

SSH to VM

Add your SSH key to the ssh-agent

```
eval "$(ssh-agent -s)"
ssh-add ~/.ssh/your_key
```

Enter the VM with VSCode remote

Add the config to your ssh config file (.ssh/config)

```
Host tutorial-0
  HostName sigcomm-tutorial-0.mpi-inf.mpg.de
  User root
  ProxyJump contact
  ForwardAgent yes
  LocalForward 8001 0.0.0.0:8001
```

or with bash

```
ssh -L8001:0.0.0.0:8001 -A root@sigcomm-tutorial-X
```

Install Docker

Add Docker's official GPG key:

```
sudo apt-get update
sudo apt-get install ca-certificates curl
sudo install -m 0755 -d /etc/apt/keyrings
sudo curl -fsSL https://download.docker.com/linux/debian/gpg -o
/etc/apt/keyrings/docker.asc
sudo chmod a+r /etc/apt/keyrings/docker.asc
```

Add the repository to Apt sources:

```
echo \
  "deb [arch=$(dpkg --print-architecture) signed-
  by=/etc/apt/keyrings/docker.asc] https://download.docker.com/linux/debian
  \
```

```
$(. /etc/os-release && echo "$VERSION_CODENAME") stable" | \  
sudo tee /etc/apt/sources.list.d/docker.list > /dev/null  
sudo apt-get update
```

Install

```
sudo apt-get install docker-ce docker-ce-cli containerd.io docker-buildx-  
plugin docker-compose-plugin
```

Enter OpenOptics Development Conatiner

Clone Repo

```
git clone -b tutorial git@gitlab.mpi-klsb.mpg.de:ylei/openoptics-  
mininet.git
```

Pull the Docker Image

```
docker pull ymlei/openoptics-mininet:latest
```

Enter the Container

With VSCode devcontainer

Open openoptics-mininet folder with VSCode remote. With Docker and the VS Code Dev Containers extension installed, simply press Ctrl+Shift+P or Command+Shift+P (Mac) in your VS Code and run the “Dev Containers: Reopen in Container” command to open the repository inside the container. After that, Optics-Mininet is ready to go.

Or with bash

```
cd /openoptics-mininet  
docker run --privileged -dit --network host \  
--name openoptics-mininet \  
-v "$PWD:/openoptics-mininet" \  
optics-mininet /bin/bash  
docker exec -dit openoptics-mininet bash
```

Initialize the Dashboard

```
cd /openoptics-mininet/openoptics/dashboard  
bash init.sh
```

Enjoy!

Exercises for the tutorial are under `/openoptics-mininet/exercises`.

If you would like to explore more, you could try out more sophisticated examples under `/openoptics-mininet/example`, and openoptics source code under `/openoptics-mininet/openoptics`