***Abstract*—łłnetwork slicingNFV SDNłł5G network slicingłł łł123**

I. Introduction

5Gł 5Gł3GPPłł 5Gł4G We need to allocated three types of resources. they are network, compute and storage. I need to read sdran network . and do some model building work.

ł We assume total bandwidth in the network is BHz. According to Shannon capacity formula,

motivation In article [], the virtual RAN was proposed to abstract the network resources.

main contribution

II. System Model

The 5G network include several elements as infrastructure. It includes base stations, mobile edge computing servers, core network and cloud. For the 5G communication, these kinds of resources should be considered. ł

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III. Resource Allocation and HARQ Optimization for URLLC Traffic in 5G Wireless Networks

C classes SINR, a Poisson process with rate λ_c packets/sec. Arrival rates $\lambda := (\lambda_1, \lambda_2, ..., \lambda_C)$. Let $SINR_c$ denote the SINR of a class c user's packets.

A class c user requires r_c channel. The transmission success probability is at least $1 - \delta$. A URLLC packet of class c is allocated a bandwidth of h_c for a period of time s_c.

$\kappa s_c h_c = r_c$

where κ is a constant which denotes the number of channel uses per unit time per bandwidth of the OFDMA time-frequency plane. łłURLLCł

IV. Network Slicing

A 5G network slicing management might organize the resource and allocated them for various application requests. We assume that the system has a constant amount of resources. The network slicing request resources from system according to application requires, and every network slicing has its tenancy period.

Based on this assumption, we seem system resources as a box with the cuboid shape. The Height of the box H represents the computing capacity in the whole system. The width of the box W represents the bandwidth provided by the network. The length of the box L is the time axis, and it can accommodate the tenancy period of network slicing.

We define a network slicing request as $s_i = \{C, B, T, i\}$, where C is the requirements of the computing resource, B is the amount of bandwidth required by network slice, T is the tenancy period of this network slice, it is the time of the resource occupation, i is used to identify the application who request the network slice.

A set of applications I need to be served, $i \in I, I_i = \{F, t\}$, where F is the file size of application need to be computed and transferred, t is the maximum delay required by application, the delay contains computing time and transferring time. When an application i has been finished within the delay successfully, it can provide a profit p_i.

$$maximize \quad \sum_{i=1}^{I} p_i R_i \tag{1}$$

$$subject \quad to \quad \sum_{i=1}^{I} C_i \leq H \tag{2}$$

$$\sum_{i=1}^{I} B_i \leq W \tag{3}$$

$$\frac{F_i}{C_i} + \frac{F_i}{B_i} \leq t_i \tag{4}$$