



Aliasing in DNS

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Aliasing in DNS

- The “Chinese scripts” case
 - .中国 vs .中國
- The “Diacritics” case
 - řehoř.cz —> rehor.cz
- The “I have a website there...”
 - domain.tld
 - Web hosted at <place1>
 - Mail hosted at <place2>

CNAME + DNAME Experiment

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.master + 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 9.11.5(rc1)	OK!	N/A	N/A
BIND 9.12.3(rc1)	OK!	N/A	N/A
BIND 9.13.3	OK!	OK!	OK!
PDNS Recursor 4.1.4	DNAME fails [2]	N/A	N/A
Unbound 1.8.1	OK!	OK!	OK!
Knot Resolver 3.0.0	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

draft-sury-dnsop-cname-plus-dname

- Very preliminary draft based on a dnsextdraft from 2010
- Different solution from the ANAME
 - Doesn't really replace ANAME
 - Provides a quick *mostly* **working** solution deployable right now
- Optimization:
 - Return DNAME along with CNAME for <owner> query?

Do we still need alias?

- YES!!!
- But it's not really an DNS alias!
 - And the CNAME is never what you think it is...
- We need a pointer where the “stuff”[*] is located

But, wait!

- We already have that...
- It's called MX and used for mail
- It's called PTR and used for reverse delegations
- It's called SRV and used for everything else...
- ...but the Web :(

Can we use SRV?

- Hell, yeah!
- But it adds latency:
 - Then we just slap the needed records in the ADDITIONAL section
 - Or use parallel DNS queries
- But it's not supported everywhere
 - Well, ALIAS/ANAME/... also isn't
- But I already have ALIAS/ANAME/...
 - You can use both for transitional period!

What about wildcards?

- No, you can't have a pony!
 - **_http._srv.*.cname-plus-srv.pw.**
- Possible solutions:
 - CNAME+DNAME @ *
 - Needs new code
 - SRV at target
 - The SRV domain prefix is lost
 - Don't use wildcards
 - *"It's a provisioning problem."*
 - Just keep using the CNAME there





Thank you!

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