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**Use of the Cost Community to Propagate BGP Origin Validation State  
draft-retana-sidr-origin-validation-cost-community-00**

Abstract

This document explains the use of the Cost Community to provide flexibility in the application of routing policy related to the origin validation state of a route.

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**[1.](#) Introduction**

The BGP Origin Validation mechanism [[RFC6811](#)] defines the route validation states as "Valid", "NotFound" and "Invalid". The Origin Validation State Extended Community [[I-D.ietf-sidr-origin-validation-signaling](#)] has been defined so that this state can be considered prior to any of the steps defined in the BGP decision process [[RFC4271](#)].

It has been suggested that the LOCAL\_PREF attribute [[RFC4271](#)] may also be used to indicate the degree of preference of a route according to its origin validation state. [[RFC7115](#)] also suggests the need to consider the origin validation state at other steps in the selection process, for example after considering the AS\_PATH length.

The Cost Community [[I-D.ietf-idr-custom-decision](#)] can provide a flexible mechanism to propagate the origin validation state, without overloading existing attributes that may already be used to set other types of local policy (such as the LOCAL\_PREF).

**[2.](#) Requirements Language**

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

**[3.](#) Use of the Cost Community to Propagate BGP Origin Validation State**

It is RECOMMENDED that the values defined in [[I-D.ietf-sidr-origin-validation-signaling](#)] also be used to assign the Cost:



+-----+-----+	
Cost	Validation State
+-----+-----+	
0	Valid
1	NotFound
2	Invalid
+-----+-----+	

Cost vs Validation State

The Point of Insertion (POI) can be set to any of the values defined in [[I-D.ietf-idr-custom-decision](#)]. Note that the use of the ABSOLUTE\_VALUE POI is equivalent to using the Origin Validation State Extended Community.

If the Cost Community is used to propagate the origin validation state, then the Origin Validation State Extended Community SHOULD NOT be used. If used, then it will always take precedence over the Cost Community, regardless of the POI used.

#### 4. Operational Considerations

The use of the origin validation state as part of the BGP decision process is a matter of local policy.

The policy mechanism chosen to propagate the origin validation state SHOULD be implemented uniformly across the local autonomous system to guarantee a consistent decision process and reduce the risk of routing loops.

#### 5. Security Considerations

This document explains the use of the Cost Community to provide flexibility in the application of routing policy related to the origin validation state of a route. As such, it does not introduce new security risks beyond the ones considered in [[I-D.ietf-idr-custom-decision](#)] or [[RFC6811](#)].

#### 6. IANA Considerations

This document has no IANA actions.

#### 7. Acknowledgements

The authors would like to thank Keyur Patel.



## **8. References**

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