Содержание

1 General Description

💡 See also: BNG Solution Overview

There is a direct L2 connection between L2-Connected BRAS and subscriber, therefore BRAS operates with original MAC-addresses, vlan or Q-in-Q tag, DHCP requests, which are the Radius requests based on. IP addresses are allocated in the Radius-Accept attribute.

BRAS L2 Options:

- DHCP - The subscriber receives an IP address via Stingray Service Gateway (SSG) DHCP Proxy and proceeds to AAA in the Billing system. SSG terminates the subscriber and transfers him to the border.
- Static IP - Subscriber has a static IP address, proceeds to AAA in the Billing system with ARP authorization, is terminated by SSG and gets to the border.
- PPPoE - Subscriber creates a PPP tunnel with SSG, proceeds to AAA in the Billing using login/password, is terminated by SSG and gets to the border

Solution Components

L2-connected BRAS consists of two components:

- FastPCRF as an authorization via Radius component.
- FastDPI as a component that processes the subscribers' traffic.

📝 For the L2-Connected option, the source subscriber MAC addresses are in the BRAS visibility range. BRAS acts as an L3 device and terminates Subscribers' IP traffic. IP addresses allocation to Subscribers is handled using DHCP or when the Subscriber sets static IP parameters.

✋ BRAS functions can only be used when using FastDPI in inline bridge mode. When implementing L2-Connected BRAS on a test stand with a small number of test subscribers, keep in mind that BRAS may not work correctly with a subscriber base consisting of 1-2 subscribers due to its architectural features and optimization for a

> large amount of traffic. This reflects in the delay in responses to DHCP/PPPoE packets. For full operation of L2-Connected BRAS it is recommended to load SSG with any traffic so that work flows are not idle.

L2 Connected BRAS Specifications

L2-connected BRAS for VLAN/QinQ networks provides the following functions:

- Termination of Subscribers to WAN traffic, termination of response traffic from WAN to Subscribers
- DHCP: monitoring of DHCP requests from subscribers and their maintenance
- IP source guard - check that the LAN packet belongs to the same VLAN from which the DHCP registration was
- Local traffic interconnection between Subscribers and from Subscribers to local resources.

Solution Benefits

> L2-connected BRAS with DPI technology for distributed net has many advantages compared to traditional solutions:
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> - Traffic control and prioritization by applications and autonomous systems in the accessible band of each uplink
> - Limiting the bandwidth occupied by torrent when approaching the channel upper boundary
> - Traffic prioritization by applications and AS within the Subscriber's data plan (this option is relevant for corporate clients: a number of corporate users work within single data plan. Bandwidth for them needs to be allocated so as not to interfere with each other)
> - Support for subscribers with any number of IP addresses, including dynamically allocated
> - Redirection of Subscribers with zero balance to Captive Portal with an Allow list of resources. For example, bank resources for payment based on domain name or URL, including options with wildcard asterisks
> - Ability to gather full NetFlow Statistics for bandwidth or for billed subscribers only
> - Support for regulatory and law enforcement requirements, automatic loading and filtering by RKN and Ministry of Justice registers
> - Interaction with SORM (work as a puller SORM-3)