

DNS and Zero Trust Architecture: The Role of ICANN

ICANN Presented by:

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PLAN

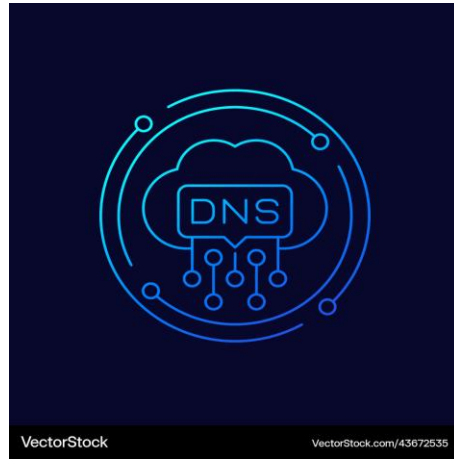


- ❖ Introduction
- ❖ What Is DNS and What Does Zero Trust Mean?
- ❖ What Role Does ICANN Play in the Context of Zero Trust?
- ❖ How Are DNS Stakeholders Affected?
- ❖ Why Should We (Youth) Get Involved—and How?
- ❖ Conclusion

INTRODUCTION



CYBERSECURITY



DOMAINE NAME SYSTEM



ZERO TRUST ARCHITECTURE



ICANN

WHAT IS DNS ?

Imagine the DNS as a Phonebook

As simple as finding a contact in your phone...

Instead of dialing a contact's number, you just search by name in your directory.

DNS works just like that, but for the Internet. Rather than remembering the IP address of a website, like 192.0.2.44, you enter a domain name such as `www.example.com`.

Nom de domaine

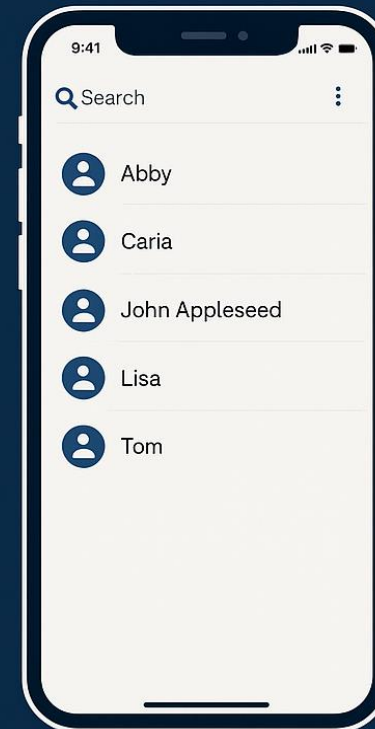


DNS



IP

192.0.2.44



WHAT IS ZERO TRUST?

Zero Trust



You don't assume
a user or device safe—



No implicit trust



Always verify identity



Enforce access
segmentation



Monitor continuously
*Even internal users or
systems must prove
they're safe — every time*

COVID-19



You don't assume
someone is healthy—



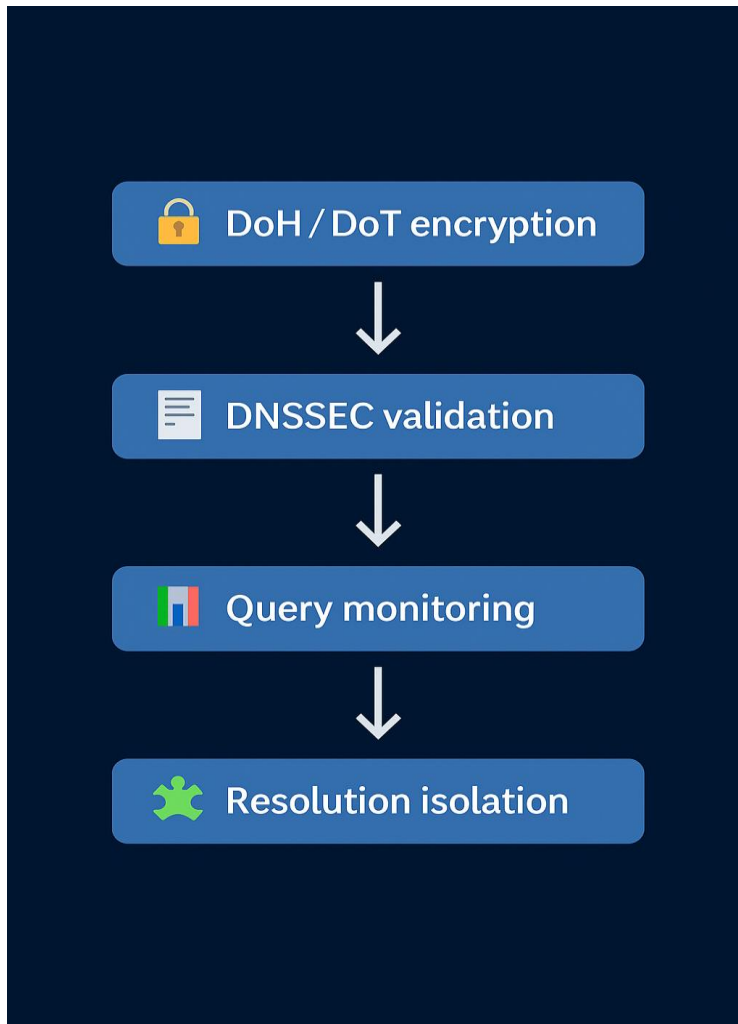
You wear a mask



You keep your
distance

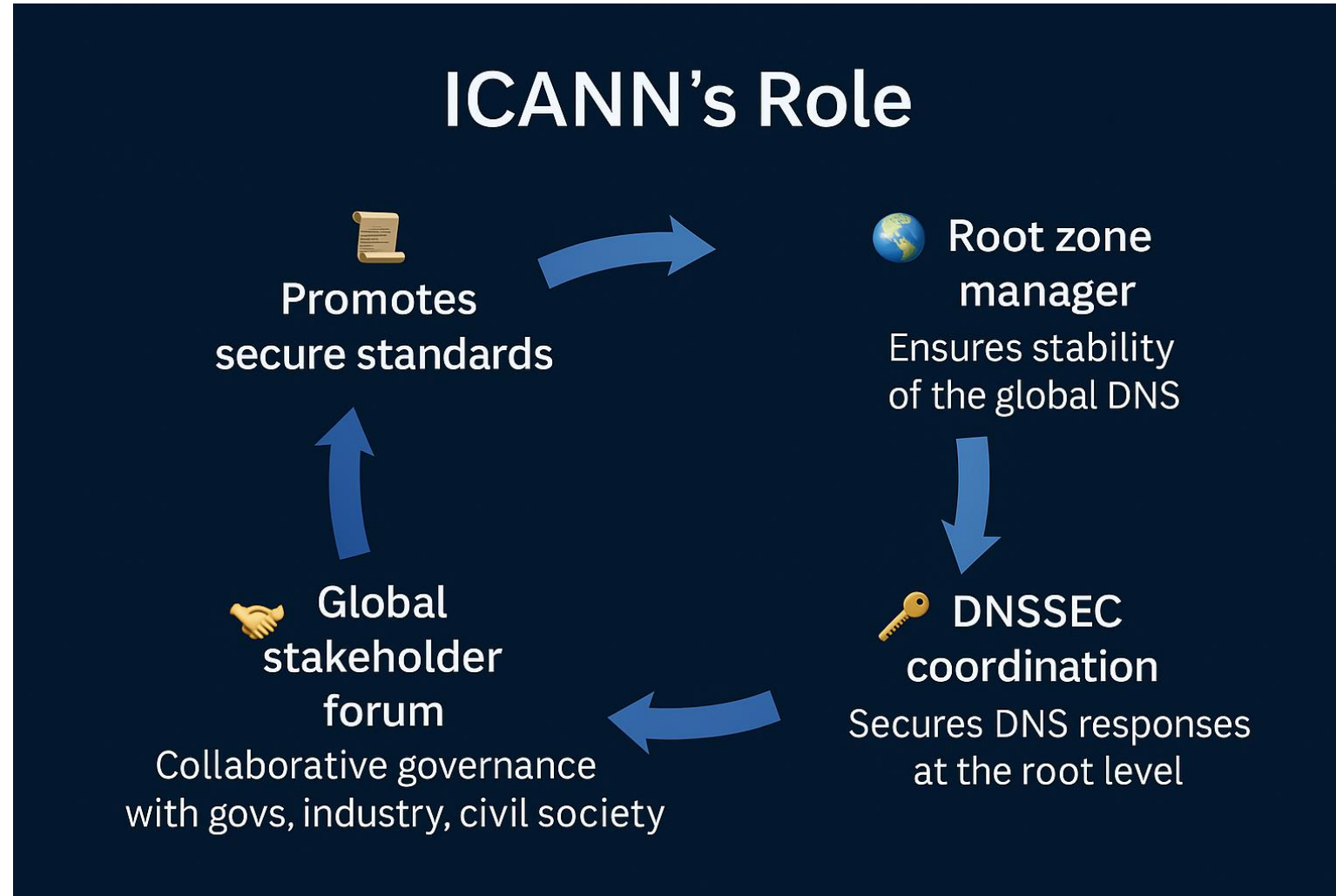
*Because even trusted
contacts can spread
the virus.*

DNS IN ZERO TRUST



- ❖ **Encrypt DNS traffic** with DoH (HTTPS) and DoT (TLS) to protect privacy and prevent spying
- ❖ **Validate authenticity** of DNS responses with DNSSEC to block forged or modified data
- ❖ **Monitor DNS queries** to detect threats like malware, tunneling, and suspicious behavior
- ❖ **Isolate DNS resolution** based on identity or device to limit exposure and control access

WHAT THAT ROLE DOES ICANN PLAY IN THE CONTEXT OF ZERO TRUST?



HOW ARE DNS STAKEHOLDERS AFFECTED?



Registries – Apply DNSSEC to ensure domain integrity



Registrars – Offer secure-by-default domain settings (e.g., DNSSEC, 2FA)



DNS Operators – Encrypt traffic (DoH/DoT), monitor queries, and isolate resolution

WHY SHOULD WE (YOUTH) GET INVOLVED AND HOW ?



Contribute to a More Secure Internet



Promote Best Practices in Cybersecurity and Digital Infrastructure



Shape the Future -You Are Digital Natives

CONCLUSION



Questions?



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More: <https://www.icann.org/nextgen>