
Visionary and Extreme Networks' Fabric Attach Integration

Introduction

The Pro AV industry is experiencing a shift toward scalable and efficient AV-over-IP solutions, driven by the increasing demand for seamless audiovisual integration across dynamic and complex environments. Managing large-scale AV deployments, with hundreds or even thousands of endpoints, has traditionally required extensive manual configuration and significant IT overhead. This complexity has created a pressing need for streamlined, automated network integration.

Visionary, a leader in AV-over-IP technology, has partnered with Extreme Networks to deliver a first-of-its-kind solution by integrating Extreme Networks' Fabric Attach into Visionary's PacketAV™ Matrix Series endpoints. This groundbreaking collaboration introduces automation and simplicity to AV network operations. Fabric Attach automates traditionally labor-intensive tasks like VLAN assignments and traffic prioritization, enabling plug-and-play functionality for AV endpoints. The result is reduced operational overhead, enhanced scalability, and greater reliability in AV system management.

This paper explores the innovative integration of Visionary and Extreme Networks' technologies, showcasing its ability to simplify deployment, improve scalability, and maintain high-performance AV standards. Through real-world applications—such as university campuses, corporate headquarters, and entertainment venues—the paper highlights how this solution reduces time, effort, and complexity for IT and AV teams while meeting the demands of modern audiovisual environments. Visionary and Extreme Networks are setting a new standard in Pro AV, delivering an efficient and automated approach to AV network management.

What Is Extreme Networks' "Fabric Attach"?

- **Origin:** Fabric Attach was introduced primarily by Avaya (later acquired by Extreme Networks) to simplify and automate the provisioning of endpoints (such as IP phones, Wi-Fi access points, etc.) in a Shortest Path Bridging (SPB) fabric.
- **Goal:** It automates the process of attaching devices to a virtualized network fabric by advertising the service requirements (VLAN, VRF, etc.) of the endpoint. In an SPB network, this helps reduce manual configuration steps on edge switches.

Relation to IEEE 802.1aq (SPB)

- **802.1aq (Shortest Path Bridging):** This is a true IEEE standard that replaces older Spanning Tree Protocol (STP) variants, providing:
 - Shortest-path forwarding.
 - Better convergence times.
 - Simplified network topologies.
- **Fabric Attach + SPB:** Fabric Attach piggybacks on top of 802.1aq to automate end-node service provisioning. However, the mechanism itself—known as "Fabric Attach"—is not codified as an IEEE standard.

Visionary and Extreme Networks' Fabric Attach Integration

Case Study

A helpful way to think about Visionary's AV over IP endpoints and Extreme Networks' Fabric Attach technology is to imagine a large, dynamic environment—such as a university campus, corporate headquarters, or sports arena—where dozens or even hundreds of AV endpoints must be deployed, managed, and secured. In these scenarios, network administrators and AV/IT teams benefit from a solution that is easy to scale, easy to deploy, and reliable enough to carry high-quality audio and video streams without interruption.

Below is a real-world use case illustrating how the integration of Visionary's AV-over-IP endpoints and Extreme Networks' Fabric Attach works:

The Setting: A Large Campus or Facility

Consider a multi-building university campus or a multi-floor corporate facility that needs to deliver digital signage, lecture capture, live event streaming, and interactive displays at scale.

These environments often have:

- **Multiple VLANs** to isolate AV traffic from general data traffic (e.g., student/staff data, VoIP, security cameras).
- **Frequent room or device changes** - (moves, adds, changes in conference rooms, auditoriums, event spaces, etc.)
- **High demands on bandwidth and security** - ensuring that critical data and AV streams do not conflict or get compromised.

The Challenge: Simplifying Network Configuration

Traditionally, setting up an AV over IP system in such a large environment would require extensive manual network configuration: each AV endpoint (encoder/decoder) must be placed on the correct VLAN, QoS must be properly configured, and traffic priorities must be set. As the environment expands or changes, this process must be repeated—making administration complex and time-consuming.

The Visionary + Extreme Solution

Visionary's AV over IP Endpoints

Visionary's endpoints encode and decode audio/video and send those streams over the network.

They are designed to provide:

- **High-quality, low-latency A/V streaming** over standard IP networks.
- **Interoperability** with third-party control systems.
- **Flexibility** to fit into different environments (education, corporate, government, hospitality, etc.).

Visionary and Extreme Networks' Fabric Attach Integration

The Visionary + Extreme Solution (cont)

Extreme Networks' Fabric Attach

Extreme's Fabric Attach (FA) technology is a network automation and provisioning framework that extends the capabilities of an Extreme Fabric (or other compatible networks) directly to the edge devices.

Key benefits include:

- **Auto-Provisioning** - Endpoints can be recognized automatically and placed on the correct VLAN or service path without manual intervention.
- **Secure Segmentation** - Traffic from AV endpoints is automatically segmented from other network traffic, enhancing security and performance.
- **Simplified Configuration** - When a device moves to a new location or additional endpoints are added, the system dynamically updates the network configuration.

The Integration in Practice

Plug-and-Play Deployment

- An integrator or IT staff connects Visionary's AV encoders/decoders to the network.
- Fabric Attach discovers these endpoints and automatically assigns them to the appropriate VLAN or virtualized service.

Real-Time Traffic Prioritization

- Fabric Attach ensures high-priority handling of AV traffic.
- Mission-critical video streams, lectures, or live event broadcasts get the appropriate bandwidth and QoS settings.

Scalable and Flexible Expansion

- As the facility grows—new buildings, new conference rooms, new digital signage locations—Visionary endpoints simply plug into the network.
- Fabric Attach dynamically provisions these devices with minimal manual configuration, reducing operational complexity.

Enhanced Security

- Segmentation means that AV traffic is confined to designated network paths.
- Policies and user roles set by the network administrator ensure unauthorized users do not access or interfere with AV streams.

Visionary and Extreme Networks' Fabric Attach Integration

The Integration in Practice (cont.)

Reduced Administrative Overhead

- With auto-provisioning and automated VLAN assignments, IT can quickly deploy and manage hundreds of endpoints.
- Day-two operations (moves, adds, changes) become far less time-consuming.

Real-World Impact

Example 1: University Lecture Halls

- **Before:** IT staff had to manually configure VLANs for each lecture hall's AV system. Moving an encoder or adding digital sign required network re-configuration.
- **After:** With Visionary + Fabric Attach, new devices "announce" themselves to the network and get the correct VLAN instantly. If a professor's device is moved to a new hall, the correct settings follow automatically.

Example 2: Corporate Campus with Town Hall Spaces

- **Before:** Manual setup was required for each AV system in conference rooms, huddle spaces, and large town hall event areas.
- **After:** Endpoints can be placed in any location, and the Extreme network automatically provisions QoS and VLAN segmentation, ensuring secure and seamless AV delivery for employee training sessions, executive broadcasts, and more.

Example 3: Arena/Stadium

- **Before:** A massive amount of signage, suite displays, and live event feeds required manual network configuration, making large events difficult to manage.
- **After:** Fabric Attach helps dynamically segment live feed traffic, advertisements, broadcast feeds, etc. Visionary endpoints deliver pristine audio and video, while the network automatically optimizes bandwidth for each type of traffic.

Conclusion

By integrating Visionary's high-performance AV over IP endpoints with Extreme Networks' Fabric Attach technology, large-scale facilities gain an efficient, secure, and scalable solution. Automated discovery and provisioning dramatically reduce deployment time, while QoS and segmentation ensure high-fidelity audio and video streams.

This combination is particularly advantageous in environments where AV requirements change frequently, network security is paramount, and minimizing downtime is critical.