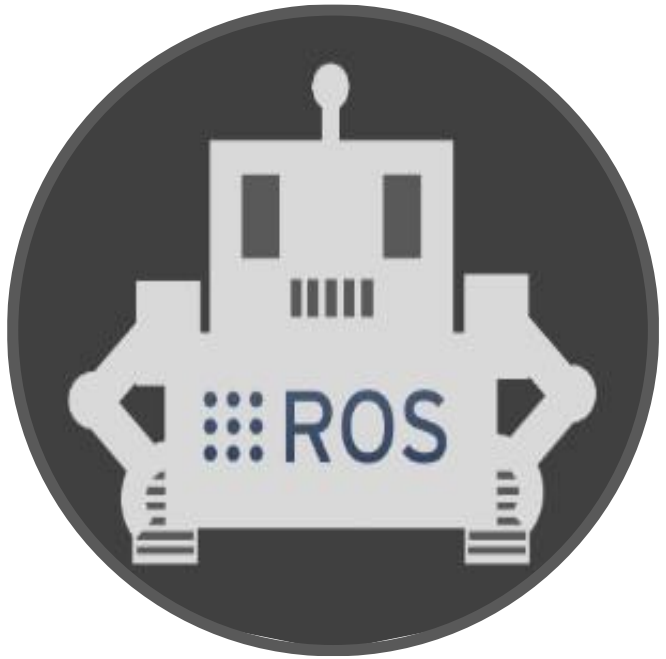
ROS 기초 강의

Chapter 7. ROS Network

구선생 로보틱스



Update 20240620

강의 자료 다운로드

ROS 기초 강의 강의노트

https://drive.google.com/drive/folders/1rRwS2j98HNyj5Is_yVXEGj30ILvMPtrz?usp=drive_link

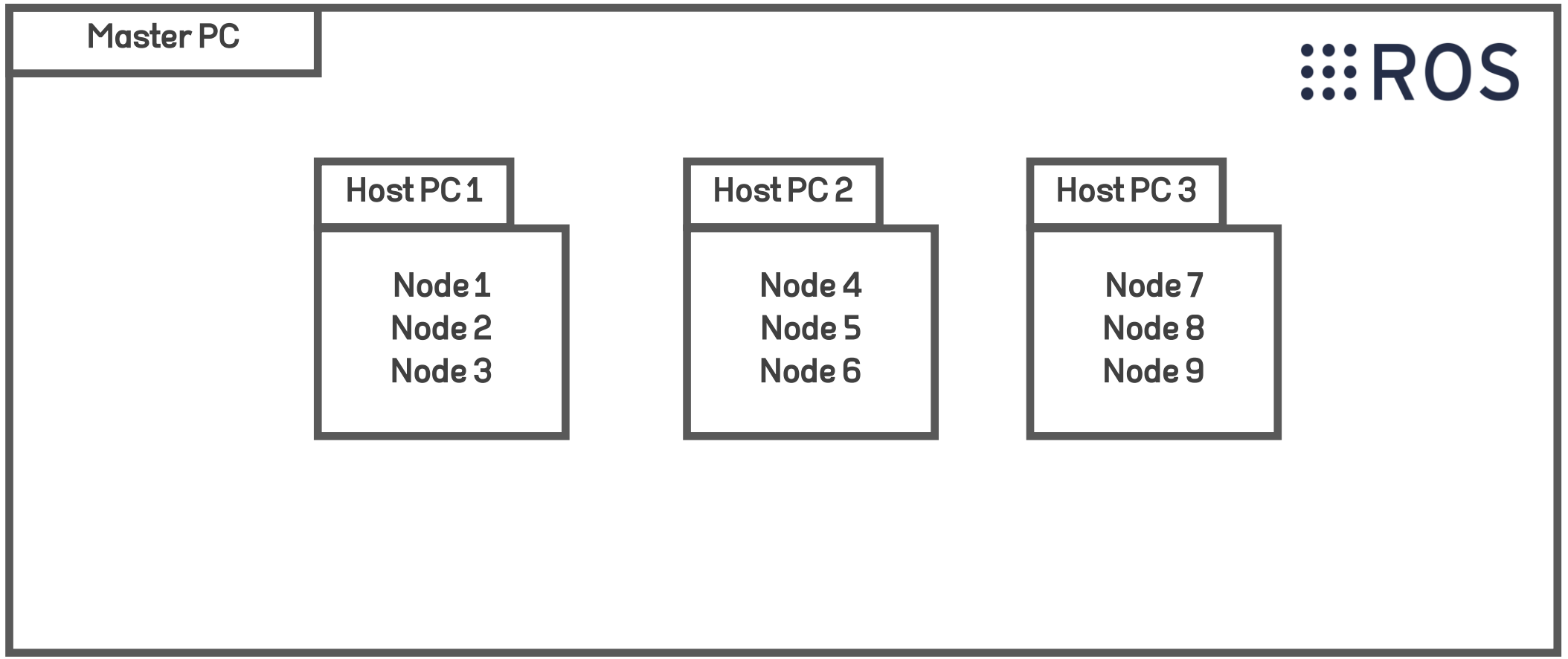
1. ROS Network 기초
2. ROS Network 설정

ROS Network 기초

ROS Network란?

ROS는 Master와 Host를 이용한 네트워크를 구성할 수 있다.

동영상 강의 - ROS Network 기초
https://youtu.be/swnBlVoyOFo?si=RTD-NdM1ktr7kl3x



1. ROS Network 기초
2. ROS Network 설정

ROS Network 설정

IP 확인

동영상 강의 – ROS Network 설정
https://youtu.be/ykV0JvwKnsA?si=82YwYhEI7OUwgHir

1) IP 확인을 위한 net-tools 설치

```
$ sudo apt-get install net-tools
```

2) IP 확인

```
$ ifconfig
```

```
ubuntu@ubuntu:~$ ifconfig
ens33: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.209.128  netmask 255.255.255.0  broadcast 192.168.209.255
        inet6 fe80::5d38:4a55:1725:ae58  prefixlen 64  scopeid 0x20<link>
        ether 00:0c:29:77:dc:64  txqueuelen 1000  (Ethernet)
        RX packets 9287  bytes 9634587 (9.6 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1589  bytes 158742 (158.7 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 3779  bytes 457531 (457.5 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 3779  bytes 457531 (457.5 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

ROS Network 설정

Master, Host 설정

3) bashrc 파일 편집

```
$ nano ~/.bashrc
```

4) 제일 아랫 줄에 내용 추가

Master PC | **IP 192.168.209.128**

```
111 if ! shopt -oq posix; then
112   if [ -f /usr/share/bash-completion/bash_completion ]; then
113     . /usr/share/bash-completion/bash_completion
114   elif [ -f /etc/bash_completion ]; then
115     . /etc/bash_completion
116   fi
117 fi
118
119 source /opt/ros/noetic/setup.bash
120
121 export ROS_HOSTNAME=192.168.209.128
122 export ROS_MASTER_URI=http://192.168.209.128:11311
```

Host PC | **IP 192.168.209.130**

```
111 if ! shopt -oq posix; then
112   if [ -f /usr/share/bash-completion/bash_completion ]; then
113     . /usr/share/bash-completion/bash_completion
114   elif [ -f /etc/bash_completion ]; then
115     . /etc/bash_completion
116   fi
117 fi
118
119 source /opt/ros/noetic/setup.bash
120
121 export ROS_HOSTNAME=192.168.209.130
122 export ROS_MASTER_URI=http://192.168.209.128 :11311
```

ROS Network 설정

설정 확인

Master PC 에서 실행

Host PC 에서 실행

```
ubuntu@ubuntu:~$ rosrun turtlesim turtle_teleop_key
Reading from keyboard
---------------------------
Use arrow keys to move the turtle. 'q' to quit.
```

서로 다른 PC에서 실행 된 노드 이지만,
Network 설정이 연결되어 있어 통신이 가능하다

감사합니다

구선생 로보틱스