

Assignment No. 1

Q) Write one page summary of each of your understanding of

- SDN
- Potential of network enhancement via SDN
- Challenges that network administrators will face with SDN implementations

ans a) SDN:

SDN stands for Software Defined Network. It is an approach to networking that uses software-based controllers & APIs to communicate with ~~h/w~~ infrastructure & direct traffic on a network.

SDN allows data to move easily between distributed locations which is ~~called~~ critical for cloud applications.

SDN supports moving workloads around a network quickly for instance dividing a virtual network into sections using a technique called as network function virtualization. They help new business ventures through flexibility & virtualization.

b) Potential of network enhancements via SDN:

- In SDN architecture, the Control plane & data plane are decoupled. ~~decompite~~ decoupled & ~~h/w~~ infrastructures are abstracted & managed by centralised controller.

- with SDN, efficient & flexible network control can be achieved which potentially enhances network performance.
- with the explosion of network based applications, communications network have been growing rapidly having more complicated, resulting in a large scale of heterogeneous network architecture.
- With SDN efficient & flexible network control can be achieved, which potentially enhances the network performance.
- To harvest the benefits of SDN in wireless network, the SDN architecture has been recently considered.

c] Challenges that network administrator will face with SDN.

Implementation:

- ① Scalability: Since the SDN architecture includes centralized or partially distributed controllers interfacing with data plane on multiple devices. The possibility exists for the controller to become a network, with volumes of networking request can be when controllers.

- ② Security: Because the control plane plays a such a control functions in an SDN Architecture security strategies must focus on preexting the controlles & authenticating can applications excess the control plane.
- ③ Interportability: For new Networks implement SDN is fairly straight forward as the legacy network is likely supporting active bussiness & networking ~~exenes~~ system.
- ④ Performance: Performance is the greatest issues for all networks regardless issued for all networks regardless of how robust, secure scalable or interperable.

Q2) Explain Analogy between RISC (Reduced Instruction set computing) Architecture in computation and SDN in Networking.

| SDN | RISC |
|--|--|
| ① The SDN architecture is centred on data concepts. | It is primarily aimed at services providers and operators. |
| ② As communication protocol SDN employs openflow. | For NFV no protocol has been established. |
| ③ It is supporter of an open networking foundation. | It is working group is in charge of NFV. |
| ④ Corporate. It serves as the SDN business initiate. | Services providers or operator serve as the NFV business initiate. |
| ⑤ SDN application on servers or switches that are industry standard. | NFV apps run on servers that are industry standard for RISC. |

Q3) why there are two PKT_OUT options emerging from secure channel box?

Ans: when the controller has a data packet to forward out through the switch, it uses the openflow PACKET_OUT message.

- we see in figure that such a data packet coming from the controller may take two different paths through the openflow logic, both denoted by γ .

In the rightmost case the controller directly specifies the output port and the packet is passed to that port N in the example.

In the leftmost Path γ case the controller indicates that it wishes to defer the forwarding decision to the packet matching logic.