

Technical Note #104

Lighthouse Pro STATIC, DHCP, and IP Addresses

Background

Every building in the world that receives mail from the postal service has a unique address. In this case, the address consists of the recipient's name, street name/number, city, state/region, and country. A computer IP address works the same way. No two computers, network printers, or other devices can exist on the same network (the post office) with the exact same IP address.

Your router, cable modem, or other equipment that connects to the internet manages your local network. One of the most important jobs of this equipment is to make sure every wired or wireless device that connects gets a unique IP address.

Up until now, you probably never needed to know about this. You turn your personal computer on, and you automatically connect to your local internet and the world wide web without doing anything. This process is called DHCP. As your computer boots up, it asks your router for an IP address and other connection information. Your router happily obliges and gives your computer a unique IP address to use. Your router keeps a list of the all the IP addresses it has already given out so it doesn't wind up giving out duplicates.

The IP address your computer gets can only be used for a certain period of time, perhaps an hour. This is done to prevent the router from running out of IP addresses. The process is called a DHCP *lease*. Just like leasing a car, you have to return the vehicle at the end of the lease period. Your computer has to return the IP address at the end of the DHCP lease. Your computer then asks for a new lease and gets a new IP address to use. This is all done in the background and does not interrupt your web browsing or network access in any way. Now the router might give the computer the exact same IP address for the new lease, or maybe not. It's all up to the router.

Fixing Lighthouse Pro IP Changes

We get many technical support calls where people have chosen to configure the Lighthouse Pro for DHCP and after a few days or weeks, they can no longer access the web pages. The problem is that the router has eventually assigned a different IP address to the controller, and the old IP address no longer works. The short term solution is to press the *NETWORK* button on the remote and use the IP address shown by entering it into your web browser. There are two long term fixes to solve this problem:

1. The more expensive, quality brands of routers provide greater flexibility in configuring the DHCP portion of the router. Some allow you to tie the MAC address (which is a unique hardware identifier) to a specific IP address. By entering the Lighthouse Pro's MAC address into your routers DHCP configuration tables, the router will always provide the exact same IP address to the Lighthouse Pro at all times. Once again, lower cost routers usually don't provide this capability. If your router does not

have a section in its configuration pages to enter MAC addresses, then your router doesn't support this method.

2. Use a STATIC IP address instead of DHCP. When STATIC is selected as the connection type, the controller will ignore communications from the router's DHCP and use its own, fixed IP address that never changes. In order to set this up, you need to find out the router's *DCHP ADDRESS RANGE* and pick an IP address that is outside of that range. You will need to access your router's configuration web pages to find this out. For example, if the router's DHCP Address Range is 192.168.1.**100** through 192.168.1.**199**, then any number above this range can be used. For example, 192.168.1.**210** or 192.168.1.**226** would work equally well. The choice is arbitrary, but the last number must be less than 250. So for this example, any number from 192.168.1.**200** through 192.168.1.**249** would work. You might pick something that is easy to remember, like 192.168.1.**222**. By using this STATIC connection method, The Lighthouse Pro's IP address will stay at this number and never change.