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O. Borchert
D. Montgomery
USA NIST

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BGPsec Validation State Unverified
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Abstract

In case operators decide to delay BGPsec path validation, none of the available states do properly represent this decision. This document introduces "Unverified" as a well-defined validation state which allows to properly identify a non-evaluated BGPsec routes as not verified.

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1. Introduction

BGPsec path validation [RFC8205] provides well defined validation states. Though, there are instances in which BGPsec routes are not immediately validated upon receiving them. This could be due to configuration where the operator chose to perform "Lazy Evaluation" or due to instances where router configuration could enable the operator to delay route validation during situations of unexpectedly high loads such as DDOS attacks or others. Here, the absence of a well-defined initialization state requires to use a validation state, that is otherwise well-defined and therefore "waters" down the meaning of that state.

Hence, this document updates the RFC 8205 by adding the proposed validation state "Unverified".

1.1. Terminology

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14 [RFC2119] [RFC8174] when, and only when, they appear in all capitals, as shown here.

2. Suggested Reading

It is assumed that the reader understands BGP [RFC4271] and BGPsec Protocol Specification [RFC8205]

3. Initializing BGPsec route

This document introduces the validation state "Unverified" to be used for BGPsec routes that are not evaluated otherwise.

To allow proper initialization the following state is introduced:

- Unverified: Specifies the state of a BGPsec route where no evaluation has been performed.

3.1. Changes to RFC 8205

The BGPsec protocol specification as specified in [RFC8205] suffers the limitation described above in this document. [Section 5.1] of RFC 8205 specifies two states for BGPsec path validation:

> The validation procedure results in one of two states:
> 'Valid' and 'Not Valid'.

Also, [Section 5.1] makes it clear that:

> BGPsec validation need only be performed at the eBGP edge.

This document updates RFC 8205 in such that:

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

3. Usage Considerations

The validation state "Unverified" allows to distinguish between evaluated BGPsec routes and non-evaluated BGPsec routes. This allows the operator to create policies to treat such routes different from routes labeled with either validation state "Valid" or "Not Valid"

4. Security Considerations

This document introduces no new security concerns beyond what is described in [RFC8205]

5. IANA Considerations

This document has no IANA actions.

6. References

6.1. Normative References

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, DOI 10.17487/RFC2119, March 1997, <https://www.rfc-editor.org/info/rfc2119>.

[RFC8174] Leiba, B., "Ambiguity of Uppercase vs Lowercase in RFC 2119 Key Words", BCP 14, RFC 8174, DOI 10.17487/RFC8174, May 2017, <https://www.rfc-editor.org/info/rfc8174>.

[RFC8205] Lepinski, M., Ed., and K. Sriram, Ed., "BGPsec Protocol Specification", RFC 8205, DOI 10.17487/RFC8205, September 2017, <https://www.rfc-editor.org/info/rfc8205>.

8.2. Informative References

[RFC4271] Rekhter, Y., Ed., Li, T., Ed., and S. Hares, Ed., "A Border Gateway Protocol 4 (BGP-4)", RFC 4271, DOI 10.17487/RFC4271, January 2006, <https://www.rfc-editor.org/info/rfc4271>.

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Authors' Addresses

Oliver Borchert
National Institute of Standards and Technology (NIST)
100 Bureau Drive
Gaithersburg, MD 20899
United States of America

Email: oliver.borchert@nist.gov

Doug Montgomery
National Institute of Standards and Technology (NIST)
100 Bureau Drive
Gaithersburg, MD 20899
United States of America

Email: dougm@nist.gov