

Proposing validation state “Unverified”

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draft-borchert-sidrops-rpki-state-unverified-00

draft-borchert-sidrops-bgpsec-state-unverified-00

O. Borchert, D. Montgomery

National Institute of Standards and Technology

Proposal

- We propose adding the state “**Unverified**” to prefix origin validation and BGPsec path validation.
- This allows a well defined distinction between **validated** updates from **non-validated** updates.
- This will require updates to
 - RFC 6811, RFC 8097
 - draft-borchert-sidrops-rpki-state-unverified-00
 - and RFC 8205
 - draft-borchert-bgpsec-state-unverified-00

Reasoning

- If operators start creating policies for “NotFound” it becomes vital to distinguish between “NotFound” and not verified route prefixes.
- There are situations where validation is not performed (yet/ever).
 - No connection to validation cache yet / data not yet synchronized with validation cache
 - Operator chooses not to validate specific routes
 - “Lazy Evaluation” – asynchronous evaluation to prevent hold ups
 - Others...
- An unverified route is not the same as a verified route and vice versa
 - The lack of the state “Unverified” waters down the meaning of all other states.
 - RFC 6811 urges to use NotFound for unverified updates.
 - RFC 8205 does not mention what to do with unverified routes.
 - “Unverified” allows to signal within iBGP if an update was in fact validated or not.
 - The absence of the community string value does not make this clear.
- Each validation state of RFC 6811: “Valid”, “Invalid”, “Not-Found” and RFC 8205 “Valid”, “Not-Valid” is the result of well defined algorithms.
 - Not being validated must be a well defined state as well.

Real World Usage we found:

- Juniper
 - Provides the state “unverified”
- NIST BGP-SRx
 - Provides the state “undefined”
- Others ?

Update to RFC 6811

Add the state:

Unverified: Specifies the state of a route prefix on which no evaluation has been performed.

Paragraph 2. Prefix-to-AS Mapping Database

Update the statement:

“If validation is not performed on a Route, the implementation SHOULD initialize the validation state of such a route to “NotFound”.”

with:

“If no evaluation of a route prefix is performed in any form, the implementation MUST initialize the validation state of such a route to “Unverified”.”

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Update to RFC 8097

Paragraph 2. Origin Validation State Extended Community

Extend the Table

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

with:

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

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Update to RFC 8205

5.1 Overview of BGPsec Validation

...

“The validation procedure results in one of two states: 'Valid' and 'Not Valid’”

...

“BGPsec validation need only be performed at the eBGP edge.”

...

The following sentence should be added saying:

“BGPsec routes MUST be initialized using the BGPsec validation state "Unverified" until proper evaluation of the BGPsec route has been performed.”