



Building a Network Access Control (NAC) Capable SDN Controller



Our Client

A global telecommunication service provider.

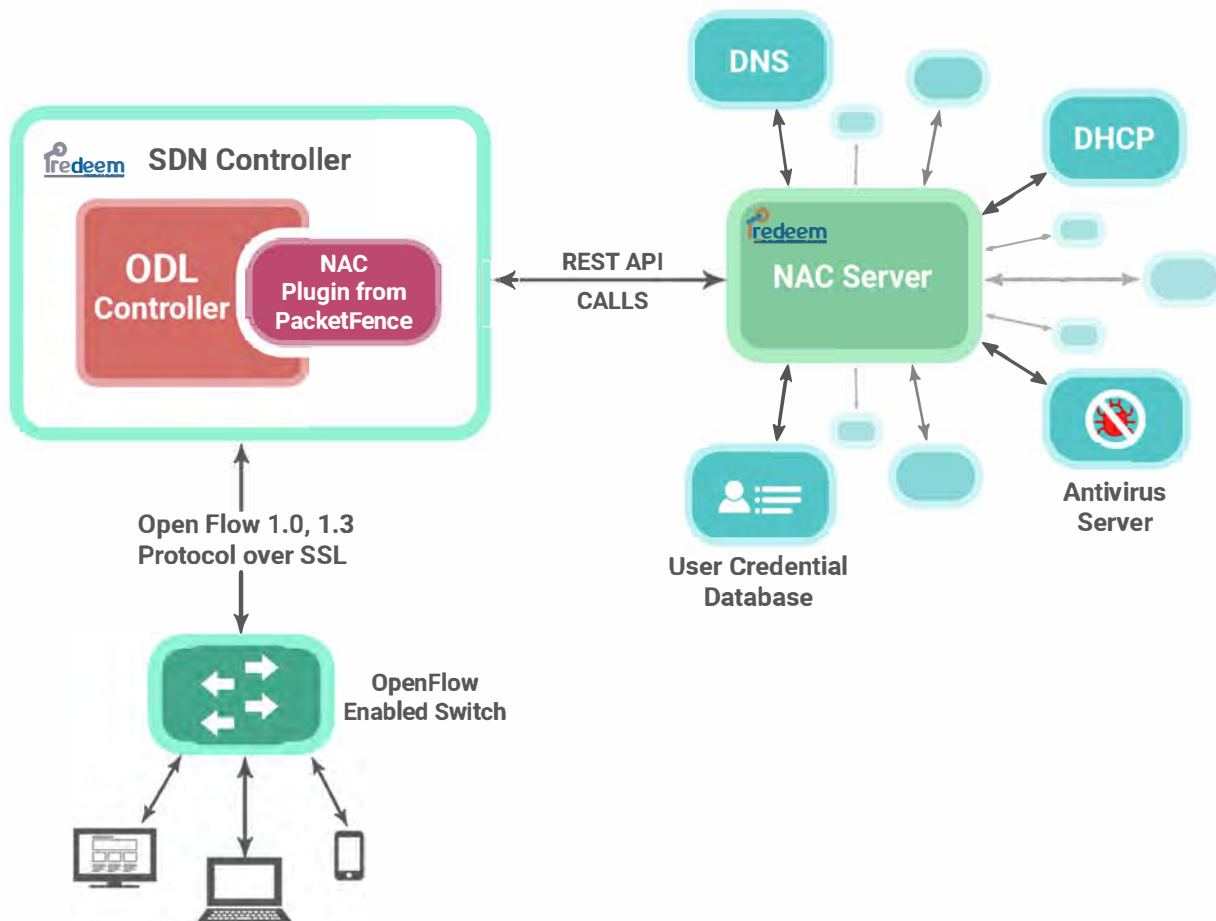
Why they needed us

They were looking to adopt SDN for all the benefits that it had to offer. So, they needed a SDN Controller with Network Access Control (NAC) capability. This would ensure that only authorized users would be using their services.

What we did

We built a SDN Controller with Network Access Control (NAC) capability by integrating PacketFence's NAC Plugin with OpenDaylight SDN Controller.

We also set up a NAC Server which handles the verification and authentication of users (devices).



When the user connects a new device to the network for the first time, the device gets an IP address by using a DHCP (Dynamic Host Configuration Protocol) Discovery Broadcast.

Now the user has to open a browser and enter his/her user name and password. These credentials are sent to the NAC Server through the NAC Application. The NAC Application is a part of the NAC Plugin and hence runs in the SDN Controller. The entered credentials are verified by the NAC Server with our client's user credential database. The NAC Server also performs other checks for malware, DNS, DHCP etc. If the NAC Server sends a "Verification Successful" message to the NAC Application, then the SDN Controller configures (by pushing flow table entries) all the OpenFlow enabled Switches in the network to allow access for that particular device (user).

The NAC Server and SDN Controller communicated using REST API. The SDN Controller and switches communicated using OpenFlow.

How they benefited

They gained the advantages of SDN, like network programmability, easy network configurability etc. along with the security benefits of NAC.

About Redeem Systems

Redeem Systems is a pure-play Engineering and Digital Services Company with focus on mission critical highly engineered + high availability systems. Our global presence spans Asia-Pacific, Middle-east, Europe and North-America.

Our focus verticals include – Tele-communications, Medical Electronics and Aerospace & Strategic Electronics.

Our Product Engineering competencies include Product Design and Development, Verification & Validation, Emerging Markets Strategy and Product Life-Cycle Extension through Value Analysis and Value Engineering

Our Digital competencies are focused on Industrial Internet-of-Things (IIoT), Engineering Big Data Analytics and Software Defined Networking (SDN)/ Network Functions Virtualization (NFV).