Nokia Deepfield Cloud Intelligence helps a Tier 1 ISP get detailed visibility into network traffic and move away from expensive inline DPI probes

Use case

For internet service providers (ISPs), the ability to understand traffic patterns and trends is of paramount importance. The lack of precise and full traffic visibility can result in incorrect reporting of traffic types and volumes. This may lead to ineffective infrastructure buildouts and poor quality of online services. In addition, if ISPs can't control (and obtain feedback about) the way their services are delivered, they may not be able to provide the superior content experiences their subscribers demand. All of this could lead to reduced subscriber loyalty and increased churn.

Historically, ISPs have relied on network probes and deep packet inspection (DPI) technology to gain visibility into the services and applications that run across their networks. With exponential growth in network volumes, the skyrocketing cost of the appliance-based approach becomes a bottleneck that prevents ISPs from obtaining detailed traffic insight.

DPI technology also works at select points or interfaces in the network. This means that DPI may not be able to provide a full, end-to-end perspective on how today's cloud-based applications and services are delivered—from their originating domains, across peering/transit to their network edge and access.

ISPs need detailed traffic insights and the ability to correlate them with their whole network topology and all service footprints.

Challenge

A Tier 1 ISP's customers were experiencing degraded performance in a few areas of its network. The issue was affecting applications and content originating from a large webscale company, but the ISP couldn't identify what the issue was or what part of the networking infrastructure was affected the most. For years, the ISP had relied on information from DPI probes to monitor network performance and determine network health. The ISP believed that the probes enabled it to see all the traffic that was traversing its network, but the insight obtained from the probes was clearly missing something.

Solution

Deepfield Cloud Intelligence enabled the ISP to gain deep insight into the traffic running across its network. It provides full visibility into the ways that applications and content are delivered from all internet sources and across the ISP's network to its subscribers.

Deepfield Cloud Genome® adds the ability to precisely allocate this traffic to different CDN domains and categorize it. This data feed tracks, maps and analyzes billions of internet endpoints and flows to provide a dynamic supply map of the internet.

The combination of Deepfield Cloud Intelligence and Deepfield Cloud Genome allowed the ISP to correlate a large volume of traffic that was originating from a webscale application and content provider but being delivered globally through a CDN partner.

This information gave the ISP a full perspective on all traffic that was coming from the webscale provider and being delivered to the ISP's customers. Armed with this insight, the ISP added the right amount of capacity, reconfigured its network and improved its ability to handle increased traffic volumes during peak traffic periods.
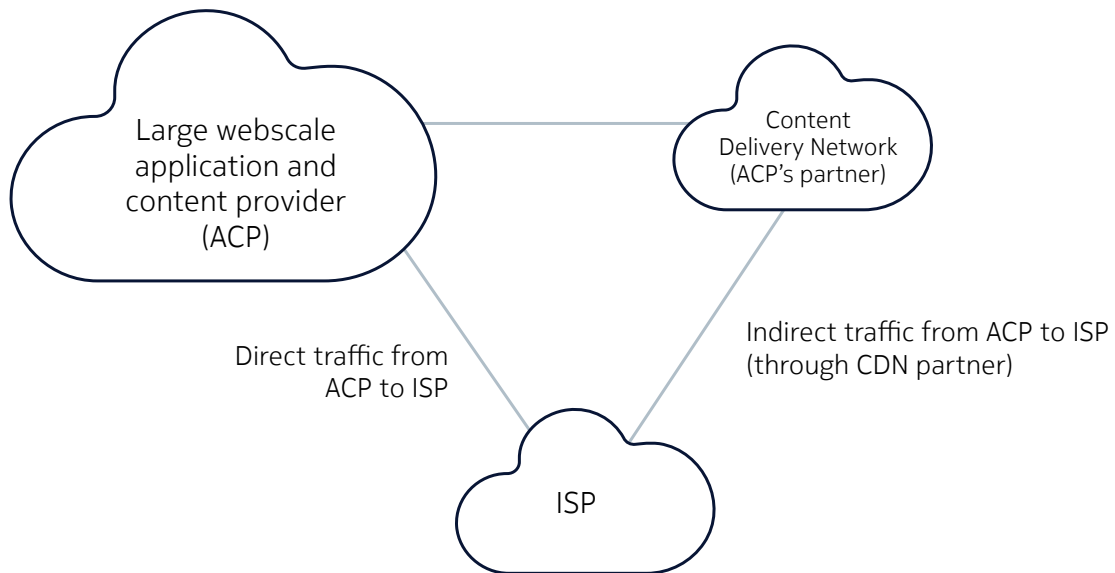
Encouraged by this case, the ISP began using Deepfield Cloud Intelligence across the rest of its network.

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Use case
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Benefits

Together, Deepfield Cloud Intelligence and Deepfield Cloud Genome give the ISP complete and accurate insight into the internet traffic that crosses its network. The ISP uses this insight to continuously improve its network planning and optimize the delivery of cloud applications and services. These improvements enhance the customer experience and strengthen customer loyalty.

Deepfield Cloud Intelligence enables the ISP to gain complete and accurate insight into the internet traffic that crosses its network.

Large webscale application and content provider (ACP)

Content Delivery Network (ACP's partner)

Direct traffic from ACP to ISP

Indirect traffic from ACP to ISP (through CDN partner)

ISP