WebSphere Application Server Troubleshooting and Performance Lab on Docker - Lab Preparation

Authors

- Kevin Grigorenko (kevin.grigorenko@us.ibm.com)

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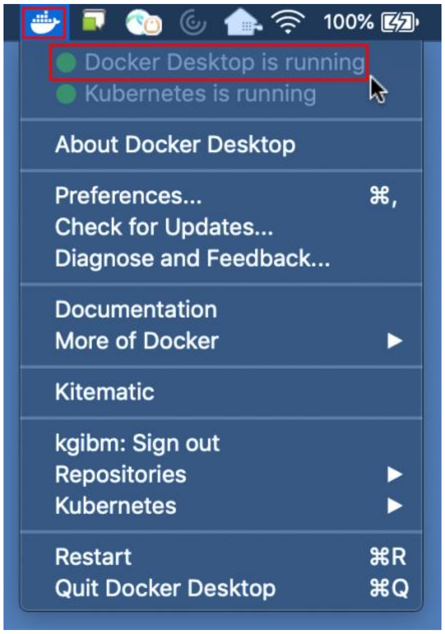
1 Lab Preparation

1. Install Docker:
   a. Windows ("Requires Microsoft Windows 10 Professional or Enterprise 64-bit.")
      - Download: https://hub.docker.com/editions/community/docker-ce-desktop-windows
      - For details, see https://docs.docker.com/docker-for-windows/install/

   b. Mac ("Requires Apple Mac OS Sierra 10.12 or above")
      - Download: https://hub.docker.com/editions/community/docker-ce-desktop-mac
      - For details, see https://docs.docker.com/docker-for-mac/install/

   c. For a Linux host, simply install and start Docker (sudo systemctl start docker):
      - For an example, see https://docs.docker.com/install/linux/docker-ce/fedora/
2. Ensure that Docker is started. For example, start Docker Desktop and ensure it is running:

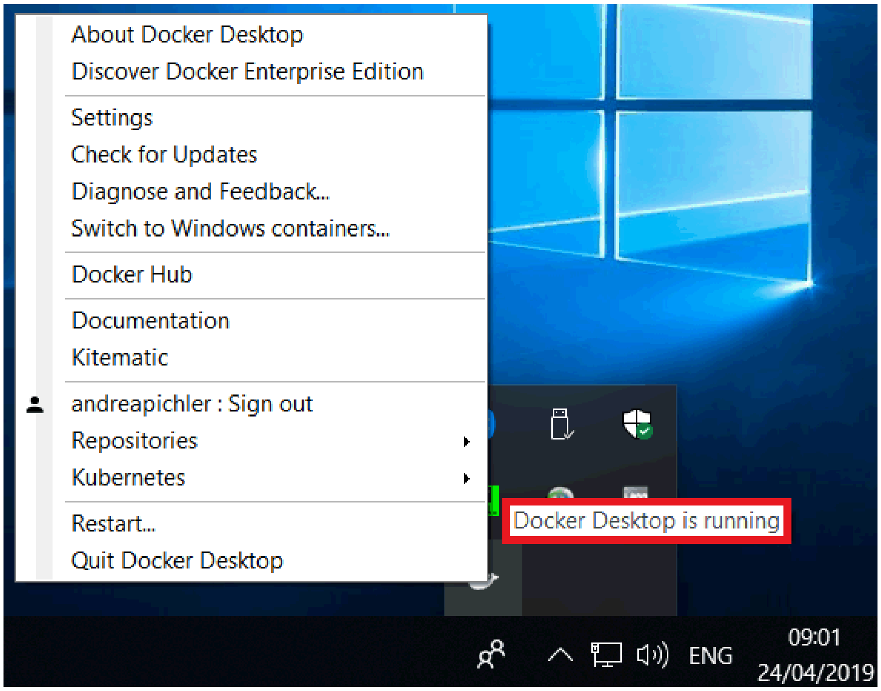
   macOS:



Docker Desktop is running

Kubernetes is running

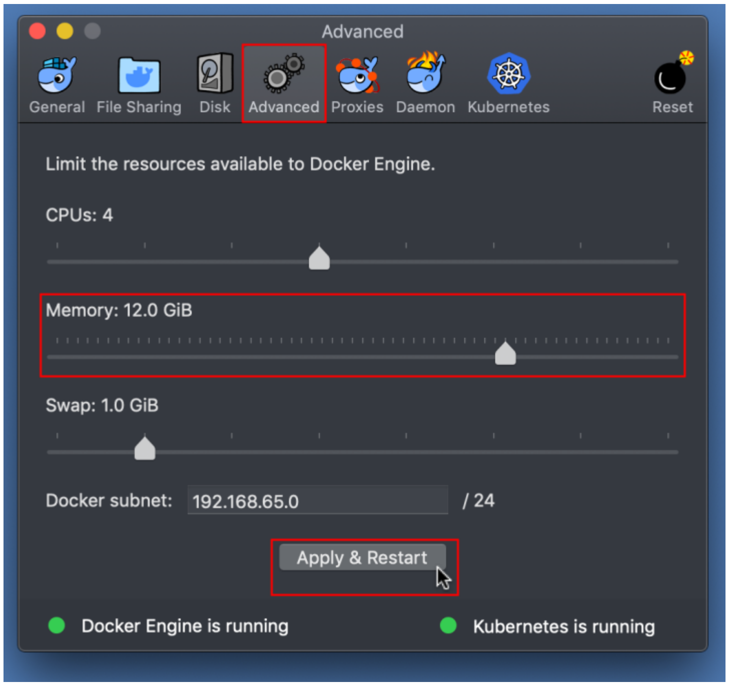
Windows:



Docker Desktop is running

3. Ensure that Docker receives sufficient resources, particularly memory:
    a. Click the Docker Desktop icon and select “Preferences…” (on macOS) or “Settings” (on Windows)
    b. Select the Advanced tab.
    c. Increase Memory is at least 4GB and, ideally, at least 8GB.
    d. Click Apply

macOS:



Limit the resources available to Docker Engine.

CPUs: 4

Memory: 12.0 GiB

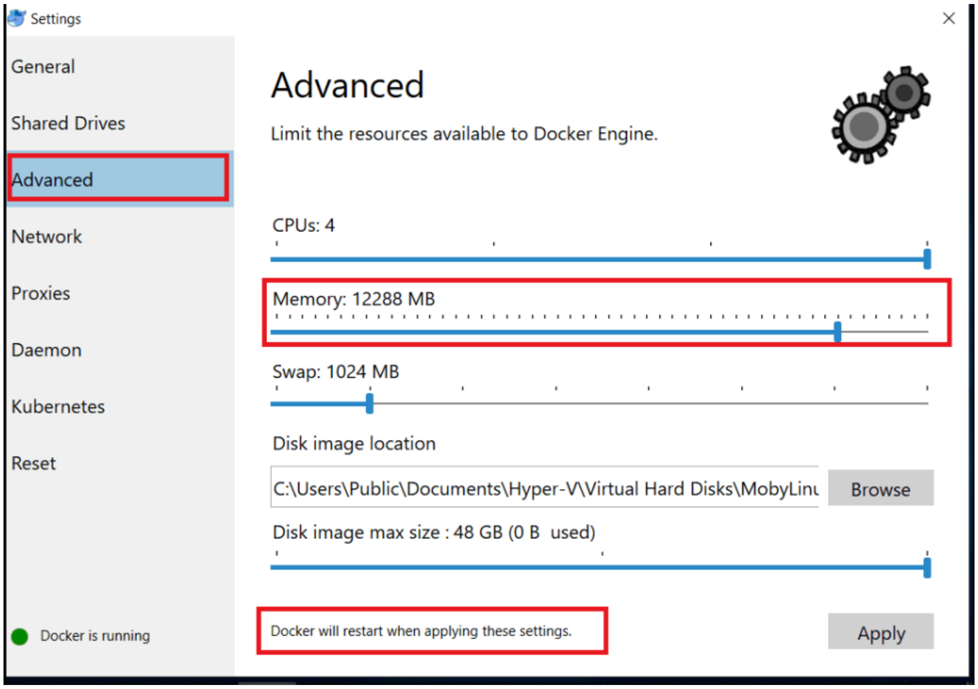
Swap: 1.0 GiB

Docker subnet: 192.168.65.0 / 24

● Docker Engine is running

● Kubernetes is running

Windows:



Advanced

Limit the resources available to Docker Engine.

CPUs: 4

Memory: 12288 MB

Swap: 1024 MB

Disk image location

C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\MobyLinu

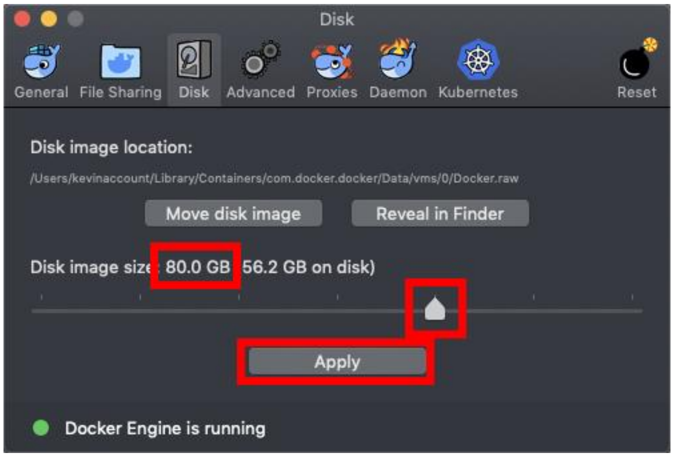
Disk image max size : 48 GB (0 B used)

Docker will restart when applying these settings.

e. Select the **Disk** tab.

f. Increase the **Disk image size** to at least 80GB and click **Apply**:

macOS:

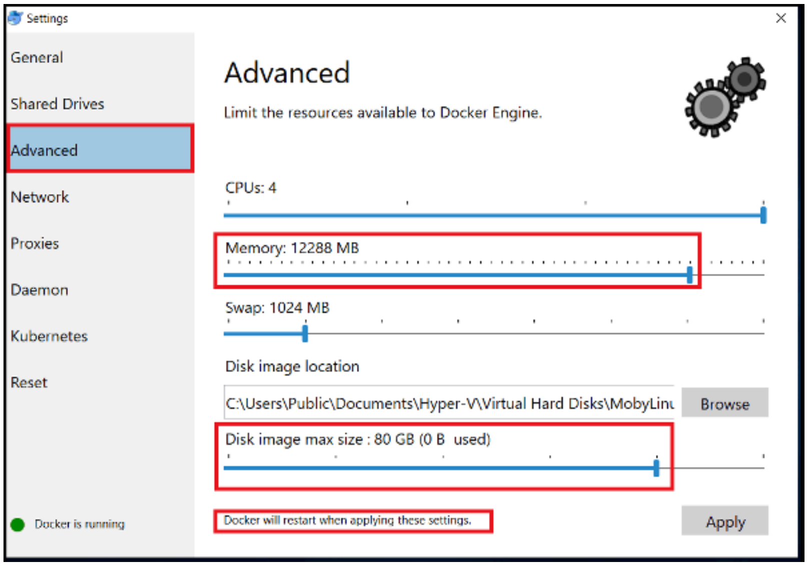


Disk image location:

/Users/kevinaccount/Library/Containers/com.docker.docker/Data/vms/0/Docker.raw

Disk image size: 80.0 GB (56.2 GB on disk)

Windows:



Advanced

Limit the resources available to Docker Engine.

CPUs: 4

Memory: 12288 MB

Swap: 1024 MB

Disk image location

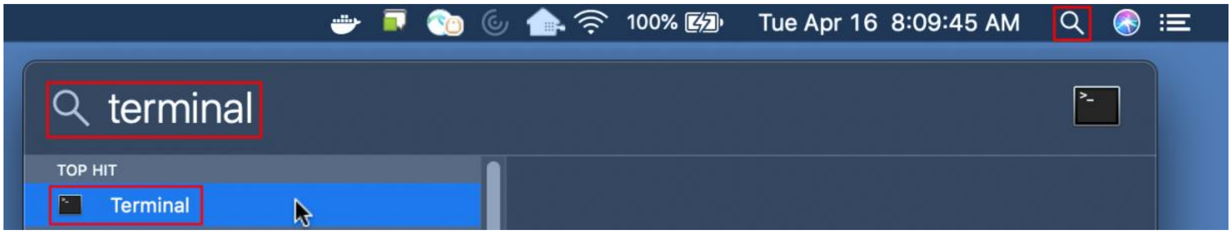
C:\Users\Public\Documents\Hyper-V\Virtual Hard Disks\MobyLinu

Disk image max size : 80 GB (0 B used)

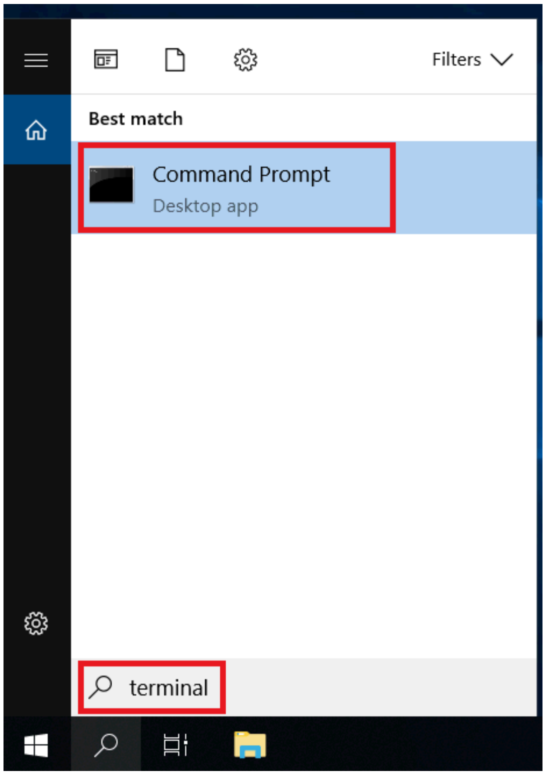
Docker will restart when applying these settings.

4. Open a terminal or command prompt:

macOS:



Windows:



5. Download the images:

```
docker pull kgibm/fedorawasdebug
```

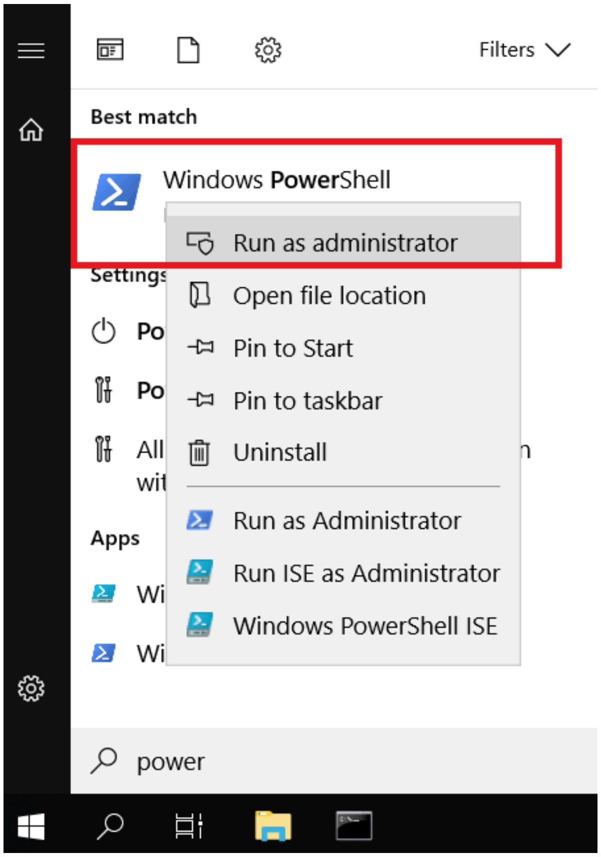
g. Note that these images are > 20GB. If you plan to run this in a classroom setting, consider performing all the steps up to and including this item before arriving at the classroom.

2 Appendix

2.1 Windows Remote Desktop Client

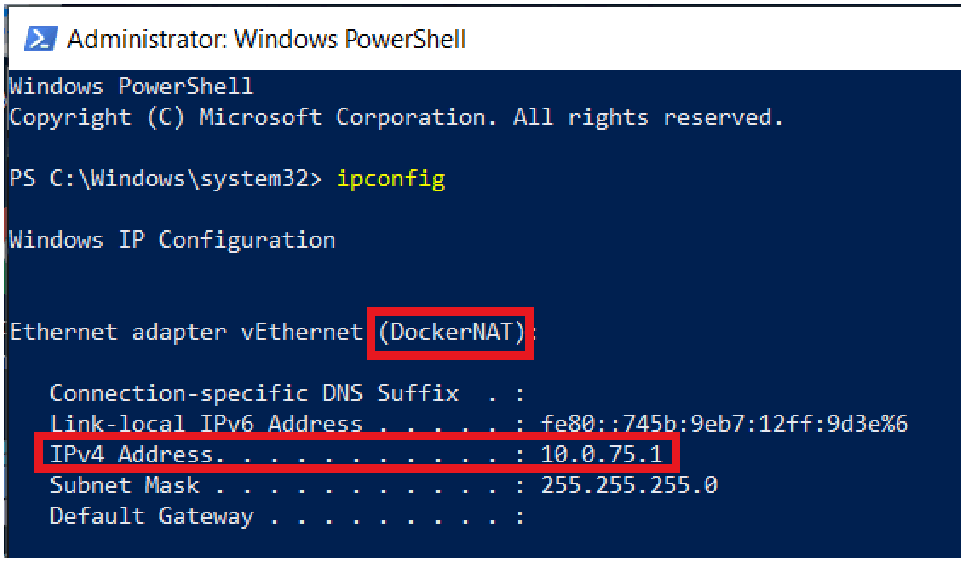
Windows requires extra steps to configure remote desktop to connect to a container[1]:

1. Open PowerShell as Administrator:



2. Run ipconfig and copy the IPv4 address of the DockerNAT adapter. For example:

[1] https://social.msdn.microsoft.com/Forums/en-US/872129e4-07a5-48c3-86f7-996854e7a920/how-to-connect-via-rdp-to-container?forum=windowscontainers



```
Windows PowerShell
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PS C:\Windows\system32> ipconfig

Windows IP Configuration


Ethernet adapter vEthernet (DockerNAT):

   Connection-specific DNS Suffix  . :
   Link-local IPv6 Address . . . . . : fe80::745b:9eb7:12ff:9d3e%6
   IPv4 Address. . . . . . . . . . . : 10.0.75.1
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . :
```

3. Run the following command in PowerShell:

```
New-NetFirewallRule -Name "myRDP" -DisplayName "Remote Desktop Protocol" -Protocol
TCP -LocalPort @(3389) -Action Allow
```

4. Run the following command in PowerShell:

```
New-NetFirewallRule -Name "myContainerRDP" -DisplayName "RDP Port for connecting to
Container" -Protocol TCP -LocalPort @(3390) -Action Allow
```