

Inside Cato's Intelligent Last-Mile Management Service

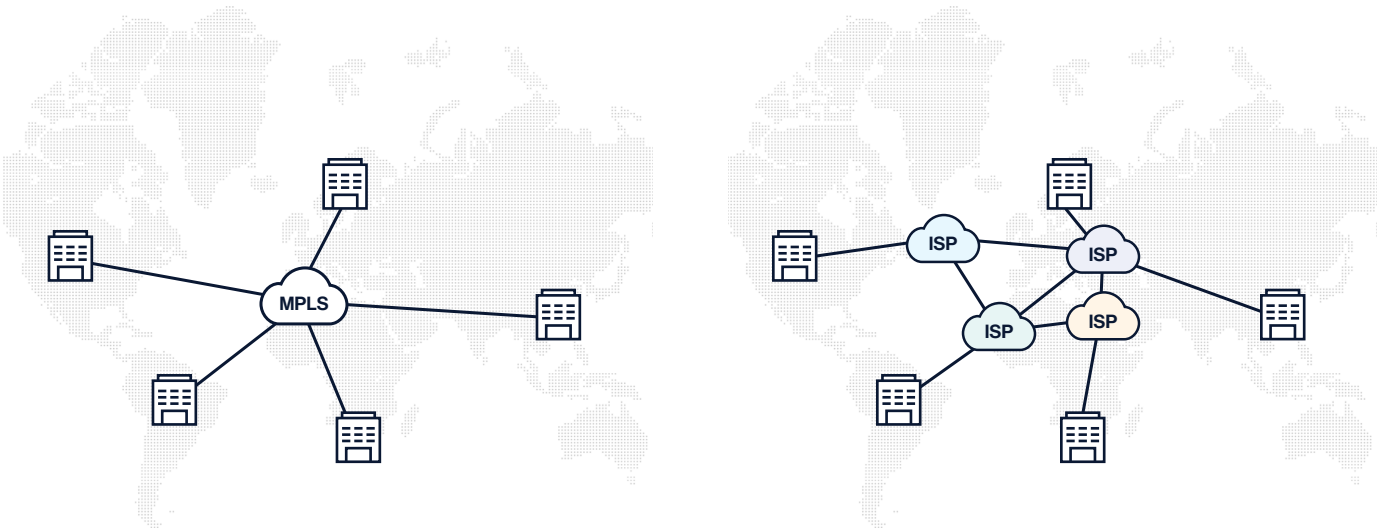
Today's Last-Mile Management Challenge

Many companies keep their MPLS-based WANs so they can continue working with a single, global network service provider. With a single contract and one point-of-contact, IT consolidates monitoring and support services for their entire network.

Internet-based WANs reduce bandwidth costs, improve cloud access, increase agility and more but they split access management across various ISPs around the world. Each ISP comes with different service levels, tools, culture, time-zones, and languages. This move can cause high friction in daily network operations and present many troubleshooting challenges — especially for IT teams with limited resources.

Bottom line? One throat-to-choke is a good thing.

Cato Intelligent last-mile Management (ILMM) is a global, last-mile monitoring and management service designed for today's enterprise. It's proactive and gives any enterprise that focal management point they so often want. To better understand the value of ILMM, take a closer look at the last-mile challenges facing today's enterprise.



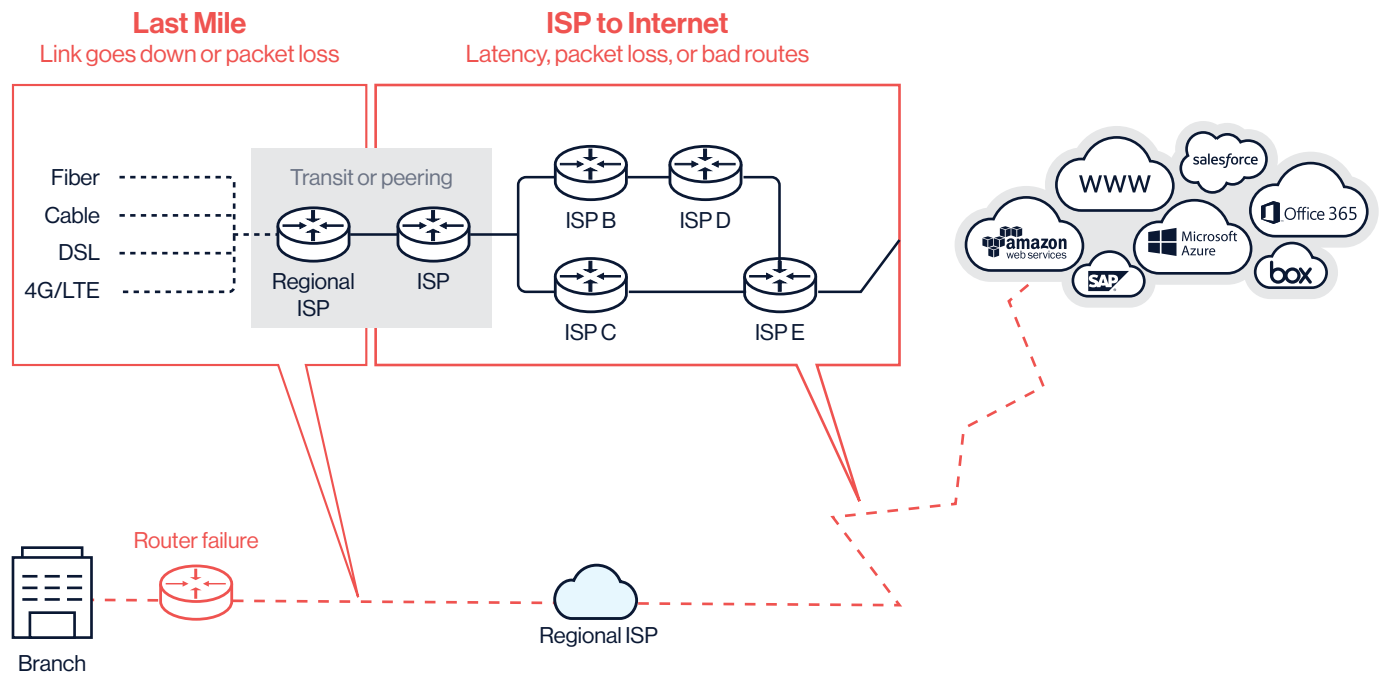
A major challenge in moving to an Internet-based SD-WAN is managing the many ISP relationships

Last-Mile: What Can Go Wrong?

When IT migrates from MPLS to SD-WAN, they are still responsible for end-to-end performance. Obvious, perhaps, but for every last-mile link, any number of factors may impact link quality. The condition of the last-mile infrastructure and the degree of network congestion can severely degrade packet loss and jitter. ISP's routing policies will impact latency. The ISP's upstream peering relationships will impact jitter, loss, and latency. All of which need to be monitored by IT and, when there's a problem, opening tickets with the local ISPs to resolve this issue.

Delivering the monitoring and management infrastructure to get the job done comes with its own headaches. Probes must be deployed at each location to understand last-mile operation. They must alert on both brownouts (performance degradation in packet loss, latency, and jitter) and blackouts (network outage). Insight is needed not just into the status of the physical network but the real ability to access the Internet and key applications. Staffing requirements also grow both in terms of the knowledge to interpret last-mile performance reports and the skills required to work with the local ISPs. Local language and time zone requirements, particularly when supporting a global business, must be met.

Third-party, last-mile monitoring services might seem like the answer but often solve only part of the problem. They typically rely on the capabilities of the router at the customer premises to gather link information. Often this is done using ICMP and relegated to detecting outages (blackouts) from the enterprise site to the ISP premises. But such services are limited to reachability testing. They're unable to detect spikes in latency, loss, or jitter metrics which indicate brownouts. Reachability testing is also blind to outages upstream from the ISP.



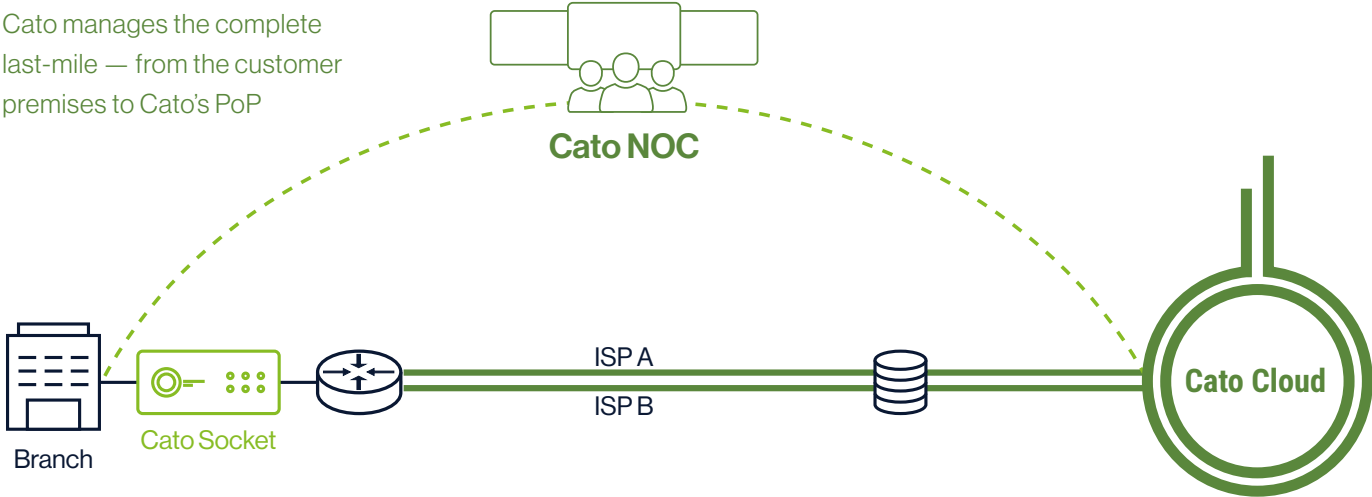
Last-mile problems can occur upstream and downstream from the regional ISP

Cato's ILMM: Intelligent Last-Mile Management for Today's Global Enterprise

With Cato ILMM, enterprises gain an intelligent last-mile management service that meets the needs of today's enterprise. Cato ILMM monitors the complete last-mile from the site through the ISP all the way to the Cato PoP for brownout and blackout detection.

Instead of being limited to the capabilities of the router, Cato uses its Cato Socket for last-mile monitoring. By default, Cato Sockets measure latency, loss, jitter using four different methods — DNS, HTTP, ping, and traceroute — although custom services can also be defined. Test results are then compared against the link profile generated during the onboarding process. Cato uses its data warehouse capabilities to construct detailed profiles of last-mile performance for each monitored service. These profiles are continuously updated to reflect seasonal variations in traffic conditions. By comparing test results against the link profiles, Cato can detect brownouts not just link outages.

Cato manages the complete last-mile — from the customer premises to Cato's PoP



Once problems are identified, Cato proactively works with ISPs to resolve them to minimize or eliminate the impact on users. Detailed reports identify the source of networking problems backed by extensive logs, shortening the time for ISPs to resolve problems.

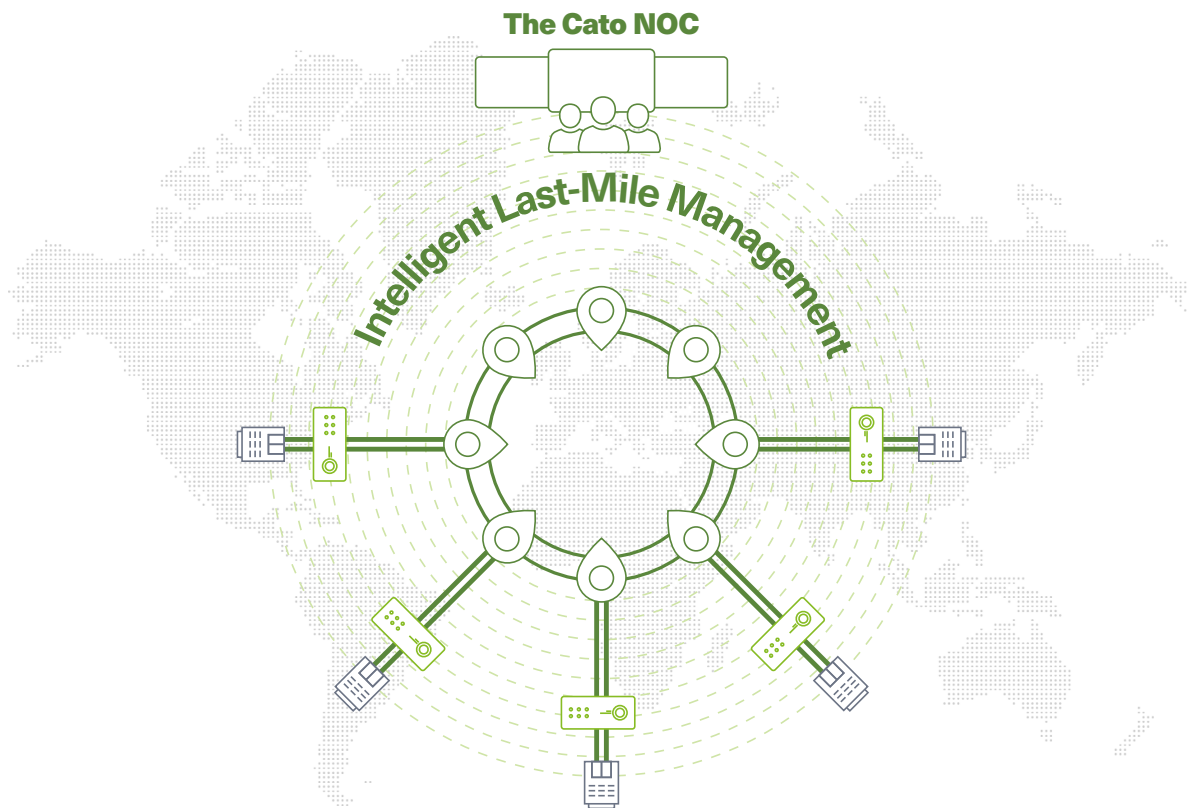
And while most last-mile monitoring services stop at the ISP's premises, Cato's ILMM monitors the link from the Cato Socket through the ISP and all the way to the Cato PoP around-the-clock, seven days a week, 365 days a year.

Last-Mile Management With Self-Service Agility

For far too long, the convenience of managed last-miles meant suffering the headaches of opening trouble tickets and waiting for carriers to fulfill move, add, and change (MAC) requests. Cato changes that paradigm, marrying the flexibility of self-service management of the cloud with the convenience of last-mile management.

With Cato, enterprises control their own MACs, making network changes in minutes that often require opening tickets and waiting days with traditional managed services. At the same time, they offload the burden of maintaining the global network infrastructure onto Cato. Even prior to Cato ILMM, Cato monitored and managed the Cato Cloud, an SLA-backed global network. Now with Cato ILMM, Cato provides end-to-end management of the company's global WAN.

To learn more about how Cato ILMM can help your organization contact us at <https://www.catonetworks.com>



About Cato Network

Cato Networks provides organizations with a cloud-based and secure global SD-WAN. Cato delivers an integrated networking and security platform that securely connects all enterprise locations, people, and data. Cato Cloud cuts MPLS costs, improves performance between global locations and to cloud applications, eliminates branch appliances, provides secure Internet access everywhere, and seamlessly integrates mobile users and cloud datacenters into the WAN.

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