

Remote Access - Port Forwarding

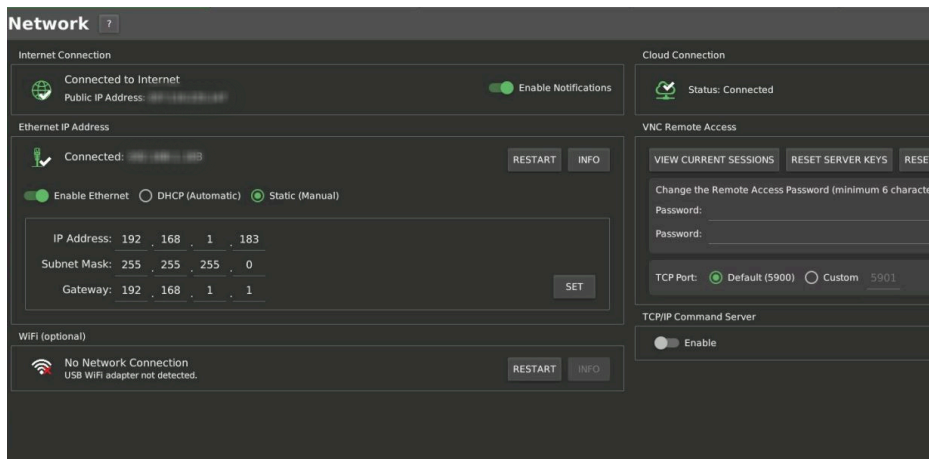
The Agrowtek system has full remote control capabilities using a standard VNC application (virtual network computing) on a phone, tablet or computer.

VNC applications allow control of the system as if you were at the screen without the need for a subscription or a connection to the cloud.

****Port Forwarding must be configured in the router to enable VNC access remotely when offsite****

Need to Know:

- **Local IP Address:** _____
 - Can be found in the Network Tab (System > Network > Ethernet IP Address (or Wifi if equipped)).
- **Port Number:** 5900 (Default) // _____ (Custom)
 - Port number can be adjusted if there are multiple devices that require a VNC connection on the network. Typically 5900 (Default)
- **Public IP Address:** _____
 - Found at the top of the Network Tab, (System > Network > Internet Connection > Public IP Address.)
- **Static IP Address:**
 - A static IP address should be assigned to the controller in the network router to ensure continuous remote access



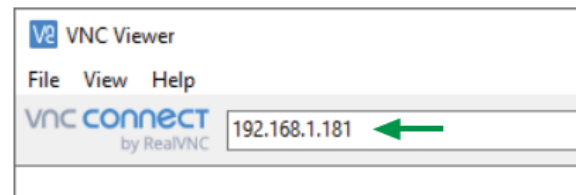
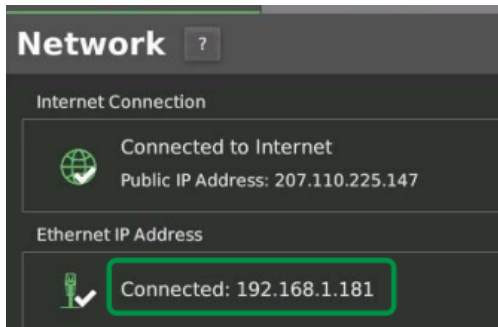
The screenshot shows the 'Network' configuration page. It is divided into several sections:

- Internet Connection:** Shows 'Connected to Internet' with a public IP address of 99.14.22.22. There is a toggle for 'Enable Notifications'.
- Ethernet IP Address:** Shows 'Connected' with a status icon. Below it, there are radio buttons for 'Enable Ethernet', 'DHCP (Automatic)', and 'Static (Manual)'. The 'Static (Manual)' option is selected. The IP address is set to 192.168.1.183, Subnet Mask to 255.255.255.0, and Gateway to 192.168.1.1. There are 'RESTART' and 'INFO' buttons.
- WiFi (optional):** Shows 'No Network Connection' with a message 'USB WiFi adapter not detected.' and 'RESTART' and 'INFO' buttons.
- Cloud Connection:** Shows 'Status: Connected'.
- VNC Remote Access:** Includes buttons for 'VIEW CURRENT SESSIONS', 'RESET SERVER KEYS', and 'RESET'. Below these, there is a section to 'Change the Remote Access Password (minimum 6 characters)' with 'Password:' and 'Confirm Password:' fields. There is also a 'TCP Port' section with 'Default (5900)' selected and 'Custom' (5901) as an option.
- TCP/IP Command Server:** Has an 'Enable' toggle switch.

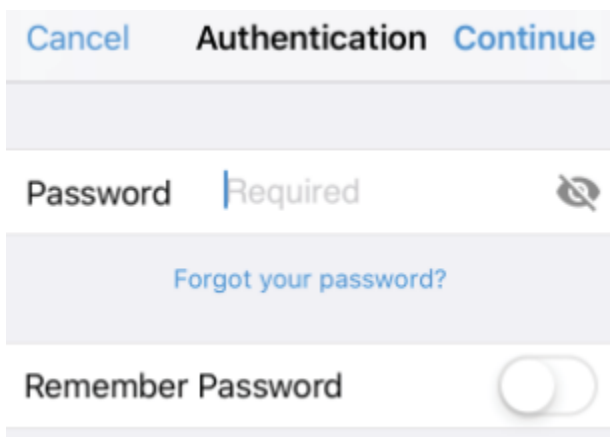
Local Connection:

Before configuring port forwarding, you can test the VNC connection by using a device that is connected to the same Wifi or Ethernet network as the Agrowtek device.

- Install a VNC Viewer Application. (Real VNC, Remote Ripple, etc.)
- Enter the **local IP address** of the GCX/BDX.

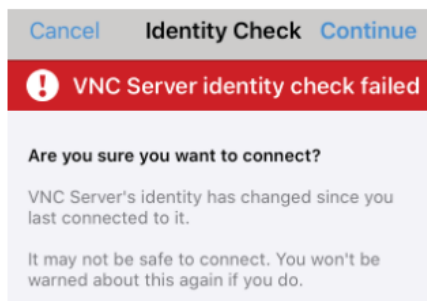


- Enter the VNC Password (GCX Default = gcxvnc, BDX Default = bdxvnc)



It is recommended to change the default VNC password when setting up your system.

- Accept the new identity check message.



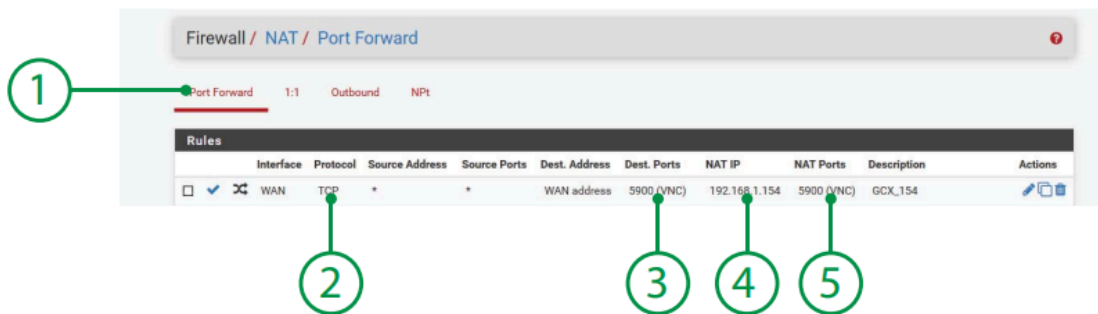
This message will only be shown on the first connection.

Port Forwarding:

Port forwarding is done at the network router/modem that the system is connected to.

Each manufacturer has slightly different configurations for port forwarding screens, however the concept is the same. Port forwarding must be configured by the user.

- An example port forwarding rule is shown below. Each router has unique menus, however the process is generally the same.



1. Log into the router and navigate to the section to add a port forwarding rule.
2. **Protocol:** If prompted, set the protocol type to **TCP**.
3. **Destination (External) Port:** The port number that is used to access the controller on the router. (default 5900)
4. **IP Address:** This should be the **local IP address** of GCX/BDX
5. **Device (NAT) (Internal) Port:** The port number that is used by the controller (default 5900 or customer port.)
 - a. Some routers (Comcast) do not have separate port numbers and instead use the same port number for both. In this case, use the port number that is configured for use on the controller.

Remote Access:

Once port forwarding has been configured correctly, the system may now be accessed remotely (off site) by using the **Public IP Address**. Repeat the steps shown in section above for local access, but instead enter the public IP address.

VPN:

Some networks that do not allow port forwarding, such as Starlink, require the use of a VPN to enable remote access through VNC.

VPN (Virtual Private Network) connections provide a secure tunnel between a remote computer and the facility network that the system is operating on.

When connected through a VPN, VNC connections can be made using the **Local IP Address**. See steps for connecting above in the **Local Connection** section.

Consult with an IT professional for assistance configuring a VPN.

Static vs Dynamic IP:

A **Static IP Address** should be assigned to the controller in the network router to ensure continuous remote access.

Dynamic IP Address (DHCP): Used by most home and business internet connections.

- This means that your service provider assigns your router a new public IP address periodically (e.g., daily, weekly, or when your router restarts.)

Static IP Address: A Public IP address assigned by your ISP that does not change.

- ISPs often charge a fee for static IP addresses on residential accounts, while this service is often included with business level accounts.

Consult with an IT professional for assistance with configuring a static IP.

VNC Troubleshooting Tips:**Mouse pointer alignment:**

- If the mouse pointer on your device is not aligned with the mouse pointer on the VNC display, move the mouse to the upper-left corner of the screen to align the pointers on the devices.

Picture Quality:

- Usually poor quality problems are attributed to network issues. If you experience picture quality problems, change the picture quality from "automatic" to "medium" or "high".

Additional Resources:

While Agrowtek can not provide direct support with remote access configurations, there are a number of resources available to assist you.

IT / Network Specialist - Usually the best resource. A trained IT professional can assist with enabling remote access and should be familiar with Port Forwarding, Static IP, etc.

Cable Company / Network Provider - Your Internet provider, i.e Spectrum/ Comcast (etc.), can sometimes assist with network configuration.

- "I need help setting up a port forwarding rule in my router to enable remote access to my device using a VNC Connection."
- They will need the Local IP address of your GCX/BDX.

Camera Installer - Many camera systems utilize port forwarding to enable remote monitoring. Your camera installer may be familiar with configuring your network for these types of connections.

Portforward.com - An online resource that explains port forwarding in more detail and includes several router specific guides. <https://portforward.com/how-to-port-forward/>

Internet Search - Searching your router model number & "Port Forwarding" will usually yield a guide or walkthrough using your specific equipment.