

GENERAL NOTES

1. Internet connection is not required for AudioFetch to work. However, internet connection is recommended for better user experience.
 - a. Some mobile phones can experience difficulty remaining connected to WiFi if no internet. The mobile device may want to hop to an internet connected WiFi. If you are on a non-internet connected WiFi network for AudioFetch and experience the mobile device hopping to a different WiFi, you can solve this issue by turning off “Auto-Join” under the other WiFi network setting.
 - b. When first installing the AudioFetch App, you must accept the permission “Allow AudioFetch to Access LOCAL NETWORK”. You can check this setting in your mobile device within the Settings tab of AudioFetch.

SYMPTOM: Red status LED remains blinking forever (on AudioFetch box)

This means the AudioFetch or FetchExpress cannot connect into your network (cannot obtain IP address).

1. **Is the WiFi using “Captive Portal”? (splash screen or login page) . Also helpful for guest networks:**
 - a. All AudioFetch boxes must be whitelisted in the Access Point and/or Router to bypass the captive portal.
2. **Is AudioFetch box connection to network wired? (Ethernet Cable)**
 - a. Check that cable is good, plugged in securely on both ends, and plugged into active port on network router or switch. Try connecting another network device, notebook computer, etc. into the same cable to confirm it is working. Try changing cable, changing Ethernet port.
 - b. Check configuration settings of the network Router and/or Switch: ensure the Ethernet port is enabled and DHCP is enabled.
 - i. If DHCP not enabled on network, then set manual IP address in the AudioFetch Doghouse
 - c. Are Access Points (such as Meraki) operating in NAT mode? If so they must be reconfigured to operate in Bridge Mode.
3. **Is AudioFetch box connection to network wireless? (FetchExpress in Wireless Client Mode)**
 - a. Is 2.4 GHz band available? FetchExpress can only connect into a 2.4GHz WiFi network. If the network is 2.4 GHz and 5 GHz ensure band steering is not enabled which will force connections to 5 GHz.
 - b. Double-check SSID/Encryption/Password information provided at time of FetchExpress order match the current WiFi settings **exactly**. If not then re-configure FetchExpress with correct SSID/Encryption/Password settings which match your WiFi network.
 - c. Check that existing WiFi network is operating (connect another device to confirm), try adjusting FetchExpress antenna position then power cycle, try moving FetchExpress closer to Access Point temporarily then power cycle.
 - d. Reconfigure FetchExpress Wireless Client Mode SSID/Encryption/Password settings (in case they are incorrectly configured), see FetchExpress Quick Troubleshooting Guide: Wireless Client Mode WiFi SSID & Password.
4. **Is the “USE AUTOMATIC IP ADDRESS” default setting in AudioFetch appropriate for your network?**
 - a. Consider logging into AudioFetch Doghouse App/Utility and setting a Fixed IP Address under NETWORKS SETTINGS tab.

SYMPTOM: AudioFetch App unable to play - asks to go into demo mode or indicates:

“A connection was not found” or “Please ensure you are connected to an AudioFetch-Enabled WiFi”

This means the AudioFetch App cannot find the AudioFetch/FetchExpress boxes on the network – likely the network is blocking communication between App and AudioFetch boxes.

1. **Check these first:**
 - a. Ensure the mobile device (running AudioFetch App) has WiFi enabled and is connected to the correct WiFi network.
 - b. Check that AudioFetch App is updated to latest version.
 - c. Ensure “client isolation” is disabled in the Access Point or Router configuration settings.
 - i. Or if available in Access Point/Router settings: add each AudioFetch box to Client Isolation Whitelist.
 - d. Some Access Points such as Ubiquiti have a setting called “Guest Policy”, try disabling this.
 - e. Some Access Points have a setting to “Enable Multicast”, try enabling this.
 - f. If using FetchExpress in Wireless Client mode, ensure it connects into same network (or same VLAN) as users connect to.

- g. When connected to the user WiFi network (with PC or mobile device), can you successfully ping the IP address of the AudioFetch box? If not then review/adjust network settings (VLAN, Firewall, etc.) as needed to make pings work.
- 2. Do users connect to a “guest” WiFi network? (good to check all these points even if not using a guest network)**
- Ensure all AudioFetch/FetchExpress boxes are configured as public/visible devices on guest network. (check config. settings of Access Point/Router). This can involve white-listing the AudioFetchExpress MAC addresses in the router.
 - If AudioFetch box is using wired/Ethernet connection, ensure Router forwards all traffic between the guest network and Ethernet port.
 - Try mapping the Ethernet port directly into the same subnet or VLAN as users connect to.
 - Try moving users and AudioFetch boxes to a standard (not guest) WiFi network, such as the main WiFi of a Wireless Router.
- 3. Do users connect to different subnet(s) than AudioFetch boxes are connected to?**
- Use a single subnet or VLAN for users *and* AudioFetch boxes.
 - If separate subnets are required:
 - Network must forward all traffic between user mobile devices and AudioFetch boxes on the different subnets.
 - Either: a) Multicast must be forwarded between subnets; or b) DNS discovery must be used (see [Alternate Discovery Methods](#) section)
- 4. Does the AudioFetch box respond to a “ping” from a user device (or tablet/PC connected to the user WiFi)?**
- No – The network is blocking most or all communication between AudioFetch box and user WiFi, this must be resolved.
 - Yes – The network is blocking only some of the communication, usually it is blocking multicast traffic.
 - Either: a) Multicast must be allowed; or b) DNS discovery must be used (see [Alternate Discovery Methods](#) section)
- 5. Other things to check:**
- Are Access Points (such as Meraki) operating in NAT mode? If so they must be reconfigured to operate in Bridge Mode.
 - Cisco Meraki Access Points and a feature they have called: Air Marshal, which can deliberately interfere with nearby AFEs operating in Access Point mode. If the AudioFetch hardware can not be discovered, try whitelisting the AudioFetch SSID under Air Marshal.
 - If the FetchExpress will not connect in client mode to Cisco gear, check the wireless firewall and traffic shaping rules-layer3 to “allow”.
 - If UniFi router set to guest network, within UniFi router advanced settings tab, change from Guest Hotspot to Standard.
 - Does Access Point and/or Router have a firewall enabled which blocks traffic between users and AudioFetch boxes?
 - Either: a) Whitelist AudioFetch boxes (MAC addresses); or b) Add rules allowing all AudioFetch traffic (see AudioFetch App Note: Network Quick Start Guide)

SYMPTOM: AudioFetch App seems to start correctly (no error messages) but audio cannot be heard

1. Check these first:

- Check Doghouse “Channels Setup” page and ensure all desired channels are enabled.
- Check Doghouse “Audio Settings” page and try adjusting Audio Gain up while monitoring Peak Audio Status number.
 - If Peak Audio Status remains at 0%, it means there is no output signal from the TV, or the cable from TV is bad. Check that cable is plugged into correct jacks on back of TV, check TV settings to ensure Audio output is enabled with sufficient volume, try another cable.
 - If using digital optical or coax output from TV, check TV settings to ensure output is set to PCM (not Dolby).

2. If using FetchExpress:

- Check Doghouse “Audio Settings” page and ensure Microphone Enable checkbox is unchecked (unless using a microphone).

3. If using AudioFetch Signature or Lite

- Check Doghouse “Audio Settings” page and ensure Public Address dropdown selector is set to “Disabled”.

ALTERNATE DISCOVERY METHODS

The AudioFetch App tries to discover AudioFetch boxes using IP multicast communication. If the network blocks multicast traffic and it cannot be enabled for some reason, then the network must be configured to allow one of these alternate discovery methods:

1. DNS

- a. The AudioFetch boxes must be assigned fixed/static IP addresses:
 - i. This is usually done by configuring the network DHCP server to reserve static IP addresses for each AudioFetch box's MAC address.
- b. Double check that each AudioFetch box is configured with a unique box letter in each of the Doghouses (Multi-Box Setup page)
- c. The network Router must be configured to run a Local DNS Server (consult Router manual or contact manufacturer's tech support)
 - i. For example, Cisco Small Business Routers can be configured through their GUI setup with "DNS Local Database" which is a local DNS server.
- d. The Local DNS Server must be configured with manual entries for each of the AudioFetch boxes, each box must be given a unique hostname in this format: audiofetch, audiofetch-2, audiofetch-3, audiofetch-4, etc.
- e. For more information, consult the AudioFetch App Note: Network Details

2. SSDP Fallback

- a. In some cases where multicast traffic is generally restricted from or between clients on the WiFi network, it may be possible to open up one-way multicast traffic *from* the AudioFetch box(s), which will allow the AudioFetch system to work.
- b. Is AudioFetch box connection to network wired? (Ethernet Cable)
 - i. Check network Router settings and configure to allow multicast from the AudioFetch Box(s).
 - ii. Check Access Point settings and configure to allow multicast from the wired connection through to the WiFi.
- c. Is AudioFetch box connection to network wireless? (FetchExpress in Wireless Client Mode).
 - i. Check Access Point and/or Router settings to determine if it is possible to enable (whitelist) multicast from the AudioFetch box(s).