Overcome network lag and latency

Optimize customer experience with egress peering engineering

Use case

Whether they’re gaming or streaming video, your customers demand excellent quality of experience (QoE). If they don’t get it, they’ll complain on social media, damaging your reputation, or they’ll switch to a competitor. Nokia egress peering engineering (EPE) optimizes outbound network traffic through automated peering engineering — and delights your customers with exceptional QoE. You enjoy lower CAPEX and OPEX. It’s a game changer.
Better QoE requires better internet peering

Ensuring exceptional customer experience with consistent high performance and low latency for applications such as video streaming and online gaming is a challenge for many companies. The Border Gateway Protocol (BGP) is the main network protocol providing the routing mechanism for internet peering. Although it has been extended to route multiple types of traffic, its core functionality and decision process have largely remained unchanged.

As a result, BGP has limitations that make it ineffective when making peering decisions to meet real-time internet traffic requirements. BGP:

- Does not consider link capacity or real-time traffic utilization
- Lacks support for real-time performance information
- Does not consider the performance of the network
- Typically selects only a single path per destination.

These limitations are exacerbated by a lack of visibility of traffic flows at the peering edge. The cumbersome, complex manual processes used to gain visibility of traffic flows and address the limitations of BGP are costly and require experienced and knowledgeable network staff.

A fundamentally different approach to peering is required to address these challenges — one that makes the network much more dynamic.

Automated peering engineering to the rescue

Automated peering engineering ensures consistent high performance and low latency to deliver exceptional customer experience. It provides real-time traffic visibility combined with instant network and resource control to automate network peering.

As shown in Figure 1, EPE optimizes outbound traffic by specifying the peering router and external interface to use to reach a specific destination. The selected outgoing traffic is then automatically steered toward the appropriate link and peering provider to meet the defined performance objectives.

The path to be used can be selected using BGP policies, BGP route injection, Openflow, filters or BGP Flow Spec.
Enhance the customer experience

Automated peering engineering enhances the customer experience by moving traffic from congested peering links to lightly loaded links — or by selecting end-to-end paths that meet the required performance level.

This helps to deliver:

• A flawless customer experience with reduced link congestion, packet loss and traffic interruption
• The lowest possible latency for time-sensitive applications such as video streaming or online gaming
• A fully automated solution that can proactively anticipate and quickly react to peaks of traffic and make them transparent to end users.

Reduce your costs

Peering relationships are complex and costly, which makes traditional manual management of BGP policies expensive and inadequate. Automating and optimizing peering can significantly reduce your OPEX and CAPEX.

• Automated traffic steering enables more efficient use of interfaces, decreasing peering costs.
• Better use of available bandwidth minimizes the need for extra transit capacity.
• Simplified operational procedures reduce the need for skilled network operations staff and special networking tools.
Nokia automated peering engineering

Nokia uses insight-driven automation to implement peering engineering. This integrates and combines real-time traffic visibility with instant control of network resources and application traffic flows. Applied to peering, it enables incoming and/or outgoing traffic to be automatically engineered at border routers and network interconnections.

Insight-driven automation continuously monitors the state of the network to verify whether the outcome is meeting the intended goals. When the outcome deviates from the intent, corrective actions are taken. For example, a policy can be created to automate egress peering by using alternative network resources and paths when congestion or high latency is detected. This ensures application performance for latency-sensitive traffic such as video streaming and online gaming to enhance the customer experience.

To learn more, read the Nokia white paper Automated peering engineering.

Every network needs a partner. Make Nokia yours.

With an expert team of more than 2,500 professionals spanning more than 80 countries and six global delivery centers, Nokia has the breadth and depth to guide you through every step of your network optimization journey.