SDN

Assignment no. 02

Assume you want to implement lint state routing protocol over a SDN based network. Write down in bulleted points what are the task of the SDN Controller for managing link state routing. Explain how the controller will interact with the switches to implement the protocol.

Ans
→ For the first extension, implement dynamic ARP requests from the router allowing all traffic to be ~~deter~~ delivered successfully during first round.

→ ARP should only be generated on the relevant subnet based on the IP destination address.

→ A router should not generate gratitude ARP. only ARP when necessary.

→ An implementation should be robust to the case that no ARP reply is ever received f have same

2) SDN Provide a centralized view of a network a, then do you think that the congestion control in TCP would be redundant in SDN supported network & can be commited from TCP design?

Ans:

In a cloud data center networks TCP incast usually happens when multiple senders simultaneously communicate with a single receieve However, when TCP incast happen DCN may suffer from both throughput collaps for TCP brust flow & temporary starvation for TCP background flows. when we detect network congestion on an openflow switch a controller can select the background flows & reduce their bundbwidth by adjusting the advertised window of TCP ACK packets of the corresponding background flows so as to reserve more bandwidth for burst flow -

TCP is traspetent to the end systems & can accurately acclerate the rate of background flows by leveraging the global view of the network gained via SDN.

Q3) State whether the following statement are true or false write justification.

a) In a SDN architecture, the ARP request can be handled by both the controller as neat as the switches.

⇒ True

An SDN Controller is an application in a software defined networking architecture that manages flow control for improved network management & application performance the SDN controller platform typically runs on a server of uses protocols to Fell switches where to send packets

SDN Controller direct traffic according to forwarding policies that a network operator puk in place, thereby minimizing manual configurations for the individual network devices.

b) ICMP is not necessary in SDN architecture, as the controller has centralized control.

Ans: False

The controller is the core of the SDN. It resides between network devices at on end of n/w & applications at the other end.

Any communication between application & n/w devices must go through controller.

The controller communication with application such as firewall or load balances, via north band interface. The controller talks with individual network, devices using a southbound interface traditional one like the openflow protocol.

Q4) Consider a SDN supported cellular base station. Can this base station support multiple operation lly if ɘ, give an idea about how the operator specific authentication mechanism can be implemented at base station remains un connected with an authentication, Authorization and accounting (AAA) server that take cares of user authentication. In this question you need to explain how this AAA servers are virtualized.

=> cellular data networks are ripe for the introduction of software defined networking where the network equipments performance basic packet processing functions at the best of at applications running on a logically centralized controller for operators greater control over their equipment simplify network management f introduce value added services

- SDN can enable to carrier distributed data-plane rules over multiple chapter

network switches, reducing the scalability
pressure on the packet gateway &
enabling flexible handling of traffic that
stays within the cellular network
- It supporting real-time updates to many
fine grained packet hadelling rules
significant scalability change
- Cellular Network operates offer many files-
gained & services implemented in a network
applications or middleboxes.