Nokia Deepfield Cloud Intelligence

Context-aware content engineering

Nokia Deepfield Cloud Intelligence provides service providers (cable providers, cloud providers and Telcos) as well as large enterprises with context-aware content engineering.

The Deepfield Cloud Intelligence software application is easy to deploy, scale and manage, and provides 100 percent visibility without hardware probes.

Cloud Intelligence is one component of the Nokia Deepfield solution, which consists of:

- Nokia Deepfield Core Platform: Big data engine/software platform that is the basis for the Deepfield applications
- Nokia Deepfield Cloud Genome: Patented map of the global service supply chain that adds visibility to all applications built onto the Core Platform
- Three applications
  - Nokia Deepfield Cloud Intelligence: Analytics application that provides end-to-end network visibility and context-aware content engineering
  - Nokia Deepfield Service Intelligence: Analytics application that monitors customer Quality of Experience (QoE) in real time
  - Nokia Deepfield Defender: Security application that performs real-time distributed denial-of-service (DDoS) detection and mitigation.

Features

- More precise network build-outs
- Detailed cost breakdowns for billing at P95
- Real-time insights into subscribers and services, even down to the device
- Improved management of peering, transit and CDN partnerships
Benefits

• Improved peering and transit relationships result in lower costs
• More visibility across your network means troubleshooting network issues in seconds
• Cost savings through more efficient network build-outs
• Better identification of which markets are using which services, so you can properly prepare for unexpected internet events

Figure 1 shows the types of analysis that Cloud Intelligence performs.

Figure 1. Cloud Intelligence analysis types

1. Did traffic delivered by your video content server in NYC stay in the NYC region?
2. How much Netflix traffic is Akamai delivering from this router to DSL customers?
3. How much Netflix did your Qwilt cache in Boston deliver last week?
4. How much YouTube traffic over this Verizon transit link is being consumed by premium enterprise customers in Boston?
How Cloud Intelligence works

Traditional traffic engineering point solutions for service providers, content delivery networks (CDNs) and large enterprises are designed for legacy data networks, not cloud and over-the-top (OTT) services with complex service supply chains.

Cloud Intelligence provides actionable information to optimize today’s networks and manage relationships with content, peering and OTT partners/cloud applications and services.

Cloud Intelligence leverages the dozens of data sources ingested by the Core Platform—including the Cloud Genome global service map, which maps every single endpoint on the global internet. Cloud Intelligence then applies analytics models to provide context. Examples include:

- Determining where to focus infrastructure build-outs: Place caches, add bandwidth and add points of presence (PoPs)
- Deciding how to manage content delivered by CDNs
- Identifying optimal peering points based on content distribution
- Rectifying p95 peer billing.

Deploying Cloud Intelligence is easy and flexible. We offer a variety of options, from the full Software-as-a-Service (SaaS) experience to running on premises on your own bare metal hardware, virtual machines or containers.

Deployment begins with a single, self-contained virtual appliance. For larger networks, just create more virtual appliance instances, and each one becomes a node within your Deepfield cluster, for seamless scalability.

Use cases

**Peering, transit and asymmetric traffic visibility**

Cloud Intelligence performs peer analysis and peer prospecting, enabling you to optimize existing peers, eliminate unnecessary network traffic, and thereby reduce paid transit and expensive peer traffic. And because you see the origin of all traffic, you can accurately plan for traffic at peak times.

Look at a peer by a POP and sort all the cable modem termination systems (CMTSs) or broadband remote access servers (BRASs) using the POP location to visualize a specific stream of traffic.

In addition, Cloud Intelligence deciphers traffic in asymmetric BGP routing (see Figure 2).

**Figure 2. Asymmetric traffic visibility**

![Asymmetric traffic visibility](image-url)
On-net caching
Use Cloud Intelligence to determine which CDNs to use for on-net caches or to localize on-net caches, reducing poorly delivered traffic across the backbone. Determine when on-net caches are delivering traffic to other networks, violating cache agreements. And by learning which CDNs are being most used by customers, you can also decide who to peer with directly for cost savings.

Capacity planning
For capacity planning, monitor network traffic at the caching, router interface, regional and CDN levels.

Cloud Intelligence users
ISPs, cable operators and large enterprises can use Cloud Intelligence for network engineering/operations, business development and marketing.