



# BIG-IP SDN Services Help Build Your Cloud Architecture

The pressure on network operations to support a growing, dynamic, and volatile set of technologies increase faster than your network's scaling capabilities. BIG-IP® SDN Services simplifies your transition to a cloud network architecture by providing network virtualization to consistently deliver application delivery services like load balancing, firewalls, access control, and DNS for critical applications across your IT environments. F5 gives you the performance you need, along with the flexibility to seamlessly interoperate with different network topologies, including both traditional VLANs and emerging SDN frameworks like VXLAN.

## Implementing Application Delivery Services for SDN

Traditional networks simply don't offer the flexibility and agility that modern organizations require. Virtual machine mobility and fault-tolerance solutions are generally designed to operate best with flat, Layer 2 networks—but managing such architecture at scale is operationally difficult. Maintaining the core network becomes a challenge, especially when strong isolation for multi-tenancy is required. Virtual networks provide a way for organizations to decouple virtual domains from the underlying networking and virtualization infrastructure, which enhances your overall system flexibility, scalability, and resilience.

While co-existence of a VXLAN-based virtual network with traditional networks is assured because of its foundation on existing Ethernet standards, compatibility with traditional networking requires implementing additional capabilities in the network. This is especially true when hosts on a VXLAN virtual network need to communicate with hosts on a non-VXLAN (e.g., VLAN-based) network.

With network virtualization, you can create elastic, logical networks that span physical network boundaries to better serve your geographically dispersed data centers and users. Network virtualization overcomes the traditional limitations of VLAN-based topologies for maximized scalability and flexibility, as well as optimized performance for users—regardless of underlying network topology.

## Solution

F5® BIG-IP SDN Services can virtualize your network to give you the performance and scalability you need. F5 products are VXLAN-aware, which enables application delivery services like load balancing, firewalls, access control, application acceleration, DNS delivery, and WAN optimization.

### Key features

- **VXLAN Support**—Network virtualization to scale beyond traditional networks for cloud infrastructure
- **VXLAN Bridge**—Enable connectivity between native virtual VXLAN networks
- **VXLAN Gateway**—Ability to enable connectivity between VXLAN virtual networks and traditional VLAN networks

### Key benefits

- **Operational Consistency**—Provide security, availability, and optimization capabilities to both SDN and traditional networks
- **Application Mobility**—Virtual machines do not need to change when they are migrated between data centers or clouds
- **SDN Transition**—Bridge traditional VLAN networks and transition to SDN VXLAN-based topologies

## Deploy Consistent Application Delivery Services for SDN Networks

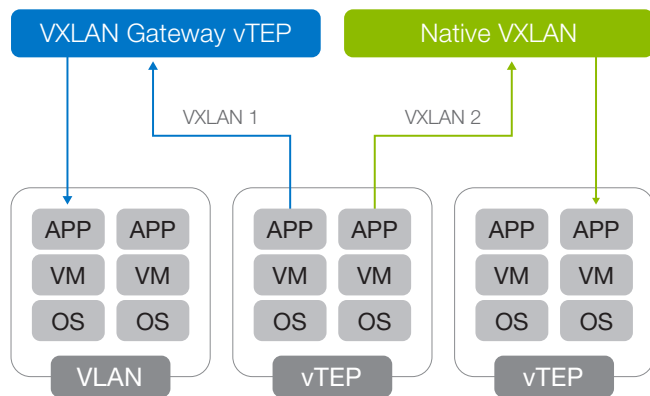
BIG-IP SDN Services allows you to standardize Application Delivery Services in both traditional networks and SDN networks in a consistent manner by making the delivery services available to application workloads irrespective of the underlying network topology. For example, BIG-IP products can provide services in a unified, predictable manner for applications running across cloud environments. In addition, F5 can deliver security, availability, and optimization capabilities to use SDN technologies like VXLAN, and intelligently deploy services throughout the IT infrastructure—for any workload, on any server, anywhere.

## Improve Application Mobility and Resource Utilization

VXLAN is an overlay protocol that allows you to extend layer 2 domains across data centers over layer 3 networks, resulting in a logical flat network with segmentation for security and multi-tenancy. This simplifies application mobility for VM migrations and creates multi-data center resource pools for higher resource utilization, whether you're faced with disaster recovery, business continuity, or scalability challenges.

## Simplify the Transition to Virtual Networks

With BIG-IP SDN Services, traditional VLAN and VXLAN-based networks co-exist, which allows you to gradually migrate your applications to virtual networking. VXLAN gateway enables organizations to transition their existing networks from VLANs to VXLAN-based topologies, giving you the ability to deploy a VXLAN network while maintaining access to the applications and resources on the VLAN network.



Standardize application delivery services for traditional and virtual networks.

## Learn more

For more information about BIG-IP SDN Services, please see the following resources or use the search function on [f5.com](http://f5.com).

### Product pages

[Virtual Networks](#)

### Press release

[F5 Solutions Combine with VXLAN to Support SDN](#)

### White paper

[VXLAN and the BIG-IP Platform](#)

