### **NSEC3 TO NSEC Transition of .nu**



## Ulrich Wisser

- Senior DNS Expert
- ulrich.wisser@internetstiftelsen.se DNS-Labs
- **Swedish Internet Foundation**
- Software Developer / System
  Architect for .SE registry system
- Co-Chair of Centr-Tech WG
- Member of DNS-OARC program committee



# **Transition from** NSEC3 to NSEC



### **RFC 5155**

**10.5.** Transitioning a Signed Zone from NSEC3 to NSEC

To safely transition back to a DNSSEC [RFC4035] signed zone, simply reverse the procedure above:

- 1. Add NSEC RRs incrementally or all at once.
- RRs for negative and wildcard responses.
- 3. 3. Remove the NSEC3 RRs either incrementally or all at once.
- complete, all NSEC3-unaware clients will treat the zone as secure.

2. 2. Remove the NSEC3PARAM RRSet. This will signal the server to use the NSEC

4. Transition all of the DNSKEYs to DNSSEC algorithm identifiers. After this transition is



What could possibly go wrong?



PTS NIS CEO

CISO



DO SOME TESTING



# NOANSWER VS.

## Answer: NO ANSWER



### **NSEC/NSEC3** Testbed

No Data – No Wildcard

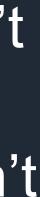
No Data – Wildcard

Name Error – No Wildcard

Empty Non Terminal



## No NSEC No NSEC3 NSEC/NSEC3 doesn't cover label NSEC does cover label - NSEC3 doesn't NSEC3 does cover label – NSEC doesn't Data with NSEC/NSEC3



## https://public-dns.info



### RESULTS

No Nsec No Nsec3

Nsec Does Not Cover Label Nsec3 Does Not Cover Label Nsec And Nsec3 Do Not Cover Label Nsec Does Cover Label Nsec3 Does Not Nsec Does Not Cover Label Nsec3 Does

NODATA	NXDOMAIN	SERVFAIL
32	0	39
0	32	39
0	32	39
0	71	0
0	55	16
0	65	6





Looks good to go!









### \*.NU -> \*.NUTEST.NU

OpenDNSSEC

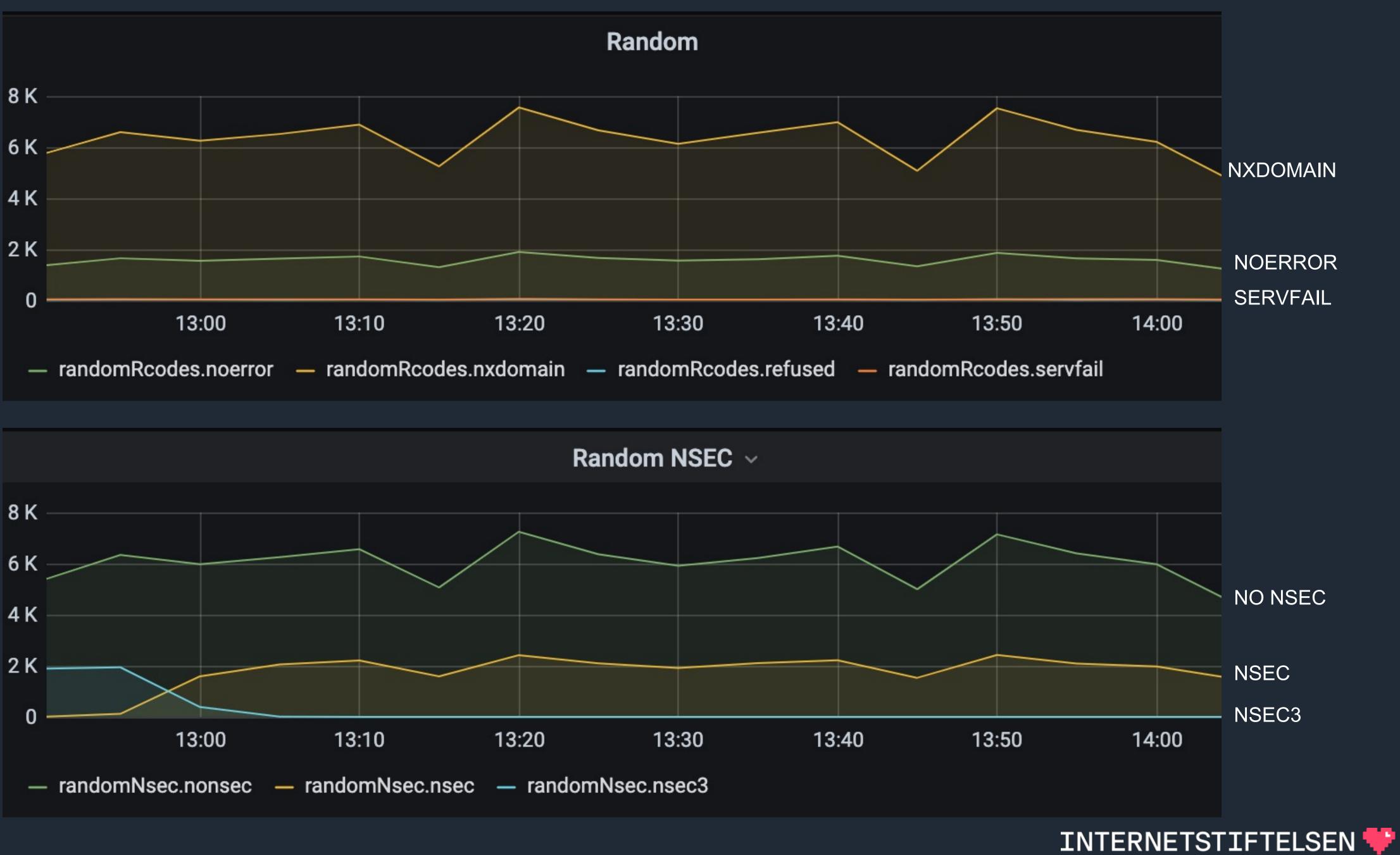
One Anycast DNS Provider

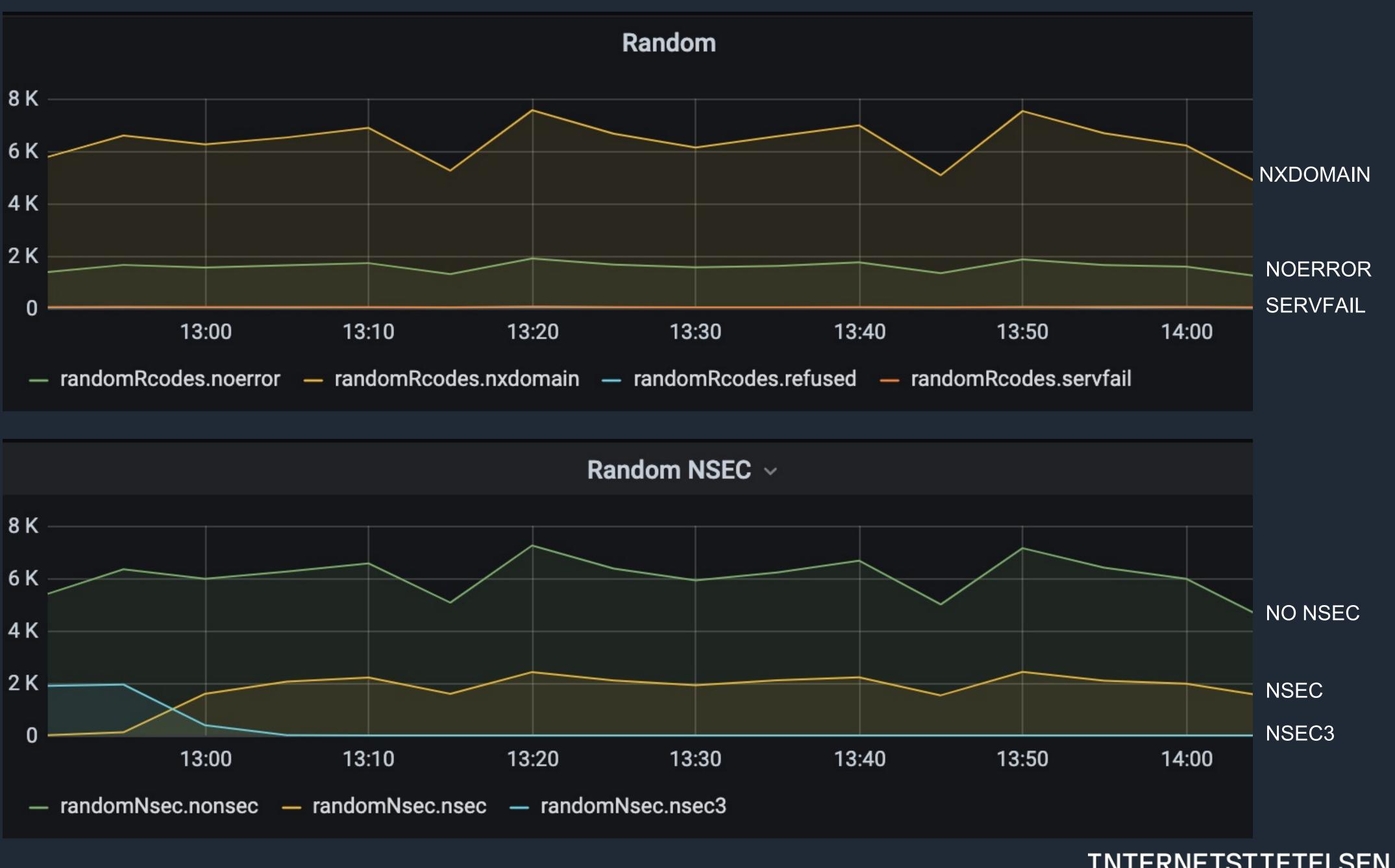
Ripe Atlas Measurement with 500 probes











# Looks good! Good to go!



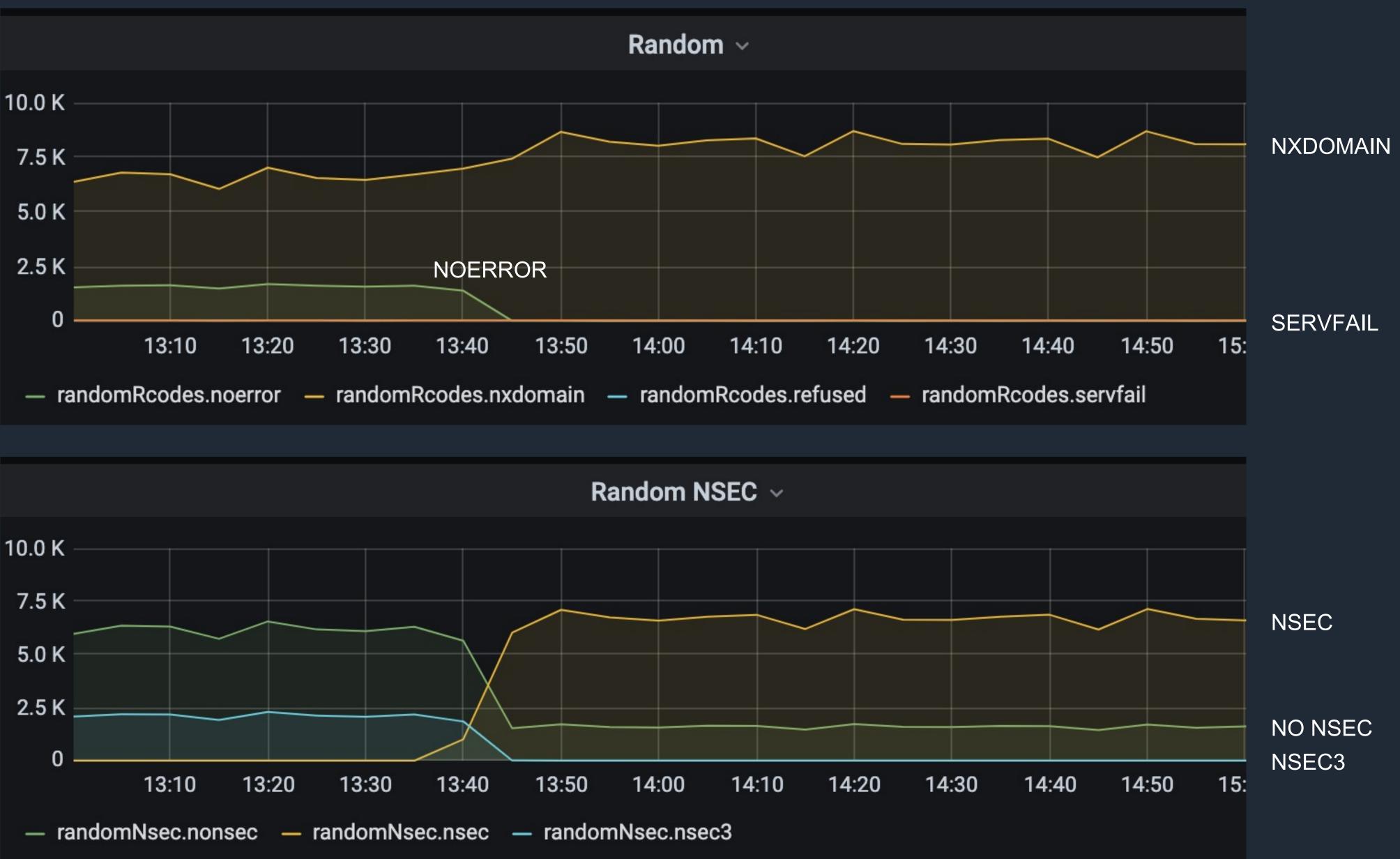
### NU

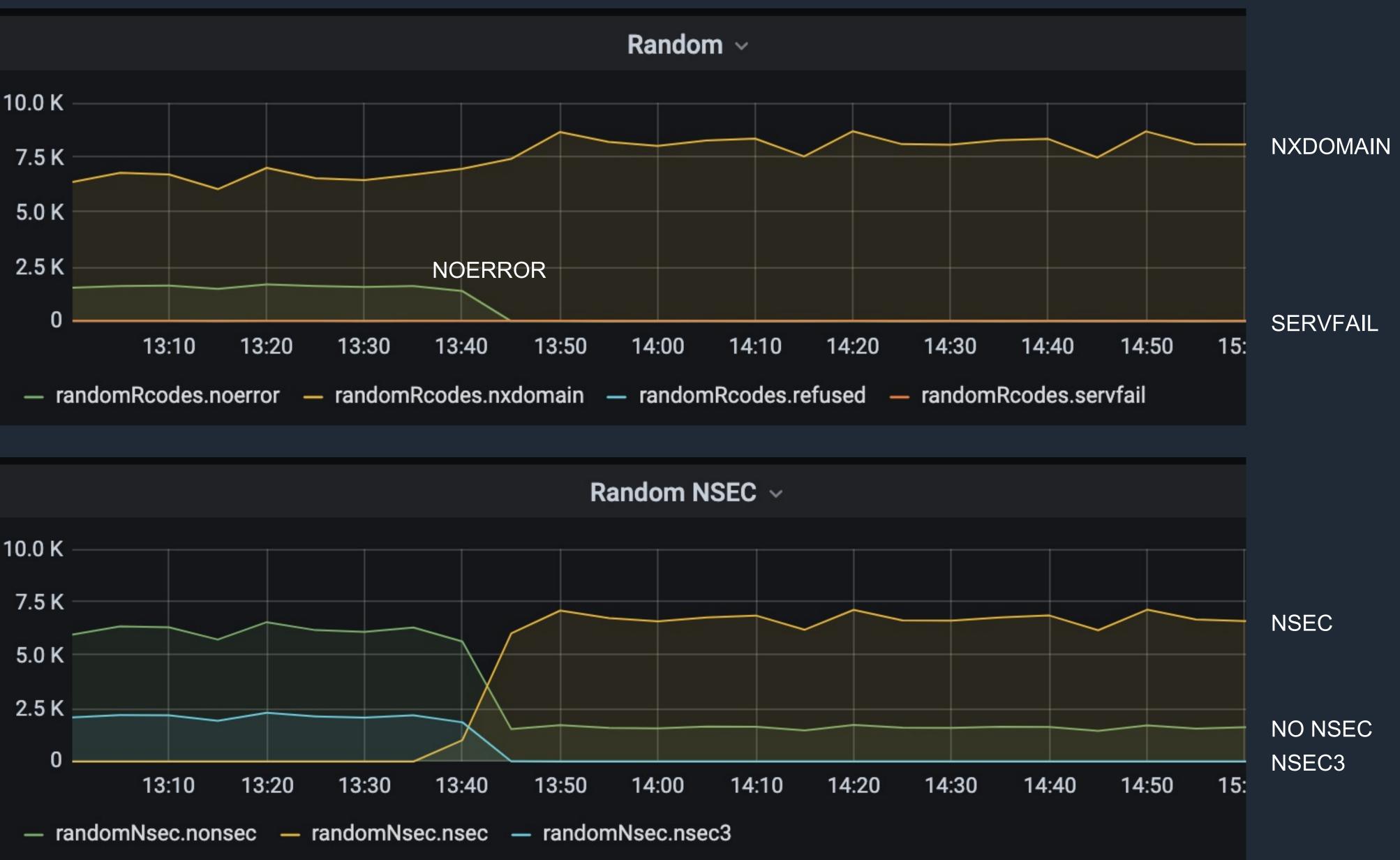
### OpenDNSSEC

Three Anycast DNS Providers

Ripe Atlas Measurement with 5000 probes











SUCCESS

