

# CLAT Recommendations

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# Updates since last time

RFC 8781 is MUST, but RFC 7050 is SHOULD

SLAAC addresses SHOULD be treated as temporary (rotate)  
(noting that the addresses are not seen beyond the PLAT)

IPv6-only: no ~~non-link-local IPv4~~ address native IPv4 default route

IPv4 MTU SHOULD be 20 bytes lower than IPv6 one

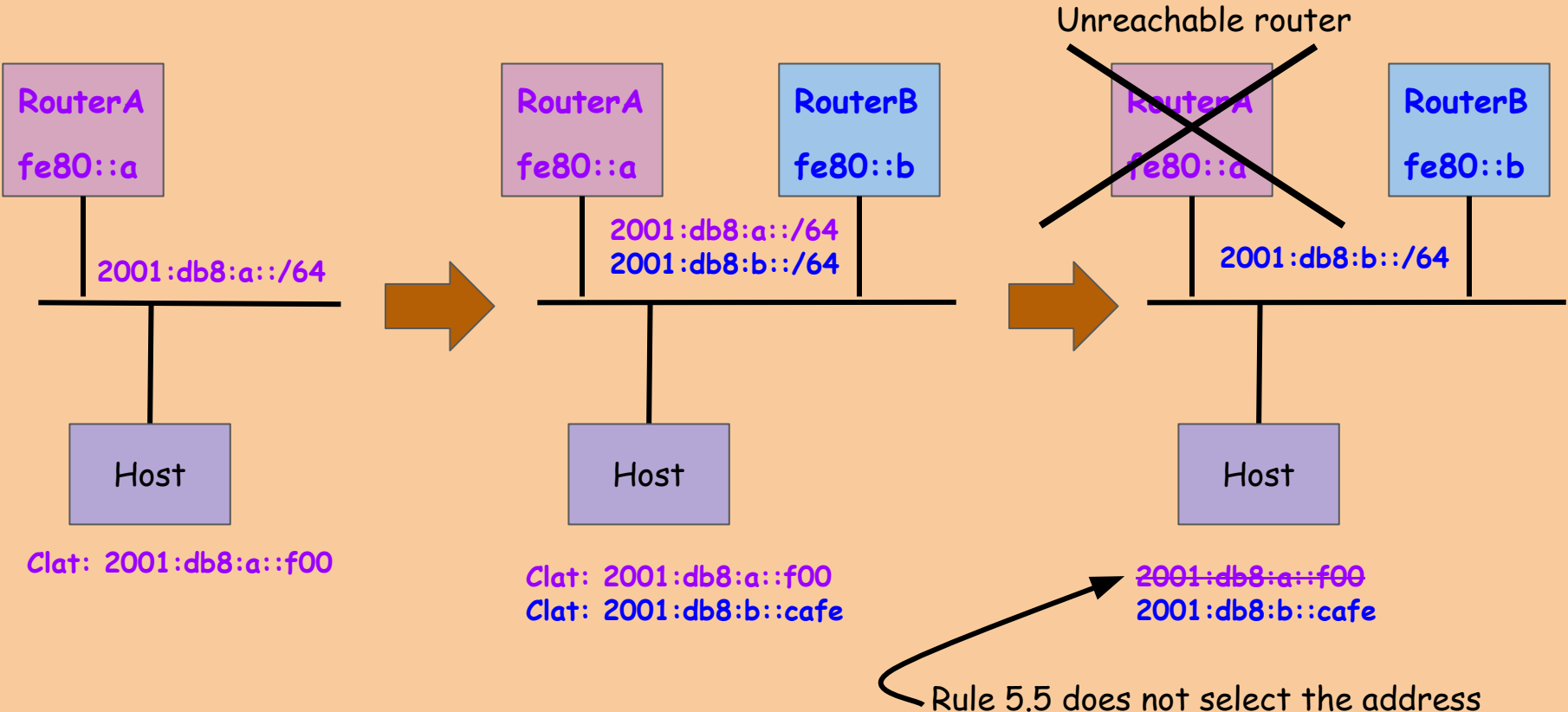
Editorial and clarifications

# Open questions

None at this moment :)

That said: any thoughts on this in context of RFC 6877 being promoted to Standard?

# CLAT + multiple PIOs: Desired Behaviour



# Observed Behaviour

Only one is used to create a CLAT address

What goes wrong:

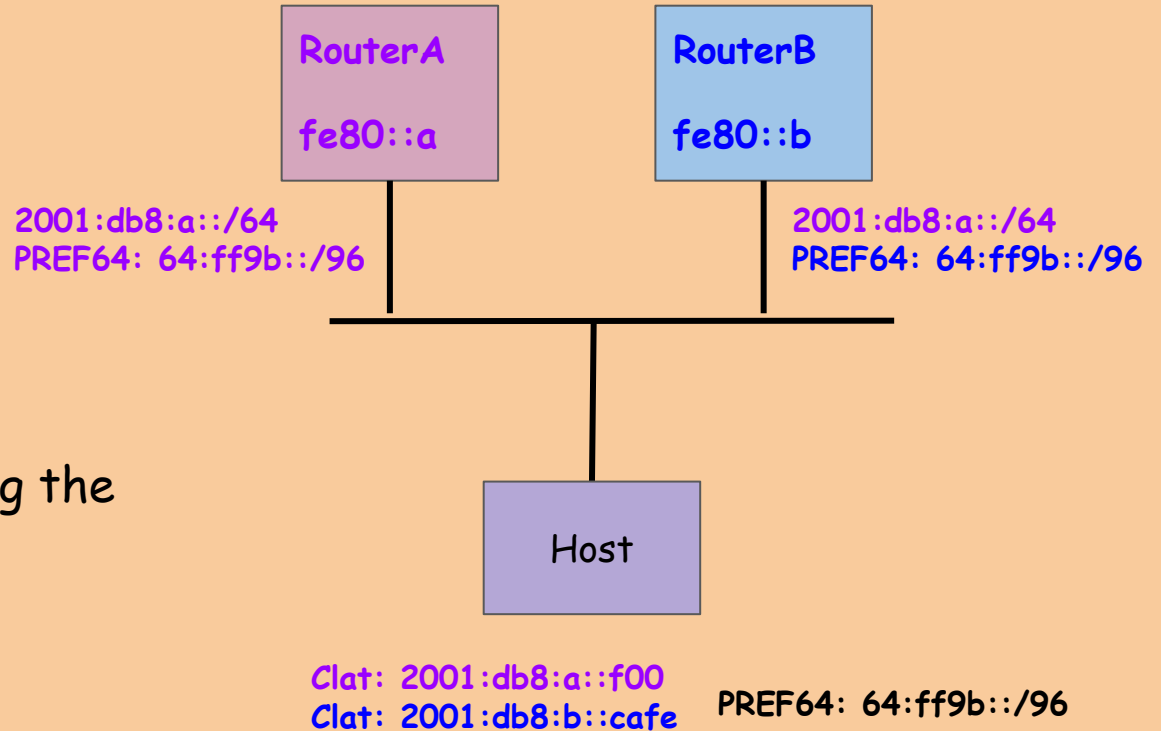
- CLAT broken if the subnet changes (renumbering/changed attachment)
- If RA contains GUA and ULA PIOs: clat might pick up a ULA address

# Current Text

- CLAT SHOULD create an address from each PIO
- All packets with the same IPv4 5-tuple MUST be translated to the same IPv6 address (as long as the address is valid/configured)
- Packets from a given clat address SHOULD be sent to the router advertising the PIO

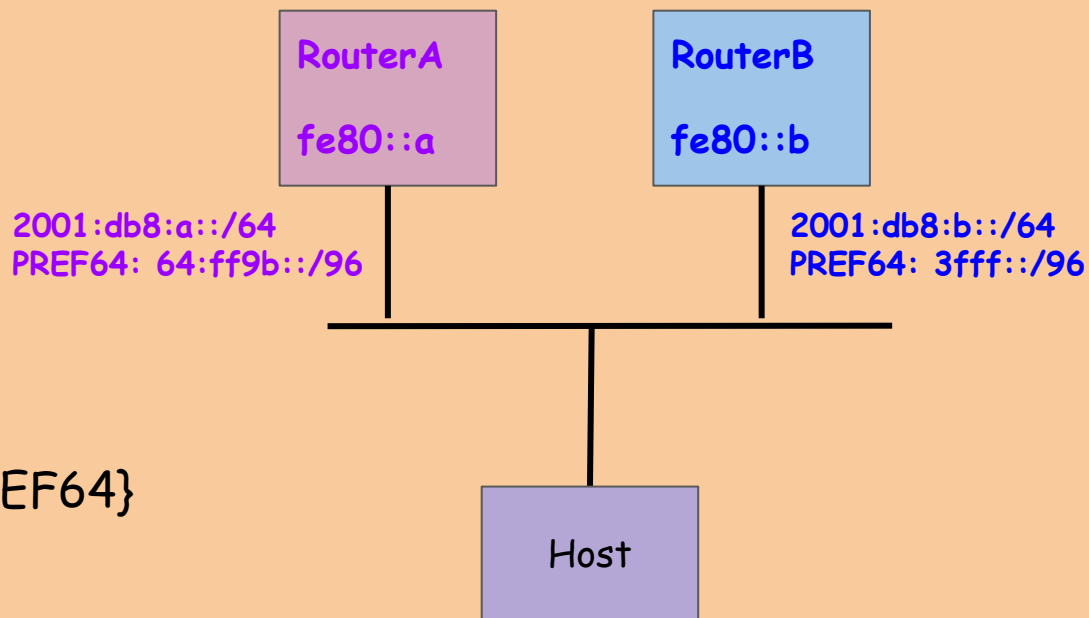
However....

# Easy (Ideal) Case



Current text works  
Rule 5.5 used for selecting the  
next-hop

# Multiple Routers, Multiple PREF64

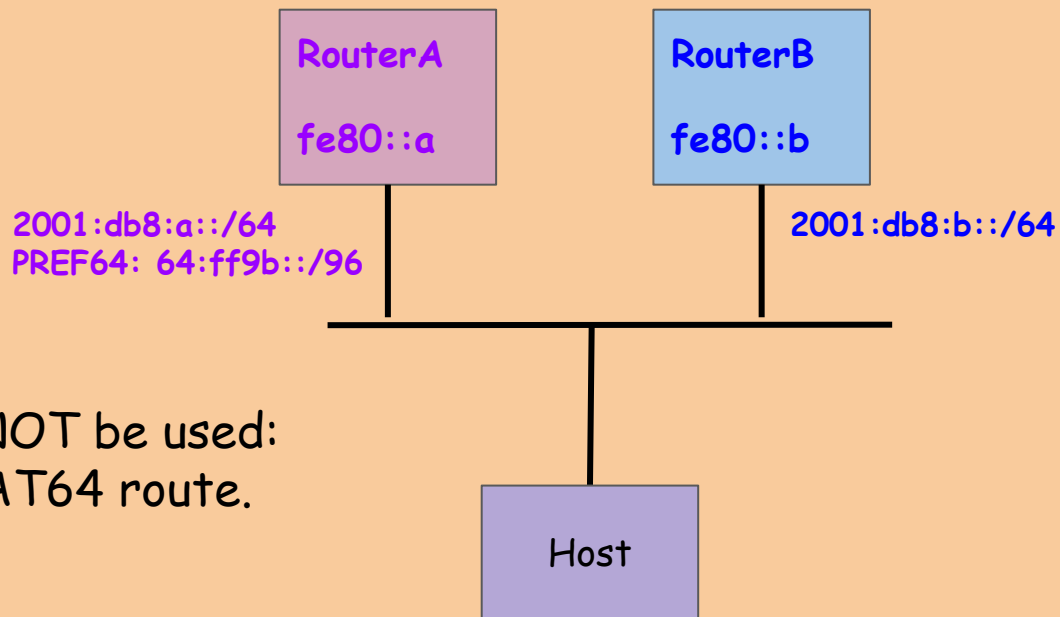


CLAT needs to track:  
{router link-local, PIO, PREF64}

Tracked by rule 5.5



# Multiple Routers, Only Some Send PREF64



PIO w/o PREF64 MUST NOT be used:  
Router B may not have NAT64 route.

Clat: 2001:db8:a::f00 pref64: 64:ff9b::/96  
~~Clat: 2001:db8:b::cafe pref64: 3fff::/96~~

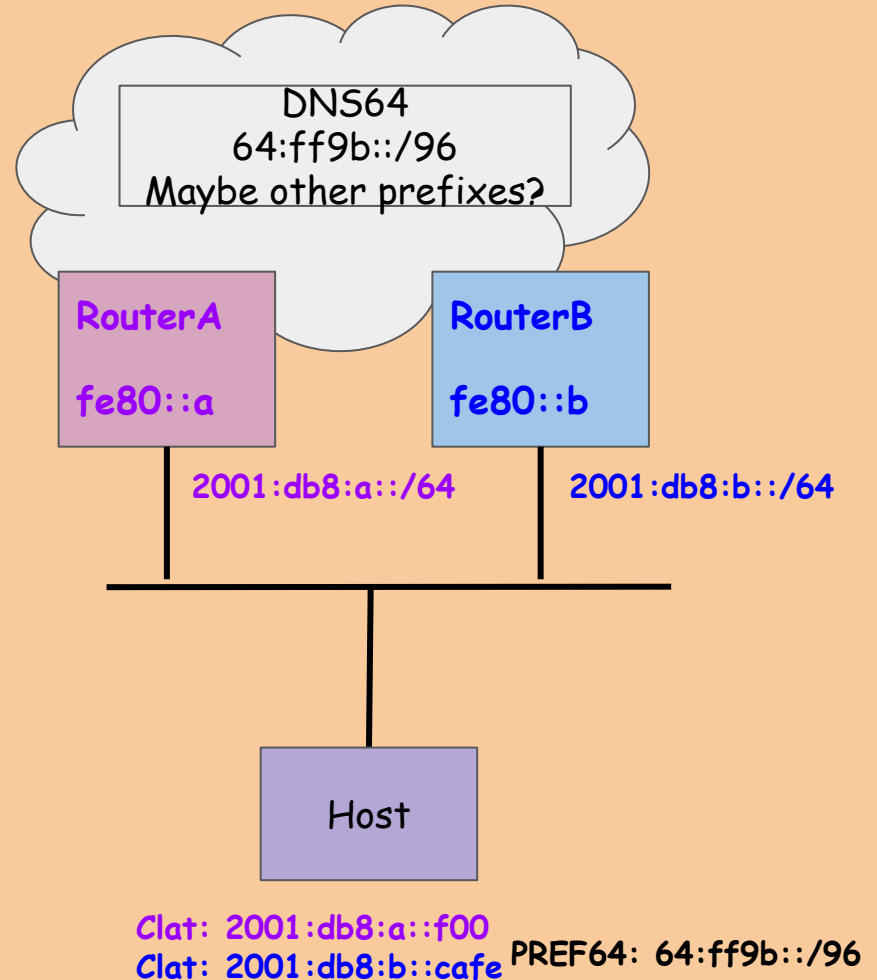
# No PREF64 in RAs

CLAT MAY use RFC7050

Section 3 of RFC7050:

*"A node MUST look through all of the received AAAA resource records to collect one or more Pref64::/n.  
...The node MUST use all learned Pref64::/n when performing local IPv6 address synthesis"*

Don't Try This at Home!



# Proposed Approach

- Only use PIOs from RAs containing PREF64 options.
- IF no PREF64 discovered in RA: MAY use all PIOs
  - Fallback to RFC7050 is already 'MAY'
- Open issue: what to do if RA with PREF64 arrives when CLAT is running?
  - Shall be out of scope?
  - Or "if clat config changes, restart"?

# Open Question: Multiple PREF64

Assuming one CLAT instance can support one PREF64 only

Multiple PREF64 per interface (from one or multiple routers):

- multiple instances?
- Use only one and document in the operation considerations that “multiple prefixes” behaviour is undefined?

# Open Question: Multiple PIOs in one RAs

	Pros	Cons
Use one PIO	<ul style="list-style-type: none"><li>• Simple</li><li>• Combined with <a href="#">draft-link-6man-gulla</a>: the operator can control which PIO is used</li></ul>	<ul style="list-style-type: none"><li>• Unpredictable</li></ul>
Use all PIOs	<ul style="list-style-type: none"><li>• Predictable</li><li>• "Make before break" in planned renumbering</li></ul>	<ul style="list-style-type: none"><li>• Complicated</li></ul>

Questions? Comments?