SEND / ND Proxy
Problem Statement
IETF 72 – csi WG
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Identified scenarios (1/4)

- IPv6 Mobile Nodes
  - Two nodes need to be able to "advertise" a same address (i.e. DAD, Neighbor Resolution)
  - Impact on NS/NA messages
  - E.g. in Mobile IPv6 [RFC3775], a MN and a HA with the MN's HoA
Identified scenarios (2/4)

- IPv6 Fixed Nodes
  - One node needs to "advertise" a address but owned by another node
    - Impact on NS/NA messages
    - E.g. address assignment in IKEv2 [RFC4306] with the Security Gateway
  - Sub-case of the previous scenario
    - But with a larger solution space
Identified scenarios (3/4)

• Bridge-like ND Proxies [RFC4389]
  – A Bridge needs to rewrite information in forwarded packets
  – A Bridge needs to "advertise" a address but owned by another node
    • Impact on NS/NA messages
  – A Bridge needs to "advertise" a prefix but owned by another router
    • Impact on RS/RA messages
Identified scenarios (4/4)

- Generalization: case where \( N \) nodes "advertise" a same address (with \( N \geq 2 \))
  - Anycast addresses
  - PMIPv6 case (i.e. ingress MAG's LLA)
SEND and ND Proxy

• No appropriate keys/authorizations
  – To generate messages and to sign them instead of another node
  – To modify messages and to keep valid the signatures
Potential approaches

• Trusted ND Proxy
  – Do nothing

• Relax SEND policy
  – To accept unsecured ND/RD messages

• Authorization delegation
  – Generation of certificates for the ND Proxy

• Crypto based
  – Ring group signatures

• Virtual interface
  – One prefix per node
Open issues/Next steps

• To add references to potential solutions?
Comments/Questions?