

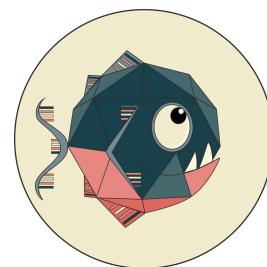
Feb 02, 2024

Version 1

Laptop setup and piranhaGUI install V.1

DOI

<https://dx.doi.org/10.17504/protocols.io.ewov1q642gr2/v1>



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**Manuscript citation:**

Automated detection and classification of polioviruses from nanopore sequencing reads using piranha

Áine O'Toole, Rachel Colquhoun, Corey Ansley, Catherine Troman, Daniel Maloney, Zoe Vance, Joyce Akello, Erika Bujaki, Manasi Majumdar, Adnan Khurshid, Yasir Arshad, Muhammad Masroor Alam, Javier Martin, Alexander G Shaw, Nicholas

C Grassly, Andrew Rambaut

bioRxiv 2023.09.05.556319; doi: <https://doi.org/10.1101/2023.09.05.556319>

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Protocol status: Working

We use this protocol and it's working

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Abstract

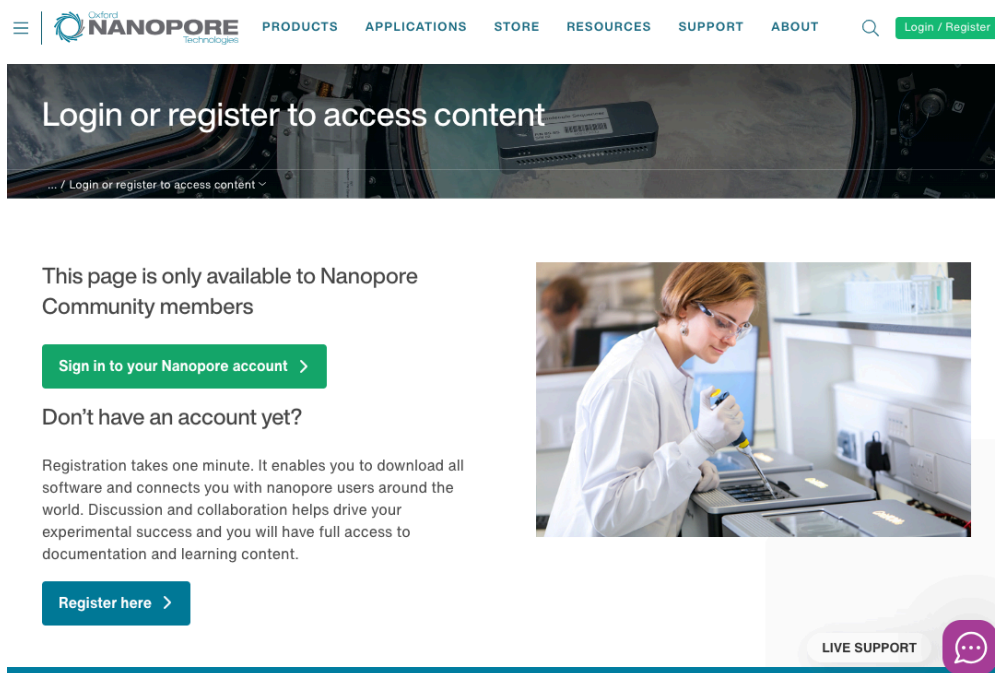
This protocol provides step-by-step guidance on installing piranhaGUI and its dependency Docker Desktop.

Laptop requirements

- 1 Requirements:
 1. Administrator access to the laptop
 2. A high-performance laptop with a GPU

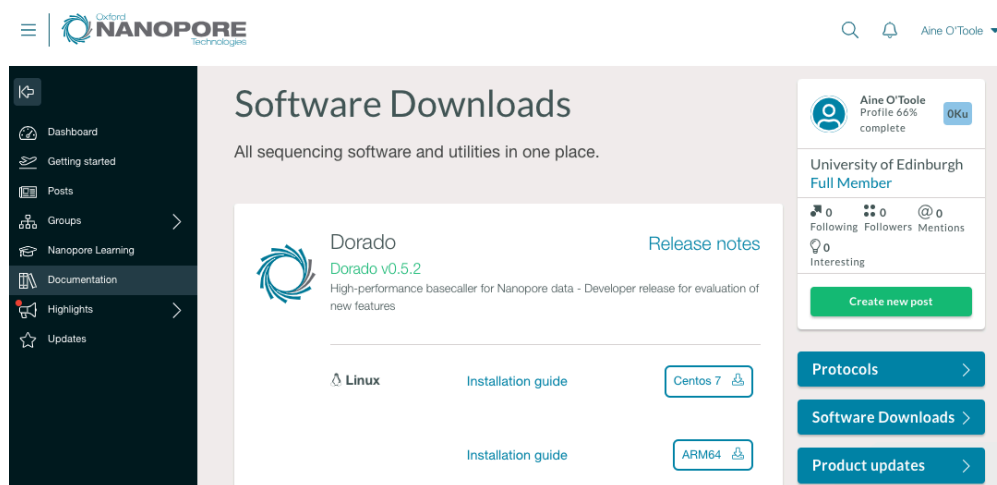
Setting up a Nanopore account & installing MinKNOW

- 2 Register for an Oxford Nanopore Technologies Account at <https://nanoporetech.com/community> by clicking the "Register here" button. You will have to verify your email address and log in. If you already have an account, sign in.



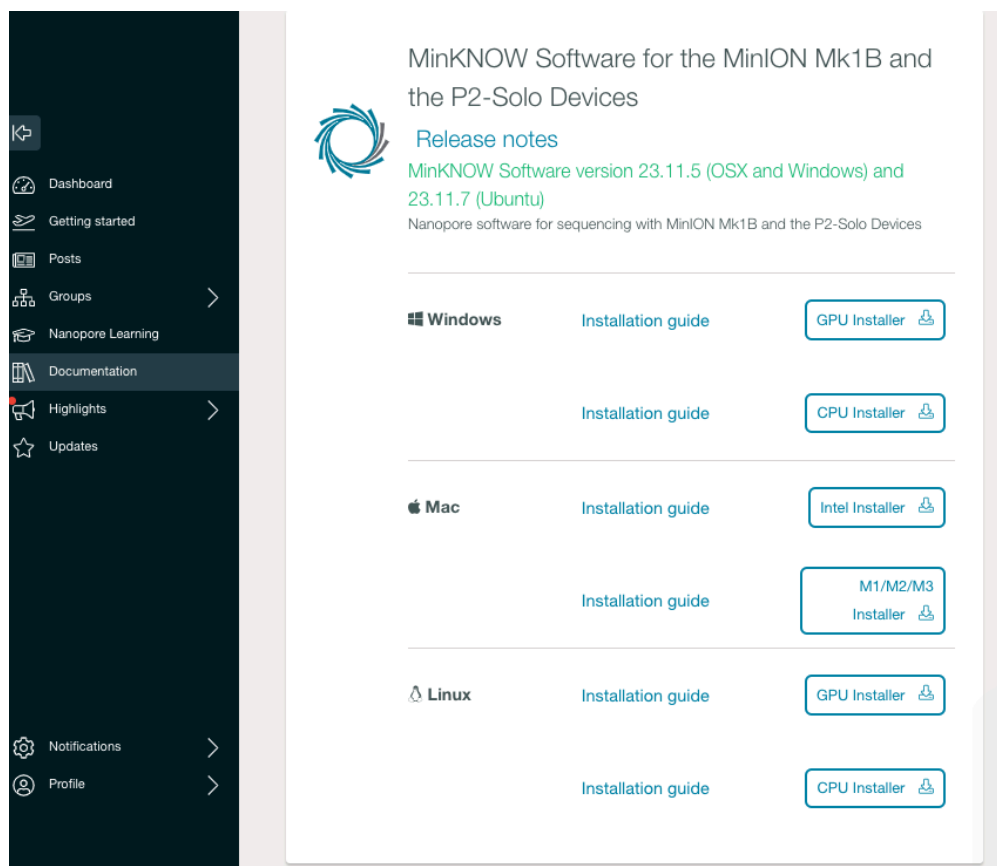
To access the useful software, you will need to associate your account with a full membership or else order a starter pack and become a full member.

- 3 Navigate in a web-browser to <https://community.nanoporetech.com/downloads>, you will need to log in to your Nanopore account to access this page.



The screenshot shows the Nanopore Software Downloads page. On the left is a dark sidebar with navigation links: Dashboard, Getting started, Posts, Groups, Nanopore Learning, Documentation (highlighted), Highlights, and Updates. The main content area is titled "Software Downloads" with the subtitle "All sequencing software and utilities in one place." Below this, the "Dorado" section is displayed, featuring the Dorado logo, the version "Dorado v0.5.2", and a description: "High-performance basecaller for Nanopore data - Developer release for evaluation of new features". There is a link to "Release notes". Below the description, there are installation guides for Linux, Centos 7, and ARM64. On the right side, there is a user profile for "Aine O'Toole" (University of Edinburgh, Full Member) and a "Create new post" button. At the bottom right, there are buttons for "Protocols", "Software Downloads", and "Product updates".

Scroll down once you have reached this page to view the "MiKNOW download" and download the respective link depending on whether you are using a Windows, Mac or Linux machine.



The screenshot shows the Nanopore MiKNOW Software page. On the left is a dark sidebar with navigation links: Dashboard, Getting started, Posts, Groups, Nanopore Learning, Documentation (highlighted), Highlights, and Updates. The main content area is titled "MiKNOW Software for the MinION Mk1B and the P2-Solo Devices". Below this, the "Release notes" section is displayed, featuring the MiKNOW logo, the version "MinKNOW Software version 23.11.5 (OSX and Windows) and 23.11.7 (Ubuntu)", and a description: "Nanopore software for sequencing with MinION Mk1B and the P2-Solo Devices". Below the description, there are installation guides for Windows, Mac, and Linux. For Windows, there are links to "GPU Installer" and "CPU Installer". For Mac, there are links to "Intel Installer" and "M1/M2/M3 Installer". For Linux, there are links to "GPU Installer" and "CPU Installer".

4 **Mac Installation of MiKNOW**

If you have a Mac and are not sure whether you have an Apple or Intel chip, click the apple icon in the top left hand side of the screen, and navigate to "About this Mac". A window will pop up (like the one in the image) that describes various things about your computer, including "Processor". If your processor has Intel in it, you have an Intel chip, otherwise you have an Apple chip. Another clue would be how new your Mac is. If you've purchased a Mac in the last 3 years it's very likely to be an Apple chip.

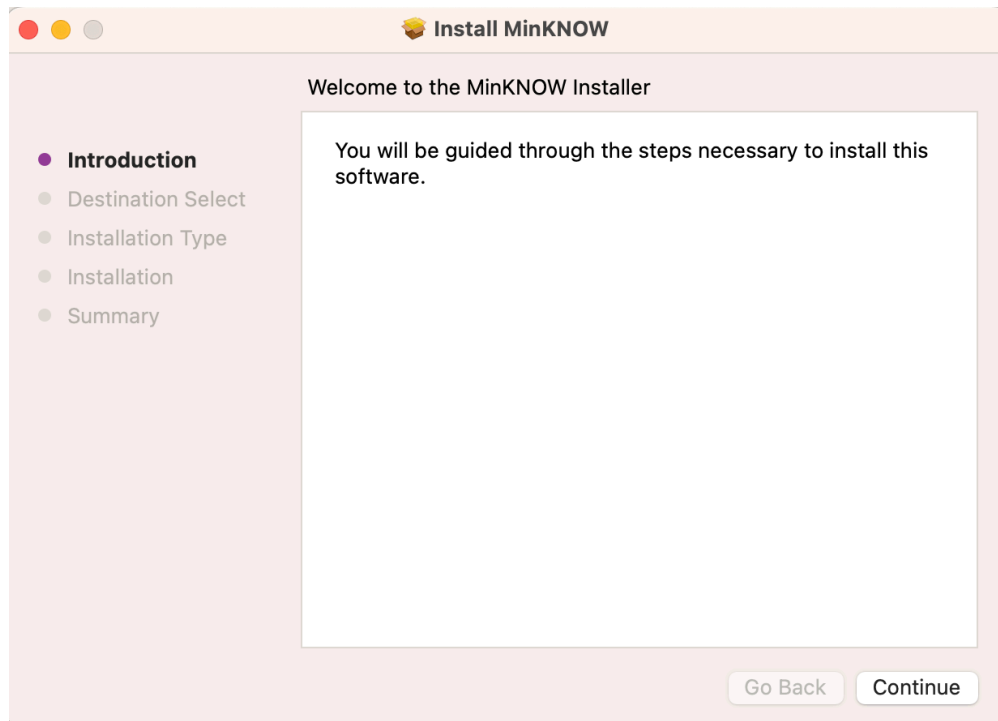


About this mac In this example the processor is an intel one, so the link to click on would be the Mac Intel installer.

Once you've downloaded the Mac dmg file, extract it and open the MinKNOW.pkg file by double clicking on the icon.



An installer window will open and you'll be guided through the installation steps:

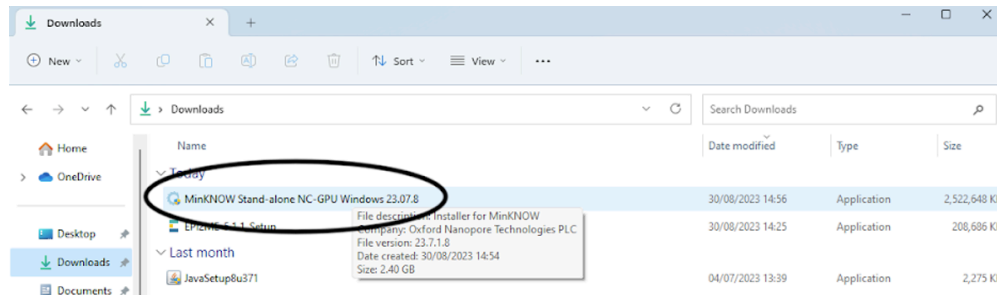


5 Windows installation of MiKNOW

Download the windows installer, the machine you're using should have a GPU so click on the GPU installer link. If your machine does not have a GPU, running basecalling for a Nanopore run will take a very long time.



Run the installer by double clicking it in the directory it was downloaded to (likely your downloads folder).

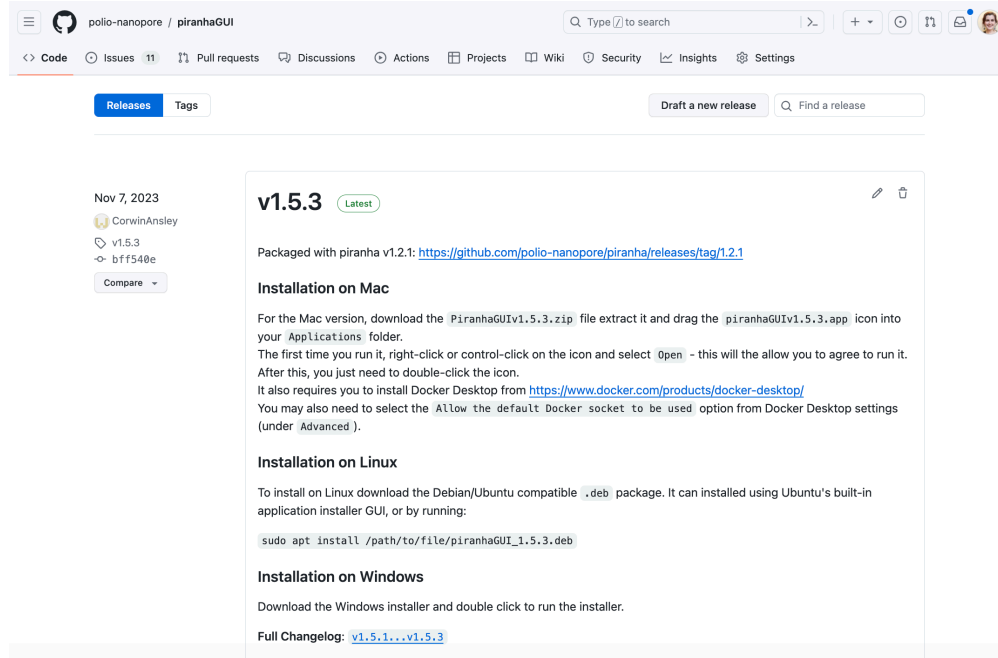


When the installer pops up, follow the installation instructions to install MiKNOW.

- 6 You should now be ready to run MinKNOW when you go to perform a sequencing run.

Install piranha through piranhaGUI

- 7 PiranhaGUI can be installed on a Windows, MacOSX or Linux machine. To install piranhaGUI, navigate to [piranhaGUI GitHub](https://github.com/oxfordnanopore/piranhaGUI) on a web browser. You should see a page similar to the one below, which shows the latest releases of piranha GUI, along with some installation instructions.



Nov 7, 2023
CorwinAnsley
v1.5.3
bfff548e
Compare

v1.5.3 Latest

Packaged with piranha v1.2.1: <https://github.com/polio-nanopore/piranha/releases/tag/1.2.1>

Installation on Mac

For the Mac version, download the `PiranhaGUIv1.5.3.zip` file extract it and drag the `piranhaGUIv1.5.3.app` icon into your `Applications` folder.
The first time you run it, right-click or control-click on the icon and select `Open` - this will allow you to agree to run it. After this, you just need to double-click the icon.
It also requires you to install Docker Desktop from <https://www.docker.com/products/docker-desktop/>.
You may also need to select the `Allow the default Docker socket to be used` option from Docker Desktop settings (under `Advanced`).

Installation on Linux

To install on Linux download the Debian/Ubuntu compatible `.deb` package. It can be installed using Ubuntu's built-in application installer GUI, or by running:

```
sudo apt install /path/to/file/piranhaGUI_1.5.3.deb
```

Installation on Windows

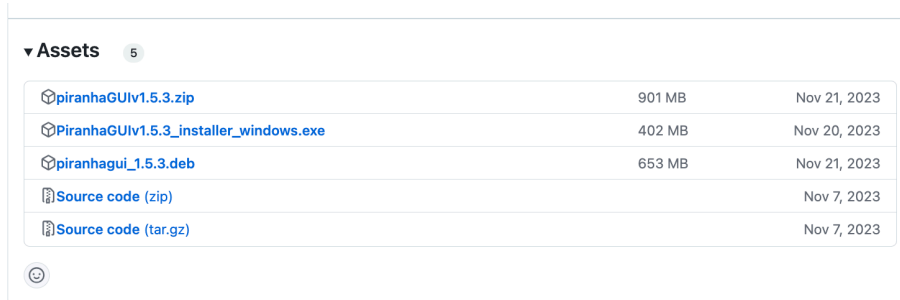
Download the Windows installer and double click to run the installer.

Full Changelog: [v1.5.1...v1.5.3](#)

PiranhaGUI releases page. A release is like a checkpoint for software that pins everything at a specific version. There may be periodic updates of piranhaGUI (new releases) and also of the piranha software that piranhaGUI runs.



- 8 To download the latest release, click on the relevant link on this page under the "assets" category of the latest releases.
- If you're a window's user, download the PiranhaGUIvX.X.X_installer_windows.exe installer and double click to run it
 - If you are a MacOS user download the PiranhaGUIvX.X.X.zip file and extract it, then drag it to your Applications folder. The first time you run it, right-click or control-click on the icon and select Open - this will allow you to agree to run it. After this, you just need to double-click the icon.
 - For Linux install the piranhaGUI_X.X.X.deb file.



▼ Assets 5		
 piranhaGUIv1.5.3.zip	901 MB	Nov 21, 2023
 PiranhaGUIv1.5.3_installer_windows.exe	402 MB	Nov 20, 2023
 piranhagui_1.5.3.deb	653 MB	Nov 21, 2023
 Source code (zip)		Nov 7, 2023
 Source code (tar.gz)		Nov 7, 2023

Download links for piranhaGUI

- 9 If you have never run Docker on your computer before, you will need to install Docker Desktop.
- Navigate to <https://www.docker.com/products/docker-desktop/> on a web browser and you should see a page like the one below. Click on the relevant download link (Mac - Apple Chip, Mac - Intel Chip, Windows or Linux). See the next step if you are not sure whether you have an Apple Chip or Intel Chip.



Docker Desktop

The #1 containerization software for developers and teams

Your command center for innovative container development

Create an account

Download for Mac - Apple Chip



Download for Mac - Intel Chip



Download for Windows



Download for Linux

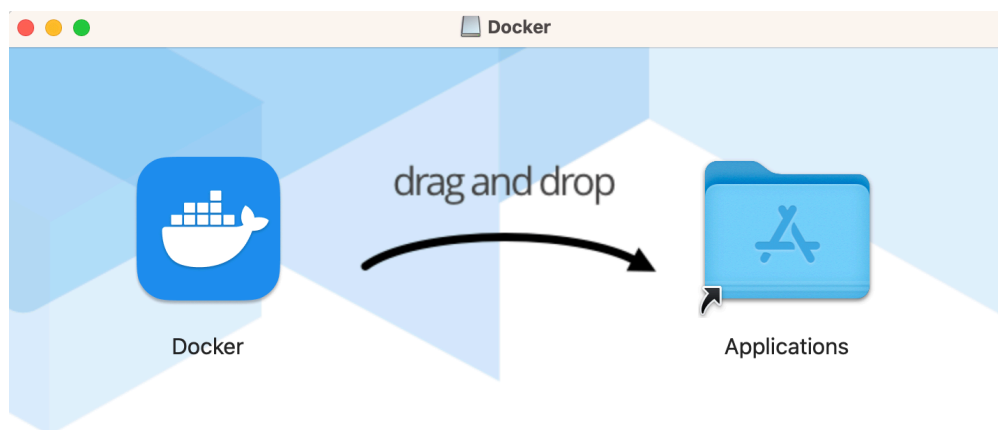


10 Install on a Mac



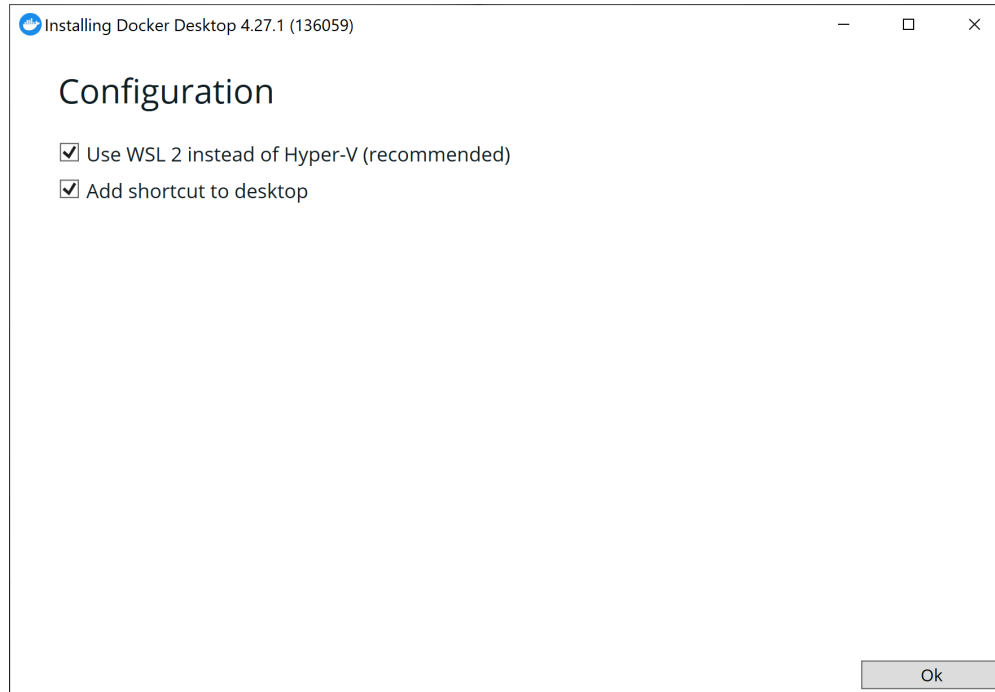
About this mac In this example the processor is an intel one, so the link to click on would be the Mac Intel installer.

If you downloaded a Mac dmg file, click on it to open and a window should pop up prompting you to drag the Docker icon into the Applications folder. Drag the icon into Applications.



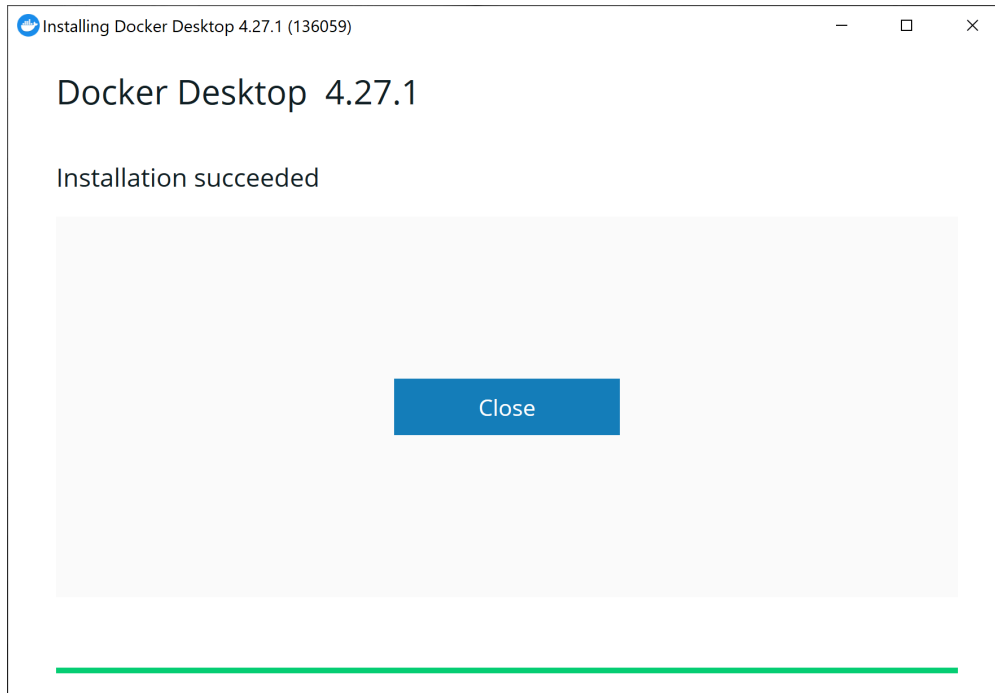
11 **Install on a windows machine**

If you downloaded a windows executable, double-click to open and follow the installation instructions on the window that pops up.



Tick use WSL2 instead of Hyper-V if possible

When you have clicked through and completed the instructions, you should see the following success screen:



- 12 Open Docker Desktop by clicking on the icon in your file browser to check it has installed successfully.

PiranhaGUI setup

- 13 Double click on the piranhaGUI icon to open it. If you have a Mac and have not previously run piranhaGUI you should right-click or control-click on the icon and select 'Open', which will allow you to agree to run it.

When piranhaGUI has opened you should see a screen like the one below:

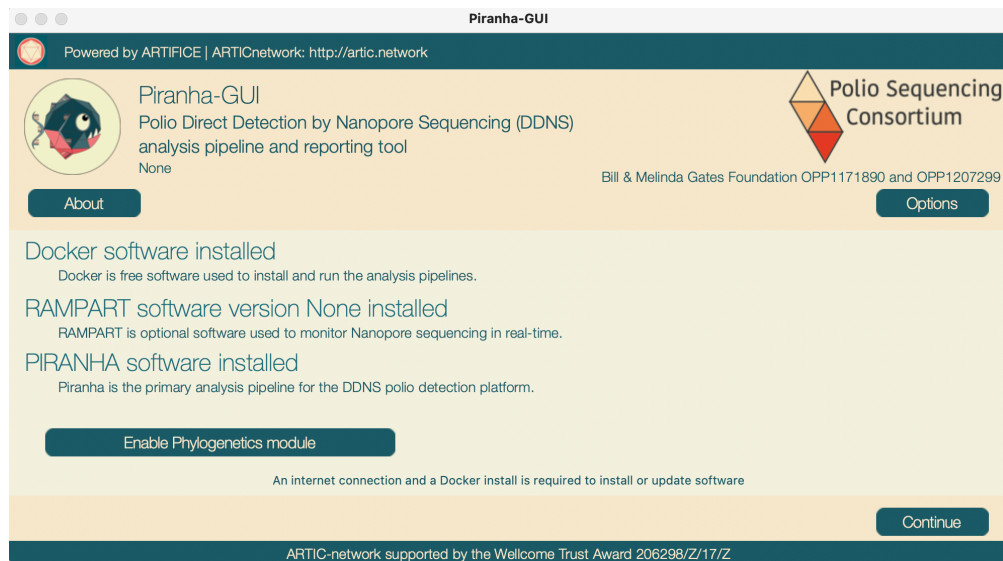


If the screen does not say Docker software installed, you may need to repeat the above Docker installation steps and ensure Docker installs correctly. Internet connectivity may be an issue for downloading Docker Desktop, but this only needs to be done once. Try to ensure a stable internet connection and download again if necessary. If the screen says "Docker software installed", you can move on to the next step.

- 14 You will want to make sure you have the latest version of piranha installed. If the message appears, as in the previous image, that an update is available for piranha, then click on the button to install the update to the piranha software. You should see the below message pop up that piranha GUI is pulling PIRANHA image:



This step requires an internet connection, when it is complete and piranha has been updated to the latest you should see the following screen:



All messages are in green, so you should be now ready to run piranha.

****If you are taking part in a training workshop and do not have a reliable internet connection, you may be able to install piranha with from a distributed thumb drive.****

Protocol references

Additional troubleshooting resources

Docker install and running issues

<https://docs.docker.com/desktop/troubleshoot/topics/>

WSL installation issues

<https://learn.microsoft.com/en-us/windows/wsl/install>