

A Perspective Towards NCIFA and CIFA in Named-Data Networking Architecture

ABSTRACT

Named-Data Networking (NDN) is the most promising architecture in the future Internet. NDN ensure high availability of contents and security of the data packet. However, it may disturb the stability and security in NDN routing such as Interest Flooding Attack (IFA). There are many existing detection and mitigation technique about IFA which labelled a non-collusive type of routing threats where it causes the PIT resources to exhausted and legitimate request could not perform in communication. Unfortunately, all the existing counter-measure mechanism could not defend the Collusive Interest Flooding Attack (CIFA). The attacks initiated with a satisfying interest and malicious data producer will reply to the corresponding request before the expiry of existing PIT entries in NDN router along the path. CIFA is classified as low rate intermittent attack which is very difficult in distinguish with legitimate requests. Thus, CIFA is more vulnerable and threatens than previous NCIFA. Moreover, there is no benchmark datasets or any public datasets to perform further experiments on detecting CIFA. Thus, there is a need to produce reliable datasets for future investigation in detection or mitigation relevant attacks in NDN.