Quick Reference Guide

BROCADE

6 Reasons to Consider SDN for Campus Networks

Software-defined networking (SDN) offers today's static campus networks much needed flexibility and programmability to enhance resource utilization and achieve faster application deployments. SDN enables dynamic network provisioning, leading to enhanced business productivity, security and improved user experience.

HOW IS SDN BENEFICIAL FOR CAMPUS NETWORKS?

The limitations of traditional three-tier campus network architectures are being severely tested by peer-centered, wired/wireless, multi-device, and multi-application environments running rich media like streaming video and audio. These legacy networks are inflexible, inefficient, and have high OpEx costs.[1]

By contrast, SDN is a dynamic, manageable, cost-effective, and adaptable architecture that is ideal for the high-bandwidth requirements of today's applications.[2] SDN brings more flexibility, management, and control to the networking environment by decoupling network logic and policies from the underlying switching hardware.

6 TOP BENEFITS OF SDN FOR CAMPUS NETWORKS

The key question is not, if, but when the appropriate benefits of SDN will start to accrue. Here are six ways campus networks can benefit from using SDN:

Operational Savings: SDN can lower operating expenses with simplified management and better IT staff utilization. With many cost-competitive options for hardware, it can also reduce capital expenses.

Higher Performance: SDN supports dynamic allocation of bandwidth and resources as needed by variable user application loads.

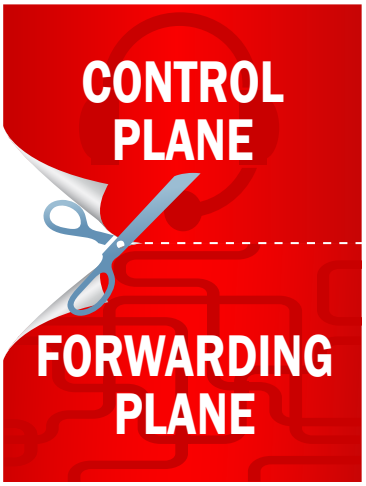
Improved Uptime: SDN reduces configuration and deployment errors that can impact the campus network.

Better Management: Centralized management reduces time spent on application deployment and routine maintenance, which gives IT time for more strategic tasks.

Resource Flexibility: SDN offers a broad choice of innovative network applications, services, and custom development using standard tools.

Enhanced Security: Dynamic adjustment of network access rights and traffic isolation between users, devices, and application resources.

WHAT IS SOFTWARE-DEFINED NETWORKING?



SDN enables programmatic interfaces to the network by separating the control plane, which governs a network, from the forwarding plane that sends packets through it.

This **gives IT more control over the behavior and performance of their networks**. It also addresses the management complexity of rapidly growing and distributed networks by centralizing control and enabling programmability to achieve desired behaviors.

USE CASES FOR SDN IN CAMPUS NETWORKS

These common use cases help campus networks realize the benefits of SDN:

- ✓ **Application-Aware Routing** enables the network to dynamically provide policy-based routing for certain application types. This means zero latency, high application availability, and users enjoy optimized performance.
- ✓ **Network Slicing/Traffic Isolation** makes it easy to quickly initiate a logical network to isolate traffic among multiple tenants and manage it over a physical network. This is often a static and cumbersome process on a traditional three-tier network.
- ✓ **Security and Policy Enforcement** can be enabled contextually and comprehensively by application, user, or device type thus limiting access to specific resources.
- ✓ **Video Streaming, Social Media, and Collaboration Applications** often require a low-latency network topology. SDN can help ensure reliable and efficient delivery of video and collaboration flows resulting in a smooth user experience.[3]

HOW TO PREPARE FOR SDN

Getting ready for SDN doesn't require a forklift upgrade. Start the implementation process with these four steps:

4. Set up a test pre-production network in a lab to evaluate potential SDN solutions.
3. Develop a plan that identifies areas where automation will benefit the network and evaluate SDN applications that can address these needs.
2. Ensure any new networking equipment purchases will support SDN hybrid mode for traditional Ethernet protocol routing and new SDN flows. This allows for a gradual transition at the organization's desired pace.
1. Realize it's not necessary to tear out existing Ethernet switches or router devices – they can be the foundation for building out new SDN-enabled topologies.[4]

[1] Mehra, Rohit, *Is Your Enterprise Campus Network Ready for SDN?* IDC, June 2014.
[2] *The Current and Future Benefits of SDN in the Campus*, Ashton, Metzler & Associates.
[3] Mehra, Rohit, *Is Your Enterprise Campus Network Ready for SDN?* IDC, June 2014.
[4] Ibid.

LEARN MORE

Discover how SDN solutions from Brocade can fully automate your campus network while reducing complexity and TCO. **Get Started**

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