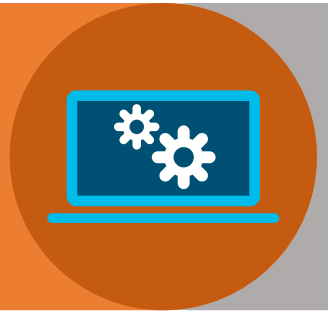
SDWAN Architecture Concepts

WAN Challenges

Efficiency



- Complexity with multiple transport types
- Management of enterprise WAN networks

Experience

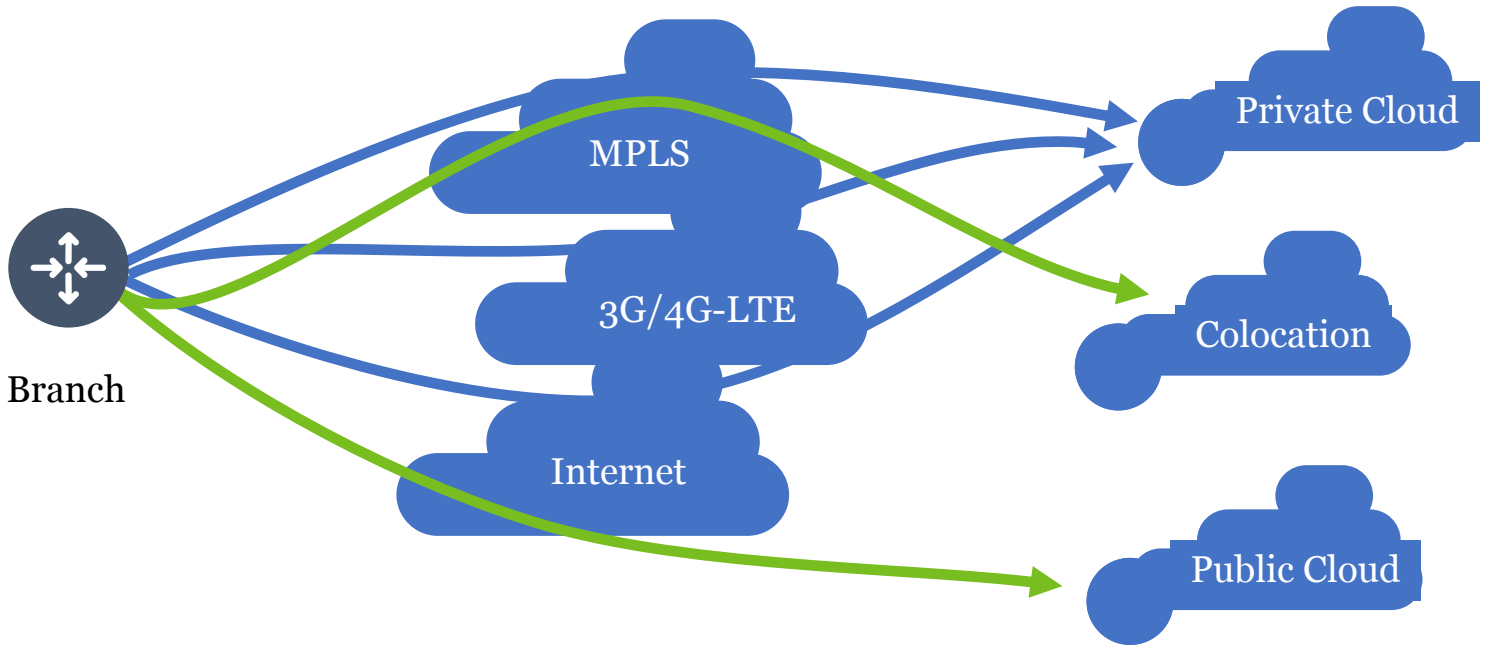
- Need better analytics and visibility into applications and network resources
- Need consistent user experience for applications independent of their location

Security

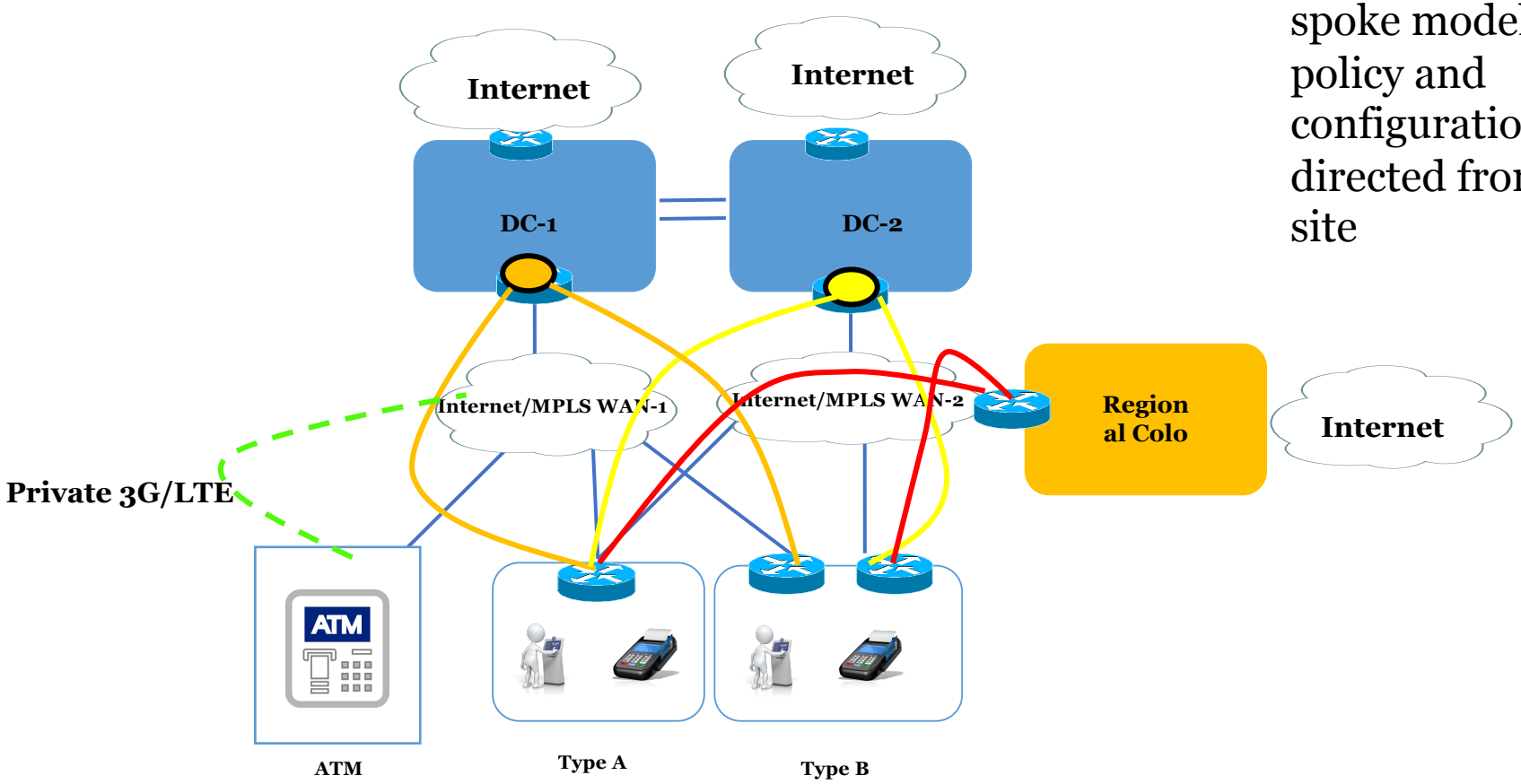
- Security requirements to be better prepared to face changing threats
- Audit and compliance related to the network

What SD-WAN Needs to Do

- Deploy branches in a simple fashion across any transport
- Extend network into public cloud seamlessly
- Secure VPN overlay for private and virtual public cloud access



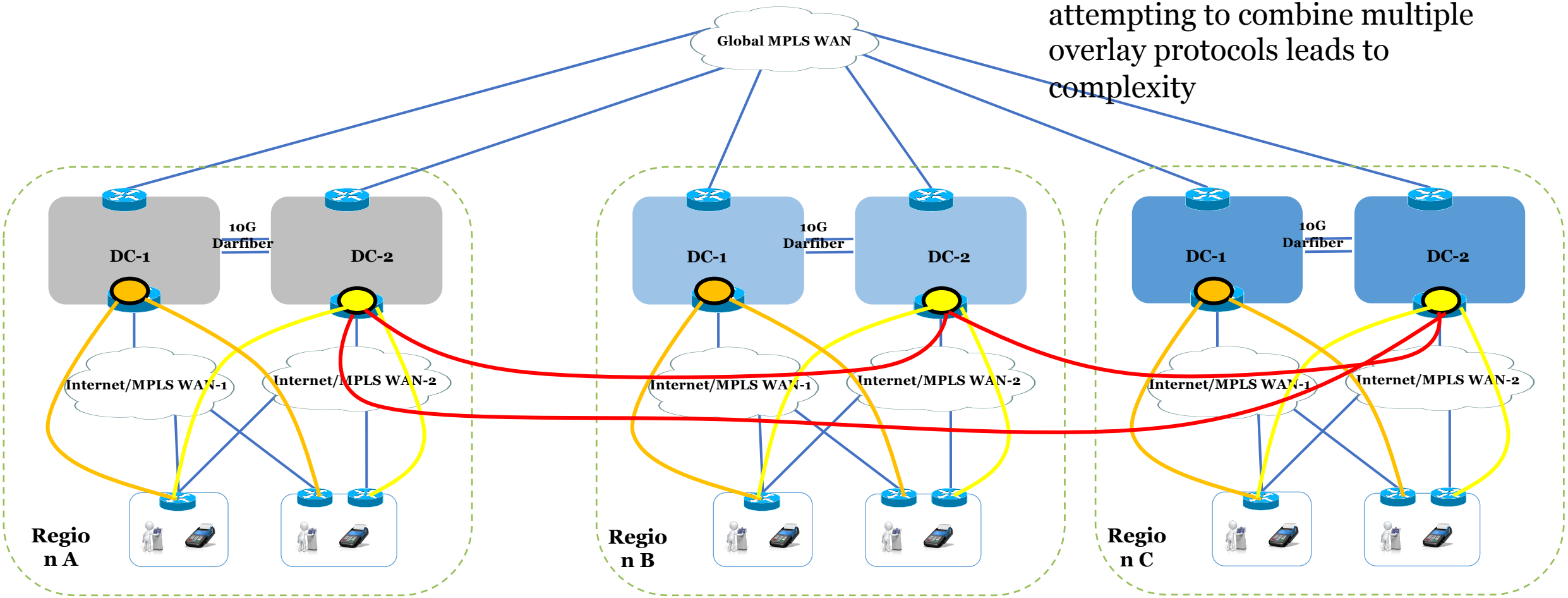
Classical Designs



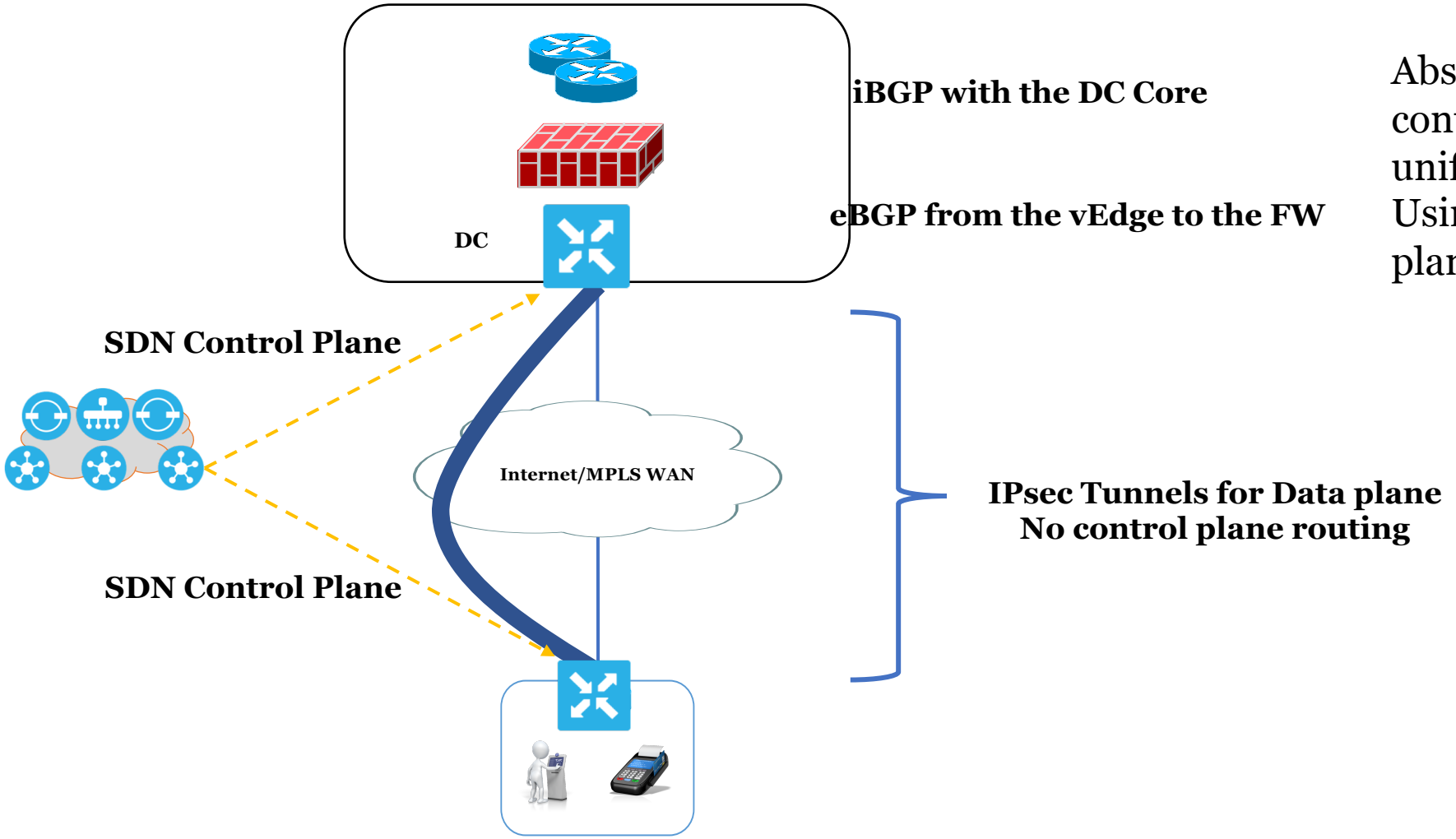
Standard dual hub and spoke model where policy and configuration are directed from the hub site

Classical Challenges

Real world networks are not strictly hub and spoke, and attempting to combine multiple overlay protocols leads to complexity

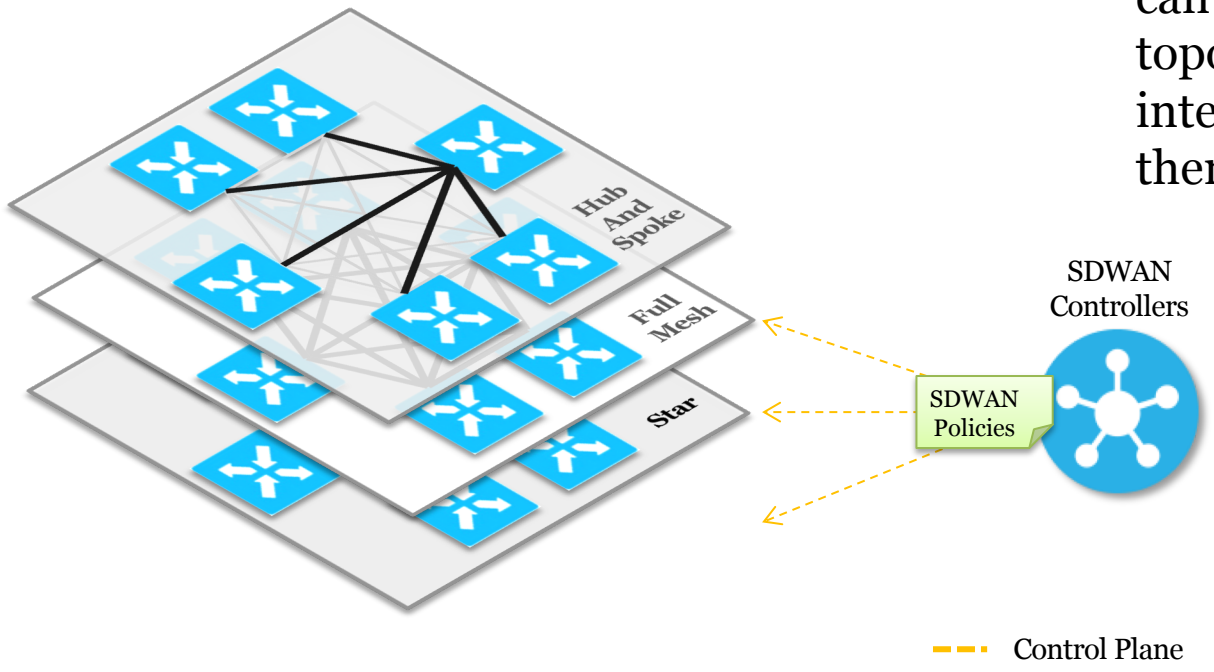


SDN Approach for the WAN



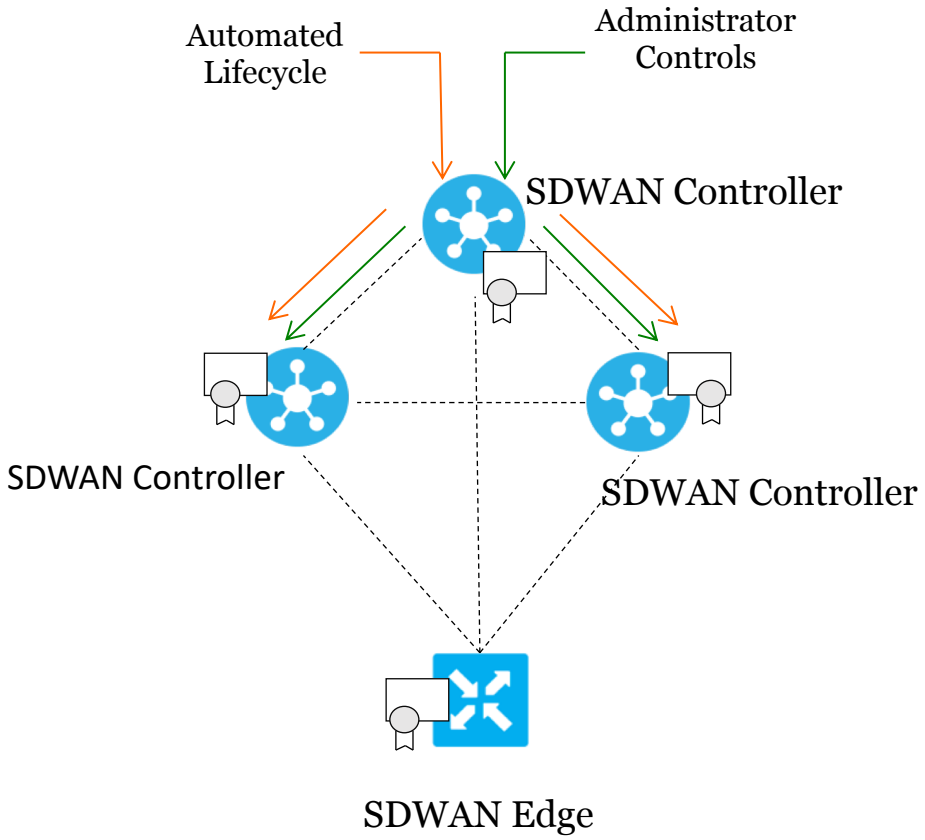
Abstract away multiple control planes to a single unified SDN control plane. Using this build the data plane.

Custom Topologies using SDWAN



Having the ability to program the network as needed, we can now build the kind of topologies we need, and intelligently route traffic over them

Certificates Everywhere

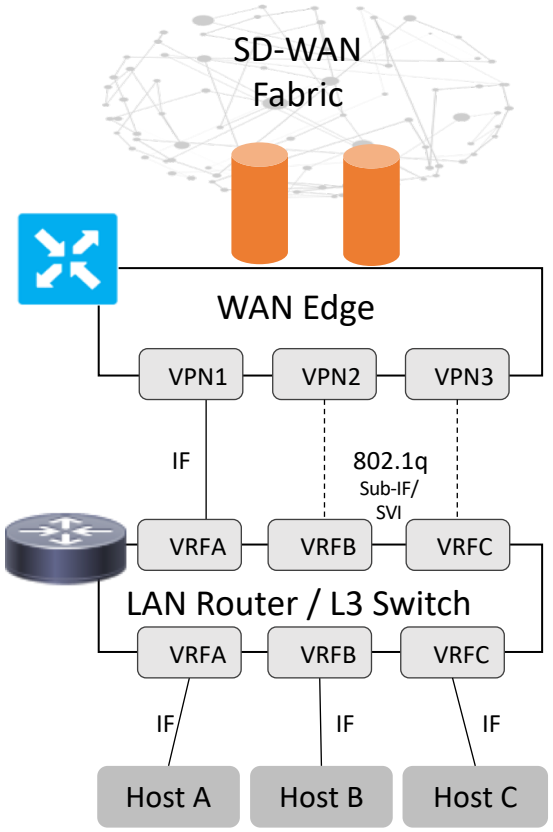


In an increasingly security conscious world, how do we still permit Pre-Shared Keys as the means to establish network connectivity?

The SDWAN approach allows us to transform.

Security and networking coupled together, instead of separately

Segmentation and Encryption



The need to segment traffic is paramount.

Classical techniques are complex and difficult to operationalize.

SDWAN brings simplified segmentation, while using standard IPSec to provide AES-256 everywhere.

Takeaways

- The WAN needs to change to handle the new application patterns
- Classical approaches involve a complicated interweaving of multiple protocols
- SDN approaches to the WAN –(SD-WAN) make it possible to make any kind of topology while increasing the network security model