

# IETF Hackathon

IETF 114

23-24 July 2022

Philadelphia, Pennsylvania

# Hackathon Plan

- Draft: [draft-ietf-dnsop-dnssec-bootstrapping](#)
- Requires co-publishing the target zone's CDS/CDNSKEY records at a subdomain of the nameserver's hostname
- Example: Bootstrapping `example.co.uk` via `ns1.desec.io` requires:

`_dsboot.example.co.uk._signal.ns1.desec.io. IN CDS ...`

No automation so far.

- Hackathon plan: Automatically generate these records, either via
  - period cronjob, or
  - dynamic synthesis (by nameserver when queried)

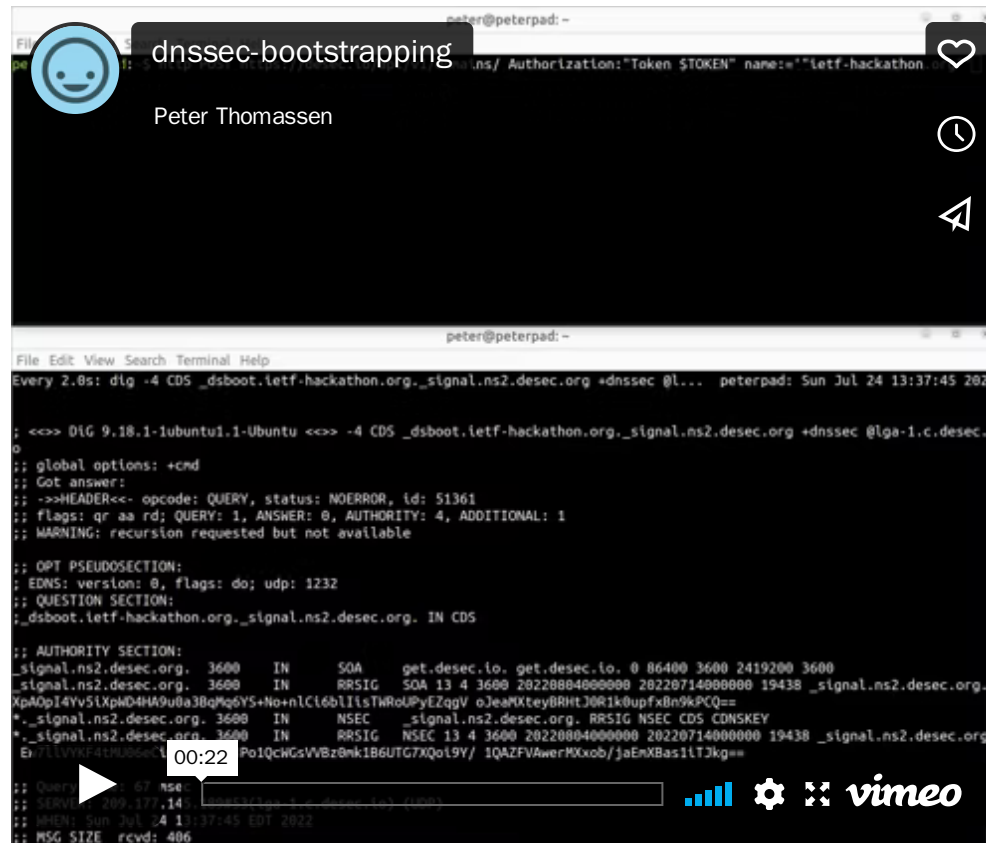
# What got done

- Agreement: Expose only minimal configuration to admin
  - Tagging a zone as "bootstrapping zone" enables synthesis for all managed zones
- Code (deployed):
  - deployed:
    - saltant.net: cronjob (catalog zone → bootstrap zone) ([Gitlab repo](#))
    - at deSEC: PowerDNS record synthesis ([deSEC PR #46](#))
  - in the works:
    - Knot DNS module
- Techniques:
  - cronjob: Python script
  - PowerDNS: LUA records
  - Knot DNS: native C module

# What we learned

- Pretty straightforward, plan worked overall
- Learned some things about LUA – good to have an expert at the table :-)
- Unexpected insight: bootstrap zones also have 2 NS records  
→ need to have them on two secondaries
  - e.g. `_signal.ns1.desec.io` is hosted on ns1 *and* ns2
- Protocol seems workable in practice

# Video demo



The screenshot shows a video player interface. At the top, there is a title bar with a blue circular icon containing a white smiley face, the text "dnssec-bootstrapping", and a heart icon. Below the title bar, the name "Peter Thomassen" is displayed. The main area of the video player shows a terminal window with the following output:

```
peter@peterpad: -
File Edit View Search Terminal Help
Every 2.8s: dig -4 CDS _dsboot.ietf-hackathon.org._signal.ns2.desec.org +dnssec @l... peterpad: Sun Jul 24 13:37:45 2022

; <==> Dig 9.18.1-ubuntu1.1-Ubuntu <==> -4 CDS _dsboot.ietf-hackathon.org._signal.ns2.desec.org +dnssec @lga-1.c.desec.l
0
;; global options: +cmd
;; Got answer:
;; ->HEADER<-- opcode: QUERY, status: NOERROR, id: 51361
;; flags: qr aa rd; QUERY: 1, ANSWER: 0, AUTHORITY: 4, ADDITIONAL: 1
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags: do; udp: 1232
;; QUESTION SECTION:
;; _dsboot.ietf-hackathon.org._signal.ns2.desec.org. IN CDS

;; AUTHORITY SECTION:
signal.ns2.desec.org. 3600 IN SOA get.desec.lo. get.desec.lo. 0 86400 3600 2419200 3600
signal.ns2.desec.org. 3600 IN RRSIG SOA 13 4 3600 20220804000000 20220714000000 19438 _signal.ns2.desec.org.
XpAOpI4Yv5lXpM4HA9u0a3BoMq6Y5+No+nLC16b1IisTWRoUPyEZqgV oJeaMXteyBRHtJ0R1k0upfx8n9%PCQ==
*_signal.ns2.desec.org. 3600 IN NSEC _signal.ns2.desec.org. RRSIG NSEC CDS CDSKEY
*_signal.ns2.desec.org. 3600 IN RRSIG NSEC 13 4 3600 20220804000000 20220714000000 19438 _signal.ns2.desec.org.
En7llvKf4tU066C1 Po1QchGsVVBz0nk1B6UTGXQol9Y/ 1QAZFVAwerMXxob/jaEnXBasi1tJkg==

;; Query time: 67 usec
;; SERVER: 209.177.14. (209.177.14.1) (UDP)
;; WHEN: Sun Jul 24 13:37:45 EDT 2022
;; MSG SIZE rcvd: 406
```

At the bottom of the terminal window, there is a play button icon, a progress bar, and a "00:22" timestamp. To the right of the progress bar, there are icons for signal strength, settings, and a "vimeo" logo.

# Wrap up

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## **Team members:**

### Cronjob:

- John O'Brien

### PowerDNS synthesis:

- Jerry Lundström
- Nils Wisiol

### Knot DNS synthesis:

- Peter Thomassen

## **First timers @ IETF/Hackathon:**

- John O'Brien
- Nils Wisiol