

# Remote VNC Access

## GCX & BDX Systems



**KEEP THESE INSTRUCTIONS**

REV 10/24

# VNC Remote App

The GCX 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. VNC connections are secured using 128bit AES encryption and a user-set passcode.

There are a variety of free VNC client applications that can run on any device:

- RealVNC
- TigerVNC
- TightVNC
- UltraVNC
- Mocha VNC Lite
- noVNC
- UltraVNC

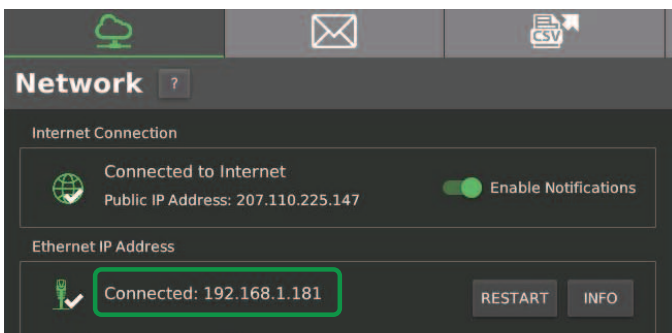
Agrowtek currently recommends the free “Real VNC” viewer application:



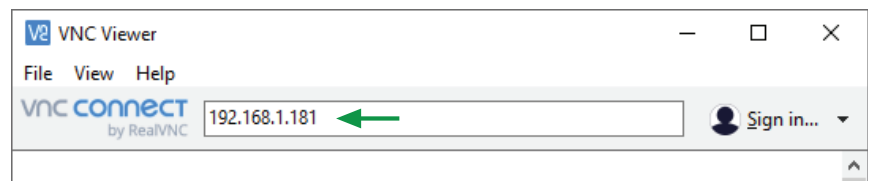
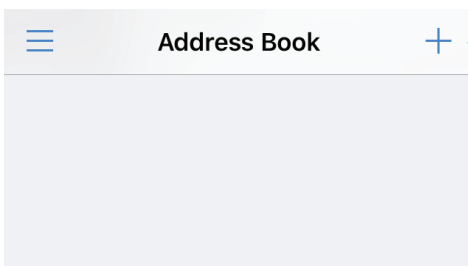
## Local Network Access

A VNC application can connect directly to the controller’s local IP address when the vnc viewer application has access to the local network. If a pc or phone is connected to the wifi or Ethernet network that the controller is on, use the controller IP address to test the VNC application.

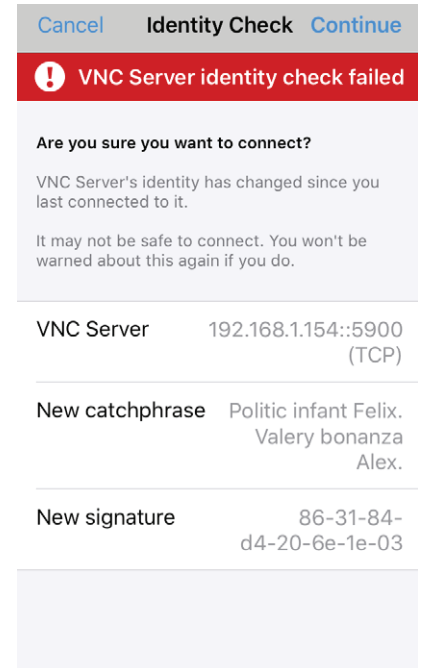
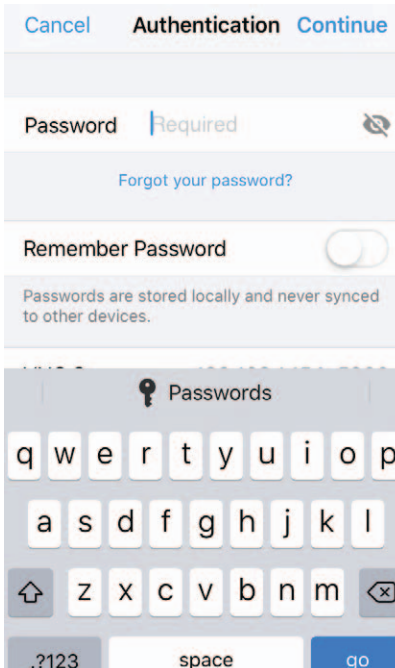
1. Locate the Ethernet or Wi-Fi I.P. address of the controller on the Network page:



2. Open the app and press the + button, or, using the PC app, enter the IP address into the address bar.



3. Enter the I.P. address of the controller and a reference name for the connection, then press Connect.
4. Enter the password then accept the new identity check message to allow the connection to establish. This message will be shown on the first connection. After the certificate is accepted the identity is confirmed.



### **i** Picture Quality

If you experience picture quality problems (low resolution) change the picture quality from automatic to medium or high.

### **i** 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.

## Remote Network Access

There are currently two recommended methods for accessing the VNC screen control remotely; port forwarding rules setup on the router/modem, or a VPN (virtual private network) connection.

### VPN

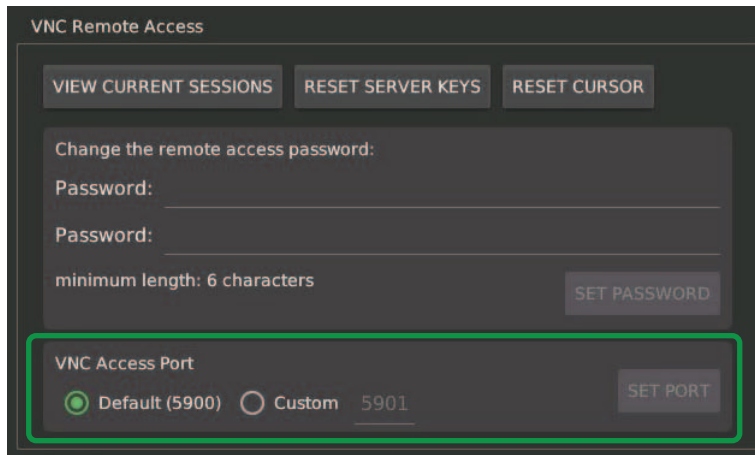
VPN (virtual private network) connections provide a secure tunnel between a remote computer and the facility network that the controller is operating on. The advantage is that VPN connections are very secure when configured correctly, and the controller can be connected to with the same IP address as on-site without any port forwarding rules. A VPN connection may require the assistance of your IT professional.

### 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. A connection is made to the controller from outside the router by going through the port forwarding rule setup in the router. This is common with gaming systems and other equipment.

## VNC Port Forwarding

GCX controllers use the standard VNC port number of 5900, or a custom VNC port can be configured.



VNC Remote Access

VIEW CURRENT SESSIONS   RESET SERVER KEYS   RESET CURSOR

Change the remote access password:

Password: \_\_\_\_\_

Password: \_\_\_\_\_

minimum length: 6 characters   SET PASSWORD

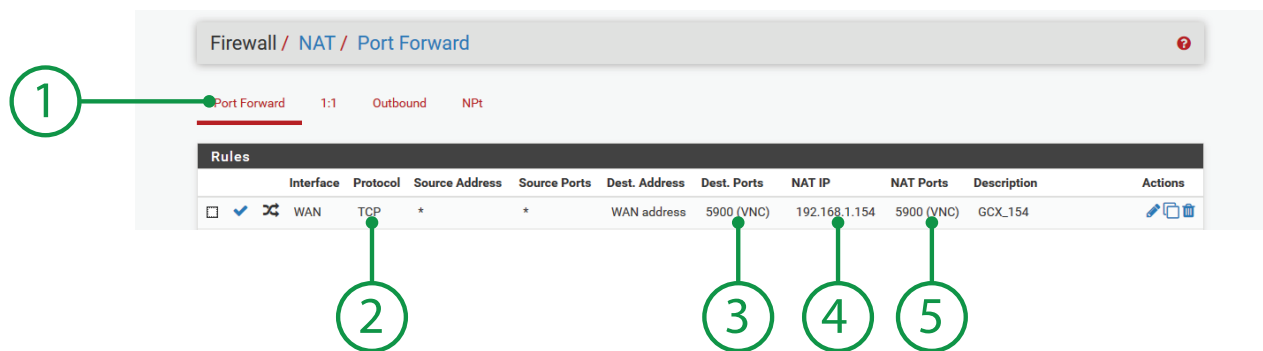
VNC Access Port

Default (5900)    Custom   5901   SET PORT

## Router Configuration

For “port forwarding” instructions, please reference the manual for your network router.

Each router has unique menus, however, the process is generally the same; an example is shown below.



1. Port Forwarding

2. Protocol

3. Destination Port

4. IP Address

5. Device (NAT) Port

Navigate to the Port Forwarding rules section of your router.

Set the protocol type to **TCP** if prompted.

The port number that is used to access the controller on the router.

*This is sometimes referred to an “external” port number.*

The local IP address of the controller as shown on the controller screen.

The port number that is used by the controller (default 5900 or customer port.)

*This is sometimes referred to an “internal” port number.*

Some routers/modems (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.

### **i** Notes

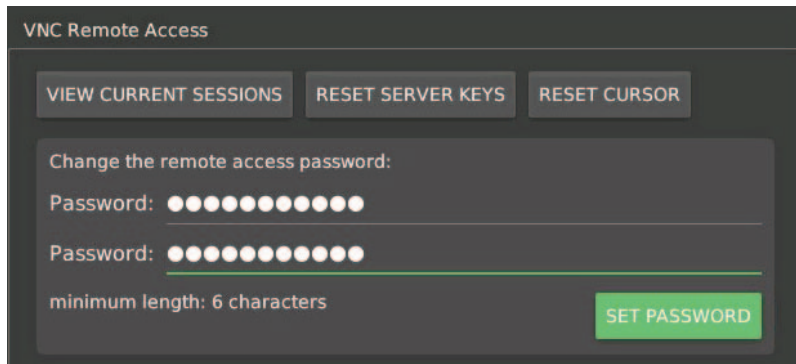
- A static IP address should be assigned to the controller in the network router’s DHCP table.
- An external port of your choice should be opened and directed to the VNC port on the GCX controller.
- If the internet service is not static IP, consider dyndns or similar service for a static access url.

## VNC Password & Security

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The VNC server has a default password ( gcxvnc ) which should be changed when the system is installed.

To change the password, navigate to the network tab and enter the desired password twice:



The screenshot shows a dark-themed window titled "VNC Remote Access". At the top, there are three buttons: "VIEW CURRENT SESSIONS", "RESET SERVER KEYS", and "RESET CURSOR". Below these is a section titled "Change the remote access password:". It contains two password input fields, each with a label "Password:" and a series of 12 dots representing the password characters. A green underline is visible under the second input field. Below the input fields, it says "minimum length: 6 characters" and a green "SET PASSWORD" button.

### Security

GCX controllers operate on a Linux OS using direct frame buffering without any windowing system. VNC connections are password protected and encrypted, with access only to the framebuffer. Internally managed security certificates and phrases will invalidate and require resetting if excessive unauthorized access is attempted. If using port forwarding, use an uncommon external port number to reduce likelihood of unauthorized access attempts. Additionally, the GCX system may be secured with user access control to prevent physical or remote access to the screen.

With secure passwords there are no known security vulnerabilities on GCX systems using VNC.  
***It is recommended to change the default VNC password when setting up your system.***