Configuring Triple Play Services with CLI

This section provides information to configure Residential Broadband Aggregation services using the command line interface. It is assumed that the reader is familiar with basic configuration of VPLS, IES and VPRN services.

Topics in this section include:

Configuring VPLS Residential Split Horizon Groups

To configure a group of SAPs in a VPLS service as a Residential Split Horizon Group (RSHG), add the residential-group parameter when creating the split horizon group. Traffic arriving on a SAP within an RSHG will not be copied to other SAPs in the same split horizon group. Note that the split horizon group must be created before it can be applied.

The following example displays a VPLS configuration with split horizon enabled:

```
*A:ALA-48>config>service>vpls# info
----------------------------------------------
            split-horizon-group "DSL-group2" residential-group create
                description "split horizon group for DSL - no broadcast supported"
            exit
            stp
                shutdown
            exit
            sap 2/1/4:100 split-horizon-group "DSL-group2" create
                description "SAP in RSHG"
            exit
            sap 2/1/4:200 split-horizon-group "DSL-group2" create
                description "another SAP in the RSHG"
            exit
            no shutdown
----------------------------------------------
*A:ALA-48>config>service>vpls#
```

Configuring Static Hosts

If the MAC address is not specified for a static host, the system will learn respective MAC address dynamically from ARP packets (arp-request or gratuitous-arp) generated by the host with the specified IP address. On a VPLS service, this can occur if arp-reply-agent function is enabled on a given SAP. On Layer 3 services, such as IES or VPRN, the ARP packets are always examined so no further conditions are applicable.

The learned MAC address will be handled as a MAC address of static host with explicitly defined *mac-address*. Meaning:

- The MAC address will not be aged by the mac-aging or arp-aging timers.
- The MAC address will not be moved to another SAP as a consequence of re-learning event (= event when learning request for the same MAC address comes from another SAP)
- The MAC address will not be flushed from FDB due to SAP failure or STP flush messages.

Every time the given static-host uses different MAC address in its ARP request, the dynamic mac-learning process will be performed. The old MAC address will be overwritten by a new MAC address.

The learned MAC address will not be made persistent (a static host is not a part of the persistency file). A service discontinuity of such a host could be proportional to its arp-cache timeout.

The following interactions are described:

- Antispoof (all services) — In case a static IP-only host is configured on a given SAP, both anti-spoof types, IP and IP MAC are supported. Static hosts for which MAC address is not known will not have any antispoof entry. This will be added only after the corresponding MAC has been learned. As a consequence, all traffic generated by the host before sending any arp packets will be most likely dropped.
- Enhanced subscriber management (all services) — ESM is supported in a combination with a static ip-only host. It is assumed that ip-mac antispoofing is enabled. The resources (queues, etc.) are allocated at the time such a host is configured, although they will be effectively used only after antispoof entry has been installed.
- Dual-homing (all services) — It is assumed that static host is configured on both chassis. The dynamic mac-address learning event will be then synchronized (also, if the members are on two different nodes) and corresponding anti-spoof entries will be installed on both chassis.
- MAC-pinning (for VPLS services only) — The dynamically learned MAC address of the static-host will be considered as a static-mac and is not affected by the **no mac-pinning** command.
- ARP-reply-agent (VPLS services only) — It is possible to the enable arp-reply-agent on a SAP where static host with ip-only configured. Besides the regular arp-reply-agent

functionality (reply to all arp-requests targeting the given host's IP address) learning of the host's MAC address will be performed. As long as no MAC address have been learned no ARP replies on behalf of such host should be expected. Enabling of arp-reply-agent is optional for SAP with ip-only static hosts.

Configuring Static Hosts on a VPLS SAP

The following example displays a static host on a VPLS SAP configuration:

```
*A:ALA-48>config>service# info
----------------------------------------------
vpls 800 customer 6001 create
     description "VPLS with residential split horizon for DSL"
     stp
          shutdown
     exit
     sap 1/2/7:100 split-horizon-group "DSL-group2" create
          description "SAP for RSHG"
          static-host ip 10.1.1.1
     exit
     no shutdown
----------------------------------------------
*A:ALA-48>config>service#
```

Configuring Static Hosts on an IES SAP

The following displays a static host on an IES SAP:

```
*A:ALA-49>config>service>ies# info
----------------------------------------------
            interface "test2" create
                address 102.22.1.1/24
                sap 7/1/5 create
                    description "IES with static host"
                    static-host ip 10.1.1.1
                exit
            exit
----------------------------------------------
*A:ALA-49>config>service>ies#
```

Configuring Static Hosts on a VPRN SAP

The following displays a static host on a VPRN SAP:

```
*A:ALA-49>config>service>vprn# info
----------------------------------------------
            description "VPRN service with static host"
            interface "to_Dslam" create
                sap 2/1/6:0 create
                    description "SAP with static host"
                    static-host ip 10.1.1.1
                exit
            exit
            no shutdown
----------------------------------------------
*A:ALA-49>config>service>vprn#
```