

LiDAR Configurations for Jackal and PC (Ubuntu 18.04)

Weihaio Cheng

The Velodyne VLP-16 Lidar is connected to Jackal and PC through an ethernet cable. The IP address for Velodyne VLP-16 Lidar is set to **192.168.131.20**, and should not be changed for any reason.

The configuration page can be found by typing the Lidar's IP address in a browser.

Connecting to Jackal

For Jackal's application, the destination's IP address is set to **192.168.131.1** (Jackal's IP)

Theoretically, it does not require any additional configuration for connecting the VLP-16 Lidar to Jackal.

← → ↻ ⚠ Not secure | 192.168.131.20

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Velodyne® LiDAR

Sensor Model: S/N: MAC: Factory MAC:

VLP-16 USER INTERFACE

Require GPS receiver valid: ☐ On ☒ Off

Phase Lock ☐ On ☒ Off Offset:

Host (Destination)

IP Address: Data Port: Telemetry Port:

Network (Sensor)

DHCP: ☐ On ☒ Off

IP Address: Mask: Gateway:

MAC Address:

GPS Position: ☐ PPS:

Motor State: RPM: Lock: Phase:

Laser State:

Velodyne® LiDAR

Connecting to an Ubuntu PC

For other applications, the destination's IP address is set to **255.255.255.255** (It allows you to send the Lidar data to any device that the ethernet cable is connected to.)

The screenshot shows the Velodyne LiDAR web interface in a browser. The address bar shows '192.168.131.20'. The page title is 'Velodyne LiDAR'. Below the title, sensor information is displayed: Sensor Model: VLP-16, S/N: AH02421449, MAC: 60-76-88-38-3b-4b, Factory MAC: 60-76-88-10-53-c9. The main section is titled 'VLP-16 USER INTERFACE' and contains several configuration fields. Under 'Host (Destination)', the IP Address is set to 255.255.255.255, Data Port to 2368, and Telemetry Port to 8308. Under 'Network (Sensor)', DHCP is set to Off, IP Address to 192.168.131.20, Mask to 255.255.255.0, Gateway to 192.168.131.1, and MAC Address to 60-76-88-38-3b-4b. There are buttons for 'Download Snapshot' and 'Save Configuration'. At the bottom, there are fields for GPS Position, PPS (Absent), Motor State (On), RPM (600), Lock (Off), Phase (239.78), and Laser State (On). The Velodyne LiDAR logo is in the bottom right corner.

Sensor Model: VLP-16 S/N: AH02421449 MAC: 60-76-88-38-3b-4b Factory MAC: 60-76-88-10-53-c9

VLP-16 USER INTERFACE System Info Diagnostics

Require GPS receiver valid: ☐ On ☒ Off

Phase Lock ☐ On ☒ Off Offset: 0 + - Set

Host (Destination)

IP Address: 255.255.255.255 Data Port: 2368 Telemetry Port: 8308 Set

Network (Sensor)

DHCP: ☐ On ☒ Off

IP Address: 192.168.131.20 Mask: 255.255.255.0 Gateway: 192.168.131.1

MAC Address: 60-76-88-38-3b-4b Set

Download Snapshot Save Configuration

GPS Position: ☐ PPS: Absent

Motor State: On RPM: 600 Lock: Off Phase: 239.78

Laser State: On

Velodyne LiDAR

In addition, it requires two additional steps to configure the ethernet port to the given IP address.

```
$ sudo ifconfig eth0 192.168.131.10
$ sudo route add 192.168.131.20 eth0
```

Note: the name of your ethernet port may not be eth0. The name can be found by typing `$ ifconfig` command in your Ubuntu terminal.

The default launch file for the VLP-16 Lidar has a different IP address. In order for the Lidar to work properly, the IP address must be changed to **192.168.131.20**.

The launch file can be found in the following directory. Depending on the file name, it might be slightly different on your own PC.

```
file:///home/nvidia/catkin_ws/src/velodyne/velodyne_pointcloud/launch/VLP16_points.launch
```

Find this line inside the launch file (it might have an empty IP address):

```
<arg name="device_ip" default="192.168.1.201" />
```

and change it to the following:

```
<arg name="device_ip" default="192.168.131.20" />
```

Note some of you may find this [tutorial](#) helpful. However, it only works for VLP-16 Lidar with the default IP setting, which is different from what we have on the Jackal.