Testing
SD-WAN

Background

Software Defined Wide Area Network (SD-WAN) provides customers to be able to easily control and change their WAN connections between branch offices, data centers, and headquarters. In addition, customers will lower their hardware and maintenance costs compared to past propriety or legacy routing hardware and software. The ease of use and cost savings is the fuel behind SD-WAN equipment vendor revenue that is projected to grow to $1.3 billion by 2020.

SD-WAN

Of course with any new technology it's best to test it before the technology is rolled out to the field. SD-WAN has a number of features that needs to be tested: segment traffic, scalability, failover capability, and application performance.

Segment Traffic – traffic can be segmented based on the application characteristics and policies. A policy example would be segmenting traffic according to its security classification. Another segmentation example would be separating enterprise applications from VoIP.

Scalability – a SD-WAN can be set up to be as a simple link between two sites or as complex as a complete mesh network where there is a connection between any site to any other site.

Failover Capability – multiple links can be implemented in a SD-WAN configuration where the links provide failover capability to each other.

Application Performance – it doesn't matter if a network is easier to manage and has more features if performance heads south. As always, application performance matters.

Testing SD-WAN

In the previous section, some of the SD-WAN features were described. In this section, methods to test SD-WAN will be discussed.

Segment Traffic – since traffic can be segmented into many different ways it's critical to be test each segmentation method. Does VoIP get better service then general Internet traffic? Does higher priority traffic get directed to the greater bandwidth links?

Scalability – even if you plan to start with a simple link between two sites it would be in your best interests to make sure the SD-WAN equipment can fulfill

your future network requirements. Can the SD-WAN solution be used in a full mesh network?

Failover Capability – when does the network make the decision to use the backup or failover link. Of course if the link goes down for an extended period of time then the network should easily handle this outage. Typically when most networks have momentarily packet loss it's due to a congested router or another application hogging the bandwidth. How does the SD-WAN handle these dynamic changing network conditions?

Application Performance – it's worth repeating: application performance matters. Does your network performance improve or get worse in all of the different network conditions. There's only one good way to test application performance by controlling the traffic and network conditions in a test lab environment.

About PacketStorm Communications

PacketStorm Communications, Inc. develops IP Network Emulators that allow users to emulate various IP Network conditions. By developing proprietary hardware and software, PacketStorm has created emulators that can be used to extensively test networking applications that are available today as well as future technologies that have yet to be deployed

PacketStorm is a privately held company founded in 1998 by a team of engineers and managers from the prestigious Bell Laboratories. With extensive backgrounds and experience in both network development and testing, PacketStorm continues to focus on the needs of IP developers and network managers. PacketStorm's world headquarters in New Jersey handles product engineering, marketing, and customer support.

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