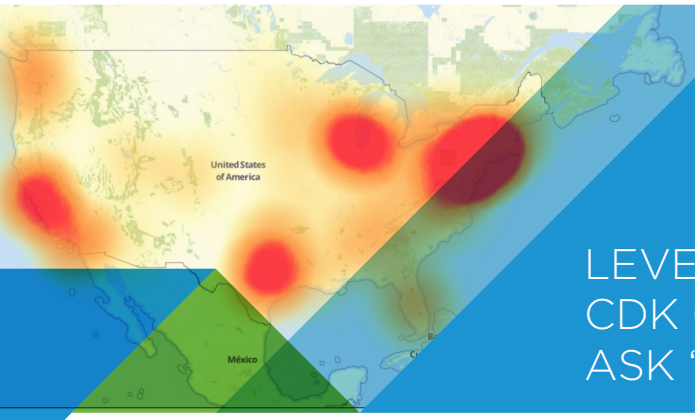

LEVEL 3 BREAKS THE INTERNET, BUT CDK GLOBAL SD-WAN CUSTOMERS ASK "WHAT OUTAGE?"

CDK Global

INDUSTRY
IT AND DIGITAL MARKETING SOLUTIONS

HEADQUARTERS
HOFFMAN ESTATES, IL

Even with a widespread Internet blackout, CDK Global was able to keep customers on-line and operational using SD-WAN.

Problem Situation

The modern world means constant connectivity, both in business and in our personal lives, and the Internet plays a huge role in making sure that happens. How do you Google without the Internet? How do you browse Amazon or Facebook without the Internet? If you're a retailer or a restaurateur and rely on the Internet to process payments, how do you transact?

On Monday, November 6, many customers who relied on Internet providers such as AT&T, Comcast, RCN, and Verizon experienced an Internet outage for 90 minutes, causing panic and impacting individuals' livelihood.

The root cause of this outage? Level 3, the enterprise ISP backbone for other Internet providers, experienced a "route leak" issue through a simple misconfiguration error. This is caused when Autonomous Systems (ASeS), which track packets moving across various networks and determine which are the most efficient, report inaccurate information about the performance of IP addresses. The bad information causes Internet providers to make routing decisions that cause packets to either slow down or stop.

One way to fix the situation is to remediate the misconfiguration. This can take a significant time to identify and then implement a fix. An Internet outage literally translates into "time is money," so most businesses cannot afford to wait for the fix. Alternatively, Internet providers can circumvent the problem by re-routing traffic to a different, operating backbone.

But each of these scenarios means that when an outage occurred, people and businesses were burdened for a given period of time, and a triage had to occur. However, there is an alternative that eliminates the impact of an Internet outage: SD-WAN.

SD-WAN Can Save the Business

Software-Defined Wide Area Network (SD-WAN) is the application of software-based network technologies to WAN connections to more effectively route all network traffic between headquarters or data centers, remote and branch offices, and the cloud. More simply, it's the method of using the benefits of the cloud, the bandwidth of broadband and existing enterprise-wide network infrastructure to more efficiently and cost-effectively transmit media (data, video, voice) and quickly access cloud applications from every location in the network.

SD-WAN is no longer a buzzword, but a proven technology to deliver the scalability, affordability, and flexibility that enterprises require to support today's evolving technological landscape. Market research giants Gartner and IDC both concede that the technology has reached beyond an early adopter phase and will soon gain wide-scale adoption over the next few years.

More importantly, SD-WAN is enabling business continuity, allowing organizations to maintain constant connectivity in spite of other technical difficulties. For example, CDK Global, a leading provider of integrated information technology and digital marketing solutions, used SD-WAN to ensure that its customers did not feel the impact of the Level 3 outage.

CDK Global and Software-Defined WAN (SD-WAN): No Disruption to Service

CDK Global automotive dealers use a variety of Internet providers, including Level 3/Comcast, to gain access to business-critical applications. Some customers also use VMware SD-WAN™ by VeloCloud® technology to manage connectivity and optimize traffic.

When the Level 3 outage occurred, CDK Global immediately began to evaluate impact to its customer base. It quickly realized that not all customers were impacted by the outage.

Customers that were not utilizing SD-WAN had intermittent and poor-quality internet access. Outages and poor service can be very disruptive to auto dealers dependent on service speed and high-quality transactions with their consumers.

However, customers who were using CDK SD-WAN experienced absolutely no impact. Business continuity was maintained and an outage on such a grand scale was of no consequence to them. It's likely that most did not realize that an outage had occurred until they read about it online after the fact.

DMPO Saves the Day

Utilizing VMware SD-WAN Dynamic Multipath Optimization (DMPO), all transport links are monitored on a continuous basis and when issues arise, it automatically re-routes traffic on a sub-second basis to an alternative transport path. This is how DMPO was able to save the day for customers using SD-WAN on the day Level 3 experienced its outage.

DMPO performs continuous, unidirectional measurements of performance metrics — loss, latency and jitter of each packet on every tunnel between any two DMPO endpoints, VMware SD-WAN Edges or VMware SD-WAN Gateways. VMware SD-WAN's sub-second steering allows independent decisions in both uplink and downlink directions without introducing any asymmetric routing.

Throughout its lifetime, a single traffic flow can be steered onto one or more DMPO tunnels, in the middle of the communication, with no impact to the flow, connections, sessions or calls. A link that is completely down is referred to as having a blackout condition, which is what happened with Level 3.

VMware SD-WAN offers sub-second blackout and brownout protection. With continuous monitoring of all the WAN links, VMware SD-WAN DMPO detects brownout or blackout condition within 300-500 milliseconds and immediately steers traffic to protect the application performance, while ensuring no interruption to active flows and user experience. There is one minute of hold time from the time when the link brownout or blackout condition is cleared before DMPO steers the traffic back onto the preferred link if specified in the business policy.

SD-WAN: Much More than Just a Technology

CDK Global offers its customers a networking platform that goes beyond just adding software defined network capabilities to the WAN. With CDK Cloud Connect, customers get a reliable Internet experience with around-the-clock monitoring that is specifically tuned to automotive dealer environments. It also ensure that their network remains robust, nimble, and secure - even when issues beyond their control arise.

SD-WAN goes beyond just a network enhancement. It has become the transformative catalyst needed to ensure that businesses today remain functional at all times and that the network becomes a driver of business.

On November 6th, SD-WAN customers were none the wiser to the impact of the Level 3 outage. SD-WAN delivered on its promise of built-in intelligence, automation, scalability, performance, agility, and network enabling.

Can you afford not to have SD-WAN?

vmware®

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