Filtering Overlapping Routes
(draft-white-grow-overlapping-routes-04)

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What is this document about?

- **Optional** mechanism to remove a prefix when it overlaps with an equivalent shorter prefix.

- Intent: used based on local decisions and policies, not on an Internet-wide fashion.

- While there may be local benefits to applying manual filters and/or the mechanism specified in this document, the operator should be aware of the impact it may have on neighboring autonomous systems' policies [RFC7789].

Filtering Overlapping Routes

- AS65000 advertises...
  - 2001:db8:0:1::/64 and 2001:db8::/61 to AS65001
  - 2001:db8:0:1::/64 to AS65002
- AS65003 and AS65004 will receive all advertisements

AS65004

AS65003

AS65001

AS65002

2001:db8:0:1::/64
2001:db8::/61

2001:db8:0:1::/64

AS65000
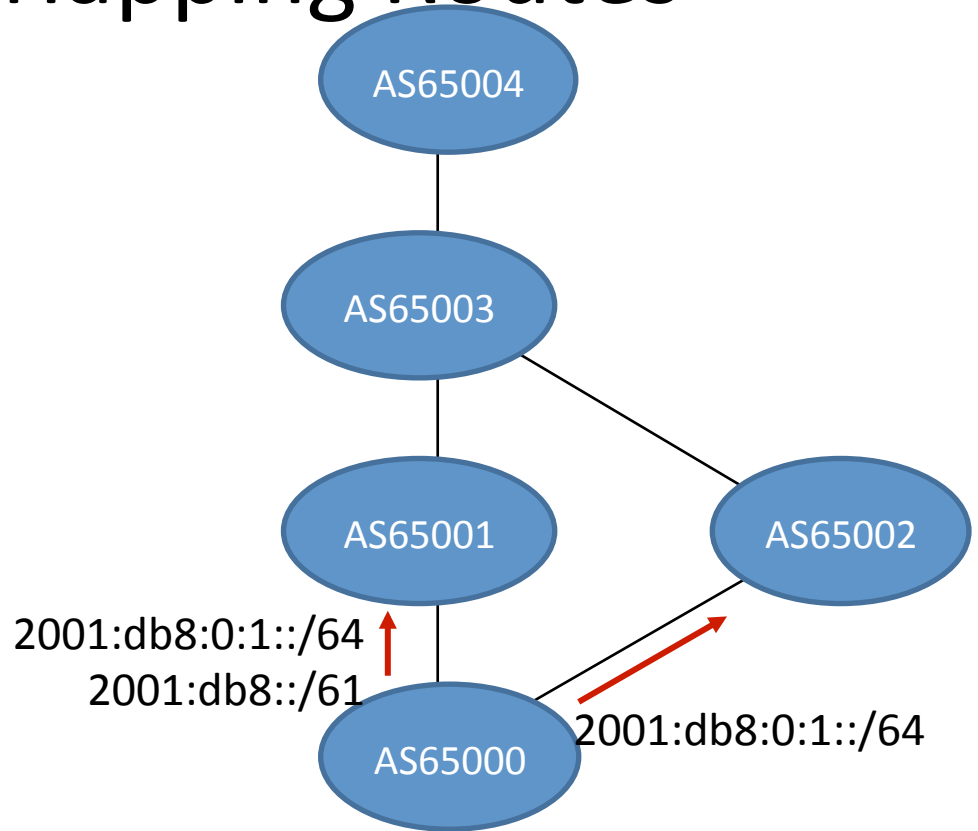
Terminology

- 2001:db8:0:1::/64 = overlapping (longer)
- 2001:db8::/61 = covering (shorter)

The term BOUNDED is used to refer to a locally assigned community used to mark overlapping routes, and to these marked routes as well.

An overlapping prefix is said to fully overlap the corresponding covering prefix if both have identical AS_PATH attributes (both in length and contents) and the same NEXT_HOP.

Overlapping Route Filtering Mechanism

1.   marking overlapping routes

    –   Using the BOUNDED community

2.   preferring marked routes

    –   Cost Community OR Local Preference

3.   handling marked routes within the AS

    –   MAY not be installed in the local RIB

4.   handling marked routes at the AS exit point

    –   SHOULD NOT be advertised to external peers

Filtering Overlapping Routes

- Router A
  - Marks 2001:db8:0:1::/64 as BOUNDED
  - Sets the Cost Community
- Internal routers in AS65003
  - may not install the BOUNDED route in the local RIB/FIB
- Router C
  - Doesn't advertise the BOUNDED route to AS65004

AS65004

C

AS65003

B

A

AS65001

AS65002

2001:db8:0:1::/64
2001:db8::/61

AS65000

2001:db8:0:1::/64
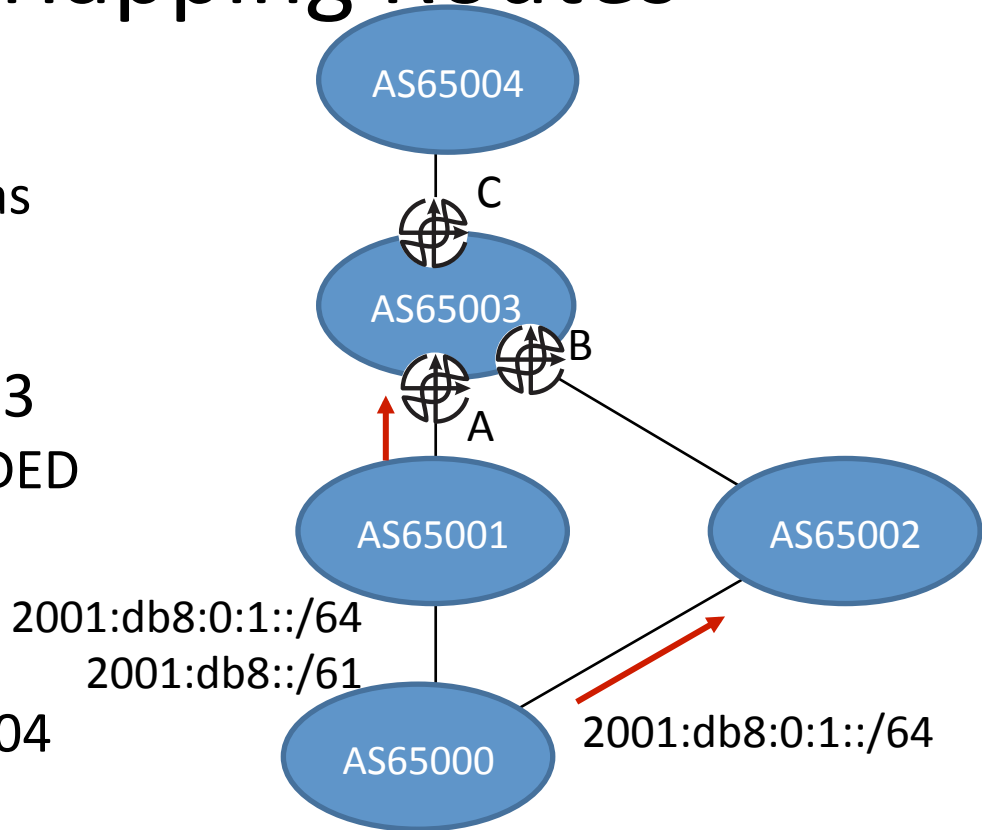
Next Steps

- Comments/Questions?

- Request WG adoption.