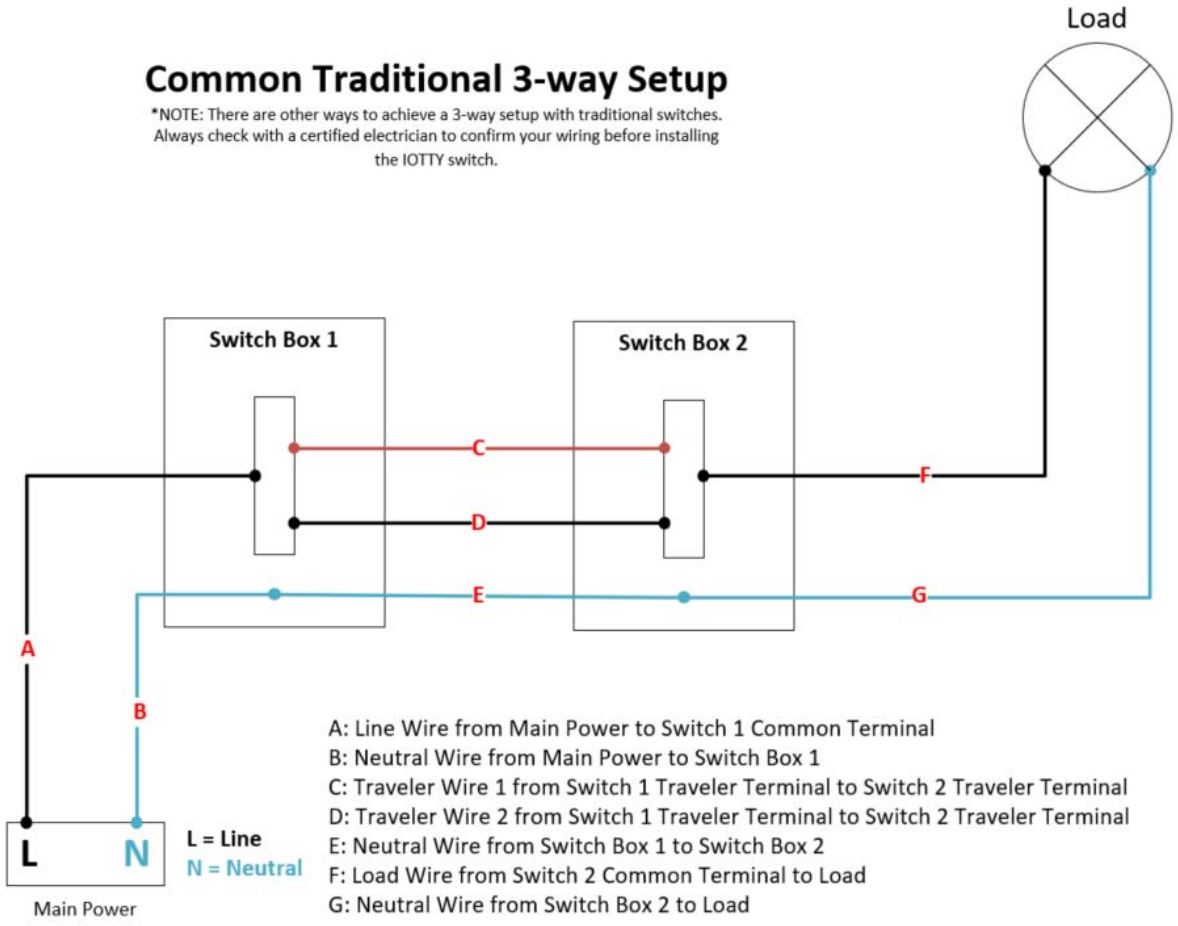
**How a Common Traditional 3-way Setup works:**

*Illustration 1: Common Traditional 3-way Setup*

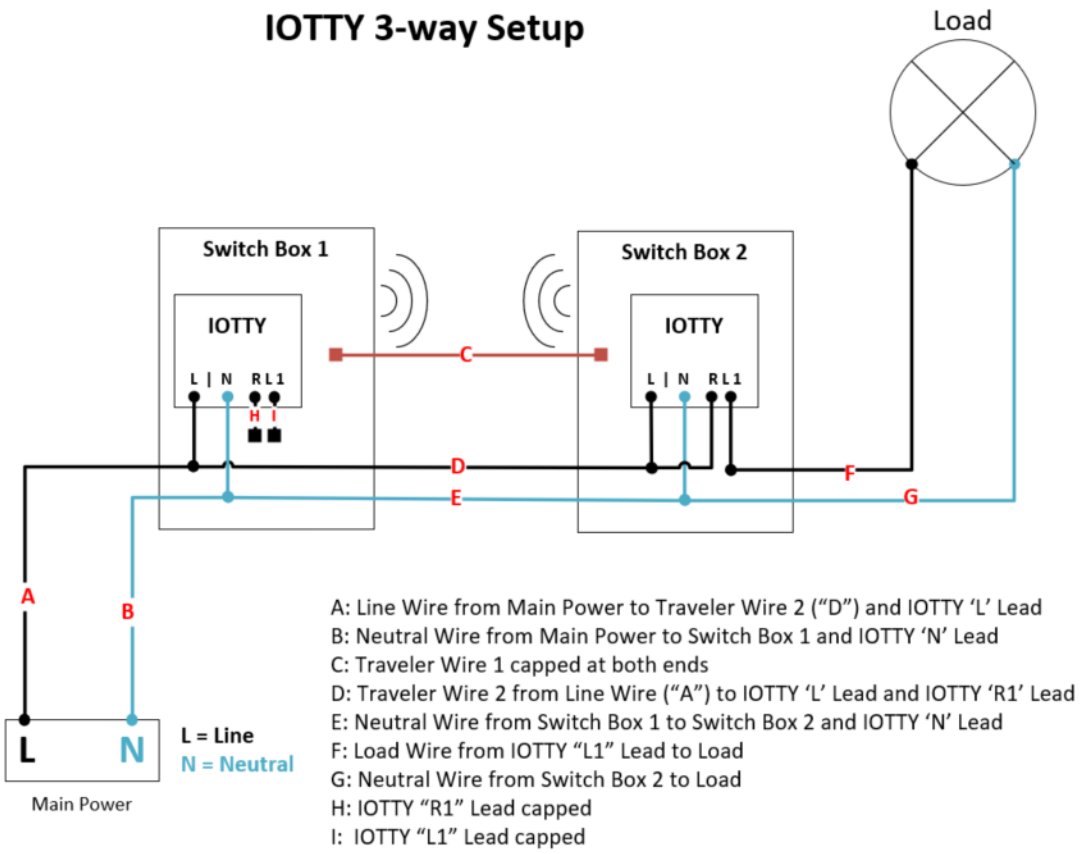



In the above setup, power flows from the Main Power through the Line Wire “A” to the first switch. This first switch will then connect the power to either Traveler Wire 1 “C” or Traveler Wire 2 “D” depending on the position of the switch. The Traveler Wire “C” and Traveler Wire “D” also connect to the second switch. This second switch will then connect either Traveler Wire 1 “C” or Traveler Wire 2 “D” to the Load Wire “F” depending on the position of the switch. If Switch 1 and Switch 2 are both positioned to connect through Traveler Wire 1 “C” or both are positioned to connect through Traveler Wire 2 “D”, then power will flow from the Main Power all the way to the Load. If the switches are setup such that one switch connects to Traveler Wire 1 “C” and the other connects to Traveler Wire 2 “D”, then power will not make it to the load.

Once power makes it to the load, it returns to the Main Power through the series of Neutral wire connections. The neutral wire “G” connects the load to Switch Box 2. Inside Switch Box 2, neutral wire “G” is connected with neutral wire “E”. Inside Switch Box 1, neutral wire “E” is connected with neutral wire “B”, thus completing the circuit.

**How an IOTTY 3-way Setup works:**

*Illustration 2: IOTTY 3-way Setup*




In the above setup it is important to note that for the IOTTY switches, the IOTTY "L" lead must be connected to a constant source of power and the IOTTY "N" lead must be connected to the Neutral. This ensures the switch has a constant power supply for the backlight and wifi modules. When pressing the switch on the IOTTY, you are actually opening (stopping the flow of power) or closing (allowing the power to flow) a relay between "R1" and "L1". In Switch Box 1 both the "R1" and "L1" leads are capped off because if they were used to control the flow of power, then Switch Box 2 would not have a constant power supply. Instead, when you press Switch 1, it will send a signal via wifi to Switch 2 that will change the position of the relay in Switch 2.

In the above setup, power flows from the Main Power through the Line Wire "A" to the first switch box where it is connected to both Traveler Wire 2 "D" and the IOTTY "L" Lead. In this setup, Traveler Wire 1 "C" is capped off at both ends as it will not be used. Traveler Wire 2 "D" carries the power to Switch Box 2 where it connects with the both the IOTTY "L" Lead and the IOTTY "R1" Lead. Then the IOTTY "L1" lead is connected with the load wire "F". When the switch is pressed, the relay between "R1" and "L1" will be opened or closed, preventing or allowing, respectively, the power to flow all the way from the Main Power to the Load.

Once power makes it to the load, it returns to the Main Power through the series of Neutral wire connections. The neutral wire "G" connects the load to Switch Box 2. Inside Switch Box 2, neutral wire "G" is connected with neutral wire "E". Inside Switch Box 1, neutral wire "E" is connected with neutral wire "B", thus completing the circuit. Both IOTTY Switches also connect into the neutral wire connections as illustrated to ensure they have a constant power flow.

**Converting a Common Traditional 3-way Setup to an IOTTY 3-way Setup:**

WARNING: For safety, always turn off power at the breaker before doing any electrical work.

There are multiple ways to achieve a 3-way setup so you should confirm with an electrician your setup is as seen in illustration 1. The following instructions are based on converting a 3-way setup as seen in illustration 1 to the IOTTY 3-way setup. If your existing 3-way setup is not as seen in illustration 1, your electrician should still be able to achieve the required IOTTY 3-way Setup based on the illustration.

*Instructions:*

1) Turn Power at the breaker off
2) At each switch, mark the common wire (each switch will have two terminal screws of the same color and a common screw of a different color. Mark the wire connected to the different colored screw).
3) Determine which box has the line (power) coming into it and which box has the load going out. The box that has the line coming in will be wired as a pass-through box as seen in Illustration 2 (Switch Box 1). The box that has the load going out will be wired as the control box as seen in Illustration 2 (Switch Box 2).
4) Start in Switch Box 1
    a. Disconnect the previous switch
    b. Connect the “N” Lead on the IOTTY switch to the Neutral in the box
    c. Connect the Line Wire with the “L” Lead on the IOTTY switch and one of the Traveler Wires going to Switch Box 2 (Note which color the traveler is).
    d. Cap off the unused Traveler Wire
    e. Cap off “R1” and “L1” Leads on the IOTTY switch
5) Finish in Switch Box 2
    a. Disconnect the previous switch
    b. Connect the “N” Lead on the IOTTY switch to the Neutral in the box
    c. Connect the Traveler Wire from step 3c with the “L” Lead on the IOTTY switch the “R1” Lead on the IOTTY switch.
    d. Cap off the unused Traveler Wire
    e. Connect the “L1” Lead on the IOTTY switch to the Load Wire
6) Install Glass Faceplates
7) Turn Power at the breaker on

**Registering your switches and Finalizing IOTTY 3-way Setup in the app:**

*Register your device (using airplane mode)*

1) Connect your phone/tablet to the switch's network (IOTTY_serial_number)
2) Turn on airplane mode (in some rare scenarios your phone/tablet will send communications over your mobile data network even when connected to the switch which will prevent registration)
3) Select the plus sign and add device then reset it to factory defaults (this ensures you are communicating with the switch by confirming a successful factory reset).
4) Select the plus sign and add device and enter in your home's ssid/network name and password (NOTE: The IOTTY switch will only connect to 2.4GHz band wifi networks. When entering the ssid, be sure to include the full network name including all capitalizations, spaces, and underscores. It needs to be entered exactly as it appears when you see it in your available wifi networks on your phone)
5) Once your devices are registered, reconnect your phone/tablet to your home network
6) Restart the IOTTY app and you should see your switches connected.

*Setup Multiway Automation.*

1) Open the IOTTY App
2) Click the '+' sign and select to add an automation
3) Choose to add a Multi-way automation
4) From the main device drop down select the switch in Switch Box 2 (the one actually controlling the power flow)
5) From the 'Select Devices to Link' section select the switch in Switch Box 1 (the switch with only power connected and the “R1” and “L1” leads capped)
6) Save your automation

Once you save the automation you should now be able to turn on/off the load using either switch.

**FINAL TROUBLESHOOTING NOTE:**

If the glass faceplate was removed with the power on, it causes a temporary sensitivity issue that is easily resolved. Please install the glass faceplate and then from the app navigate to the device and restart it. You can accomplish this by:

1) Open the IOTTY app
2) From the Home Screen (make sure Rooms is highlighted in the top row) click the blue bar 'All Devices'
3) Then click the background of the device (not the light bulb) to open the device settings
4) Scroll to the bottom of the menu and click the blue bar 'Restart Device'