



# Spectrum Fiber Internet Access BGP control

## BGP Communities

Customers can control their routing through a variety of methods. Some of these are special community-based controls implemented by Spectrum Enterprise. The responsibility for configuring and use of these remains with the customer and is provided as a value-add to the service. Spectrum expects the customer to have a clear and precise understanding of the routing impact when using such mechanisms.

### 1. Local Preference Communities

These communities control Spectrum Enterprises local-preference of customer-announced routes within our network. Since local-preference is a non-transitive attribute, this affects Spectrum Enterprises route selection only, and not the route selection made by Spectrum peers and customers.

Since Spectrum has multiple ASNs, it gives our customers flexibility to influence routing for their pre-fixes on a regional or national level. Please keep in mind that setting local-pref at the national level does not automatically set the same local-pref at the regional level. If the customers wish to change the local-pref at a regional and national level they need to send us the communities for both.

Community	Action taken by Spectrum upon receipt of a route advertisement containing the community
ASN:50	Sets the LOCAL PREFERENCE attribute of the BGP route to 50 instead of the default 100 within Spectrum Enterprises local region AS.
ASN:80	Sets the LOCAL PREFERENCE attribute of the BGP route to 80 within Spectrum Enterprises local region AS.
ASN:120	Sets the LOCAL PREFERENCE attribute of the BGP route to 120 within Spectrum Enterprises local region AS.
7843:50	Sets the LOCAL PREFERENCE attribute of the BGP route to 50 within Spectrum Enterprises backbone region AS.
7843:80	Sets the LOCAL PREFERENCE attribute of the BGP route to 80 within Spectrum Enterprises backbone region AS.
7843:120	Sets the LOCAL PREFERENCE attribute of the BGP route to 120 within Spectrum Enterprises backbone region AS.

Spectrum Enterprise has regional ASN's that connect to a National Backbone ASN (7843), the above community strings allow the customer to influence routing behavior on both ASN's.



## 2. Route Suppression and AS-Path prepend communities

Customers may set any of the following communities in order to have Spectrum suppress their route announcements or to have Spectrum Enterprise's ASN prepended to their routes to all Peers or to select specific peers as they leave AS7843.

Community	Action taken by Spectrum upon receipt of a route advertisement containing the community
65000:0	Suppress advertisement to all non-Spectrum ASes
65000:ASN	Suppress advertisement to ASN
65001:0	Prepend Spectrum AS (7843) one time to all Peer ASes
65001:ASN	Prepend Spectrum AS (7843) one time to the specified ASN
65002:0	Prepend Spectrum AS (7843) two times to all Peer ASes
65002:ASN	Prepend Spectrum AS (7843) two times to the specified ASN
65003:0	Prepend Spectrum AS (7843) three times to all peer AS's
65003:ASN	Prepend Spectrum AS (7843) three times to the specified Spectrum peer ASN
ASN:1	Prepend Spectrums regional ASN one time.
ASN:2	Prepend Spectrums regional ASN two times.
ASN:3	Prepend Spectrums regional ASN three times.

The specific peers that are currently supported using this functionality are listed below. Spectrum Enterprise reserves the right to modify this list at any time without notice.

Peer	ASN
Level(3) Communications	AS3356
XO Communications	AS2828
Tata Communications	AS6453
Telia Sonera	AS1299
Cogent Communications	AS174
Global Crossing	AS3549
Zayo (formerly AboveNet)	AS6461

Example: In order to have Spectrum Enterprise suppress the advertisement of your routes to Level3 Communications, send us your routes with the community 65000:3356



### 3. Outbound Customer Communities

For customers receiving full Internet routes from Spectrum, following communities will be sent to customers in order that they may influence their outbound traffic to Spectrum based on these route origins should they so choose.

Community	
7843:2000	Outbound Spectrum Internal
7843:2001	Outbound Spectrum Customer
7843:2002	Outbound Spectrum Peer

### 4. RTBH community

Spectrum provides a mechanism allowing customers to trigger the Spectrum network to discard all traffic entering the Spectrum network from external sources destined for any routes specifically announced by a Spectrum BGP customer with a special community. Spectrum customers can black-hole traffic for any customer-owned prefix with length equal to or longer than what Spectrum is currently accepting from them. For routes tagged with this black-hole community, Spectrum will accept advertisement of customer-owned pre-fixes smaller than a /24.

Example:

Normal allowed prefix length – 71.42.150.0/24

Allowed length for prefix tagged with black-hole community – 71.42.150.0 /24-32

Community	Action taken by Spectrum upon receipt of a route advertisement containing the community
7843:666	Black-hole traffic for customer-routes announced with this community.

### 5. BGP Multi Exit Discriminator

Spectrum currently accepts MED from customers, however since MED is a non-transitive attribute, it is only propagated to adjacent autonomous systems. When the customer sends MED to Spectrum, it is only propagated within the local region AS. Customers who have multiple connections to Spectrum, may choose to configure a higher MED to manipulate the "less-preffered" customer connection. Spectrum will prefer to send customer traffic on the connection with the lowest MED with default MED value being 0.