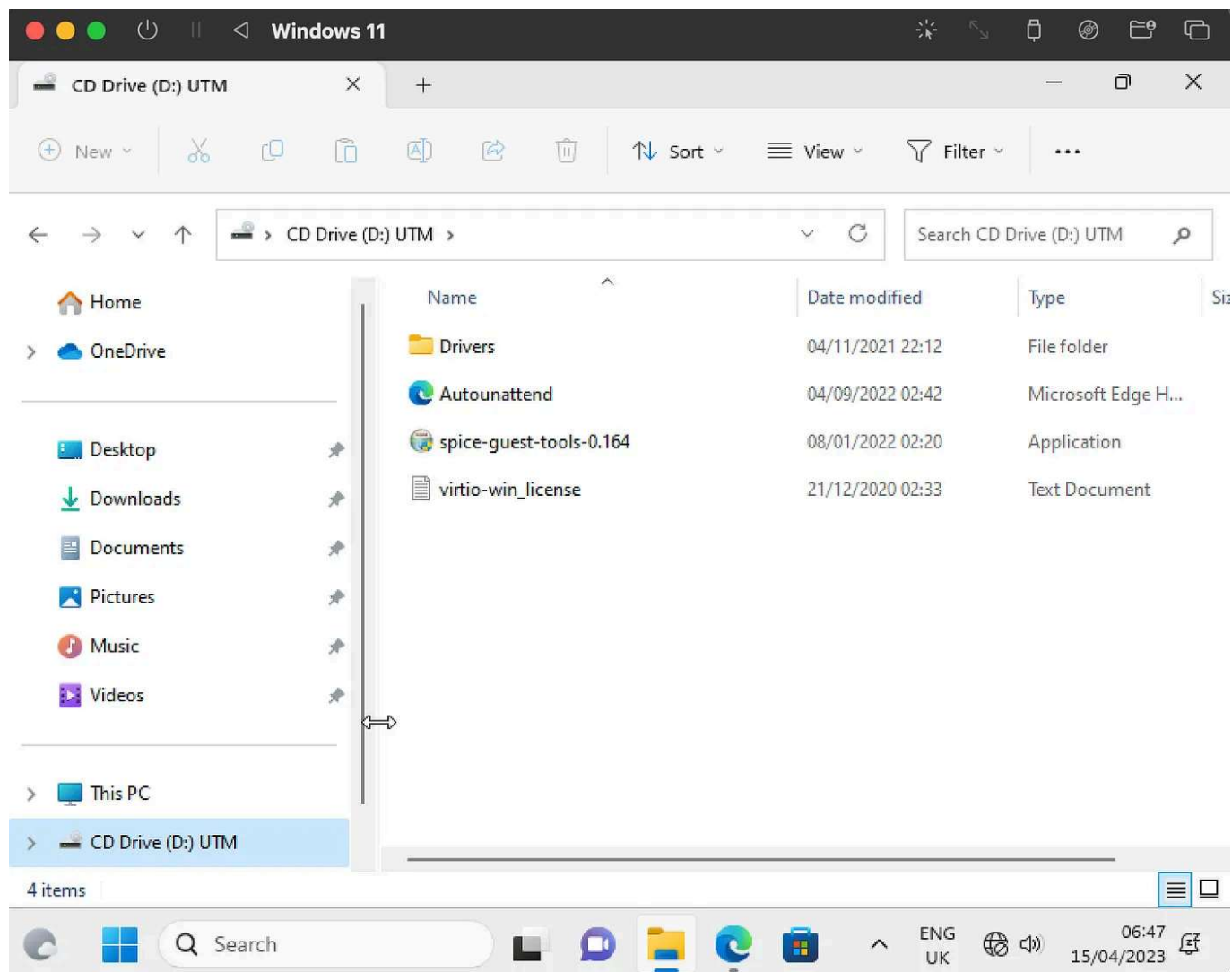
10. When the Terminal exits, it will reboot and start the Windows 11 installation process. Follow the on-screen instructions.

Hmmm... Well done! 🙌 🙌

Once Windows 11 has been successfully installed, open your Microsoft Edge browser to see if you can access the internet. As seen below, mine did not connect.

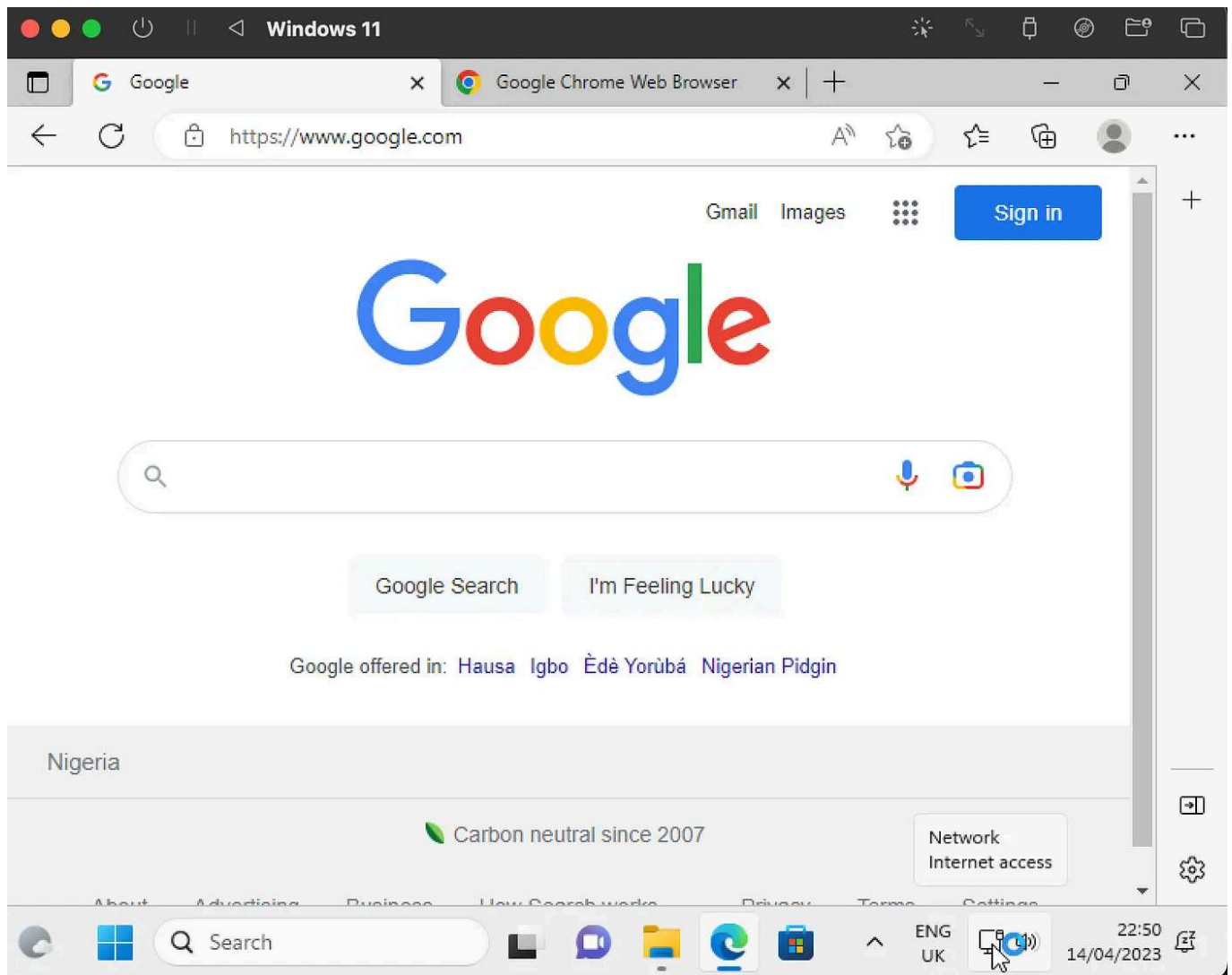


So, this takes us to install the SPICE tools that were initially mounted during the creation of the VM. You can find it here as shown below:



Click the *Application* file—mine is `spice-guest-tools-0.164` to install it. Follow the on-screen instructions.

Check back your browser and you will have access to the internet.



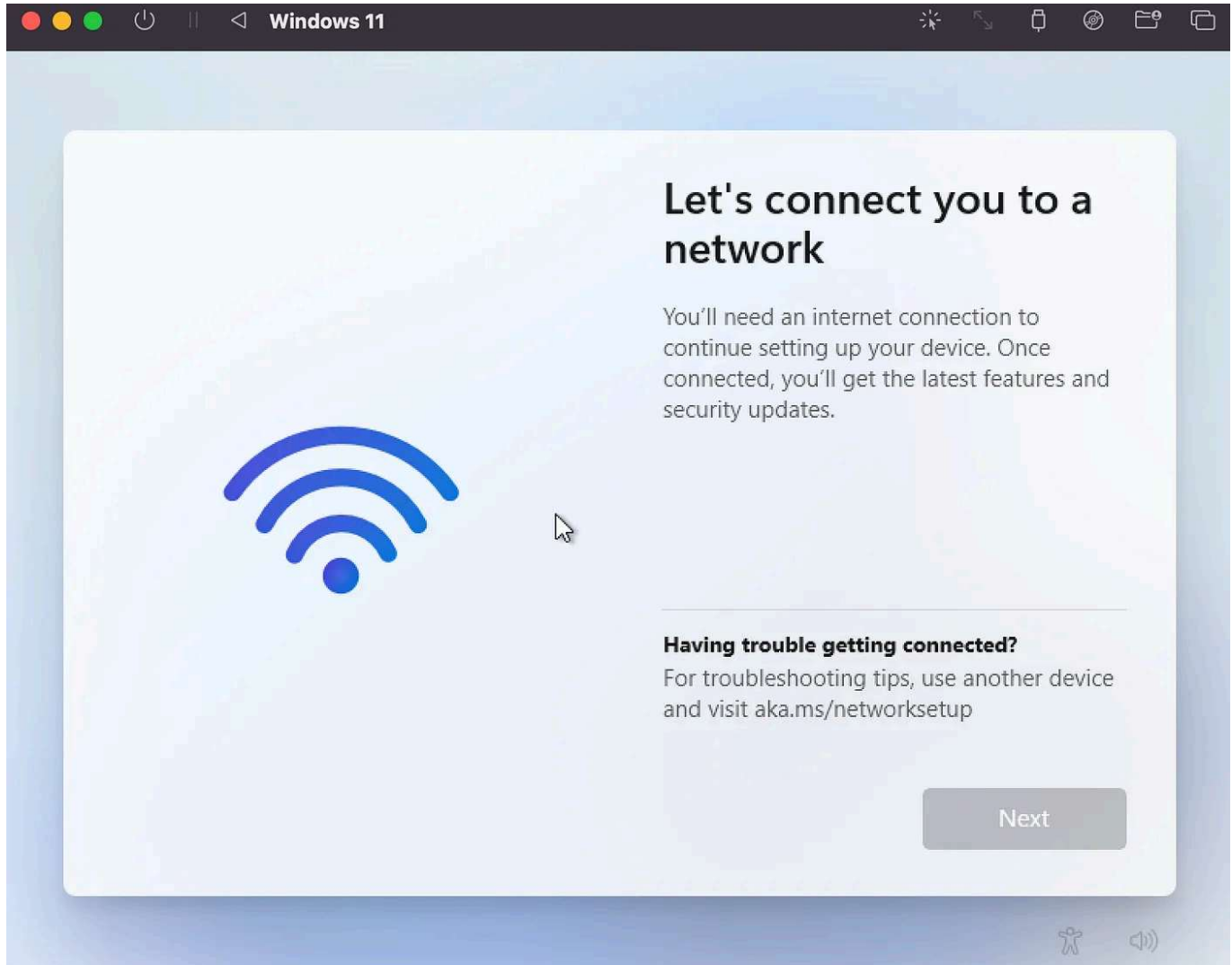
Yay! 🥳🥳 We have completed the installation of the Windows 11 VM on UTM.

## Possible Problems

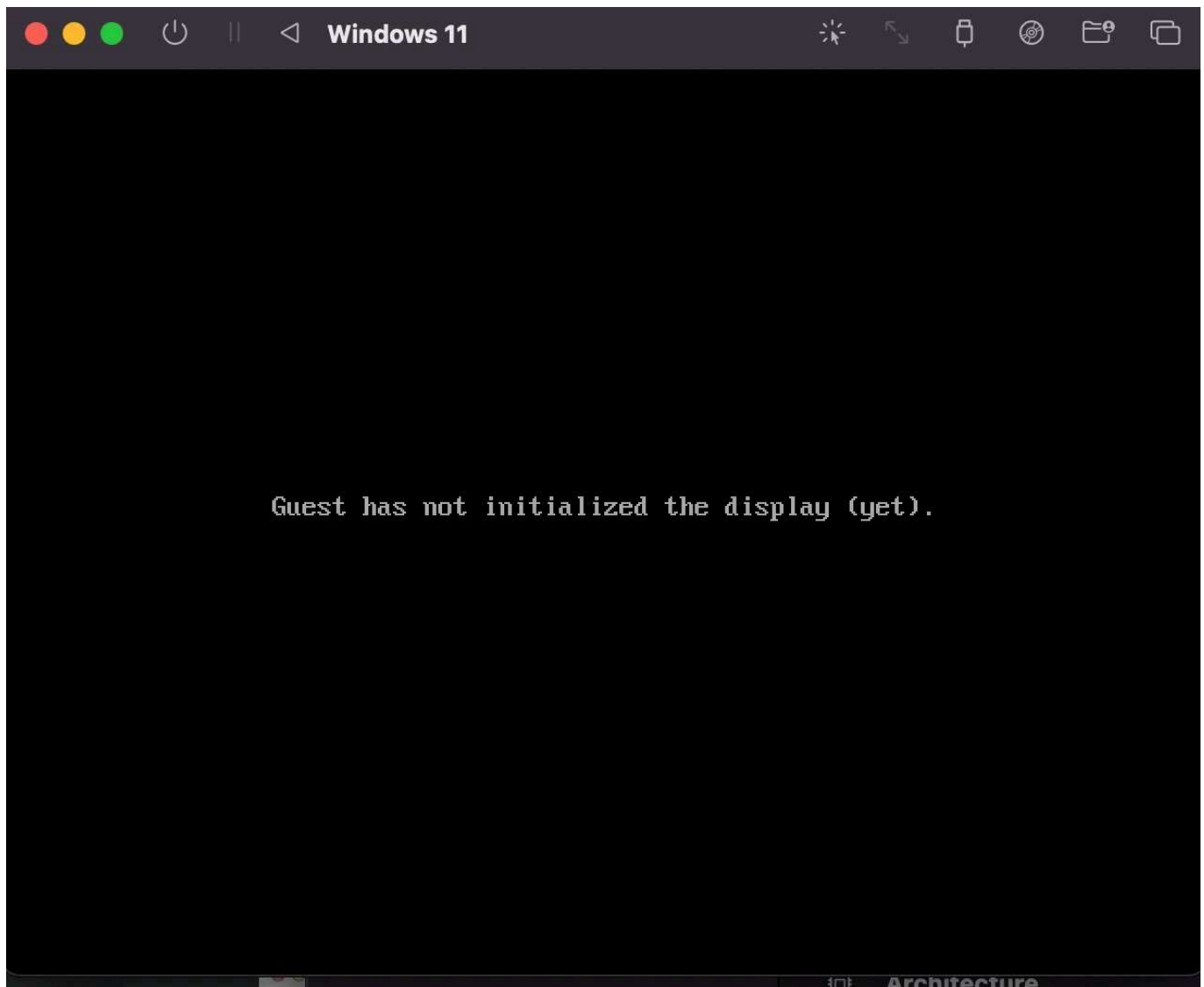
I would not say this process was as easy as it is written because I encountered several issues and retried the whole VM creation 3 times before it was a success.



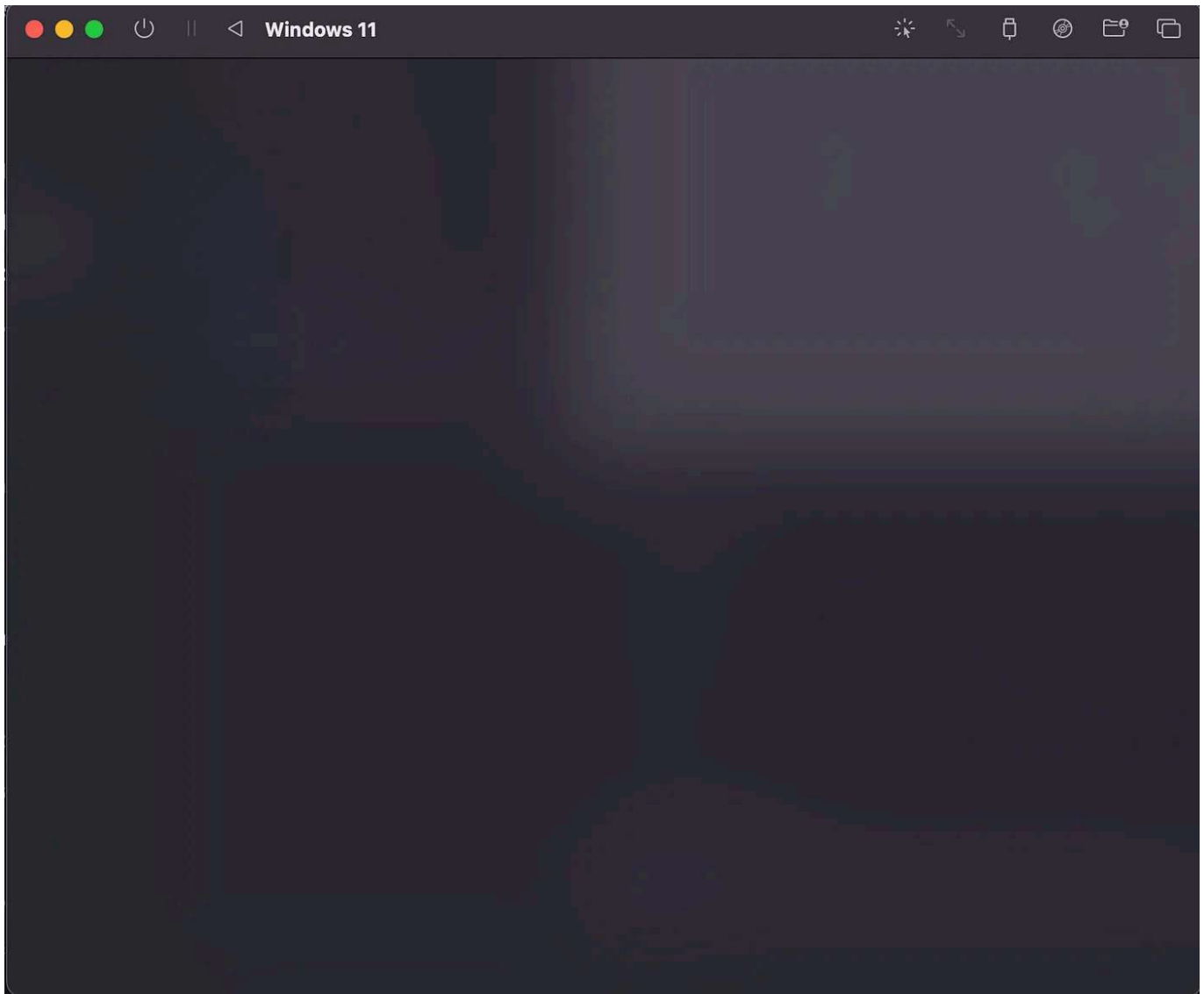
1. If you see this page during the installation, it means you had an oversight in the warning stated above. 😊 Kindly check back on Step 9 to fix it. However, you would definitely need to delete the VM and start the process again. 🙄



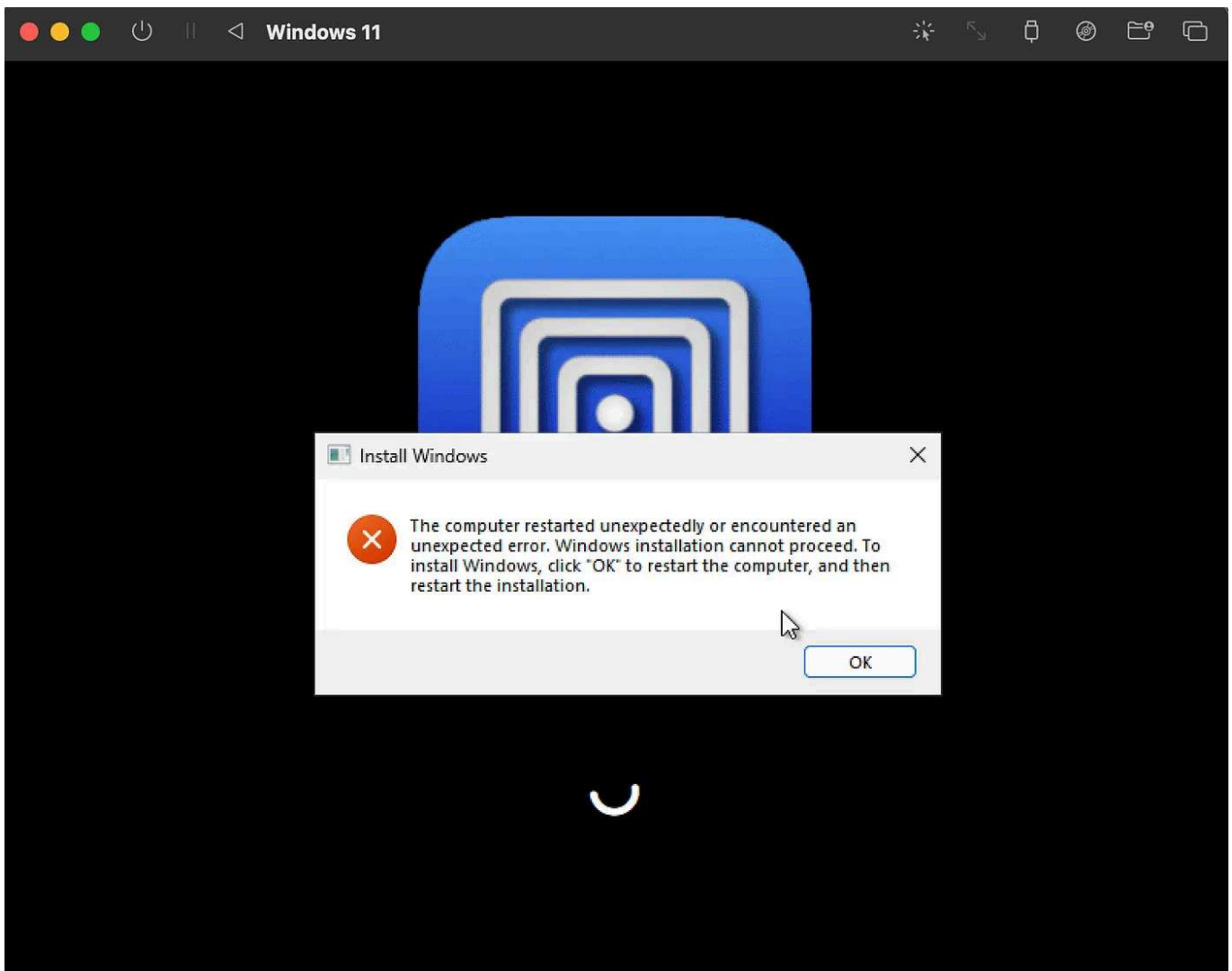
2. This page shows up after VM creation once you start the VM. Close the VM, and make sure that the **virtio-ramfb-gl (GPU Supported)** is selected under *Display* tab in Settings.



3. This page also shows up after VM creation once you start the VM. Close the VM, and make sure that the **UEFI Boot** is checked in *QEMU* tab in Settings.

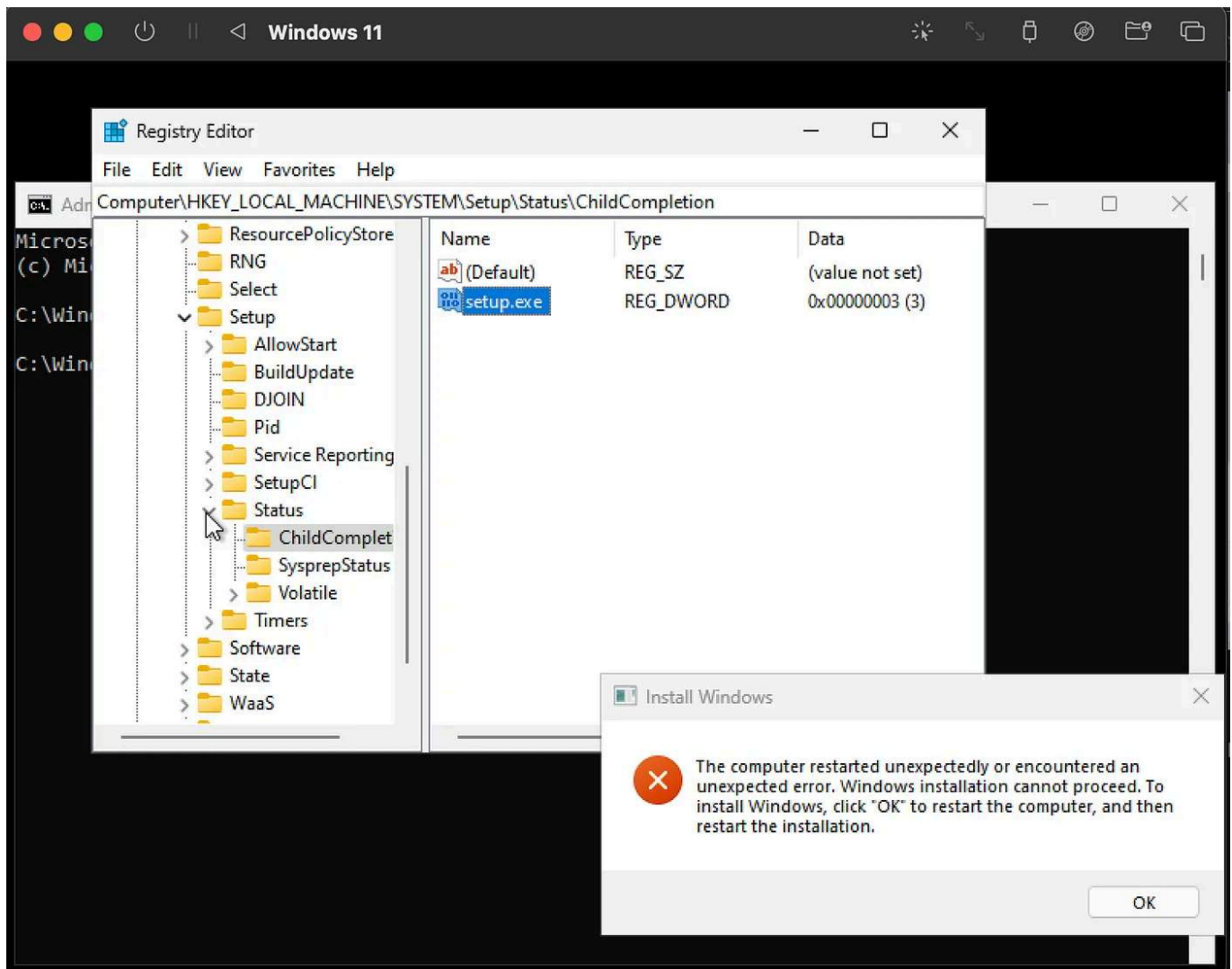


4. While I tried to follow the whole process on another MacBook M1, I encountered this error after the `bypassnro` operation on terminal:



### Fix:

- click OK. Then, stop the VM and restart it
- while booting, press `Shift + fn + F10` to launch the **Terminal**
- type `regedit` , press enter and the image below will show up



Make sure to open the right directory:

HKEY\_LOCAL\_MACHINE/SYSTEM/Setup/Status/ChildCompletion

- double-click the `setup.exe` and change any value to 3, click OK
- close the Registry Editor and terminal, then, click OK on the error page to exit it
- the windows will now boot properly

You could join the [UTM Discord](#) community if you have any issue—aside the ones noted in this article—in order to get help.

# Reference

<https://www.youtube.com/watch?v=FWT5RGt26Ag&t=1s>

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Written by **Damilola Omoyiwola**

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Android Engineer | Occasional Writer

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## Responses (3)



Write a response

What are your thoughts?



**Rio Casanova**

Oct 3, 2024



Thank you so much haha, I needed this so bad. Cant find this information anywhere.



1

Reply



**Karthik Vijapurapu**

May 18, 2024



Thank you so so much Damilola! One of the clearest steps ever described ! Kudos!

 1 [Reply](#)




Patrick Andrade

Feb 22, 2024



I would recommend just check this guide from UTM for ISOs : <https://docs.getutm.app/guides/windows/>

 1 [Reply](#)

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13:30	Reading FC	FT	2
MD: 12			
FINISHED	Levante UD		1
14:00	Elche CF	FT	1
MD: 10			
FINISHED	FC Crotone		0
15:00		FT	



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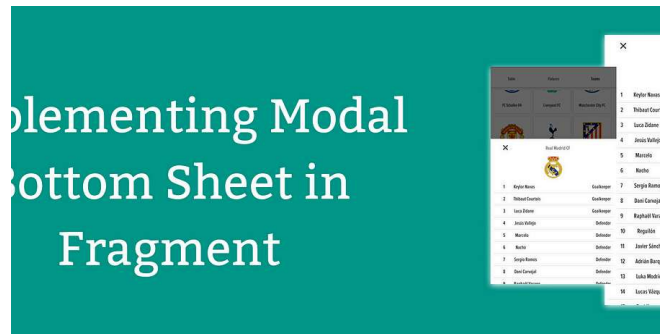
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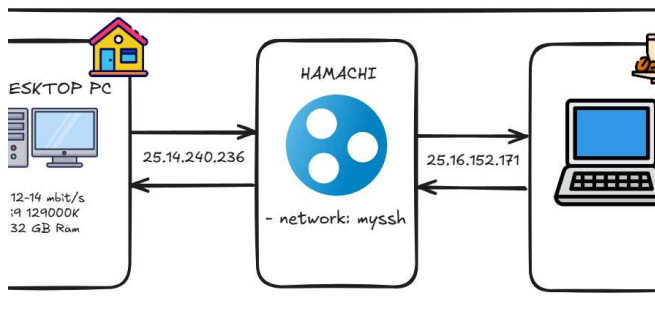
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Ghostty	✓	✓	✓	✓



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