LabQuest 2 Networking—
Technical Information for System Administrators

LabQuest 2 is a Wi-Fi-enabled device that supports laboratory investigations.
The wireless capabilities of LabQuest 2 provide unprecedented tools for collecting and analyzing data on mobile devices and iPad®, remote viewing and control of LabQuest 2 with a computer, and emailing sensor data and graphs for later analysis at home. These student-centric tools enable teachers to encourage collaboration among students with individual accountability.

Network-enabled features of LabQuest 2

- Printing (wireless)
- LabQuest Viewer (wireless)
- Email graphs and data
- Vernier Data Share (with a web browser or using Graphical Analysis™ for iPad®)

LabQuest 2 Technical Specifications

- 800 x 480 pixel color display with resistive touchscreen
- 800 MHz Application Processor
- Wi-Fi 802.11 b/g/n (2.4 GHz)
- Bluetooth for WDSS
- Built-in GPS, 3-axis accelerometer, ambient temperature sensor, light sensor, and microphone
- USB port for sensors, flash drives, and peripherals
- USB mini port
- MicroSD/MMC slot
- Rechargeable, high-capacity battery

The wireless features of LabQuest 2 enable teachers to do the following:

- View and control LabQuest for classroom presentations
- Monitor LabQuest devices for lab groups in the classroom
- Transfer data from LabQuest devices for analysis and saving of student work.
- Email and print graphs and data

With wireless networking enabled, students benefit from the ability to do the following:

- Connect mobile devices, including iPad, for data analysis and the ability to take home projects for reports
- Share data within a lab group
- Email graphs and data from an experiment to members of the lab group (Email messaging is not supported.)
- Print graphs and data via wireless network (Wired USB printing is also supported.)

Supported Networking Modes

Wireless

- **Existing networks (infrastructure)**
  - Supported Wireless Security
    - Unencrypted networks
    - WPA/WPA2 Shared Key
- **Classroom network (ad hoc)**
  - LabQuest 2 can establish an ad-hoc, peer-to-peer, wireless network with classroom devices.
    - This is ideal for Bring-Your-Own-Device environments where school network security is a concern or in situations where the school network is incompatible or unable to support LabQuest 2 networking.
    - Can be secured with a WEP key.

Wired

- **IP over USB**
  Directly connect LabQuest 2 to a computer using the included USB cable for classroom presentations in cases where wireless networking is not feasible. (See LabQuest Viewer)

Onboard Services

- Email - Supports Plain or TLS authenticated SMTP servers for emailing experiment data (outgoing only)
- Printing - Supports wireless printing to Bonjour/Zeroconf printers
- SSH - Onboard SSH server for remote administration
- VNC - Available for remote control and viewing of experiments
- HTTP - Serves Vernier Data Share for remote data collection and analysis to any device with a compatible web browser (e.g., Laptop, smart phone, tablet, PC, etc.)

LabQuest 2 Network Security

- SSH has a strong default passphrase.
- VNC server can be secured with a password set by user.
- Remote collection can be disabled for Vernier Data Share.
- You can utilize your existing secured wireless infrastructure, or you can create a segregated secured network for only Connected Science System data (ad hoc)