S-BFD Update

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Authors/Contributors/Contributions-by:
Many BFDers … (too many to list here)
Thanks to those contributed!!

Presenter:
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S-BFD Documents

Currently focused on:

- Use-case
- Base
- IP/MPLS Data Plane
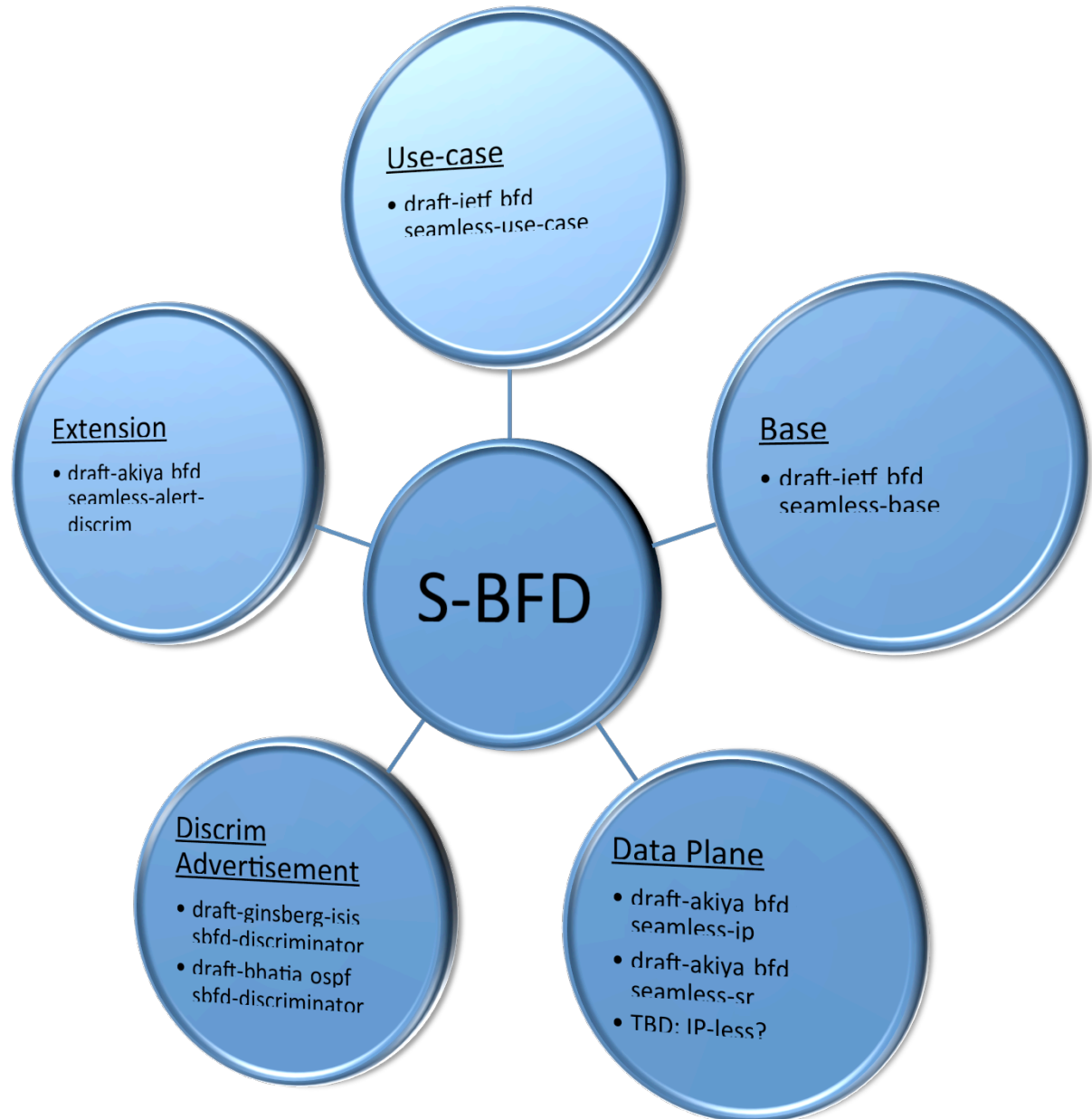- ISIS Advertisement
- OSPF Advertisement

Next focus areas:

- Alert Discriminator
- SPRING

Further down the road:

- IP-less?
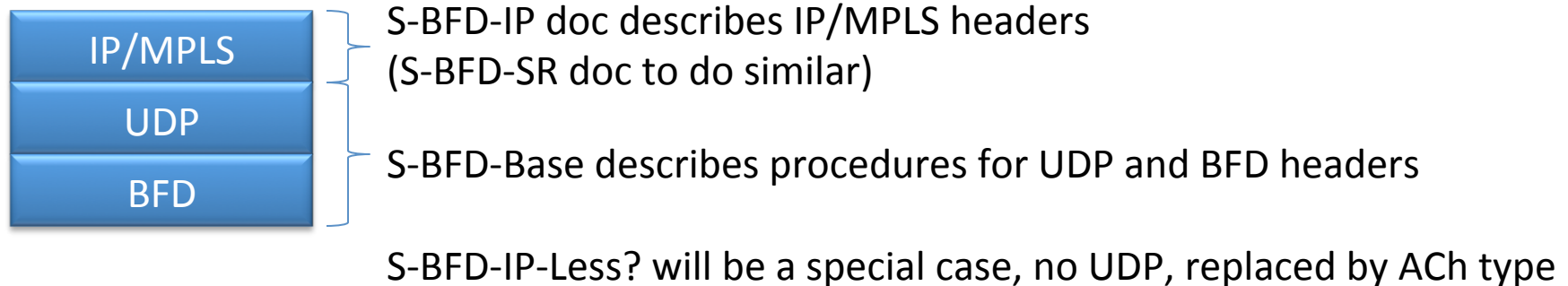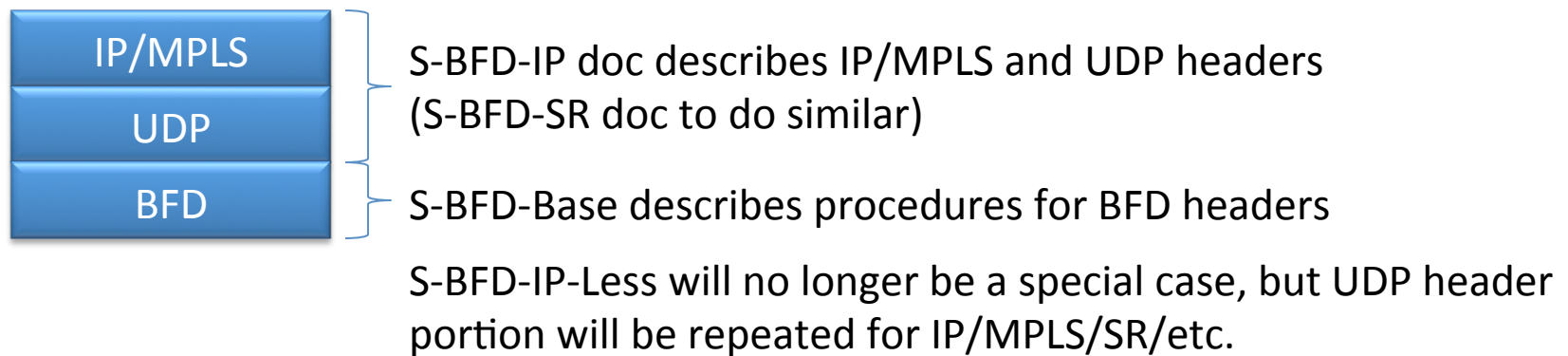- Yang/Netconf?
- Additional Security?

Let's see …

- SFC

S-BFD Documents Structure

- ## Single port (7784?) for all S-BFD types, thus:

| IP/MPLS |
| UDP |
| BFD |

S-BFD-IP doc describes IP/MPLS headers
(S-BFD-SR doc to do similar)

S-BFD-Base describes procedures for UDP and BFD headers

S-BFD-IP-Less? will be a special case, no UDP, replaced by ACh type

- ## Above == current plan, however alternatively:

| IP/MPLS |
| UDP |
| BFD |

S-BFD-IP doc describes IP/MPLS and UDP headers
(S-BFD-SR doc to do similar)

S-BFD-Base describes procedures for BFD headers

S-BFD-IP-Less will no longer be a special case, but UDP header portion will be repeated for IP/MPLS/SR/etc.

- ## If you have strong preference, plz voice on list.

S-BFD Terminologies

- Defined in draft-ietf-bfd-seamless-base-01

S-BFD - Seamless BFD.

S-BFD packet - a BFD control packet on the well-known S-BFD port.

Entity - a function on a network node that S-BFD mechanism allows remote network nodes to perform continuity test to. An entity can be abstract (ex: reachability) or specific (ex: IP addresses, router-IDs, functions).

SBFDInitiator - an S-BFD session on a network node that performs a connectivity test to a remote entity by sending S-BFD packets.

SBFDReflector - an S-BFD session on a network node that listens for incoming S-BFD packets to local entities and generates response S-BFD packets.
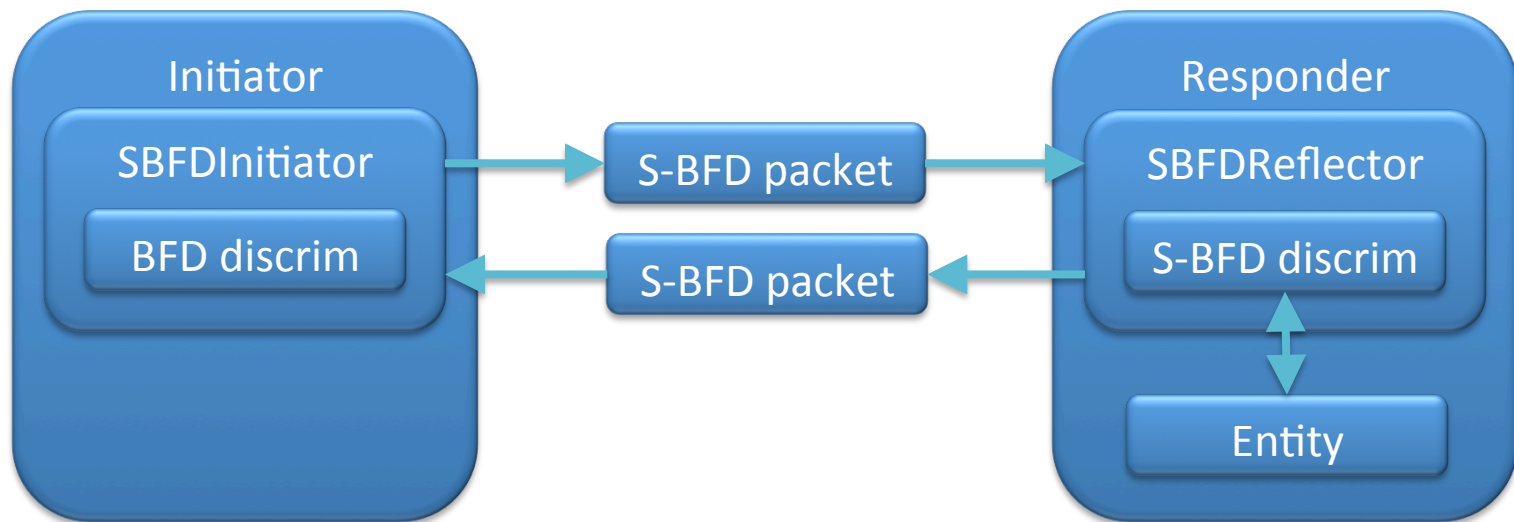
Reflector BFD session - synonymous with SBFDReflector.

S-BFD discriminator - a BFD discriminator allocated for a local entity and is being listened by an SBFDReflector.

BFD discriminator - a BFD discriminator allocated for an SBFDInitiator.

Initiator - a network node hosting an SBFDInitiator.

Responder - a network node hosting an SBFDReflector.

Seeking Comments/Thoughts [1]

- SBFDReflector behavior: what value to set in the state field of sending S-BFD packets?

Option 1 (currently defined in base)	Option 2 (alternative)
`Has two states: UP, ADMINDOWN`	`Has two states: UP, ADMINDOWN`
`Sets UP or ADMINDOWN`	**`Reflects received state or sets ADMINDOWN`**
	```if (bfd.SessionType == SBFDReflector) { if (local_state == ADMINDOWN) { Set ADMINDOWN in state field; } else { Copy received state to state field; }}```
• `SBFDInitiator requires sending `**`1`**` S-BFD packet to receive response with state=UP.` • `SBFDInitiator `**`cannot`**` reuse the FSM from RFC5880, i.e. (local_state=DOWN && received_state=UP) transitions the local_state to DOWN according to RFC5880.`	• `SBFDInitiator may require sending `**`2`**` S-BFD packets to transition to UP state and `**`3`**` S-BFD packets to receive response with state=UP.` • `SBFDInitiator `**`can`**` reuse the FSM from RFC5880.`

Seeking Comments/Thoughts [2]

- S-BFD discriminator uniqueness within an administrative domain. Why?
  - To avoid false positive.
  - S-BFD packet falsely terminates on node X instead of Y, but both X and Y have same S-BFD discrim.
  - Detailed explanations in base doc Section 5.
- Initially, uniqueness relies on configuration.
  - Sufficient?
- Down the road, what extensions do we need?

Seeking Comments/Thoughts [3]

- Reserving one or set of S-BFD discriminators?

- Possible usages:

  - Alert discriminator

  - Scenarios where overhead of S-BFD advertisement is too costly

- Useful? Oppose? How does WG feel about this?

Thank you!

Questions/Comments?