



A Security Perspective on Federated Cloud Networks and Network Functions

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Focus area

By integrating software defined networking technology into cloud management platforms it is possible to create more advanced and flexible cloud network federation mechanisms. Federated networks are composed of network segments. Each network segment needs to be protected from external and insider threats.

Who benefits and how?

With cloud network federations it becomes possible for individual tenants to customise the security of their virtual networks to meet their specific security requirements. Tenants can thus customise the level of security and create a secure cloud environment in which to deploy their applications.

The BEACON H2020 project focuses on enabling federated cloud networking. The long term vision is a fully virtualized data centre for federated clouds that relies on the convergence of cloud computing and software defined network technologies. By interconnecting two or more cloud computing environments to form a cloud federation, resources can be shared in order to increase capacity, availability or resilience. Shared resources include compute and storage resources but also networking resources. By integrating software defined networks (SDN), network virtualization (NFV) and network function chaining (SFC) technologies into cloud management platforms it is possible to create more advanced and flexible cloud federation mechanisms. The BEACON project is integrating network virtualisation technologies from the OVN open source project with open source cloud middleware OpenNebula and OpenStack to experiment with different types of cloud federations

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