



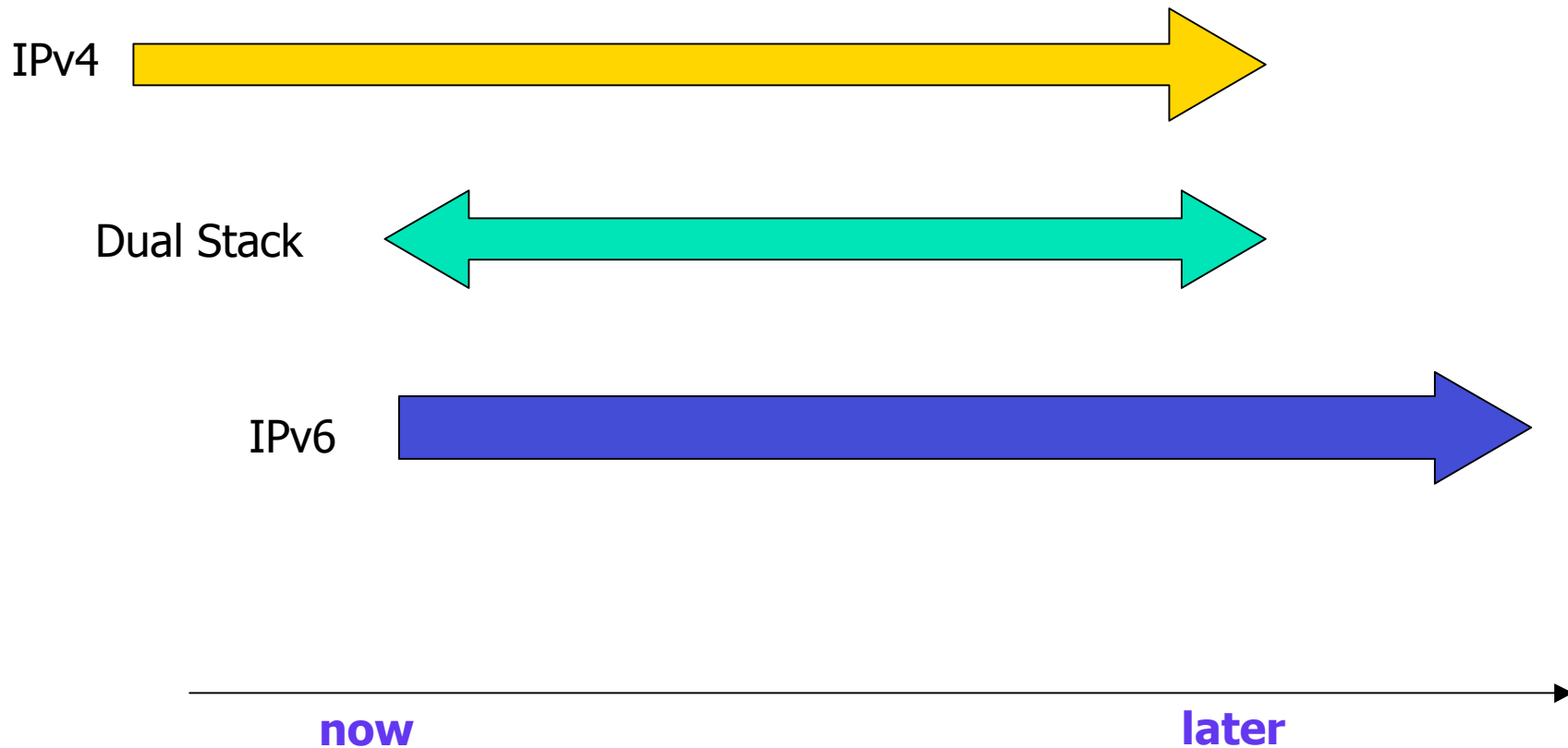
# IPv4 Address Transfer proposal

## APNIC prop-050-v002

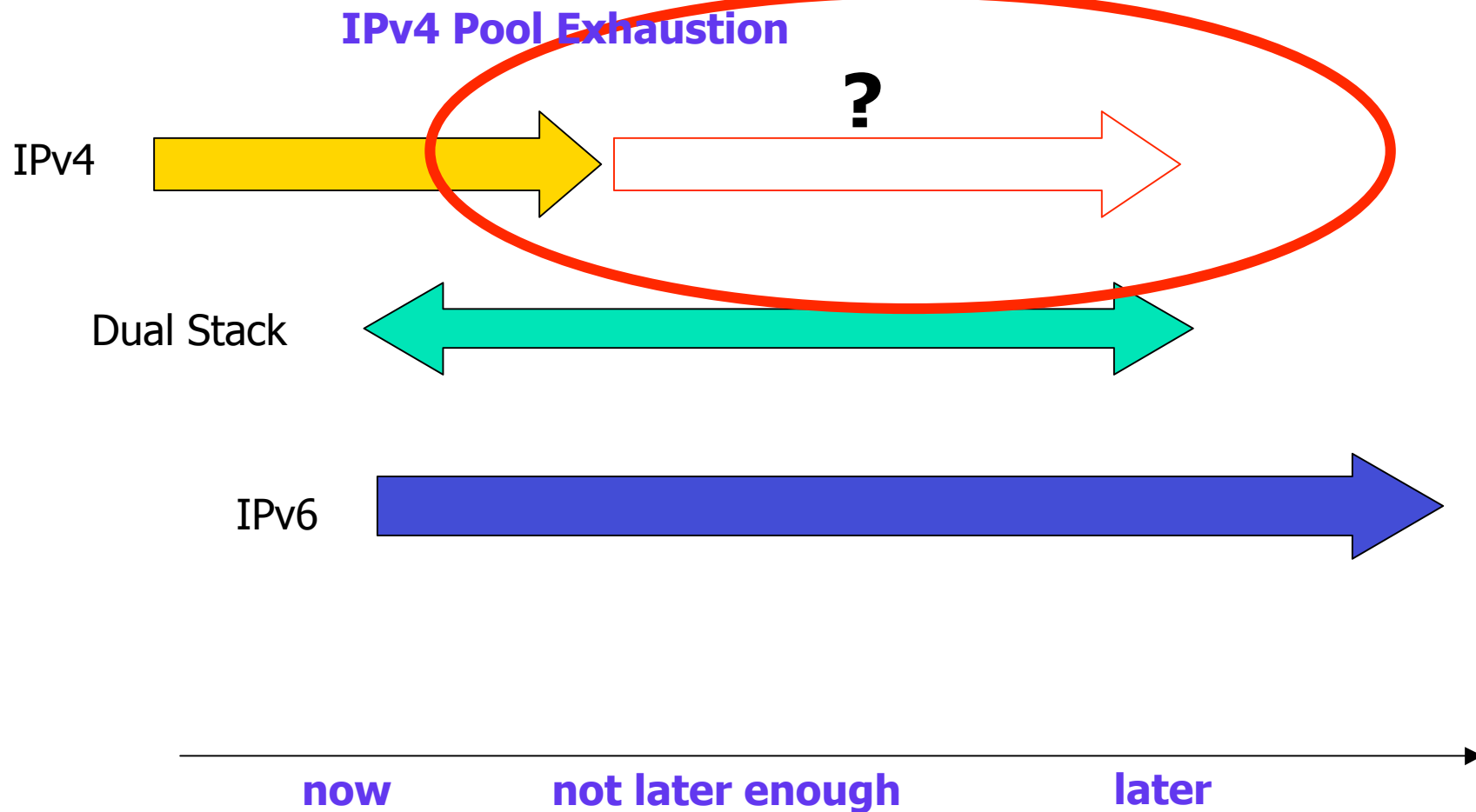
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Geoff Huston

# IPv4, IPv6, and Transition: As planned



# IPv4, IPv6, and Transition: As being implemented





# Motivation

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- If the demand for IPv4 addresses extends beyond the likely pool exhaustion date ...
  - How will IPv4 addresses be distributed to meet this ongoing demand?
  - Will industry be forced into a mode of IPv4 address transfers to support dual stack deployments?
    - Should we look at this option now, or wait until its time to really panic?



# Address Transfer Proposal

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- APNIC to recognise the transfer of IPv4 addresses between current APNIC account holders
- Record these IPv4 address transfers in the APNIC IPv4 address registry



# Constraints – Address Block

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## Address block:

- /24 or larger
- administered by APNIC
- status is “current”
- subject to all current APNIC policies



# Constraints – Source

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The disposer is:

- a current APNIC account holder
- registered holder of the address block in APNIC registry
- ineligible for any further APNIC IPv4 address allocations for 24 months
- must document the reasons for any future IPv4 address requests following this 24 month period



# Constraints – Recipient

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The recipient is:

- current APNIC account holder
- subject to all APNIC policies
- liable for APNIC fees associated with current resource holdings





## Details

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- Transfer procedure requires notification to APNIC by both parties
- Details of the transfer to be published by APNIC in a transfer log
- APNIC may levy a transfer registration fee



# Advantages

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- Maintain a consistent and accurate public registry of address holdings
- Mitigate risks associated with potential black / grey market formation
- Provide indirect incentives for address holders to recirculate unused / unneeded IPv4 address space to support the dual stack transition phase



# Disadvantages

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- Market formation and risks of various forms of market distortions emerging
  - This would be beyond the direct control or purview of APNIC
- Potential for process abuse
- Potential for further routing table growth



# Comparison: RIPE Policy Proposal

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- RIPE Proposal 2007-08
  - Parties are RIPE LIRs
  - Respect minimum allocation size of block
  - Allow permanent and non-permanent transfers
  - Address blocks must be certified



# Comparison: ARIN Policy Proposal

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- IPv4 Transfer Policy Proposal
  - ARIN Advisory Council proposal
  - Disposer has not received any resources for previous 24 months, nor able to receive resources from ARIN or from transfer for 24 months
  - Acquirer may only make 1 transaction each 6 months and cannot dispose for 24 months. Must be qualified under ARIN policies as requiring addresses
  - IP block meets minimum size constraint



# Further Considerations

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- **Constraint Setting:**

- Application of constraints on transfers to prevent hoarding, fragmentation and speculation

VS

- excessive constraints potentially motivating the emergence of alternative constraint-free transfer systems outside of the the RIR framework



# Considerations

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- Side Effects:
  - Just how fragile is today's routing environment?
  - What distinguishes transfer any different from current routing fragmentation practices?



# Considerations

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- Clarity of intended outcome:
  - temporary measure to mitigate some risks in the IPv6 transition and facilitate a path to an IPv6 outcome

vs

- the construction of a long term viable market in IPv4 addresses





# Considerations

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- Clarity of role:
  - Registration of outcome
- vs
- facilitation of the redistribution of addresses



# Considerations

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- Scope:
  - Regional or Globally Coordinated?
  - Should this encompass a cross-RIR framework for transfers?



Questions?

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