

draft-wkumari-dnsop-multiple-responses

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The World of DNS Requests Today

- A single request to start
- Followed by another
- And another
- And ...

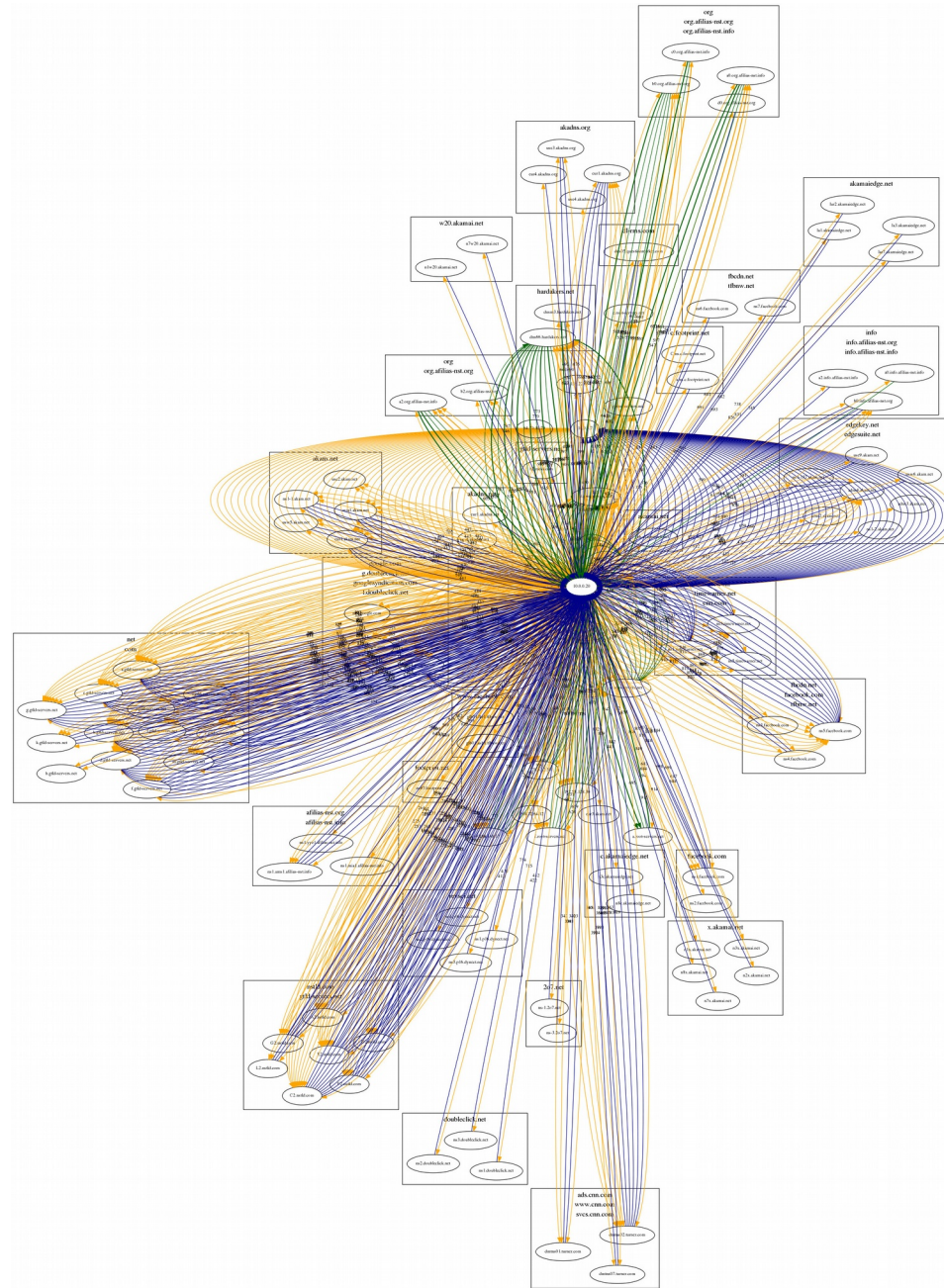
Examples

- Query A for www.example.com
 - Followed by `css.example.com`
 - And then `images.example.com`
 - And `api.example.com`
 - ...
- Query MX for `example.com`
 - Followed by A for `mail1.example.com`
 - Followed by A for `mail2.example.com`
 - Followed by `TLSA _25._tcp.mail1.example.com`
 - Followed by `TLSA _25._tcp.mail2.example.com`

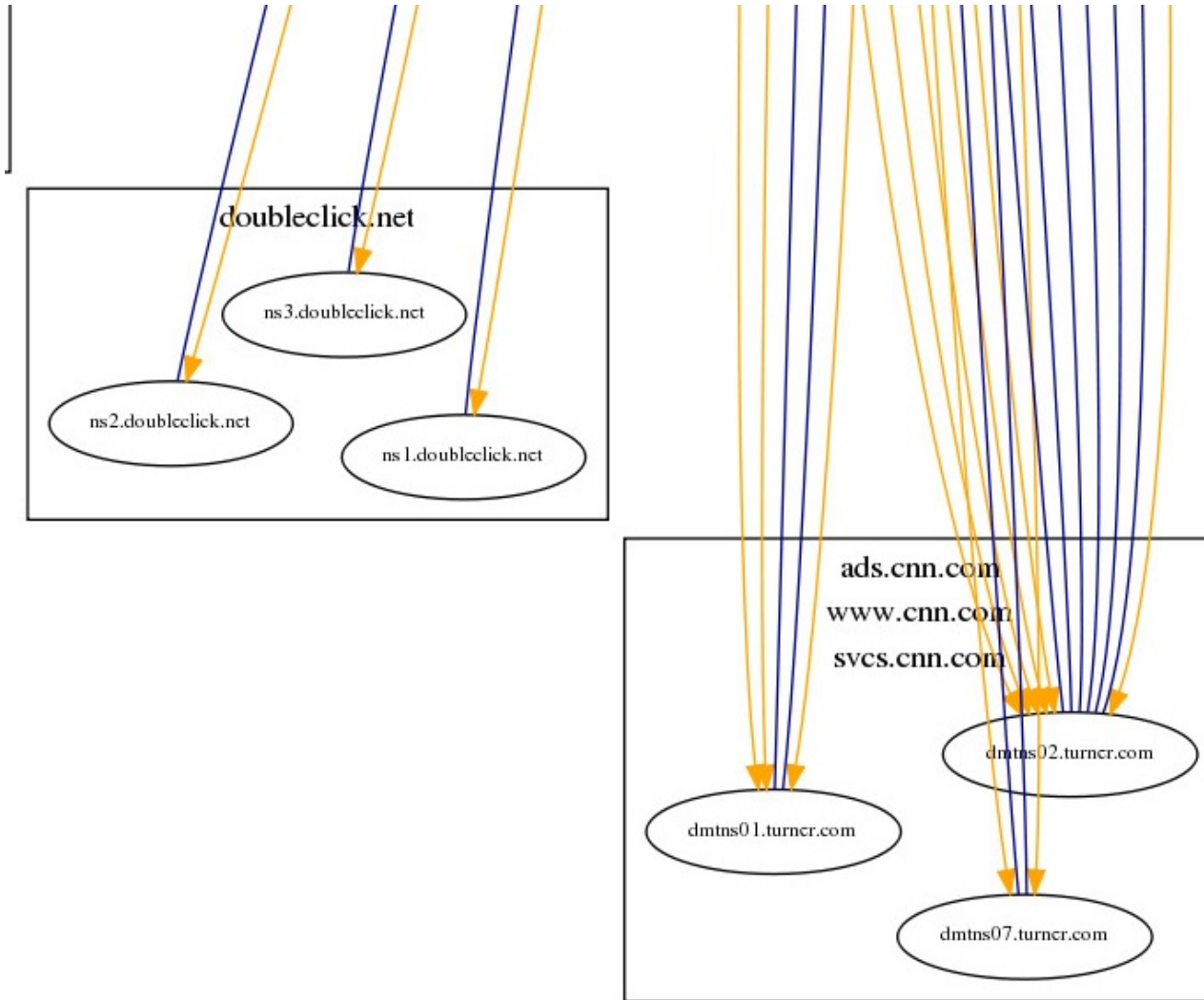
Examples 2

- Query SRV for `_imaps._tcp.example.com`
 - Followed by A for `imap1.example.com`
 - And A for `imap2.example.com`

A Pictorial View from 2010



A Close Up



What this proposal is and is not

- Is
 - **A Bundling ability** for authoritative servers
 - **Zone administrator configured**
 - Client still asks one question
- Is not
 - A way to ask multiple questions
 - (The client doesn't know the questions yet)
 - Competition with dnsop-xxx-...
 - Where xxx = ask multiple questions

How It Works

- Client sends an **EXTRA** flag in EDNS0
- Authoritative DNS server
 - Gets instructions via an EXTRA RR type
 - Sends ANSWER
 - Also **fills ADDITIONAL** section
 - Maybe truncates to fit transport
- Clients may query for EXTRA if desired
 - Generally not needed
 - Not prohibited though

The EXTRA Record

- The **EXTRA** record specifies:
 - Given a name and type...
 - ... what else should be returned
- Current dnsop-list agreement: (?)
 - www IN EXTRA A 10 A images
 - www IN EXTRA A 10 A css
 - www IN EXTRA A 20 CNAME api → api.magic
 - www IN EXTRA A 30 NS magic
 - www IN EXTRA A 30 DS magic

Restrictions

- MUST be authoratative
 - Can't answer for other portions of the tree
 - (Prevents regional differences based on query src)
- MUST be DNSSEC signed
 - Protects against poisoning
 - Most existing resolvers ignore ADDITIONAL today
 - Except for glue...
 - ... Which they only use to bootstrap

Questions?



Next Steps

- DNSOP Adoption?
 - Yay?
 - Nay?

