

afnic
Internet
made in France

LoRa Alliance F2F - 04/02/2026

DNS Usage in the BE Interfaces

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DNS Timeline

2016
DNS introduction in BE specs
JoinEUI & NetID

2017
Backend Interface - v1.0
(JoinEUI & NetID resolution)

2018
`lorawan.net` acquired
for DNS service

2018
Afnic delegated
NetID & JoinEUI zones

2019
Afnic PoC
(18 months)

2020
DevEUI + JoinEUI
`(TS002-1.1.0)`
DNS Task Force

2022
DNS-based PKI demo
IETF 115 (Afnic)

2025
Plug & Play API TF
(Backend, DNS, P&P)

Recommendations & Specifications where DNS is mentioned

Technical Recommendations

- DNS Operator
- Zero-Touch Onboarding
- End-Device Capabilities API
- Mutual authentication for Backend Components

Technical Specifications

- Backend Interfaces Technical Specification
  `TS002-1.2.0`
- Automated Device Profile Download

DNS-based Usages

Network & Roaming

- Join resolution using **JoinEUI**
- Roaming using **NetID**

Zero-Touch Onboarding

- Lookup **JS** using DNS
- Lookup **DPS**

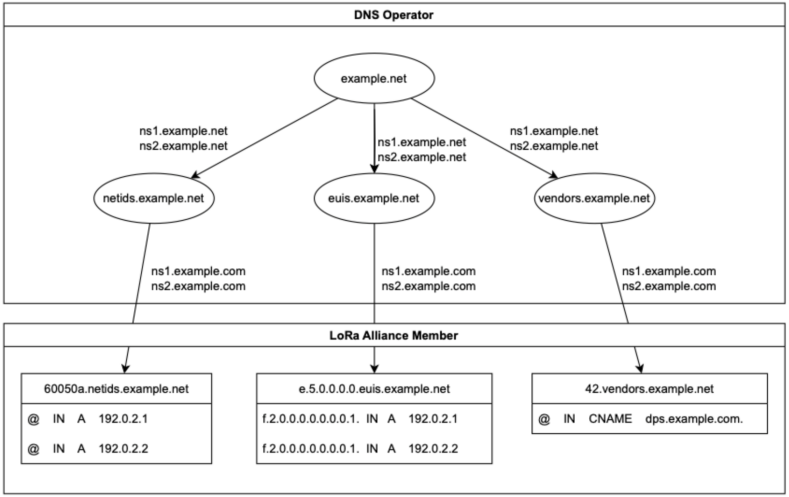
Device Manufacturing

- Batch manufacturing for multiple operators
- Same device batch, different end-users

Security

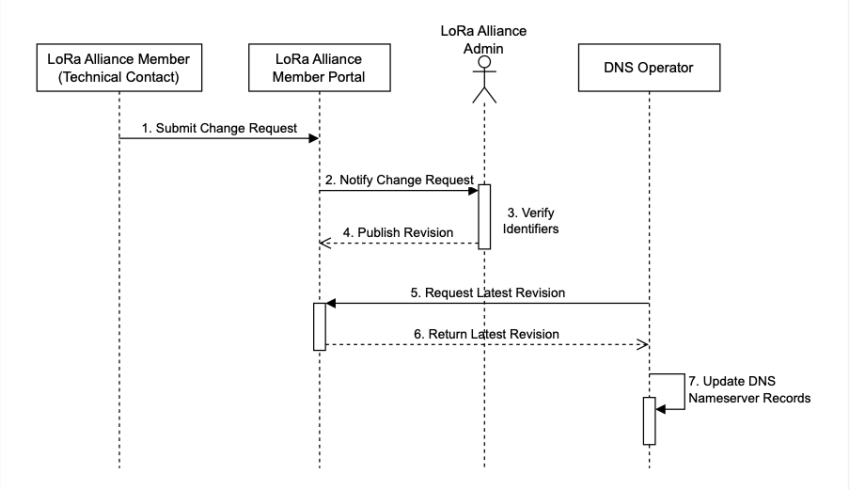
- Mutual authentication between **NS–GW**
- Without relying on a CA vendor

DNS Delegation



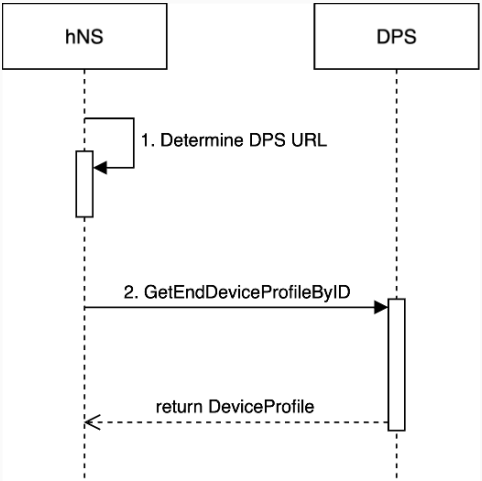
Source: DNS Operator Technical Recommendation

DNS Subzone Changes



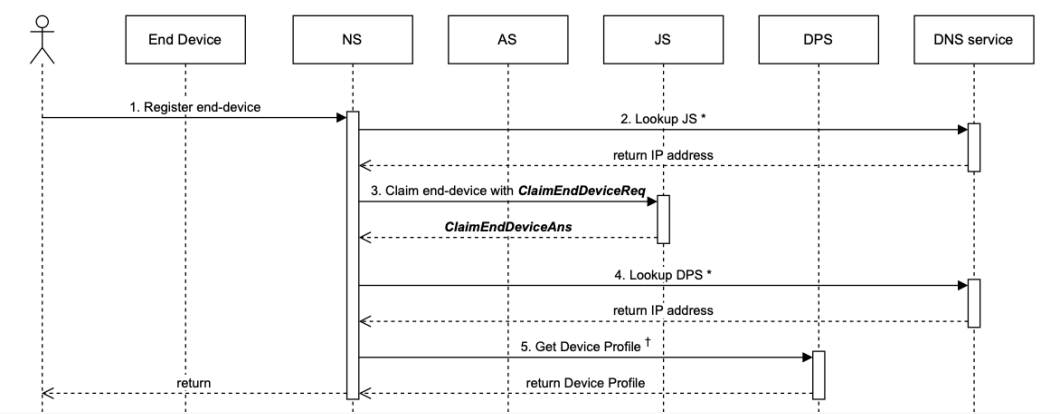
Source: DNS Operator Technical Recommendation

DPS Resolution



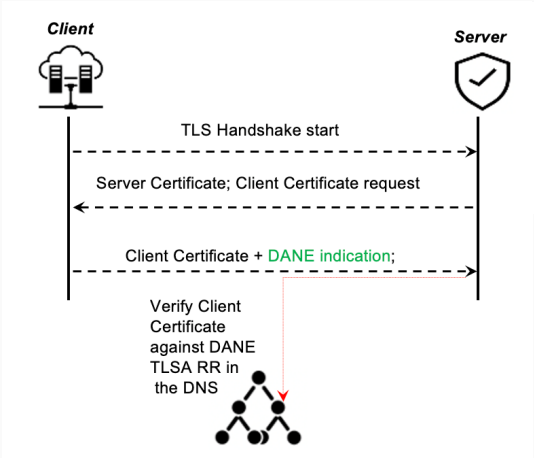
Source: End-Device Capabilities API Specification *(The hNS can use DNS [TS002] to lookup the Device Profile Server IP address or hostname using a given VendorID [TR005])*

Zero-Touch Onboarding



Source: Zero-Touch Onboarding Technical Recommendation

Mutual Authentication



DANE-based Mutual Authentication

DANE Authentication for Network Clients Everywhere (dance)

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Document	Date	Status
Active with the IESG Internet-Drafts (3 hits)		
draft-ietf-dance-architecture-10 **An Architecture for DNS-Bound Client and Sender Identities**	23 pages 2025-12-02	IESG Evaluation::Revised I-D Needed Submitted to IESG for Publication : Informational Reviews: iotdir Early dnsdir Early dnsdir Early iphart IETF Last Call Action Holders: Ash Wilson, Shumon Huque, Olle E. Johansson, Michael Richardson
draft-ietf-dance-client-auth-09 **TLS Client Authentication via DANE TLSA records**	10 pages 2025-09-19	Waiting for AD Go-Ahead::Revised I-D Needed 19 Submitted to IESG for Publication : Proposed Standard Reviews: iphart IETF Last Call secdir IETF Last Call genart IETF Last Call dnsdir IETF Last Call Action Holders: Shumon Huque, Viktor Dukhovni
draft-ietf-dance-tls-clientid-07 **TLS Extension for DANE Client Identity**	6 pages 2025-09-17	Waiting for AD Go-Ahead::Revised I-D Needed 19 Submitted to IESG for Publication : Proposed Standard Reviews: iphart IETF Last Call secdir IETF Last Call genart IETF Last Call dnsdir IETF Last Call Action Holders: Shumon Huque, Viktor Dukhovni

Thank You

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Questions?