Here's the technical stuff

INSTALLATION TIPS

- Mount the system where it can easily be reached to reboot.

- To access advanced features, the system must be connected to a public internet network ensuring wireless phones can see wired local servers.

- Access points need to be 801.11n or better; dual band preferred.

- If you want a static IP address, please request prior to shipment.

- Avoid mesh or multi-hop networks and avoid crowded wi-fi frequencies.

- Perform a site survey and check interference issues before finalizing the installation.
  2.4 GHz wi-fi has only three non-overlapping channels.

I.T. CHECKLIST

Required

- ☐ Mount system where reset switch can be reached
- ☐ Train venue personnel on how to reset the system
- ☐ Train venue personnel on how to reset the router
- ☐ Access point (AP) is enterprise grade
- ☐ System has good ventilation
- ☐ Smart phone can hear audio with Audio Everywhere app
- ☐ Smart phone can access internet while app is running in background
- ☐ Access point bandwidth is set to 20 MHz on 2.4 GHz, 40 MHz on 5 GHz band
- ☐ Router/DHCP server IP address range is at least 200
- ☐ IP lease times are less than or equal to 24 hrs = 1,440 min = 86,400 seconds
- ☐ Mesh or multi-hop Wi-Fi WLANs are NOT used
- ☐ TKIP encryption is NOT used
- ☐ Signal-to-noise ratio on the Wi-Fi channel is at least 20 dB
- ☐ A dual-band single-radio AP is NOT used
- ☐ Check Wi-Fi spectrum with tool like Android's Wi-Fi Analyzer app to make sure there are no channel conflicts

Recommended

- ☐ Access point is dual-band
- ☐ Access point is 802.11 ac or better
- ☐ Access point uses "airtime fairness" to favor advanced phones
- ☐ Access point uses "band-steering" to favor the 5 GHz band
- ☐ BSS minrate set to about 12,000
- ☐ Router/Switch is 1000 baseT (Gigabit) connected with correctly terminated CAT6
- ☐ Untwisted pair Ethernet wires should be no longer than 1 cm
- ☐ Wi-Fi encryption is NOT used, the system is OPEN
- ☐ After performing a site survey, the AP frequency is set to a fixed value, or mean time between channel hops is no less than 30 min

NETWORK GUIDE

LAN Ports and Services

- Servers expose an HTTP server on port 8000. They both receive and originate requests on this port. Protocol HTTP.
- Servers expose a file server on port 90. Protocol HTTP.
- Servers listen on port 16384.
- Servers RTP on port 16384.
- Servers use Zeroconf (Bonjour/Avahi). Multicast UDP (also called mDNS), usually on port 5353 (Typical address 224.0.0.251).
- For enterprise mode operation (via IP address or CNAME), mDNS is not needed.
- The servers send RTP packets using UDP to the apps over a range of ports.
- Service ID are _ExXothermic._tcp and _AsClientExXothermic._tcp.

WAN ports and services

- Our Cloud server is gears.exxothermic.com (IP address: 108.166.110.178, but subject to change) via Cloud port 1025. Protocol HTTP.
- Media files are stored on *.rackcdn.com Protocol HTTP.

How they look if you scan the LAN

1. MX2's: ExXtractor v.2 (Shuttle)
2. MX3's: Odroid (WIBRAIN)
3. MX3 and MX5 after 2.47 shows Venue Server serial number. E.g., AEL4-43HY-...
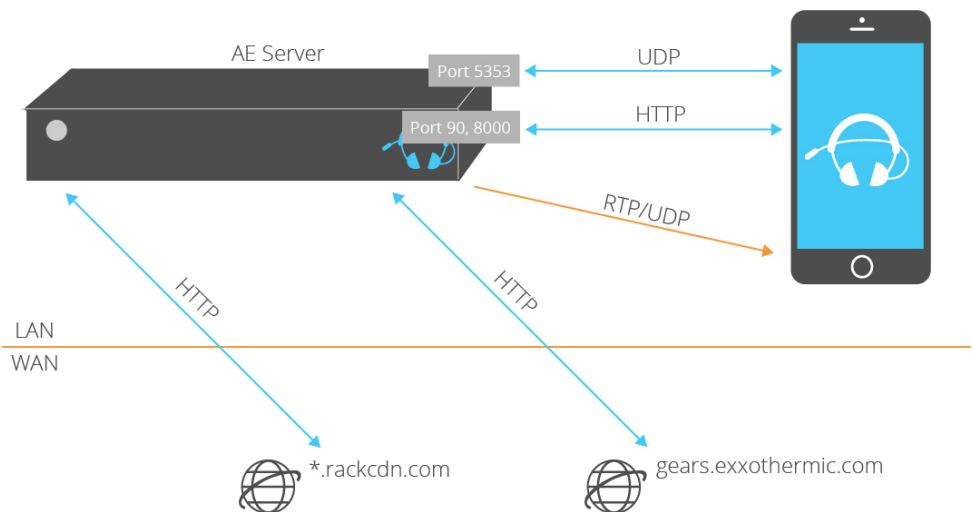
Alerts

- For Cisco equipment, see audioeverywhere.com/Cisco.
- For Aruba equipment, see audioeverywhere.com/Aruba.
- When using guest mode, white list the Venue Servers based on the Venue Server MAC address. Guest modes typically have many security features varying based on vendor. See audioeverywhere.com/GuestNet.
- ASUS wireless routers are generally incompatible with the Audio Everywhere system, especially when isolated from the internet.

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