relays_overview

July 14, 2025

```
Total relays: 8865, with metadata: 1247 (14.07%)
Network distribution for relays with metadata:
- clearnet: 997 (79.95%)
- tor: 250 (20.05%)
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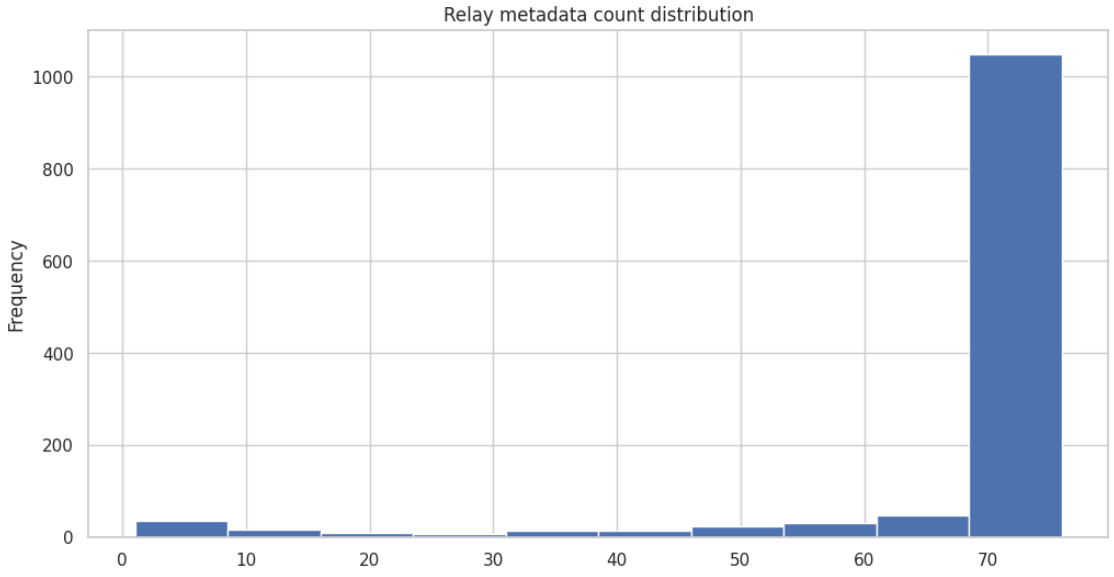
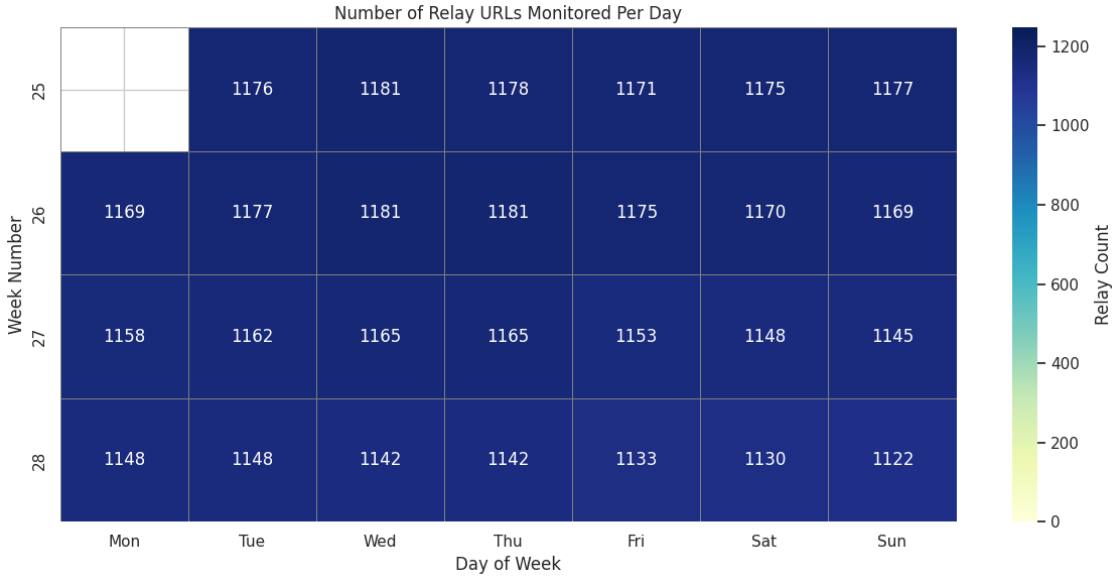
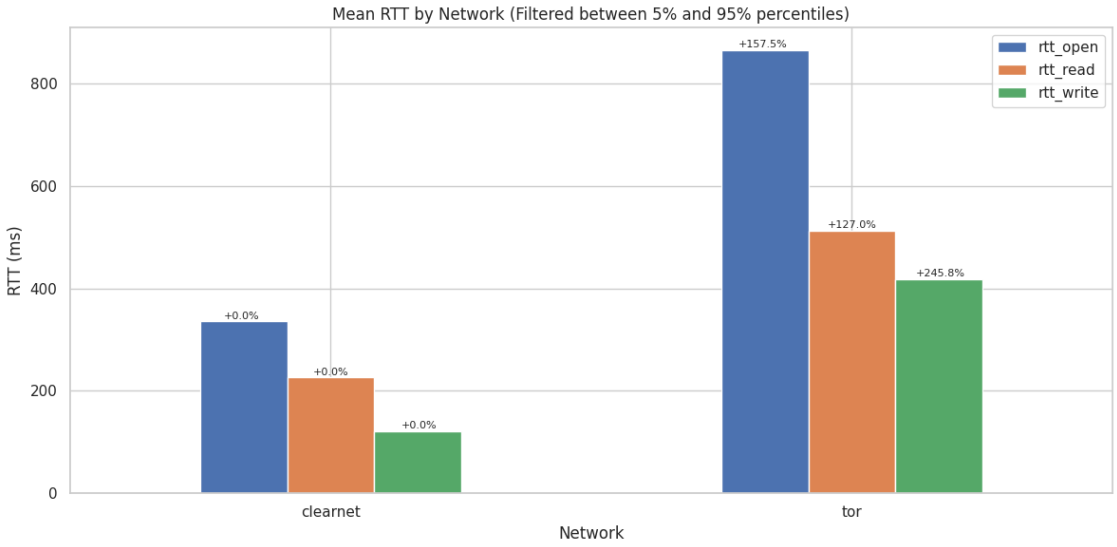
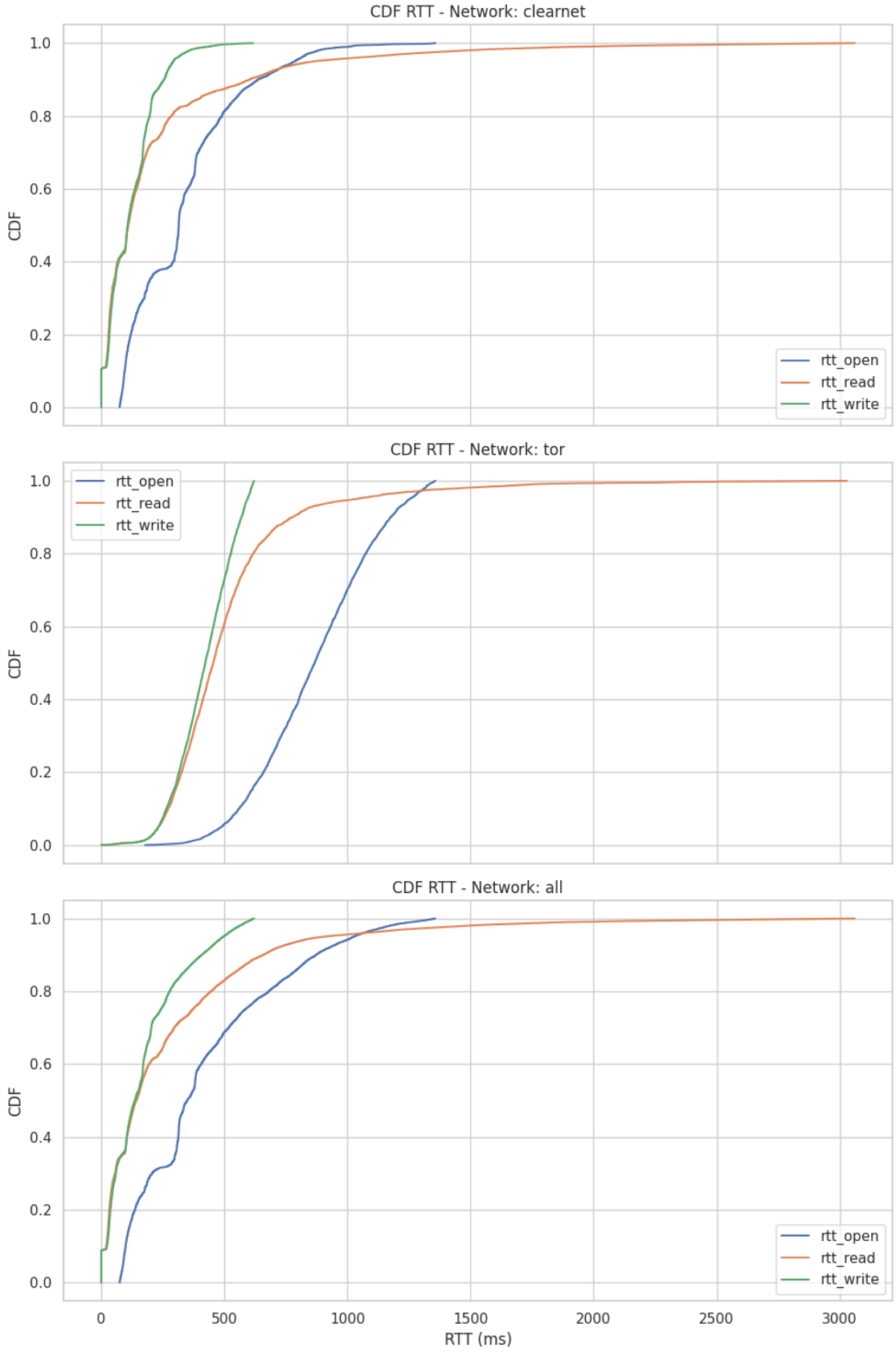
```
<Axes: title={'center': 'Relay metadata count distribution'},
ylabel='Frequency'>
```

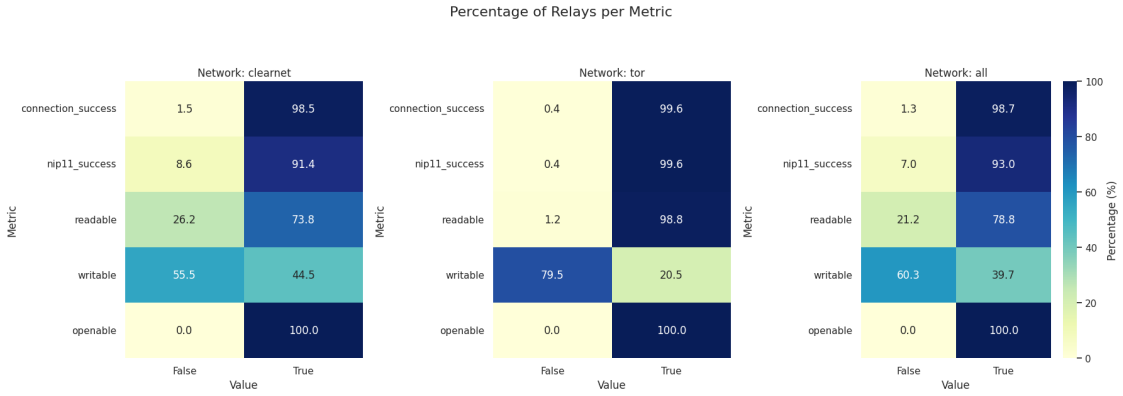



```
Total unique relays with metadata: 1247
```


Number of Relay URLs Monitored Per Day
Week Number
25
26
27
28
1176
1181
1178
1171
1175
1177
1169
1177
1181
1181
1175
1170
1169
1158
1162
1165
1165
1153
1148
1145
1148
1148
1142
1142
1133
1130
1122
Mon
Tue
Wed
Thu
Fri
Sat
Sun
Day of Week
Relay Count
1200
1000
800
600
400
200
0


Mean RTT by Network (Filtered between 5% and 95% percentiles)
RTT (ms)
800
600
400
200
0
rtt_open
rtt_read
rtt_write
+0.0%
+0.0%
+0.0%
+157.5%
+127.0%
+245.8%
clearnet
tor
Network


CDF RTT - Network: clearnet
CDF RTT - Network: tor
CDF RTT - Network: all
CDF
RTT (ms)
rtt_open
rtt_read
rtt_write
0.0
0.2
0.4
0.6
0.8
1.0
0
500
1000
1500
2000
2500
3000



Network: clearnet

	connection_success	nip11_success	readable	writable	openable	count
0	True	True	True	True	True	419
1	True	True	True	False	True	273
2	True	True	False	False	True	199
3	True	False	False	False	True	52
4	True	False	True	False	True	20
5	True	False	True	True	True	12
6	True	True	False	True	True	5
7	False	True	True	False	True	2
8	True	False	False	True	True	2

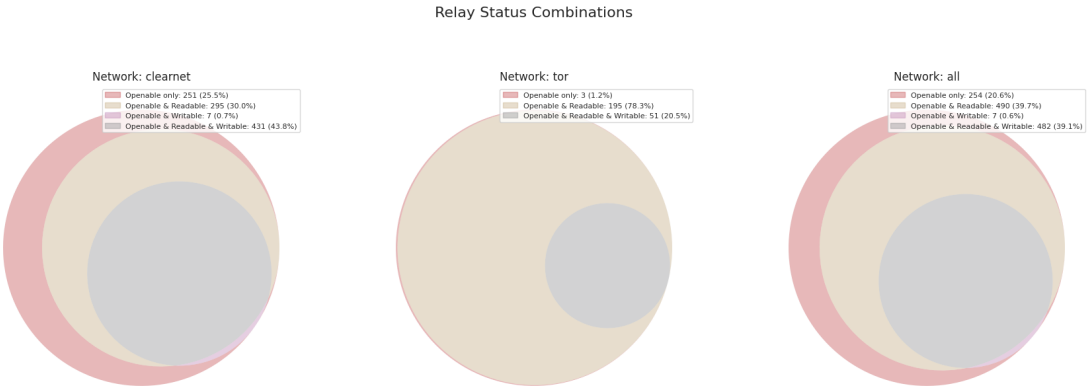
Network: tor

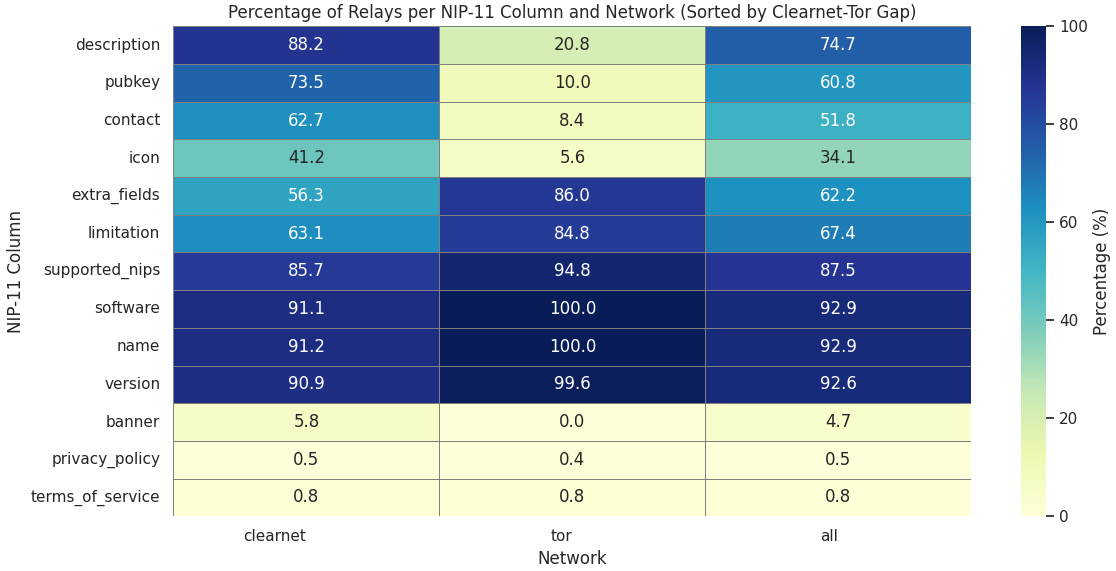
	connection_success	nip11_success	readable	writable	openable	count
0	True	True	True	False	True	194
1	True	True	True	True	True	51
2	True	True	False	False	True	3
3	True	False	True	False	True	1

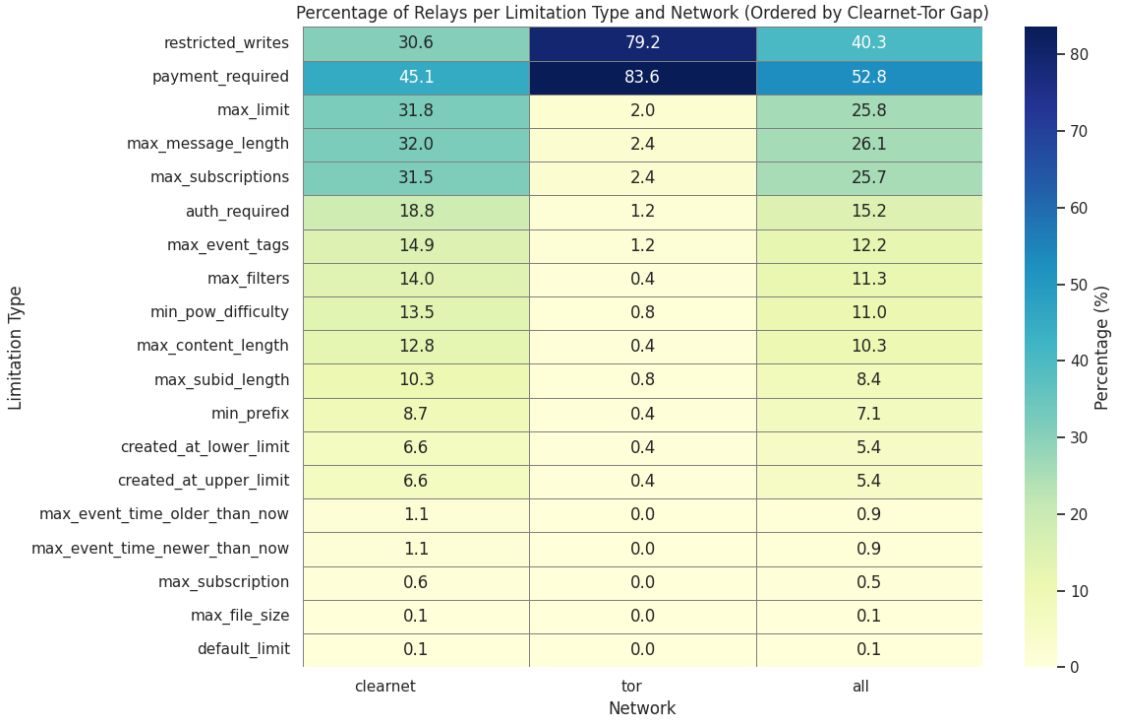
Network: all

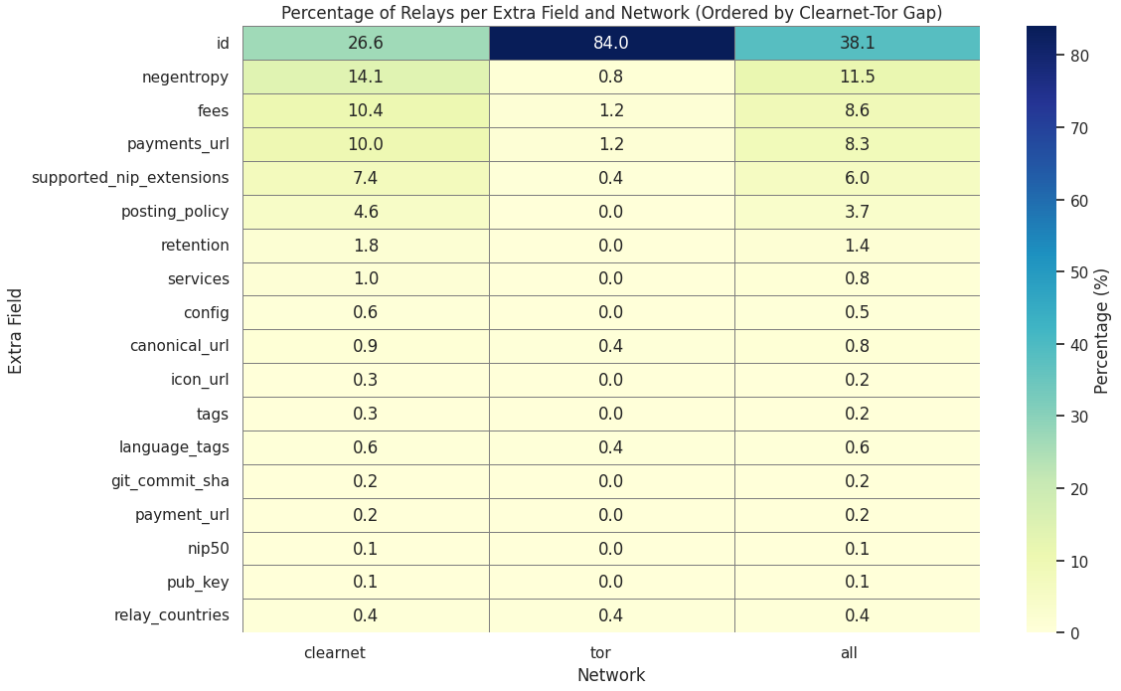
	connection_success	nip11_success	readable	writable	openable	count
0	True	True	True	True	True	470
1	True	True	True	False	True	467
2	True	True	False	False	True	202
3	True	False	False	False	True	52
4	True	False	True	False	True	21
5	True	False	True	True	True	12

6	True	True	False	True	True	5
7	False	True	True	False	True	2
8	True	False	False	True	True	2



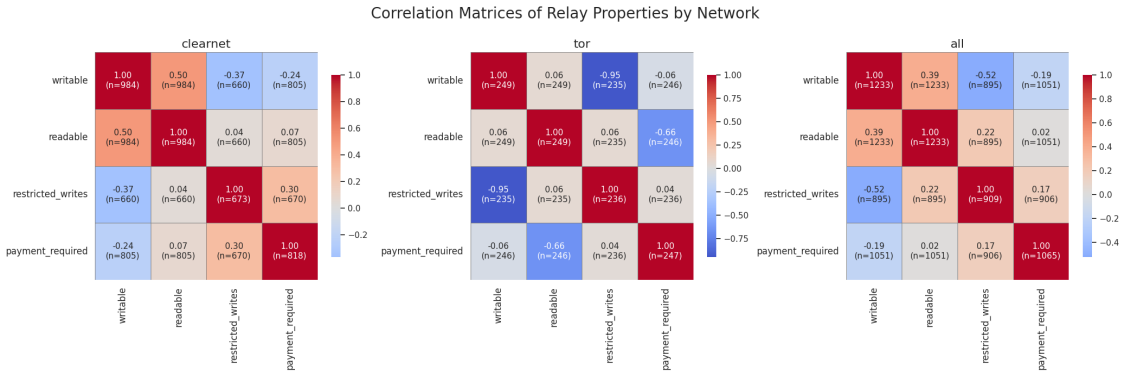







```
Number of relays in cleanet and tor: 1247
Number of relays in cleanet: 997
```

Number of relays in tor: 250



Network: clearnet

	writable	readable	restricted_writes	payment_required	count
0	True	True	False	False	273
1	False	False	False	False	178
2	False	True	False	False	96
3	False	True	True	False	68
4	False	False	True	False	24
5	False	True	True	True	7
6	True	False	False	False	6
7	False	False	True	True	4
8	True	True	True	False	1

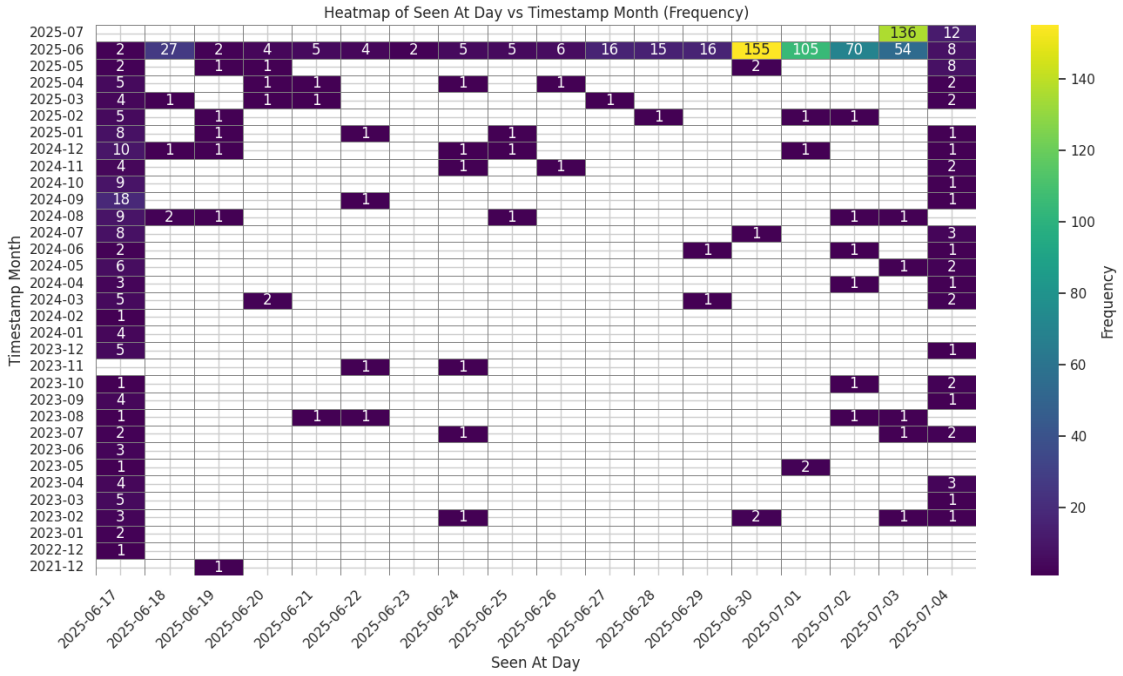
Network: tor

	writable	readable	restricted_writes	payment_required	count
0	False	True	True	False	182
1	True	True	False	False	48
2	False	True	False	False	3
3	False	False	False	False	1
4	False	False	True	True	1

Network: all

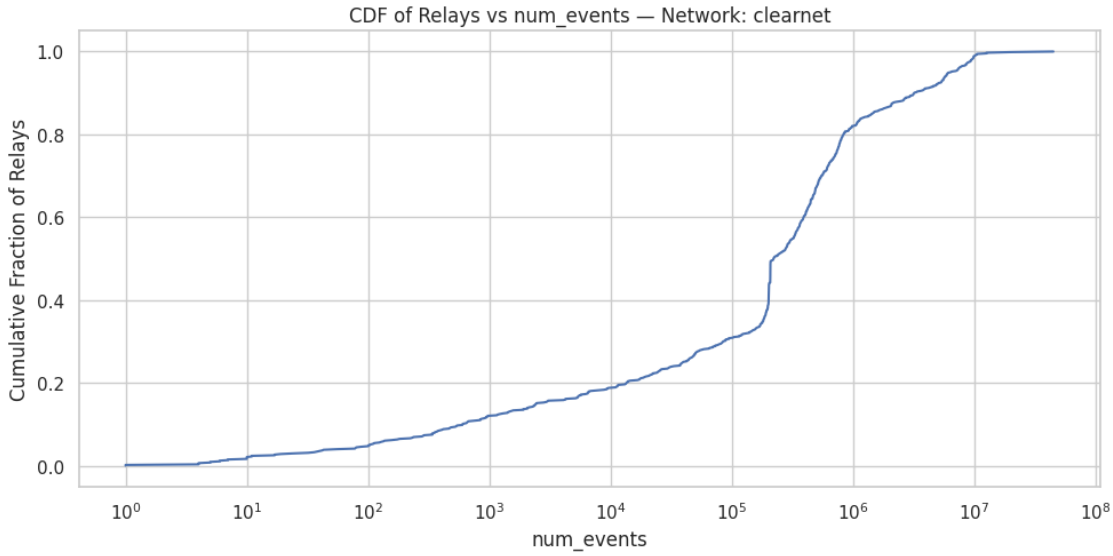
	writable	readable	restricted_writes	payment_required	count
0	True	True	False	False	321
1	False	True	True	False	250
2	False	False	False	False	179
3	False	True	False	False	99
4	False	False	True	False	24
5	False	True	True	True	7
6	True	False	False	False	6

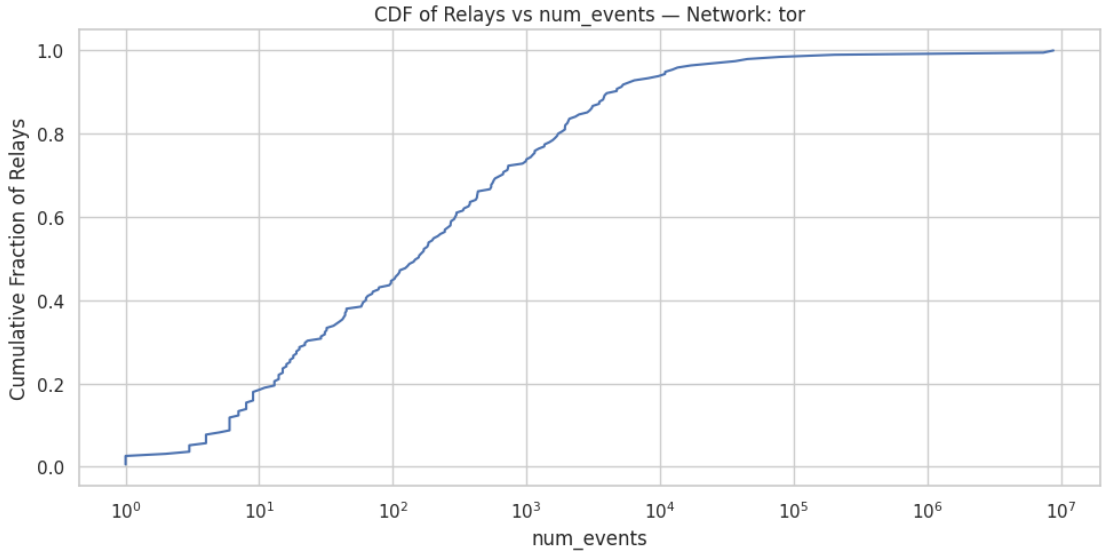
7	False	False	True	True	5
8	True	True	True	False	1

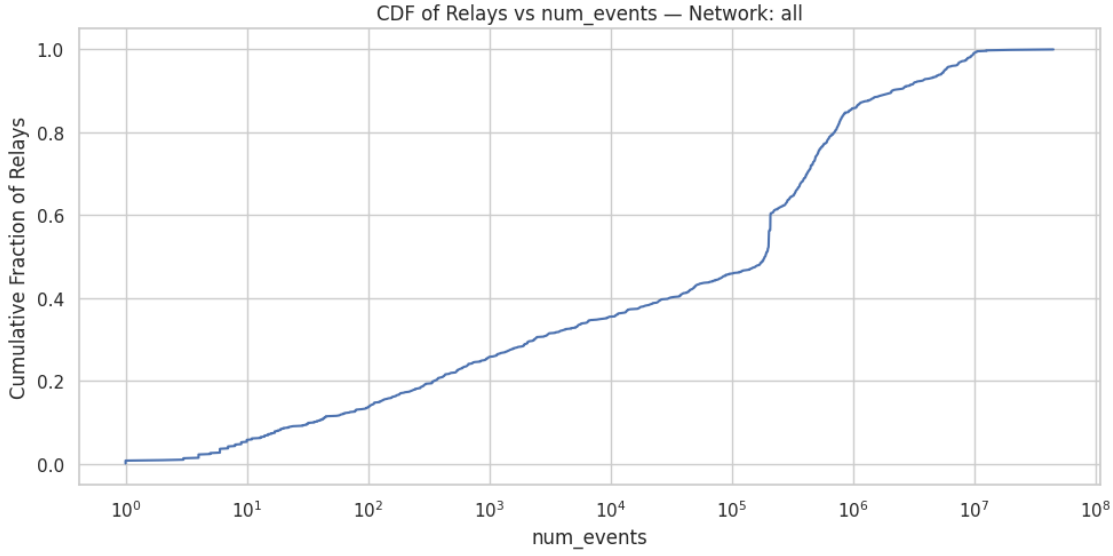


Top 5 relays with most num_events in clearnet:
- wss://relay.nostr.band: 45043188 num_events
- wss://a.nos.lol: 19468715 num_events
- wss://dave.st.germa.in/nostr: 12627203 num_events
- wss://nos.lol: 12627110 num_events
- wss://nostr-01.yakihonne.com: 10561376 num_events

Top 5 relays with most num_events in tor:
- wss://oxtrdevav64z64yb7x6rjg4ntzqjhedm5b5zjqulugknhzr46ny2qbad.onion: 8792611 num_events
- wss://sovbitm2enxfr5ot6qscwy5ermdffbqscy66wirkbsigvcshumyzbbqd.onion: 7390935 num_events
- wss://3rpykuwfpgjijym45svczvzpbur6t6x4b67lnvp6wxdre2cqoy6a4dyd.onion: 202968 num_events
- wss://sovbitgz5uqyh7jwcsudq4sspxlj4kbnurvd3xarkkx2use3k6rlibqd.onion: 78898 num_events
- wss://cmuqxreb6oma3x3iq3zh62im7w4266uo3txac6e75qtlfqs7scwqyqyd.onion: 45099 num_events

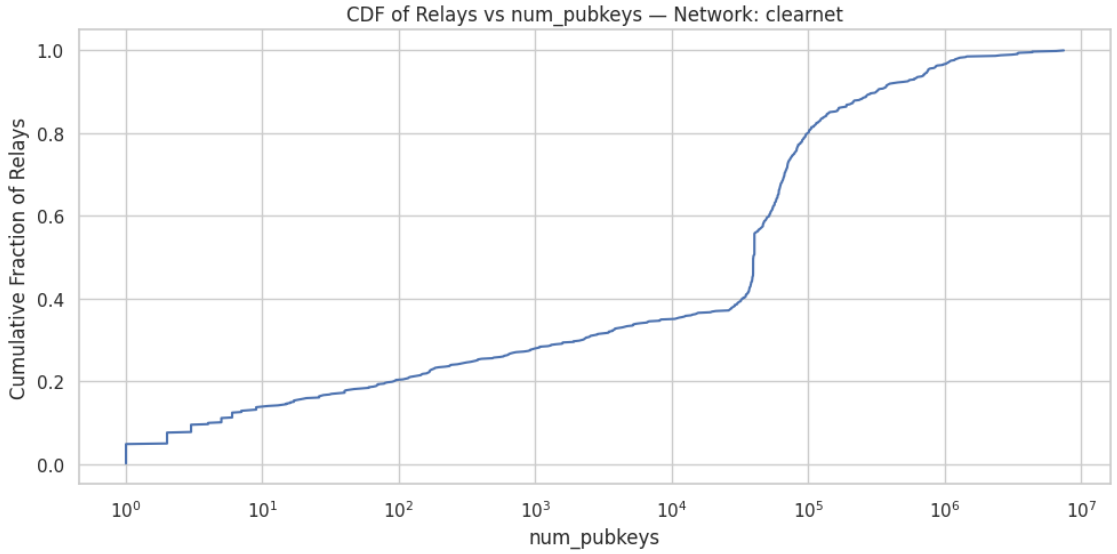

CDF of Relays vs num_events — Network: clearnet
Cumulative Fraction of Relays
1.0
0.8
0.6
0.4
0.2
0.0
10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
num_events

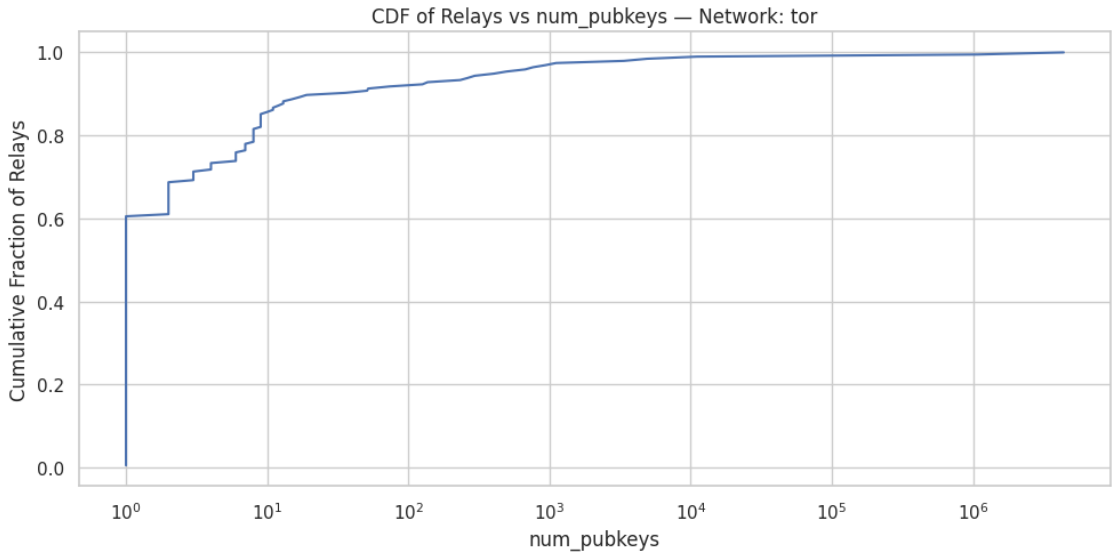

CDF of Relays vs num_events — Network: tor
Cumulative Fraction of Relays
1.0
0.8
0.6
0.4
0.2
0.0
10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7
num_events

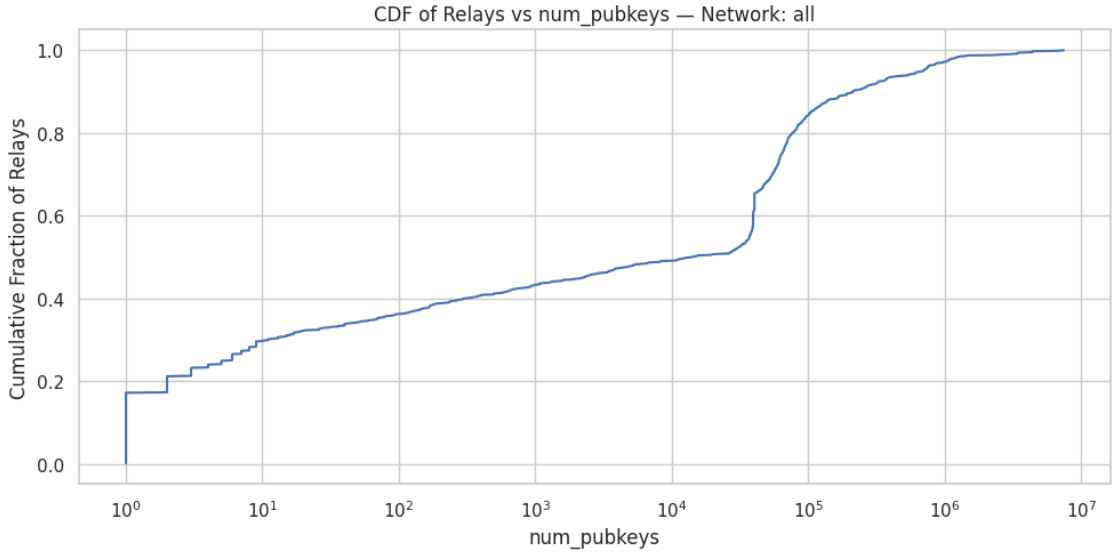

CDF of Relays vs num_events — Network: all
Cumulative Fraction of Relays
1.0
0.8
0.6
0.4
0.2
0.0
10^0 10^1 10^2 10^3 10^4 10^5 10^6 10^7 10^8
num_events

```
Top 5 relays with most num_pubkeys in clearnet:
- wss://directory.yabu.me: 7450716 num_pubkeys
- wss://relay.nos.social: 6578814 num_pubkeys
- wss://nostr.oxtr.dev: 4375266 num_pubkeys
- wss://nostr.0xtr.dev: 4375214 num_pubkeys
- wss://user.kindpag.es: 3464521 num_pubkeys

Top 5 relays with most num_pubkeys in tor:
- wss://oxtrdevav64z64yb7x6rjg4ntzqjhedm5b5zjqulugknhzr46ny2qbad.onion: 4390593
num_pubkeys
- wss://sovbitm2enxfr5ot6qscwy5ermdffbqscy66wirkbsigvcshumyzbbqd.onion: 1077601
num_pubkeys
- wss://3rpykuwfpgjijym45svczvzpbur6t6x4b67lnvp6wxdre2cqoy6a4dyd.onion: 11118
num_pubkeys
- wss://hae65yo2et4gnmifkay3j35ooy6rva5nkedkoodyq4fgafpw74xlenqd.onion: 4920
num_pubkeys
- wss://ykzqzq6p33vstqolru7b5dykjjfov7xomidnyevnb5oizopcxc57z6id.onion: 3365
num_pubkeys
```


CDF of Relays vs num_pubkeys — Network: clearnet
Cumulative Fraction of Relays
num_pubkeys


CDF of Relays vs num_pubkeys — Network: tor
Cumulative Fraction of Relays
num_pubkeys


CDF of Relays vs num_pubkeys — Network: all
Cumulative Fraction of Relays
num_pubkeys

```
                                              relay_url  num_events  \
600  wss://oxtrdevav64z64yb7x6rjg4ntzqjhedm5b5zjqul…     8792611
808                              wss://nostr.oxtr.dev     8576968

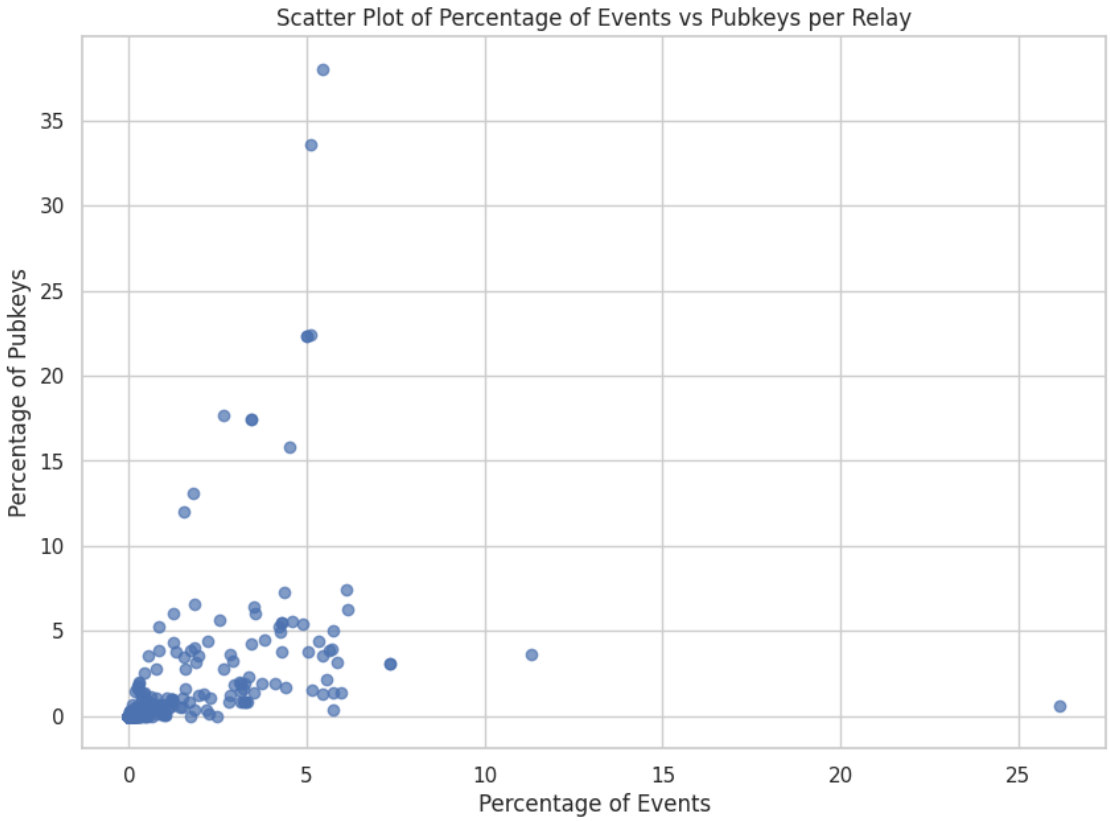
     num_pubkeys  first_eventdate  last_eventdate  pct_events  pct_pubkeys  \
600      4390593                0      1751473310    5.104648    22.410147
808      4375266                0      1751188203    4.979454    22.331916

      network
600       tor
808  clearnet

                                              relay_url  num_events  \
58                            wss://freelay.sovbit.host     7396293
115  wss://sovbitgz5uqyh7jwcsudq4sspxlj4kbnurvd3xar…       78898
418                             wss://nostr.sovbit.host       78415
664  wss://sovbitm2enxfr5ot6qscwy5ermdffbqscy66wirk…     7390935

     num_pubkeys  first_eventdate  last_eventdate  pct_events  pct_pubkeys  \
58       1077913       1628046289      1751473311    4.294000     5.501805
115          496       1640305962      1751472288    0.045805     0.002532
418          496       1640305962      1751185520    0.045525     0.002532
664      1077601       1628046289      1751473311    4.290889     5.500213

      network
58   clearnet
115       tor
418  clearnet
664       tor
```


Scatter Plot of Percentage of Events vs Pubkeys per Relay
Percentage of Pubkeys
Percentage of Events
0
5
10
15
20
25
30
35