



# CNAME + DNAME Experiment

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IETF 102 Hackathon

# Goals

1. Put CNAME + DNAME in the parent zone and see what works and what breaks
  2. Put CNAME + DNAME into the apex of the zone and see what works and what breaks
- Setup:
    - Authoritative server:  
BIND 9.13.2 + experimental/cname-at-apex branch
    - Zones:
      - cname-at-apex.rocks
      - cname-plus-dname.rocks

# CNAME at APEX

## Results

DNSSEC Validation Enabled	No QNAME Minimization	Relaxed QNAME Minimization	Strict QNAME Minimization
BIND 9.11.4	CNAME MASKS APEX	N/A	N/A
BIND 9.12.2	CNAME MASKS APEX	N/A	N/A
BIND 9.13.2	CNAME MASKS APEX	CNAME MASKS APEX	CNAME MASKS APEX
PDNS Recursor 4.1.3	CNAME MASKS APEX	N/A	N/A
Unbound 1.7.3	CNAME MASKS APEX	CNAME MASKS APEX	CNAME MASKS APEX
Knot Resolver 2.4.0	N/A	CNAME MASKS APEX [1]	N/A
Google Public DNS	CNAME MASKS APEX [1]	N/A	N/A
Verisign Public DNS	CNAME MASKS APEX	N/A	N/A
Quad 9	CNAME MASKS APEX	N/A	N/A
Cloudflare 1.1.1.1	N/A	CNAME MASKS APEX [1]	N/A

1. MX is masked to CNAME target, but SOA isn't

# CNAME + DNAME @ PARENT

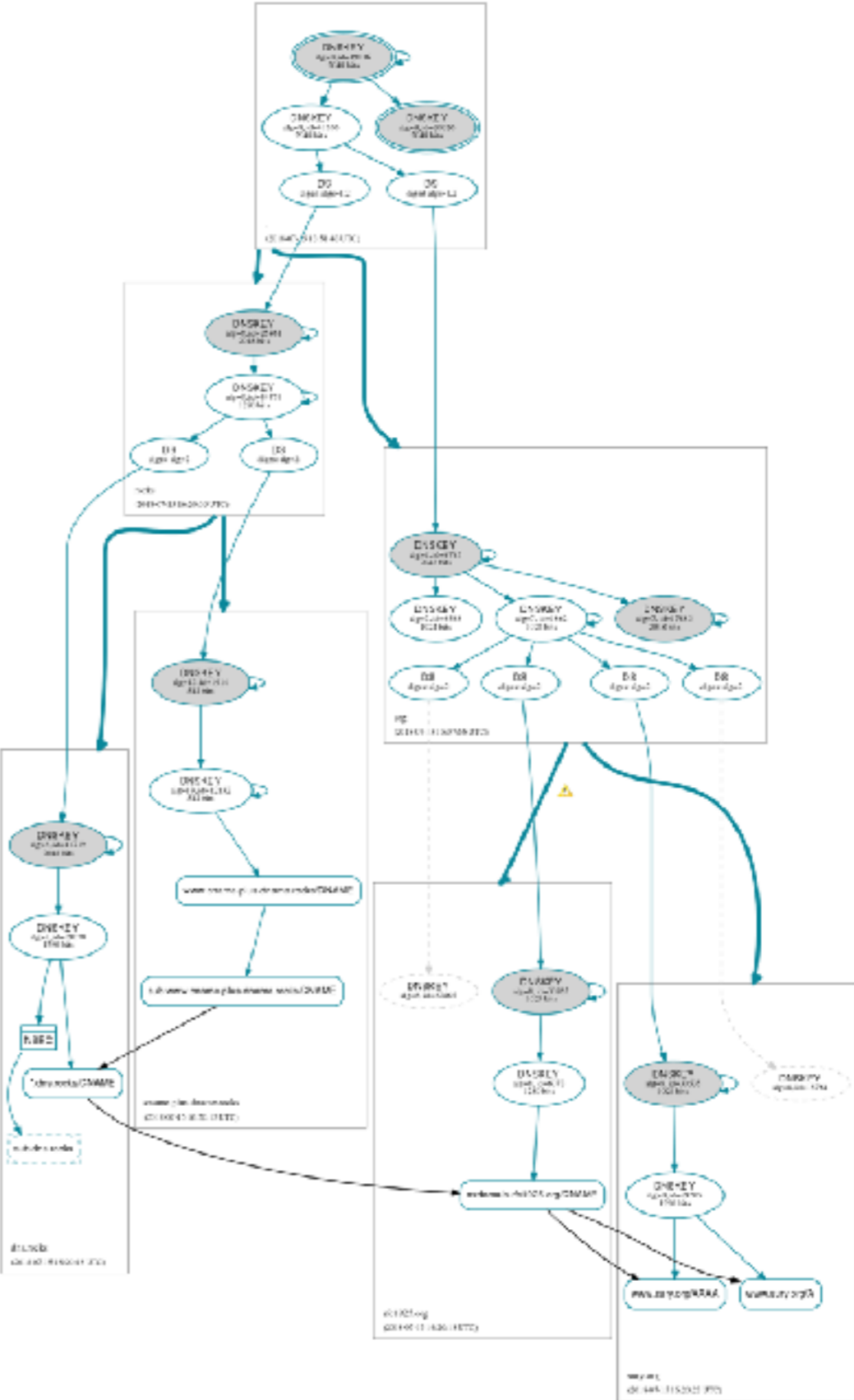
## Results

DNSSEC Validation Enabled	No QNAME Minimization	Relaxed QNAME Minimization	Strict QNAME Minimization
BIND 9.11.4	OK!	N/A	N/A
BIND 9.12.2	OK!	N/A	N/A
BIND 9.13.2	OK!	OK!	OK!
PDNS Recursor 4.1.3	DNAME fails [2]	N/A	N/A
Unbound 1.7.3	OK!	OK!	OK!
Knot Resolver 2.4.0	N/A	Mixed [1]	N/A
Google Public DNS	OK!	N/A	N/A
Verisign Public DNS	OK!	N/A	N/A
Quad 9	DNAME fails [2]	N/A	N/A
Cloudflare 1.1.1.1	N/A	Mixed [1]	N/A

1. DNAME returns SERVFAIL \*AND\* Correct Resource Records
2. PowerDNS 4.2 has some DNAME fixes in the roadmap

# DNSVIZ

sub.www.cname-plus-dname.rocks



# draft-sury-dnsop-cname-plus-dname

- Very preliminary draft based on a dnsect draft from 2010
- Different solution from the ANAME
  - Doesn't really replace ANAME
  - Provides a quick **working** solution deployable right now
- Questions:
  - Return DNAME along with CNAME for <owner> query?
  - Does NSEC(3) help here? Make DNSSEC mandatory?