

## Ham 307 – AS3 Network - Router

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1. The network router provides connection to the Internet, sends information through ports to the correct device, and provides a barrier to limit access from outside sources.
2. This information is not common knowledge. It is something likely you have never done. In fact, it is something I had never done. But it is straight-forward step-by-step instructions. Now, you have one of the secrets of the IT gurus.
3. Peer to peer programs communicate directly, rather than sending packets to a server like a normal computer process.
  - a. Normally routers do not allow unsolicited packets from such peer to peer. That is how HACKERS get in.
  - b. The solution is port forwarding that allows a certain designated port to be forwarded to specific software on a specific computer IP address.
  - c. AllStarLink can be controlled peer-to-peer from outside devices who want to connect.
  - d. So, permission must be granted by the router for AllStarLink ingress.
4. **CAUTION:** Opening a port means giving access behind your fire-wall. It opens a tunnel which can be manipulated for other than noble purposes. Your passwords are little protection at that point. They all can be read.
5. **AllStarLink:** port forward 4569 UDP to Raspberry Pi IP address running ASL.
  - a. AllStarLink has a basic page. <https://allstarlink.github.io/>
6. **INSTALL:** Not all routers are even close to operating similar. These are generic instructions. It is not magic.
  - a. Obtain IP address for the router. Usually on router ID tag.
  - b. Enter address into web browser.
  - c. Login with name & password. Usually on router ID tag.
  - d. Find menu for Port Forwarding. It is typically Advanced, Security, or some similar location.
  - e. Select the device or IP address which to forward.
  - f. Enter port start and port stop number.
  - g. Enter UDP. (The protocol is more time sensitive than TCP ).
  - h. WiFi may be on the same router. If so, it should have the same port forward addresses.
  - i. Logout, save, exit, or otherwise graciously leave.
7. Routers will not allow porting to two different devices at two different IP addresses.
8. **REMOVE:** A clean router is a safer router.
  - a. Obtain IP address for the router. Usually on router ID tag.
  - b. Enter address into web browser.
  - c. Login with name & password. Usually on router ID tag.
  - d. Find Menu for Port Forwarding. It is typically Advanced, Security, or some similar location.
  - e. If you installed EchoLink, select the ports 5198-5199. Click remove. These are Ports you set.
  - f. Select Application Forwarding. Remove apps for EchoLink.
  - g. These will be the router address and the device address. These are tunnels you did not create.
  - h. Go to Security settings. See what is modified from Factory Default. Remove any unneeded.
  - i. Logout, save, exit, or otherwise graciously leave.
9. **DHCP RESERVATION:** Use to allocate a particular internal IP address with a specific device.
  - a. This is an advanced function. RESERVATION will save the same slot each time for a connected device.
  - b. Select the Device (alarmpi) or enter its MAC address.
  - c. Select an internal IP address to associate with that machine. Apply.
10. As always, if you have problems with a computer system, call a kid. The one I use is 45-years-old.
11. Life is good. Enjoy!

