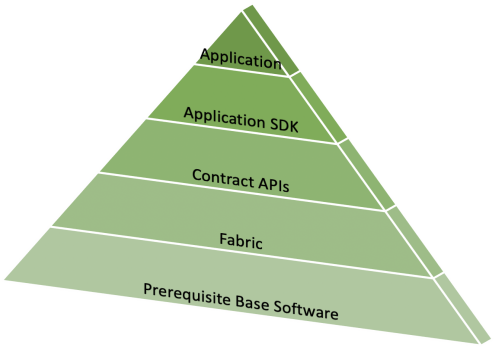
https://hyperledger-fabric.readthedocs.io/en/latest/getting_started.html

The Fabric application stack has five layers:



- Prerequisite software: the base layer needed to run the software, for example, Docker.
- Fabric and Fabric samples: the Fabric executables to run a Fabric network along with sample code.
- Contract APIs: to develop smart contracts executed on a Fabric Network.
- Application APIs: to develop your blockchain application.
- The Application: your blockchain application will utilize the Application SDKs to call smart contracts running on a Fabric network.

https://pureinfotech.com/install-wsl-windows-11/

cek versi wsl yang terinstall

```
PS C:\Users\christian.wisnu> wsl -l -v
  NAME                   STATE           VERSION
* docker-desktop-data    Running         2
  docker-desktop         Running         2
```

cek daftar wsl yang dapat diinstall

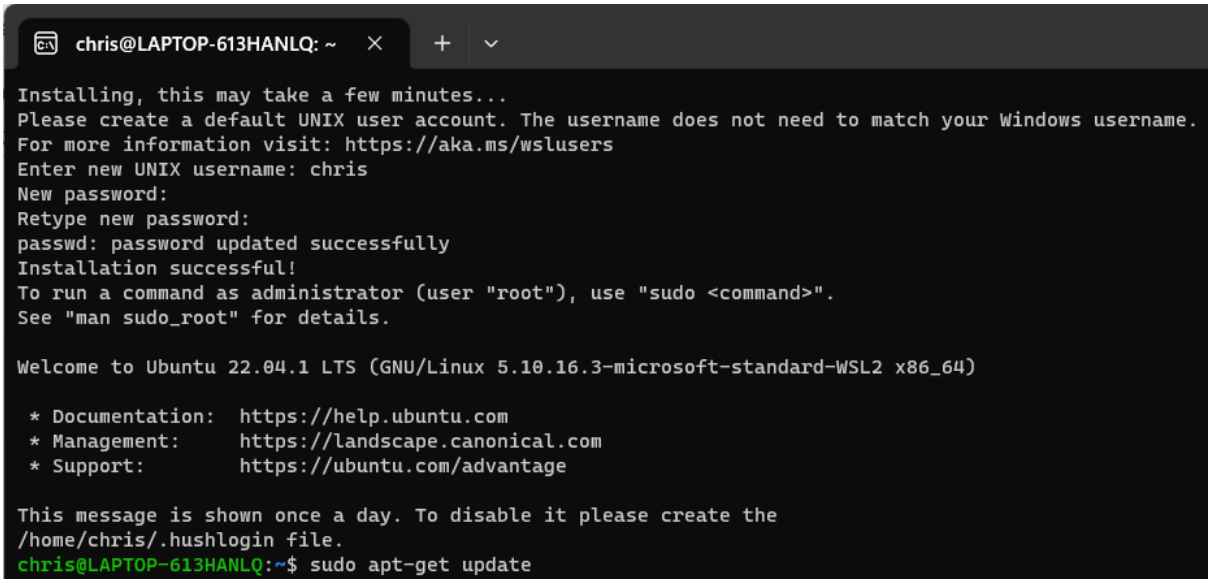
```
PS C:\Users\christian.wisnu> wsl --list --online
The following is a list of valid distributions that can be installed.
Install using 'wsl --install -d <Distro>'.

NAME                            FRIENDLY NAME
Ubuntu                          Ubuntu
Debian                          Debian GNU/Linux
kali-linux                      Kali Linux Rolling
Ubuntu-18.04                    Ubuntu 18.04 LTS
Ubuntu-20.04                    Ubuntu 20.04 LTS
Ubuntu-22.04                    Ubuntu 22.04 LTS
OracleLinux_8_5                 Oracle Linux 8.5
```

```
OracleLinux_7_9                 Oracle Linux 7.9
SUSE-Linux-Enterprise-Server-15-SP4   SUSE Linux Enterprise Server 15 SP4
openSUSE-Leap-15.4              openSUSE Leap 15.4
openSUSE-Tumbleweed             openSUSE Tumbleweed
```

https://learn.microsoft.com/en-us/windows/wsl/setup/environment?source=recommendations

enter new username and password for ubuntu




```
sudo apt update && sudo apt upgrade
```

```
chris@LAPTOP-613HANLQ:~$ sudo apt install git
```

cloning sample code hyperledger fabric

```
chris@LAPTOP-613HANLQ:~/fabric-sample$ git clone
https://github.com/hyperledger/fabric-samples.git
```

```
chris@LAPTOP-613HANLQ:~/fabric-play$ git clone
https://github.com/InsanRamadhan/HyperledgerFabric.git
Cloning into 'HyperledgerFabric'...
remote: Enumerating objects: 1340, done.
remote: Counting objects: 100% (37/37), done.
remote: Compressing objects: 100% (24/24), done.
```

```
remote: Total 1340 (delta 14), reused 27 (delta 10), pack-reused 1303
Receiving objects: 100% (1340/1340), 113.67 MiB | 1.07 MiB/s, done.
Resolving deltas: 100% (225/225), done.
chris@LAPTOP-613HANLQ:~/fabric-play$ ls
HyperledgerFabric  fabric-samples
chris@LAPTOP-613HANLQ:~/fabric-play$ cd HyperledgerFabric/
chris@LAPTOP-613HANLQ:~/fabric-play/HyperledgerFabric$ ls
README.md application_1 application_2 bin chaincode config fabcar install-fabric.sh
network  scripts
chris@LAPTOP-613HANLQ:~/fabric-play/HyperledgerFabric$ chmod +x install-fabric.sh
```

https://docs.docker.com/desktop/windows/wsl/

Pada windows terminal jalankan

```
wsl --set-default ubuntu
```

Pada wsl jika docker blm bisa

```
sudo apt install docker
```

jalankan instalasi fabric

```
sudo ./install-fabric.sh d
```

masuk ke folder network dan net down dan net up

```
chris@LAPTOP-613HANLQ:~/fabric-play/HyperledgerFabric/network$ sudo ./network.sh down
Using docker and docker-compose
Stopping network
[+] Running 4/0
 ⠿ Volume compose_peer0.org3.example.com  Removed
 ⠿ Volume compose_orderer.example.com     Removed
 ⠿ Volume compose_peer0.org1.example.com  Removed
 ⠿ Volume compose_peer0.org2.example.com  Removed
Error: No such volume: docker_orderer.example.com
Error: No such volume: docker_peer0.org1.example.com
Error: No such volume: docker_peer0.org2.example.com
Removing remaining containers
Removing generated chaincode docker images
"docker kill" requires at least 1 argument.
See 'docker kill --help'.

Usage:  docker kill [OPTIONS] CONTAINER [CONTAINER...]

Kill one or more running containers
Unable to find image 'busybox:latest' locally
latest: Pulling from library/busybox
4b35f584bb4f: Pull complete
Digest: sha256:b5d6fe0712636ceb7430189de28819e195e8966372edfc2d9409d79402a0dc16
Status: Downloaded newer image for busybox:latest
chris@LAPTOP-613HANLQ:~/fabric-play/HyperledgerFabric/network$
```

ketika dijalankan network up terjadi error maka ulangi dengan perintah..

```
 curl -sSLO https://raw.githubusercontent.com/hyperledger/fabric/main/scripts/install-fabric.sh && chmod +x install-fabric.sh
./install-fabric.sh d s b
```

give permission do docker
https://stackoverflow.com/questions/72528606/docker-rancher-permission-denied-when-using-docker-from-wsl

```
sudo addgroup --system docker
sudo adduser $USER docker
newgrp docker
# And something needs to be done so $USER always runs in group `docker` on the `Ubuntu` WSL
sudo chown root:docker /var/run/docker.sock
sudo chmod g+w /var/run/docker.sock
```

jalankan lagi

```
./install-fabric.sh d s b
```

masuk ke folder network
jalankan ./network.sh down
dan ./network.sh up

```
chris@LAPTOP-613HANLQ:~/fabric-play/HyperledgerFabric/network$ ./network.sh up
Using docker and docker-compose
Starting nodes with CLI timeout of '5' tries and CLI delay of '3' seconds and using database 'leveldb' with crypto from 'cryptogen'
LOCAL_VERSION=2.4.7
DOCKER_IMAGE_VERSION=2.4.9
Local fabric binaries and docker images are out of  sync. This may cause problems.
/home/chris/fabric-play/HyperledgerFabric/network/../bin/cryptogen
Generating certificates using cryptogen tool
Creating Org1 Identities
+ cryptogen generate --config=./organizations/cryptogen/crypto-config-org1.yaml --output=organizations
org1.example.com
+ res=0
Creating Org2 Identities
+ cryptogen generate --config=./organizations/cryptogen/crypto-config-org2.yaml --output=organizations
org2.example.com
+ res=0
Creating Orderer Org Identities
+ cryptogen generate --config=./organizations/cryptogen/crypto-config-orderer.yaml --output=organizations
+ res=0
Generating CCP files for Org1 and Org2
[+] Running 8/8
 ⠿ Network fabric_test                    Created                                                                                0.9s
 ⠿ Volume "compose_orderer.example.com"   Created                                                                                0.0s
 ⠿ Volume "compose_peer0.org1.example.com"  Created                                                                              0.0s
 ⠿ Volume "compose_peer0.org2.example.com"  Created                                                                              0.0s
 ⠿ Container orderer.example.com          Started                                                                                3.9s
 ⠿ Container peer0.org1.example.com       Started                                                                                2.3s
 ⠿ Container peer0.org2.example.com       Started                                                                                3.4s
 ⠿ Container cli                          Started                                                                                4.5s
CONTAINER ID   IMAGE                               COMMAND                  CREATED         STATUS                  PORTS
                    NAMES
c6e76e695f5b   hyperledger/fabric-tools:latest     "/bin/bash"              4 seconds ago   Up Less than a second
                    cli
7c649d9d9f08   hyperledger/fabric-peer:latest      "peer node start"        5 seconds ago   Up 2 seconds            0.0.0.0:7051->7051/tcp, 0.0.0.0:9444->9444
```