# Installing Docker on Windows

We need to install docker in our machine, on which we can host the hybris container on an Ubuntu Image. This process is faster to start, easy to maintain and can be used for our day-to-day development.

Please find the detailed steps to install docker and host Hybris in it.
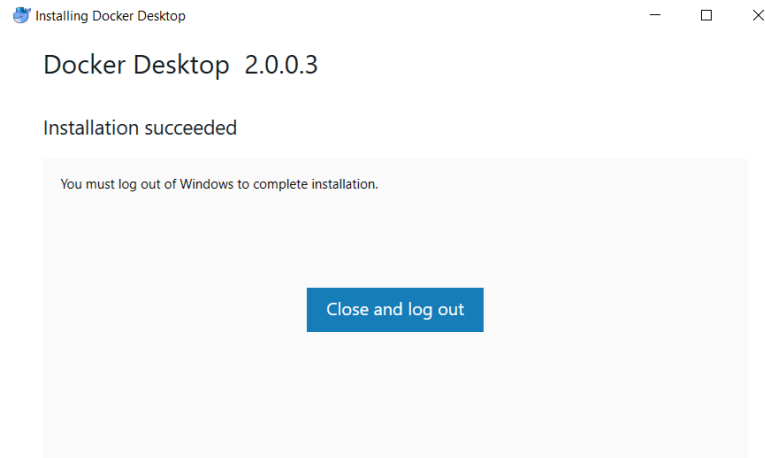
1. Enable Hyper-V in your machine.
    a. Search for Windows features and look for Hyper-V and enable it.
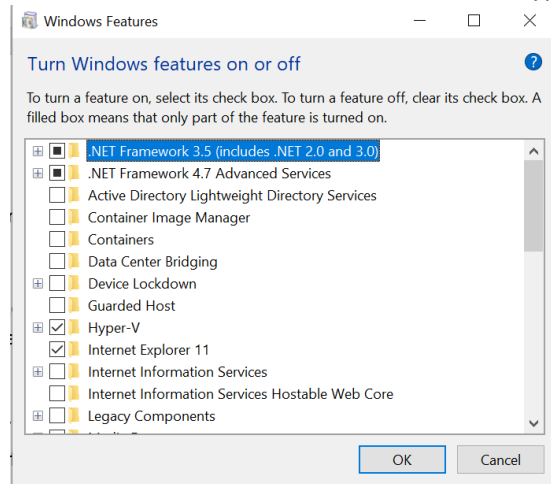
    b. It may restart your system after this setting.
2. Install Docker for Windows
    a. We need to create a Docker Hub account and then download Docker for Windows.
    b. URL: https://docs.docker.com/docker-for-windows/install/
    c. Once Download is complete, run the installer as Admin.
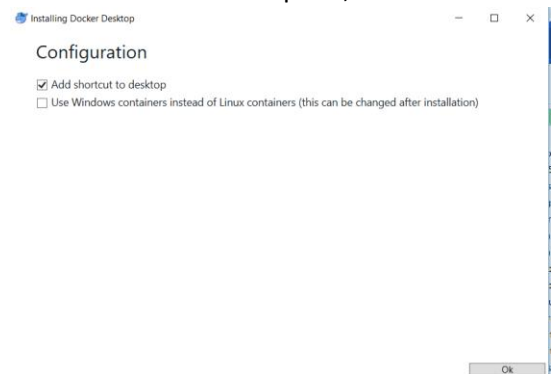
    d. Click on OK to proceed with Linux Container installation.
    e. Please find below screenshot which shows that installation is complete.

Docker Desktop 2.0.0.3

Installation succeeded

You must log out of Windows to complete installation.

Close and log out

3. Once the installation is complete, it may restart your machine once again to make BIOS level changes.
4. One the machine is restarted, start Docker for Windows.
5. We will be prompted that Docker is starting, and it will take few min to get the Docker running.
6. Once the Docker is up and running, it will ask for login and password. Please give the id password which were created from Docker Hub.
7. Once this is login is complete, open Windows Powershell.


```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\gtirumalla>
```
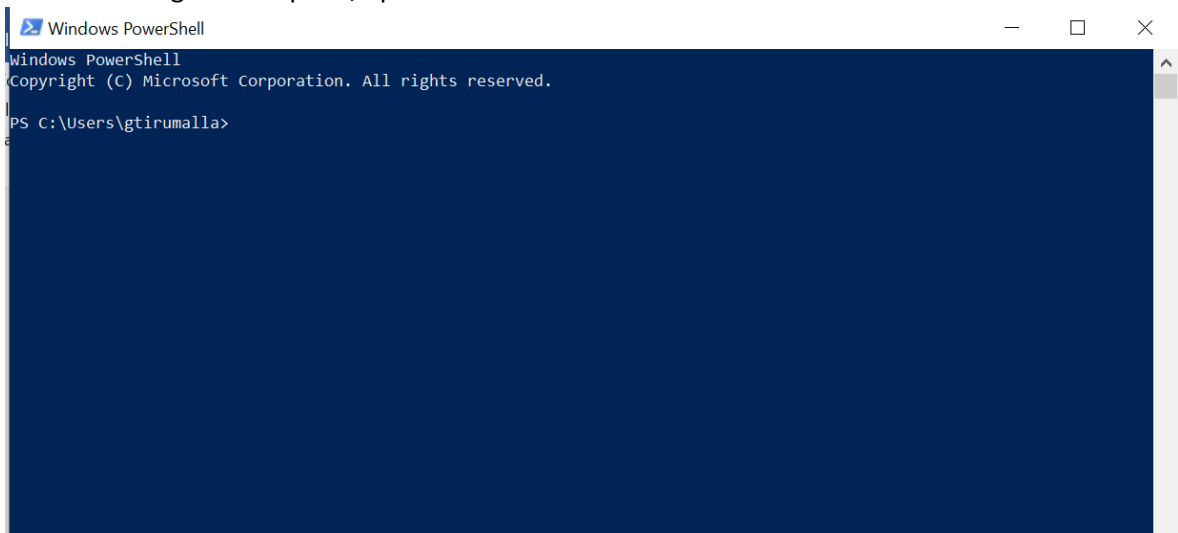
8. Check if it is authenticated properly by running "docker login" command.
9. If everything is fine, it will authenticate your credentials and mentions that it is successful.
10. We need to pull Ubuntu image from Docker Hub, this is completely Free.
11. Command: docker pull ubuntu
12. Above command will pull lite version of Ubuntu.
13. It will take awhile to download, run the below command to check if the image download is complete or not.
    Command: docker image ls
14. Run the below command to run this image as a container.

Command: docker run -it -d -p 9002:9002 -p 9001:9001 -p 8000:8000 -p 8983:8983
4c108a37151f /bin/bash

15. This command will publish all the required ports for Hybris development, creates and starts
    Ubuntu Container.
16. Run the below command to check the status of Docker containers.
    Command: docker ps -a

```
PS C:\Users\gtirumalla> docker ps -a
CONTAINER ID    IMAGE          COMMAND        CREATED       STATUS      PORTS                                                                              NAMES
c5594e12c06b    6296bc195e6c   "/bin/bash"    7 days ago    Created                                                                                        naught
y_raman
8e649f353c94    4c108a37151f   "/bin/bash"    8 days ago    Up 4 days   0.0.0.0:8000->8000/tcp, 0.0.0.0:8983->8983/tcp, 0.0.0.0:9001-9002->9001-9002/tcp   musing
_wozniak
PS C:\Users\gtirumalla>
```

17. Run the following command to get inside Docker container.
    Command: docker exec -it {containerId} /bin/bash
18. Create a folder
        Command: mkdir {foldername}
19. We need to create sudo user apart from root in this Docker container.
    URL : https://linuxize.com/post/how-to-create-a-sudo-user-on-ubuntu/
20. After this user creation, change to this user and then proceed further.

    Command : su {username}

21. We need to install java in this Ubuntu Container.
    Run the following commands to install java one after other.
        a. apt-get update
        b. apt-get install openjdk-8-jdk

22. Now, we need to copy our Hybris installation into Docker container.
23. **Do this step if you are trying to install Hybris with root user.** We need to modify the Solr
    installation file, which will throw exception when during server start.
    Reason: During solr server start, there are validations in Hybris Solr that Server cannot be
    started with root user. Hence we need to
24. Don't have to install Hybris again. Just copy the path in which hybris is located in your system.
    Run the following command to copy entire Hybris workspace to Container.
    docker cp C: \hybris\ {containerid}:/{foldername}/

25. This will copy entire hybris installation into Docker container. Now, we can directly directly start
    the Hybris server from Docker container.

    Commands to initialize env variables: . ./setantenv.sh

    Ant all and ant clean all will run normally.

    To start the server: ./hybrisserver.sh debug

26. To debug, as we have published 8000 port in Docker container, we can directly launch the debug
    configuration from eclipse or intellij

27. If we are done with our code changes and want to deploy same thing to docker. Run the below commands to push code from Host machine to Docker container.

Eg: docker cp C:\hybris\hybris\config\local.properties 8e649f353c94:/hybris/hybris/config/

docker cp C:\hybris\hybris\config\localextensions.xml 8e649f353c94:/hybris/hybris/config/

docker cp C:\hybris\hybris\bin\custom 8e649f353c94:/hybris/hybris/bin/

These commands will copy data from your host to container. **Modify these paths according to your local system folder structures.**

28. If the Host machine is restarted, then we don't have to perform all these steps again. Instead of that. Open powershell and run below command to look for saved containers.
    Command: docker ps -a
29. Look for your container and run the below command to start the container.
    Command: docker start {containerId}

Result:

Operation	Time taken
Ant all	45 Seconds
Ant clean all	1Min 20Sec
Server start in Debug	4Min*(May vary based upon the list of extensions)

FYI:

a. To speed up the server startup and if we are not working on junits, we can ignore execution of junits during server startup by adding below line in local.properties.

Installed.tenants=

b. We can install "htop" to monitor the usage of Container CPU.
c. If you see below error, mostly it because Container CPU RAM is not sufficient to perform your operation.
   LOG : pinging the jvm took seconds to respond
   Fix: To increase RAM

Important Docker commands,

1. docker login
2. docker cp {sourcefolderpath} {containerId}:/{destinationfolderpath}
3. docker image ls
4. docker stop container
5. docker start container

6. docker exec -it {container} /bin/bash

We can even install Jrebel as mentioned in the below url.

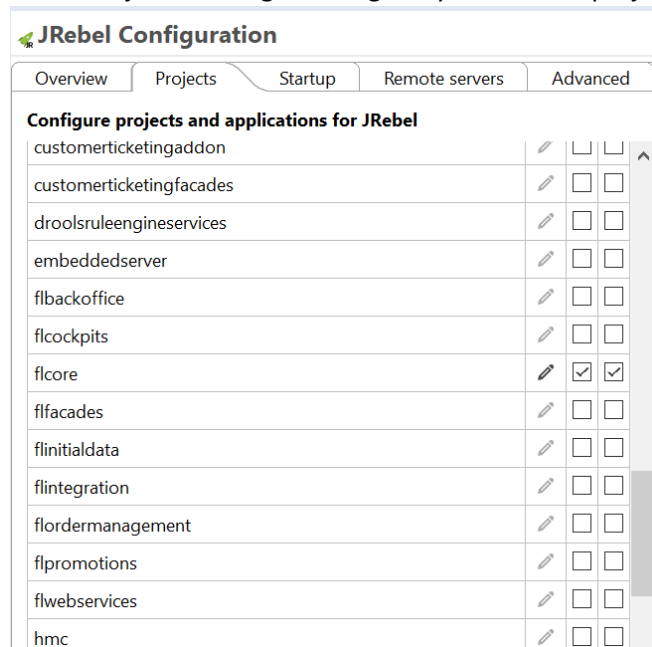URL: https://dzone.com/articles/hybris-with-docker-for-development-in-windows-mach

Installing and configuring Jrebel with remote server.

1. Download jrebel plugin from eclipse marketplace.
2. We need to activate the jrebel either from eclipse or from command line.
3. We need to configure remote server in jrebel plugin configuration.
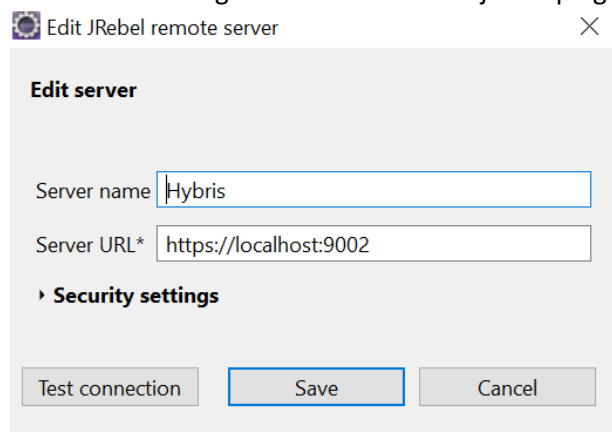
4. After configuring Remote server, we need to generate rebel.xml and rebel-remote.xml for all the custom projects.
5. From the jrebel configuration go to your custom projects and select as shown below.

6. In the above screenshot I have enabled jrebel only for flcore project.

7. This will generate the two xml files mentioned above. Make sure folder path in the xmls are same as path in your remote server.
8. Copy rebel.xml and rebel-remote.xml files and paste them in both flcore/src as well as flcore/classes.
9. Then select the flcore project from project hierarchy and from jrebel click on synchronize.

10. This will sync the projects in your eclipse with projects in remote server.
11. When ever we make any changes in eclipse, trigger an ant build from eclipse for that particular project and we can see the class files getting pickedup by remote server.

All the best!!!