T · · Systems · · ·

IP Transit

AS3320 BGP Communities

Version: 1.1

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1 Introduction

The Deutsche Telekom AS3320 Internet network ("AS3320") provides the following BGP community based routing services to IP transit customer networks. A customer network can use these communities to influence routing decisions and manipulate traffic streams within AS3320. There are two general categories of communities:

- Signalling communities that are sent by a customer network to request certain routing services from AS3320.
- Informational communities that AS3320 sends to provide additional information about routes that is not available via other BGP attributes.

2 Signalling Communities

2.1 Blackholing

A customer network may request blackholing to defend against Denial of Service (DoS) and Distributed DoS attacks. Blackholing results in AS3320 discarding all traffic to the particular address space. Authorization by AS3320 backbone engineering is required to ensure the affected address space truly belongs to the customer network.

Community Value	Name	Description
65000 : 0	Blackholing	AS3320 discards all traffic to the destination prefix(es).

2.2 NOPEER

This is the recently IETF defined community NOPEER [1]. A customer network can use this to restrict propagation of its routes to AS3320 peers.

Community Value	Name	Description
65535 : 65284	NOPEER	Defined by RFC 3765. AS3320 will not propagate the tagged route(s) to its peers.

2.3 Local Preference

A customer network can control the route priority within AS3320 for its advertisements by using the following Local Preference communities. Currently, AS3320 assigns the (standard) Local Preference value of 100 by default.

[1] G. Huston, "NOPEER Community for BGP Route Scope Control," RFC 3765, April 2004.

Community Value	Name	Description
65001 : 100	Standard Local Preference	Set Local Preference to 100 (default).
65001 : 50	Low Priority Local Preference	Set Local Preference to 50.
65001 : 150	High Priority Local Preference	Raise Local Preference value to 150. Requires authorization from AS3320 backbone engineering.

2.4 Restrict Route Propagation

A customer network may use these communities to restrict propagation of its routes to AS3320 peers. However, the well known community NOPEER should be employed instead of these where appropriate.

Community Value	Name	Description
65010 : X	No Export to AS X	Do not advertise route(s) to named AS3320 peer (ASN=X)
65010 : 65001	No Export by Class: Peer	Do not advertise route(s) to AS3320 peers.
65010 : 65002	No Export by Class: Upstream	Do not advertise route(s) to AS3320 upstream.
65010 : 65003	No Export by Class: Peer & Upstream	Do not advertise route(s) to AS3320 peers and upstream.

2.5 AS Path Prepending

AS path prepending is a common way of making routes less attractive since AS path length is usually one of the BGP path selection criteria. A customer network may use these communities to selectively request AS3320 to insert additional copies of the AS number 3320 when propagating the customer routes to neighbors.

Community Value	Name	Description
65012 : X	AS Prepend 2x to AS X	Prepend 3320 two times to named peer (ASN=X)
65013 : X	AS Prepend 3x to AS X	Prepend 3320 three times to named peer (ASN=X)
6501n : 65001	AS Prepend by Class: Peer	Prepend 3320 n times to peers. n=2 or 3.
6501n : 65002	AS Prepend by Class: Upstream	Prepend 3320 n times to upstream.
6501n : 65003	AS Prepend by Class: Peer & Upstream	Prepend 3320 n times to peers and upstream.
6501n : 65004	AS Prepend by Class: Customer	Prepend 3320 n times to customers.
6501n : 65005	AS Prepend by Class: Customer & Peer	Prepend 3320 n times to customers and peers.
6501n : 65006	AS Prepend by Class: Customer & Upstream	Prepend 3320 n times to customers and upstream.
6501n : 65007	AS Prepend by Class: All	Prepend 3320 n times to all AS3320 neighbors.

3 Informational Communities

3.1 Route Classification

As information to customer networks, AS3320 sends region and country origins on the routes it advertises and indicates whether the route is imported from a customer, peer or upstream provider.

Route Classification by Region	
Community Value	Description
3320 : 2010	Imported in Europe
3320 : 2020	Imported in North America
3320 : 2030	Imported in Asia Pacific

Route Classification by Country	
Community Value	Description
3320 : 2010	Imported in Europe
3320 : 2020	Imported in North America
3320 : 2030	Imported in Asia Pacific
3320 : 1040	Imported in Austria
3320 : 1056	Imported in Belgium
3320 : 1124	Imported in Canada
3320 : 1203	Imported in Czech Republic
3320 : 1208	Imported in Denmark
3320 : 1246	Imported in Finland
3320 : 1250	Imported in France
3320 : 1276	Imported in Germany
3320 : 1344	Imported in Hong Kong
3320 : 1348	Imported in Hungary
3320 : 1380	Imported in Italy
3320 : 1392	Imported in Japan
3320 : 1528	Imported in the Netherlands
3320 : 1578	Imported in Norway
3320 : 1616	Imported in Poland
3320 : 1702	Imported in Singapore
3320 : 1724	Imported in Spain
3320 : 1752	Imported in Sweden
3320 : 1756	Imported in Switzerland
3320 : 1826	Imported in Great Britain
3320 : 1840	Imported in the USA

Route Classification by Neighbor Type	
Community Value	Description
3320 : 9010	Imported from a customer
3320 : 9020	Imported from a peer
3320 : 9030	Imported from an upstream provider