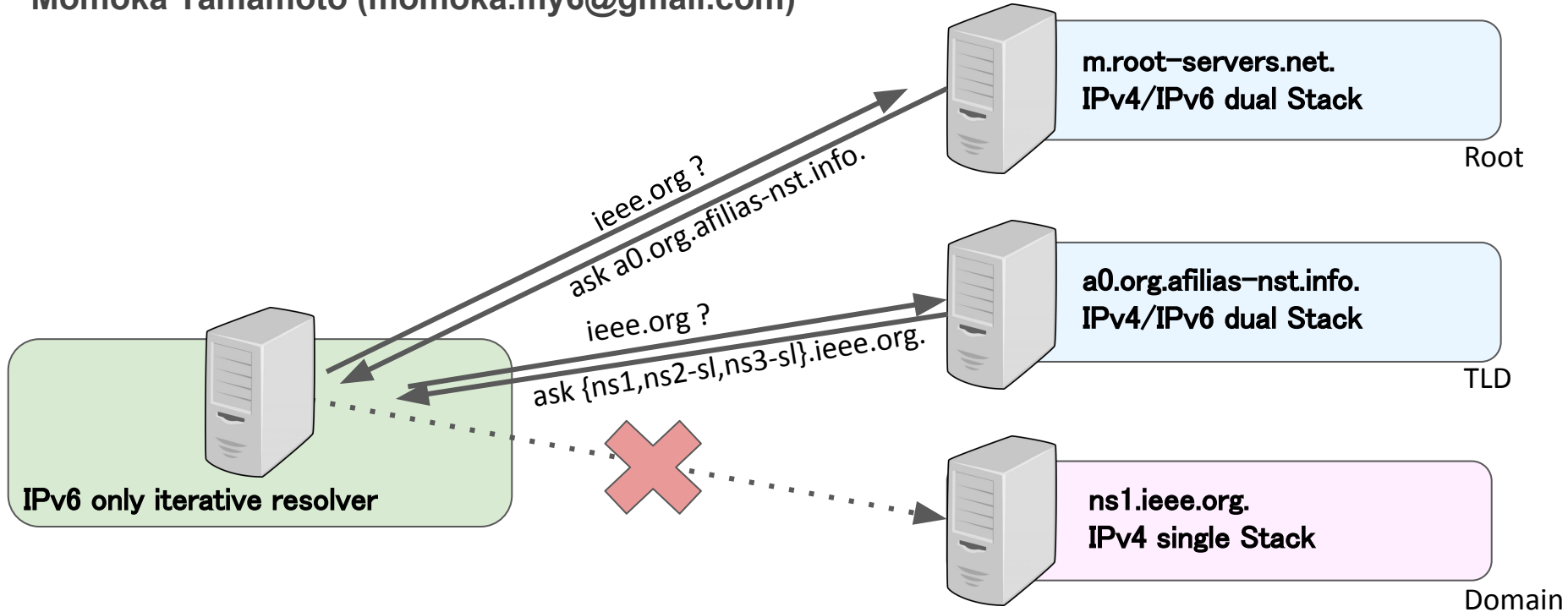
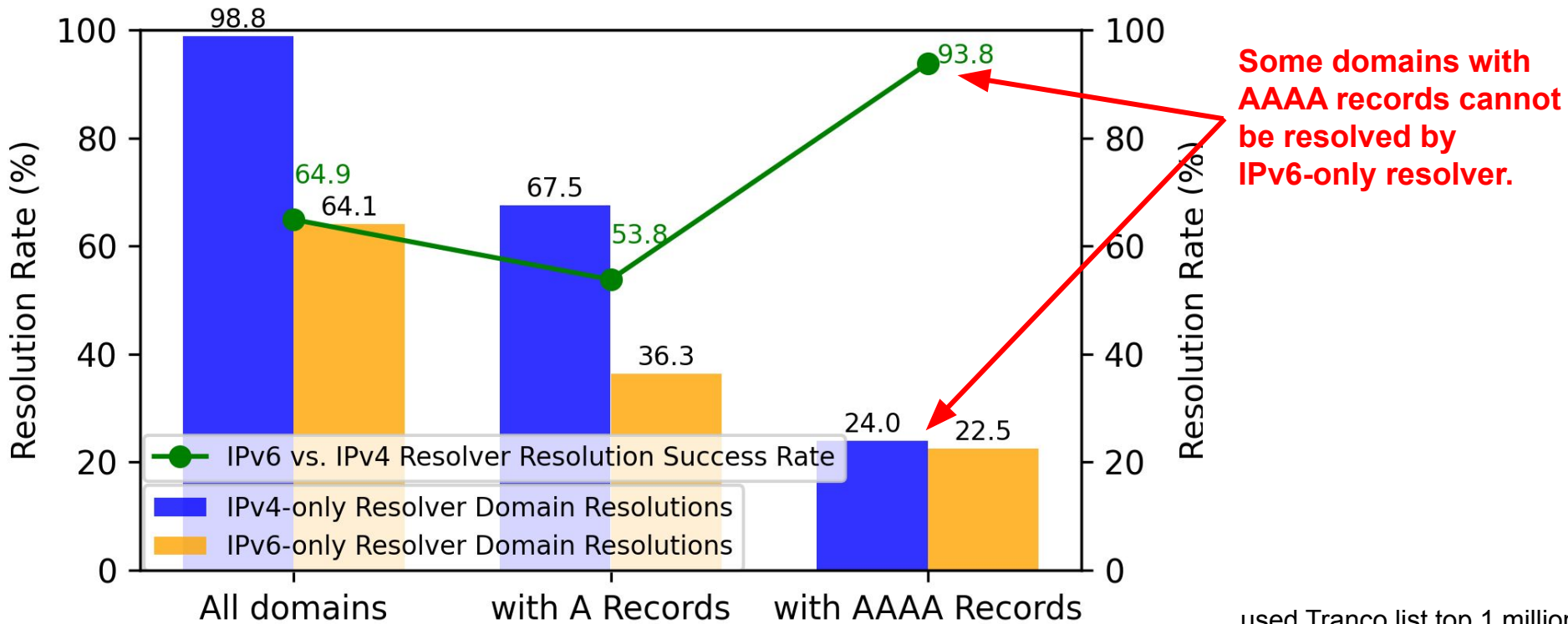


# IPv6 only resolvers, what is stopping them?

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# Percentage of domains resolved by an IPv6/IPv4 only Resolvers, with Breakdown by Record Type



# Domain that have AAAA record but can't be resolved by IPv6-only resolver

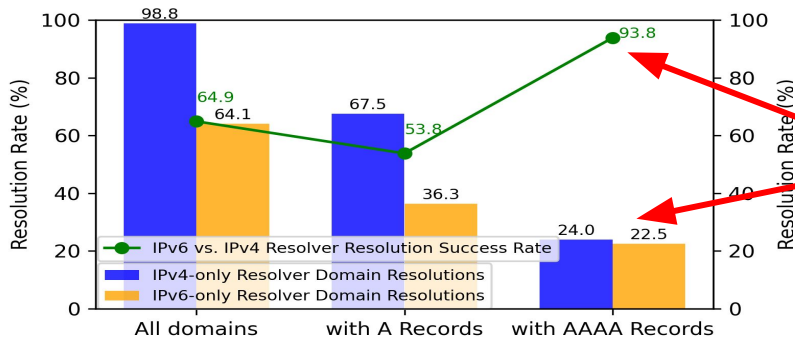
wikipedia.org  
mail.ru  
wikimedia.org  
harvard.edu  
nginx.org  
www.gov.uk  
gnu.org  
criteo.com  
uol.com.br  
timeweb.ru

timeweb.ru  
umich.edu  
dreamhost.com  
wiktionary.org  
zoro.to  
utexas.edu  
justhost.ru  
zhibo8.cc  
mangaraw.to  
9animetv.to

colorado.edu  
swisscom.ch  
66law.cn  
medlineplus.gov  
usa.gov  
georgetown.edu  
citrix.com  
ithome.com  
odoo.com  
sprinthost.ru

cancer.gov  
weborama.fr  
swisscom.com  
mantraonline.com  
9anime.to  
identrust.com  
tawk.to  
chinanews.com  
yoojia.com  
wikisource.org

afraid.org  
uwaterloo.ca  
wikibooks.org  
lichess.org  
videolan.org  
lua.org  
mediawiki.org  
eia.gov  
dtln.ru  
centos.org



**Some domains with AAAA records cannot be resolved by IPv6-only resolver.**

# Why are these domains unresolvable?

```
$ dig wikipedia.org aaaa
```

```
; <<>> DiG 9.16.1-Ubuntu <<>> wikipedia.org aaaa
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 65143
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags::; udp: 512
;; QUESTION SECTION:
;wikipedia.org.                IN      AAAA

;; ANSWER SECTION:
wikipedia.org.                600    IN      AAAA  2001:df2:e500:ed1a::1
```

```
$ dig ns0.wikimedia.org. aaaa
```

```
; <<>> DiG 9.16.1-Ubuntu <<>> ns0.wikimedia.org. aaaa
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 44205
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags::; udp: 512
;; QUESTION SECTION:
;ns0.wikimedia.org.           IN      AAAA

;; AUTHORITY SECTION:
wikimedia.org.                591    IN      SOA   ns0.wikimedia.org.
hostmaster.wikimedia.org.    2023032813 43200 7200 1209600 600
```

# Why are these domains unresolvable?

```
% dig ext-dns-1.harvard.edu. @m.edu-servers.net.

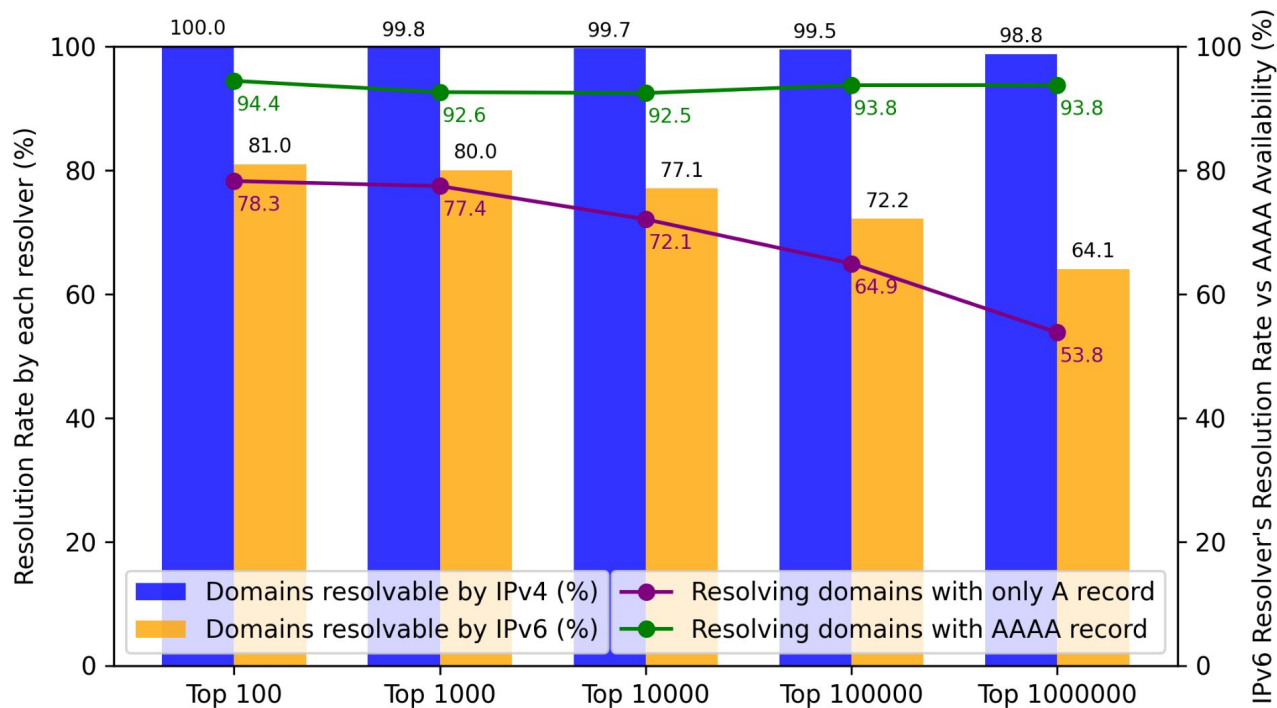
; <<>> DiG 9.10.6 <<>> ext-dns-1.harvard.edu. @a.edu-servers.net.
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 42717
;; flags: qr rd; QUERY: 1, ANSWER: 0, AUTHORITY: 2, ADDITIONAL: 3
;; WARNING: recursion requested but not available

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags;; udp: 4096
;; QUESTION SECTION:
;ext-dns-1.harvard.edu.      IN      A

;; AUTHORITY SECTION:
harvard.edu.                172800  IN      NS      ext-dns-1.harvard.edu.
harvard.edu.                172800  IN      NS      ext-dns-2.harvard.edu.

;; ADDITIONAL SECTION:
ext-dns-1.harvard.edu.     172800  IN      A       128.103.200.35
ext-dns-2.harvard.edu.     172800  IN      A       128.103.200.162
```

# Comparison of resolution rates for different popularity rankings



Comparison of the resolvability of domains by IPv4-only and IPv6-only resolvers across different popularity rankings.