

Introduction to SD-WAN

Presented By:
Jason Bomar, CCIE #9316
jbomar@la-networks.com


cisco

Gold
Partner

LAnet 

Limitations in Current Design



There are a number of limitations that have arisen in traditional WAN – some have been with us for a long time, some are more recent. These limitations are a large part of what drove SD-WAN Architecture.

Forces Internal and External



More Users

We are seeing the work force expand, but in new and innovative ways: expanding branch offices, contractors, IoT devices, etc.



More Apps

Applications dominate the business landscape, and the ability to support them and allow for an optimal experience is now paramount.



More Threats

We are seeing more advanced attacks, and with the expansion of the branch, diversity of the applications, security now needs to be pervasive.



More Demands

Because of all of these shifts in the speed of business, the demands and expectations have skyrocketed

Welcome to the digital revolution! Make yourself at home, it might be a while!

Key Factors to Align To

User Experience

- Web and cloud app (O365 etc.) is new norm
- Delays in bring up circuits/deploying sites

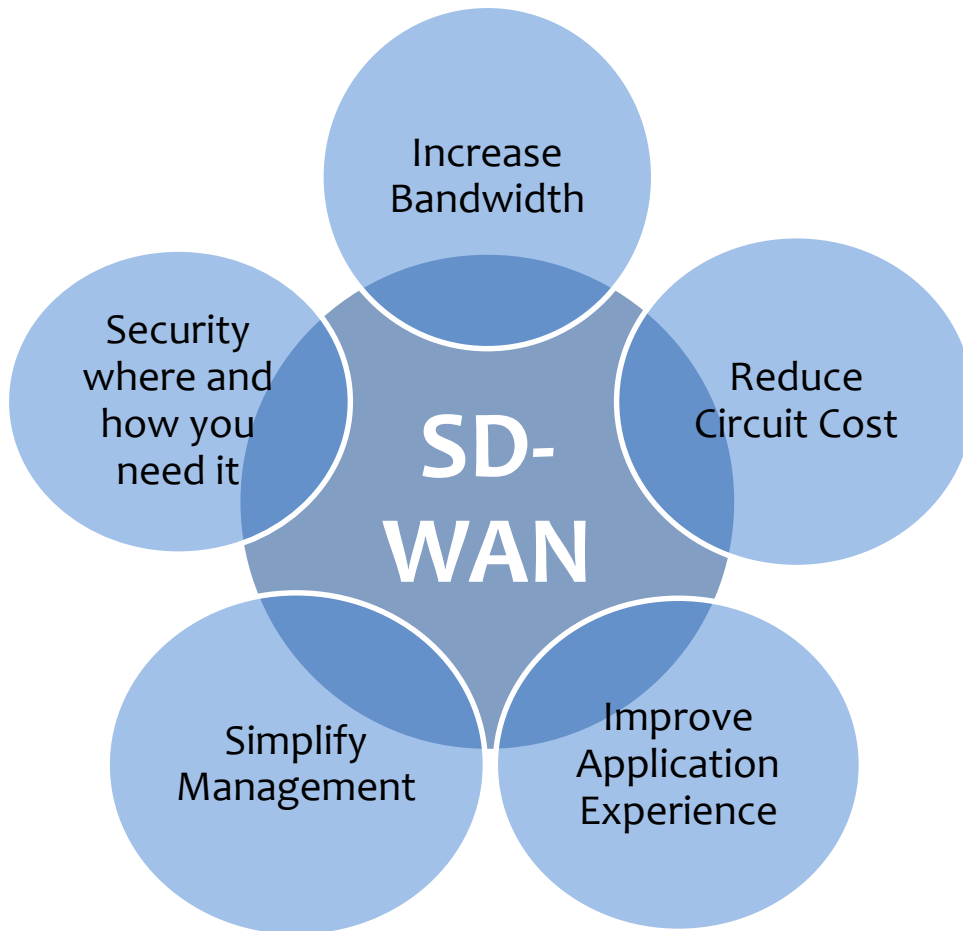
Operational Costs

- Box-by-box management
- Expensive bandwidth in MPLS

Security Challenges

- SaaS drives “Internet everywhere”
- Increasing count of non-traditional devices

Is SD-WAN Real?



By the end of 2019, 30% of enterprises will have deployed SD-WAN technology in their branches, up from less than 1% today*

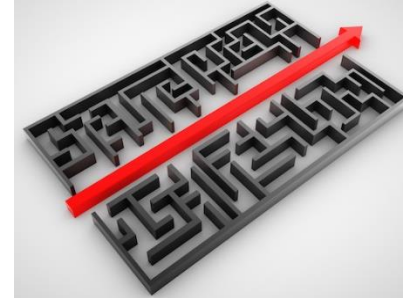
* Source: Gartner Predicts 2016: Enterprise Networks and Network Services, December 2015

How SD-WAN Addresses These Areas



Improve Application Performance

- Provide better application experience regardless of where the application resides
- Simplify QoS/QoE



Reduce Complexity

- Simplify deployment with no/low touch
- One portal to manage/operate all sites



More Bandwidth for Lower Cost

- Whether this is hybrid WAN or all Internet
- Provide users and apps with the bandwidth they need



Security Where You Need It

- Local Branch Security
- Service Chaining
- Enable SaaS access in a safe and secure manner

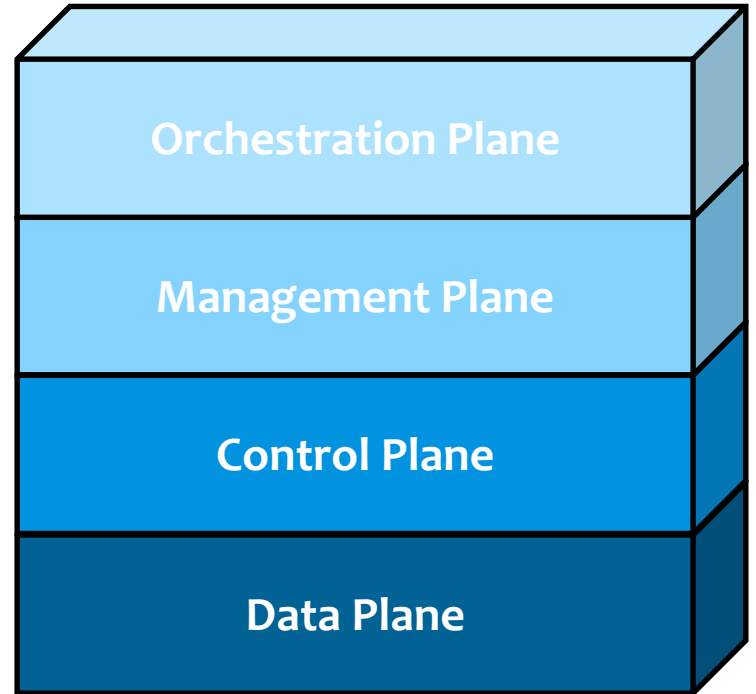
SD-WAN Definitions

What is SD-WAN:

SD-WAN is the approach to building and designing a WAN utilizing SDN techniques to optimize and automate, as well as protect, traffic between diverse locations.

How SD-WAN does it:

Using a cloud based controller, you create an overlay network for building the encrypted tunnels, define your applications, how to treat them, where your sites are, etc. This portal/controller because the critical lynchpin as you now manage and operate the WAN from there.



SD-WAN Benefits

Operational Simplicity

Low/No Touch Provisioning

Centralized Monitoring and Visibility

Ineroperates With Legacy Environment

WAN Flexibility

Carrier Agnostic

Transport Flexible (MPLS, Cable, etc.)

Intelligent Link Utilization

Cloud and Application Awareness

Application Based Traffic Steering

IaaS and SaaS Support

Analytics and Reporting

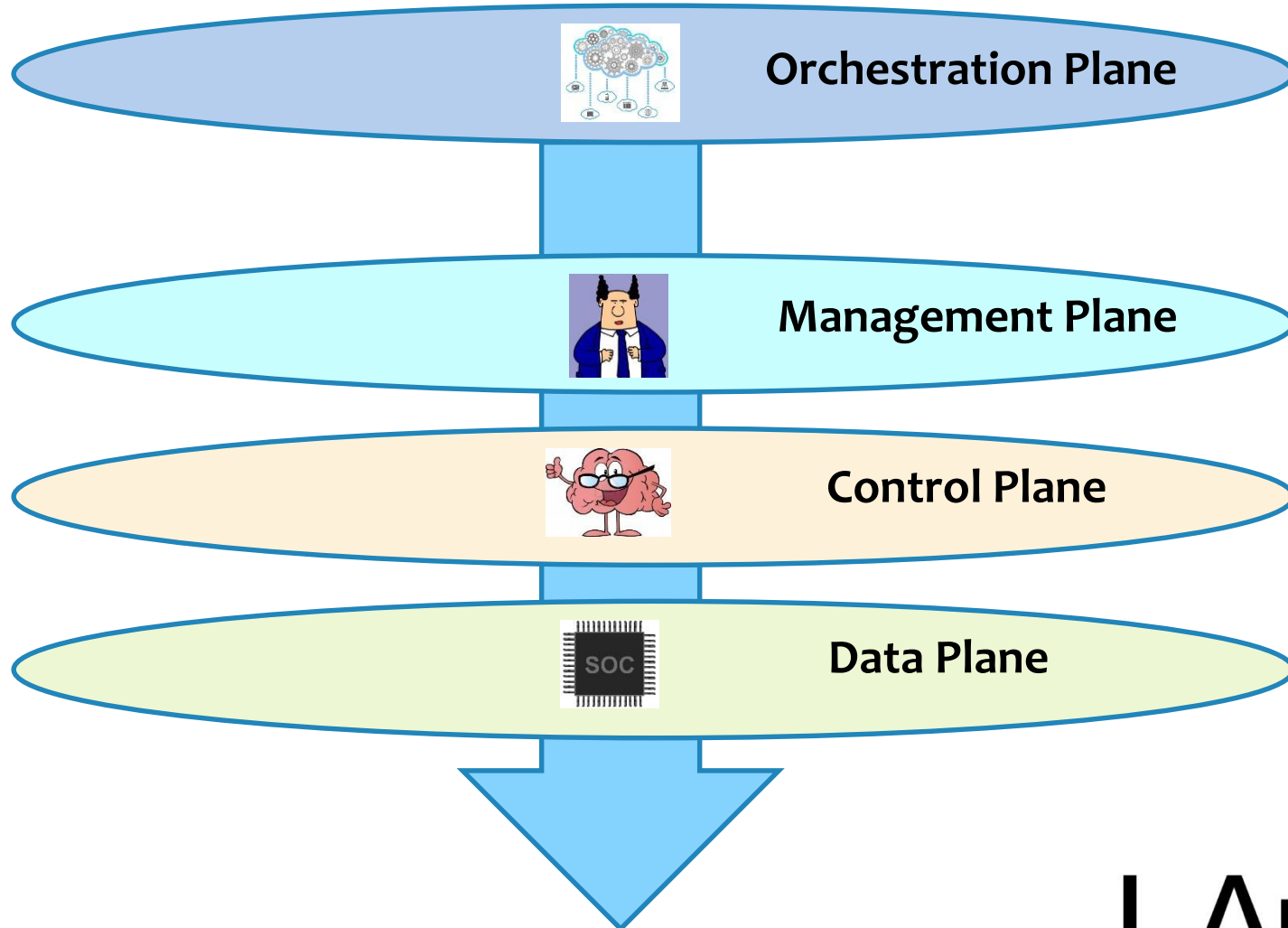
Secure and Routed Infrastructure

Centralized Control

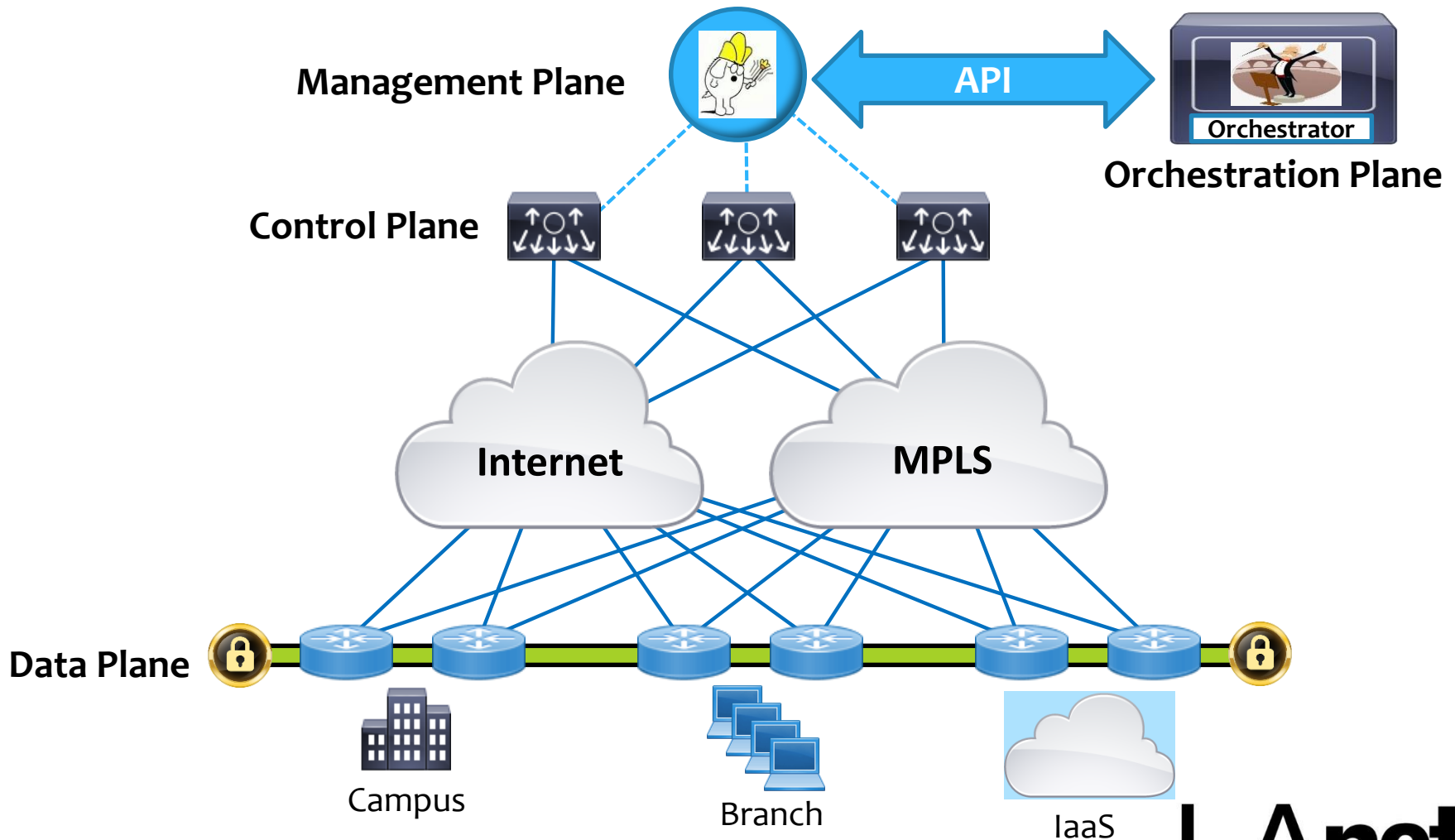
Secure Connectivity Between Sites

Distributed Forwarding

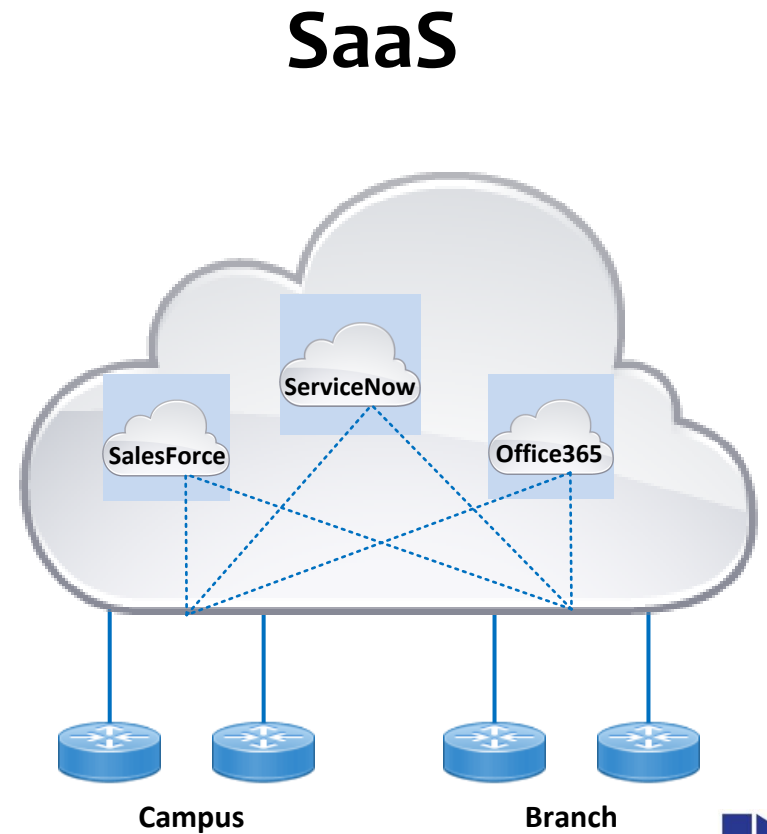
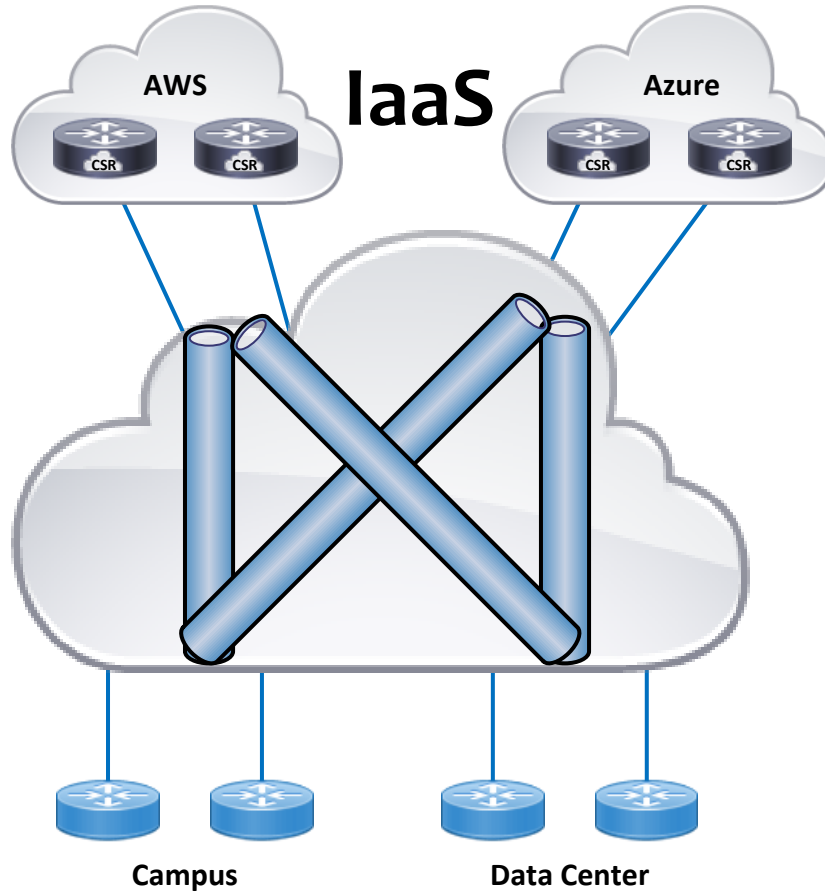
SD-WAN Simple Architecture



SD-WAN Detailed Architecture

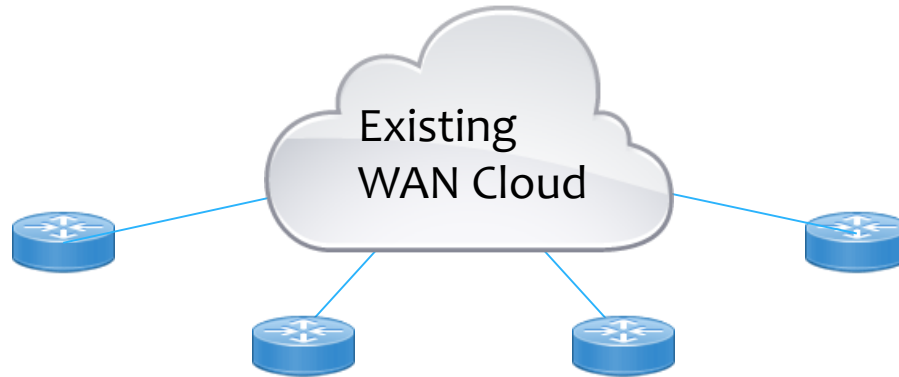


Integrate with the 'Cloud'



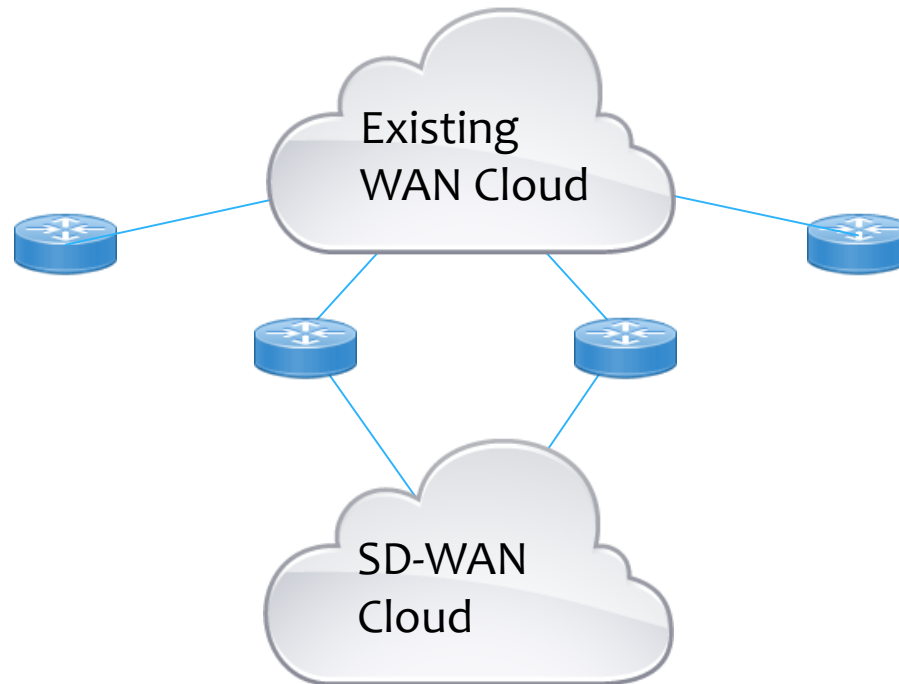
Migration Thoughts

Phase 0



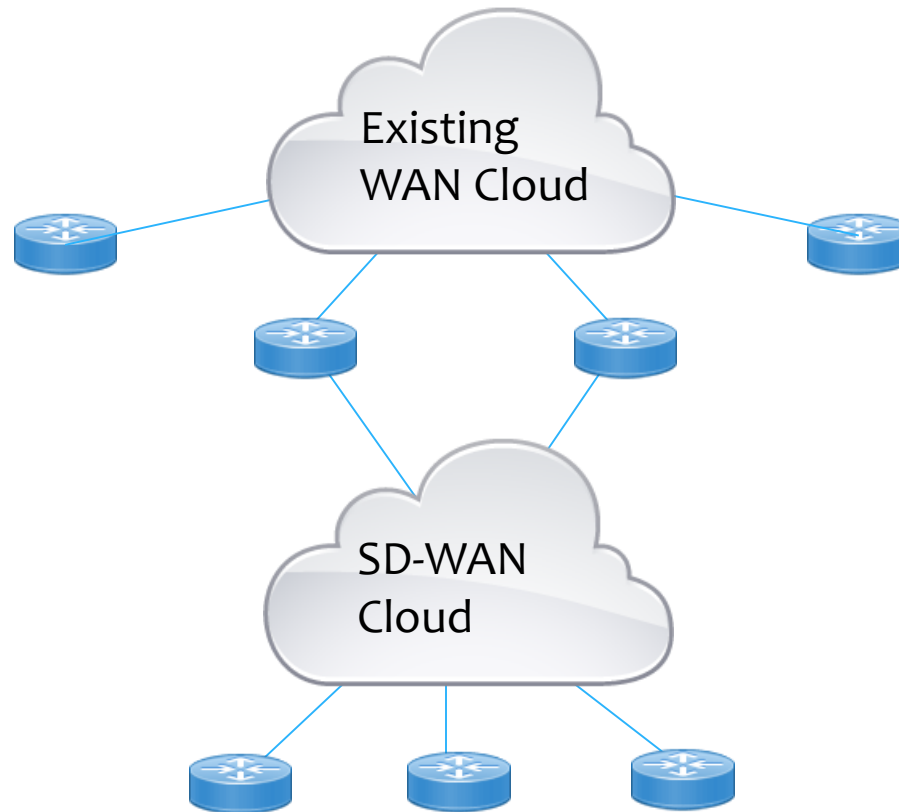
Migration Thoughts

Phase 1



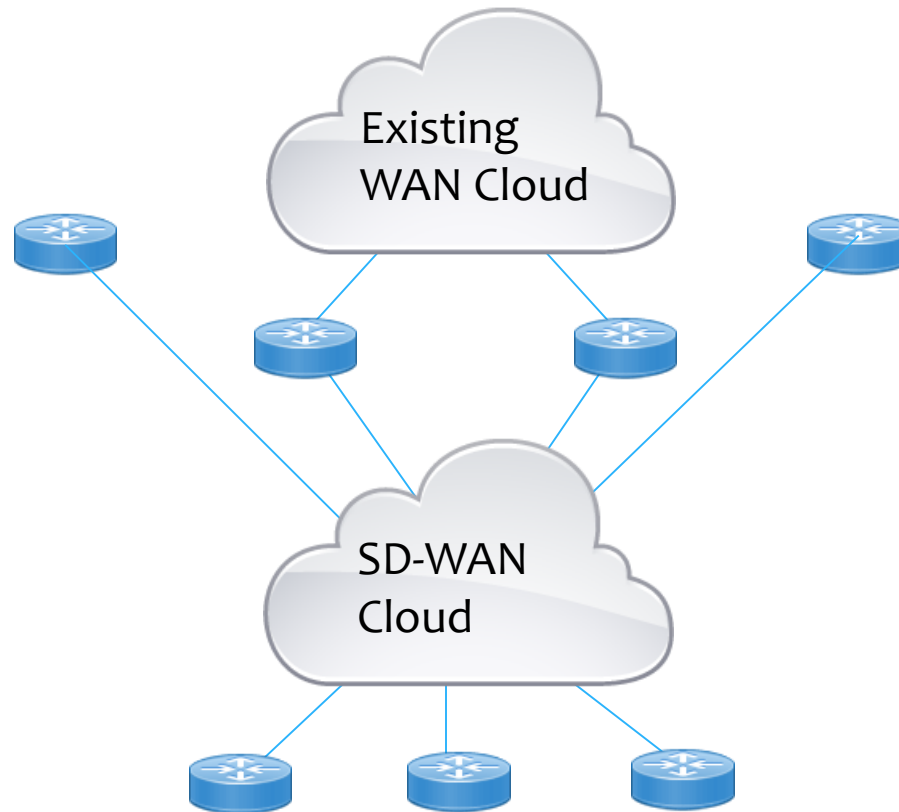
Migration Thoughts

Phase 2



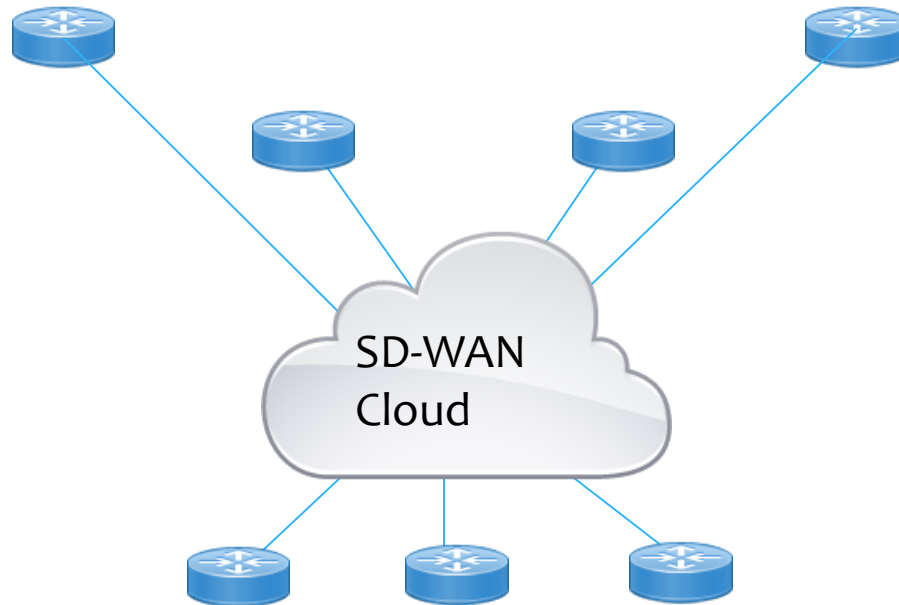
Migration Thoughts

Phase 3



Migration Thoughts

Phase 4



Key Considerations and Questions

- * Topology and Segmentation Support
- * IaaS and SaaS Support/Integration
- * Routing Protocol Support
- * Application Awareness
- * Service Insertion Support
- * Supports Transport Independence
- * Management and Orchestration Support
- * Key Management Between Endpoints

Helpful Links

- <https://www.sdxcentral.com/sd-wan/definitions/software-defined-sdn-wan/>
- <https://www.cisco.com/c/en/us/solutions/enterprise-networks/sd-wan/index.html>
- <http://www.esharp.net/introduction-to-sd-wan/>

Thank you for your time!!


cisco

Gold
Partner

LAnet 