# Address Usage Recommendations

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# Address Usage Problem

- Multiple Addresses: temporary and stable
- Outgoing address selection is well specified in RFC 6724
- Server address selection is not well specified
- Dominant practice: Bind(socket, [::]:<port>)

# Issues with Bind(socket, [::]:<port>)

- Unexpected address discovery
  - Temporary address exposed in outgoing connections
  - Adversary probe range of service ports for that address
- Availability outside the expected scope
  - Service is meant to be local, e.g., only exposed through mDNS
  - But it is available in global scope

# Alternative to Bind(socket, [::]:<port>) ?

- In theory, developers could
  - Enumerate all the addresses available on all interface
  - Pick the ones that fits the application's profile
  - Bind individual sockets to each selected address
- In practice, few developers do that
  - Requires tracking address changes
  - Requires testing address properties
  - Tends to not be portable
- And it may not even be available in "service level" API

# Address Configuration issues

- Address Selection is performed by the application
- Address Configuration is performed by the system
- Several options are available
  - Configure stable addresses or not,
  - Configure temporary addresses or not,
  - Configure addresses globally for the system, versus by subsystem
    - Sandboxed browser, Container, Compartment…

# Changes in the last revision

- Note that addresses could be selected in a number of ways:
  - TCP/IP stack filtering
  - Application-based filtering
  - Firewall-based filtering
- Minor editorial changes and clarifications

# Next steps

- Keep document focused on problem statement?
  - Leave solutions to a separate document

- Adopt as wg item?