VNC & Remote Access

GCX & BDX Systems

tailscale

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KEEP THESE INSTRUCTIONS

REV 06/26

Introduction

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

Agrowtek currently recommends the following free VNC viewer apps:

Windows	Remote Ripple or RealVNC Viewer
Mac	Apple Screen Sharing app
iOS / iPhone	RealVNC Viewer
Android / Chromebook	bVNC
Linux	UltraVNC, TightVNC

The system can be accessed remotely (off-site) for free with the VNC app using the following methods:

Connection Method	**Advantage**
Free Tailscale Connection	Free, secure, easy setup.
VPN (virtual private network)	Secure, but requires IT knowledge to configure.

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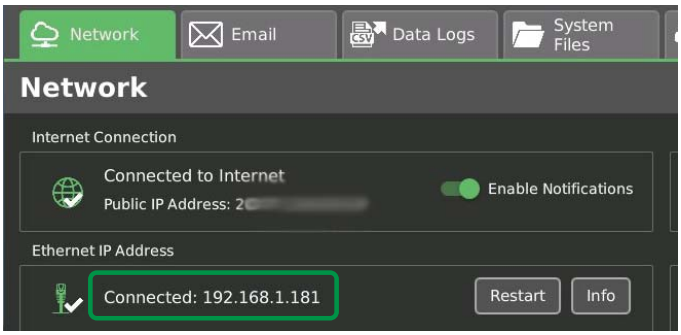
Local Network Access

Before accessing the system remotely, ensure that the system can be accessed locally. You can test the VNC connection by using a device (computer,phone, tablet) that is connected to the same WIFI or Ethernet network as the Agrowtek device.

1. Install a VNC Viewer Application. (Real VNC, Remote Ripple, etc.)

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



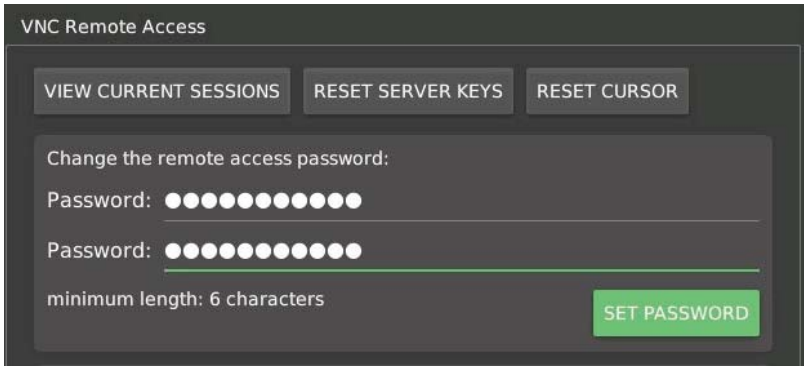
VNC Password & Security

Agrowtek controllers operate on a Linux OS 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 unathorized access is attempted. Additionally, the 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.

⚠ IMPORTANT
Change the VNC password and setup user accounts on the system to ensure system security.

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

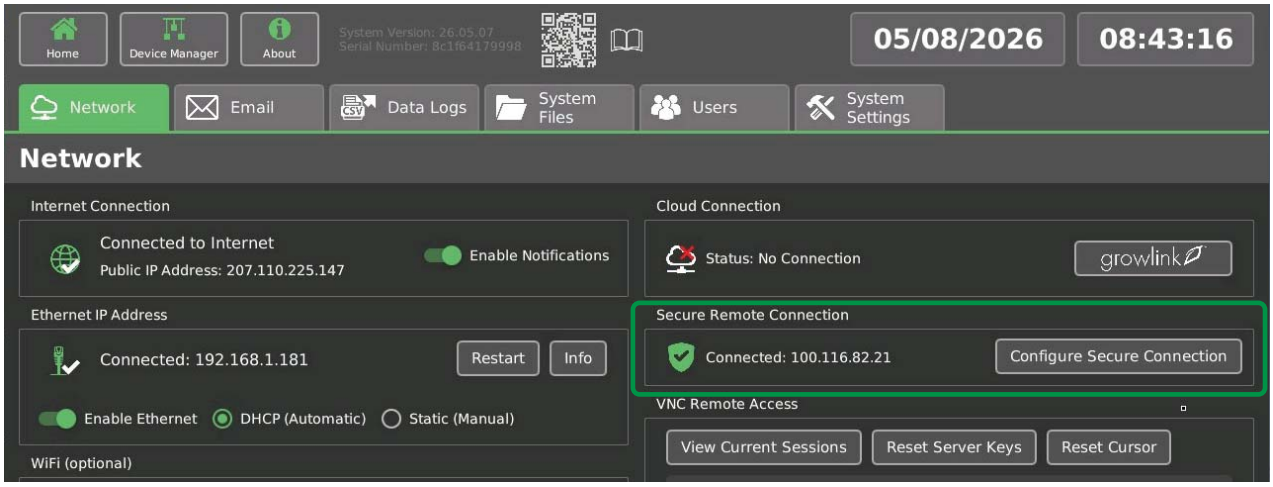


Tailscale Remote Connection

Tailscale is a free service that establishes a secure connection to your system without any port forwarding in your router. The secure connection allows the user to access the control system with the free VNC client app remotely on a phone or desktop computer over the internet.

Tailscale simplifies remote access setup for users and works with Starlink and other satellite internet services.

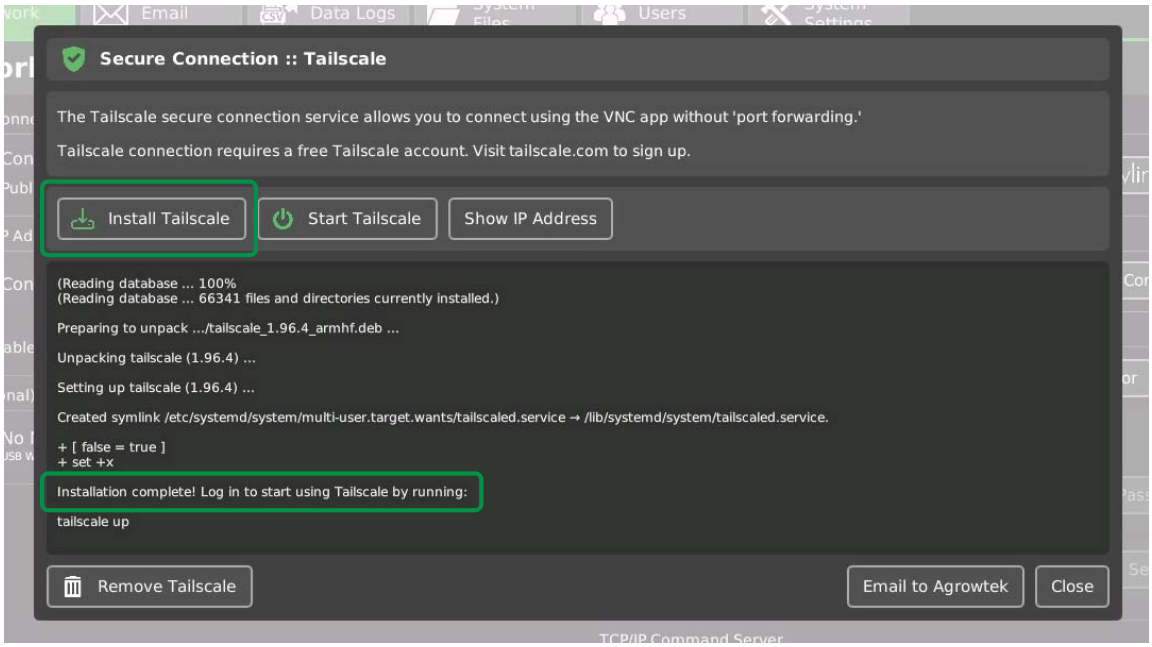
Checkout the setup video here for more information: https://www.youtube.com/watch?v=2RY1aah2ytk



Installing the Service

1. Navigate to the Network tab and press the "Configure Secure Connection" button.

2. In the Tailscale dialog, press the "Install Tailscale" button and wait for the installation to complete.
   This process may take up to a minute to complete.



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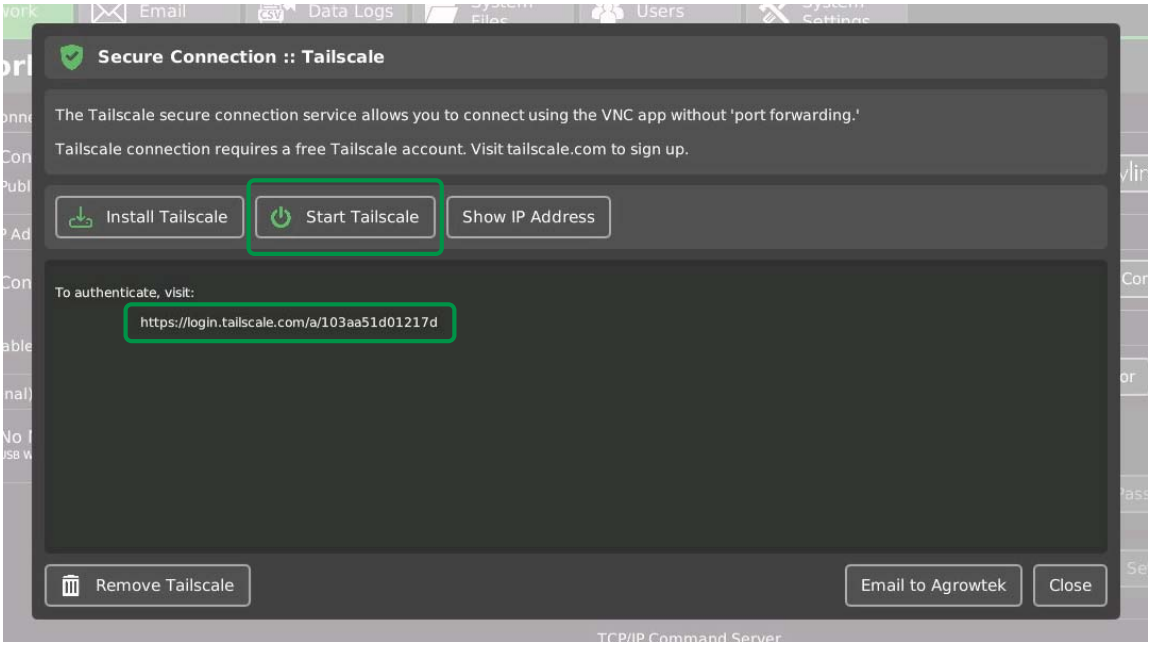
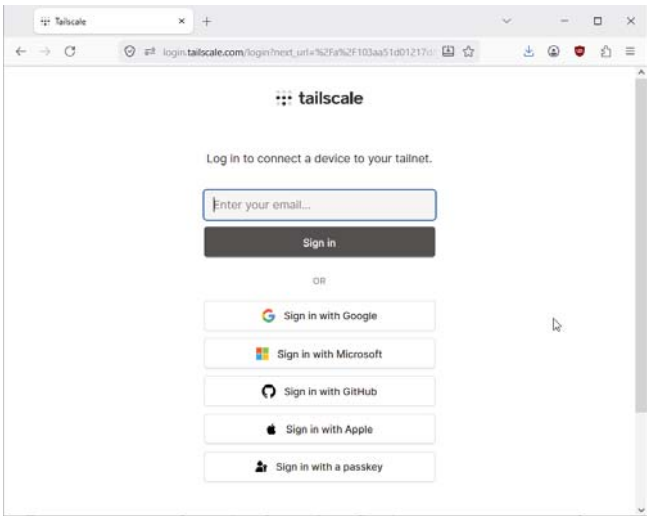
Registering the System

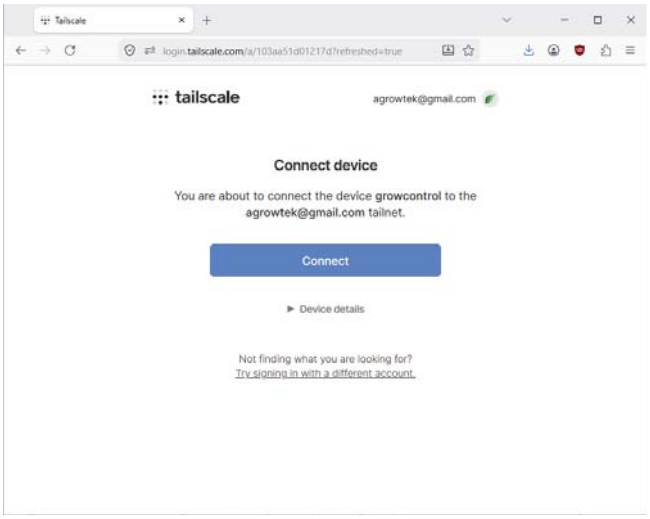
1. Once Tailscale is installed, you can Start Tailscale; press the "Start Tailscale" button. Wait for the system to generate a registration link. *This may take up to 30 seconds, please wait for the link to appear.*



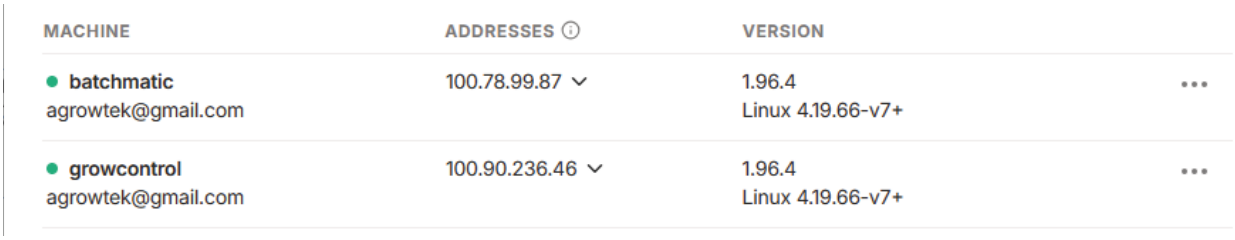
2. Open the link in a browser on your computer or phone to complete the registration with Tailscale.

If you do not have a Tailscale account, create one now.





3. The devices will now be shown in your Tailscale dashboard with their remote IP address.



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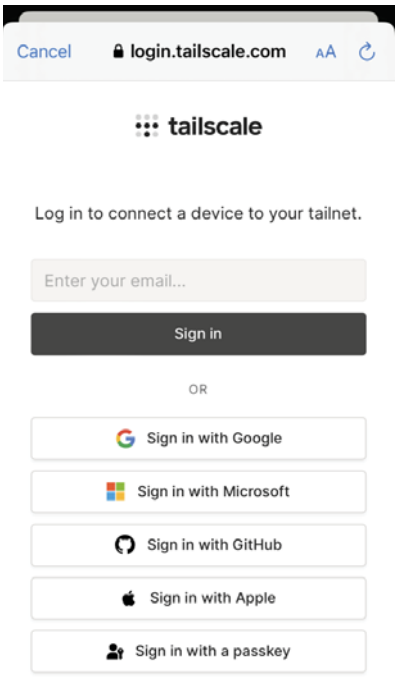
Adding Other Devices

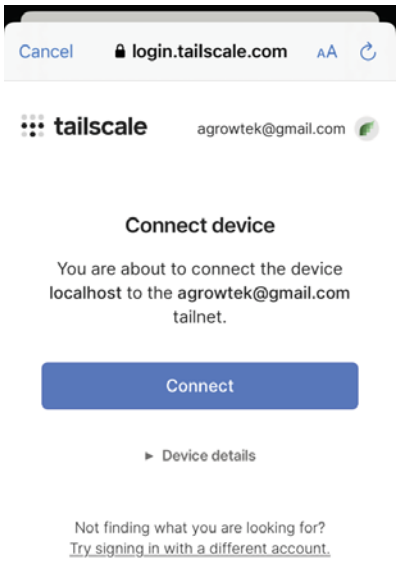
To access the Agrowtek system using the Tailscale secure connection, the Tailscale app or software must be also installed on the device (phone, pc, etc.) which will be used to connect to tha Agrowtek system. This allows a secure end-to-end connection between the devices that can only be accessed by authorized users.

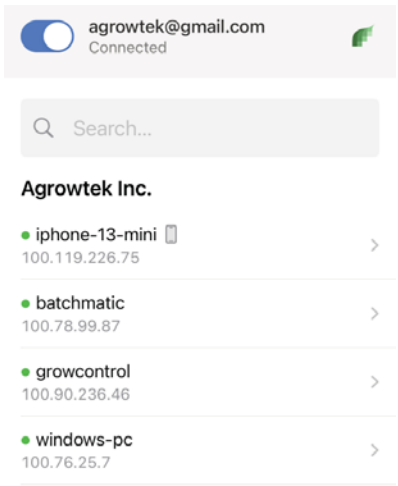
1. Visit Tailscale.com or open the app store on your device and install the Tailscale app.

2. Authenticate the device and connect it to your Tailscale account.

3. Open the Tailscale app to see all of your devices and their connection addresses.
   The connection address is used to connect the VNC app to the system.

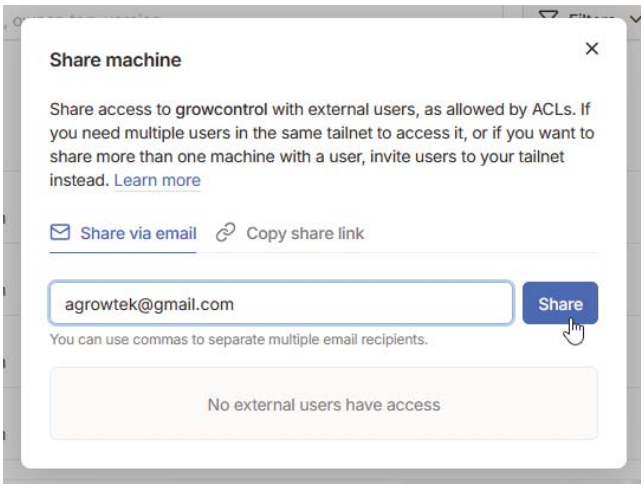






Sharing Tailscale Connections

You may grant another Tailscale user access to your system by shring the connection with them by email or a link. Select the device in your tailscale dashboard and click "Share."

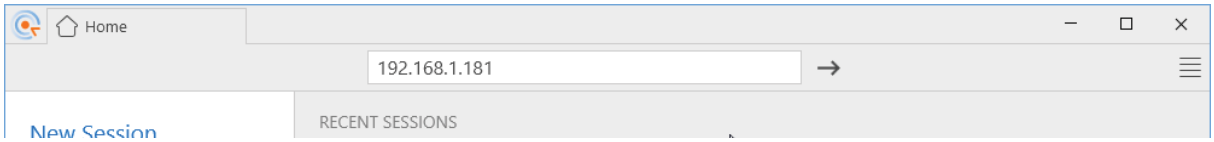


Windows Remote Ripple

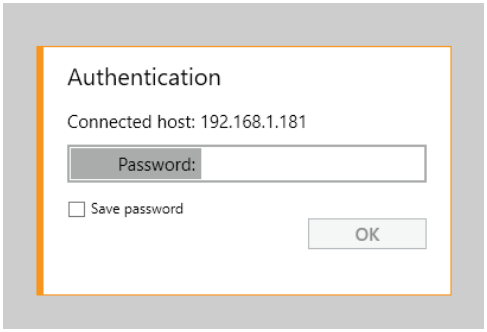
Remote Ripple is a feww VNC viewer app that is simple to use and features tabs for easy navigation between multiple VNC connections.

1. Download and install the Remote Ripple program from remoteripple.com

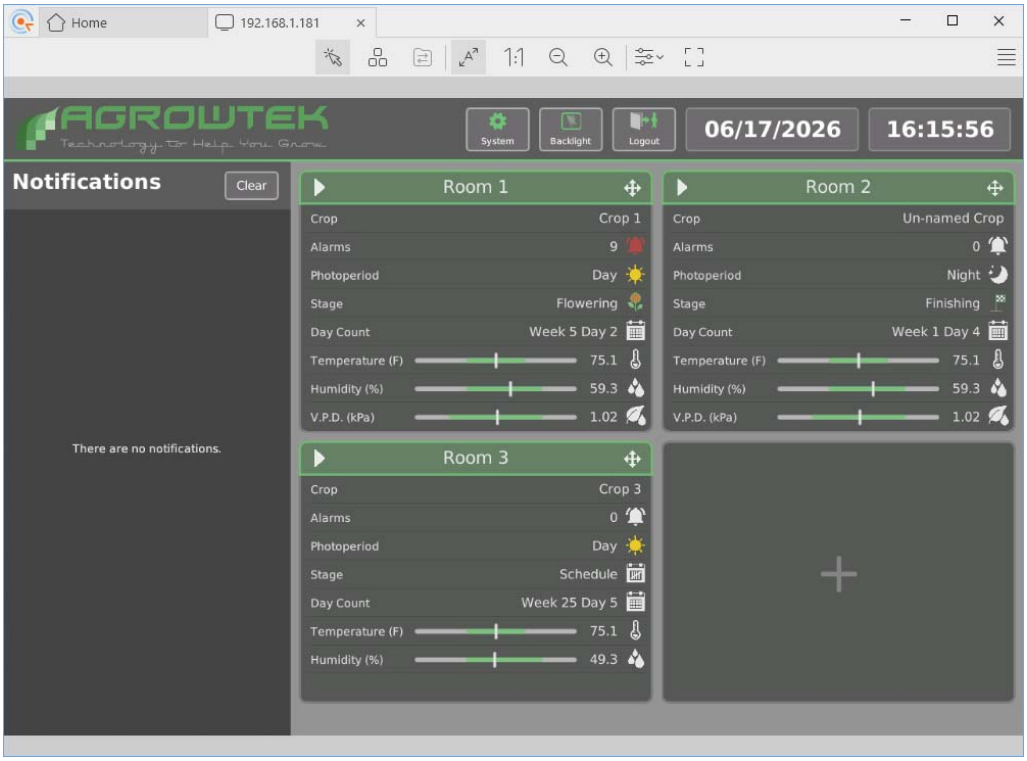
2. Open Remote Ripple and enter the controller's IP address in the address bar, then press enter.



3. An authentication dialog will pop up; enter the system VNC password and press 'OK.'



4. A new tab will be populated with the system's screen.



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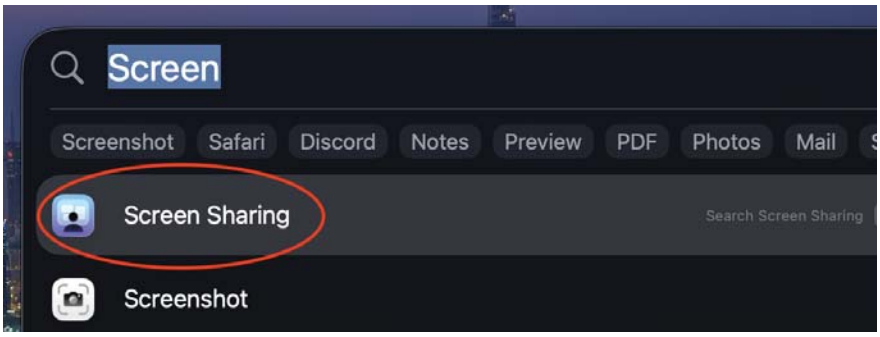
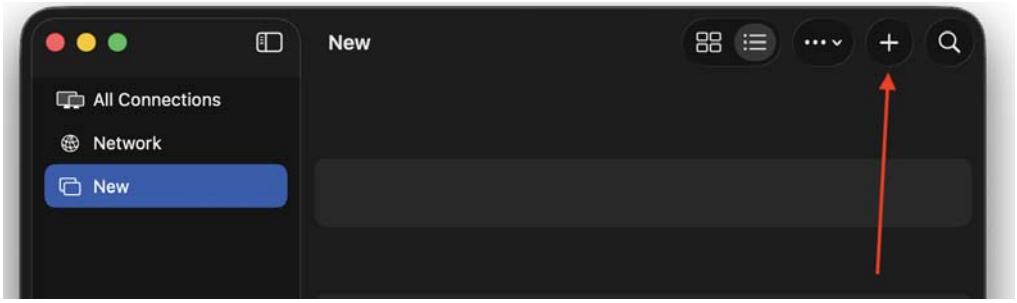
Mac Screen Share App

Modern Apple computers ship with built in "Screen Sharing" application that can be used to access VNC.

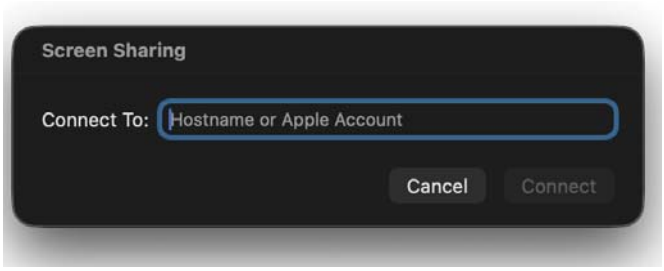
1. Launch "Screen Sharing" Application.

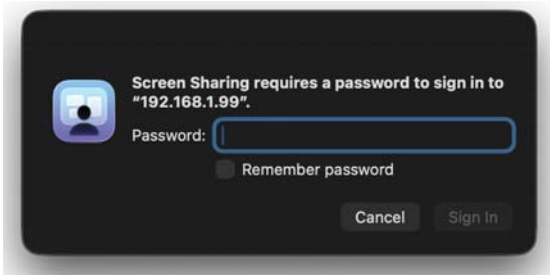


2. Press + to add a new connection.

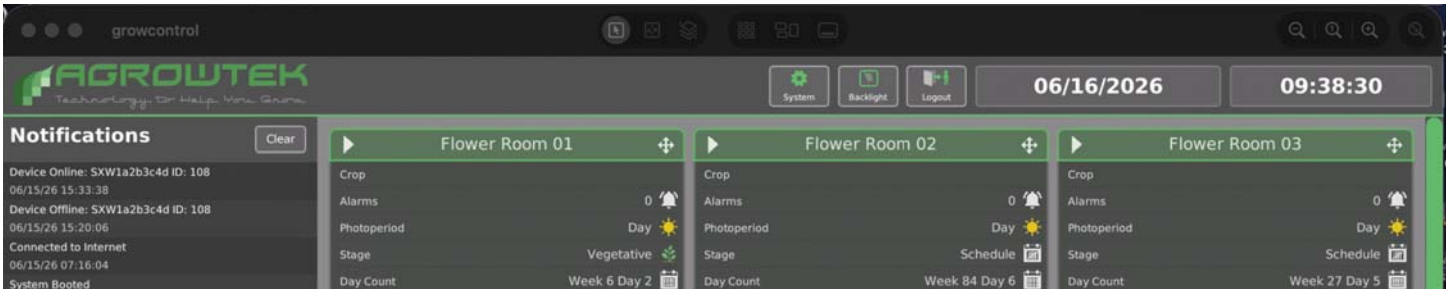


3. Enter the IP address of the controller and press 'Connect.'
4. Enter your VNC password and press 'Sign In.'





Note: Use the local Ethernet or WiFi ip address on the system's Network tab.
Configure Tailscale to access the system with a Tailscale IP address remotely.



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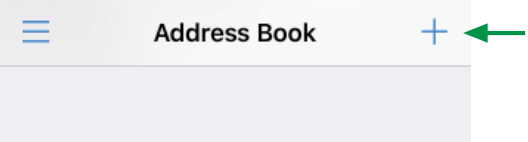
iOS / iPhone App

Agrowtek recommends the free RealVNC Viewer app on iOS available in the App Store.

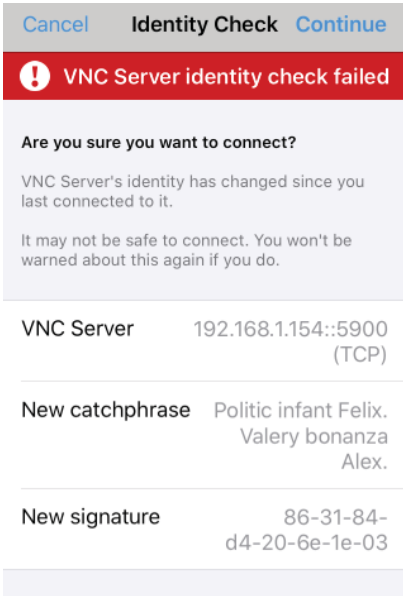
1. Open the app and press the + button to add a new address to the address book.

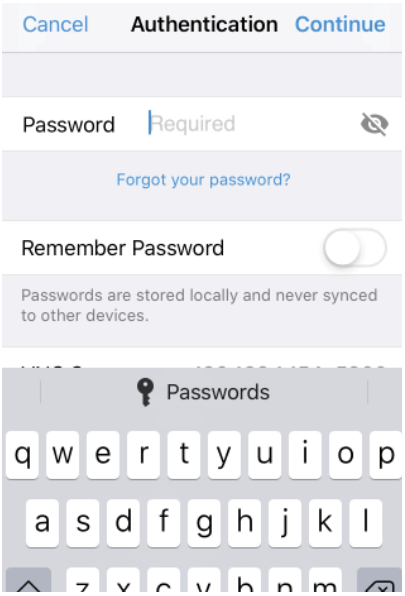


2. Enter the controller's IP address in the Address field and provide a reference name if desired.

3. Confirm the server identity (press continue). *This occurs only on the first connection to the controller.*

4. Press 'Connect' and enter the system's VNC password.





The viewer will log into the system and provide full access to the system's screen remotely.

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

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.

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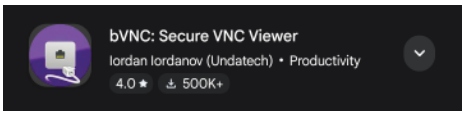
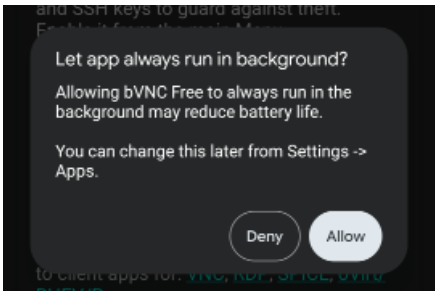
Android / Chromebook

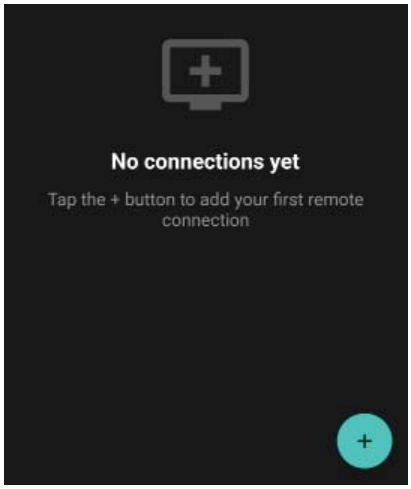
Agrowtek recommends the free bVNC Viewer app on Android available in the Google Play store.



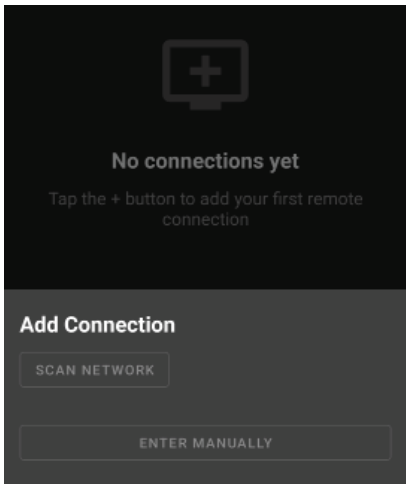
Allow the app to run in the background.



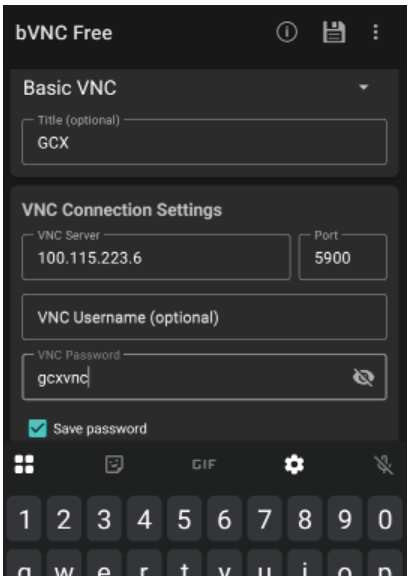
Press the + button to add a new connection.



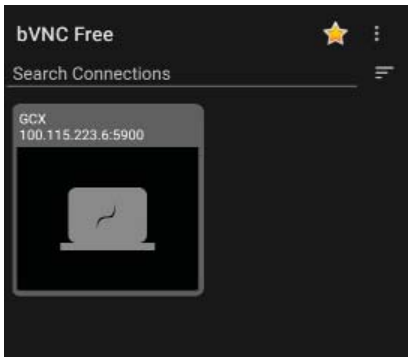
Press ENTER MANUALLY to configure the connection.



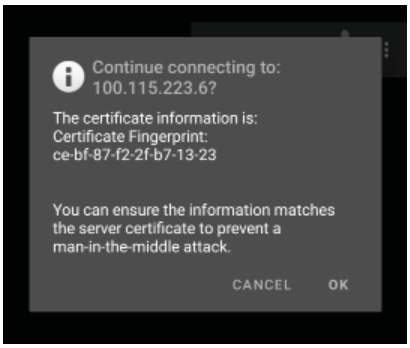
Enter the connection details; use your controller's local IP address or Tailscale IP address.



Click on the new connection to open it.



Press OK to confirm the certificate from the controller.



Troubleshooting

Problem	Solution
The mouse pointer is not aligned on the VNC window.	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. If the pointer is still not aligned, move the mouse to all four edges of the window to align the pointers.
Low picture quality.	Usually poor image quality problems are attributed to network issues or low network speed. If you experience picture quality problems, change the picture quality from "automatic" to "medium" or "high". If you continue to experience quality problems and are using WiFi, hard wire the network connection with Ethernet cable.
The Local IP address of the controller is changing causing the port forwarding to stop working.	Set the system's connection to be 'static' in the router interface so that the router does not change the system's IP address. If necessary, set a static IP address on the router.
Can not access the system with the VNC viewer; connection times out.	Ensure the system is connected to the internet. Check the internet connection status on the Network tab. Check if the system can be connected to with the local Ethernet IP address (see Local Network Access.) If using port forwarding, ensure the rule is setup correctly and you are using the Public IP address as the connection address in the app. If using Tailscale, ensure the system and the device you are connecting on are connected to the Tailscale dashboard, and you are using the Tailscale provided IP address for the system.