

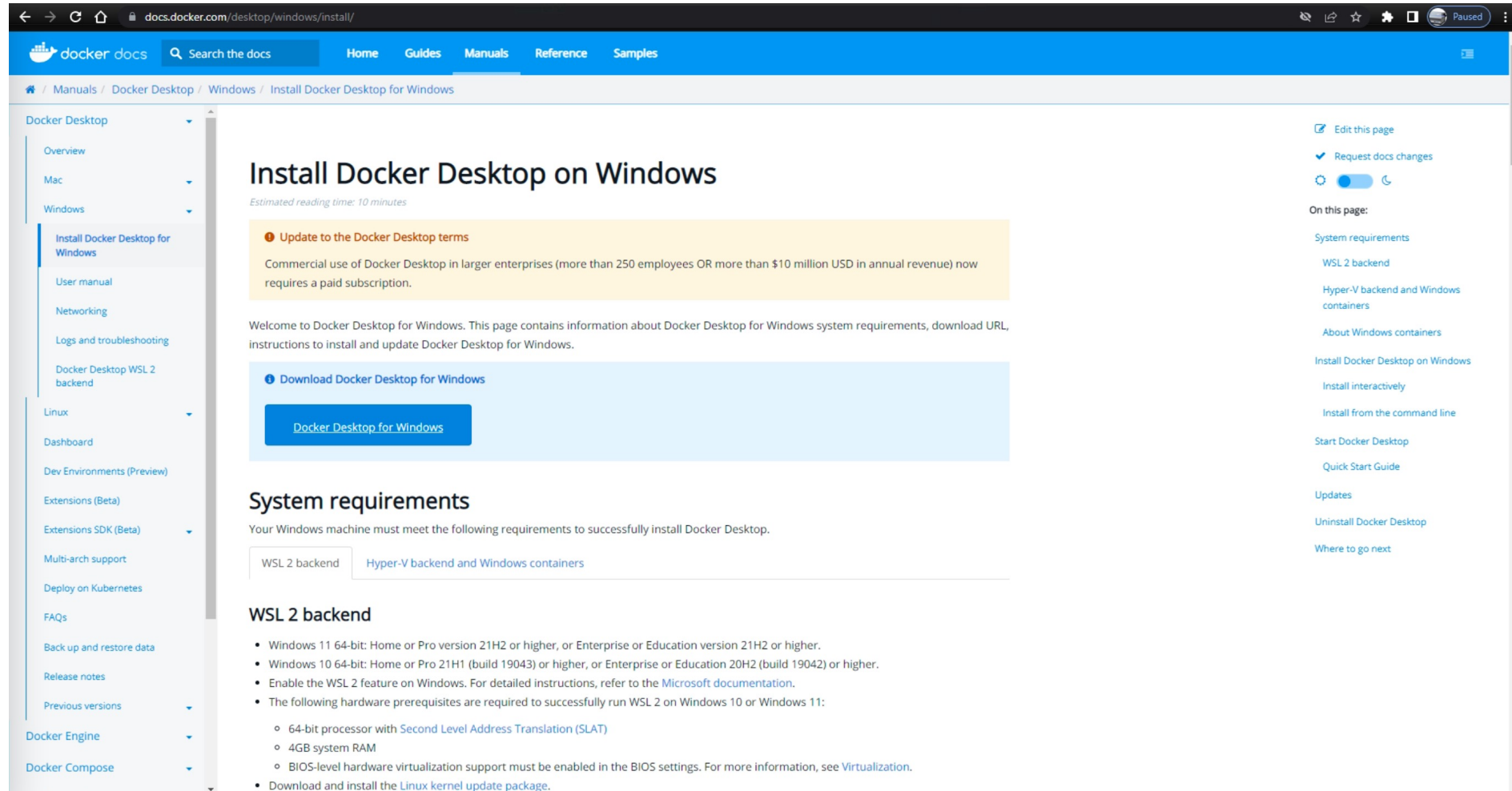
Guide to using **ASHLAR** on docker

Heng

16 June 2022

1. Install Docker Desktop

<https://docs.docker.com/desktop/windows/install>



The screenshot shows the Docker documentation website for installing Docker Desktop on Windows. The page has a blue header with the Docker logo and navigation links. A left sidebar contains a table of contents for Docker Desktop, Linux, and Docker Engine/Compose. The main content area is titled "Install Docker Desktop on Windows" with an estimated reading time of 10 minutes. It includes a yellow warning box about commercial use, a blue box with a download button, and a "System requirements" section with tabs for WSL 2 backend and Hyper-V backend. The WSL 2 tab is active, showing a list of requirements for Windows 11, Windows 10, and hardware prerequisites. A right sidebar offers options to edit the page, request changes, and a list of related links.

docs.docker.com/desktop/windows/install/

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Manuals / Docker Desktop / Windows / Install Docker Desktop for Windows

Docker Desktop

- Overview
- Mac
- Windows
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 - Networking
 - Logs and troubleshooting
 - Docker Desktop WSL 2 backend
- Linux
 - Dashboard
 - Dev Environments (Preview)
 - Extensions (Beta)
 - Extensions SDK (Beta)
 - Multi-arch support
 - Deploy on Kubernetes
 - FAQs
 - Back up and restore data
 - Release notes
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- Docker Compose

Install Docker Desktop on Windows

Estimated reading time: 10 minutes

Update to the Docker Desktop terms

Commercial use of Docker Desktop in larger enterprises (more than 250 employees OR more than \$10 million USD in annual revenue) now requires a paid subscription.

Welcome to Docker Desktop for Windows. This page contains information about Docker Desktop for Windows system requirements, download URL, instructions to install and update Docker Desktop for Windows.

Download Docker Desktop for Windows

[Docker Desktop for Windows](#)

System requirements

Your Windows machine must meet the following requirements to successfully install Docker Desktop.

WSL 2 backend Hyper-V backend and Windows containers

WSL 2 backend

- Windows 11 64-bit: Home or Pro version 21H2 or higher, or Enterprise or Education version 21H2 or higher.
- Windows 10 64-bit: Home or Pro 21H1 (build 19043) or higher, or Enterprise or Education 20H2 (build 19042) or higher.
- Enable the WSL 2 feature on Windows. For detailed instructions, refer to the [Microsoft documentation](#).
- The following hardware prerequisites are required to successfully run WSL 2 on Windows 10 or Windows 11:
 - 64-bit processor with Second Level Address Translation (SLAT)
 - 4GB system RAM
 - BIOS-level hardware virtualization support must be enabled in the BIOS settings. For more information, see [Virtualization](#).
- Download and install the [Linux kernel update package](#).

[Edit this page](#)

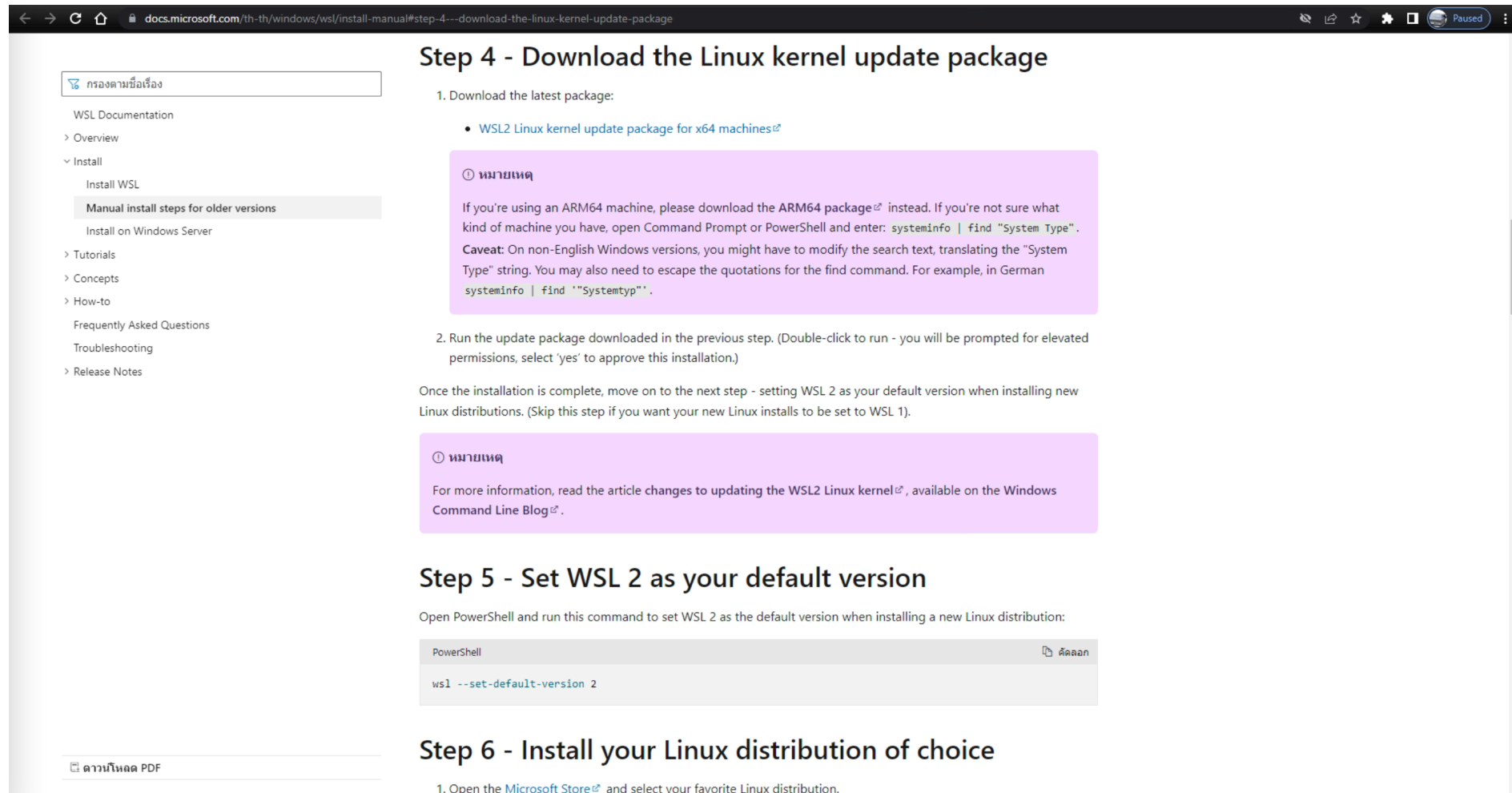
[Request docs changes](#)

On this page:

- System requirements
- WSL 2 backend
- Hyper-V backend and Windows containers
- About Windows containers
- Install Docker Desktop on Windows
 - Install interactively
 - Install from the command line
- Start Docker Desktop
 - Quick Start Guide
- Updates
 - Uninstall Docker Desktop
 - Where to go next

2. Install Linux kernel update package

<https://docs.microsoft.com/th-th/windows/wsl/install-manual#step4---download-the-linux-kernel-update-package>



← → ↻ 🏠 docs.microsoft.com/th-th/windows/wsl/install-manual#step4---download-the-linux-kernel-update-package

🔍 กรองตามชื่อเรื่อง

- WSL Documentation
- > Overview
- > Install
 - Install WSL
 - Manual install steps for older versions**
 - Install on Windows Server
- > Tutorials
- > Concepts
- > How-to
- Frequently Asked Questions
- Troubleshooting
- > Release Notes

Step 4 - Download the Linux kernel update package

1. Download the latest package:
 - [WSL2 Linux kernel update package for x64 machines](#)

📌 **หมายเหตุ**

If you're using an ARM64 machine, please download the [ARM64 package](#) instead. If you're not sure what kind of machine you have, open Command Prompt or PowerShell and enter: `systeminfo | find "System Type"`.
Caveat: On non-English Windows versions, you might have to modify the search text, translating the "System Type" string. You may also need to escape the quotations for the find command. For example, in German `systeminfo | find '"Systemtyp"'`.

2. Run the update package downloaded in the previous step. (Double-click to run - you will be prompted for elevated permissions, select 'yes' to approve this installation.)

Once the installation is complete, move on to the next step - setting WSL 2 as your default version when installing new Linux distributions. (Skip this step if you want your new Linux installs to be set to WSL 1).

📌 **หมายเหตุ**

For more information, read the article [changes to updating the WSL2 Linux kernel](#), available on the [Windows Command Line Blog](#).

Step 5 - Set WSL 2 as your default version

Open PowerShell and run this command to set WSL 2 as the default version when installing a new Linux distribution:

```
PowerShell
wsl --set-default-version 2
```

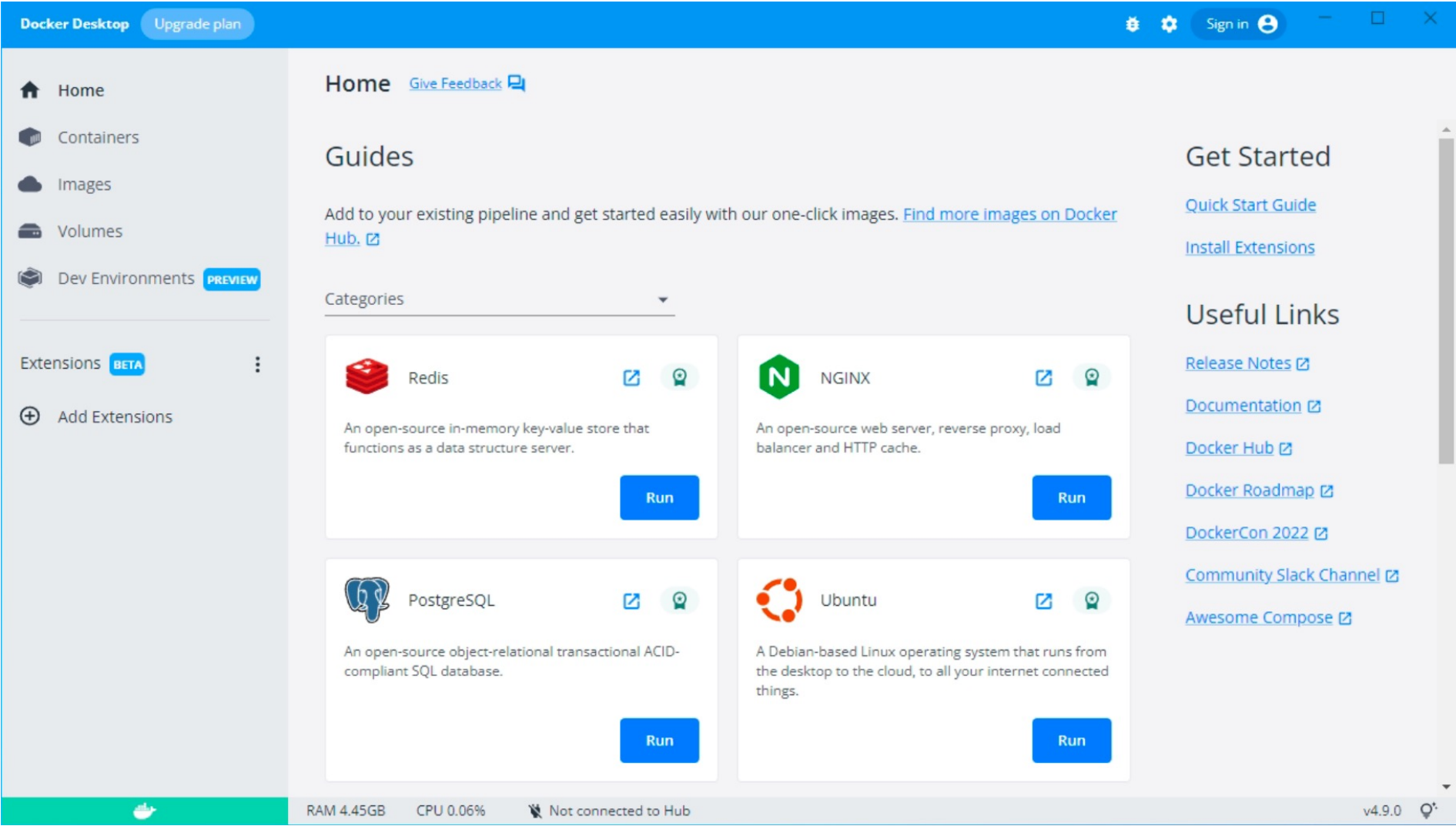
📄 คัดลอก

Step 6 - Install your Linux distribution of choice

1. Open the [Microsoft Store](#) and select your favorite Linux distribution.

📄 ดาวน์โหลด PDF

3. Open Docker Desktop



4. Download ASHLAR Docker Image

<https://hub.docker.com/r/labsyspharm/ashlar>

hub.docker.com/r/labsyspharm/ashlar


Missed DockerCon 2022? Watch now on-demand.

docker hub

Search for great content (e.g., mysql)

Explore Pricing Sign in Register

Explore labsyspharm/ashlar



labsyspharm/ashlar

OPEN SOURCE PROGRAM

☆

Pulls 7.2K

By labsyspharm • Updated 22 days ago

ASHLAR: Alignment by Simultaneous Harmonization of Layer/Adjacency Registration

Container

Overview

Tags

ASHLAR: Alignment by Simultaneous Harmonization of Layer/Adjacency Registration

Whole-slide microscopy image stitching and registration in Python

Ashlar performs fast, high-quality stitching of microscopy images. It also co-registers multiple rounds of cyclic imaging for methods such as CyCIF and CODEX. Ashlar can read image data directly from BioFormats-supported microscope vendor file formats as well as a directory of plain TIFF files. Output is saved as pyramidal, tiled OME-TIFF.

Note that Ashlar requires unstitched individual "tile" images as input, so it is not suitable for microscopes or slide scanners that only provide pre-stitched images.

Visit labsyspharm.github.io/ashlar/ for the most up-to-date information on ASHLAR.

Usage

```
ashlar [-h] [-o PATH] [-c CHANNEL] [--flip-x] [--flip-y]
      [--flip-mosaic-x] [--flip-mosaic-y]
```

Docker Pull Command

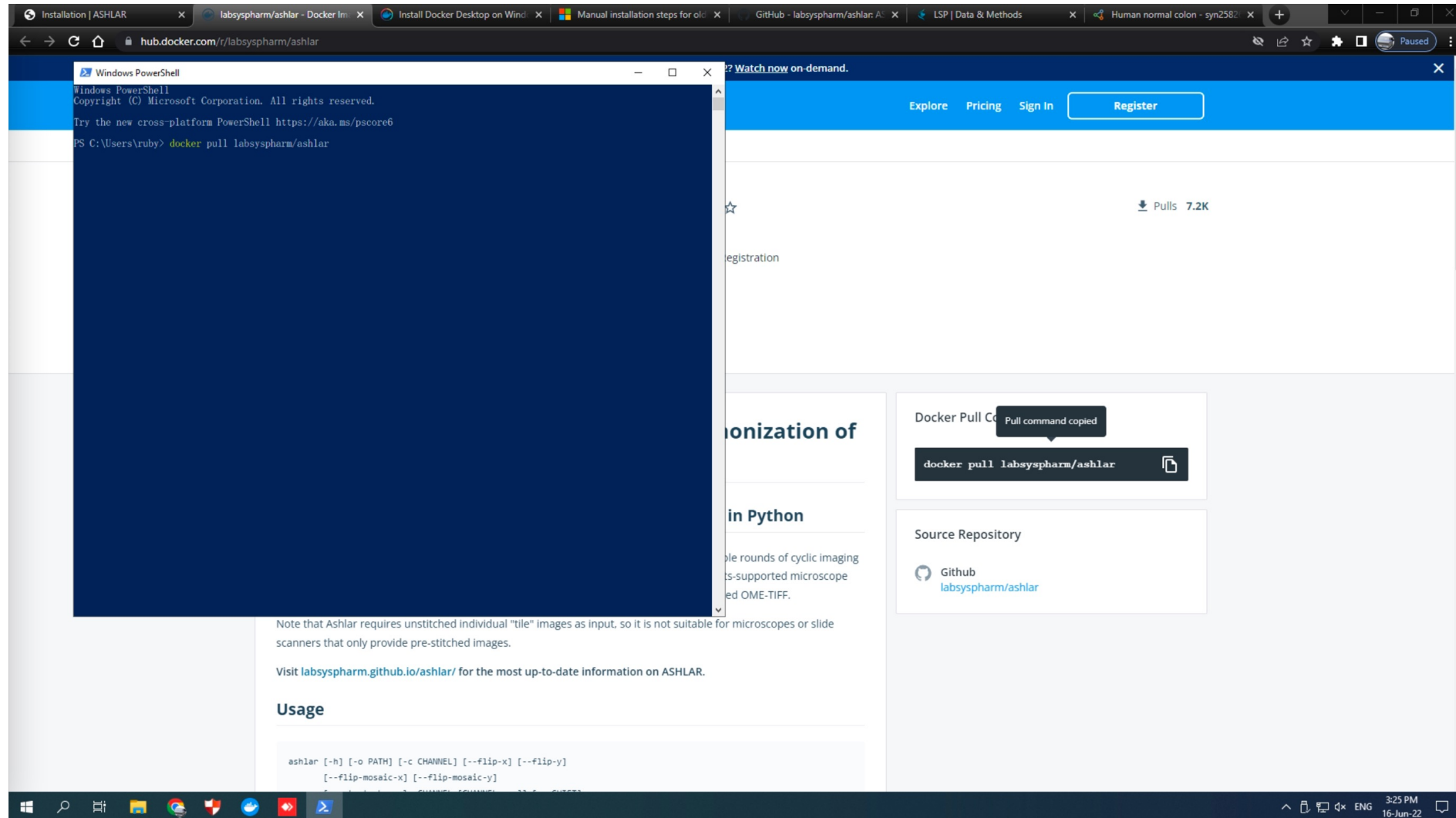
```
docker pull labsyspharm/ashlar
```

Source Repository

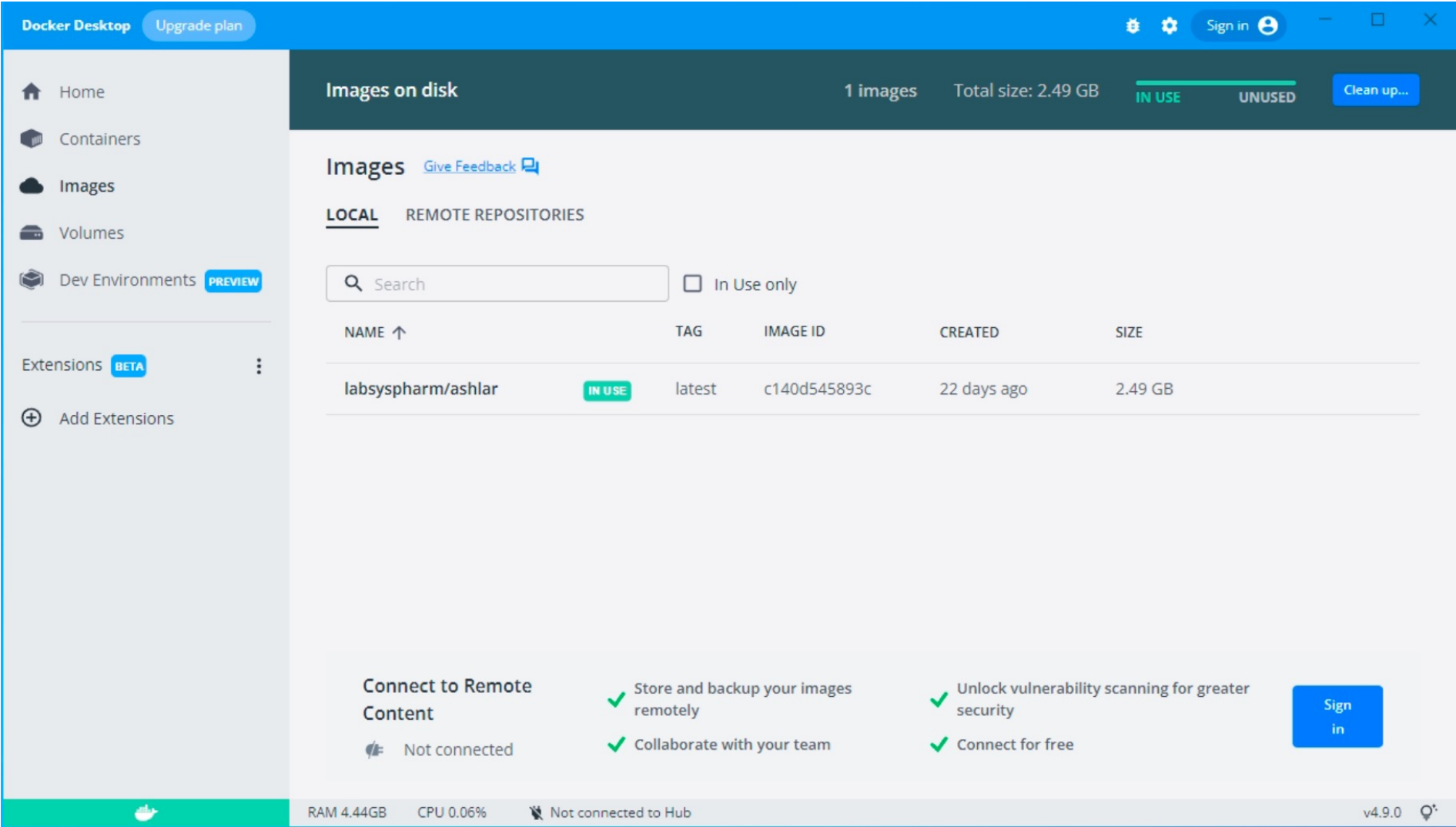
Github

[labsyspharm/ashlar](https://github.com/labsyspharm/ashlar)

5. Open 'Windows PowerShell' and run the following command to pull the image
> `docker pull labsyspharm/ashlar`



6. The 'ASHLAR Image' will show on the Docker Desktop



Quick DEMO using ASHLAR

<https://synapse.org/#!Synapse:syn25826362>

Ashlar ☆
Synapse ID: syn25826361 ⓘ Storage Location: Synapse Storage [Project Settings](#)

[Files](#) ⓘ [Discussion](#) ⓘ

Files » Benchmark image data » Human normal colon

Human normal colon ☆

Synapse ID: syn25826362 ⓘ DOI: <https://doi.org/10.7303/syn25826362> Item count: 2 Access: [Report Violation](#) Storage Location: Synapse Storage [Download Options](#)

Name	Size	Modified On	Created On	ID	MD5	Modified By	Download
COLNOR69MW2-cycle-1.ome.tif	1.575 GB	06/01/2021 11:32 PM	06/01/2021 11:32 PM	syn25826363	03bec9978cdd5f3eb7@jmhlich	@jmhlich	
COLNOR69MW2-cycle-2.ome.tif	1.575 GB	06/01/2021 11:32 PM	06/01/2021 11:32 PM	syn25826364	a53c2b2da72c805203@jmhlich	@jmhlich	

Created by @jmhlich on June 1, 2021 11:27 PM
Modified by @jmhlich on June 2, 2021 12:27 AM

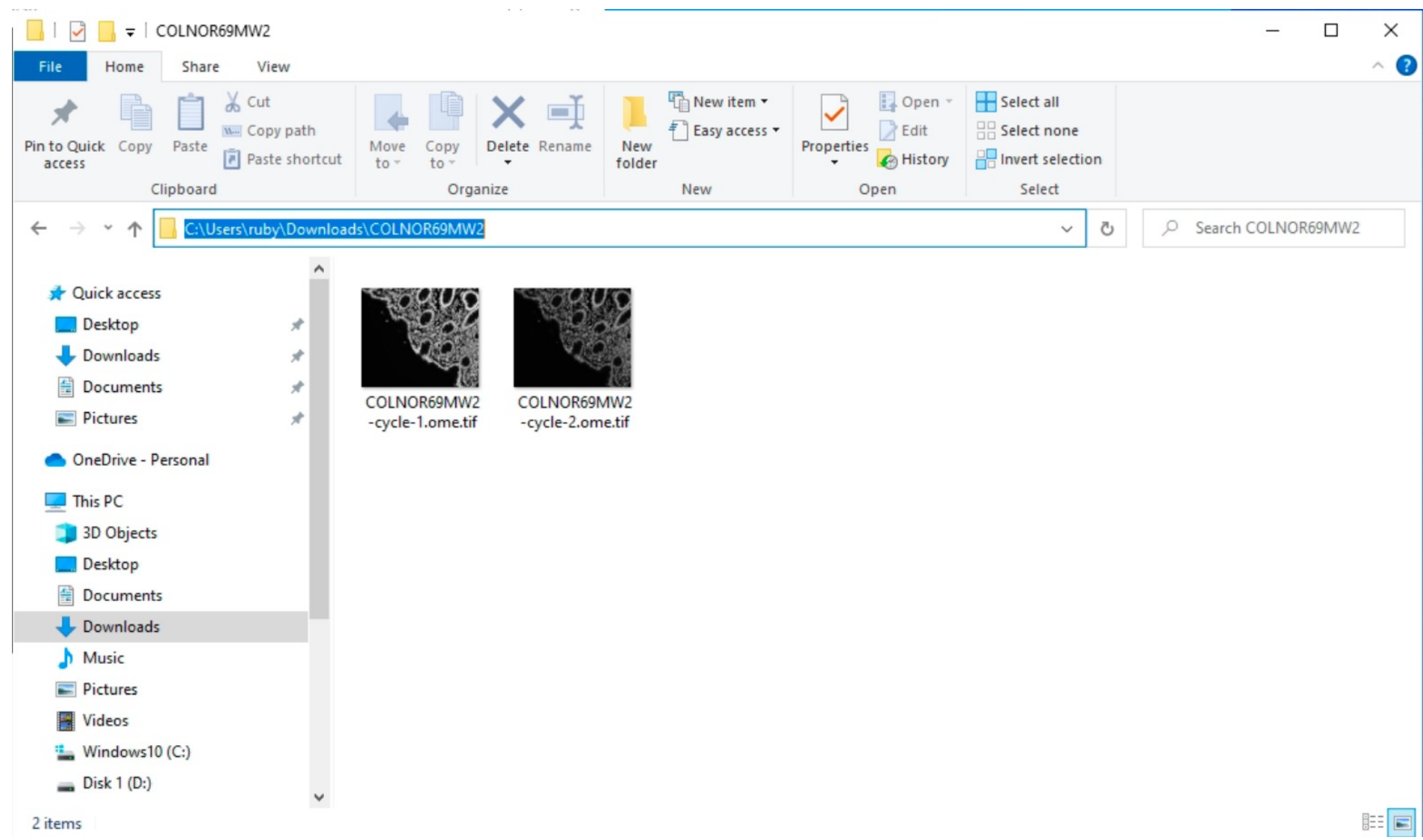
SYNPASE Experimental Mode Off ⓘ

[Contact Us](#) • [Documentation](#) • [Creative Commons License](#) • [Report Violation](#)

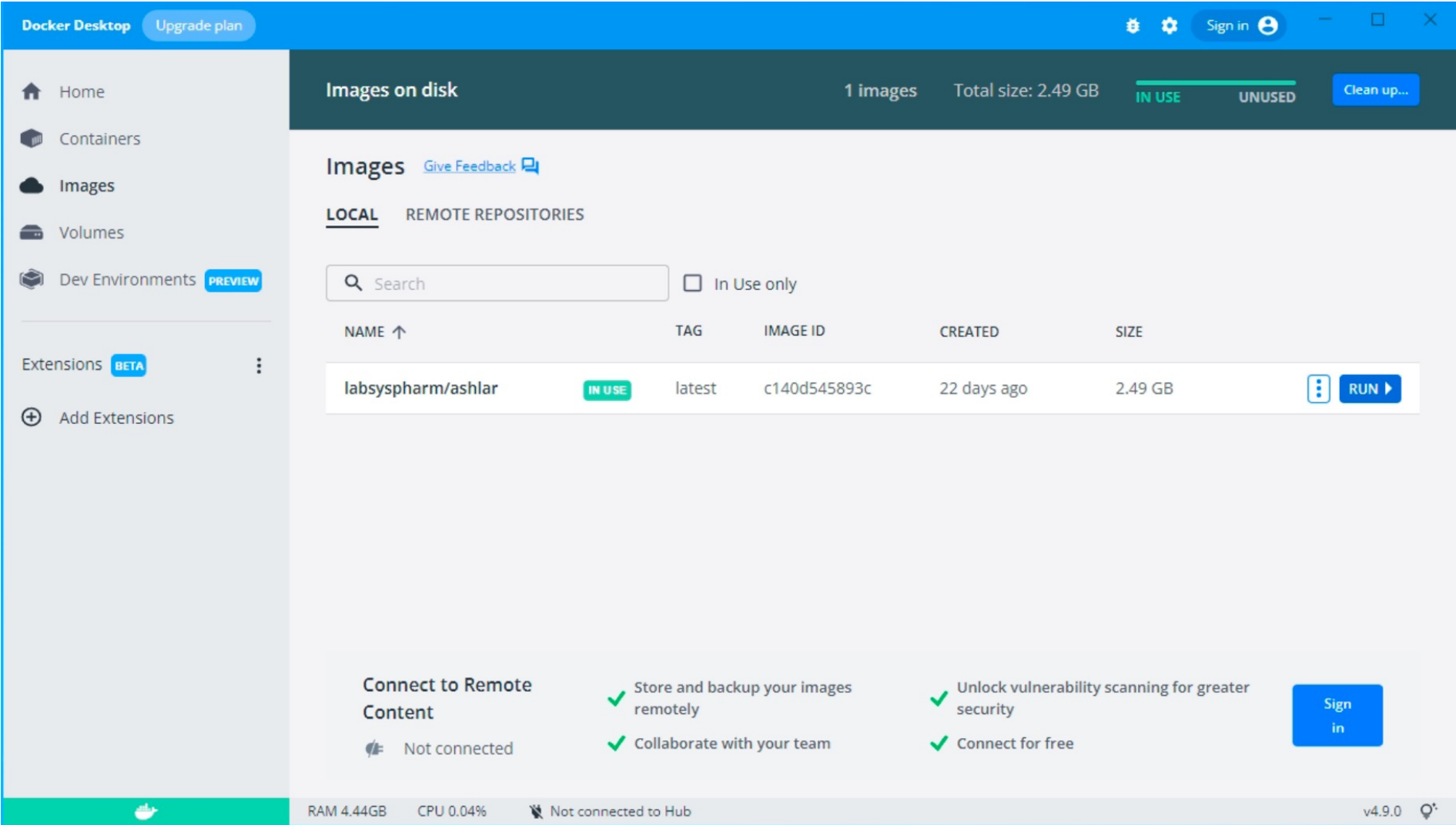
2022 SAGE BIONETWORKS

portal:410.0-4-gf60aff2
repo:410.0

8. Get the directory of your working folder that contains your images
C:\User\ruby\Downloads\COLNOR69MW2

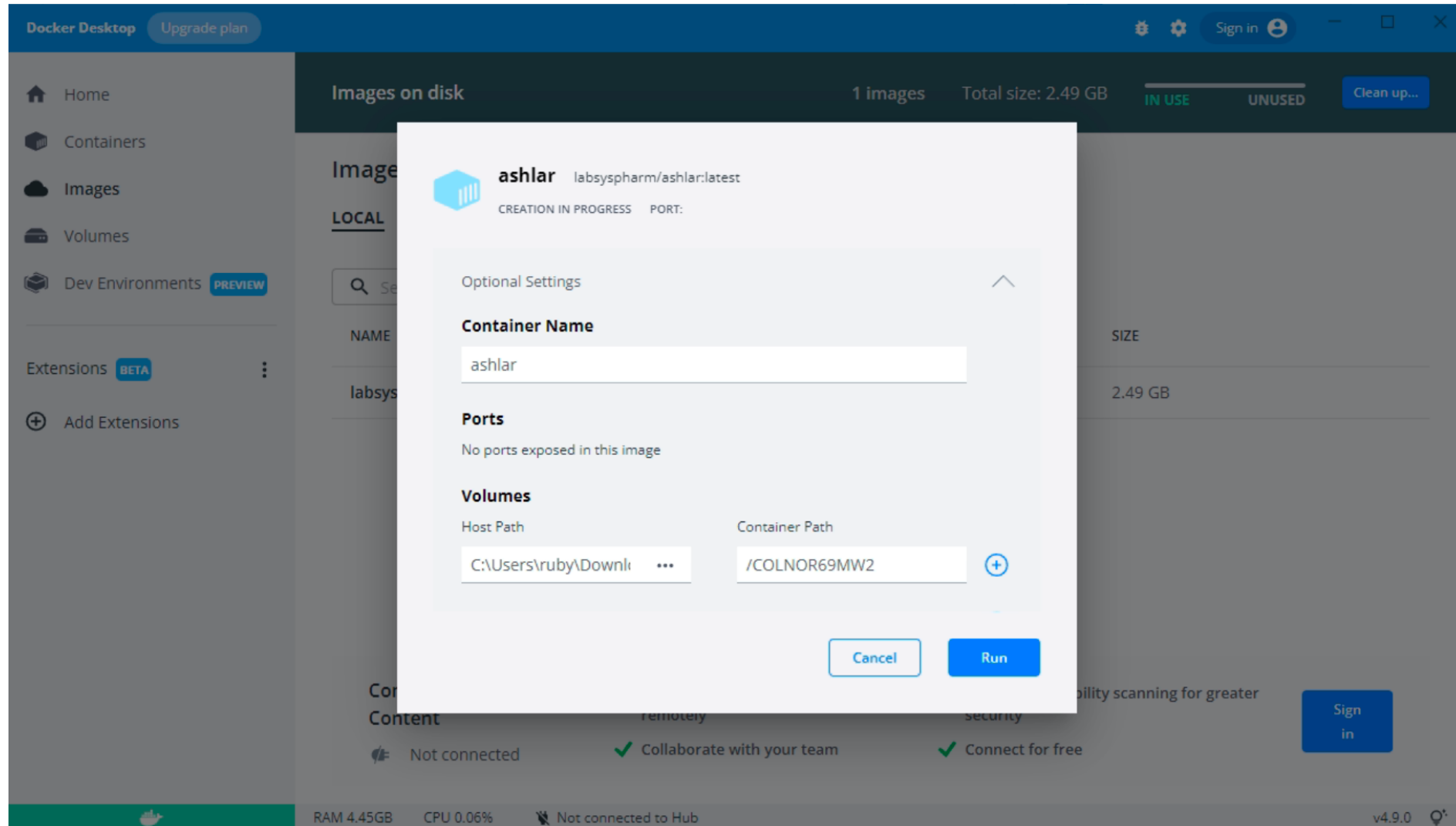


9. Run ASHLAR Docker Image and customize setting

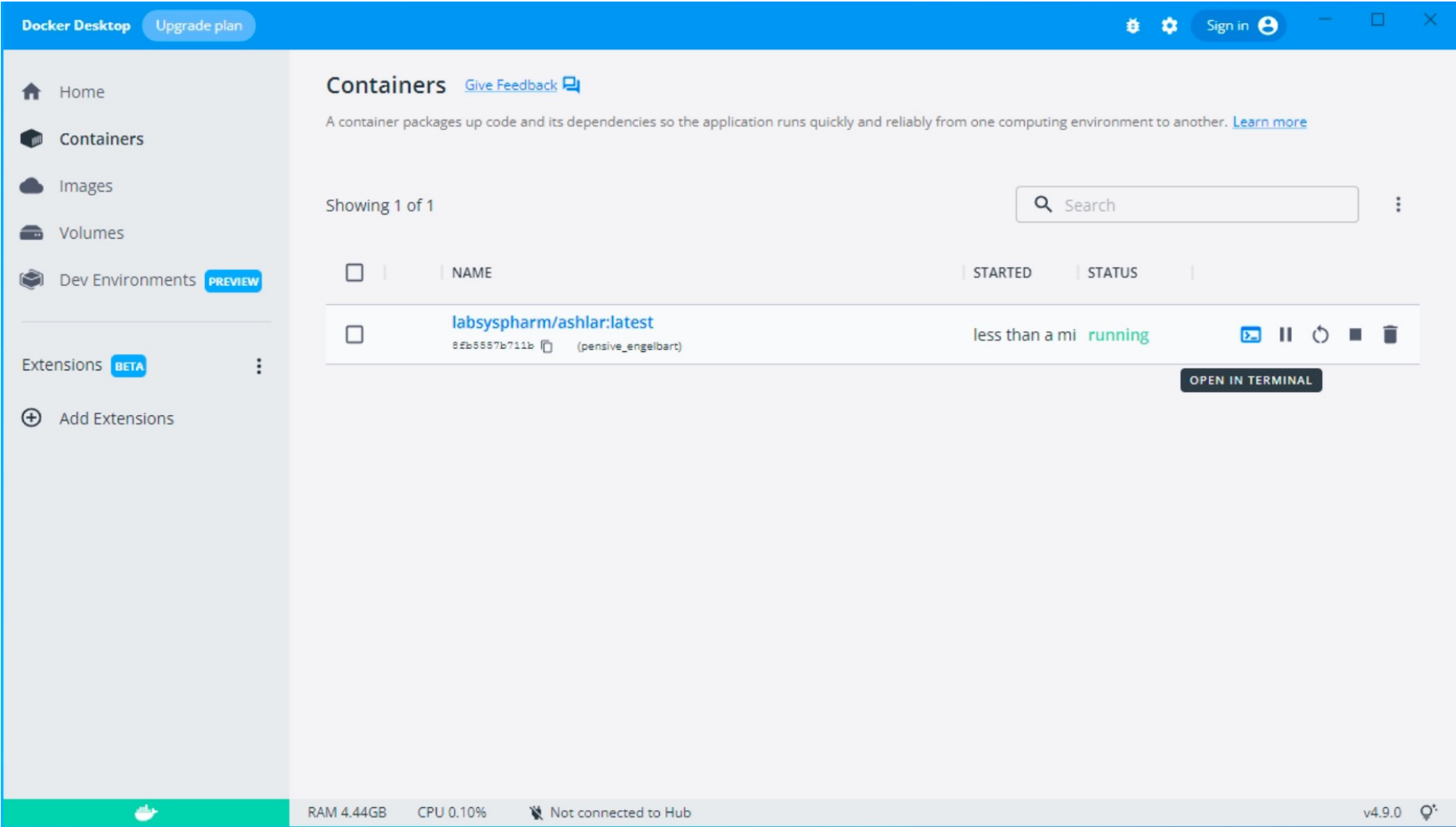


10. In Optional Settings, define as Follows

- Container Name: **ashlar**
- Host Path: **<Image Directory>** e.g., C:\User\ruby\Downloads\COLNOR69MW2
- Container Path: **/COLNOR69MW2**



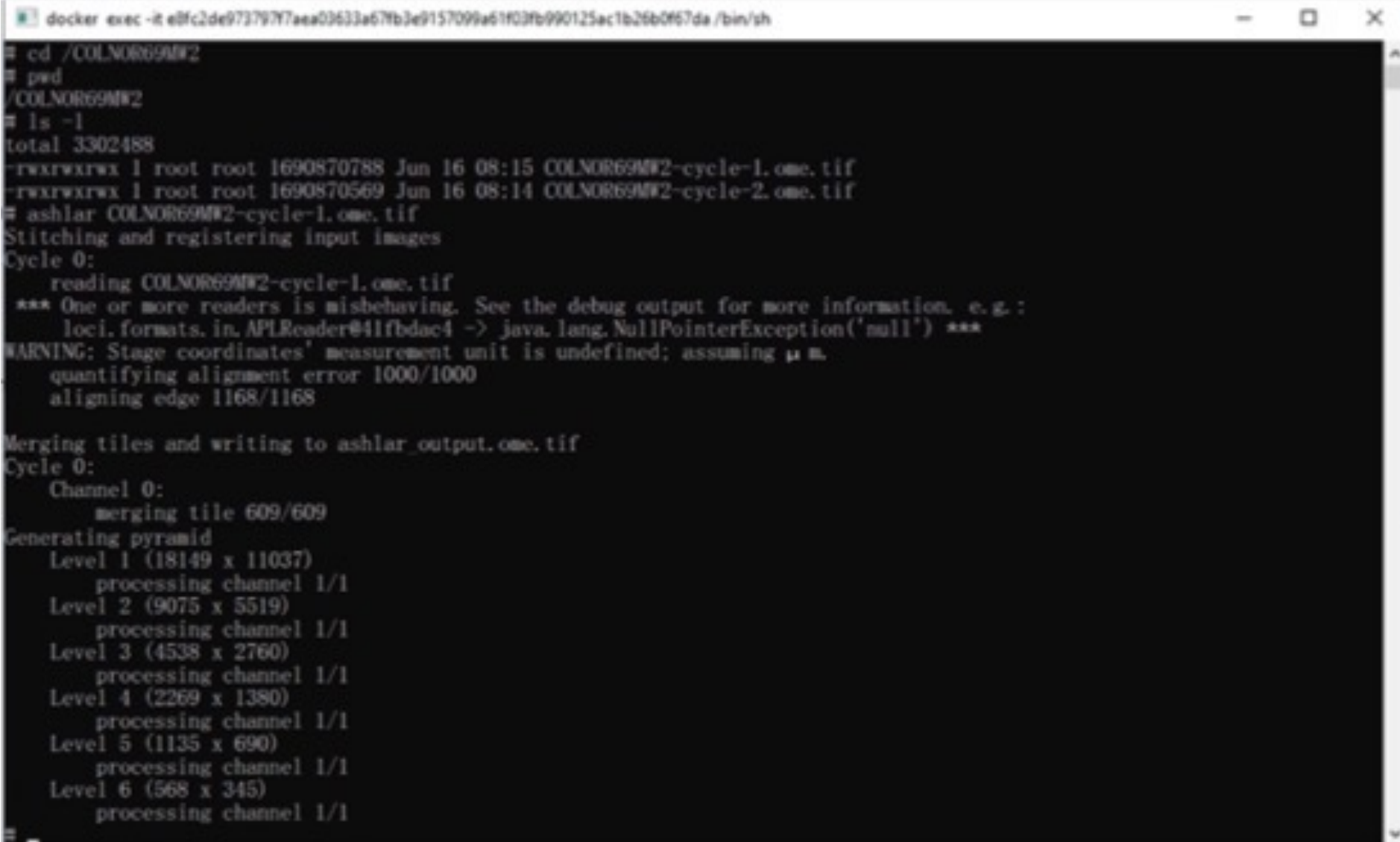
11. From Containers Tab, Click 'Open In Terminal' to run the ASHLAR pipeline



12. Run the ASHLAR pipeline as follows

```
# cd /COLNOR69MW2
```

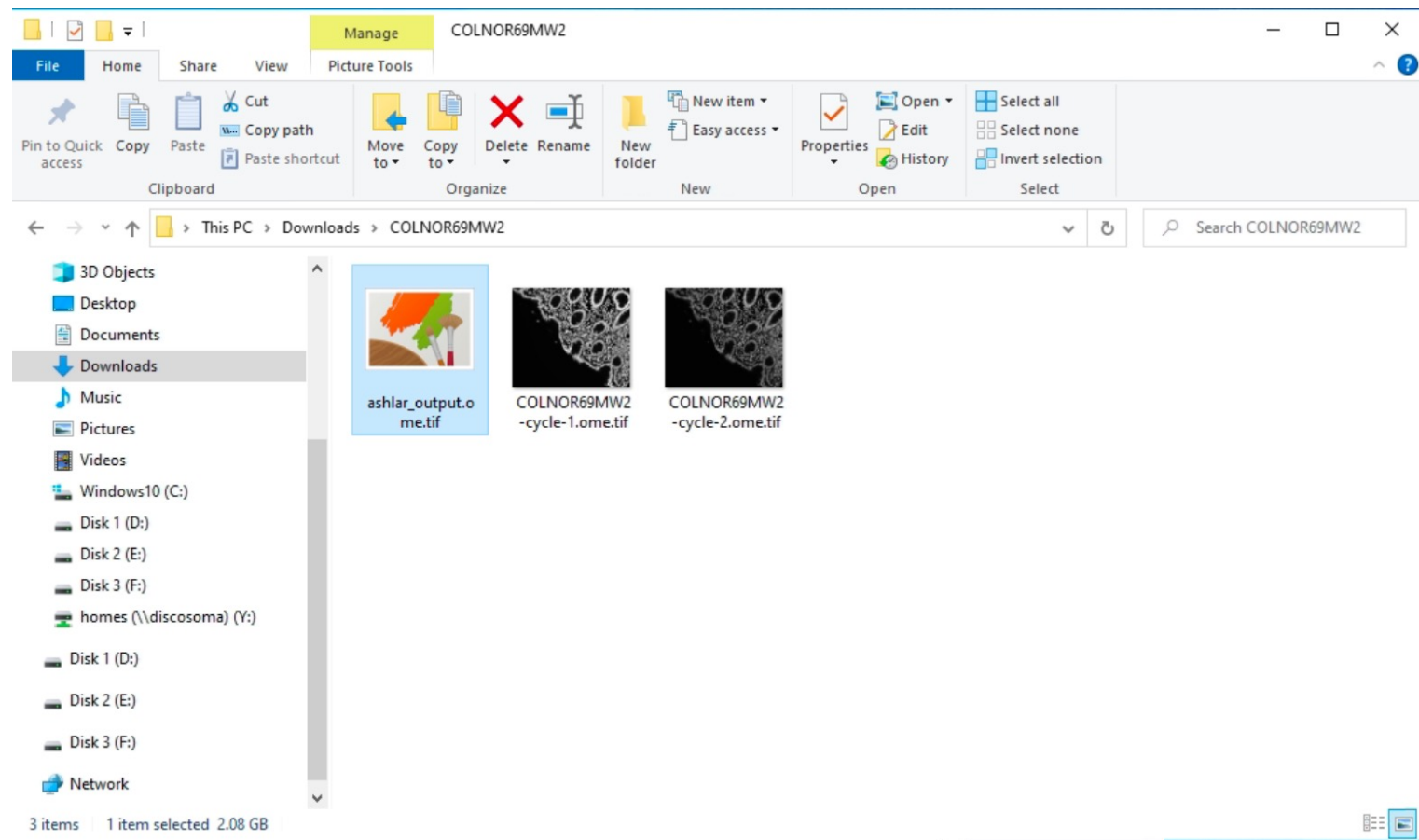
```
# ashlar COLNOR69MW2-cycle-1.ome.tif
```



```
docker exec -it e8fc2de9737977a6a03633a67fb3e9157099a61f03fb990125ac1b26b0f67da /bin/sh
# cd /COLNOR69MW2
# pwd
/COLNOR69MW2
# ls -l
total 3302488
-rwxrwxrwx 1 root root 1690870788 Jun 16 08:15 COLNOR69MW2-cycle-1.ome.tif
-rwxrwxrwx 1 root root 1690870569 Jun 16 08:14 COLNOR69MW2-cycle-2.ome.tif
# ashlar COLNOR69MW2-cycle-1.ome.tif
Stitching and registering input images
Cycle 0:
  reading COLNOR69MW2-cycle-1.ome.tif
  *** One or more readers is misbehaving. See the debug output for more information, e.g.:
    loci.formats.in, APLReader@41fbdac4 -> java.lang.NullPointerException('null') ***
WARNING: Stage coordinates' measurement unit is undefined; assuming  $\mu$ m.
  quantifying alignment error 1000/1000
  aligning edge 1168/1168

Merging tiles and writing to ashlar_output.ome.tif
Cycle 0:
  Channel 0:
    merging tile 609/609
Generating pyramid
  Level 1 (18149 x 11037)
    processing channel 1/1
  Level 2 (9075 x 5519)
    processing channel 1/1
  Level 3 (4538 x 2760)
    processing channel 1/1
  Level 4 (2269 x 1380)
    processing channel 1/1
  Level 5 (1135 x 690)
    processing channel 1/1
  Level 6 (568 x 345)
    processing channel 1/1
#
```

13. After completed, the ASHLAR output file will be stored in your working folder
e.g., **ashlar_output.ome.tif**



15. Open the ASHLAR output image (recommend using Fiji – ImageJ program)

