

Problem Statement Regarding IP Address Usage

**(draft-gont-6man-address-usage-
recommendations)**

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Goals of this document

- Discuss IPv6 address properties and implications
- Discuss 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
 - operations
- Not always well understood

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.
 - Implications on network operations

API limitations for incoming connections

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

Moving forward

- Comments?