Internet Connection on Raspberry Pi OS using 7Semi 4G USB Modem

Prerequisites:

- **Raspberry Pi running Raspberry Pi OS**
- **7Semi 4G Modem**
- **SIM card with an active data plan**
- **UFI connector for the LTE antenna (if required by your modem)**
- **Basic familiarity with Raspberry Pi and command-line usage**

Steps:

Gather Information:
Check the documentation or website of your 7Semi 4G Modem to:
Find specific connection and configuration instructions (if available).
Obtain the APN (Access Point Name) settings from your mobile network operator.

Update Your Raspberry Pi:
Open a terminal window and run the following commands to update your system:
Bash

```
sudo apt update
sudo apt upgrade
```

Reboot your Raspberry Pi:
Bash

```
sudo reboot
```

Install Required Packages:
Install NetworkManager and ModemManager:
Bash

```
sudo apt install network-manager modemmanager
```

Install additional packages if required by your modem's documentation:
Common add-ons include `libqmi-utils` and `udhcpc`.
Bash

```
sudo apt install libqmi-utils udhcpc
```

Connect the Modem and Prepare Hardware:

Insert the SIM card into the modem's SIM slot.
Attach the LTE antenna using the UFI connector.
Connect the 7Semi 4G Modem to a USB port on your Raspberry Pi.
The power LED, Modem Status LED, and Network LED will light up.

Check USB Detection:

Open a terminal window and run:
Bash

```
lsusb
```

Verify if your modem is listed.

Start and Enable NetworkManager:

Start NetworkManager:
Bash

```
sudo systemctl start NetworkManager
```

Enable NetworkManager to start automatically on boot:
Bash

```
sudo systemctl enable NetworkManager
```

If your Raspberry Pi had a Wi-Fi connection, it may be disabled now. You can re-enable it using `nmcli` if needed.

nmcli device wifi connect "<SSID>" password "<PASSWORD>"

Create a Network Connection (Operator-Specific):

Important: The specific commands for creating the network connection might vary depending on your mobile network operator's APN settings.
Here's a general example, replacing `<operator>` and `<APN>` with your specific values:

Bash

```
nmcli c add type gsm ifname '*' con-name jio apn jionet connection.autoconnect yes
```

After replacing the placeholders, run the command.
Check the output for any errors or warnings.

Test the Connection:

To verify the successful connection, you can observe the connection icon (up-down arrow) as depicted in the image below.
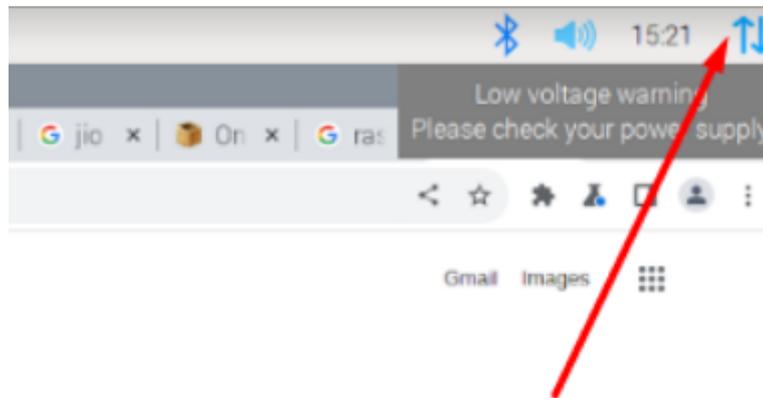
Open a web browser and try to access a website, e.g., `https://google.com`. If successful, you should be able to browse the internet through your 4G connection.