NDN (Named Data Networking) is a network architecture that developed and the promising security that could replace current architecture use, namely the IP Based architecture. On the other hand, IP Based is widely used on various types of IoT (Internet of Things) networks. The NDN capability is a challenge to be applied to IoT (Internet of Things) networks, where the NDN architecture is combined with Raspi (Raspberry-Pi), which is widely used to build IoT networks that are expected to maximize the development of IoT networks. NDN architecture is applied to IoT networks built from Raspi, where Raspi are the router and server that processes content on this IoT network. The network that has been built together with the NDN architecture is then tested by penetration on one of the routers, to charge and try to retrieve data from the current communication. This test is expected to provide results that shows how much the NDN architecture can be influenced by penetration done in the IoT network.