

# IPv6 /48 Filtering

As Seen by RIPE Atlas

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# Route Filtering (1)

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- IPv4: Up to /24 considered routable
- IPv6: ??
- RIPE-532:
  - “It is suggested that prefix filters allow for prudent subdivision of an IPv6 allocation. **The operator community will ultimately decide what degree of subdivision is supportable**, but the majority of ISPs accept prefixes up to a length of /48 within PA space.”

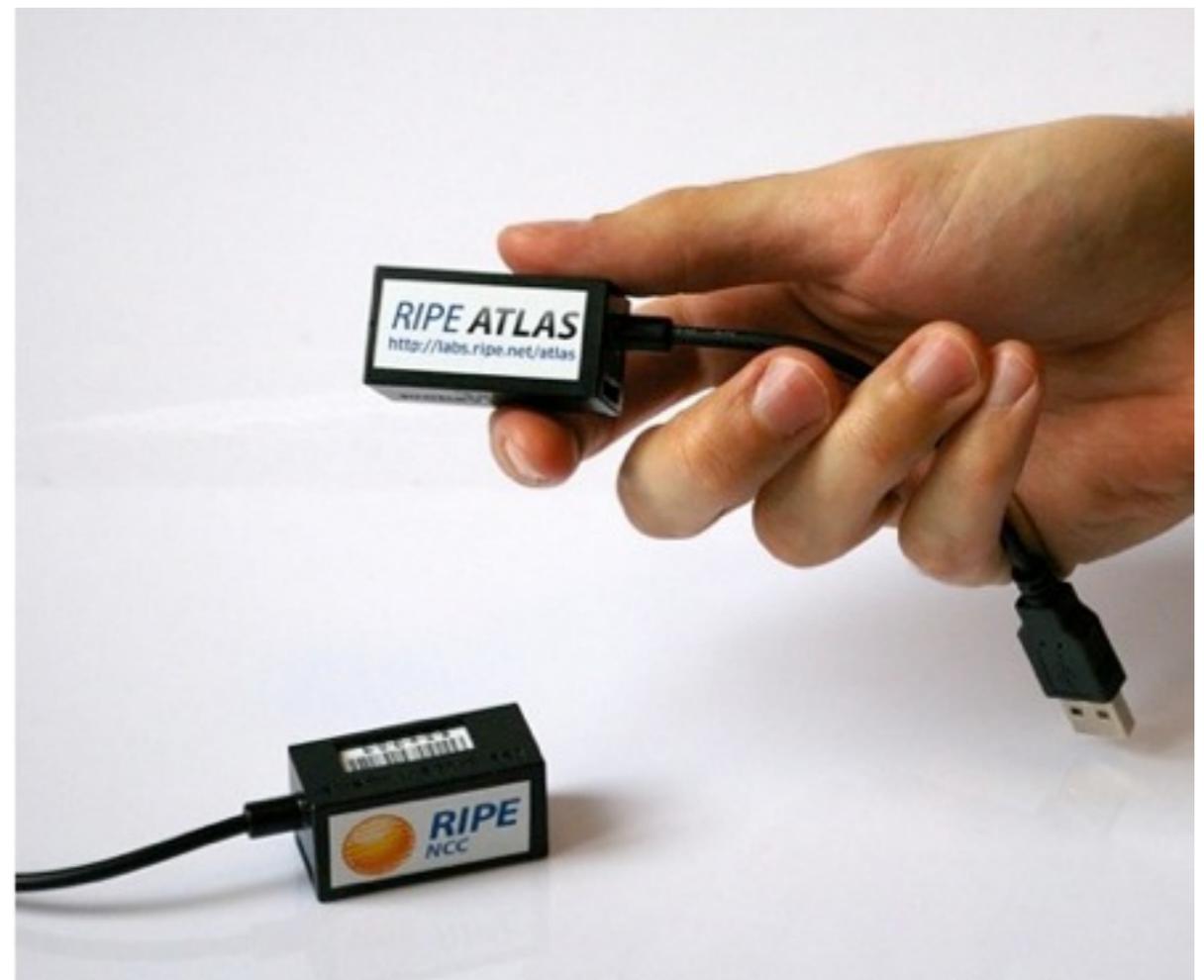
# Route Filtering (2)

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- Recent discussion on *ipv6-ops* mailing list when a /48 out of PA space without covering prefix was used
- So what's the community currently deciding?
  - Are /48s filtered?
  - /48s out of IPv6 PA space?

# Measure Data-Plane with RIPE Atlas

- 700+ IPv6 enabled RIPE Atlas probes that can measure this
- traceroute6 for 2 hours
  - /32 PA
  - /48 PI
  - naked /48 out-of-PA



# Results (2012-09-07)

Target is in:	target reached	fail	fail with !N
/32 PA space ( <a href="http://ipv6.google.com">ipv6.google.com</a> )	575	4 (0.7%)	1 (0.2%)
/48 PI space ( <a href="http://ns.ripe.net">ns.ripe.net</a> )	578	3 (0.5%)	1 (0.2%)
/48 out of PA space * ( <a href="http://cloudflare.com">cloudflare.com</a> )	569	12 (2.1%)	4 (0.7%)
/48 out of PA space ( <a href="http://www.rtl.de">www.rtl.de</a> )	568	9 (1.6%)	6 (1.0%)

\* this network has a covering /12

# Conclusion

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- We see around 1-2% of RIPE Atlas probes that can't traceroute6 to a /48-out-of-PA space
- We don't know how representative RIPE Atlas is for the IPv6 Internet at large
  - Guess: People/operators that care/think about the network are more likely to have a probe and are also the people that make a conscious decision about filtering this or not.

# Follow Up

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- This work was (is being) done by Emile Aben
- He is scheduled to discuss it more at the upcoming RIPE 65 Meeting in Amsterdam
- Probably in the Routing WG session
- Questions to: [emile.aben@ripe.net](mailto:emile.aben@ripe.net)

Questions?

