

Host Route Explicit Advertisement

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Revision History

Revision Details	Release
First introduced.	21.27

Feature Description

During the SAEGW-C failover, once the UE session is established, if the IP chunk subnet route which is advertised to IP back bone is from a faulty site then it turns unusable.

Note The Host Route Explicit Advertisement feature is currently supported only for IPv4 pools.

How it Works

During IP pool configuration, when the IP pool is created, it is divided into chunks and stored in the pool structure along with the chunk size.

UP receives chunk allocation details from CP using the Packet Forwarding Control Protocol (PFCP) message **Sx-Association Update** request. The IP chunk subnet route that is installed by the UP is advertised over Border Gateway Protocol (BGP) along with a response.

During session establishment, IP address allocation uses **up-id** to extract the chunk which is allocated to UP and having free IP addresses. This allocated IP address is passed from the CP to the UP using the **Sx Establishment Req** message for storing in the UP database.

To support the failover of the System Architecture Evolution Gateway for Control Plane (SAEGW-C) in a remote site, once the UE session is setup, the host route is advertised instead of the route installation for IP chunk subnet during the UP chunk allocation. The same host IP route is then advertised over the remote SAEGW-C for session reestablishment from the remote UP if SAEGW-C fails.

Before the host route explicit advertisement configuration, the following processes take place:

- The value of the **explicit-route-advertise** information is communicated from the CP sxmgr to the UP sxmgr using the **Sx-Association Update** request with the IP pool content type in the IP chunk type parameter. The first bit is set for enabling support for the explicit route advertisement feature.
- The UP vpnmgr receives the value of IP chunk type from the UP sxmgr.
- The installation and advertisement of IP chunk subnet route over BGP in UP vpnmgr does not take place if the first bit of the IP chunk type is set.
- During the call establishment, the host route is advertisement happens based on the IP chunk type information which is available in UP's IP chunk information. The host route advertisement is allowed once the first bit of the IP chunk type is enabled.
- CP vpnmgr maintains both the host route count per UP and the host route count in UP vpnmgr globally.
- Host routes maximum limit is 24,000. On reaching the maximum limit, the CP vpnmgr rejects the **Sx Establishment Req** request.
- During the release of a session, the host route gets deleted and the host route count is updated in the CP and UP vpnmgr.

ICSR

The IP chunk type information is updated using the checkpoint messages during the UP IP chunk details update which takes place between the UP active and standby mode.

VPNMGR Recovery

The vpnmgr local context database stores the IP chunk type information.

Limitations

Following are the known limitations of the feature:

- The maximum limit of UP host routes is 24000.
- IP pool configuration cannot be modified and must be deleted and added again with the attribute.
- During partial site failure where UPs are intact, you have to associate the failed site UP to a secondary CP. If the pool has sufficient chunks, then all UPs can serve calls from that pool. Else, only UPs which has chunk that is allocated to it serves the call.
- IPv6 support is not available for the feature.

Configuring Host Route Explicit Advertisement

Use the following CLI commands to configure the UP group specific IP pool:

```
configure
  ip pool  pool_name ip_start_range ip_end_range static group-name group_name
chunk-size chunk_size explicit-route-advertisement
  end
```

NOTES:

- *pool_name*: Group specific ip pool name.
- *explicit-route-advertisement*: Parameter that is used in configuring the **host_route_explicit_advertisement** for host route explicit advertisement.