

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

**draft-ietf-sidrops-validating-bgp-speaker
IETF 105, July 23 2019, Montreal**

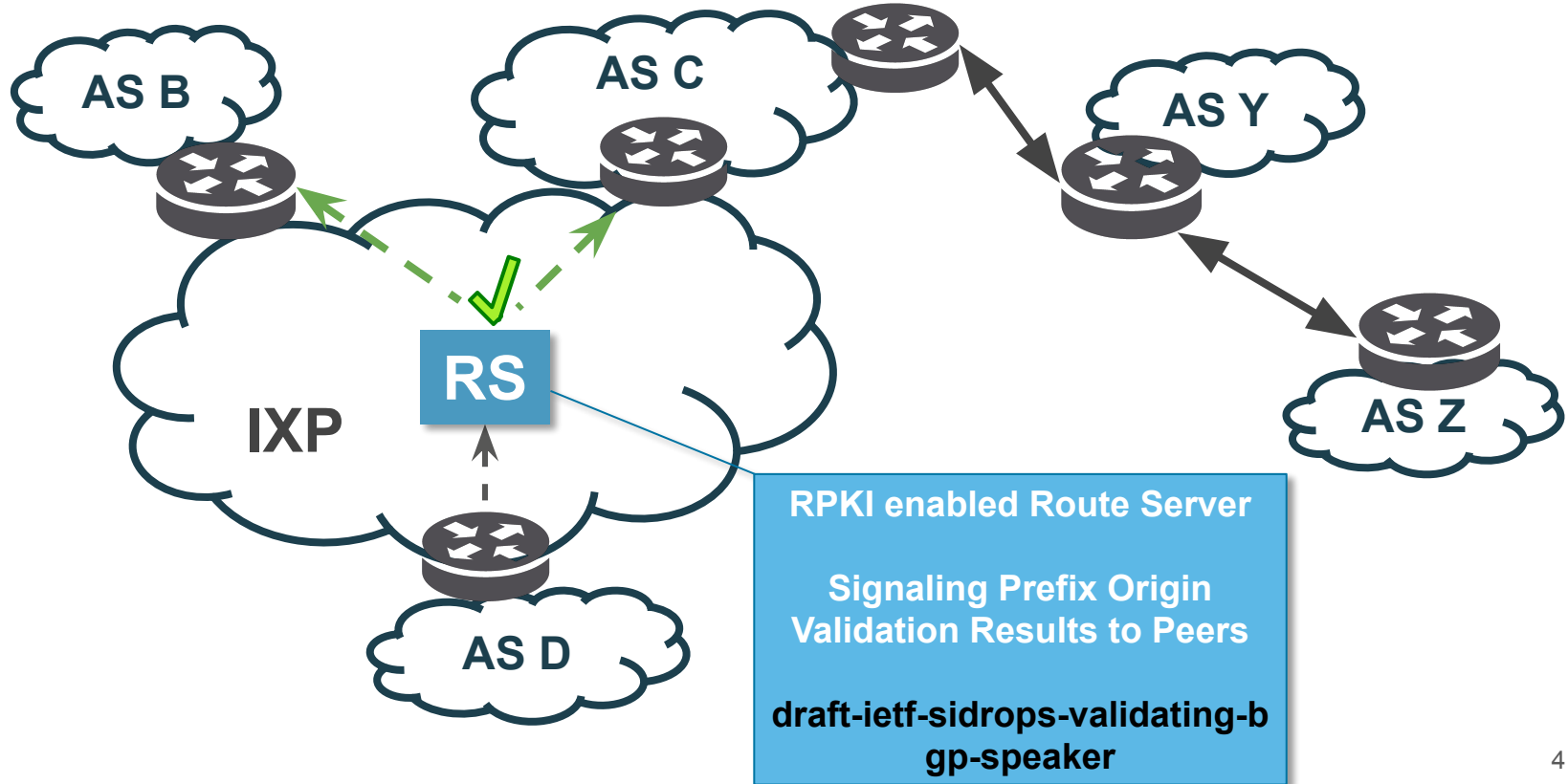
Timeline



Motivation

- Mimic **RFC8097** (IBGP only) for IXPs
- Forward RPKI origin validation results with IBGP
- Natural for IXPs to forward routing details to peers to:
 - make routing decisions
 - monitoring, maintenance, troubleshooting
 - educational and research purposes

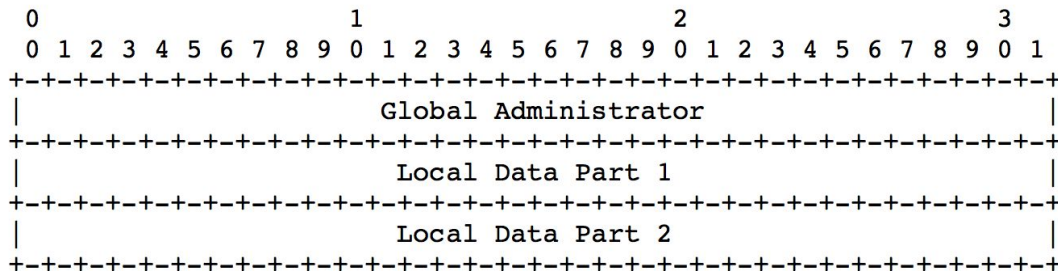
Signaling at an IXP



Current Implementation

Transitive 12-octet AS Specific Large Community (RFC8092 & RFC8195):

1. ROA validity status of a prefix (Local Administrator field)
2. Function specific value TBD (Local Data Part 1)
3. Signaling ASN (Local Data Part 2)



Value	Meaning
0	Lookup result = "valid"
1	Lookup result = "not found"
2	Lookup result = "invalid"

Modes of operation

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"** (default mode)
Tag the remaining "Unknown" and "Valid" routes, and advertise them.
3. **Drop prefixes with ROA status "Invalid" and "Unknown"**
Tag the remaining "Valid" routes, and advertise them.

Operational Recommendations

- Peers can **redistribute**, but **only in their own AS**
- A route server must strip a similar community at reception
- In case of **failure in the origin validation** check
→ **community omitted**
- If a peer obtained multiple validation states, they should only use the highest value

Past Comments

- **Signaling if validation wasn't performed**
 - Operational recommendation omitting community tag completely
- **Draft overtaken by reality**
 - Dropping of invalids by default is getting common at IXPs
- **Extended community vs. large community**
 - Changed from extended to large communities
- **Concern of outsourcing security**
 - Common and a trade-off in the Peer→ IXP relationship
- **Drop invalids as default mode of operation in this draft**
 - Now adopted in the draft