Flow-based QoS

Feature Summary and Revision History

Summary Data

Applicable Product(s) or Functional Area	P-GW
Applicable Platform(s)	• ASR 5500 • VPC-DI • VPC-SI
Feature Default	Disabled - Configuration Required
Related Changes in This Release	Not Applicable
Related Documentation	• *Command Line Interface Reference* • *P-GW Administration Guide*

Revision History

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Important   Revision history details are not provided for features introduced before releases 21.2 and N5.1.
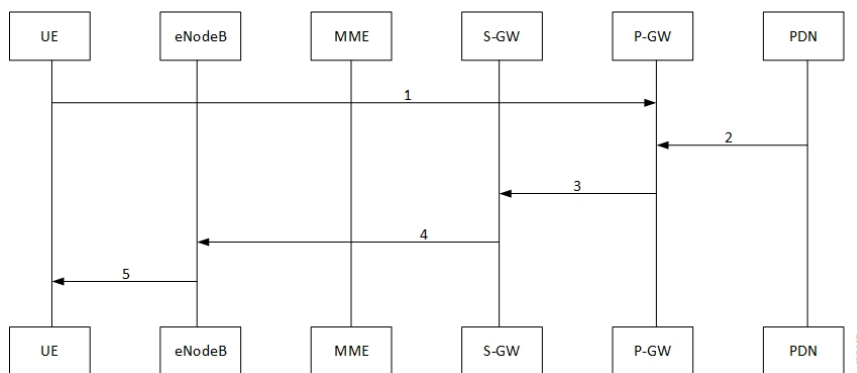
Revision Details	Release
P-GW supports prioritization of downlink traffic with the same bearer, based on a configured DSCP value in the outer-IP header	21.13.2

Revision Details	Release
First introduced.	Pre 21.2

Feature Changes

Traffic for a set of application flows can be prioritized based on the combination of the subscription value and the intended application. To support this, the P-GW provisions a configuration where the downlink traffic within the same bearer can be prioritized based on a configurable DSCP value in the outer-IP header.

The following call flow, at a high-level, illustrates the DSCP marking on the outer-IP header in a downlink traffic for a selected application.

Steps	Description
1	UE Attach Procedure and Session establishment on all the EPC Nodes (UE, eNodeB, MME, S-GW, and P-GW).
2	Downlink traffic sent to the UE from the PDN.
3	On receiving the data in the downlink direction from specific applications flows, the P-GW encodes the dscp-marking of the outer-IP header with the configured **tos-value** of the **charging-action** present under **active-charging**.
4	Based on the S-GW policies, the data is processed further and forwarded towards the UE through eNodeB.
5	UE received data from the eNodeB.

Command Changes

A new CLI command – **outer-packet-only**, is added to the **charging-action** profile of the Active Charging Service mode. The DSCP value is configured under Charging-Action.

On configuring this command, the combination of Ruledef and the Charging-Action under the Rulebase ensures that a specific flow is selected for further processing. The configured DSCP value is encoded to the outer-IP DSCP field.

Use the following configuration to encode DSCP value in the outer-IP header for specific flows:

```
configure
   require active-charging
   active-charging-service
      charging-action action_name
         ip tos tos_value downlink outer-packet-only
         no ip tos downlink
         end
```

> ☞
>
> **Important**   When the above CLI is configured, the outer-packet-only functionality takes precedence over other CLI configurations, which affects DSCP marking of outer-IP header.

NOTES:

- **ip**: Specifies the IP related configuration.

- **tos**: Specifies the type of service. *tos_value* specifies the ToS or DSCP value to be configured.

- **downlink**: Specifies downlink packets only.

- **outer-packet-only**: Copies the configured ToS value to the outer packet header.

Performance Indicator Changes

show active-charging charging-action statistics name

The output of this command includes the following field in support of this functionality:

- Outer IP header dscp marked Pkts: This field specifies the count of all the packets that are marked with the DSCP value in the outer-IP header for the corresponding charging-action.

show active-charging charging-action statistics name