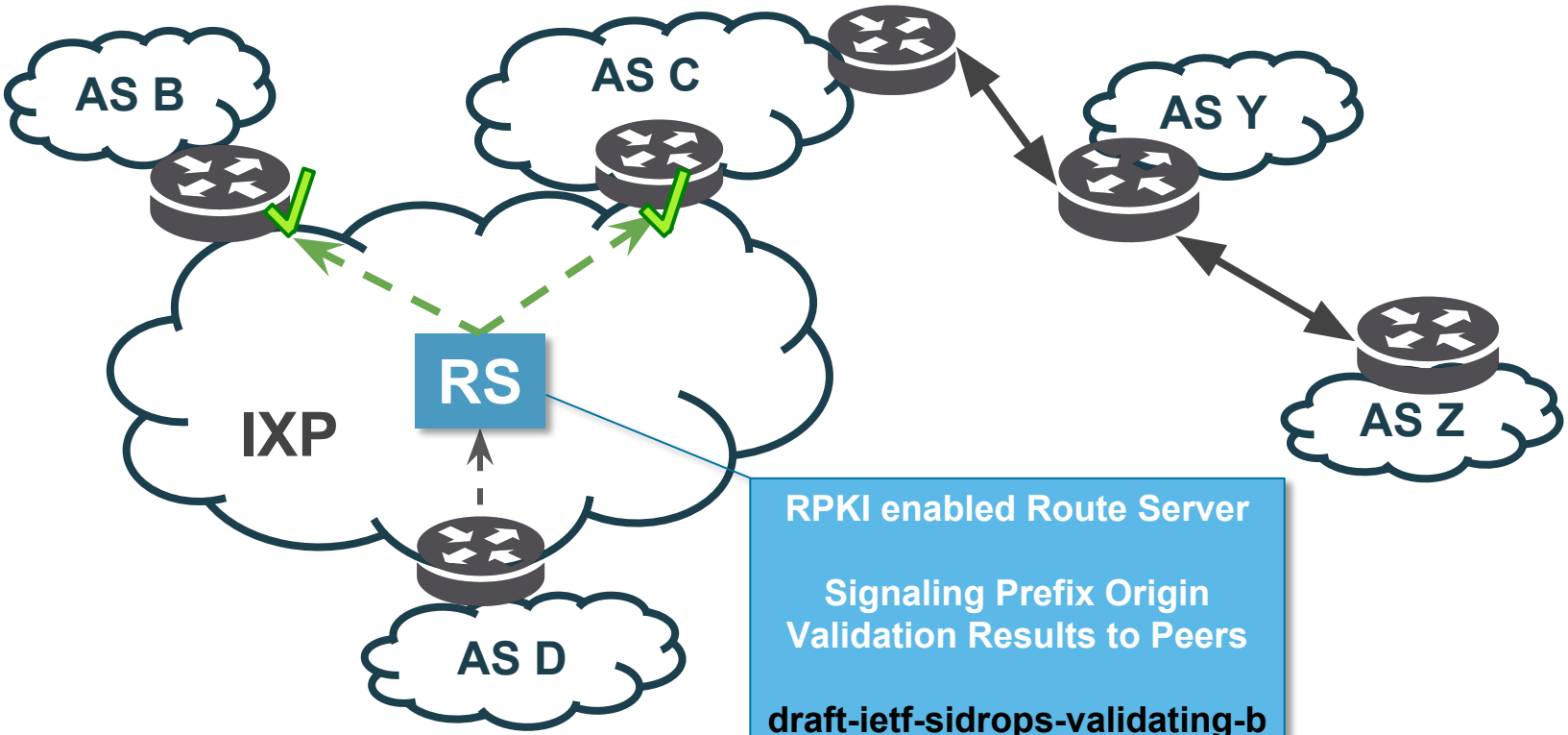
Signaling Prefix Origin Validation Results from an RPKI Origin Validating BGP Speaker to BGP Peers

draft-ietf-sidrops-validating-bgp-speaker-02
IETF 101, March 22 2018, London

Primary Goals of this I-D

- Lower the barrier of entry, e.g. for customers who are reluctant in dipping their toes, due to political, technical or business reasons.
- Standardize the way BGP speakers (e.g. IXP route servers) communicate ROA validation status via BGP communities.

Signaling at an IXP



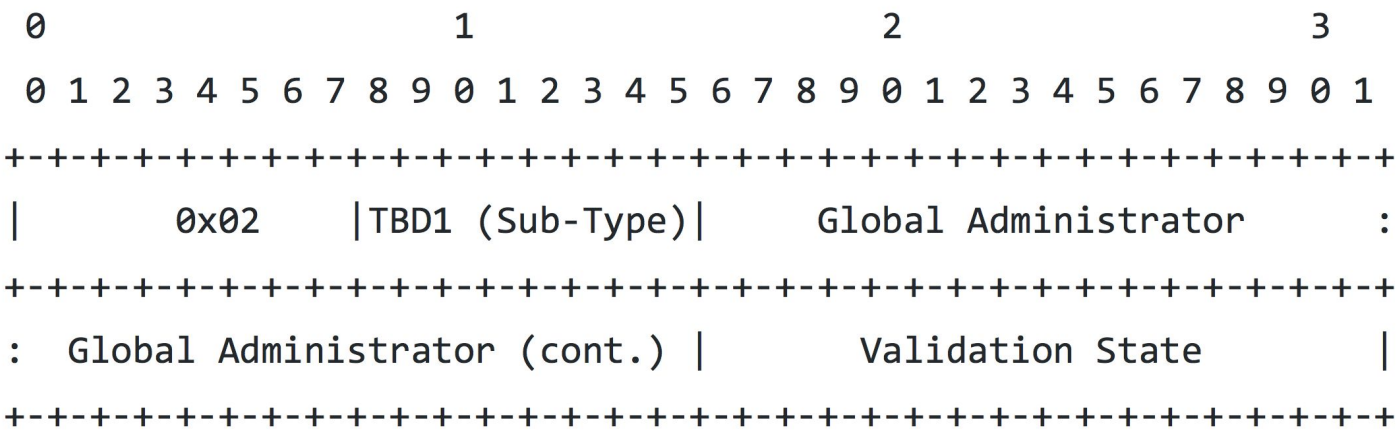
Brief I-D History

2017-01: -00 released
2017-01: -01 released (migration from SIDR to SIDRops)
2017-04: -02 released (addition of operation modes, reference updates, cosmetic changes)
2018-01: -00 of `draft-ietf-sidrops-validating-bgp-speaker` released (route server => BGP speaker, swap RFC8097 community to ad-hoc EBGP Prefix Origin Validation Extended Community)
2018-02: -01 released (minor typo fixed)
2018-03: -02 released (simplified language, added further clarifications, fixed more typos)

Method of standardization

Introduce a transitive four-octet AS Specific Extended Community, which signals:

1. ROA validity status of a prefix (Local Administrator field)
2. Signaling ASN (Global Administrator field)



Method of standardization (cont'd)

Allow for 3 modes of operation for validating BGP speaker:

1. **Tag prefixes** with their ROA validity status, and advertise them.
2. **Drop prefixes with ROA status "Invalid"**. Tag the remaining "Unknown" AKA "NotFound" and "Valid" routes, and advertise them.
3. **Drop prefixes with ROA status "Invalid" or "Unknown"**. Tag the remaining "Valid" routes, and advertise them.

Path hiding concerns

- ROA validity of prefixes is just another input for per-client policy controls, as described in §2.3.1 and addressed in §2.3.2 of RFC 7947 (multiple RIBs, ADD-PATH, etc.). In that case, BGP best path selection algorithm will run *after* dropping "Invalids" (mode 2) or "Invalids" and "Unknowns" (mode 3).
- Furthermore, at least one implementation used in IXPs supports sending the next best *available* path.
- This means that no path hiding will occur, if so desired, but can still be an option for operators, e.g. when having routes obtained via other peers.

Security and/or operational concerns

- Draft is addressing *technical* concerns and describing all available options, having the primary goals (presented in slide 2) in mind. Operational and security (best) practices are left to the operator, or other drafts.