

OSPF Adjacency Suppression

draft-cheng-lsr-ospf-adjacency-suppress-01

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Introduction

- **Presented at IETF 116 & 117 meeting and discussed in mailing list.**
- **It is to avoid the OSPF temporary blackholes during a router's unplanned restart.**
 - 1) Copies of LSAs generated before restart are likely to appear "newer" than LSAs initially generated after restart.
 - 2) The neighbors of the starting router do the route calculation using these "newer" (actually older) LSAs.
 - 3) This may cause temporary blackholes to occur until the starting router regenerates its own LSAs with higher sequence numbers.

Updates

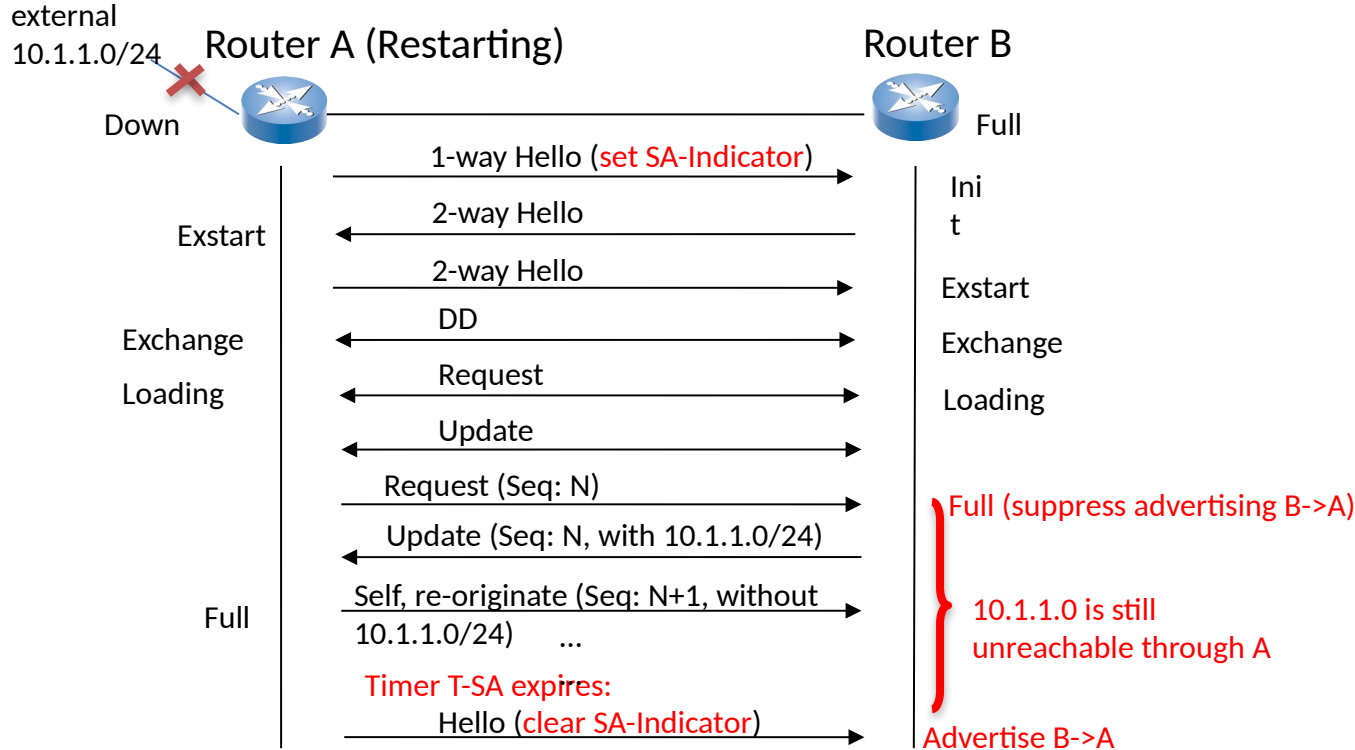
- Change loopback address example to external route example.
- Some figure and text optimization.

Solutions Overview

There are two solutions currently proposed:

[A]draft-cheng-lsr-ospf-adjacency-suppress

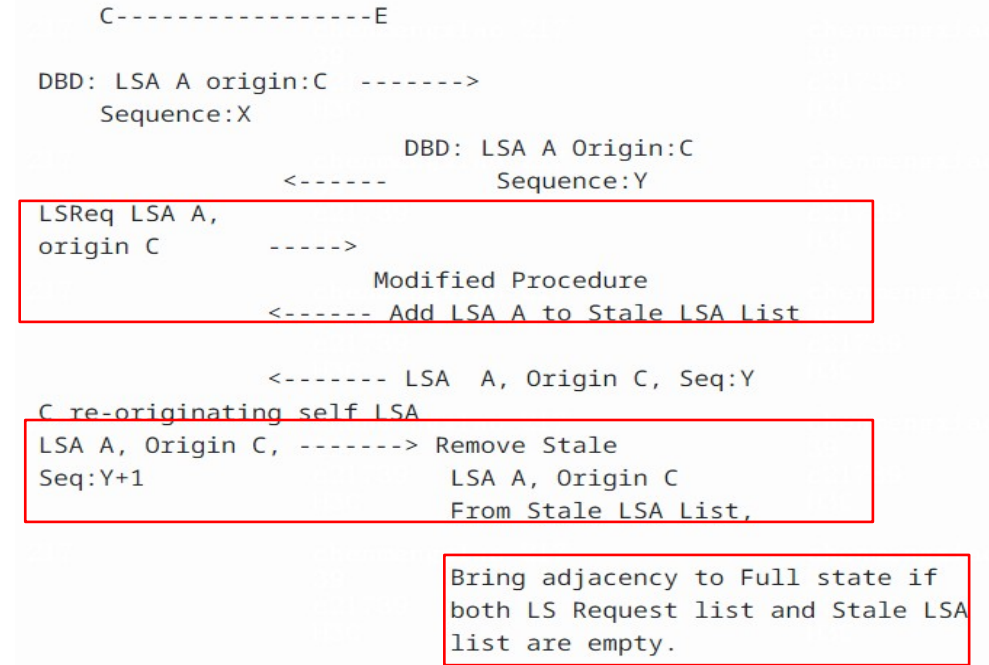
Restarting router notifies its neighbor to suppress adjacency.



[B]draft-hegde-lsr-ospf-better-idbx

Neighbor router marks its LSA as stale and hold

NSM.



Comparison

	[A]draft-cheng-lsr-ospf-adjacency-suppress	[B]draft-hegde-lsr-ospf-better-idbx
Scenarion1: Route delete	OK	If some routes do not exist after restarting, neighbor router has no chance to mark the database lsa as stale. The solution does not work in this scenario.
Scenario2 Remote neighborA--B---C	OK	Because the sequence of the flooding process can not be controlled precisely, remote neighbor still has a window for black hole.
Mechanism Concept	Restarting router take control.	Neighbor router take control.
Impact on Neighbor State Machine	N/A	Changing the core process of NSM.In case of failure, the neighbor state will remain unestablished.
Scope of Influence	Only during unplanned restarting. No interaction with other features	All the features related to neighbor establishment, including GR, NSR, link failure recovery, etc.
Maturity	Similar mechanism is widely used in IS-IS [RFC5306].	N/A.
Other Issues	N/A	Next Page

New Issues in the latest version of draft-hegde-lsr-ospf-better-idbx

```
C-----E
DBD: LSA A origin:C ----->
Sequence:X
DBD: LSA A Origin:C
<----- Sequence:Y
LSReq LSA A,
origin C ----->
Modified Procedure
<----- Add LSA A to Stale LSA List
<----- LSA A, Origin C, Seq:Y
C re-originating self LSA
LSA A, Origin C, -----> Remove Stale
Seq:Y+1 LSA A, Origin C
From Stale LSA List,
Bring adjacency to Full state if
both LS Request list and Stale LSA
list are empty.
```

- The timing of marking stale is after receiving LSA request.
But the neighbor may have been in FULL state before then.
- The condition of removing stale is receiving update with higher sequence.
If the aging process by restarting router happens, LSA can not be removed from the list.

Next Steps

- Mechanism is mature. Running code has been tested in lab.
- Ask for WG adoption.
- Any questions or comments are welcome.

Thanks