

Notation	Description
f_i	Flow i
F	Flows in the network
f_i	Flow i
R	Rules in the network
r_i	Rule i of flow i
S	Switches in the network
S_i	Switches in the forwarding path of flow i
s_j	Switch j
B_j	Cache size of switch j
$f_i(t)$	Network traffic density function of flow i at time t
X_{ij}	Whether switch j caches rule of flow i
$h_i(t)$	Cache Hits of rule i at time t
$H_i(t)$	Cache hits of rule i from time 0 to t
$F_i(t)$	Traffic of flow i from time 0 to t
$C_i(t)$	Cache hit ratio of flow i from time 0 to t
$C(t)$	Cache hit ratio of entire network
$T(f_i, t)$	Time to the next coming packet of f_i at time t
T_{max}	Maximum waiting time for the next packet coming
T_{next}	Possible maximum time to the next packet coming