

ROS2 PC&Robot Network setting By TESR

ROS2

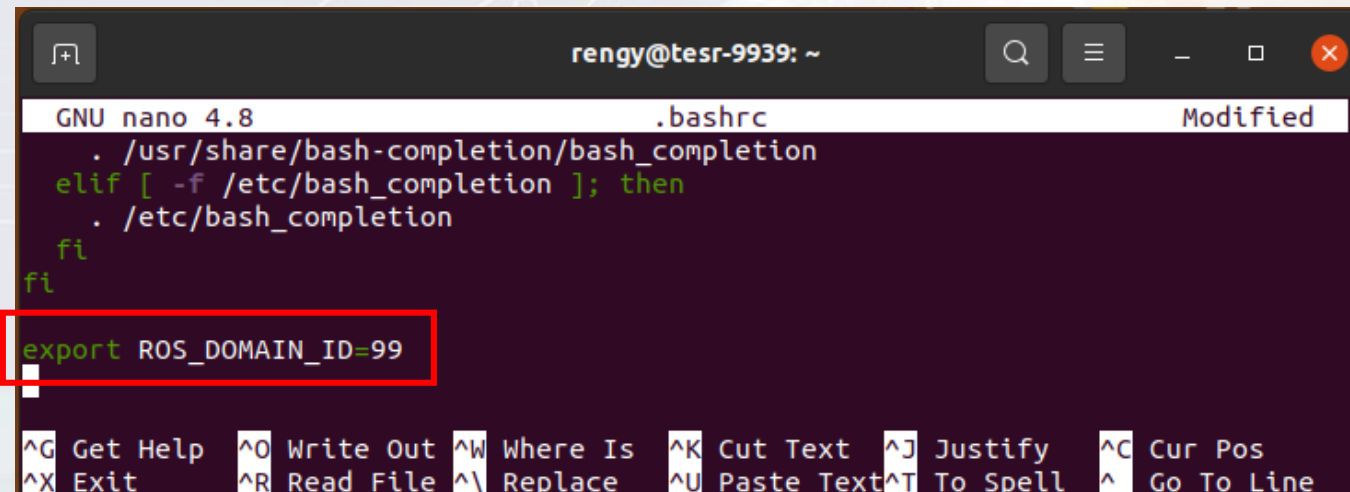
PC/Laptop's Domain setup

- Open the terminal and type:

```
sudo nano ~/.bashrc
```

- Scroll down to the last line of file and type:

```
export ROS_DOMAIN_ID=99
```



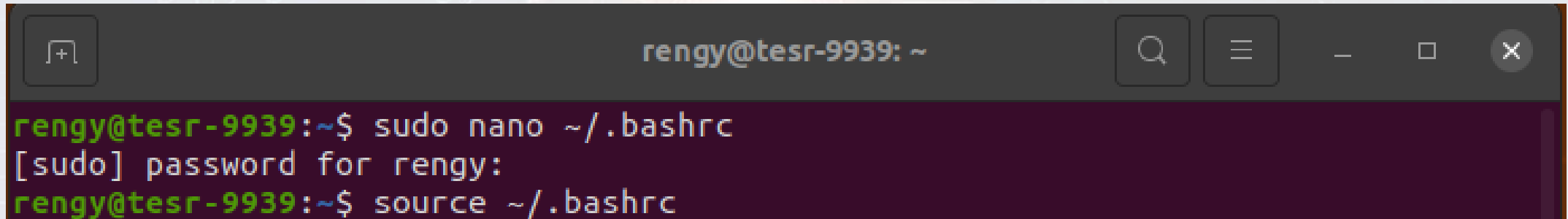
```
rengy@tesr-9939: ~  
GNU nano 4.8 .bashrc Modified  
. /usr/share/bash-completion/bash_completion  
elif [ -f /etc/bash_completion ]; then  
. /etc/bash_completion  
fi  
fi  
export ROS_DOMAIN_ID=99  
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^\ Replace ^U Paste Text ^T To Spell ^_ Go To Line
```

*Domain can define as 0~232. But by default, the Linux kernel uses ports 32768~60999 for ephemeral ports. So, you can define the domain ID as 0~101 and 215~232 without colliding with ephemeral ports.

PC/Laptop's Domain setup

- After define the DOMAIN_ID, press Ctrl+O and Enter to save the edit. And then, press Ctrl+X and Enter to Quit from nano.
- And then, source .bashrc to update **PC/Laptop's** shell environment by type:

```
source ~/.bashrc
```

A terminal window with a dark background. The title bar shows 'rengy@tesr-9939: ~' and standard window controls. The terminal text shows a user running 'sudo nano ~/.bashrc', entering a password, and then running 'source ~/.bashrc'.

```
rengy@tesr-9939: ~  
rengy@tesr-9939:~$ sudo nano ~/.bashrc  
[sudo] password for rengy:  
rengy@tesr-9939:~$ source ~/.bashrc
```

iron-X's Domain setup

- Remote to iron-X using secure shell to iron-X terminal by type:

```
ssh pi@<iron-X's IP-address>
```

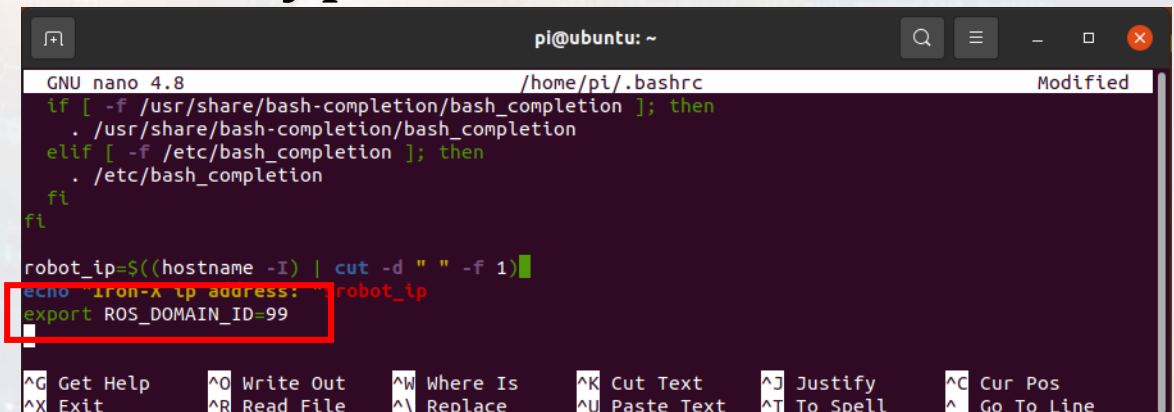
- Open the terminal and type:

```
sudo nano ~/.bashrc
```

- Scroll down to the last line of file and type:

```
export ROS_DOMAIN_ID=99
```

*You must define iron-X's ROS_DOMAIN_ID as same as PC/Laptop's ROS_DOMAIN_ID.
In this case, ROS_DOMAIN_ID is defined as 99.

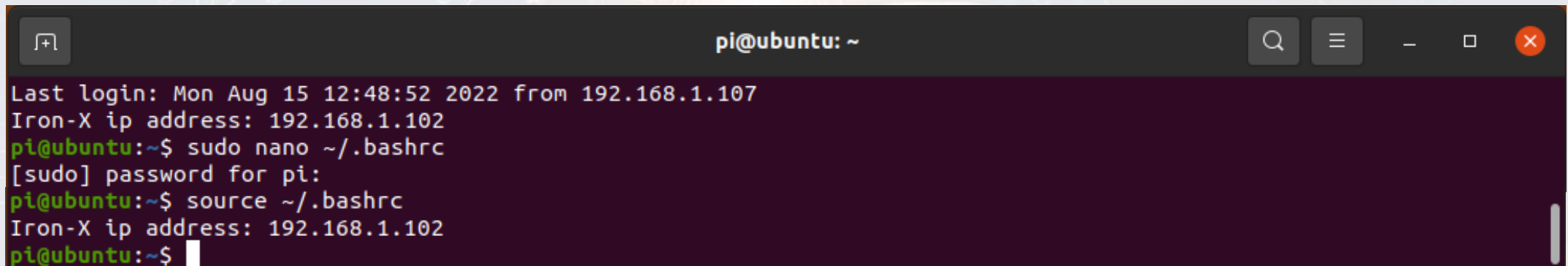


```
pi@ubuntu: ~  
GNU nano 4.8 /home/pi/.bashrc Modified  
if [ -f /usr/share/bash-completion/bash_completion ]; then  
    . /usr/share/bash-completion/bash_completion  
elif [ -f /etc/bash_completion ]; then  
    . /etc/bash_completion  
fi  
fi  
robot_ip=$((hostname -I) | cut -d " " -f 1)  
echo "iron-X ip address: $robot_ip"  
export ROS_DOMAIN_ID=99  
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos  
^X Exit ^R Read File ^_ Replace ^U Paste Text ^T To Spell ^_ Go To Line
```

iron-X's Domain setup

- After define the DOMAIN_ID, press Ctrl+O and Enter to save the edit. And then, press Ctrl+X and Enter to Quit from nano.
- And then, source .bashrc to update **iron-X's** shell environment by type:

```
source ~/.bashrc
```

A terminal window titled 'pi@ubuntu: ~' with standard window controls. The terminal output shows the last login time, the Iron-X IP address, the user running 'sudo nano ~/.bashrc', the password prompt, the user running 'source ~/.bashrc', and the resulting Iron-X IP address.

```
pi@ubuntu: ~
Last login: Mon Aug 15 12:48:52 2022 from 192.168.1.107
Iron-X ip address: 192.168.1.102
pi@ubuntu:~$ sudo nano ~/.bashrc
[sudo] password for pi:
pi@ubuntu:~$ source ~/.bashrc
Iron-X ip address: 192.168.1.102
pi@ubuntu:~$
```

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