aruba

a Hewlett Packard
Enterprise company

TECH BRIEF

ARUBA USER EXPERIENCE INSIGHT (UXI) – SENSORS

Aruba User Experience Insight offers 2 types of sensors, G5 – supporting Wi-Fi 5 and earlier network environment, and G6 – supporting Wi-Fi 6 and earlier network environment. Each G5 and G6 sensor is further categorized based on whether it uses Cellular in addition to Wi-Fi and Ethernet for provisioning and backhaul data transfer.

1. G5 Models:
   - UX-G5E – Wi-Fi + Ethernet
   - UX-G5C – Wi-Fi + Ethernet + Cellular
2. G6 Models:
   - UX-G6 – Wi-Fi + Ethernet
   - UX-G5C – Wi-Fi + Ethernet + Cellular

This brief explains how customers can deploy and use Aruba UXI sensors:

1. WHAT'S IN THE BOX:

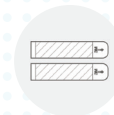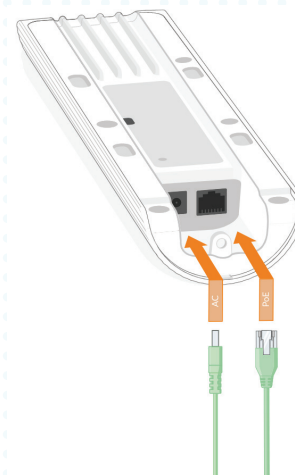1 x Sensor | 1 x Mounting Bracket | 2 x Drywall Anchors | 2 x 3mm Screws

1 x Wrench | 2 x 3M Command Strips

2. INSTALLATION

Power

For the sensor to communicate with the dashboard you must connect the sensor to an ethernet port with internet access and ensure the URLs mentioned in the connectivity section are reachable.

Installation Checklist

Sensors are designed to be mounted on a vertical surface, oriented vertically with the Aruba logo at the bottom. Other orientations may be used to accommodate cabling requirements. Below is the list of recommendation on sensors installation:

1. Near to where -
   - Users congregate
   - or Wi-Fi is used extensively
   - or Wi-Fi performance is critical
   - or there have been performance complaints
2. Ensure Ethernet is connected
3. With good Wi-Fi coverage
4. Further than 5ft (1.5m) from the nearest Wi-Fi access point
5. Indoors, within 32-95°F (0-35°C)
6. Away from physical obstructions including cabinets, server rooms, underneath desks etc.
7. At a similar height to users' phones or laptops:
   - mounted on a wall or pillar at a height of 4-5ft (1.2-1.5m)
   - or on a desk/table
8. Away from direct sunlight
9. Safe from contact with water
10. Away from significant electrical current
11. Away from metallic surfaces
12. Safe from accidental damage from doors, moving furniture, equipment, and passers-by

Mounting Options
1. Secure wall installation
2. Quick wall installation with removable adhesive
3. Secure junction box installation
4. Ceiling and Tbar installation (mounting kit sold separately)
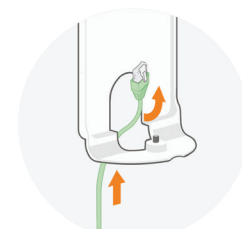5. Secure mount with Kensington Lock

(Warning - Take necessary safety precautions, use appropriate protective gear and use the proper tools.)

1. Steps for secure wall installation

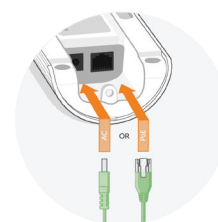**Step 1:** The sensor should be mounted vertically with the Aruba logo at the bottom.


Step 2: Follow the installation checklist to find an appropriate spot on vertical surface such as a wall or pillar.
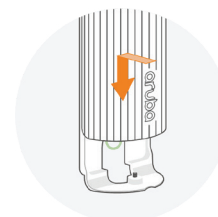

Step 3: Install the mounting bracket using the provided screws and drywall anchors if necessary.

Step 4: Route the power supply through the large hole at the bottom of the mounting bracket.

Step 5: Power the sensor using PoE or the AC power supply (sold separately).
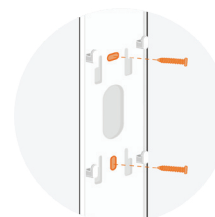
Step 6: Slide the sensor on the mounting bracket.

Step 7: Tighten the security screw with the provided wrench.
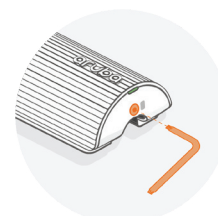

Download the wall mounting guide

## 2. Quick wall installation with removable adhesive

Using the included command strip adhesives is a quick and simple way to mount the sensor, but may be less secure in some environments.

Note - Only use adhesives on vertical surfaces lower than 6.5ft (2m) and in areas where the sensor will not hurt anyone if it falls.

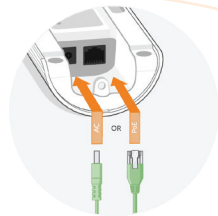**Step 1:** The sensor should be mounted vertically with the Aruba logo at the bottom.
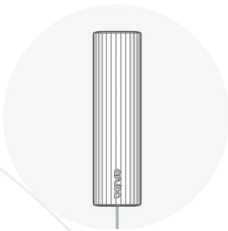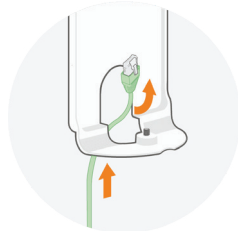
Step 2: Follow the installation checklist to find an appropriate spot on vertical surface such as a wall or pillar.

Step 3: Clean the wall surface with rubbing alcohol and let dry. Do not use household/industrial cleaners.

Step 4: Route the power supply through the large hole at the bottom of the mounting bracket.

Step 5: Power the sensor using PoE or the AC power supply (sold separately).

Step 6: Slide the sensor on the mounting bracket
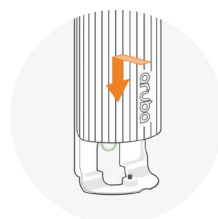
Step 7: Remove Command Strip red liners. Press adhesives to the back of the mounting bracket using the markings as a guide.

Step 8: Remove black liners. Press mounting bracket firmly to wall for 30 seconds, or more until secure, then slide sensor onto mount.

Download the solid surface mounting guide

Step 9: Tighten the security screw with the provided wrench.

3. Secure junction box installation

Step 1: The sensor should be mounted vertically with the Aruba logo at the bottom.

Step 2: Follow the installation checklist to find an appropriate spot on vertical surface such as a wall or pillar.

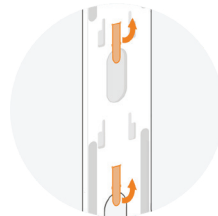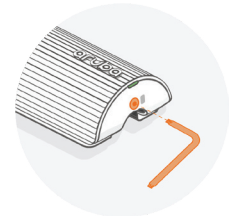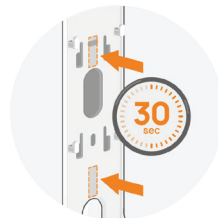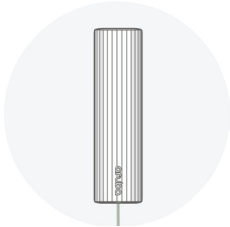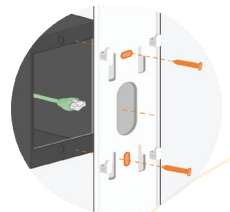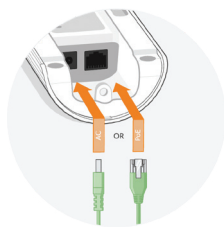**Step 3:** Attach the sensor mounting bracket to the box using the provided screws, and route the power supply through the mounting bracket opening.

Step 4: Power the sensor using PoE or the AC power supply (sold separately).

Step 5: Slide the sensor on the mounting bracket.
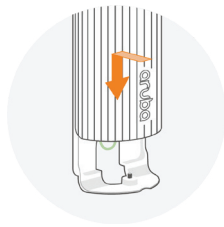
Step 6: Tighten the security screw with the provided wrench
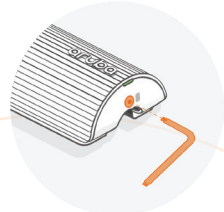
4. Ceiling and Tbar installation (mounting kit sold separately)

Step 1: Follow the mounting kit directions to attach the mounting kit to the ceiling.

Step 2: Route the power supply through the large hole at the bottom of the mounting bracket.
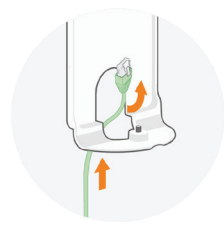
Step 3: Power the sensor using PoE or the AC power supply (sold separately).
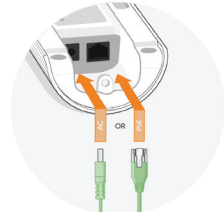
Step 4: Slide the sensor on the mounting bracket.
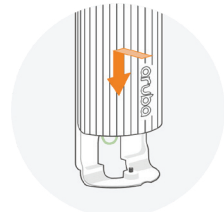
Step 5: Lock Ceiling Rail Adapter onto mounting bracket.
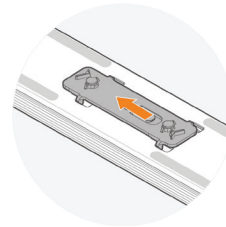
Step 6: Lock Mounting Bracket onto Ceiling Rail Adapter.
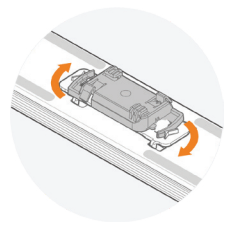
Step 7: Twist assembled sensor onto Ceiling Rail.
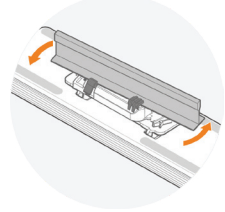
[Download the ceiling rail mounted guide](#)

5. Secure mount with Kensington Lock

Step 1: After mounting in a public place, secure the sensor using a Kensington lock
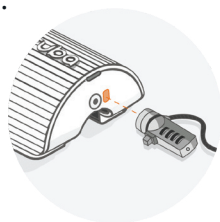

3. CONNECTIVITY

Required URLs

The sensor requires access to at least one wired or wireless network with Internet access and following URLs reachable:

Description	URL
Primary URL for all sensor communication with our backend systems	https://device-gateway.capenetworks.io
Firmware updates, tools, and patches	https://cape-device-binaries.s3.amazonaws.com
Firmware updates, tools, and patches	https://cape-build-artefacts.s3.amazonaws.com
Sensor storage	https://cape-storage-service.s3.amazonaws.com

The sensor uses one of the following methods to get the correct time:

Description	URL
NTP server	https://0.pool.ntp.org
Backup HTTP (Port 80) check	http://device-gateway.capenetworks.io

Note - If these URLs on the ethernet network are only available through a proxy, you must use the Aruba User Experience Insight Install and Troubleshooting App to set the initial proxy configuration.

For additional troubleshooting help and to apply configuration in the event of poor cellular data coverage, you can download and install the Aruba User Experience Insight Troubleshooting App

Connectivity Check

The following URLs are used by the sensor to test whether the sensor has external connectivity. Failure to reach these URLs will result in an error on the dashboard that say "Unexpected Captive Portal or Proxy"

- http://cdn.capenetworks.io/auth
- http://cdn.capenetworks.io/connectivity-check
- http://35.241.22.134/auth.html
- http://35.241.22.134/connectivity-check
- http://captive.apple.com/hotspot-detect.html
- http://connectivitycheck.gstatic.com/generate_204

Note - If your network has a Captive Portal, depending on your setup, you probably do NOT want to whitelist the following URLs. This is because the sensor might not be properly redirected to the Captive Portal. Instead, the following URLs should be accessible, but result in a Captive Portal redirect response for unauthenticated clients.

Contact support to set up a Captive Portal test.

For Sensors supporting Cellular module – G5C and G6C

Cellular data connectivity is required -

Included with your User Experience Insight software subscription is a managed cellular service provided by Twilio. For best results, position the sensor in a location likely to have good cellular data coverage (3G/4G/LTE) such as within the first 2 walls of a building.

For a list of available Twilio operators as well as coverage maps, see the following external document "Programmable Wireless: Available Operators (PLMNs)" https://www.twilio.com/docs/wireless/available-operators.

4. STATUS LIGHT

The status lights indicate the state of UXI Sensor:

|		
●	Blue	Booting without factory reset button
●	Magenta	Booting with factory reset button
●	Magenta blinking	Running factory reset
○	White blinking	Software starting
○	White	Sensor testing your network
●	Green blinking	Waiting for configuration
●	Yellow	Power outage detected
●	Yellow blinking	Power outage shutting down
●	Orange	No connectivity
●	Cyan blinking	Waiting for configuration via Bluetooth / Bluetooth mode ON
●	Rainbow	Identifying sensor

5. SENSOR ONBOARDING AND TROUBLESHOOTING APP

Use the UXI App to troubleshoot any issues which may be preventing sensors from connecting to the UXI cloud service. Onboard sensors quickly and easily on Ethernet networks with 802.1X authentication or proxies using the App's hands-free auto configuration via Bluetooth.

The application supports sensor models UX-G5E and UX-G5C only. UXI App is available for iOS devices. Android app coming soon.

How it works

1. In the User Experience Insight dashboard, configure the ethernet network with the appropriate settings and assign the network to the sensor.
2. Download and install the User Experience Insight Troubleshooting Application on your smartphone.
3. Enable Bluetooth on your smartphone.
4. Open the Aruba UXI App. The app will scan for nearby sensors. Only sensors with issues connecting to the UXI cloud will be displayed.
5. The app will automatically download available configuration settings and transfer them to sensors nearby. No pairing or other interaction is required.

Download the Aruba UXI App
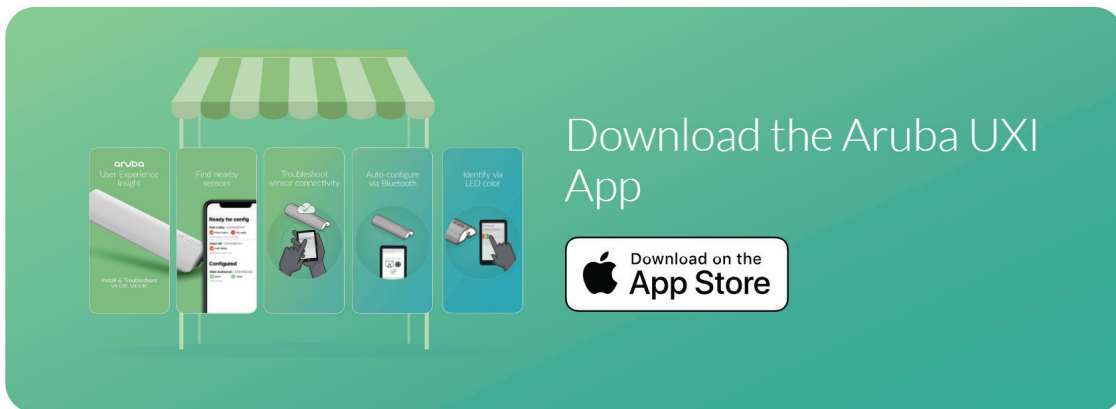
Nearby Sensors - See sensors within Bluetooth range. View sensor information including visible SSIDs and signal strength.
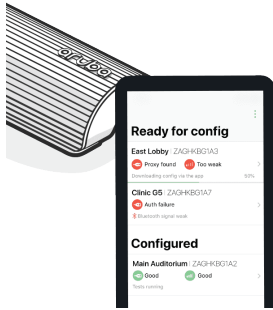
Identify Sensors - Pre-provisioning multiple sensors? Identify a specific sensor from the app. Swipe, or tap "Identify" to change the sensor's Status LED color.

Troubleshooting - Diagnose issues preventing sensors from reaching Aruba cloud services via Ethernet or cellular. See network interface and connection information, issue details, and suggested fixes.
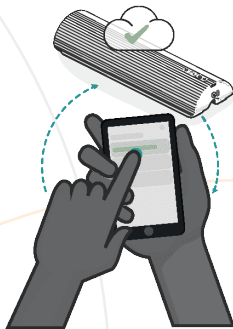
Auto Configure –

Step one: Set wired network configuration, including 802.1X credentials, certificates, and/or proxy settings on the UXI dashboard.

Step two: Hold your app-enabled device near a sensor to automatically apply configuration via Bluetooth.
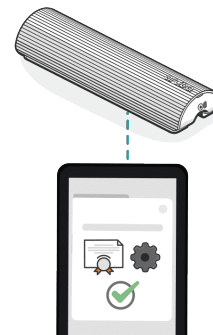
Private and Secure - The app makes use of the same industry leading authentication as the UXI dashboard, restricting usage to only those linked to your account. All communication between the UXI device and app is encrypted and makes use of unique random identifiers.

6. SENSOR SIZING GUIDE

How many User Experience Insight Sensors do I need to monitor my network?

The number of sensors you need depends on your environment and monitoring needs. Here are some guidelines which can help you decide how many sensors are right for you.

General Guidelines

- Place at least one sensor in each area that users congregate or use Wi-Fi the most, and in areas with Wi-Fi complaints
- Place sensor in areas with Wi-Fi or network performance concerns or complaints
- Place sensor in locations that are difficult, time consuming or expensive to reach in person (e.g., remote branches)
- Place sensor in any areas with mission-critical equipment connected to Wi-Fi
- Use at least one sensor per SSID tested
- Do not place sensor in areas with access points that get very little data traffic such as coverage access points on the edge of your building or in less frequented areas (e.g. storage rooms)
- In large networks with multiple access and aggregation switches, consider placing at least one sensor per access switch
- Try not to move sensor after installation as this invalidates comparisons with historical data. If you plan to move a sensor to trouble spots in response to user complaints, we recommend keeping a spare Sensor for temporary, tactical deployments
- Typically, expect a ratio of one sensor for every six to 24 Access Points
- When in doubt, start small and add more sensor over time
- Speak to a User Experience Insight product expert if you need more information

Read on for additional guidelines and ideas by type of environment.

SMB and Enterprise

- 1-2 sensor per open-plan working area
- 1 sensor per:
  - Lobby or reception area
  - CEO / executive office
  - Busy conference / meeting room
  - Cafeteria
  - Remote branch

Hotels

- 1-3 sensor in the hallway on each of the hotel floors
- 1-2 sensor per lobby
- 1 sensor per:
  - Business center
  - Hotel conference and meeting rooms
  - Restaurant or cafeteria
  - Fitness center
  - High occupancy staff areas (kitchen, working areas, housekeeping etc.)

Hospitals

- 1-3 sensor in the hallway of each hospital floor
- 1-2 sensor in high occupancy staff / nurse and doctor areas (kitchen, working quarters, resting areas, finance, insurance, medical records etc.)
- 1 sensor per:
  - Lobby or reception areas (ground level and receptions on respective floors)
  - Cafeteria or food court
  - Patient waiting area
  - Family visitation areas

Education

- 1-3 sensor in the hallway of each university or school floor
- 1-2 sensor per cafeteria
- 1-2 sensor per library or study Area
- 1-2 sensor per indoor sports facility
- 1-2 sensor per high occupancy staff/teacher/management areas (kitchen, working areas, principal office, finance and accounting, etc.)
- 1 sensor per:
  - Large classroom / lecture venue
  - Computer room / public computer desk area
  - Laboratory

Shopping center or mall

- 1-3 sensor per food court
- 1-2 sensor per major store / anchor tenant
- 1 sensor per entrance area
- 1 sensor near rest rooms

Arena

The number of sensor needed highly depends on the venue size and capacity.

7. RESOURCES AND SUPPORT:

Help Articles - Read our handy articles about common questions we get on our support channel.

Read

Intercom - If you experience any issues with your sensor or dashboard, use the speech bubble icon at the bottom right of your dashboard to chat to someone from Aruba User Experience Insight team.

Go To Dashboard

Compliance Documents:

User and Deployment Guide

G-Series Power Adapter

G-Series Welcome Sheet

UX- G5C
UX-G5C Startup Guide

UX-G5C Compliance and Environmental

UX-G5E
UX-G5E Startup Guide

UX-G5E Compliance and Environmental

UX-G5E Regulatory Information