Universal TAP

Any TAP, Any time! Whether you need to troubleshoot a server, adhere to compliance or secure your network, tapping is an indispensable tool for any company.

Introduction

For the uninitiated, a network TAP is similar to a phone TAP. In both cases, the goal is to gain visibility into an ongoing "conversation". For the network, that conversation can be between any network device in the network; switch to switch, server to switch, router to ISP, etc.

Ideally, network operators would be able to TAP any connection in the network at any time. Until recently the only way to achieve that goal was to implement an entire parallel TAP network, which is an expensive proposition. In practice, most networks utilize a limited number of TAPs and move them manually when a new port needs to be monitored. With Fiber Mountain's Glass Core, however, the ability to TAP any connection at any time becomes both easier to implement and much less expensive.

TAP Basics

In its most basic form, tapping a network device involves capturing the transmit/receive traffic and redirecting it to a monitoring device.

Traditionally, tapping is accomplished via one of the following methods:

1. Specialty boxes – Hardware build specifically for tapping

2. Port mirroring (SPAN) – Copies data from one port to another

3. Agent software – Software that runs on network devices to redirect traffic
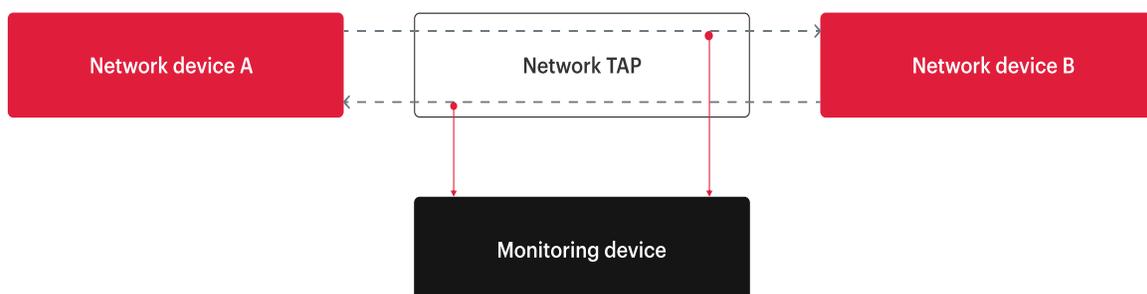
TAP Pain Points

One of the biggest challenges with TAP is the overhead of the setup. Today you may only need to TAP servers in one rack, but tomorrow you may need to TAP a router on your edge and a year from now you may need to TAP switches in building two.Setting up TAP for all these devices with specialty boxes, s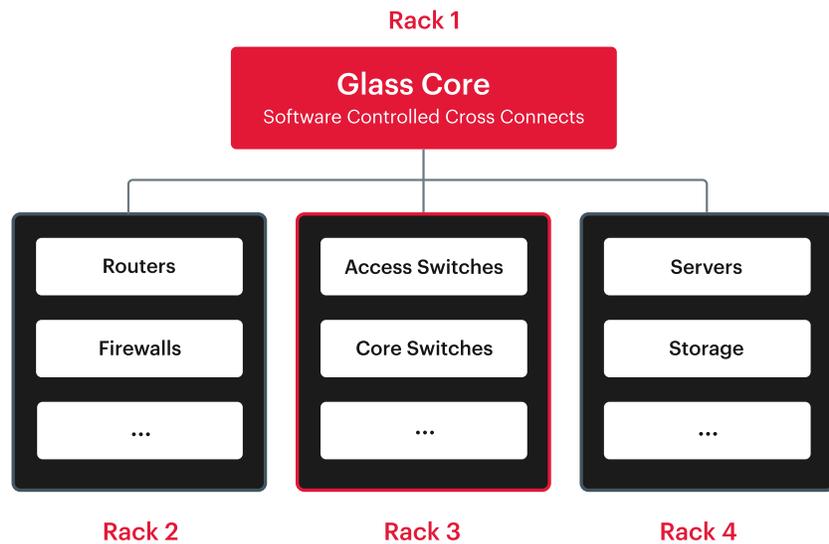oftware agents or port mirroring would be time-consuming and expensive for any large network. Even for those organizations with the time and resources to do so, management of the solution requires a small army of admins. But what if TAP could be available as soon as you plug in a new network device, with built-in functionality?

Routers	Access Switches	Servers
Firewalls	Core Switches	Storage
...	...	...
Rack 1	Rack 2	Rack 3
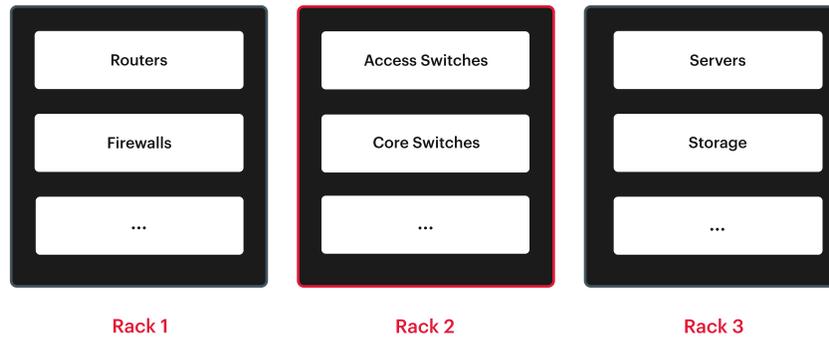
Fiber Mountain's Glass Core

In a Glass Core network, all physical connectivity is centrally managed. All physical network connections from all devices are tied into the Glass Core via Fiber Port Aggregators (FPAs) and Optical Path Exchanges (OPXs), and fro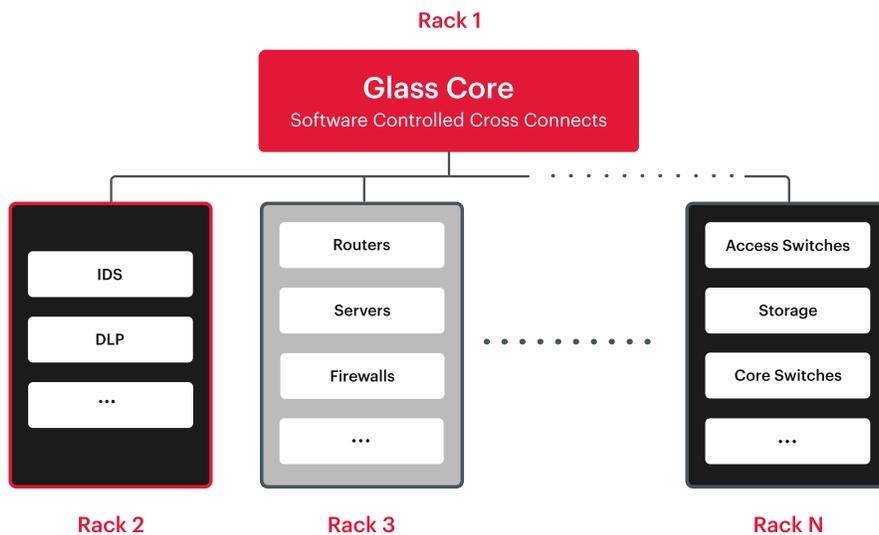m there connections are dynamically managed by the AllPath Director (APD) orchestration software. This allows an admin to route any physical network connection to any number of other devices in the network. This includes TAP of any connection for diagnostic, security or compliance purposes.

Rack 1

Glass Core
Software Controlled Cross Connects

Routers	Access Switches	Servers
Firewalls	Core Switches	Storage
...	...	...
Rack 2	Rack 3	Rack 4

Glass Core TAP

The OPX is designed to regenerate the received optical signals when it forms the cross-connection. This introduces the option of multicasting the regenerated signal to up to 160 ports on one OPX. Using a handful of OPX ports to TAP network traffic passing through the other ports is easy for the network manager to configure, with no need for additional equipment or software.

The below diagram shows a network with various network and monitoring devices connected via the Glass Core. Using APD, network operators can set up TAPs as needed, and can also configure the cross connects to form any desired network architecture, whether leaf-spine, hierarchical or a hybrid.

Rack 1

Glass Core
Software Controlled Cross Connects

IDS		Routers		Access Switches
DLP		Servers		Storage
…		Firewalls		Core Switches
		…		…

Rack 2   **Rack 3**   **Rack N**

Benefits of Glass Core TAP

Plug and Play

Glass Core networks are TAP-ready by default

Non-intrusive

All TAPs are passive

Security

All TAP connections are audible

Documentation

All end-to-end connections are automatically documented

Future-Proof

Can be configured via software for any physical network design

Conclusion

The ability to TAP is a requirement for any large network, and the ability to TAP on demand can be a game-changer. Whether you're building a new network or upgrading an existing one, Glass Core solutions provide the quickest and easiest way to add tapping capabilities in your network. Network tapping does not have to be a pain point – with a Glass Core network, you can TAP anything at any time.