

Creating ROS network with Bebop Parrot 1

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1 Setting Up Router

Follow these steps to set up the router for ROS communication. Note that this is for Linksys firmware and the exact settings may differ on different routers.

1. Change the SSID of the 5 GHz channel to DroneAP
2. Set Broadcast SSID to "yes"
3. Set Channel to "153"
4. Set Security mode to "none"
5. Set Network mode to "mixed"
6. Set Channel width to "40 MHz"

2 Configuring Wifi on Quadcopters

Follow these steps to configure the Parrot Bebop 1 quadcopter to connect to the network setup in section 1.

1. Power on Parrot Bebop 1
2. Connect to Bebop wifi on Linux system
3. Press power button 4 times on Parrot Bebop 1
4. Open terminal and type in following command (note that default IP for Parrot Bebop 1 is 192.168.42.1)

```
$ telnet 192.168.42.1
```

5. In the root type in the following command to make the firmware writable

```
# mount -o remount,rw /
```

6. Find the directory which contains the script "longpress_0.sh" by typing the following command in terminal

```
# cd /bin/onoffbutton
```

7. Edit the "longpress_0.sh" by typing the following command and adding the code seen in github.

```
# vi longpress_0.sh
```

Note that in the "longpress_0.sh" file on github that in line 37 there is a variable <drone_ip >. This needs to be changed and be different on each bebop drone.

3 Configuring Bebop Driver

The launch and configuration files in the Parrot Bebop ROS driver must be changed to allow connection to the alternate IPs given in section 2.

Each quadcopter has the same "defaults.yaml" configuration and the code is shown on github.

The launch file for each quadcopter is almost the same except the variable <drone_ip > must be changed to correspond to the previous section 2.

The files can be found in the directory of each workspace in the following way:

```
/src/bebop-autonomy/bebop_driver
```