

CUSTOMER CASE STUDY

Fibrenoire

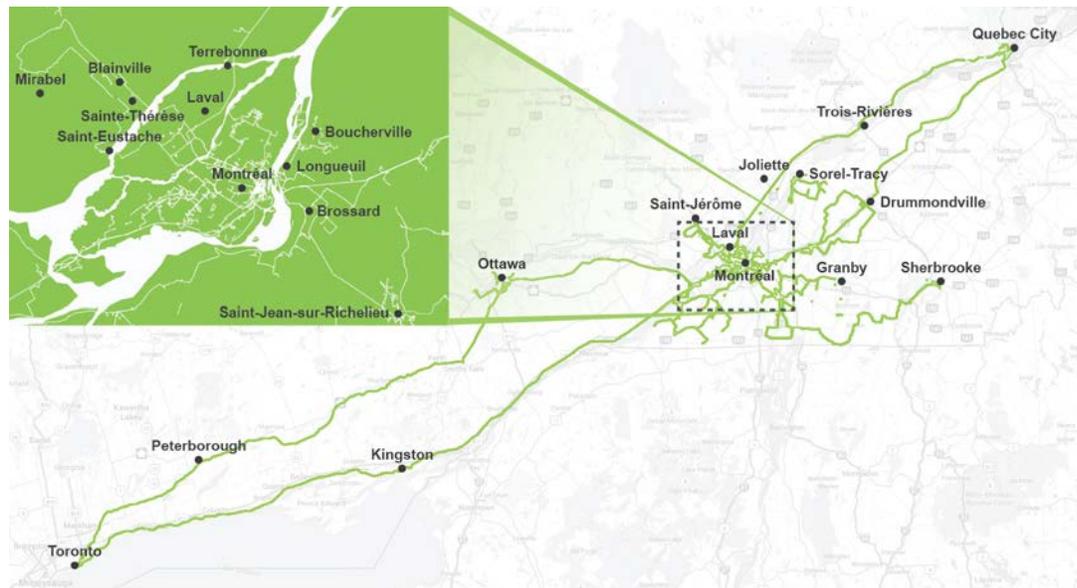


Type of Company: Metro Fibre Carrier for Wholesale and Enterprise
 Specialty: MEF Carrier Ethernet 2.0 Certified enterprise & data center connectivity solutions
 Accedian Solutions: Network Performance Elements (NIDs)

Business & Data Center Connectivity Provider Fibrenoire Expands Services and Market Reach Using Accedian Performance Assurance Solutions

Customer Overview:

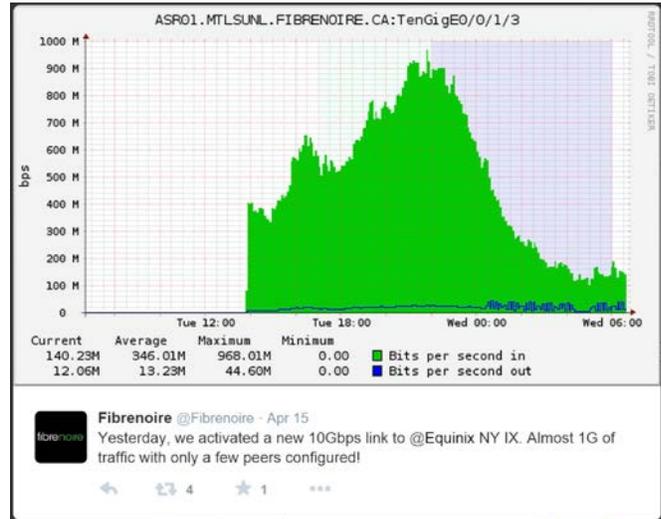
Montreal, Quebec-based wholesale and enterprise network connections provider Fibrenoire was the first network and services provider in Canada to become fully Carrier Ethernet 2.0 MEF certified, and in 2014 earned the distinction of being the fastest growing Quebec company. Through both organic growth and acquisitions, the company is now expanding nationwide while building its solutions portfolio to include cutting-edge hybrid cloud connectivity options.



Fibrenoire's distinctions include:

- A full portfolio of Ethernet (Layer 2), IP (Layer 3) and dark fibre connectivity solutions for enterprise WAN, and data center and cloud services connectivity.
- More than 40 data centers on-net, including major international players like OVH and Cologix.
- Over 1500 customers, including multinationals like Richter and Medisys.
- Exceptional internet backbone (on par with the largest operators in North America) with over 100Gbps of internet capacity on multiple 10G redundant and diverse connections, advanced content caching, and direct peering with over 250 providers and content delivery networks including Google, Netflix, Facebook, Microsoft, and Amazon from colocations in Montreal, Toronto, and upstate New York.

- Managed services portfolio that now includes MPLS VPN managed services with Dynamic QoS and a SIP trunking application launched in 2014 that helps customer optimize their infrastructure and call routing, and lets them leverage IT and SIP features such as 'follow me,' voicemail to email, HD voice, and video conferencing not available with traditional telephony.
- Inclusive network design expertise to tailor connectivity to customer needs; part of their standard relationship with customers. This customer-focused approach is a main reason Fibrenoire wins major deals.
- High level of transparency with customers. For example, they live-Tweet details about network changes or issues being serviced.



Recent updates on Fibrenoire's Twitter page. The company keeps customers informed in real-time.



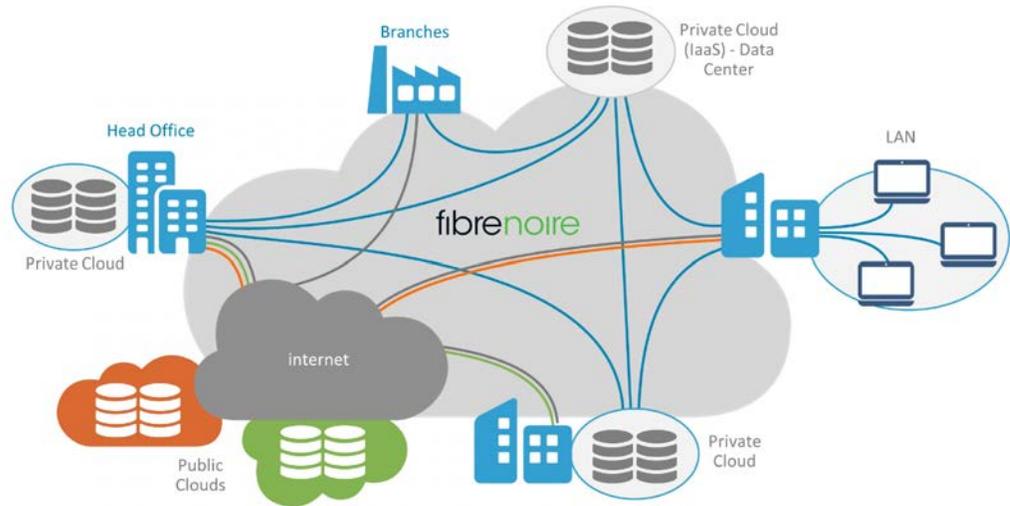
Fibrenoire @Fibrenoire

T30507: Coupure de fibre localisée. Fibre cut localized.

View translation

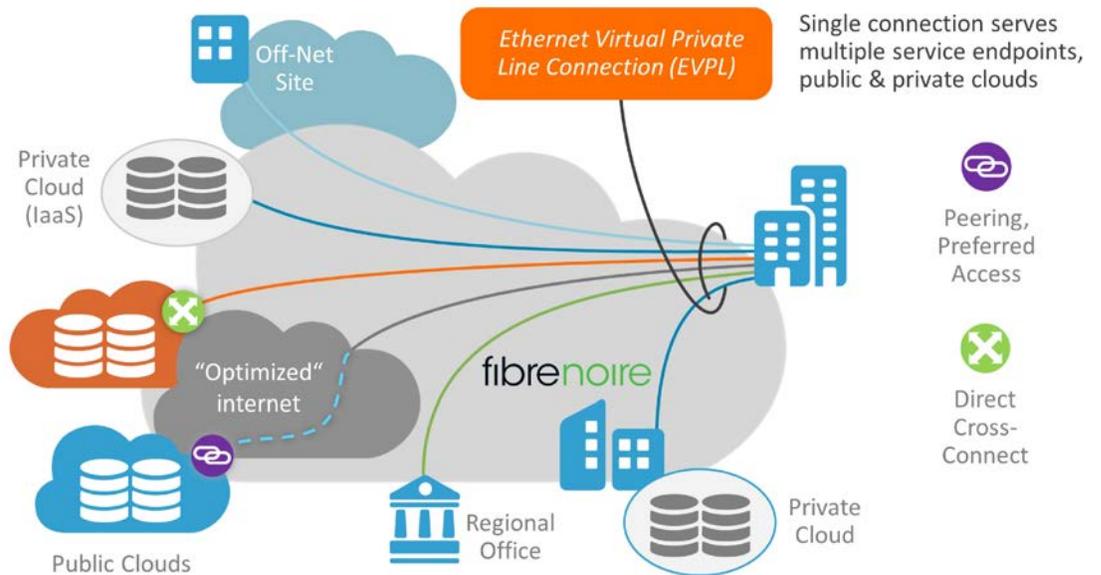
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Fibre noire offers a complete portfolio of enterprise connectivity solutions

With a solid foundation of fibre assets and strategic peering relationships, Fibre noire is now at the forefront of public cloud connectivity—a still developing area where many options are available, from direct cross-connect to peering-optimized internet connections.



Assured, reliable, cloud access vs. best-effort, “open” internet:

Performance-critical: internet bypass, direct connection

Responsive access: peering-optimized internet

Diverse services over a single, physical connection—the enterprise lifeline

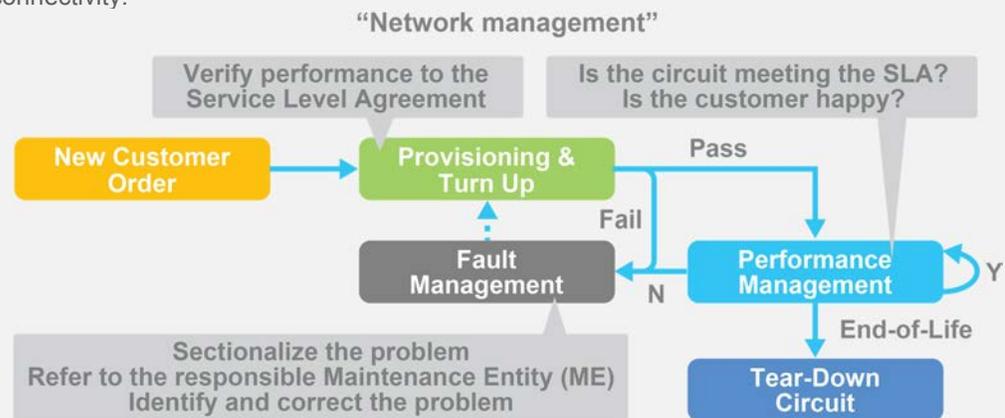
Instead of a professional services team, Fibrenoire includes design services and consultancy as part of its sales process—working closely with each customer to develop a turnkey solution tailored to their particular hybrid cloud connectivity needs. Examples of deployments include:

- Carrier Ethernet when it's necessary to retain IP addressing consistency, allowing enterprises to seamlessly move workloads from private to public clouds.
- IP connections for cases where redundancy and diverse paths are desired.

Fibrenoire's all-fibre network is fully performance assured over the complete service lifecycle, from service activation to continuous SLA/performance monitoring built in. Every service is tested to meet SLA requirements at turn-up, and each is monitored continuously for proactive performance optimization, fault management, and reporting.

MEF Service Lifecycle and SOAM

These three phases are consistent with the Metro Ethernet Forum (MEF) definition of the Carrier Ethernet service lifecycle, which serves as an established model for commercial connectivity.



Metro Ethernet Forum service lifecycle as outlined in [MEF 39: Service OAM Performance Monitoring YANG Module Technical Specification](#).

Consistent with stringent Carrier Ethernet certification requirements, all of Fibrenoire's service endpoints implement Hierarchical QoS (H-QoS) to optimize performance over multiple classes of service, and multiple logical connections over a single logical connection (EVPL). In addition to these advanced traffic management strategies, its agile, flexible service design and delivery is supported by hardware-based traffic shaping that's available to further optimize link and TCP throughput, without impacting high-priority, low latency flows.

Featured Quotes:

"To meet our customers' needs for custom-designed, MEF 2.0-Certified business Carrier Ethernet and data center connectivity solutions, we must be able to proactively discover any network issues so we can address them quickly. Accedian's robust performance monitoring platform provides that capability, and is able to evolve with us."

-Jean-François Lévesque, CTO, Fibrenoire

"Hybrid-cloud connectivity is the new enterprise lifeline. Despite the buzz, delivering networking solutions that fit each individual customer's needs is not a simple matter. It requires a high degree of agility, a flexible and well connected network, and dedicated engineering staff that are committed to developing innovative solutions. Fibrenoire's team, networking knowledge, and the degree to which they use the most sophisticated technology available sets them apart. We are proud to be their performance assurance solution partner as they grow into a differentiated national operator."

-Luc Noiseux, VP Engineering, Accedian Networks

Service and Market Reach Expansion

Fibrenoire is leveraging its excellent reputation, extensive infrastructure assets, and impressive peering relationships to expand both geographically and innovatively. Its initiatives include:

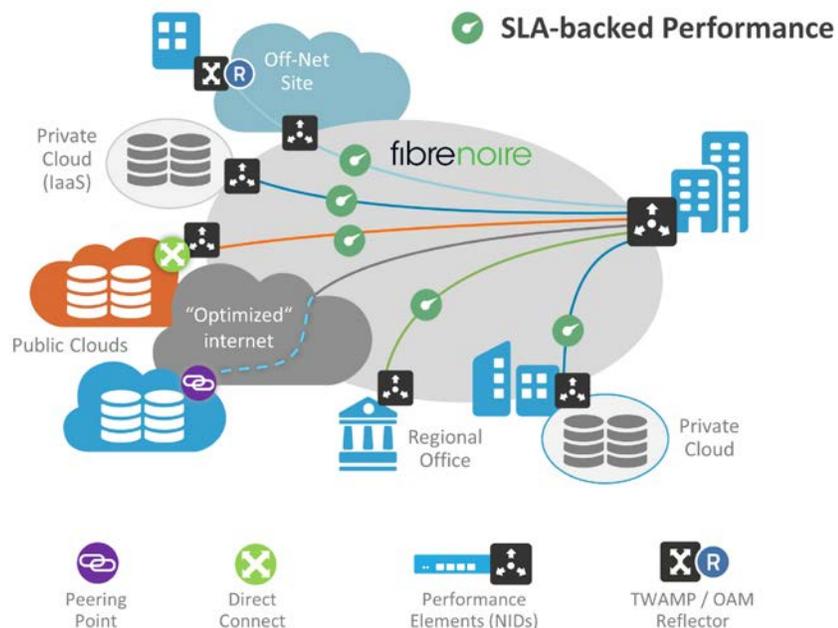
- Continue building a portfolio of custom-developed hybrid cloud solutions. This is a new area for many customers, and Fibrenoire is committed to helping them figure out the best path.
- Expand Wholesale and Carrier Ethernet connectivity solutions to cover all of Canada. As part of this initiative, Fibrenoire is expanding its footprint in Ottawa and is building new COs (Central Offices) to connect customers.

Hybrid cloud is an area of significant opportunity for Fibrenoire, since they are well versed with connecting enterprises to data centers and data centers to each other. This is the next logical step, and one where proven commitment to customer service and customization gives the company (and its customers) a leg up.

Fibrenoire is able to offer both direct cross-connect and peering-enhanced internet options, depending on customer needs. Many customers are exploring hybrid cloud by differentiating between critical- and non-critical data—and choosing where to locate said data, as well as how to access it, based on those categorizations. Less latency-sensitive, general applications can be carried efficiently over Fibrenoire’s optimized internet backbone, while direct cross-connect can be employed for critical and transactional applications.

Acquisio is one example of a customer that’s leveraging Fibrenoire’s diversified network capabilities. Their goal—like many other Fortune 500 enterprises—is to leverage a multitude of technology platform, both cloud and legacy storage and compute where this helps them maintain a cost-efficient, scalable IT infrastructure. Fibrenoire helped them design network connections—with a high level of integrated redundancy—to support this ongoing strategy. The solutions developed for Acquisio are a prime example of Fibrenoire using their network and engineering skills to provide a tailored solution that meets stringent cloud/data center connection needs.

As described in the next section, Accedian’s performance monitoring endpoints are integral to Fibrenoire’s existing and future innovations.



Performance assured network services using Accedian endpoints (Elements, TWAMP/OAM Reflectors)

Solution Capabilities

The performance assurance, Carrier Ethernet and traffic conditioning capabilities built into Fibrenoire's network and services are possible by using Network Performance Elements (network interface devices/NIDs) from Accedian. For three years and counting, Accedian has been the equipment provider for the majority of Fibrenoire's endpoints, covering most data center and enterprise-customer connections. These sophisticated, but cost-effective units are the service endpoint, the SLA monitoring instrumentation, the remote troubleshooting tools, and the turn-up test units that benchmark performance as it's activated.

Because Fibrenoire's network and Accedian solutions are both MEF-certified, Fibrenoire is able to offer multiple virtual connections over a single physical connection in the form of Ethernet Virtual Private Line (EVPL) services, as well as guaranteed CIR and EIR, priority-based traffic management.

Other capabilities enabled in Fibrenoire's network by Accedian's solutions include:

- Traffic prioritization to assure multiple classes of services in the same envelope.
- Traffic shaping using Hierarchical QoS (H-QoS) at every endpoint to achieve very high performance.
- Real-time reporting to the customer.
- End-to-end performance and SLA monitoring/reporting (including last-mile and wholesale applications) with microsecond latency measurements.
- Integrated Service Activation Test (SAT) functionality to ensure services are delivered with committed performance.
- Off-net testing using standards-based TWAMP reflectors, extending service visibility directly to customer sites.

A Relationship Driven by Performance Assurance

In today's complex network environment—with diverse, rapidly evolving technologies and business needs—the very competitive backbone of business hinges on end-to-end network reliability. The partnership of Fibrenoire and Accedian is built on a mutual goal: deliver the highest levels of performance assurance possible, empowering business success across every connection point.