Network Debugging

I hope that no one is reading this because the network is down, but stuff happens, and as a result, I've written this guide on how to do simple debugging of the network. Good luck, and may rebooting solve everything!

Initial Checks

- The first thing to do is to check your phone and see if it's connected to either the FSFB or FSFB-5G network.
  - If it is, that's good.
  - If it isn't, that's bad. Check the available networks and see if you see FSFB or FSFB-5G.
    - If so, connect to them.
    - If not, go to the section on Rebooting the Network.
  - Using the browser on your phone, try to do something on the network.
    - If you can, then the network is running, and it's probably a problem with a single device. See the section on Rebooting Devices.
    - If you can't do anything, then try connecting to FSFB (if you're on FSFB-5G) or FSFB-5G (if you are on FSFB) and check to see if you can do anything on the network.
      - If you can do something by changing networks, then go to the section on Rebooting Access Points
  - Another thing to check is the store phone. Pick it up and see if you can dial someone. If you can, the Internet is running, at least via a hird-wired connection.

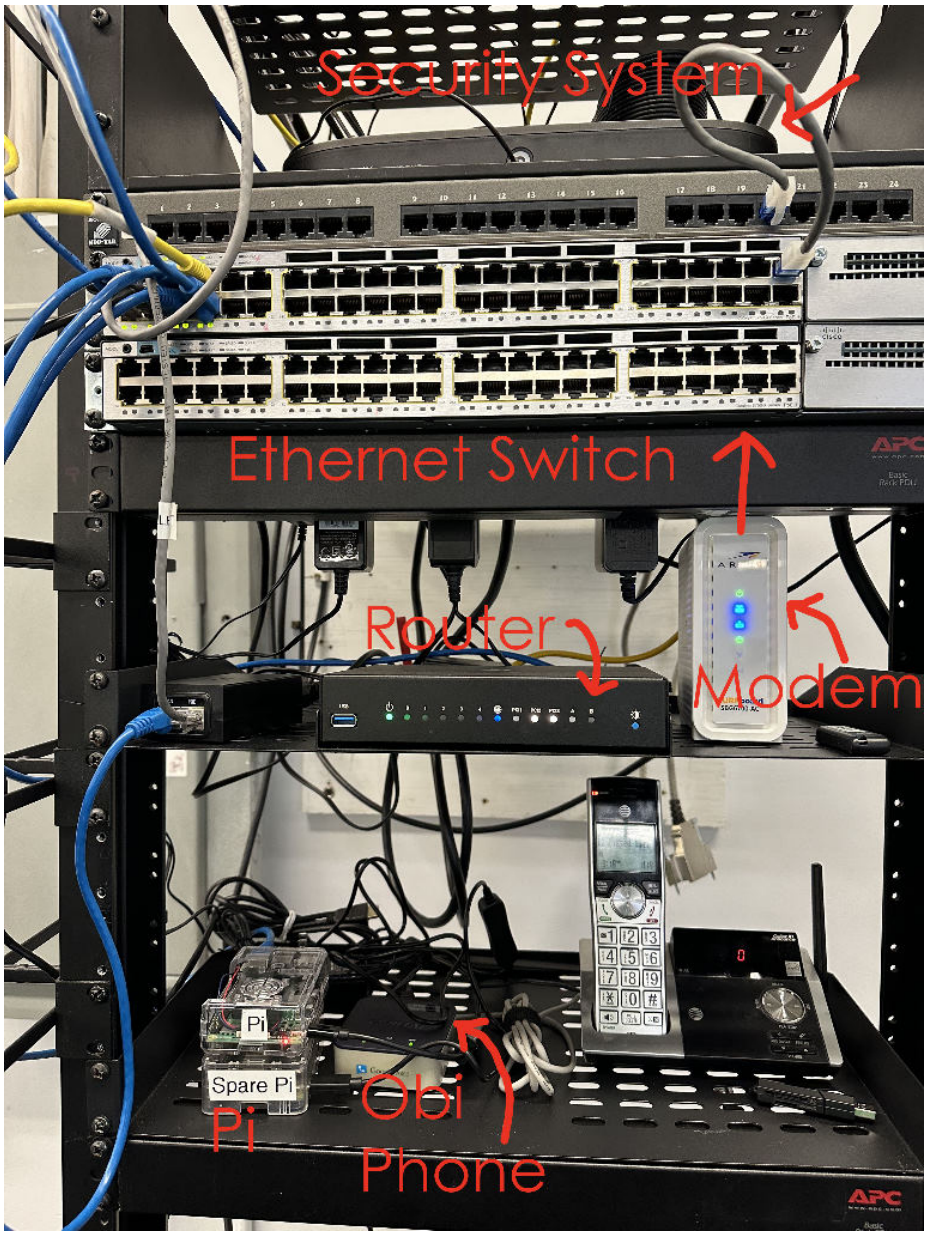
- If you're lucky, and Mark Pollard happens to be in, get him and have him help. He's a techie.

- If the Status Display isn't showing orders to load and the Movers app isn't working, go to the "Pi debugging" section

- At this point, we will just reboot everything and hope that solves the issue.
  - Unplug the modem from its power supply and plug it back in.
  - Unplug the router from its power supply and plug it back in.
  - Wait several minutes before retrying the Initial Steps.

Server Rack

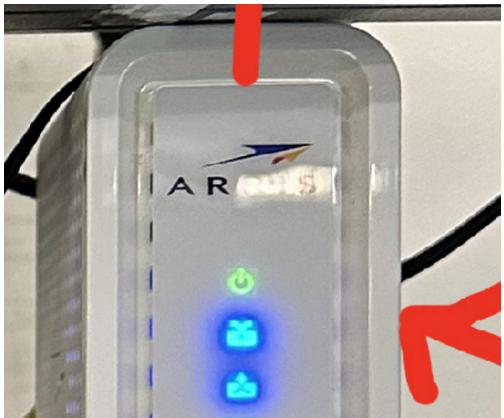
- Go to the network server rack, as shown below:



- Check to see if there are there lights on.
  - If not, then the power is off, and you need to:
    - Get Mark Revett if he's there, and have him help
    - Make sure that the UPS at the bottom of the rack is turned on
    - Make sure that there is power to the UPS. The outlet should be labeled with the panel # and the breaker #. Check the breaker.

Modem

- Start off by looking at the modem as shown below:



The bottom light, which looks like a globe, should be green.

- If it isn't green, unplug the modem and plug it back in.
  - Give it several minutes to turn green.
  - If it doesn't turn green, then the problem is with Comcast, and you need to call Comcast at 800-934-6489 and report an outage. You'll have to wait for them to repair the outage. Our account number is 8773103600392443.
  - If it does turn green, rerun the Initial Checks.

Router

- Check the Router as shown below:

You should see the following:

- The far left power light should be on
- The light under 0 should be on
  - If it's not, see the section below on the Ethernet switch
- The blue Globe LED should be lit & flashing rapidly
  - If it isn't, check the cable that runs between the modem and the router. You may want to replace it with a spare from the utility room. Make sure that it gets plugged into the port labeled WAN.

- On the store desktop:
  - Hold the Windows key down and press X
  - Select Windows Powershell
  - A blue window will appear
  - Type: ping 192.168.1.1
  - You should see several lines stating something like "Reply from 192.168.1.1: bytes=32 time=1ms TTL=64"
  - If you see that, then that means that you can talk to the router, which is good. What it also means is that the router can't communicate with the Internet, and you should call Comcast at 800-934-6489 and let them know that you have a routing issue. Our account number is 8773103600392443.

Ethernet Switch

- Next, check the Ethernet switch, which is shown below:

    - There are 2 switches stacked on top of one another. The top one is active, and the bottom one is a spare.
    - There's a fairly low probability that this will be the problem, but it's not a 0% probability.
    - On the top one, you'll see 8 Ethernet cables plugged into Ethernet ports
    - There are 2 LEDs under each column of cables. All of the LEDs should be green and may be blinking.
        - If they aren't lit, then the switch has failed.
            - Unplug the power cable from the top Ethernet switch and plug it into the bottom switch
            - Move the cables from the upper switch to the lower switch, making sure that they click into place
            - Give it several minutes to boot
    - The most important LED is #1. That goes to the router, and if that's not blinking, then:
        - Move the port 1's cable to an empty port. It should turn orange and then green
        - If that doesn't fix it, try moving the cable to another port (1-4) on the backside of the **router**.
            - The LED corresponding to the port should light up on the front of the router.
        - If that fails, try swapping the cable with a new one.
        - If that fails, something is wrong with the router, or you're not fully seating the cable.

Rebooting Access Points

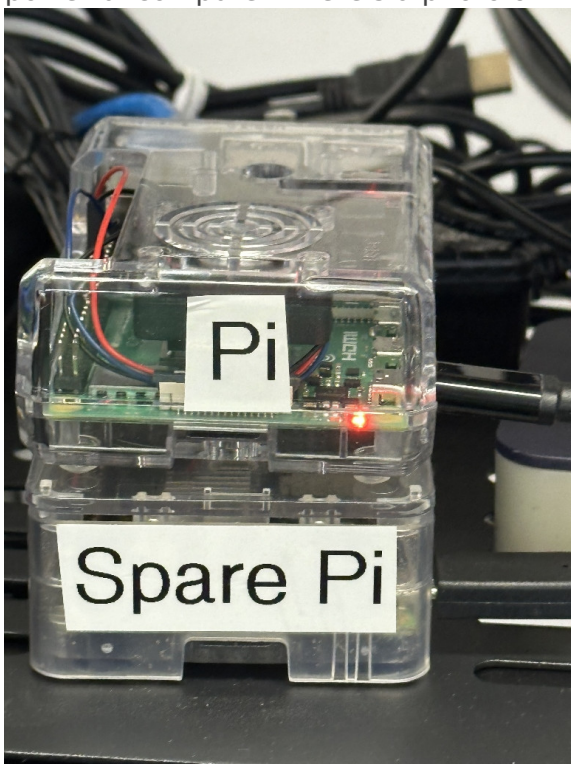
- There are 3 access points in the store that provide WiFi.
- To the right of the sink, you'll see a router mounted on the wall. Unplug it from the wall socket and plug it back in.
- On top of the network server rack, you'll see a router (not shown in the above photo), just like the one near the sink. Unplug that one, and plug it back in.
- You'll see a blue Ethernet cable going up the wall towards the ceiling. Unplug the cable from the Ethernet switch, pause 10 seconds, and plug it back in.
- Give everything a couple of minutes, and then rerun the Initial Checks.

Rebooting Devices

- If you can access the Internet on other devices, but can't access it on some, just try rebooting the bad devices.
    - On the tables, press and hold the power button until you see a message about shutting down or rebooting. Select reboot
    - On the laptops, hold the Windows key down and press X.
        - Select "Shutdown or Signout" and then select Reboot.

Pi Debugging

- A big part of our operations runs on a device called a Raspberry Pi. It's a tiny, but powerful computer. Here's a photo of the active one sitting on top of a spare.



    - There's a red LED in front of the Pi. If it isn't lit, then there's a good chance that the power supply has died.
        - Move the Spare Pi to the top of the stack for better airflow.
        - Unplug the existing power supply from the 120V power strip.
        - Plug the spare power supply into the 120V power strip
        - Move the Ethernet cable from the 1st Pi to the spare.
    - If the LED is on,
        - Go to the store laptop
        - Hold the Windows key down and press X
        - Select Windows Powershell
        - A blue window will appear
        - Type: ping 192.168.1.210
        - You should see several lines stating something like "Reply from 192.168.1.210: bytes=32 time=1ms TTL=64"
        - If you see that, then that means that you can talk to the Pi, which is good. Stop and call Geoff
        - If you see a message stating "Destination host unreachable", follow the instructions above about switching to the spare Pi.

What next?

- If the network is still down, start using the "Operating without a Network" document,
- Call/text Geoff/Sue

Port Forwarding

The following information is for the network administrator if they need to set up a new router;

- wan:3000 -> nodejs:3000
- wan:80 -> nodejs:80
- wan:51820 -> nodejs:51820

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