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?