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# Welcome, from **SaRaNg** ☺

Get started on **Hyperledger Fabric** local development environment quickly on an **Ubuntu 16** VM image

**Note:**
**This VM has been setup using instructions from:** https://hyperledger.github.io/composer/latest/installing/development-tools.html
If you want you can setup yourself following the instructions in the above link. Else you can follow through this document to get pre-built VM.

## What is in there?

| **Note:** You don't have to install the following. They are already installed and available in the VM. | | | |
|---|---|---|---|
| **1** | **Operating Systems** | 16.04 LTS (64-bit) | Through VM image |
| **2** | **Docker Engine** | Version 17.03 or higher | Followed **Installing prerequisite** instructions on https://hyperledger.github.io/composer/latest/installing/installing-prereqs.html site. |
| **3** | **Docker-Compose** | Version 1.8 or higher | |
| **4** | **Node** | 8.9 or higher (note version 9 is not supported) | |
| **5** | **npm** | v5.x | |
| **6** | **git** | 2.9.x or higher | |
| **7** | **Python** | 2.7.x | |
| **8** | **Code editor** | I have installed **VSCode** with extensions for **Docker**, **Hyperledger Composer**, **React** and **Solidity** | https://blogs.msdn.microsoft.com/jpsanders/2017/10/13/install-visual-studio-code-on-ubuntu-16-04-lts/ |

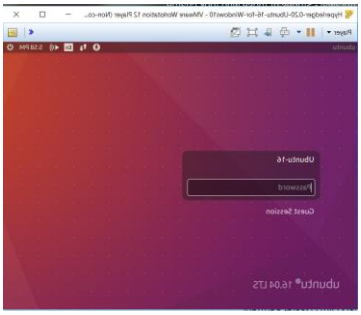
So, as you see this VM can be used for many other purposes such as to practice Docker, Node.JS, Python projects etc. in addition to Hyperledger Fabric.

### Steps to setup

1. Download the VM file ***Hyperledger-0.20-Ubuntu-16-for-Windows10.rar*** from https://drive.google.com/open?id=1-Mcc1LUhf8Pug_MaGm_niKVMu_5VB9iD into a folder in your local drive on Windows.
2. Right click on the ***.rar*** file and click on "***Extract here***". This will extract the VM to a directory named ***Hyperledger-0.20-Ubuntu-16-for-Windows10***.
3. Open VMware and click on ***Open a Virtual Machine***.
4. ***Locate Hyperledger-Ubuntu-16.vmx*** file in your extracted folder and click Open.
5. Follow along the setup prompt.
6. When prompted "I moved it", **"*I copied it*"**. Select **"*I copied it*"**.
7. **Don't** accept to upgrade the VM to higher version at any point of time. Even after it is setup and you reboot next time.
8. It will setup a Virtual machine for you with **Hyperledger** environment pre-built.

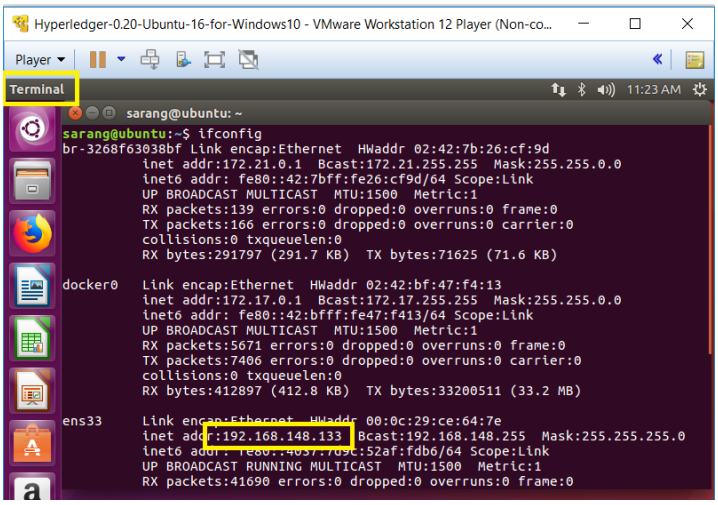
Enter user name/ password as ***sarang / sarang*** wherever prompted.

**9.** When prompted to login. Enter password ***sarang***. See **Pic-1**.



**Pic-1**

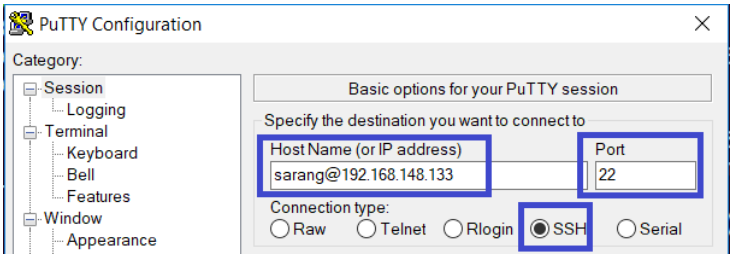
**10.** Once logged in, open terminal and run ***ifconfig*** to get your IP addresses. See **Pic-2**.




**Pic-2 (**IP will be different than the one highlighted in the pic. Note the one you get as output of ***ifconfig***)

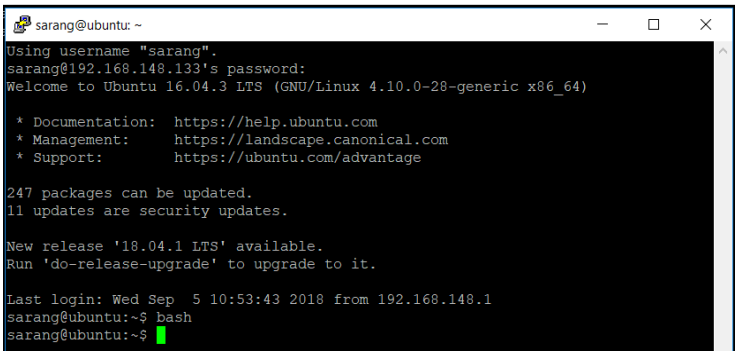
**If you are comfortable on VM terminal, you can skip step 11 and 12.**

**11.** Login to Putty using the ***IP*** you found in the previous step. See **Pic-3**.




**Pic-3**

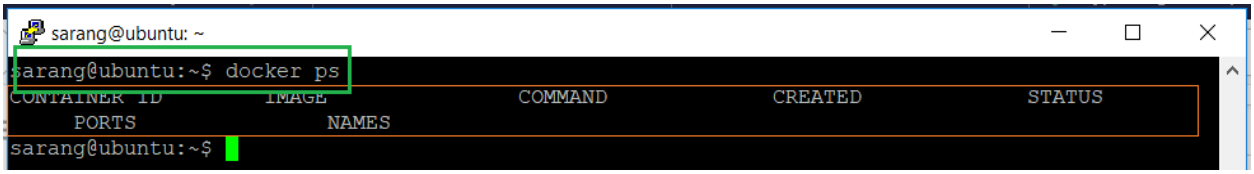
**12.** Enter ***sarang*** as password when prompted on Putty. See **Pic-4**.




**Pic-4**

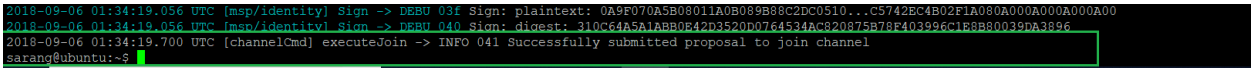
**Don't** run any of the following commands nether as ***root*** user nor with ***sudo*** or ***su***.

**13.** Run ***docker ps*** to ensure that Hyperledger is not already running. See **Pic-5**.



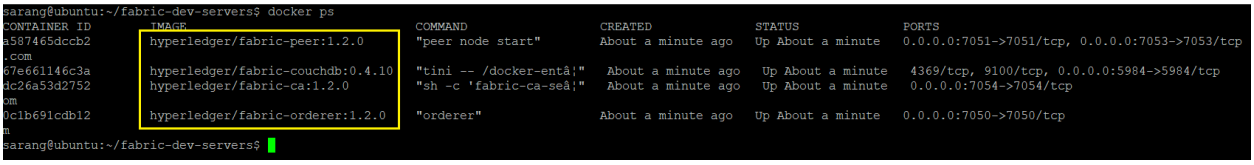

**Pic-5**

**14.** Execute ***~/fabric-dev-servers/startFabric.sh*** command to start the Hyperledger Fabric environment. See **Pic-6**.



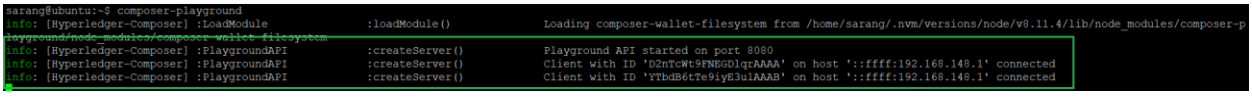

**Pic-6**

**15.** Execute ***docker ps*** command now to see you have the following 4 application running in their docker containers. See **Pic-7**.



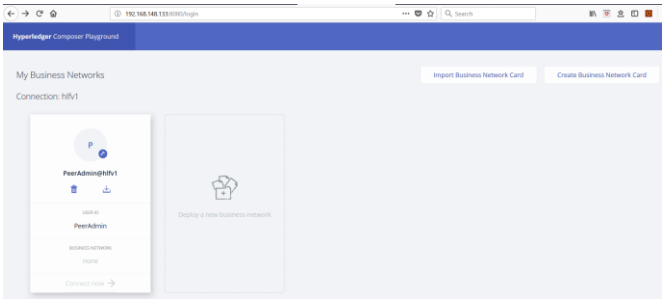

**Pic-7**

**16.** Execute **composer-playground**. See **Pic-8**.




**Pic-8**

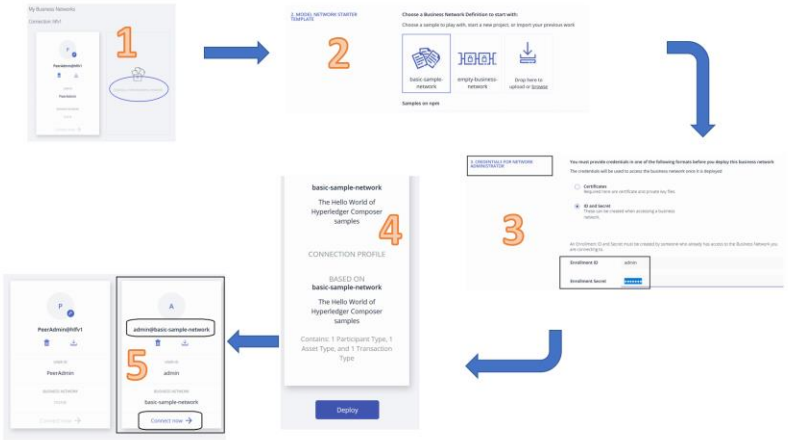
**17.** Open http://***ip-address***:8080/login in a browser (ip-address is same as the one you found in step-9). See **Pic-9**.




**Pic-9**

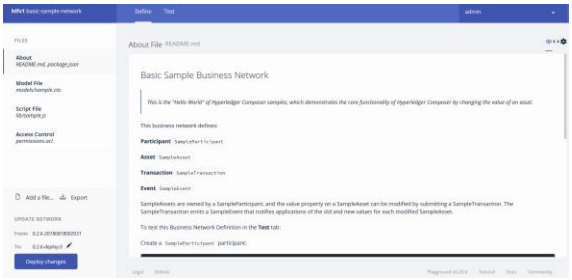
If you are seeing the above on your browser, then **congratulations**. You now have an up and running environment.

**18.** Follow the steps mentioned in **Pic-10** to create your first **basic-sample-network**.




**Pic-10**

**19.** Click on ***Connect* now** to get to **hlfv1 basic-sample-network** to Define, Change and Test your business network application. See **Pic-11**.




**Pic-11**

**20.** You can stop your runtime using
***~/fabric-dev-servers/stopFabric.sh***

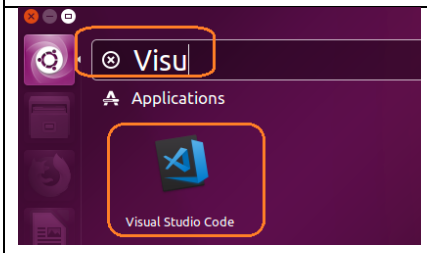
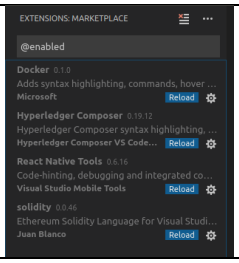
**21.** You can start it again with

***~/fabric-dev-servers/startFabric.sh***

**22.** To tear down your environment you can run
***~/fabric-dev-servers/teardownFabric.sh***
Note: If you've run the teardown script, the next time you start the runtime, you'll need to create a new PeerAdmin card by running the below commands.

***cd ~/fabric-dev-servers***
***export FABRIC_VERSION=hlfv12***
***./startFabric.sh***
***./createPeerAdminCard.sh***

**23.** Open **VSCode** editor. On Ubuntu desktop search for Visual studio. See **Pic-11**.

| Locate VSCode editor | Installed extensions |
|---|---|
|  |  |





**Where to go from here?**

Learn how to use the web app UI with the Playground Tutorial
Learn how to use the CLI and VSCode tools with the Developer Tutorial

Thank you, from **SaRaNg** and I hope it has helped ☺