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Tech note

Using WiFi Connectivity with IP-Based TapWatch Systems

Introduction

In certain properties, using WiFi connectivity with a TapWatch system may be ideal, such as at sites with robust WiFi networks, unreliable or non-existent Ethernet connectivity, or poor cellular reception. WiFi can also be a good option for legacy remote data logger sites currently using a dial up modem because Ethernet is not available.

This tech note provides two options for using WiFi with TapWatch systems:

1. Configuring a TapWatch gateway to enable WiFi connectivity
2. Using an IOGEAR Ethernet-2-WiFi Universal Wireless Adapter connected to a TapWatch gateway or remote data logger.

Note: Those interested in using WiFi with a TapWatch system must determine if the WiFi network password is subject to change. If so, users must have a defined procedure to update the WiFi password. Failure to keep the password up to date will result in a system that cannot connect to the TapWatch application, missed reads and an inability to remotely monitor the system.

Contact Information

For questions, contact Inovonics technical support:

- E-mail: support@inovonics.com.
- Phone: (800) 782-2709; (303) 939-9336.

To Configure a TapWatch gateway to Enable WiFi Connectivity

Materials Needed

- Internet connection with a minimum of 512kbps up and down, and no filtering or proxying of HTTPS outgoing connections.
- A 2.4GHz 802.11b/g/n WiFi network with either no encryption or WPA/2 encryption.
- EN7580 TapWatch gateway or EN7581 TapWatch gateway lite.
- Computer (PC or laptop).
- A brand name USB flash drive with a FAT32 (vfat) file system for configuration.

Procedure

1. Remove the TapWatch gateway's front cover.
2. Referencing the installation instructions, press the gateway's reset button.
3. Wait for the green LED to flash.
4. Insert the USB flash drive into either of the gateway's USB ports.
5. When the red LED is solidly lit, remove the USB drive.

Insert the USB drive into the computer.

6. On the computer, open the en4080-XX-config-YYYYMMDD-HHMMSS.yaml file from the USB drive using a text editor such as Notepad ++.

Note: XX is the last two hex digits of the Ethernet MAC address, as shown on the label on the back of the housing, and YYYYMMDD-HHMMSS is the current date and time.

In the “wifi” subsection of the “network” section of the config file, configure the WiFi network as detailed below, making sure to only update the fields noted.

- country: Enter the two character ISO country code in which the gateway resides; e.g. US for the United States.
- power: Enter “enabled” to use WiFi.
- ssid: Enter the name of the WiFi network the gateway will connect to.
- passphrase: Enter the passphrase (password) of the WPA/2 WiFi network to connect to. Leave empty for an open network.
- address: Enter the IP address the gateway will use, for which there are two options:
  - Enter a static IP address and the following information, found under the Ethernet section of the configuration file that includes the following: netmask, the network mask for the attached network; gateway, the IP address of the attached network’s router; and dns, the address of the desired DNS server.
  - Specific “dhcp” to use a dynamic IP address (Dynamic Host Configuration Protocol, or DHCP) for which netmask, gateway and dns data are not required.

7. Save the configuration file onto the USB drive as en4080-config.yaml.
8. Load the configuration file onto the gateway:
   a. Safely eject the USB drive from the computer.
   b. Press the gateway's reset button.
   c. Wait for the green LED to flash.
   d. Insert the USB drive into either of the gateway's USB ports.
   e. When the red LED is solidly lit, indicating the gateway has finished processing the configuration file, remove the USB drive.

9. Wait several minutes for the amber LED to turn solid, indicating the gateway has successfully established a connection with the TapWatch application.

10. Log into the TapWatch application.

11. Select the site in question from the portfolio view and check the last sync field to confirm the gateway is reporting in.

Note: The gateway may take up to 15 minutes to sync. If the amber LED does not turn solid, or you do not observe that the gateway has reported in to the TapWatch application after 15 minutes, please review this procedure to ensure you have not missed a step. If you have not, please contact Inovonics technical support.

Using an IOGEAR Ethernet-2-WiFi Universal Wireless Adapter Connected to a TapWatch Gateway or Remote Data Logger

Materials Needed

- IOGEAR Ethernet-2-WiFi universal wireless adapter.
- Internet connection with a minimum of 512kbps up and down, and no filtering or proxying of HTTPS outgoing connections.
- EN7580 TapWatch gateway, EN7581 TapWatch gateway lite or RDL 8500 remote data logger.
- Computer (PC or laptop).

Procedure

1. Source the IOGEAR Ethernet-2-WiFi universal wireless adapter from your preferred supplier.

Note: Inovonics has certified that this WiFi adapter will successfully connect a TapWatch gateway or remote data logger to the TapWatch application when following this procedure. Customers interested in using this WiFi adapter should become familiar with the manufacturer's literature to ensure they understand its operation, optimal operating environment and warranty details. Other WiFi adapters may yield similar results but have not been certified by Inovonics. Customers interested in using other WiFi adapters should test the hardware to ensure suitability for their applications.

2. Ensure the availability of a WiFi signal where you plan to install the TapWatch gateway or remote data logger.

3. Download the latest driver at https://www.iogear.com/support/dm/driver/GWU637.

4. Disconnect your computer from the Internet (Ethernet, WiFi, cellular).

5. Plug the WiFi adapter into your computer's USB and Ethernet ports.

6. Refer to the documentation at https://www.iogear.com/product/GWU637/ to configure the adapter to a local WiFi network.

7. When you are able to browse the web, unplug the WiFi adapter from your computer's USB and Ethernet ports.

8. Connect the TapWatch gateway to the cloud proxy per the installation instructions available at inovonics.com.

9. 9.Unplug the TapWatch gateway or remote data logger from power (and modem, if applicable).

10. Plug the WiFi adapter into power.

11. Referring to the installation instructions, connect the WiFi adapter to the WAN port on the TapWatch gateway or remote data logger.

12. Plug the TapWatch gateway or remote data logger into power.

13. Refer to the IOGEAR GWU637 documentation for instructions on how to confirm set up.