Rule Caching in Software-Define Networkings

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SDN Framework

Applications, Service program

Northbound Interface: Rest API

*Floodlight, Ryu, etc*

Southbound Interface: OpenFlow, OpFlex, etc

Physical, Virtual switch (Open vSwitch)
Wireless SDN

Applications, Service program

Northbound Interface: Rest API

OpenFlow Controller

Southbound Interface: OpenFlow

Physical switch & AP
Cache in Switch

◆ TCAM: Ternary Content-Addressable Memory
  ◆ Pros
    ◆ High lookup speed
    ◆ Wildcard matching capability
  ◆ Cons
    ◆ Power-hungry (100 times more power-consuming per Mbit than SRAM)
    ◆ Expensive (400 times more expensive per Mbit than SRAM)
    ◆ Large size

◆ Rule Caching
  ◆ Cache the “important” rule
  ◆ Algorithms applied in wired SDN
1. Illustrate the difference between wireless and wired SDN.

2. Figure out the problem existing in wireless SDN on rule caching.

3. Change of rule caching algorithm to fit wireless SDN.
Challenges

1. SDN for WLAN is a new topic.
2. WLAN sets stricter requirements on the transfer of real-time data.
3. Understand various kinds of rule caching algorithms.
Thanks