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Nokia Deepfield helps ISP resolve performance issues and prepare for the era of multiple streaming subscriptions

Use case

Today's internet users typically have multiple subscriptions to bandwidth-intensive streaming cloud services. Nokia Bell Labs reported that these services accounted for 60 percent of all internet traffic in 2018 and that this figure could reach 80 percent by 2020. Despite this growth, many internet service providers (ISPs) have little knowledge of how cloud-originating traffic flows traverse their networks, impact their infrastructure and are consumed by their customers.

This knowledge has become critical now that consumers demand reliable broadband internet connections and are choosing their ISPs based on who can provide them with the best experience at the best price. If subscribers can't get the high-quality experience they expect, they will complain or take their business to another ISP.



The only way for an ISP to understand how network performance issues affect its subscribers' experience is to have detailed visibility into traffic flows that carry valuable applications and services. This visibility must extend all the way from content delivery networks (CDNs) across peering and transit to end systems and customers.

Legacy approaches such as deep packet inspection (DPI) performed by dedicated hardware probes have become too expensive and inefficient for ISPs. These solutions can't scale or may have difficulties providing end-to-end insight into encrypted content. Also, since most of internet content today is encrypted, this means that DPI-based solutions may not be providing ISPs with enough visibility into how services are delivered and consumed.

Challenge

A top-tier ISP was receiving numerous customer complaints about poor video streaming quality in one of its service areas. As an immediate response, the ISP increased its network capacity by adding a large amount of costly bandwidth to the affected area. But the complaints about quality continued. The data from the ISP's legacy DPI-based systems was not providing enough information to help its traffic engineering teams pinpoint the issues that were hindering the customer experience.

Solution

Instead of straining its bottom line by continuing to add costly bandwidth, the ISP turned to Nokia Deepfield Cloud Intelligence and Deepfield Service Intelligence to examine traffic flows across its network. By executing multidimensional queries, the ISP gained insight that enabled it to detect an improperly configured cache that was causing poor streaming quality for subscribers at a specific point of presence (PoP). The ISP also discovered that the failover content cache was located 1,500 miles (about 2,400 kilometers) away. The lack of a closer backup option was adding more delays and further degrading the customer experience at peak hours.

Using the knowledge obtained from Deepfield Cloud Intelligence, the ISP reconfigured its main cache and failover caches and added just enough bandwidth to the affected part of the network.

Benefits

The output from the Deepfield solution has enabled the ISP to reconfigure its network to meet the streaming demands of its content-hungry customers. With this change, the ISP has avoided the cost of unnecessary buildouts, improved customer satisfaction and reduced customer churn.

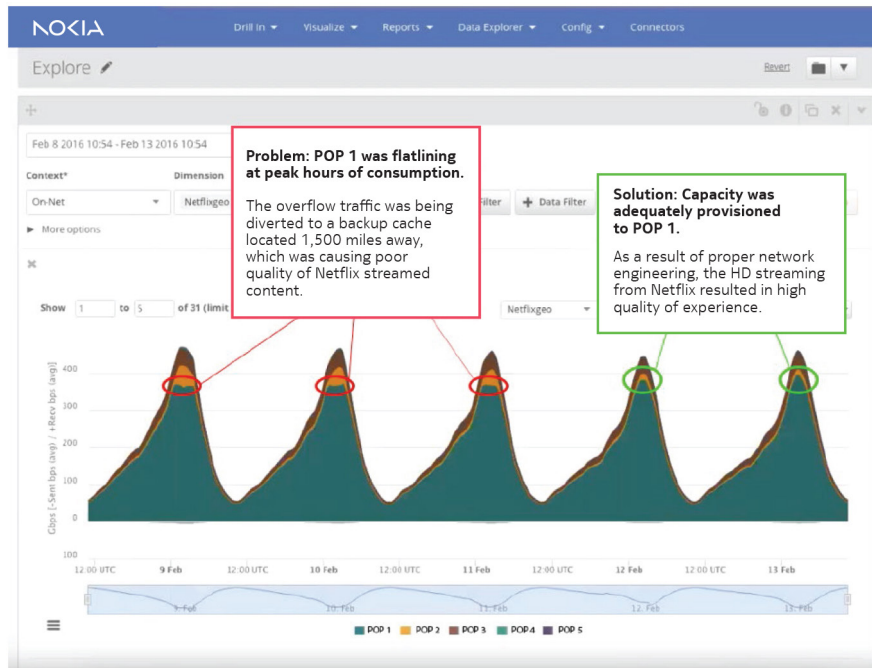
After learning more about the additional insight and analytics capabilities of Deepfield Cloud Intelligence and Deepfield Service Intelligence, the ISP made it a standard tool for its traffic engineering and service planning teams.

Using the knowledge obtained from Deepfield, the ISP was able to optimize its network and ensure a high-quality video streaming experience for its subscribers.



The ISP also embedded the use of Deepfield into several of its workflows. Today, the use of Deepfield enables continuous network performance and service quality monitoring and service planning for several different online services and across the ISP's entire network of operations.

Using Deepfield Cloud Intelligence to detect network problems



About Nokia

At Nokia, we create technology that helps the world act together.

As a B2B technology innovation leader, we are pioneering networks that sense, think and act by leveraging our work across mobile, fixed and cloud networks. In addition, we create value with intellectual property and long-term research, led by the award-winning Nokia Bell Labs.

Service providers, enterprises and partners worldwide trust Nokia to deliver secure, reliable and sustainable networks today – and work with us to create the digital services and applications of the future.

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