

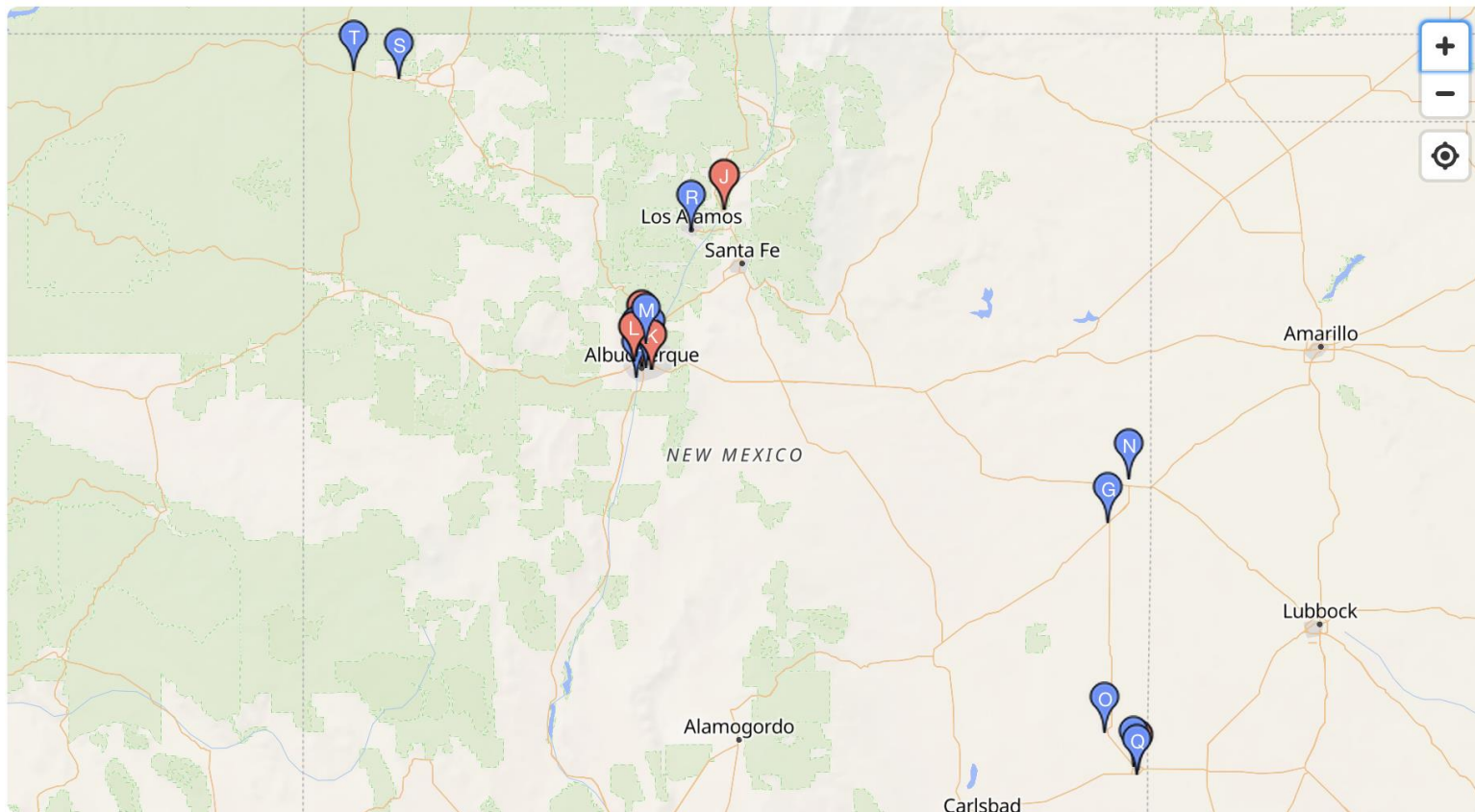


Root Zone KSK Rollover

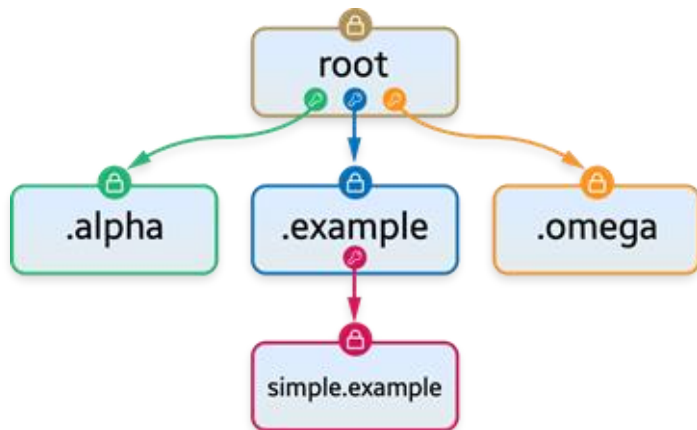
David Huberman - ICANN's Office of the CTO

The Wells Fargo logo, consisting of the words "WELLS" and "FARGO" in a white, serif, all-caps font, stacked vertically and centered within a solid red square.

**WELLS
FARGO**



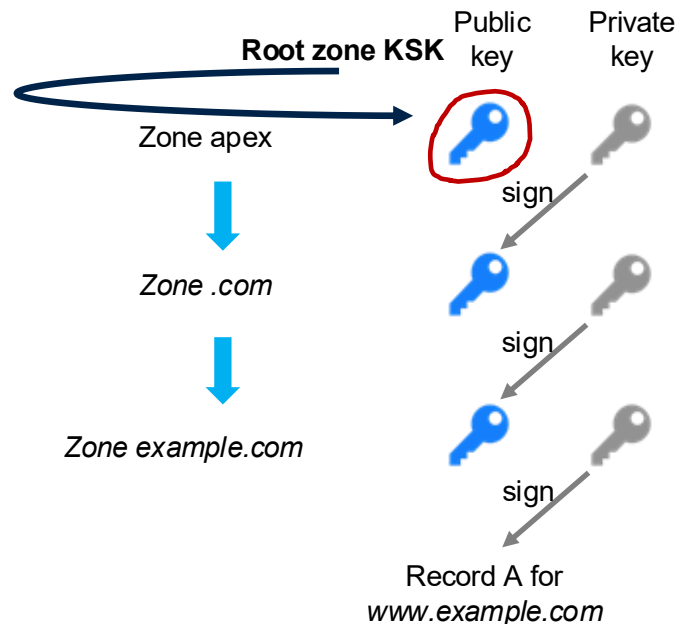
DNSSEC and the Chain of Trust



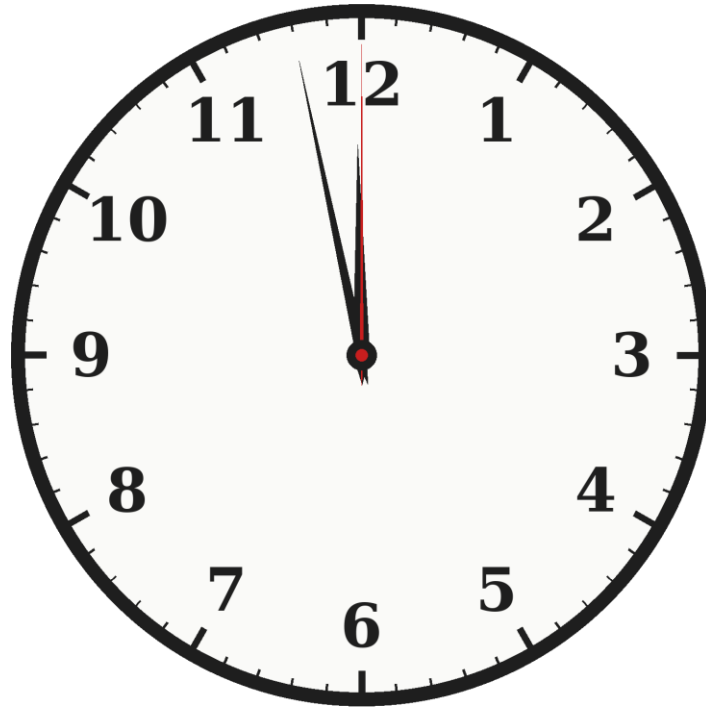
DNSSEC relies on a chain of trust, where each parent zone vouches for the keys of its signed child zones.

Since the root zone has no parent, validating resolvers must be configured with the root Key Signing Key (KSK) as a trust anchor.

Chain of Trust (DS):



It's Time to Change the Root's KSK



Why?

Why this matters:

- Cryptographic keys should be updated periodically
- Planned maintenance is safer than emergency replacement
- Regular updates strengthen long-term DNS security and resilience

What Happens During the Rollover?

High-level rollover process

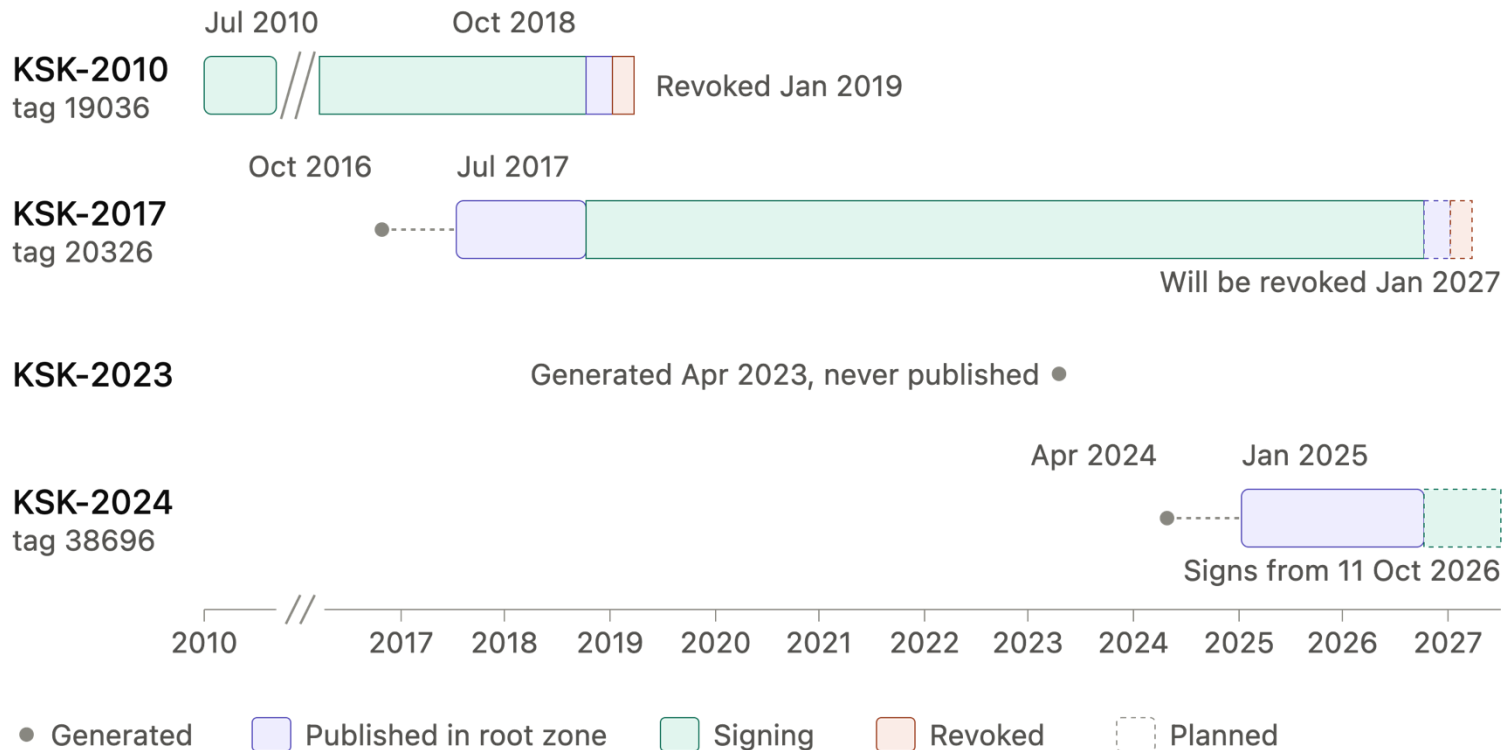
- New KSK is generated
- New KSK is published in the root zone
- Resolvers learn the new trust anchor
- Root zone signatures transition to the new KSK

Protecting the Root KSK

ICANN manages the root Key Signing Key (KSK) through a highly transparent process, which includes public-key signing ceremonies and an open design model.



The Rollover Timeline



When?

**NEXT
11 OCTOBER**

Who Needs to Take Action?

Organizations operating DNSSEC-validating resolvers, including:

- Internet Service Providers (ISPs)
- Enterprise network operators
- DNS service providers

Key action:

Ensure systems trust the new KSK

Recommended Operator Actions

Operators and developers should:

- Verify RFC 5011 support
- Test resolver behavior
- Monitor rollover updates
- Update trust anchors where needed

Operators should monitor for:

- SERVFAIL increases
- Validation failures
- Resolver log anomalies
- Unexpected traffic patterns

Lessons From the 2018 Rollover

Key lessons learned

The 2018 rollover demonstrated:

- Preparation and outreach matter
- Most operators transitioned successfully
- User impact was minimal
- Monitoring and flexibility are essential

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