

Secure Critical NMOS APIs with AMWA NMOS BCP-003



What Problem does BCP-003 Solve?

- NMOS APIs (such as IS-04 / IS-05) are very useful, but do not have any security mechanisms defined
- Common security methods are needed for the NMOS APIs to allow for multi-vendor interoperability & ease of development
- BCP-003-01/02 provides Best Current Practices for AMWA NMOS security

What is BCP-003-01?

- BCP-003-01 secures NMOS API communication
- Based on the use of TLS (Transport Layer Security)
- Calls for the use of HTTPS (HTTP over TLS) for REST API calls & WSS (WebSocket Secure) WebSocket Protocol over TLS for WS APIs

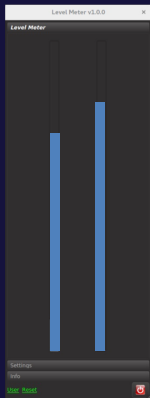
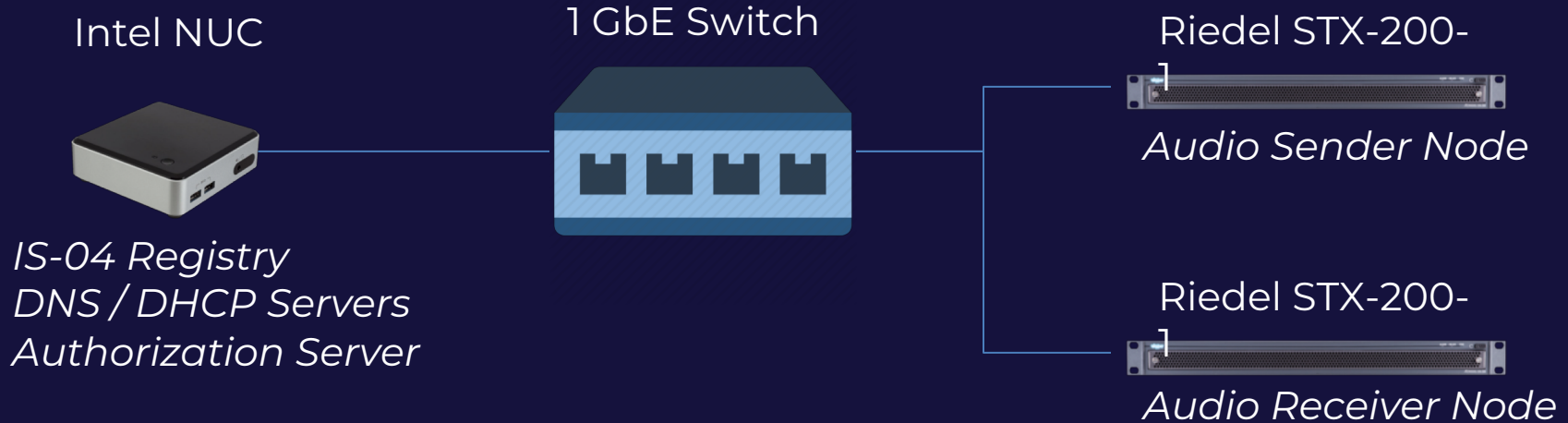


What is BCP-003-02?

- BCP-003-02 (currently AMWA “*work in progress*” status) defines authorization for NMOS APIs
- Based on the use of OAuth 2.0, a common IT industry protocol for authorization
- An Authorization Server distributes JSON Web Tokens (JWTs) to clients to authorize API calls



Demo Diagram



- Audio senders, receivers, and audio level meters
- NMOS APIs secured by TLS as per BCP-003-01

Mode: Query-Mode <https://192.168.130.50:443/x-nmos/query/v1.3/>

= User is authorized

 Auto Mode
 P2P Mode
 Static Mode
 HTTPS

QueryAPI

192.168.130.50

v1.3

SearchDomain (Unicast-DNS)

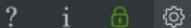
nmos.workshop.tv

Auth

192.168.130.50

443

v1.0



Bonjour Connector Browser

Nodes	Devices	Senders	Receivers
Type to filter..	Type to filter..	Type to filter..	Type to filter..
SW Rcv Node nmos-registry-5 192.168.129.48:4457	SW Rcv Device	LM 2 (ws) Source: LM 2	Levelmeter Receiver Source: Playlist
SW Node nmos-registry-5 192.168.129.48:4488	SW Device	Playlist Source: Playlist	LM 1 (ws) Source: LM 1
ap-nuc-8.rd.bbc.co.uk 192.168.130.50:443	Level Meter Device	LM 1 (ws) Source: LM 1	LM 2 (ws) Source: LM 2
Level Meter Node 192.168.130.50:4514			

Demo shows BCP-003-02 Authorization for NMOS Explorer to access NMOS APIs on secured target devices:



= support for BCP-003-02 security

Use AMWA BCP-003 to stop sneaky hackers!



<https://github.com/AMWA-TV/nmos-api-security>

BCP-003 Demo Participants



With System Integration by

