Welch Allyn®
RetinaVue® 100 Imager

Best practices

Welch Allyn®

Advancing Frontline Care™

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1 Introduction

About this document

This document provides supported settings and configurations to allow for the Welch Allyn® RetinaVue® Imager and the Welch Allyn® RetinaVue® Network Client to properly connect and send data on a Wi-Fi network. Please see the Welch Allyn medical device specific user guide for details on configuring the wireless on the device.

Firewall requirements

The RV100 and PC-based clients must be allowed to connect to each of the following servers through DNS:

Production
- register.retinavue.net
- client.retinavue.net
- retinavue.net

Sandbox – Integration and training
- sandboxregister.retinavue.net
- sandboxclient.retinavue.net
- sandbox.retinavue.net

Settings:

- Allow TCP port 443 (HTTPS/TLS) – Used for RetinaVue Client Application to Customer Portal
- Bypass or disable web proxy for these servers/addresses – RV100 does not support web proxy
- Allow ICMP – RV100 tests Internet connectivity by sending an ICMP Echo Request to IP 8.8.4.4 google-public-dns-b.google.com.

Best practices general recommendations

The following are general best practice recommendations for establishing durable wireless connections between the device radio and your wireless network.

Best practice	Affected types	Without best practice
Signal Strength In areas the device radio is expected to operate the RSSI Value ≥ -65dBm for wireless signals (measured when 802.11 APs set to 25mW).	Wireless	Dropped packets and loss of connectivity requiring excessive re-sends due to poor wireless coverage.
Signal to Noise Ratio (SNR) ≥15dB.	Wireless	High noise level causes dropped packets.
Spanning Tree Protocol (STP) STP should be turned off for the Welch Allyn specific VLAN/SSID.	Wireless	Dropped connections, loss of connectivity resulting in no data sent or excessive re-send attempts.
WLAN Optimization • Controller CPU utilization < 40% • Radio channel utilization < 40% • Number of SSIDs per AP ≤ 4 • Number of clients per AP ≤ 25 • AP Received packet error rate ≤ 100%.	Hardware, wireless	When network performance is outside recommended parameters, potential loss or corruption of data.

Wi-Fi

- 2.4 GHz, 802.11 b/g/n, 20 MHz channel
- WPA2-Personal with Pre-Shared Key (password) authentication
- WPA2-Enterprise with PEAPv0/MSCHAPv2 (user name and password) authentication

Network (TCP/IP)

- The RV100 uses only IPv4
- DHCP required, Static IP on RV100 is not supported.
  - Ensure that DHCP provides IPv4, Netmask, Default Router (gateway) address and a minimum of one DNS server address.

Note The DNS server address is not displayed on RV100 Network Screen.

Other recommendations

Wi-Fi network selection

- Hidden SSID/WLAN
  - For non-broadcasting networks, select **Other** from the list of networks and enter the SSID/WLAN name manually. WPA2-PSK – Leave the user name blank and complete the password field.
- Save Credentials - When entering credentials for a new network, make sure that **Save Credentials** is checked before exiting the screen.
- Delete a set of stored credentials – Select the network, clear the check box, and click **Save**.
- Clicking **Save** after entering credentials saves (or clears) the credentials but does not initiate a network connection.
- Click **Connect** to initiate a network connection.

Wi-Fi Status indicators (icons on the RV100 status bar)

- The signal strength icon ( ) indicates relative signal quality. No bar indicates there is very poor signal quality.
- The icon means that the camera was not able to communicate with the RetinaVue Network severs at the time of the exam submission. If the icon remains on the camera, it means the last attempt to submit an exam was not successful. See "Q: I am connected to the Wi-Fi and have good signal; why won't exams submit from the Review List?" on page 4.

Frequently asked questions

Q: What's the difference between the Patient List and the Review List?

A: All exams scheduled to the camera that haven't had images taken remain in the Patient List.

Once images have been taken for an exam, the exam is either submitted or sent to the Review List.

Q: Why are exams sent to the Review List?

A: Any exams appearing in this list have not been sent to the RetinaVue Network Server yet.

This means that the camera did not have a good wireless connection at the time of submission. The exam will wait in the review list until a good connection is made before automatically submitting.

Q: I am connected to the Wi-Fi and have good signal; why won't exams submit from the Review List?

A: You might have a good connection to your Wi-Fi, but there might be a setting within your network blocking communication between your camera and the RetinaVue Network Server. Look for on the camera which might indicate blocked communication.

Q: Why do I get a "Cannot connect to Server" message on the RV100?

A: The camera may timeout its initial connection attempt after power on, due to the wireless interface not being ready, which may cause the icon ( ) and the message **Cannot connect to the server** to display. Acknowledging the message automatically clears the problem once the wireless interface is connected.