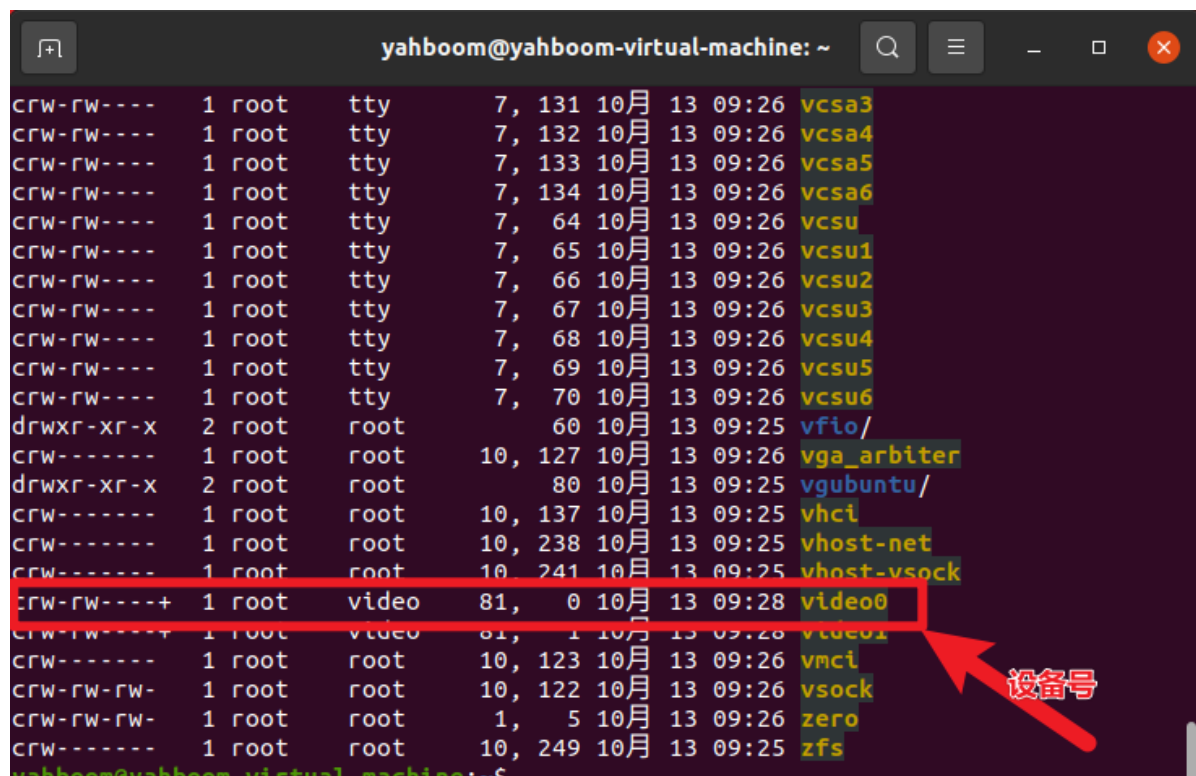# Real time monitoring of web pages

1.Environmental setup

```
sudo apt-get install ros-noetic-async-web-server-cpp ros-noetic-web-video-server
ros-noetic-usb-cam
```

Ensure that the USB camera connection is correct. Enter the following command to check if the USB device number exists and is video0

```
ll /dev
```


If the execution permissions are not sufficient, it is necessary to add execution permissions

```
sudo chmod 777 /dev/video*
```

2. Modifying the launch file

```
sudo vim /opt/ros/noetic/share/usb_cam/launch/usb_cam-test.launch
```

Keep clicking on the keyboard 【 d 】 to delete all content.

Click the keyboard 【i】to enter editing mode, and write the following content into it.

```
<launch>
    <arg name="open_view" default="false"/>
    <node name="usb_cam" pkg="usb_cam" type="usb_cam_node" output="screen">
        <param name="video_device" value="/dev/video0"/>
```

```
            <param name="image_width" value="640"/>
            <param name="image_height" value="480"/>
            <param name="pixel_format" value="yuyv"/>
            <param name="camera_frame_id" value="usb_cam"/>
            <param name="io_method" value="mmap"/>
        </node>
        <!-- web_video_server -->
        <node pkg="web_video_server" type="web_video_server" name="web_video_server"
    output="screen"/>
        <!-- image_view -->
        <group if="$(arg open_view)">
            <node name="image_view" pkg="image_view" type="image_view"
    respawn="false" output="screen">
                <remap from="image" to="/usb_cam/image_raw"/>
                <param name="autosize" value="true"/>
            </node>
        </group>
    </launch>
```

Click the [ESC] button twice (or multiple times),

click on the keyboard [shift plus;], enter [wq], and click the [Enter] button.

3.Effect demonstration

Input following command:
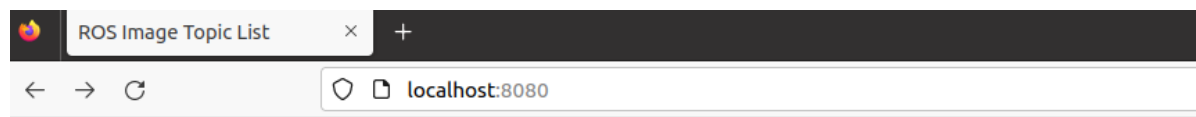
```
roslaunch usb_cam usb_cam-test.launch
```

- Web browser viewing at local

```
http://localhost:8080/
```

- View on other devices (must be in the same local area network, 192.168.2.93 is the IP address of the controller)

```
http://192.168.2.93:8080/
```

Note: It is recommended to use Google Chrome or mobile QQ browser, as other browsers may not be able to open images

localhost:8080

Available ROS Image Topics:

- /usb_cam/
  - image_raw (Snapshot)