

AS Migration

draft-ietf-idr-as-migration

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The problem

- BGP-speaking networks merge, acquire, split, reconfigure
 - this usually requires routers to change ASNs
 - Confederations not always a good solution
- Difficult for operators to coordinate ASN changes with eBGP peers
 - Each router moved to new ASN must have all eBGP peers reconfigure remote-as **simultaneously** or BGP sessions won't come up
 - doesn't scale to thousands of PE routers with hundreds of sessions each
- Mid-migration AS-Path lengthening creates undesirable traffic shifts

The Solution

- Vendors implemented BGP knobs that allow manipulation of ASN inside PE's BGP
 - Local-AS: Modify AS_PATH inbound to the Svc Provider's AS
 - Replace-AS: Modify AS_PATH outbound from the Svc Provider's AS
 - Internal BGP Alias: Seamlessly move iBGP sessions, e.g.: from PE's to RR's, from one ASN to a second ASN
 - Looks like normal spec-compliant eBGP session external to the router
- Requires no coordination/reconfiguration from eBGP peers
 - Remote-side (CE routers, esp. unmanaged) can still and do use legacy ASNs indefinitely
 - If it ain't broke, don't fix it

Why does IETF need to care?

- AS Migration tools documented in draft are:
 - Widely used by operators in Internet ASN migrations
 - Implemented to avoid BGP protocol errors (mismatching ASN's in OPEN and UPDATE PDUs)
- Need a stable reference to document these de facto standards and that they are in wide use
 - Changes that would break these capabilities (e.g SIDR BGPsec path validation) are a non-starter
 - draft-ietf-sidr-as-migration adds AS migration support in Path Validation

Draft progress

- Recently adopted by IDR, few changes from individual draft
- Several implementations have been deployed for over a decade.
- also presenting in GROW
- More reviewers?

Questions

- Document type: Info or BCP vs PS?
 - Currently: Informational
 - No interop needed (config and AS_PATH changes are only locally-significant)
 - Current draft points to 3 vendors' documentation, is 2119 text defining a single reference implementation necessary?