



# Route Servers: An AMS-IX Introspective

# Basic Route Server Challenges

- **Problem #1 (ca. 2008):** Simplify large scale EBGP interconnection (peering) across a Layer 2 network
- **Solution #1:** Deploy one (or more) intermediate broker systems, acting similarly to IBGP route reflectors. Call them route servers.\*

\*Now [RFC7947](#)

# Basic Route Server Challenges

- **Problem #2 (a bit later):** Support peer routing policies: Peers want to exchange prefixes with a subset of all route server peers.
- **Diverse ~~Kludges~~ Solutions #2:**
  1. IRR based policies
  2. BGP community parsing
  3. Client-Accessible database  
(we ended up with 1. and 2.)\*

\*Still part of [RFC7947](#)

# Routing Hygiene

- **Problem #3:** Filter out unwanted prefixes
- **Solution #3:** Basic Filtering implemented (Bogons, Martians, RFC1918, native AS, next-hop sanity)

# Routing Hygiene

- **Problem #4 (ca. 2013):** Filter out more unwanted prefixes
- **Solution #4:** Filter based on IRR data and RPKI

# Route Server politics

- **Problem #5:** Introduce solution #4 in a non controversial way.

”Filtering prefixes based on BCPs is OK, but asking other institutions (e.g. RIPE) about prefix validity may attract ire from customers not acknowledging institution authority or value. It might also inadvertently advertise capability to non-community stakeholders”

# Route Server politics

- **Solution #5 (2015):** Circumvent problem #5 by introducing four choices of filtering (IRR+RPKI, IRR only, RPKI only, no filtering, just tagging) in a second set of route servers. Add all solutions, up to #4 to that new set. Call it Falcon route servers. Make tagging the default filtering option.

# Route Server politics

- **Solution #5 (cont'd):** Bet internally as to whether customers are interested in the new route servers or not, based on the uptake in a month's time. There was 😊



# Route Server politics

- **Problem #6:** Customers/members informally suggest to backport features to the Legacy route servers. Internal discussion ensues once again. Is it OK to do that?

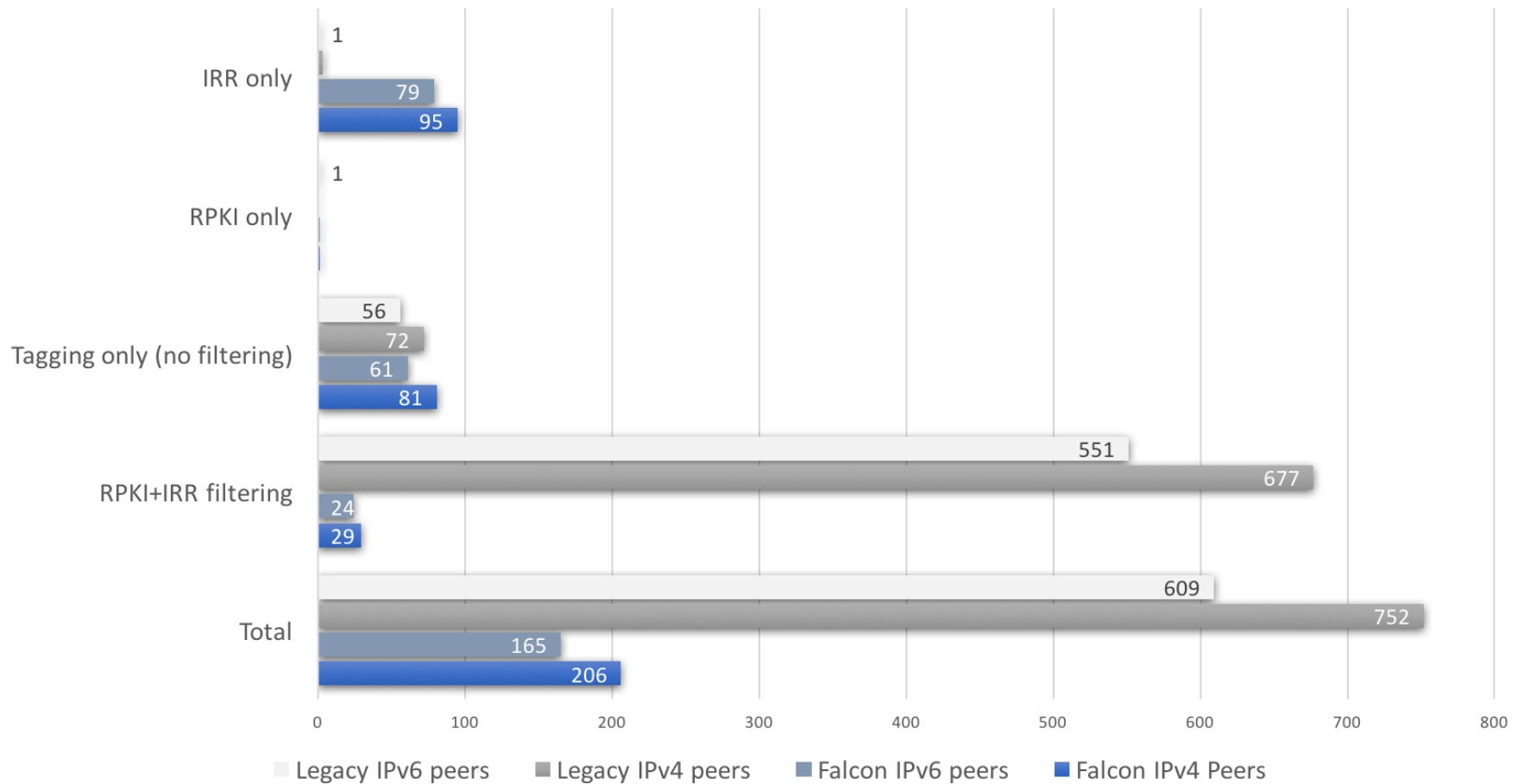
# Route Server politics

- **Solution #6 (2017):** Bring the question back to the customer/member base. Get feedback. Customers voicing opinion were all in favor of doing so, and with IRR+RPKI the default filtering mechanism.

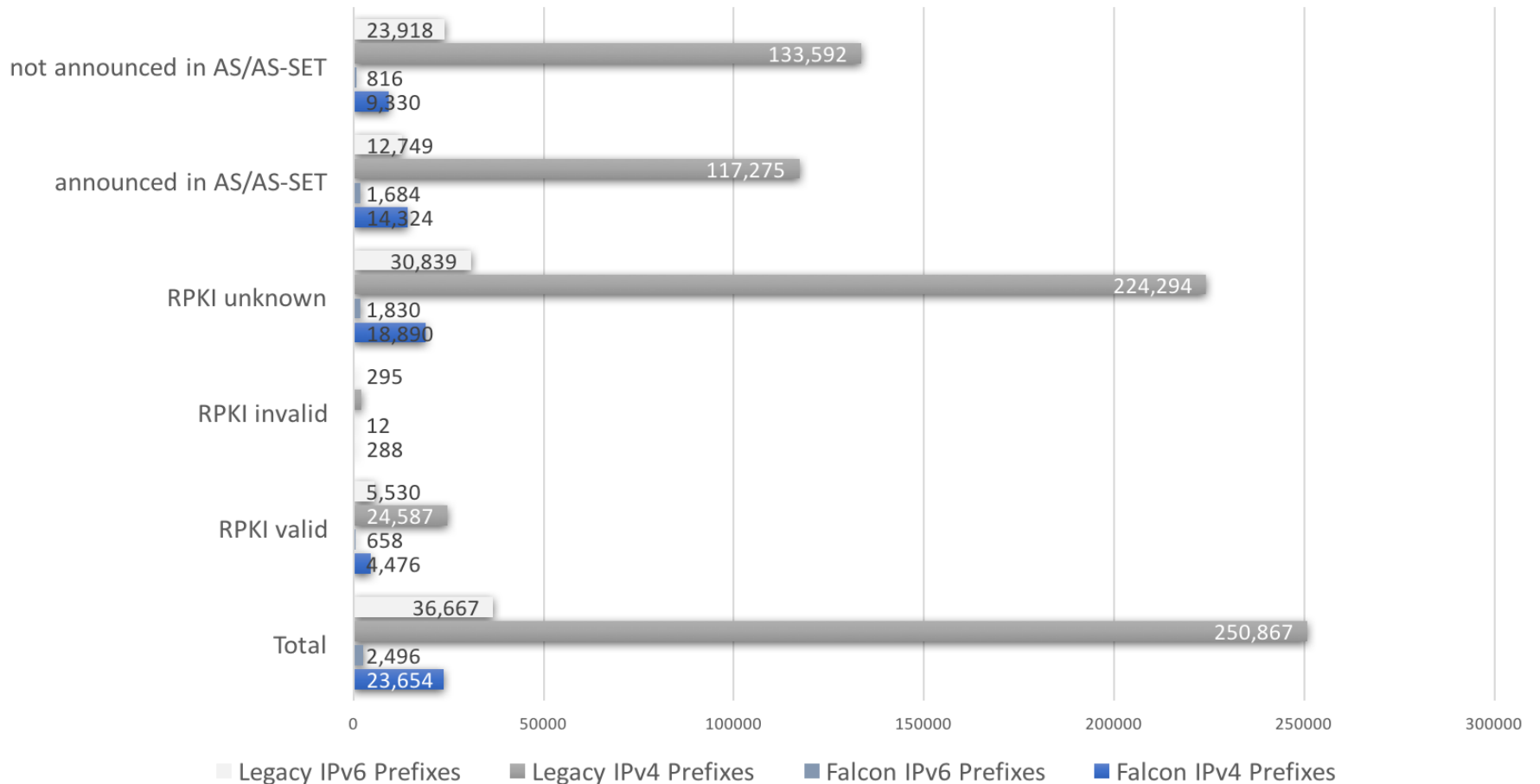
# Legacy Route Server "falconization"™

- Backporting of features went live on Friday, October 20<sup>th</sup>, 2017.
- No traffic loss detected, although advertised prefixes (with IRR+RPKI filtering) went from ~165K to ~68K.

## Route Server Peer Filtering Option Selection



## Route Server Prefix Distribution



# Questions?