+ 359 2 439 33 34
info@bix.bg
www.bix.bg

Public Peering

Technology Information Guide

Ethernet Layer: Peering VLAN

To provide Public Peering service, BIX.BG establish a pure Layer 2 connectivity between all Members (peers) called the Peering VLAN. This ensures direct traffic exchange between peers without intermediate routers.

The default tag for the Peering VLAN is 669, which can be configured as tagged or untagged on member's ports. Additionally, members have the option to use a different tag if they prefer a tagged configuration and find VLAN 669 inconvenient.

IP Networks

The networks 193.169.198.0/23 (IPv4) and 2001:7f8:58::/64 (IPv6) have been specifically allocated and designated for the purpose of the Peering VLAN. These network ranges are used to facilitate the direct exchange of traffic between peers within the Peering VLAN.

IP Address Assignments

BIX.BG provides one IPv4 and one IPv6 IP address by default to each peer. In cases where a peer has two routers operating simultaneously, BIX.BG will provide additional IP addresses.

Direct BGP Sessions

By utilizing the provided IP addresses, peers have direct Layer 3 connectivity between each other. This allows them to establish direct BGP sessions to exchange routing information.

Route Servers (RS):

Route servers are responsible for redistributing routing information between peers, simplifying the interconnection process, and reducing the operational overhead of managing individual bilateral peering relationships.

BIX.BG use two independent Route Servers to enhance its resilience, and it is highly recommended that peers establish BGP sessions with both servers to ensure maximum redundancy.

- **rs1.bix.bg** - 193.169.198.10; 2001:7f8:58::3d35:0:1
- **rs2.bix.bg** - 193.169.199.10; 2001:7f8:58::3d35:0:2

RS Prefix Filtering

To prevent incorrect announcements, BIX.BG applies a set of rules that filter received announcements matching the following criteria:

- the prefix should not be used for public unicast routing, such as bogon, multicast, etc.
- with prefix length < 8 or > 24 for IPv4 and < 12 and > 48 for IPv6.
- a private AS has been found in the announced AS path.
- the prefix is not valid according to RPKI (Resource Public Key Infrastructure) and likewise does not have a matching object in RIPE or another Regional Internet Registry (RIR).

BIX.BG refreshes RPKI and RIR filters on Route Servers daily until 10:00 AM local time (EET/EEST). If a member resolves a filtered prefix in the RPKI/RIR database, they need to perform a software refresh of their BGP sessions to trigger the validation of the prefixes once again.

Live information regarding filtered prefixes can be accessed through BIX.BG's Looking Glass at http://lg.bix.bg (with no access restrictions), and through our portal at https://my.bix.bg/ (an account is required).

RS Peering Policy

Each member can independently decide whether they want to exchange traffic with other peers. This decision can be managed separately for:

- incoming traffic - resulting from member announcements and respectively received prefixes from other parties.
- outgoing traffic - resulting from accepted received prefixes from other peers.

Manage Incoming Traffic

This control is achieved by managing the redistribution of prefixes via the Route Servers (RS). Members have the ability to determine which peers can receive their prefixes through the RS and, correspondingly, which peers can send packets to the member based on their announced prefixes. Members can maintain full control over redistributing of their prefixes using **BGP communities**, as shown below:

0:member-as => do not announce to member-as

15669:member-as => announce to member-as

0:15669 => do not announce to any member

15669:15669 => announce to all members

Remarks:

- If the 15669 BGP community is not received, the 15669:15669 community will be applied.
- For 32-bit AS numbers, BIX.BG utilize a remapping process that involves mapping a 16-bit number found on the list of peers - https://www.bix.bg/en/members/public_peers.html

BIX.BG also supports **BGP large communities**, enabling the description of the exact 32-bit AS numbers without the need for remapping, as shown below:

15669:0:member-as => do not announce to member-as

15669:1:member-as=> announce to member-as

15669:0:0 => do not announce to any member

Manage Outgoing Traffic

Members have the ability to filter prefixes received from Route Servers in their own routers. This allows them to prevent sending packets to destinations they do not wish to reach via BIX.BG.

BIX.BG Ltd.

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