SWITS 2026 PhD Student Submission

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1 Presentation

I would like to do a 10-20 minute presentation at SWITS 2026 about my most recent study called: **"Here be DDRagons! Navigating the Unexplored Map of Encrypted DNS Transport"**. See abstract below.

2 Abstract

Encrypted DNS protocols such as DoT, DoH, and DoQ were introduced to improve end-user privacy and security, but their deployment has raised concerns about increasing resolver centralization. Discovery of Designated Resolvers (DDR) was designed to counter this trend by enabling clients to automatically upgrade to authenticated encrypted endpoints offered by their existing resolvers. However, little is known about whether non-public resolvers, particularly ISP-internal resolvers invisible to Internet-wide scans, actually deploy DDR, or whether recursive resolvers use encrypted transport when querying authoritative name servers. We conduct the first large-scale study of DDR adoption from edge vantage points using 245 CAIDA Ark nodes and 11,290 RIPE Atlas probes across 3,897 ASes. We also investigate support for Authenticated DNS-over-Encryption (ADoE) between resolvers and authoritative name servers. Our findings show that DDR, in practice, outsources encryption to a few public resolvers, increasing centralization. Complementing this, our authoritative vantage point reveals that Quad9 is the only commonly advertised resolver that uses encrypted transport toward authoritative servers, and that ADoE support among root, TLD, and name servers authoritative for popular domains is extremely limited. Our results highlight the need for better understanding of roadblocks for local encrypted DNS transport deployment and for standardized signaling to enable practical, authenticated encryption on the authoritative side.