Autonomous System Provider Authorization

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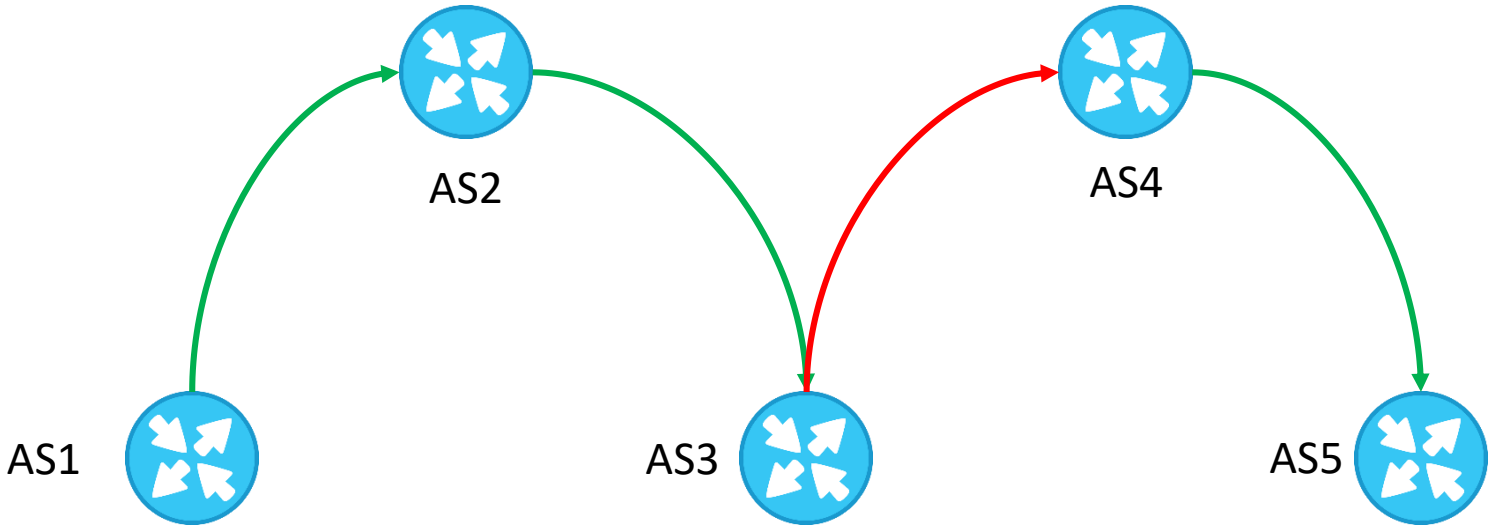
ASPA

- A new RPKI object;
- In opposite to AS-SETs, customers authorize providers;
- Together ASPAs and ROAs can eliminate most of security threats;
- No changes to BGP itself;
- BGP roles can be used to simplify the configuration process.

Changelog

- The documents were adopted by WG;
- Support for legacy BGP implementations is removed;
- Rule update: all leaks MUST be rejected;
- Support for leak detection for prefixes that are received from providers is added;

Leak Detection by Customer



If there are two pairs (AS(I-1), AS(I)), (AS(J-1), AS(J)) where J > I, and customer-provider verification procedure returns "invalid" for both (AS(I-1), AS(I), ROUTE_AFI) and (AS(J), AS(J-1), ROUTE_AFI), then the procedure also halts with the outcome "invalid";

ASPATH: 5 4 3 2 1

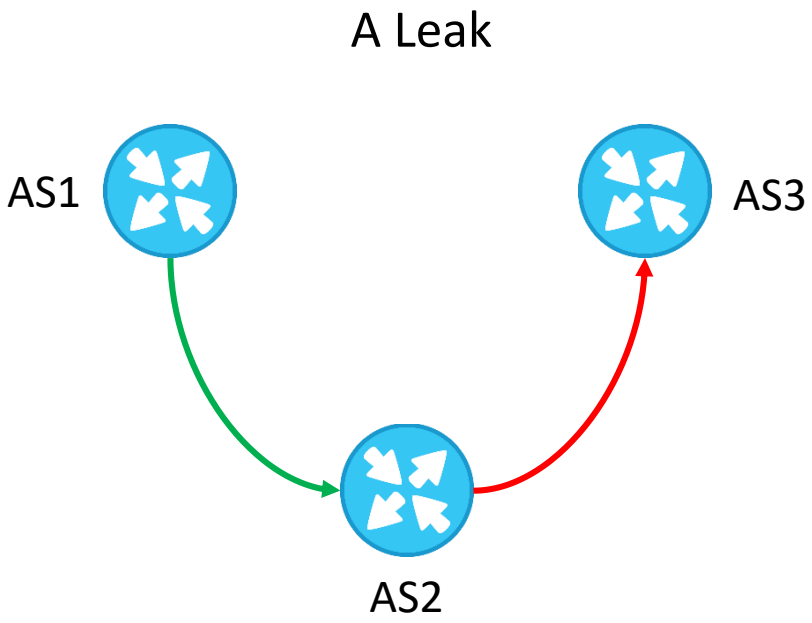
Verify(AS1, AS2) = Valid

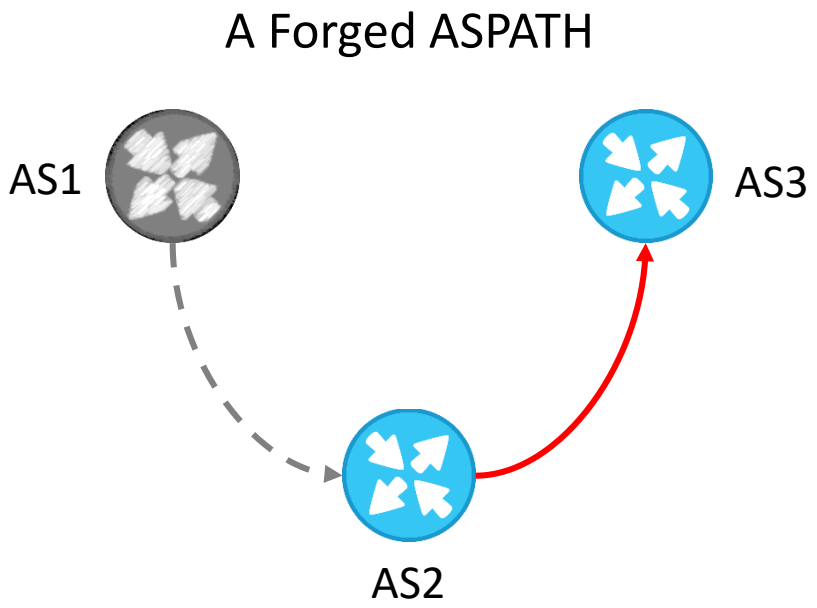
Verify(AS2, AS3) = Invalid

Verify(AS4, AS3) = Invalid

Invalid

Leaks MUST be Rejected





We can’t distinguish mistake leaks from malicious hijacks!
Leaks MUST be treated as hijacks – they MUST be rejected.

What's Next?

- Proof of concept;
- RTRv2 with ASPA support;
- WGLC!

PS: what got wrong with draft-kumari-deprecate-as-set-confed-set?