The future of networking: multi-technology network fabric

Alcatel·Lucent
Enterprise

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The need for a multi-technology network fabric

In today's fast-paced digital landscape, businesses require secure, scalable, and flexible networking solutions that adapt to evolving demands. Traditional network infrastructures struggle to keep up with the increasing complexity of applications, making network modernization essential.

One of the most effective ways to optimize network performance is through **overlay networks**, also known as **network fabrics**. These logical overlays provide a foundation for transmitting and managing data efficiently across enterprises to support various applications.

However, managing multiple networking protocols across different layers adds complexity, increasing deployment time, security risks, and operational costs. Organizations typically run a mix of technologies, such as Shortest Path Bridging (SPB), Multiprotocol Label Switching (MPLS) and Ethernet Virtual Private Networks (EVPN), requiring different operating systems and network management tools. This usually means h**igher costs, longer deployment times and skill shortages**.

But what if you could **unify all these technologies into a single network fabric** with built-in automation and security?

OmniFabric: the game changer

[Alcatel-Lucent Enterprise OmniFabric](#) is a breakthrough **multi-technology network fabric** that supports **SPB, MPLS, and EVPN** within a single Alcatel-Lucent Operating System (AOS). With **unified management via** [Alcatel-Lucent OmniVista®](#), OmniFabric enables integration, simplifies network operations, improves security and enhances automation across IT and OT environments.

Key features and benefits of OmniFabric

**1. Multi-technology integration**

OmniFabric is the **only** solution that **supports SPB, MPLS, and EVPN within the same AOS**, allowing organizations to adapt their infrastructure without vendor lock-in.

2. Advanced cybersecurity and zero trust networking

- **Micro and macro segmentation:** Secure different network segments to prevent unauthorized access

- **Automated internet of things (IoT) detection and segmentation:** Instantly detects and isolates IoT devices to prevent the spread of IoT-based malicious attacks

- **End-to-end encryption and policy enforcement:** Ensures data integrity and security
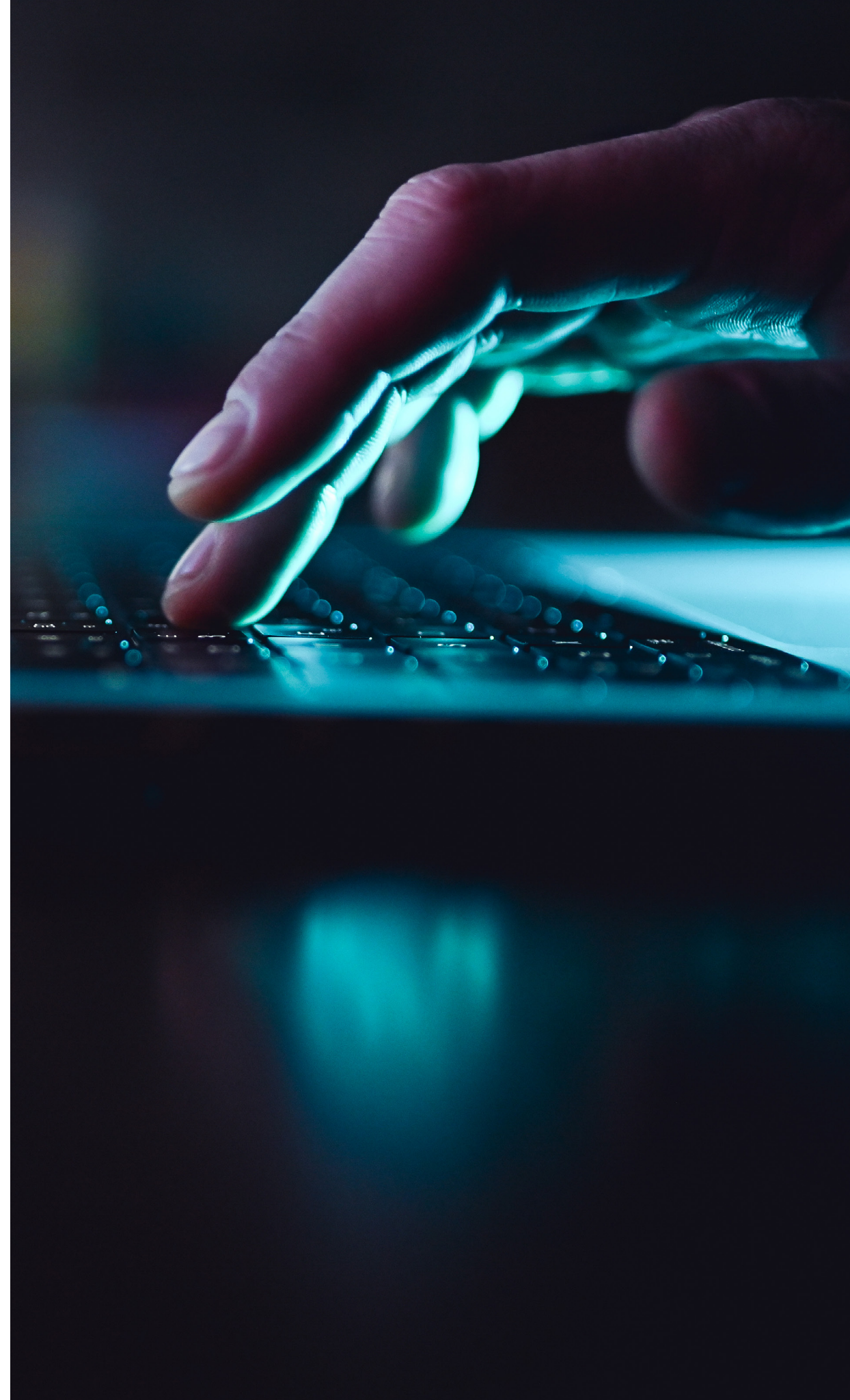
3. Built-in automation for network optimization

- **AI-driven analytics:** Detects, mitigates, and resolves network issues proactively

- **Streamlined operations:** Reduces manual configurations and troubleshooting time

- **Automated provisioning:** Deploys new devices and services faster with minimal human intervention, reducing configuration errors

4. Flexibility and interoperability

- **Supports existing brownfield environments:** Integrates with third-party equipment

- **Adaptable to different network segments:** From edge to data centers and industrial environments

- **No vendor lock-in:** Offering businesses complete freedom of choice

5. Lower total cost of ownership (TCO)

- **Unified management via OmniVista** minimizes training needs and operational complexity

- **No hidden fees**, ensuring predictable and transparent costs

- **Optimized resource allocation**, reducing infrastructure waste and inefficiencies

Examples of OmniFabric supported applications

Each networking protocol serves specific use cases. The table below summarizes the key applications and the most suitable technology.

Application	Key requirements	Recommended protocol
Video surveillance	High multicast performance, simple setup	SPB
Casino networks	Scalable multicast, low latency	SPB
Campus networks	Large-scale connectivity, simple management	SPB
Smart cities	Scalability, traffic control integration	SPB / MPLS
Large data centers	High scalability, multi-tenancy	EVPN
Mission-critical networks (ITS, rail, utilities)	Low convergence times, high resilience, ruggedized equipment	MPLS

5 Steps to implement OmniFabric successfully

Step 1: Assess your network environment

- **Brownfield** (existing network) versus **greenfield** (new project)
- Identify the **network areas involved** (data center, campus, IoT, metropolitan area network (MAN), etc.)
- Evaluate your team's expertise (the simplest to implement is **SPB**, followed by **EVPN**; the most complex is **MPLS**)
- Consider advanced segmentation and security requirements

Step 2: Select the right technology for each segment

- **SPB** is ideal for **campus networks, IoT and LAN/WLAN**
- **EVPN** is best for **large-scale data centers**
- **MPLS** is essential for **mission-critical environments like transportation and utilities**

Step 3: Plan for a smooth migration

- Ensure **interoperability** with existing third-party infrastructure
- Use **OmniVista NMS** for seamless transition management
- Implement **automated** segmentation to simplify IT/OT convergence

Step 4: Strengthen security with zero trust

- Apply **micro and macro segmentation** to restrict unauthorized access
- Enable **zero trust** networking, requiring authentication for every user/device
- **Automate IoT detection and containment**, preventing lateral movement of cyber threats

Step 5: Optimize operations and reduce costs

- Leverage **OmniVista analytics** and OmniVista Network Advisor for proactive issue resolution
- **Automate network management tasks** to reduce human intervention, minimizing manual errors and reducing incident response time
- **Reduce operational costs** by consolidating technologies under a single OS

Conclusion: future-proof your network with OmniFabric

With OmniFabric, organizations can **eliminate complexity, boost security, automate operations, and reduce costs**—all while maintaining the flexibility to choose the best technology for each network segment. By **integrating SPB, MPLS and EVPN** into a unified network fabric, OmniFabric adapts to the needs of diverse industries, ensuring **scalability, reliability, and simplified management**.

Are you ready to transform your network? Contact Alcatel-Lucent Enterprise today to learn more about OmniFabric and how it can future-proof your infrastructure.

Contact a Networking Expert

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