

# **Problem Statement Regarding IPv6 Address Usage**

**(draft-gont-taps-address-usage-problem-  
statement-00)**

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# Address Usage Problem Statement

- IPv6 provides increased addressing flexibility
  - Plenty of addresses
  - Different address properties
    - Scope
    - Stability
    - etc
- Implications of these properties not always well-understood
- API limitations prevent applications from fully-leveraging IPv6 addresses

# Goals of this document

- Discuss implications of IPv6 address properties
- Provide a problem statement about current limitations to leverage IPv6 addressing
- Serve as background and trigger for other work in this area

# Address properties

- Some address properties of interest:
  - scope: e.g. global vs. ULA (or link-local)
  - stability: e.g. stable vs. temporary addresses
  - usage type: e.g. incoming vs. outgoing connections
- All have implications on:
  - security
  - privacy
  - interoperability

# API limitations for outgoing connections

- Not possible to specify e.g.
  - Employ different addresses per process or subsystem
  - Employ different addresses per user
  - Employ a new address only for this connection
  - etc
- Some possible implications:
  - Correlation of network activity across processes/subsystems/users/connections, etc.

# API limitations for incoming connections

- Not possible to specify e.g.
  - Desired properties for the “listening” addresses
  - Set of addresses for listening to incoming connections
- Some possible implications:
  - Local service becomes globally exposed
  - Temporary addresses expose the host

# Moving forward

- Adopt as TAPS WG item?