

ABSTRACT

Named *Data* Networking (NDN) is a new design architecture network where NDN packet carries the name of the data (name) and not the source address or destination address (IP address). In computer networks, routing is essential to support data communications. Network routing on IP networks rely on Routing Information Base (RIB) that's derived from the IP table on the router, so that if there are problems on the network such as malicious attack on one of the nodes, the IP router should wait until the IP table has updated, and then change the routing path. NDN has the advantage of adaptive forwarding. By noting the pending Interest and observe the data packet that's come, each router NDN can measure the performance of the forwarding plane in each link. This information can be used to retrieve data as well as the best path available, and to detect and recover forwarding problems that can be caused by physical failure or a malicious attack. This advantage makes the routing plane on the NDN network only needed to perform routing updates periodically.

Prefix hijack is one type of malicious attacks that can occur on the network. When the hijack attacks occurred, IP packets on the network will be absorbed by the affected hijack node and will not be forwarded to the destination. While on the NDN network, NDN router can detect the occurrence of hijack attacks by observing the status of pending Interest, so that router can switch the packet delivery through other links that are not affected by hijack (choose an alternative path).

In this final project, will be carried out simulations to study the mechanisms of forwarding on the NDN network and see the effect of NDN forwarding mechanism in the case of prefix hijack when compared to the IP forwarding mechanism, also there will be examined further influence on NDN forwarding strategy against prefix hijack case. Based on the research conducted, showed that NDN can solve the problems that occur on the network when hijack attack occurred, and best route strategies is the best strategy for dealing with the hijack, because best route has the smallest amount of packet loss.

Keyword: NDN, forwarding plane, adaptive forwarding, prefix hijack