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How Dialpad Uses Kentik to Avoid Network-performance Hang Ups

dialpad

CATEGORY

- Cloud-based unified communications provider

CHALLENGE

- Effectively manage a complex global network to deliver optimal performance and reliability of services to customers
- Ensure that peering arrangements with carriers maximize customer satisfaction and cost effectiveness

SOLUTION

- Kentik Synthetics, fully integrated within the Kentik Network Observability Cloud, autonomously monitors network performance and availability

RESULTS

- Streamlines network operations and proactively reduces the risk of service interruptions for customers
- Reduces MTTR
- Provides greater peace of mind for network team

Overview

Dialpad provides cloud-based business communication services that make it easy and efficient for customers to connect and collaborate anywhere in the world over voice, video, call-center and sales applications. To ensure its customers receive the highest quality service while its network operates at peak efficiency, Dialpad relies on network observability and synthetic monitoring from Kentik.

Situation

As a global communications services provider, Dialpad operates points of presence (PoPs) around the world. This ensures customers have greater proximity to Dialpad's network operations and therefore maximizes the performance of Dialpad's service offerings.

Optimizing performance is a critical part of the network team's mission at Dialpad. Low latency substantially reduces the chance customers will experience lags or interruptions in their voice or video calls. At the same time, the network team must ensure that there will always be enough capacity to accommodate customer growth and increasing volumes of voice, video and data traffic. To address these challenges, Dialpad was in search of a way to unify its network observability.

Solution

When Dialpad was founded in 2011, the company built its own network from scratch. As a startup, resources were limited, so network components were selected on the basis of greatest "bang for the buck." When it came to selecting a solution for monitoring the flow of global network traffic, Dialpad chose Kentik "as the best solution for showing where traffic is coming from and going to," says Justin Seabrook-Rocha, manager of network engineering for Dialpad.

Today, the company uses Kentik for a variety of network management use cases.

NETWORK TROUBLESHOOTING

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According to Michael Morrison, a Dialpad network engineer, "Kentik shows us all our traffic patterns and key metrics, including latency, utilization of carrier connections, and bandwidth to a specific server. If we spot an anomaly in network behavior, we leverage this critical traffic information from a centralized vantage point to troubleshoot the problems."

"We heavily use the Kentik Data Explorer (interface) when troubleshooting," Seabrook-Rocha adds. "It's a really easy replacement for tasks such as tracing routes to a server or monitoring BGP prefixes."

CAPACITY PLANNING

Kentik is also used extensively in capacity planning, adds Morrison. "The detailed and clearly presented statistics we get from Kentik give us valuable trending insights into individual customers, regions or carriers. Having this visibility across our worldwide operation is a huge benefit as we plan for meeting future needs."

PERFORMANCE TUNING

With the rapid uptake in videoconferencing by businesses during the COVID-19 pandemic, the company has experienced soaring demand for its services. This not only covers voice and video communications, but also includes sophisticated AI-powered capabilities to improve call-center responsiveness and maximize outbound sales efforts. All of these applications rely on ultra-reliable network performance, heightening the demands on network professionals like Seabrook-Rocha and Morrison.

"Maintaining low latency is priority number one for us," Morrison notes. "That starts with having our data centers as close as possible to our customers. So, knowing how much traffic is flowing, and where it's moving from and to, is vitally important in determining where to establish data centers and when to make arrangements with carriers. Kentik gives us the visibility and detailed information we need to make those decisions with confidence."

The network team finds that Kentik adds great value to both short- and long-term management tasks. For example, “We have had several instances where customers have come to us with requests for enhanced performance, which of course we want to deliver,” Seabrook-Rocha notes. “Using the granular data Kentik provides, we’re able to identify peering relationships that provide the lowest latency and thus improve the performance of our service offerings.”

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SYNTHETIC MONITORING

In one instance, the network team observed unexplained high latencies and frequent packet loss on links to customers in India from its PoP in Hong Kong. In response, Morrison used Kentik Synthetics to better understand inbound and outbound traffic patterns. He used Kentik to identify the relevant IP addresses and source/destination information, ran synthetic tests, and the resulting analysis quickly pinpointed the problem: one of the carriers was sending traffic to the United States and back before forwarding it to its destination in India. This added around 300ms of latency. “The fix was easy, but only because Kentik gave us the insight we needed,” Morrison says.

Similarly, Seabrook-Rocha adds that the proactive monitoring capabilities of Kentik spot potential problems before customers are impacted. “For a time, we were getting an alert from Kentik every four or five weeks for an IP address that didn’t exist on our network. It was such a small amount of traffic that we didn’t fear it was a DDoS attack, but we were curious. Using Kentik, we were able to backtrack the traffic and discover the source, which we then blocked.”

Having come to rely on the network observability delivered by Kentik, Dialpad was eager to try Kentik Synthetics, which was rolled out in 2020.

“Dialpad has been a fan of Kentik for flow monitoring for many years, and we have been very impressed with the rate at which they have expanded their offerings into a holistic network-insight platform,” Morrison says. After evaluating Kentik Synthetics and competing offerings, the Dialpad team judged Kentik as the best fit, especially in its ease-of-use and the granularity of detail it provides.

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Prior to the availability of Kentik Synthetics, Dialpad used a home-grown tool to monitor some 50 connections between its data centers and public cloud providers. "But this only gave us an inside-out look," Morrison says. "Because Kentik monitors all the public cloud endpoints through its platform, we were able to also get the outside-in perspective we wanted."

Results

Dialpad Optimizes Network Performance with Kentik

The Dialpad network team points to several benefits of using the Kentik Network Observability Cloud, including Kentik Synthetics. Most important is enhanced performance for customers, thanks to:

- The ability to spot potential performance issues before they occur and put in place proactive measures to reduce latency;
- A more detailed understanding of the unique characteristics of each customer's traffic flow, leading to high-impact, tailored solutions; and
- Better-informed decision-making about when to establish peering relationships with carriers.

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Dialpad Streamlines Network Operations with Kentik

The autonomous monitoring and alerting provided by Kentik streamlines network operations and reduces the risk of service interruptions or degradation. "The highly detailed information we get from Kentik means we can troubleshoot issues in real-time that might otherwise require hours of manual labor," Morrison notes. "It eliminates guesswork and sharply reduces MTTR." At the same time, if it's an intermittent problem, "the historical data provided by Kentik is a big help."

Dialpad Reduces MTTR with Kentik

Kentik contributes greatly to a smooth, efficient network-management operation. "Kentik saves us an enormous amount of time by taking over tasks that would require a lot of our time — such as researching the best options

for peering arrangements, troubleshooting anomalies, and pinpointing the source of performance issues," Seabrook-Rocha says.

Morrison agrees. "When we set up a new PoP, we have a lot of issues to examine around traffic flows and usage patterns. With Kentik, we can quickly and easily gather the information we need, which means we don't have to do much of the research ourselves."

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Furthermore, Kentik delivers greater peace of mind to the Dialpad network team. "Having network-wide data available when you need it alleviates a lot of pressure on the team. Kentik frees us up from having to spend more time doing research or troubleshooting an issue," Morrison observes.

Seabrook-Rocha adds: "I'm always worried about overloading the network, so the proactive monitoring we have with Kentik gives me peace of mind. I know that Kentik is watching all aspects of my network and will alert me if some part of it is getting saturated or is being attacked. And if something is wrong, I can use Kentik to track down the source quickly. Again, MTTR is critical to our business."

Key Takeaways

Because the Kentik Network Observability Cloud seamlessly integrates synthetics monitoring functions, Dialpad has a single, comprehensive platform for continuous monitoring of its entire network. Through proactive alerts and highly detailed information about network performance — both real-time and historical — Kentik delivers critical information necessary to optimize network performance and quality of service to customers.

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