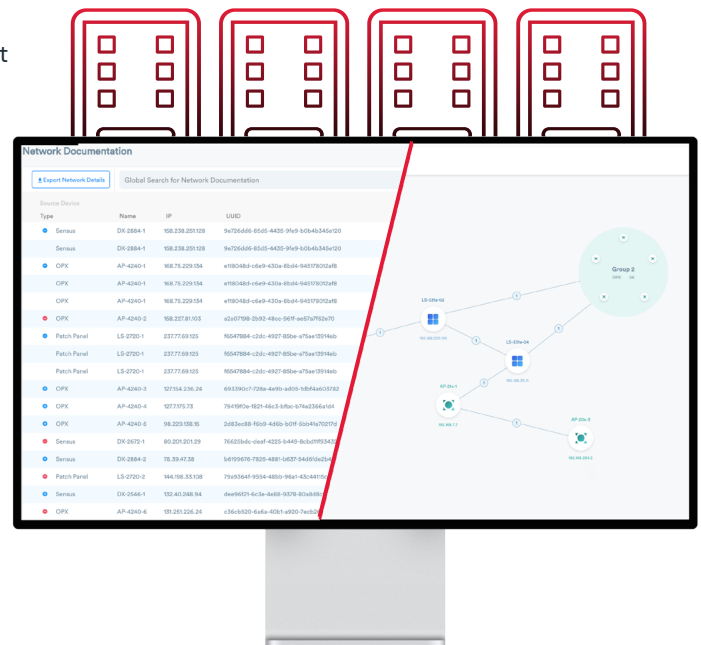# Automated Documentation

Driven by accelerating demands for more computing power, storage, bandwidth and agility, **the industry is building new data centers** (and upgrading existing data centers) to be bigger, denser and more interconnected.

Introduction

In recent years, different virtualization approaches have introduced unprecedented levels of software control to the management of servers and storage, but the physical layer of patch panels, cables and connection points has so far been invisible to software, except through the medium of human technicians manually documenting the connections that make up the physical layer of data center infrastructure.

The physical layer is a persistent roadblock to building the next generation of agile and dynamic networks, but what if it was possible to make the physical layer directly visible to and controllable by software, without the human middle-man entering data into an Excel spreadsheet?

What if there was a way to automatically document all the connections in the network and track moves, adds and changes (MAC) in real-time?

Automated Documentation Encapsulates
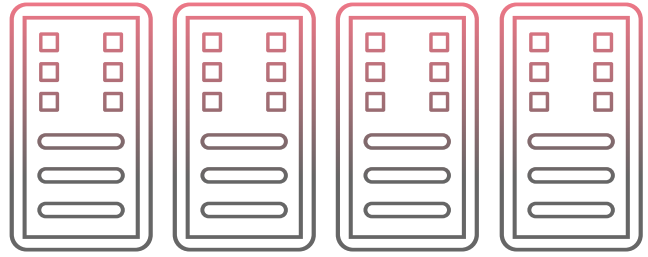
The Fiber Mountain® Solution

Fiber Mountain is driving the development of the new physical layer, with a vision of enabling managed, dynamic and secure networks by creating a software-defined layer one. Fiber Mountain's solution incorporates ICID® (Intelligent Connection Identification) technology with the AllPath® Director (APD) orchestration software to provide software-based visibility of connection points, including automatic real-time documentation of the data center network.

Fiber Mountain provides the ability to "step into" your data center and have full visibility of ICID®-enabled devices and cables, including connection paths and available cross-connects.

Network Topology and Documentation

Network topologies are typically generated manually or not at all, but a data center using Fiber Mountain solutions will enjoy the automated documentation of the real network topology, based on both ICID® and more general device detection. This topology makes it easy to see end-to-end connections, and APD also introduces the flexibility to group and arrange connections as needed.

Alarms

Timely awareness of unplanned changes within a data center allows network operators to detect and respond to physical security breaches and inadvertent cabling errors when they happen, rather than after they have already caused damage and downtime. Fiber Mountain solutions allow data centers to have the visibility and agility to respond to physical changes either via software or by knowing exactly where and when to deploy technicians to make manual corrections.

APD's Alarm notifications include a description of the problem, severity, time of occurrence, device location, port, and even fiber.

| Unscheduled Changes | | Speeds up the process |
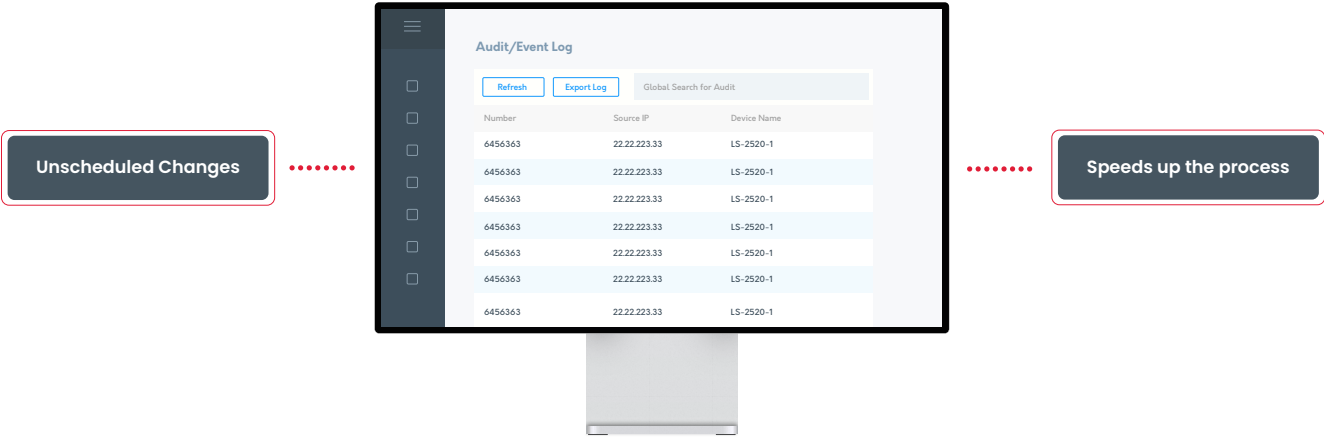
The combination of automatic documentation with alarms to notify network operators of unscheduled changes such as power supply failures, fiber disconnects and unauthorized re-patching simplifies and speeds up the process of troubleshooting and correcting problems. What could have been an indefinite shutdown or long-term security breach becomes a quick fix.

Audit Trails

Along with Alarms, the Audit Trail functionality of APD protects the data center network by improving awareness of both the current state of the network and the timing and location of all changes that have occurred in the past. This is important for reducing vulnerabilities and for improving regulatory conformance.

The Audit Trail provides another layer of visibility by preserving all events that occur in a data center, in a record that cannot be altered or deleted by anyone. The Audit Trail is recorded from the time Fiber Mountain solutions are enabled in the network, and the records can be exported for further preservation, analysis or presentation.

Testing

In addition to providing a visual topology, APD provides a text version of the network documentation. This version highlights all GLC devices and port-to-port connections.

This text-based network documentation allows administrators and executives to share a highlevel view of their data center equipment and investment, which improves their ability make solid decisions.

Conclusion

Fiber Mountain's solutions allow unprecedented visibility and agility within the data center. Real-time, accurate documentation becomes an automated process, improving day-to-day management of data center operations and speeding up the resolution of unplanned downtime, security threats and conformance requests.