



RIPE NCC

RIPE NETWORK COORDINATION CENTRE

Regional Report

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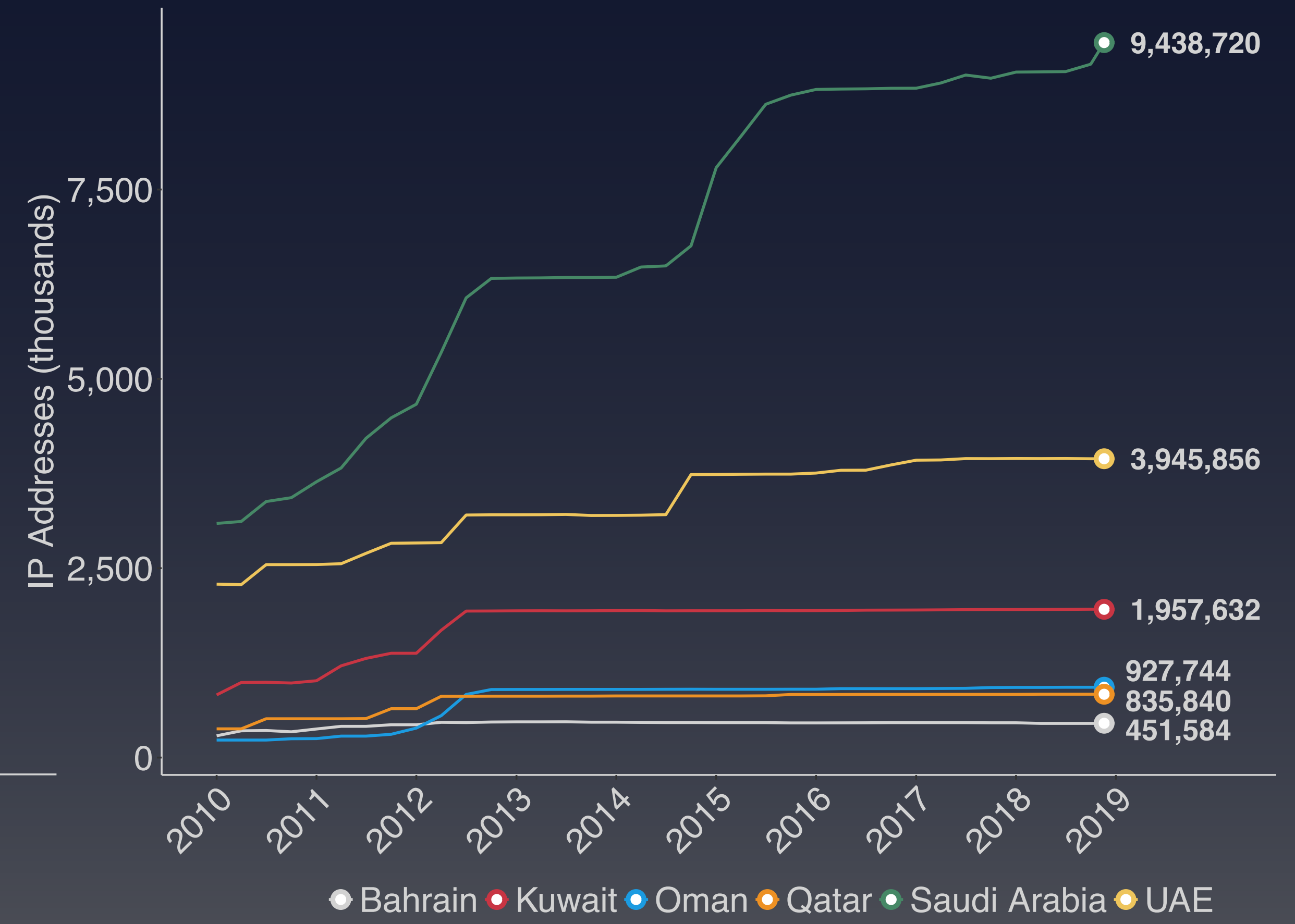
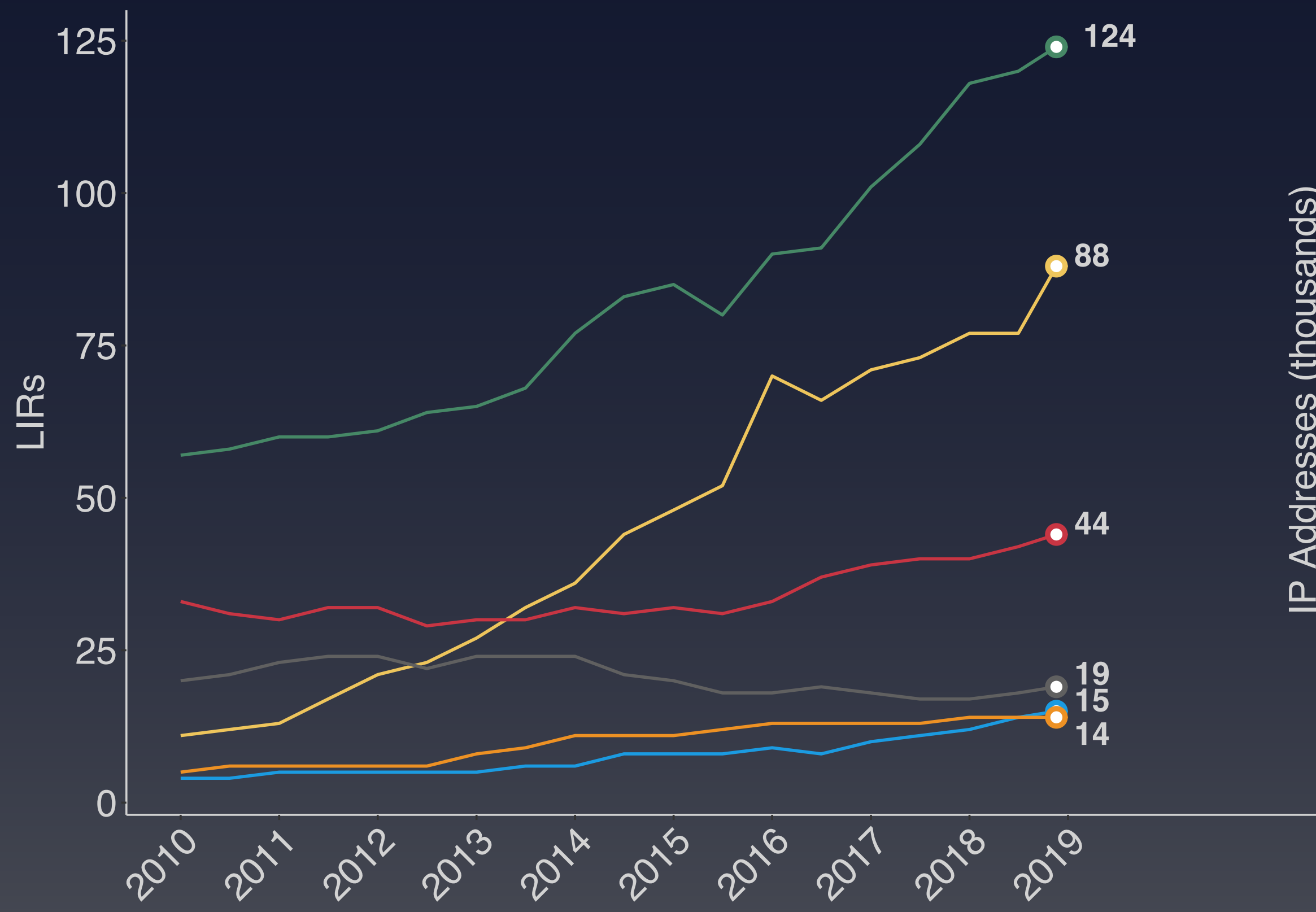
RIPE NCC

Growth in the GCC Countries



- **In September 2012, we reached our last /8 of IPv4 space (16 million addresses)**
- **Existing and future LIRs are now entitled to one final block of 1,024 IPv4 addresses (known as a /22)**
- **This created an additional incentive for network operators to become LIRs under the RIPE NCC**
- **In the GCC, we see this mainly in the number of LIRs in Saudi Arabia and the UAE**

Growth in the GCC Countries



IPv4 Transfers



- **Some organisations are now turning to IPv4 address transfers to obtain additional addresses for their networks or customers**
- **Observations from the region (since September 2012):**
 - Lebanon is the only country in the region with only internal IPv4 transfers (no import or export of addresses)
 - Jordan, Oman, Syria and Yemen have not exported any IPv4
 - Jordan, Kuwait, Oman, Qatar, Yemen have not seen any internal IPv4 transfers

IPv4 Transfers in Saudi Arabia (Addresses)



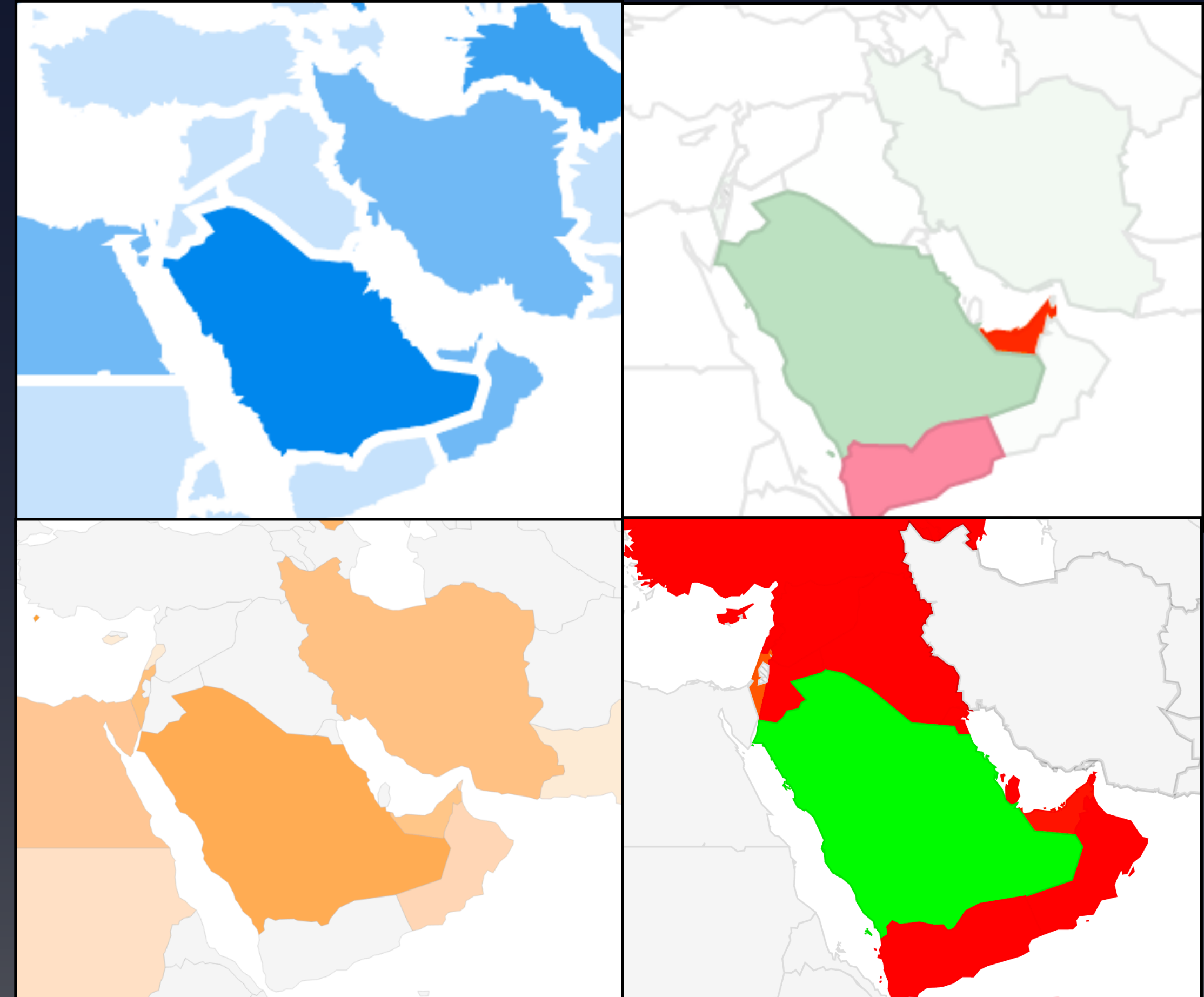
- Imports: 3.12 M
- Exports: 8.19 K
- Internal: 48.13 K
- Total IPv4 in Saudi Arabia (roughly): 9.5 M



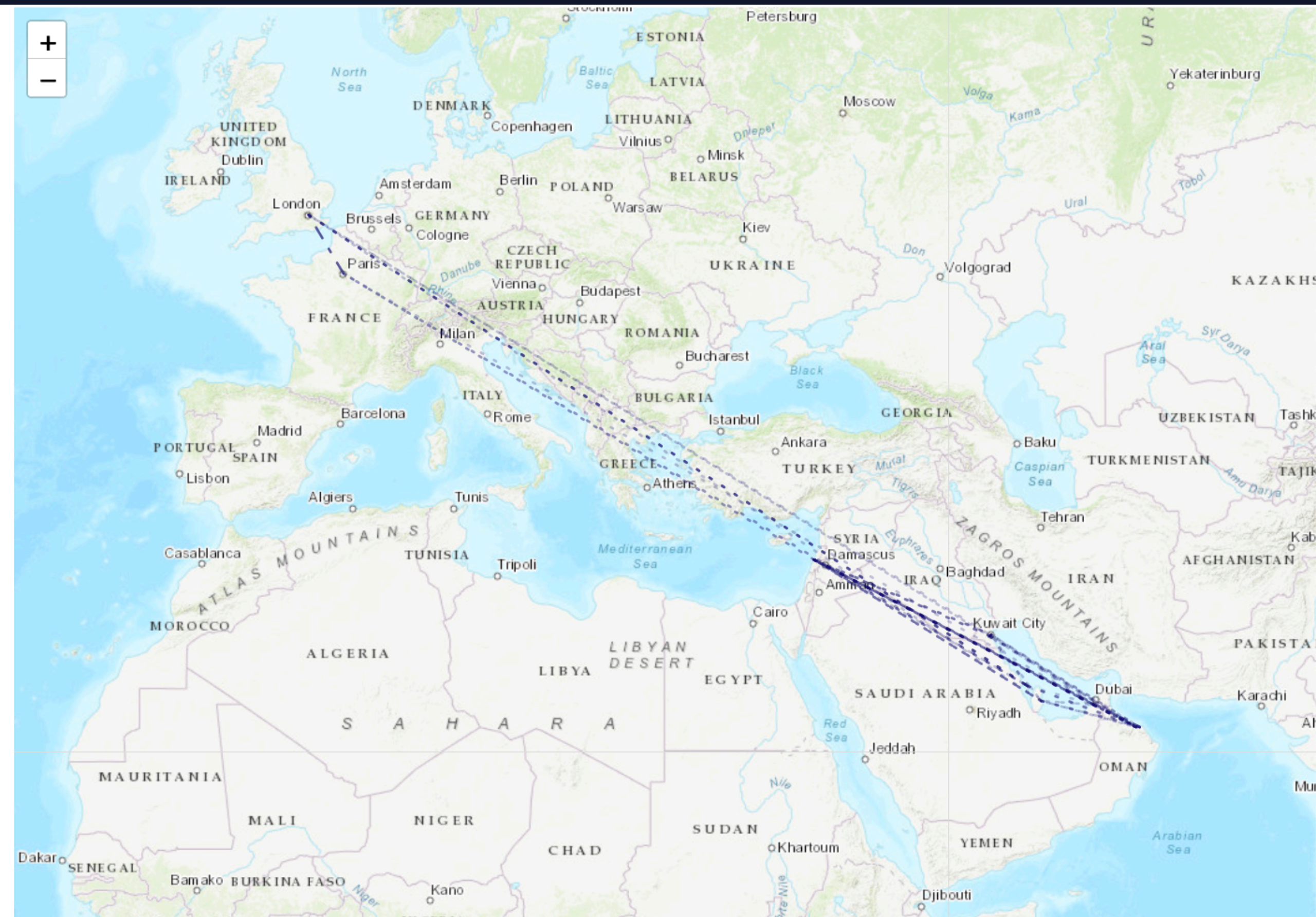
IPv6



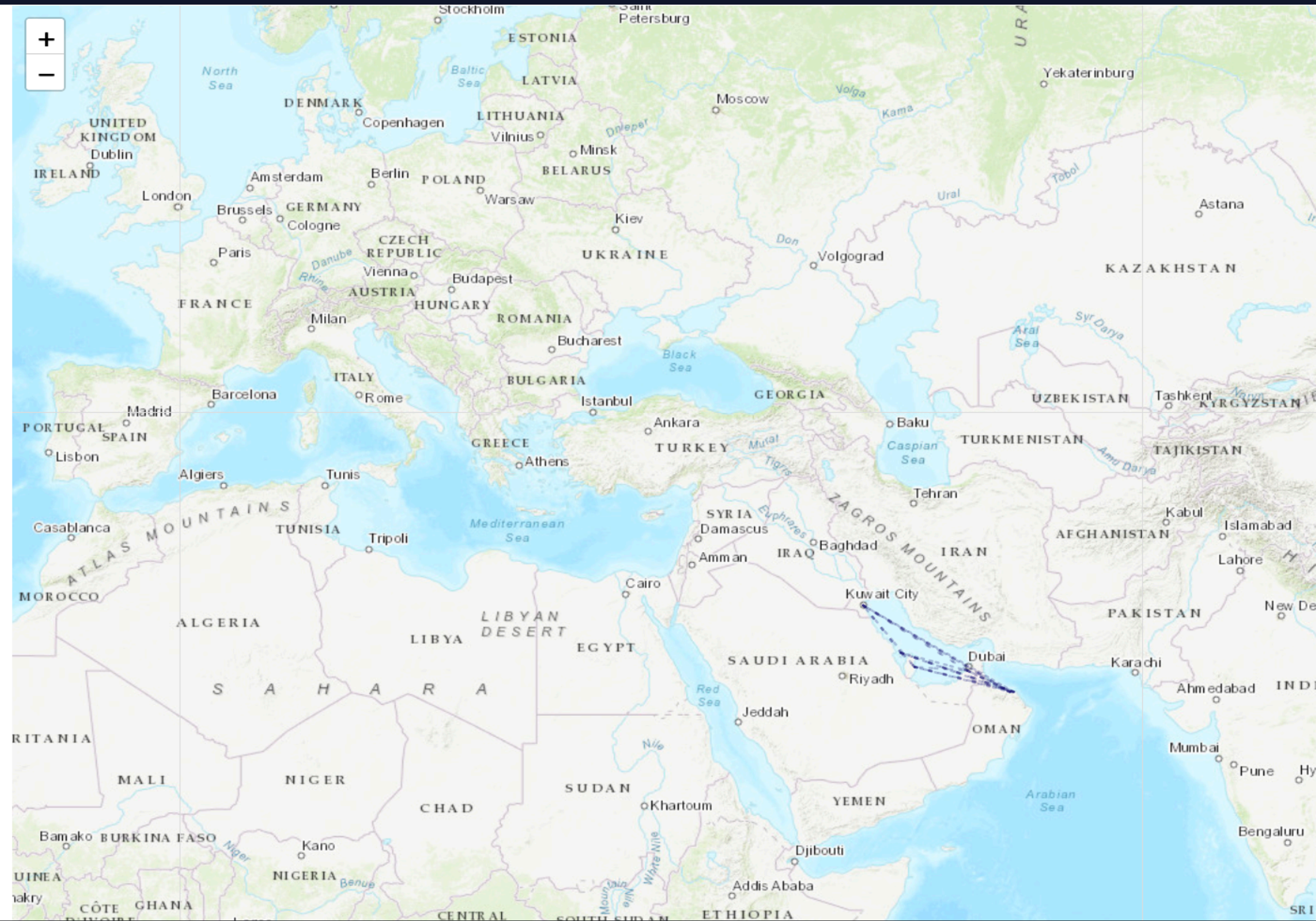
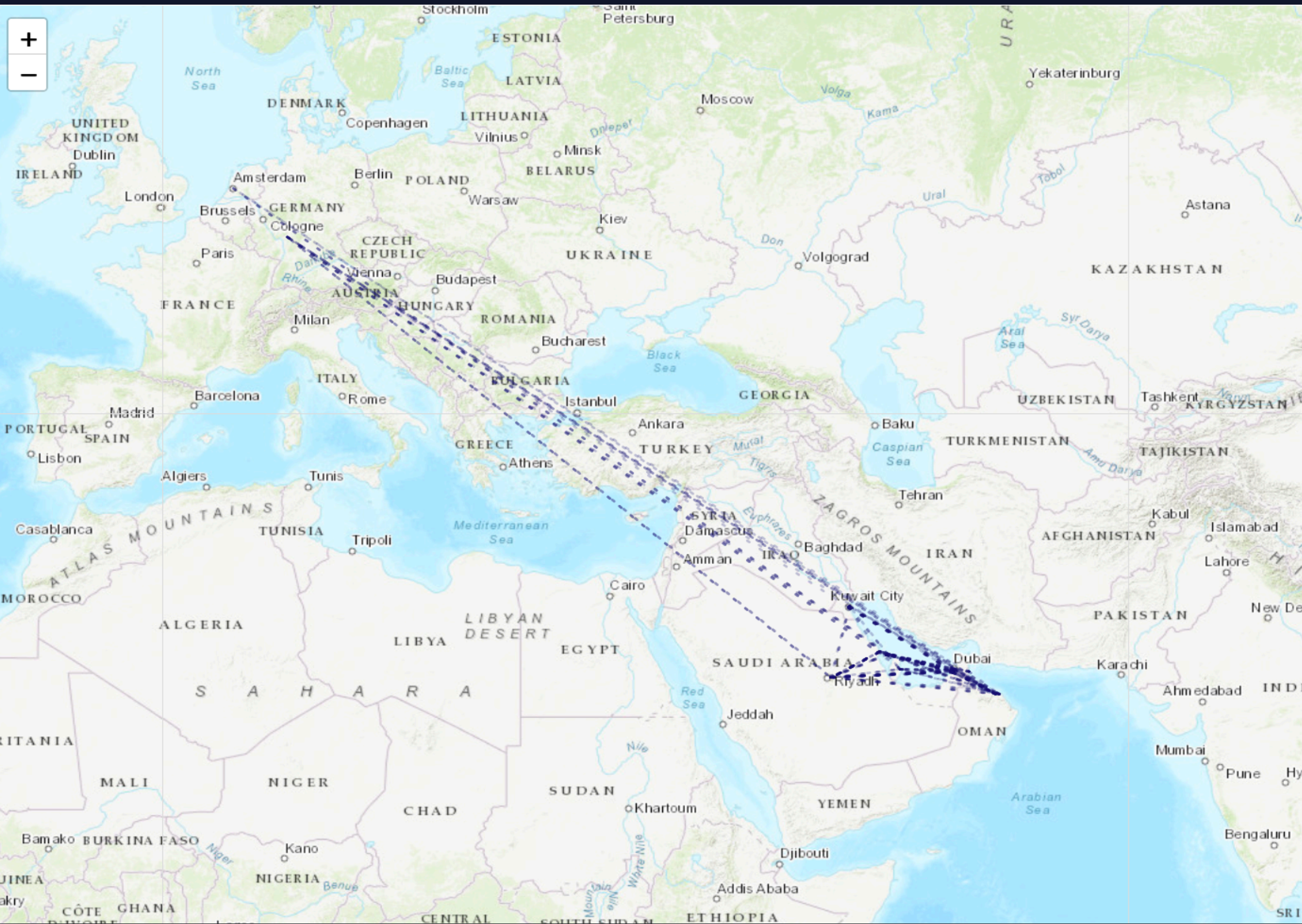
- IPv6 deployment in the Middle East countries is relatively low
- Saudi Arabia has seen a significant move towards adoption over the years
- Adoption in the Levant is still lacking



Routing Between Arab Countries (IPv4 and IPv6)



Routing Between GCC countries (IPv4 and IPv6)



The Root Server System



- We operate k.root-servers.net - one of the 13 Internet root name servers
- Servers in the region:
 - Kuwait City: 2
 - Manama: 1
 - Doha: 1
 - Beirut: 1

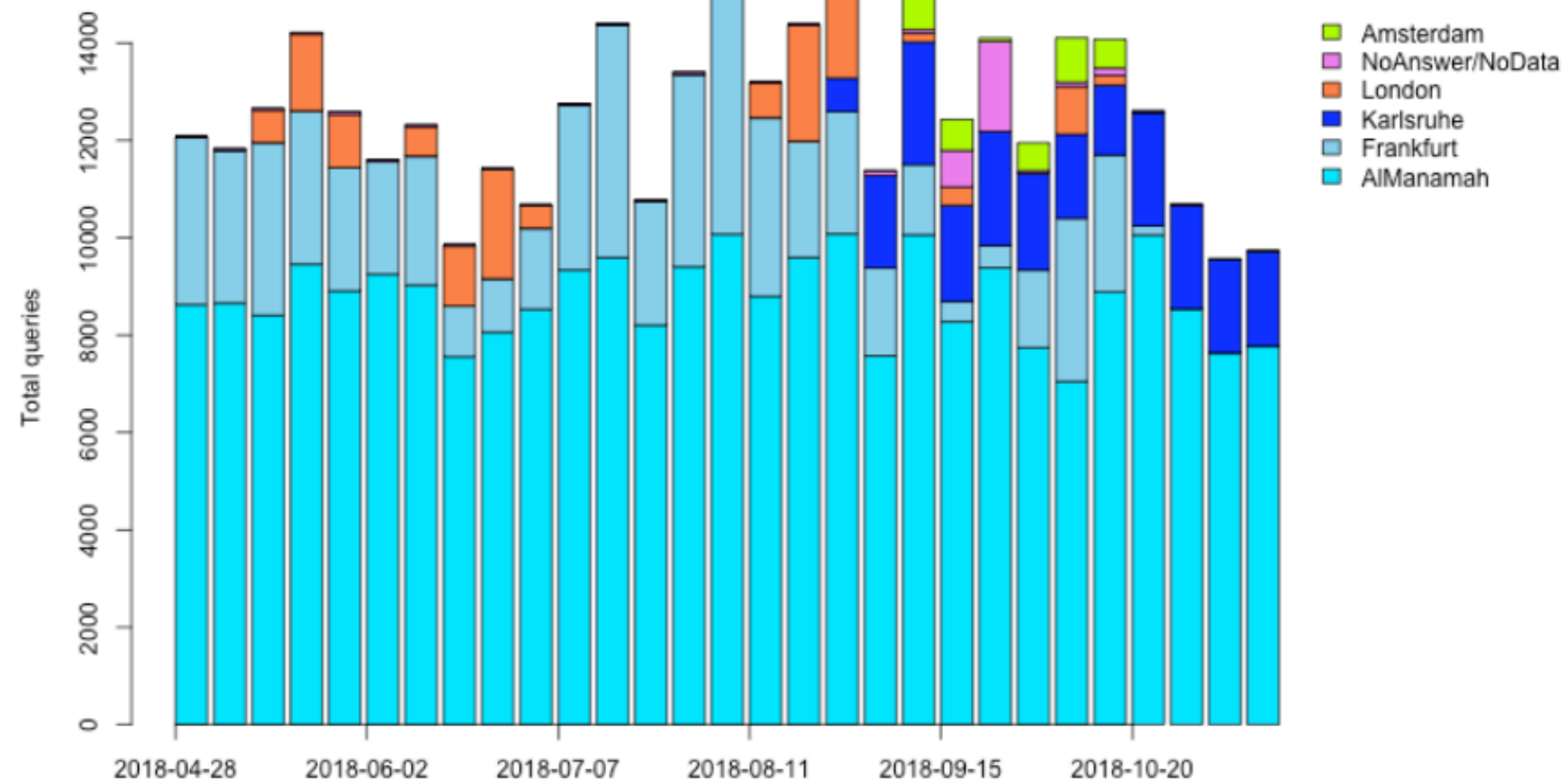


The Root Server System

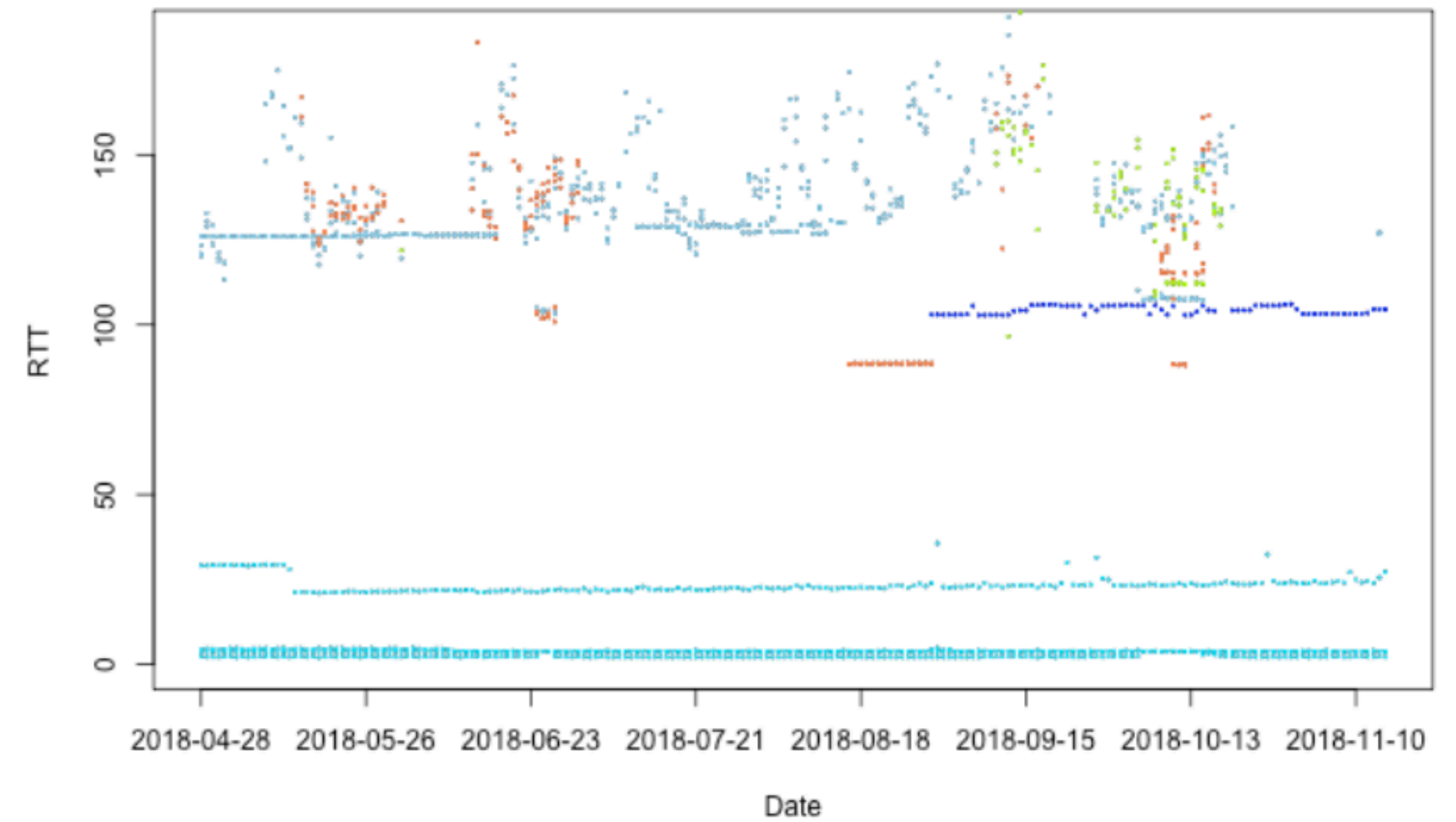


Bahrain

Top 6 K-root locations answering - Bahrain



Median RTTs to k.root-servers.net - Bahrain

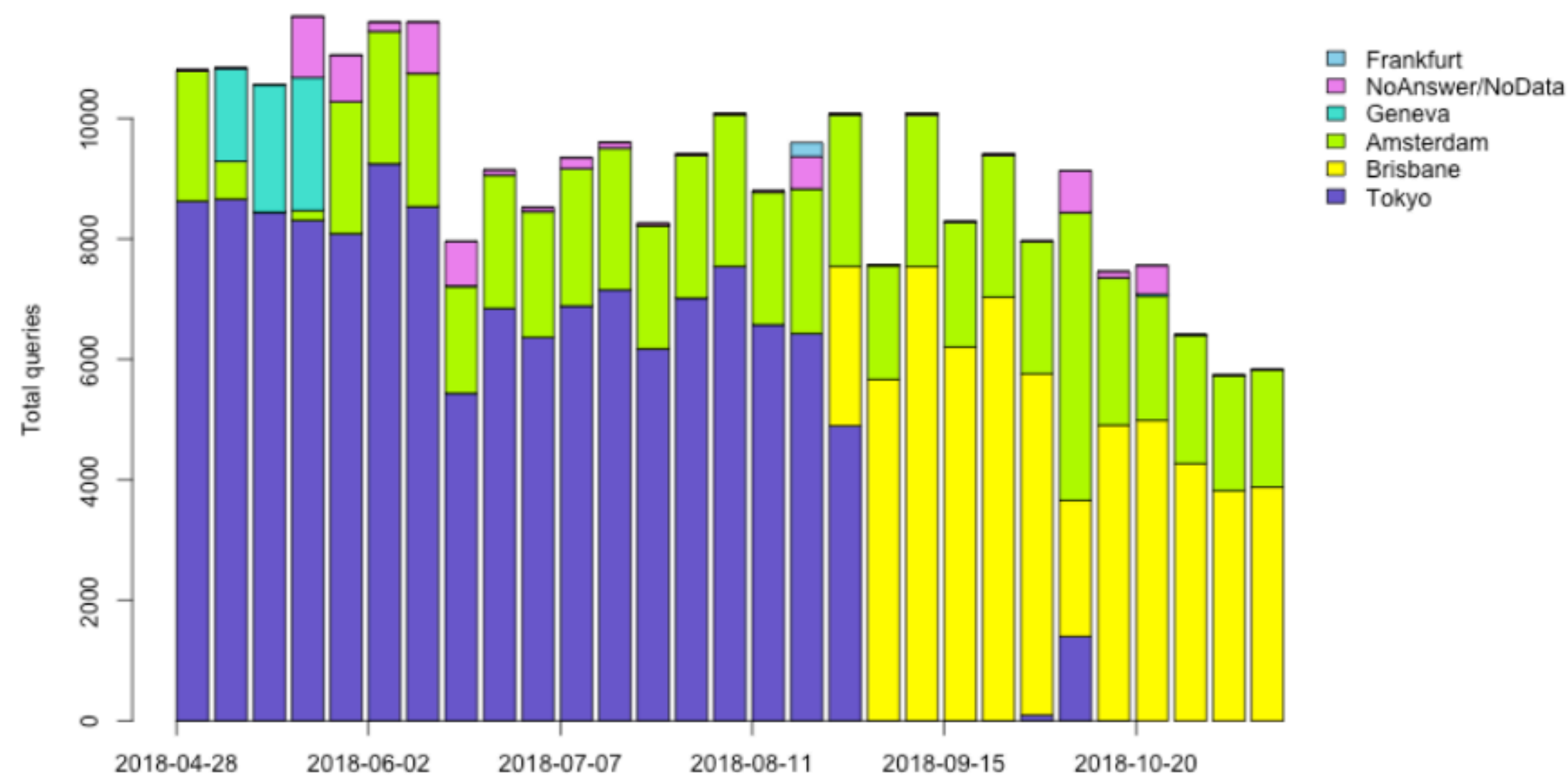


The Root Server System

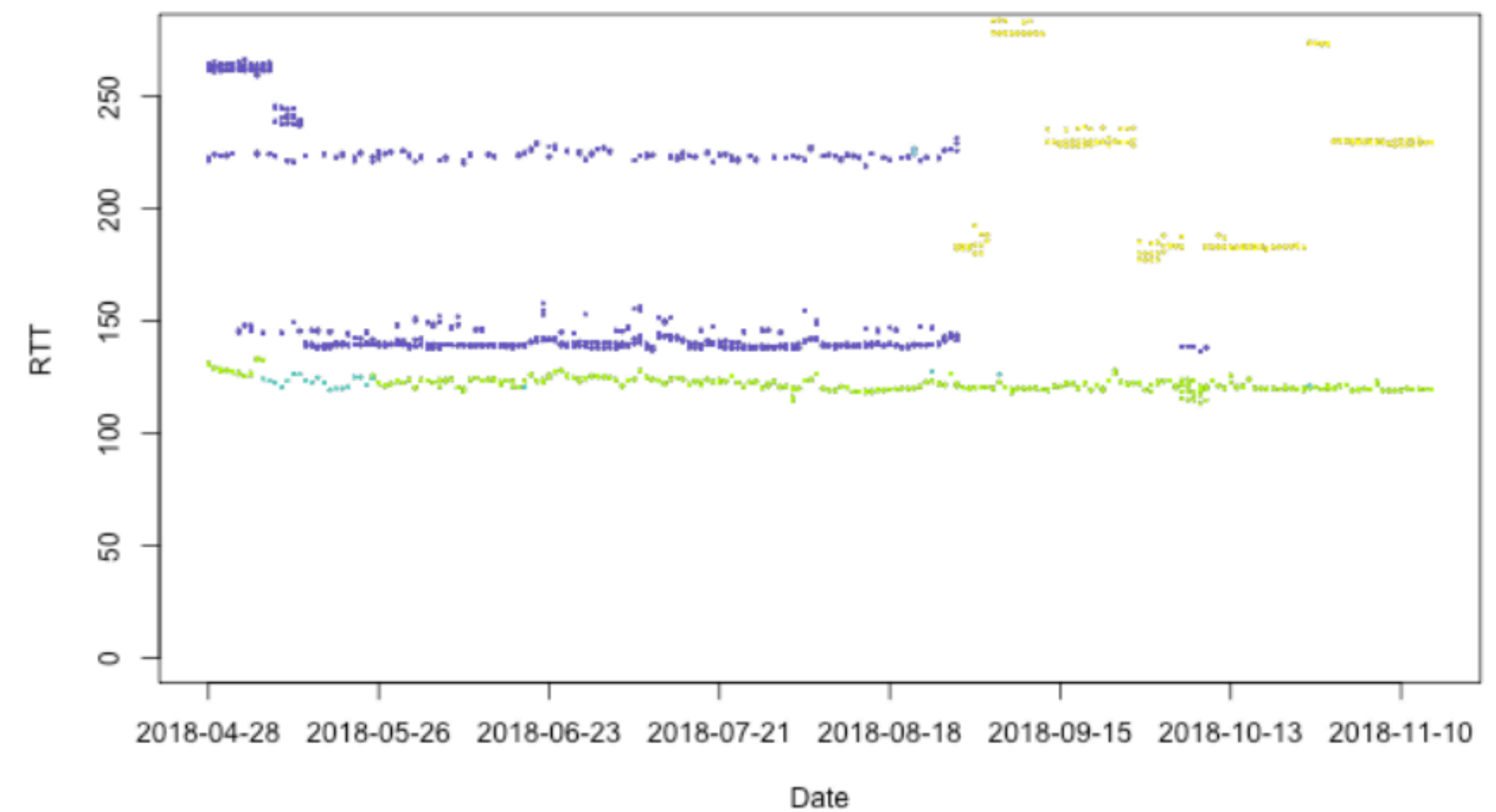


Oman

Top 6 K-root locations answering - Oman



Median RTTs to k.root-servers.net - Oman

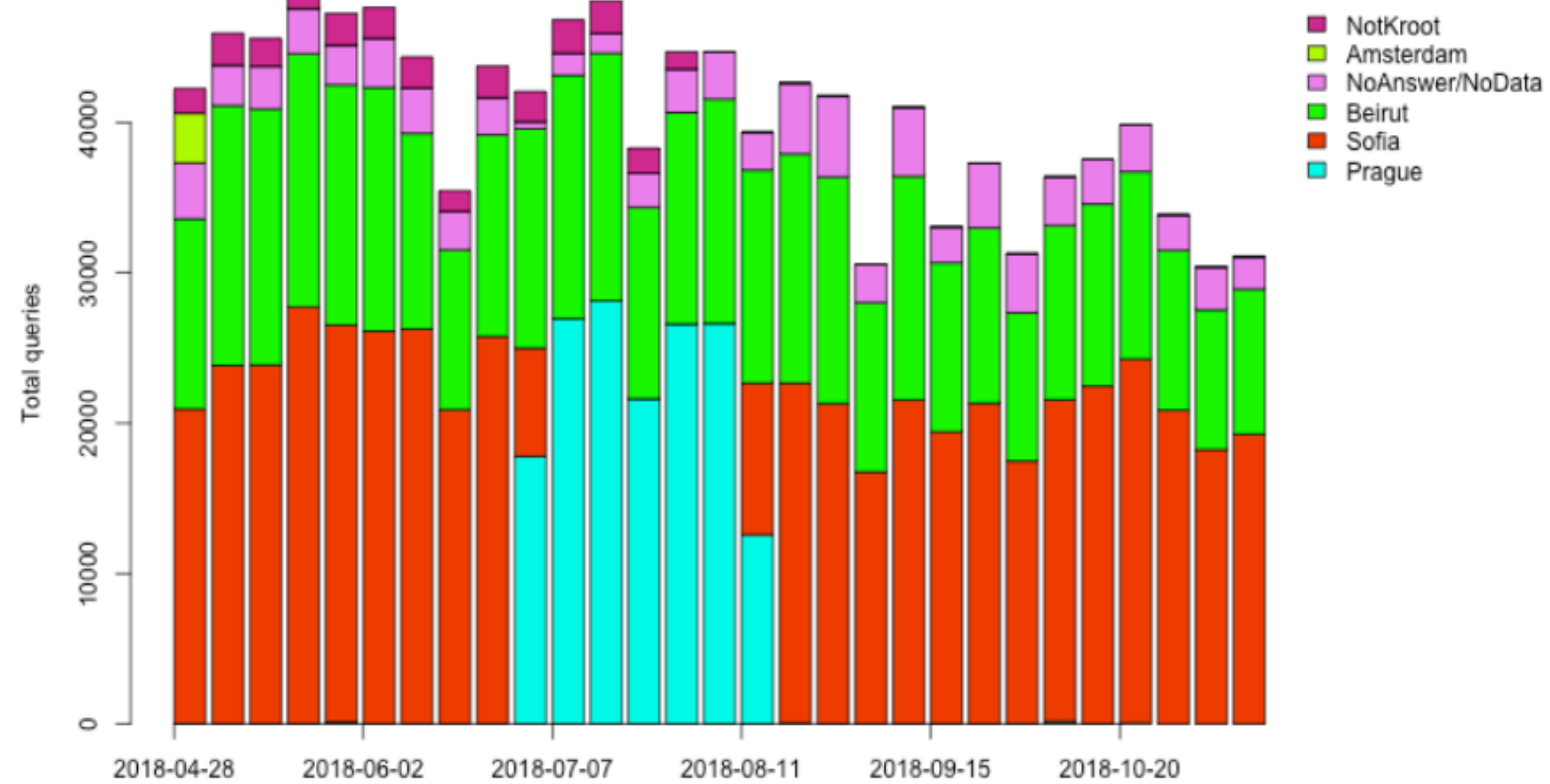


The Root Server System

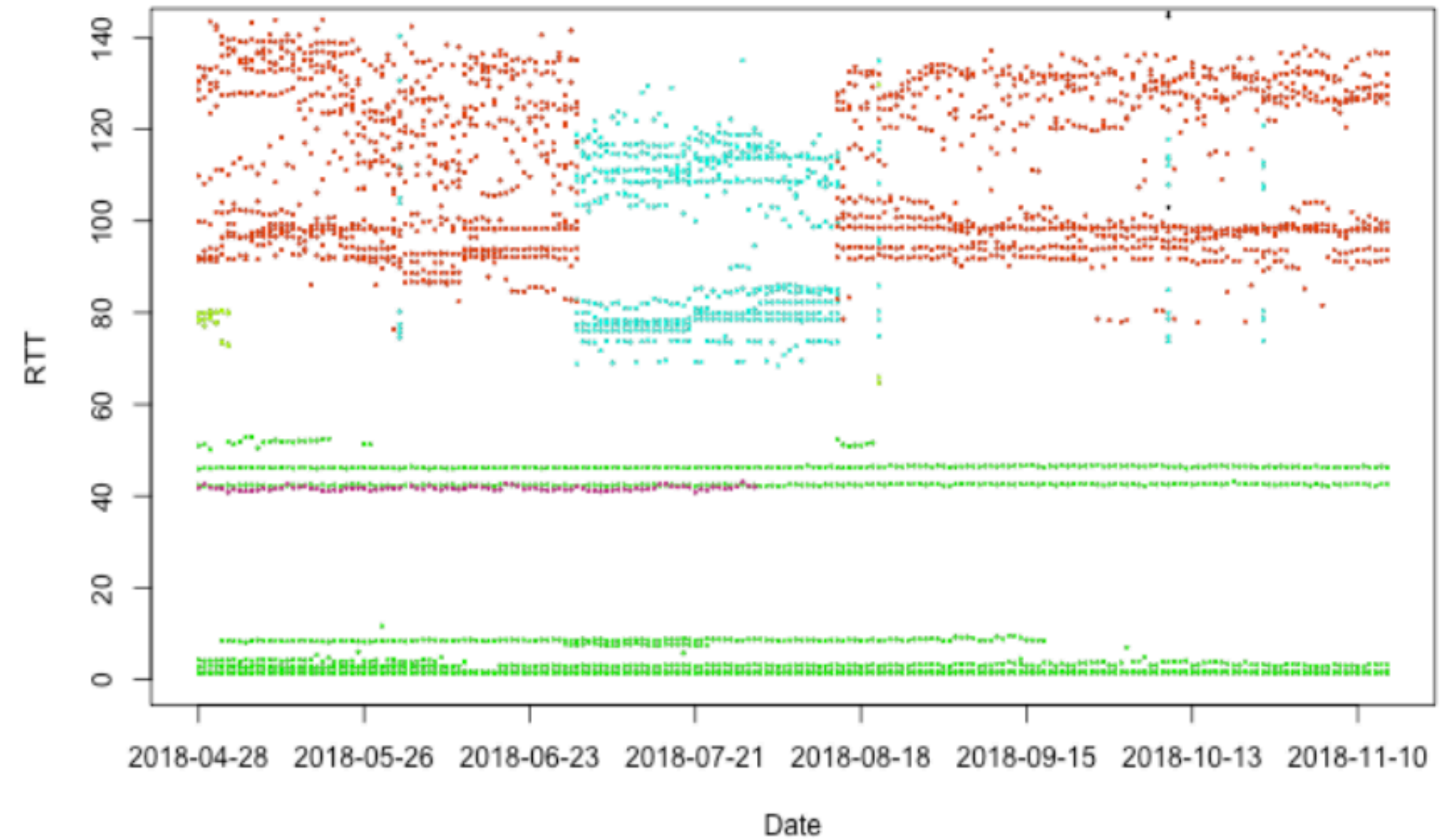


Lebanon

Top 6 K-root locations answering - Lebanon



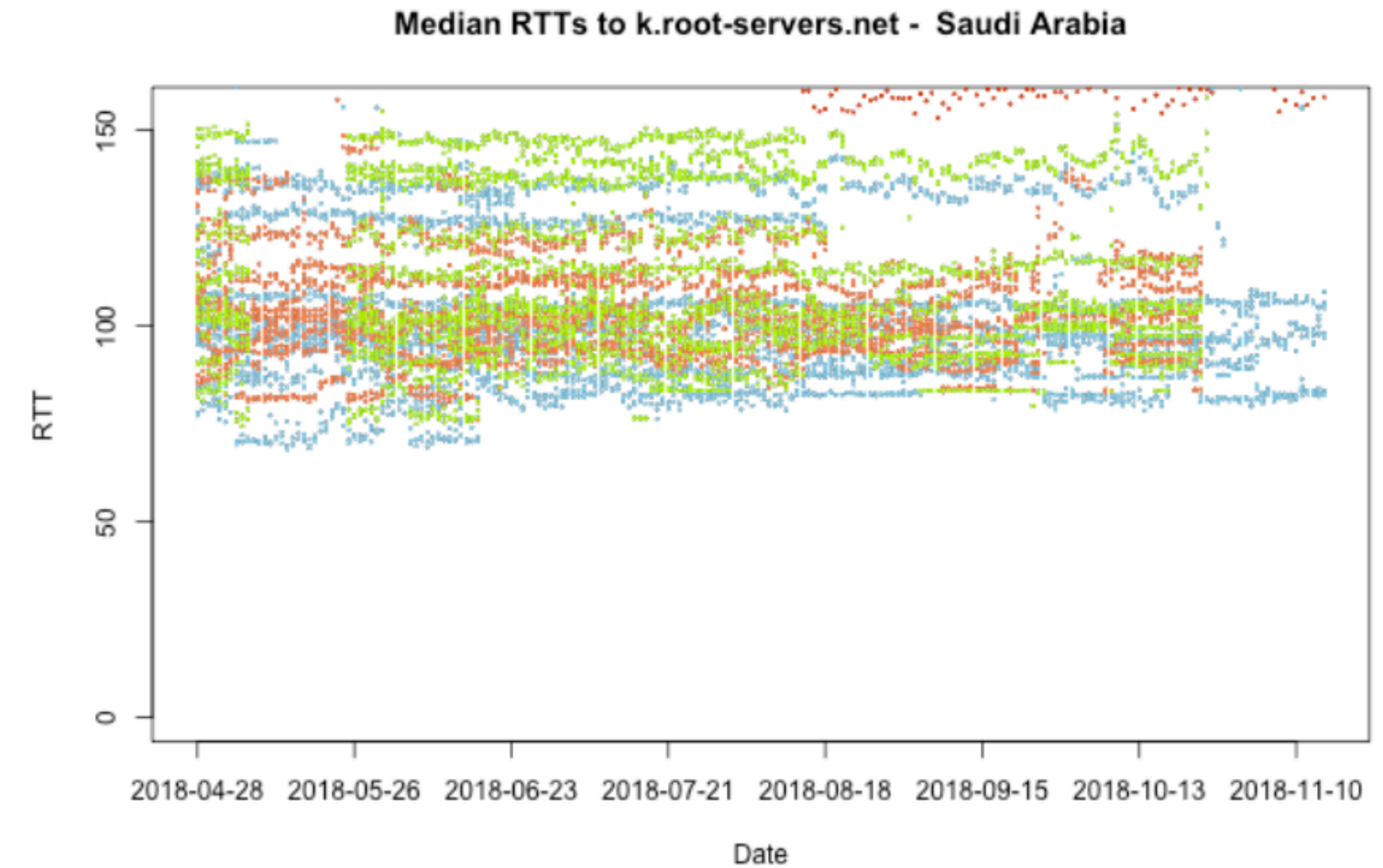
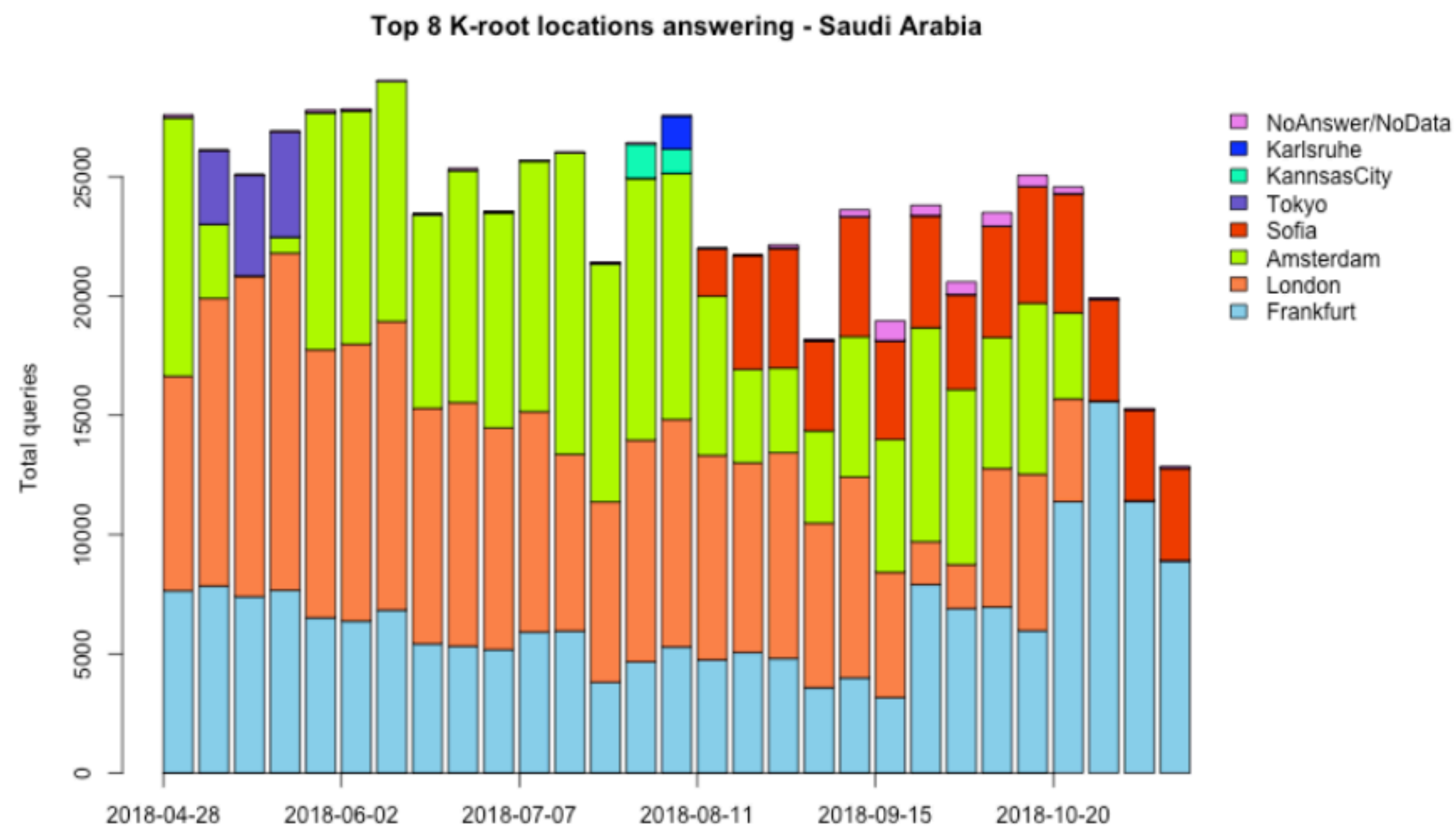
Median RTTs to k.root-servers.net - Lebanon



The Root Server System



Saudi Arabia



Measurement Tools



- **RIPE Atlas**: our main Internet data collection system - a global network of hardware devices, called probes and anchors, that actively measure connectivity
- **Routing Information Service**: a service we established in 2001 that collects and stores Internet routing data from several locations around the globe



Questions



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