

UniFi AI Port + AXIS Camera Diagnostic Report

Case Reference: [Insert Ubiquiti Case Number] **Report Date:** 2026-01-12
Prepared By: Network Administrator **Report Version:** 1.0

Executive Summary

Two UniFi AI Ports paired with AXIS ONVIF cameras display “Connected” status in UniFi Protect but produce **no video streams**. Extensive independent testing confirms both cameras are fully functional via ONVIF/RTSP protocols using third-party tools. The issue is isolated to the AI Port devices themselves.

Key Findings

Component	Status	Evidence
AXIS Cameras	Fully Operational	ONVIF responds, RTSP streams verified, snapshots captured
ONVIF Credentials	Verified Working	Python library authenticates successfully
RTSP Streams	Available	ffprobe confirms H.264 streams at expected resolutions
AI Port .21	Auth Failures	Camera logs show AH01097 errors every 10 seconds
AI Port .22	Service Inactive	No connection attempts in camera logs for 2+ days

Device Inventory

AI Ports

Device	IP Address	Paired Camera	Firmware	Status
AI Port #1	192.168.10.21	Intercom (192.168.10.11)	[Check Protect UI]	Connected, No Stream

Device	IP Address	Paired Camera	Firmware	Status
AI Port #2	192.168.10.22	Front_Of_House (192.168.10.12)	[Check Protect UI]	Connected, No Stream

AXIS Cameras

Name	IP Address	Model	Firmware	ONVIF Status
Intercom	192.168.10.11	AXIS I8016-LVE	12.7.53	Responding
Front_Of_House	192.168.10.12	AXIS M3216-LVE	12.7.61	Responding

Network Configuration

- **VLAN:** All devices on same VLAN (192.168.10.0/24)
- **Connectivity:** All devices pingable with <5ms latency
- **Firewall:** No rules blocking traffic between AI Ports and cameras

Failure Analysis

AI Port 192.168.10.21 (Intercom Camera)

Diagnosis: ONVIF Authentication Failure - Credential Mismatch

Evidence from Camera System Logs (captured via AXIS VAPIX API):

```
2026-01-12 01:21:58 | error | httpd | AH01097: pass...
2026-01-12 01:21:48 | error | httpd | AH01097: pass...
2026-01-12 01:21:38 | error | httpd | AH01097: pass...
2026-01-12 01:21:27 | error | httpd | AH01097: pass...
[Pattern continues every ~10 seconds]
```

Interpretation: - AH01097 is Apache's error code for "password mismatch" in Digest authentication - The username exists (no "user not found" error) - The AI Port IS actively attempting connections - The password stored in the AI Port does not match the camera's ONVIF password - **Despite multiple re-adoption attempts with correct credentials, failures persist**

AI Port 192.168.10.22 (Front_Of_House Camera)

Diagnosis: AI Port ONVIF Streaming Service Not Running

Evidence from Camera System Logs:

Last connection attempts: 2026-01-10 (TWO DAYS AGO)

Recent log entries show only:

- webrtc: Could not connect to signaling server (expected - isolated VLAN)
- AxisDeviceHost: autoupdate errors (expected - no internet access)
- NO httpd authentication errors
- NO ONVIF connection attempts from AI Port

Interpretation: - AI Port is NOT attempting to connect to the camera - Camera ONVIF service is healthy (responds to independent testing) - AI Port streaming daemon has likely crashed or stopped - Power cycling and re-adoption have not resolved the issue

Independent Verification Testing

Test Environment

- **Test Machine:** macOS workstation on same VLAN
- **ONVIF Library:** onvif-zeep-async v4.0.4 (Python)
- **RTSP Verification:** ffprobe (FFmpeg)
- **Credentials Tested:** onvif / ge0rge3rd

Test 1: ONVIF Device Information

Command: Custom Python script using onvif-zeep-async library

Results:

```
=====
Intercom (192.168.10.11)
=====
```

```
Manufacturer: AXIS
Model: I8016-LVE
Firmware: 12.7.53
Serial: [REDACTED]
Status:    Connected
```

```
=====
Front_Of_House (192.168.10.12)
=====
```

```
Manufacturer: AXIS
Model: M3216-LVE
Firmware: 12.7.61
Serial: [REDACTED]
Status:    Connected
```

Conclusion: Both cameras respond correctly to ONVIF GetDeviceInformation requests with the configured credentials.

Test 2: ONVIF Stream URI Retrieval

Results:

```
=====
Intercom (192.168.10.11) - Stream URIs
=====
Profile: profile_0 h264
Resolution: 1920x1280
Encoding: H264
URI: rtsp://192.168.10.11/onvif-media/media.amp?profile=profile_0_h264

Profile: profile_0 jpeg (2592x1944)
Profile: profile_1 jpeg (2592x1944)
Profile: profile_2 jpeg (2560x1440)

=====
Front_Of_House (192.168.10.12) - Stream URIs
=====
Profile: profile_1 h264
Resolution: 2688x1512
Encoding: H264
URI: rtsp://192.168.10.12/onvif-media/media.amp?profile=profile_1_h264
```

Conclusion: Both cameras provide valid RTSP stream URIs via ONVIF GetStreamUri.

Test 3: RTSP Stream Connectivity

Command: `ffprobe -rtsp_transport tcp -i <authenticated_rtsp_uri>`

Results:

```
Testing RTSP for Intercom...
Stream OK: h264 1920x1280

Testing RTSP for Front_Of_House...
Stream OK: h264 2688x1512
```

Conclusion: Both cameras deliver valid H.264 video streams over RTSP with the configured credentials.

Test 4: Snapshot Capture

Results:

Intercom: Snapshot captured successfully (1920x1280)
Front_Of_House: Snapshot captured successfully (2688x1512)

Conclusion: HTTP snapshot endpoints respond correctly with Digest authentication.

Known AXIS Camera Behavior: 127.0.0.1 XAddr Issue

AXIS cameras return 127.0.0.1 (localhost) in ONVIF GetCapabilities and GetStreamUri responses:

```
<Service>  
  <XAddr>http://127.0.0.1/onvif/services</XAddr>  
</Service>
```

Impact: ONVIF clients must perform URL fixup to replace 127.0.0.1 with the actual camera IP address.

Our Testing: Python scripts successfully handle this by replacing localhost references.

Question for Ubiquiti: Does AI Port firmware correctly handle the AXIS 127.0.0.1 XAddr behavior?

Remediation Attempts (All Unsuccessful)

Date	Action	Result
2026-01-12	Re-adopted both AI Ports with onvif/ge0rge3rd	Auth errors continue
2026-01-12	Updated ONVIF user to admin privileges	No change
2026-01-12	Created new ONVIF user (onvifuser/onvifpassword)	Auth errors continue
2026-01-12	Reverted to original credentials	Auth errors continue
2026-01-12	Power cycled AI Ports	No change
Previous	Factory reset and re-adopt	Worked temporarily, then failed

Camera Configuration Verification

RTSP Settings (Both Cameras)

Setting	Value
RTSP Enabled	Yes
RTSP Port	554
Authentication	Digest
Timeout	10 seconds
Path Arguments	Allowed

Network Settings (Both Cameras)

Setting	Value
IP Configuration	DHCP (static lease)
MTU	1500
IPv6	Enabled
LLDP	Disabled

ONVIF User Configuration

Setting	Value
Username	onvif
Role	Administrator (full access)
PTZ Access	Yes
Analytics Access	Yes

Community Research: Known AI Port + ONVIF Issues

Research across Ubiquiti Community forums and Reddit reveals this is a **known, widespread issue**:

Documented Problems

1. **AXIS Camera Incompatibility** (Reddit r/Ubiquiti): > “Pairing any of my Axis cameras that I add, as a test, to Protect with AI Port instantly kills that camera stream. It never reconnects successfully.”
2. **AI Port Stream Errors** (Reddit, from Ubiquiti support logs):
2024-12-19T17:13:00.045Z - error: Failed to restart AI Port stream
Cannot read properties of null (reading 'length')
3. **General ONVIF Instability** (Reddit r/UnifiProtect): > “ONVIF and the AI Port is very, very touch and go. I’ve seen Official UniFi Protect

releases that fix 1 ONVIF issue, but break 5 previously working ONVIF issues.”

4. **IP Cam Talk Forum:** > “I run and test a number of Dahua, Hikvision, Axis and other brands and have not seen issues except with the very first few beta releases of the Protect ONVIF Support FW.”

Ubiquiti’s Own Troubleshooting Guidance

From Ubiquiti Help Center (Article 28315005177239): > “If your AI Port is unable to stream video from your UniFi cameras, it may be due to a firewall rule blocking the connection between the AI Port and the Protect Gateway (GW).”

Note: Our network has no such firewall rules, and cameras are on the same VLAN as AI Ports.

Technical Appendix

Python Test Script

Location: /scripts/onvif_stream.py

```
# Key functionality demonstrated:
# 1. ONVIF connection with proper WSDL handling
# 2. 127.0.0.1 XAddr fixup for AXIS cameras
# 3. Stream URI retrieval
# 4. RTSP connectivity verification via ffprobe
# 5. HTTP snapshot capture with Digest auth

# Available commands:
# uv run python scripts/onvif_stream.py info      # Camera info
# uv run python scripts/onvif_stream.py streams  # List stream URIs
# uv run python scripts/onvif_stream.py snapshot # Capture images
# uv run python scripts/onvif_stream.py test-rtsp # Verify RTSP
```

Network Connectivity Tests

```
AI Port 192.168.10.21:  3/3 packets, 0% loss, avg 3.8ms
AI Port 192.168.10.22:  3/3 packets, 0% loss, avg 4.3ms
Camera 192.168.10.11:   3/3 packets, 0% loss, avg 4.0ms
Camera 192.168.10.12:   3/3 packets, 0% loss, avg 5.7ms
```

AI Port Open Ports

```
Port 53/tcp  - DNS
Port 111/tcp  - rpcbind
```

Port 443/tcp - HTTPS (Protect UI responds)
Port 830/tcp - netconf-ssh
Port 554/tcp - CLOSED (RTSP not exposed - expected for AI Ports)

Requested Actions from Ubiquiti Support

Immediate

1. **Provide AI Port debug logs** - Internal logs not accessible externally; need Ubiquiti to extract:
 - `aiport.log` showing stream connection attempts
 - ONVIF client authentication logs
 - Service restart history
2. **Confirm AXIS 127.0.0.1 XAddr handling** - Does AI Port firmware correctly rewrite localhost references in ONVIF responses?
3. **Check for credential caching** - Are AI Ports caching incorrect credentials despite re-adoption?

If Issue Persists

4. **Firmware rollback option** - Is there a known-good firmware version for AXIS camera compatibility?
 5. **Factory reset procedure** - Is there a more thorough reset than the standard process?
 6. **RMA consideration** - If both AI Ports exhibit different failure modes, could this indicate hardware issues?
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Conclusion

The cameras are not the problem. Independent testing with Python ONVIF libraries proves:

- Both cameras respond to ONVIF commands
- Credentials (`onvif/george3rd`) authenticate successfully
- RTSP streams are available and deliver valid H.264 video
- HTTP snapshots work correctly
- Network connectivity is healthy

The AI Ports are the problem:

- AI Port .21 continuously fails authentication despite correct credentials
- AI Port .22 is not attempting connections at all
- Re-adoption with verified credentials does not resolve the issue

- This matches community reports of AI Port + AXIS camera incompatibility

We request Ubiquiti's assistance in diagnosing the AI Port internal state and providing a resolution path.

Attachments

Camera Snapshots (Proof of Working Streams)

These snapshots were captured via ONVIF/HTTP using the same credentials that AI Ports fail to authenticate with:



Figure 1: Intercom Snapshot

Intercom Camera (192.168.10.11) - AXIS I8016-LVE

Front_Of_House Camera (192.168.10.12) - AXIS M3216-LVE

Supporting Files

File	Description
intercom_snapshot.jpg	Snapshot from Intercom camera

File	Description
front_of_house_snapshot.jpg	Snapshot from Front_Of_House camera
../scripts/onvif_stream.py	Python ONVIF test script used for verification

Report generated with diagnostic tools from unifi_port_mapper project



Figure 2: Front_Of_House Snapshot