

## 4.Multi-machine communication configuration

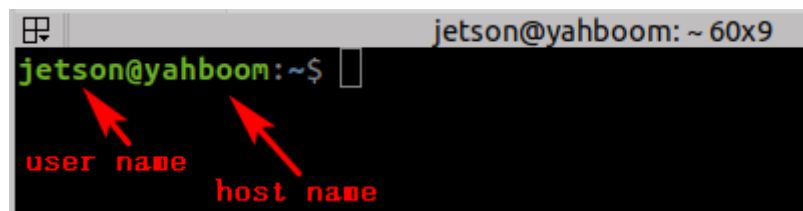
### 4.Multi-machine communication configuration

#### 4.1. Configuration

#### 4.2. Effect demonstration

**Note: You must know the robot's IP before logging in remotely, which can be displayed through an external monitor or OLED.**

For example, the following figure: Username [jetson], hostname [yahboom].



### 4.1. Configuration

Require:

- All masters are on the same network
- Choose one as the master, and all others are slaves
- Install ssh and chrony packages on each device for synchronization

```
sudo apt-get install chrony openssh-server
```

For example: jetson nano is the host, the virtual machine is the slave, and the IP of jetson nano is known.

Next just modify the .bashrc file of the slave machine (virtual machine).

```
sudo vim ~/.bashrc
```

Add at the bottom, the [IP] here refers to the IP of [jetson nano].

```
export ROS_MASTER_URI=http://IP:11311
```

After setting the IP, it is best to refresh the environment variables.

```
source ~/.bashrc
```

Modify the /etc/hosts file,

```
sudo vim /etc/hosts
```

Add another machine's IP and name

```

127.0.0.1      localhost
127.0.1.1      VM
185.199.108.133 raw.githubusercontent.com
192.168.2.92   jetson-Yahboom
# The following lines are desirable for IPv6 capable hosts
::1           ip6-localhost ip6-loopback
fe00::0       ip6-localnet
ff00::0       ip6-mcastprefix
ff02::1       ip6-allnodes
ff02::2       ip6-allrouters
~
~
~
~
~

```

IP                      Name

After modification, save and exit. Both ends of the virtual machine and the car need to be set as above.

## 4.2. Effect demonstration

Note: ROS Master must be started on the host.

Use ssh to remotely log in to the jetson nano and start rosmaster

```
roscore
```

ubuntu(virtual machine)

```

roslaunch turtlesim turtlesim_node
roslaunch turtlesim turtle_teleop_key

```

