Problem Statement Regarding IPv6 Address Usage
(draft-gont-6man-address-usage-recommendations)

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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

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

Goals of this document

- Discuss implications of IPv6 address properties

- Provide a problem statement about current limitations to leverage IPv6 addressing

- Trigger other work in this area

Moving forward

- Adopt as 6man wg item?