OSPF Fast Notification

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Authors: Sriganesh Kini, Wenhu Lu, Albert Tian

Motivation

- IGP convergence time is dependent on several factors e.g.
  - Change (e.g. failure) detection
  - LSA propagation (flooding) throughout the IGP network
  - Route re-computation and data-plane update
- Failure detection (e.g. BFD) and forwarding architecture improvements have made LSA propagation a notable component of the convergence delay
- Current OSPF flooding is dependent on hop-by-hop control-plane processing. This introduces delays.

Motivation (contd)

- The use of area wide multicasting for flooding needs to be examined for potential gains

Fast Notification (FN)

- FN is a technique to transmit a notification to a set of routers without control-plane involvement at intermediate nodes
- draft-lu-fn-transport describes different choices for FN depending on the requirements of the application
- OSPF can use FN to pipeline LSA flooding so that overall convergence is speeded up

OSPF flooding requirements

- Reliability, reliability, reliability
- Security

Solution

- Use FN to jumpstart route-computation &/or data-plane update on all routers in the area
  - No Ack for OSPF FN
- Use multicast over redundant trees for FN to minimize possibility of loss of FN
- Keep OSPF flooding as-is
- If OSPF FN is lost, OSPF flooding will always recover

Open issues

- FN message encoding
- Authentication
  - Area wide authentication
  - PKI
- When to make routes active

Questions/Comments