



DISCUSSION ON THE ENHANCEMENT OF SDF TEMPLATE

*China Telecom SA2#127Bis
zhaosong.bri@chinatelecom.cn*



IN THE SLIDES

- Use case examples showing the challenges when current SDF template is used in QoS flow mapping
- Challenge Summary

USE CASE EXAMPLE 1:
SERVICE OPTIMIZATION
FOR THE OTT'S VIP USERS

SERVICE OPTIMIZATION FOR THE OTT'S VIP USERS

Some background information:

- Video stream service provider provides diversified services for the users with different membership rank.
- Free-account users
 - low resolution video
 - lower priority in heavy-load situation
- Golden members
 - 4K resolution video at any time
 - higher priority to access the resources
- For different membership rank, the network policy is different

SERVICE OPTIMIZATION FOR THE OTT'S VIP USERS

A very common business activity of OTT:

- A free-account user is provided with a free trial of golden member service for 5 mins.
- free-account-service becomes golden-member-service temporarily
- the service requirement for following data is changed accordingly(now need 4k video, low latency, etc)
- the packet flows affected by the change of service requirement should be mapped into the corresponding different QoS flow so the increment of QoS will make the user notice the improvement of service experience and pay for the high-value service much more willingly.

SERVICE OPTIMIZATION FOR THE OTT'S VIP USERS

- An alternative work around method
 - Changing the QoS of the PCC rules
 - AS may request to change the QoS requirement for all the packet flows belongs to this service
 - All the packet flows can be provided with QoS of the golden-member service during the trail.
 - The undesirable cost for every QoS change in the PCC rules:
 - interactions among multiple NFs, such as AF, NEF, SMF and PCF are required
 - re-evaluating the existing QoS flow bindings and QoS flow rebinding are needed.
 - these procedures have to be performed again if the QoS needs to be changed back to the original one

CHALLENGES

- this change of membership rank is controlled and known only by the OTT's service
- there may not be changes in the packet structure ,such as ip-5 tuples, URL(since the URL is not available in the case the Socket connection is used for video content transmission),
- the data content pattern (acquired by DPI) may not be changed either.
- the current SDF template may not be able to provide sufficient information to detect the change and the QoS flow mapping based on this detection is hard to perform.

USE CASE EXAMPLE 2:
SERVICE OPTIMIZATION
FOR ONLINE PURCHASING

SERVICE OPTIMIZATION FOR ONLINE PURCHASING

Some background information for online shopping application:

- the data can be catalogued into two groups
 - related to “browsing the production’s information”
 - related to “purchasing the goods”
- a lot of data is for “browsing the production’s information” and only a few is for “purchasing the goods”
- the data related to “purchasing the goods” makes the transaction done eventually

SERVICE OPTIMIZATION FOR ONLINE PURCHASING

- Common sense: the more time the user spends on the status of “purchasing the goods”, the more likely that the user will regret.
- The QoE for “purchasing the goods” is more important for the OTT
- the data for “purchasing the goods” and the data for “browsing the production’s information” should be detected respectively and mapped into different QoS flow so the service experience could be optimized for achieving the service business goal: successful transaction.

CHALLENGES

- In what condition the data should be treated as “purchasing the goods” related or “browsing the production’s information” related is decided and controlled by the OTT service provider.
- For example: Due to the importance to making a transaction done, the data for browsing add-on production information for an existed order waiting to be payed may be cataloged as “purchasing the goods” rather than “browsing the production’s information”.
- There may not be sufficient information in the current SDF template to describe the differences among the packet flows which are expected to be detected respectively and provided with different QoS.

CHALLENGE SUMMARY

CHALLENGE SUMMARY

- SDF is the set of packet flow that match an SDF template, i.e a set of packet flow can be detected with the information in one certain SDF template.
- Every QoS flow represents one supported QoS requirement. If the QoS flow mapping maps one SDF into a QoS flow, it indicated that the SDF has certain QoS requirement. In other words, a set of packet flow which can be detected with the information in one certain SDF template has certain QoS requirement.
- We can find that in the QoS flow mapping, the information in one certain SDF template actually represents a connection between the all packet flows and one certain QoS requirement. (And the QoS flow mapping is based on this connection)
- However, in our use case examples: we found that the information of the SDF template may not be sufficient to make the correct connection between the packet flow and the certain QoS requirement: based on the composition of the current SDF template, the two packet flows having different QoS requirements may be classified and marked as the same SDF and will be mapped into the same QoS flow. This will inevitably affect the service experience.

SA2-184739 Study on the enhancement of SDF template

Comments and support are both welcomed!