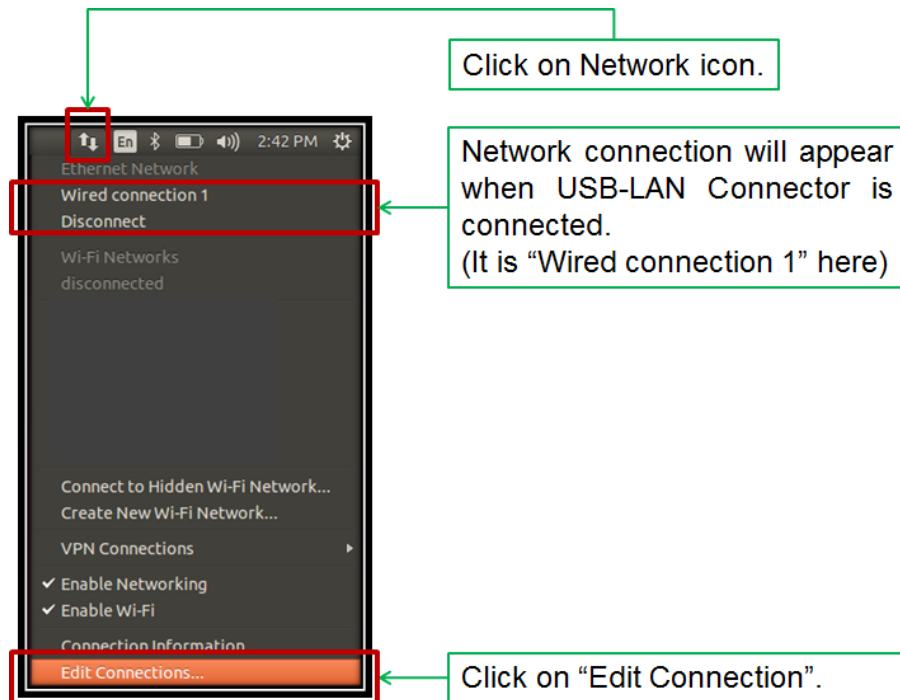# Geomagic Touch Device Drivers: Help Guide

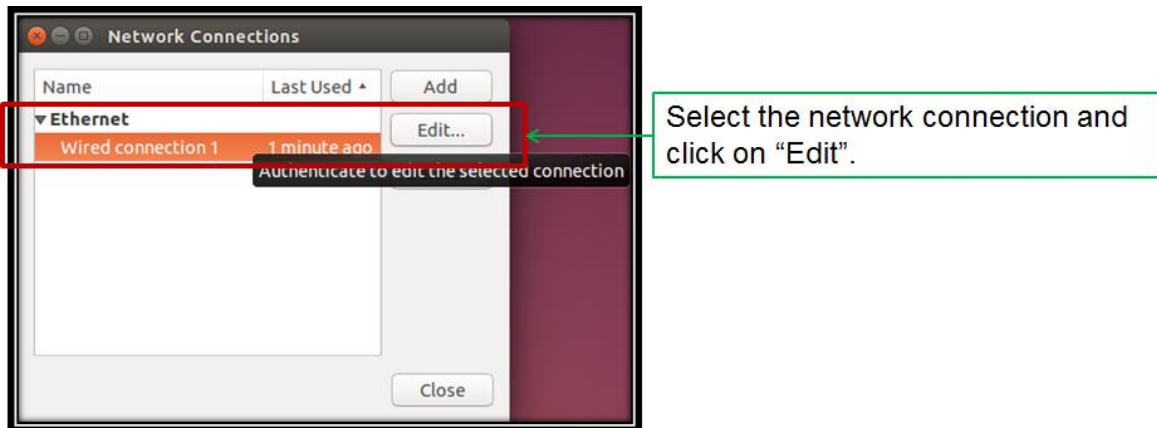## Operating System shown below: Ubuntu 14.04 (LTS) 64-bit

A. Connecting LAN-based haptic devices (Geomagic Touch X and Geomagic Touch) using Link-Local Address (LLA) connection.

1. Connect one end of the Ethernet cable to the device and another end to the LAN port of the USB-LAN adapter. Connect the USB end of the adapter to the computer. Click on the Network icon to see the list of the connections. If you have multiple wired connections, note the connection name that is using USB-LAN connection, in this case it is "Wired connection 1" (see Fig. 1).

2. Click on "Edit Connection…" to edit the connection (see Fig. 1). It will open a new window (see Fig. 2)
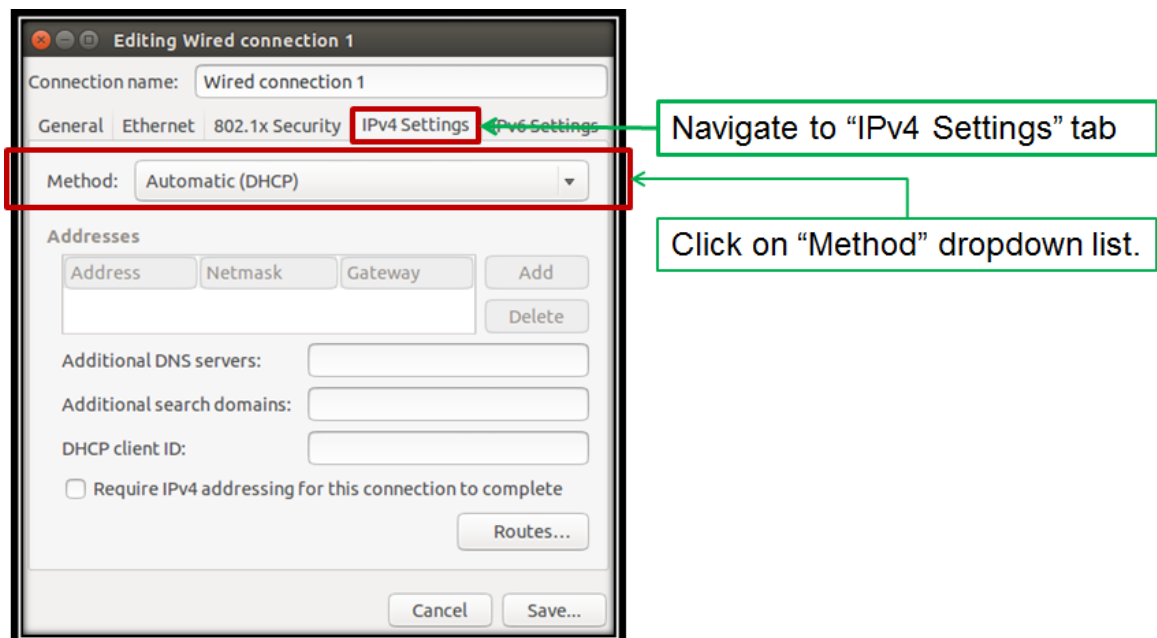

Fig. 1. <u>Floating window after clicking on Network icon</u>

3. Select the network connection name and click on Edit (see Fig. 2).
   Note: if there are multiple connections, select the one that is using USB-LAN connection and click on Edit.
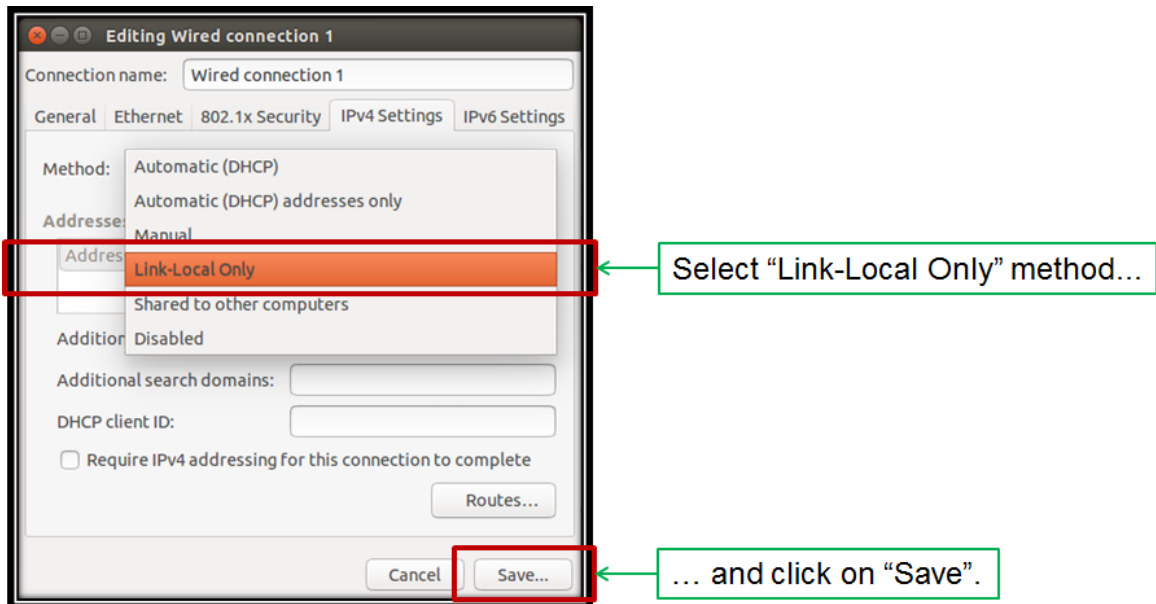

Fig. 2. <u>Network connections window after clicking "Edit Connections" in Fig. 1.</u>

4. After clicking Edit on (3), a new window, "Editing <network connection name>" window will appear. Navigate to "IPv4 Settings" tab, and click on "Method" dropdown list. In this case, the dropdown list is displaying "Automatic (DHCP)" method.
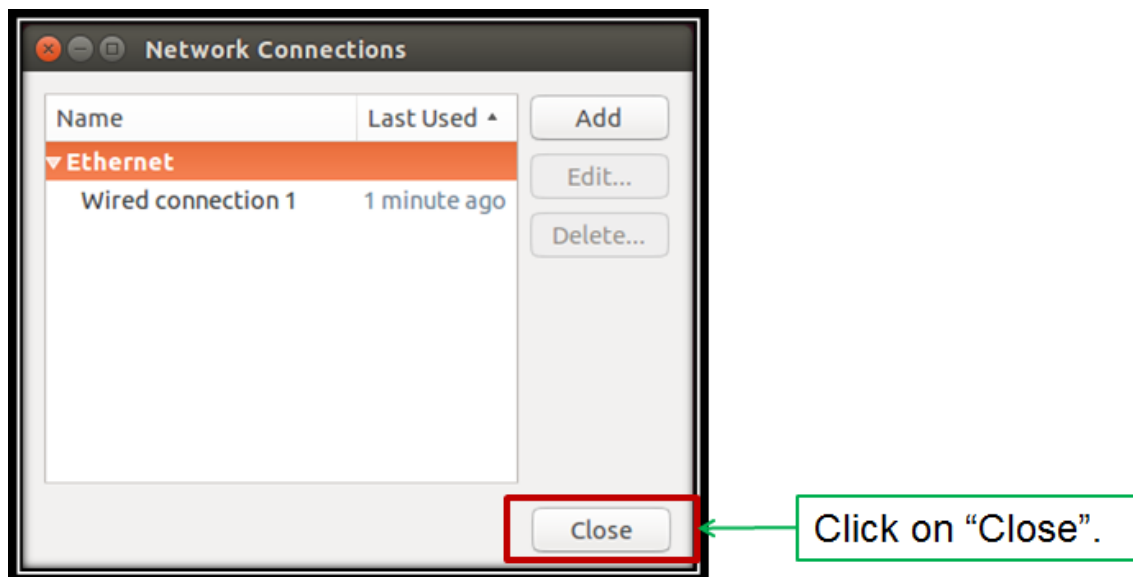

Fig. 3. <u>Editing network connection.</u>

5. Select Link-Local Only option from the dropdown list and click on Save.

Fig. 4. Select Link-Local only and save.

6. Close Network Connections window.

Fig 5. Close Network Connections window.

**NOTE: Please make sure to power cycle (unplug the power cord and plug it back in) the haptic device, after changing the network connection.

B. Detect if USB Touch device is connected and give read/write/execute to access the port to which the device is connected:

1. First of all connect the Touch device to USB port in your computer.
2. Check if the device is connected. There are a few ways to check it.
   a. When you run the following command, it shows if a USB device is available or not.
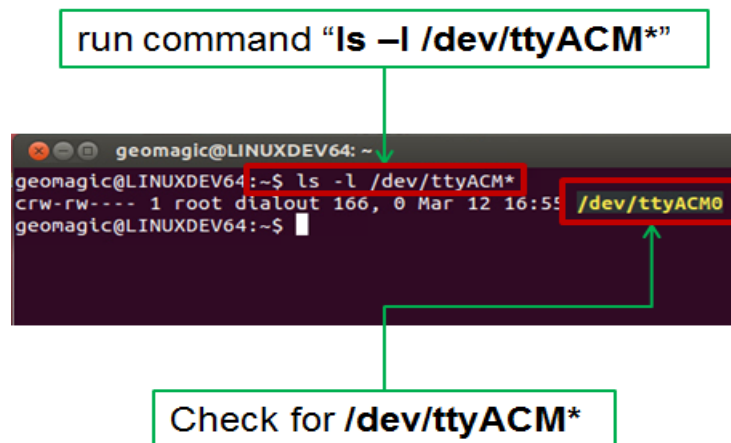   `ls –l /dev/ttyACM*`

Fig. 6. **Check if USB Touch device is connected.**

   b. If the result from (a) shows any device (**/dev/ttyACM0** in this case), run the following command:
      `udevadm info -a -n /dev/ttyACM0 | grep '{product}' | head -n1`
      If the output shown is "**3D Systems Touch 3D Stylus**"**,** then it means that the device is **connected properly**.
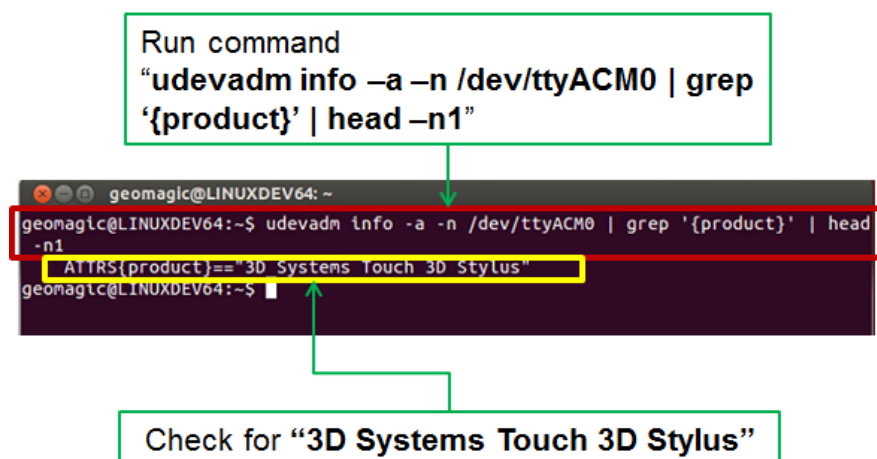

Fig. 7. **Check if the connected device is Touch device.**

c. Another way to check whether the Touch device is connected is to run the following command:

```
lsusb
```

The output of the command should show a device with **ID 0301:2988**. This is the ID of Touch device manufactured by 3D Systems Inc.
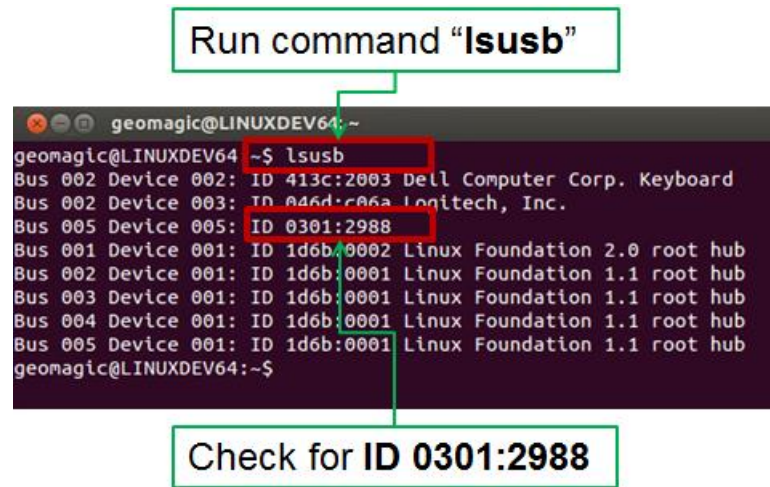

Fig. 8. **Check device ID of Touch device.**

3. Once it is verified that the device is connected, we have to give read, write, execute privilege for all user/group/other to access the device by using the following command

```
sudo chmod 777 /dev/ttyACM0
```

note: /dev/ttyACM0 is the port (in this case) where Touch device is connected. If you have multiple Touch 3D Stylus connected, please repeat steps 1, 2, and 3.

C. **Dual LAN-device configurations**

Dual device configurations (2 LAN-based haptic devices) that were tested and found to work best are as follows:

- Two LAN devices connected to two different ports on a network switch. (The computer also needs to be connected to the same switch for the LAN devices to work.)

- First LAN device connected to the network switch, and second LAN device **daisy-chained** to the first one. . (The computer also needs to be connected to the same switch for the LAN devices to work.)

- First LAN device connected to USB-LAN adapter and the second LAN device **daisy-chained** to the first one. (*This requires the first device to be connected using* **Link-Local Addressing***, please see Section A*)

- First LAN device connected directly to an Ethernet port on the computer, and the second LAN device **daisy-chained** to it. (*This requires the first device to be connected using* **Link-Local Addressing***, please see Section A*)

- Two USB devices (Touch 3D Stylus) connected to two different USB ports on a computer.

**Note: Dual device configuration also work with one LAN device (Geomagic Touch X or Geomagic Touch) and one USB device (Touch 3D Stylus).

D. **Known issues:**

1. While closing Geomagic_Touch_Diagnostic application, it prints several *"QBackingStore::flush() called with non-exposed window, behavior is undefined"* messages. This is the bug in older version of Qt and is resolved in Qt v 5.1.0 onwards. We will address this issue in the next release. For more information about the bug, please visit https://bugreports.qt.io/browse/QTBUG-28613.