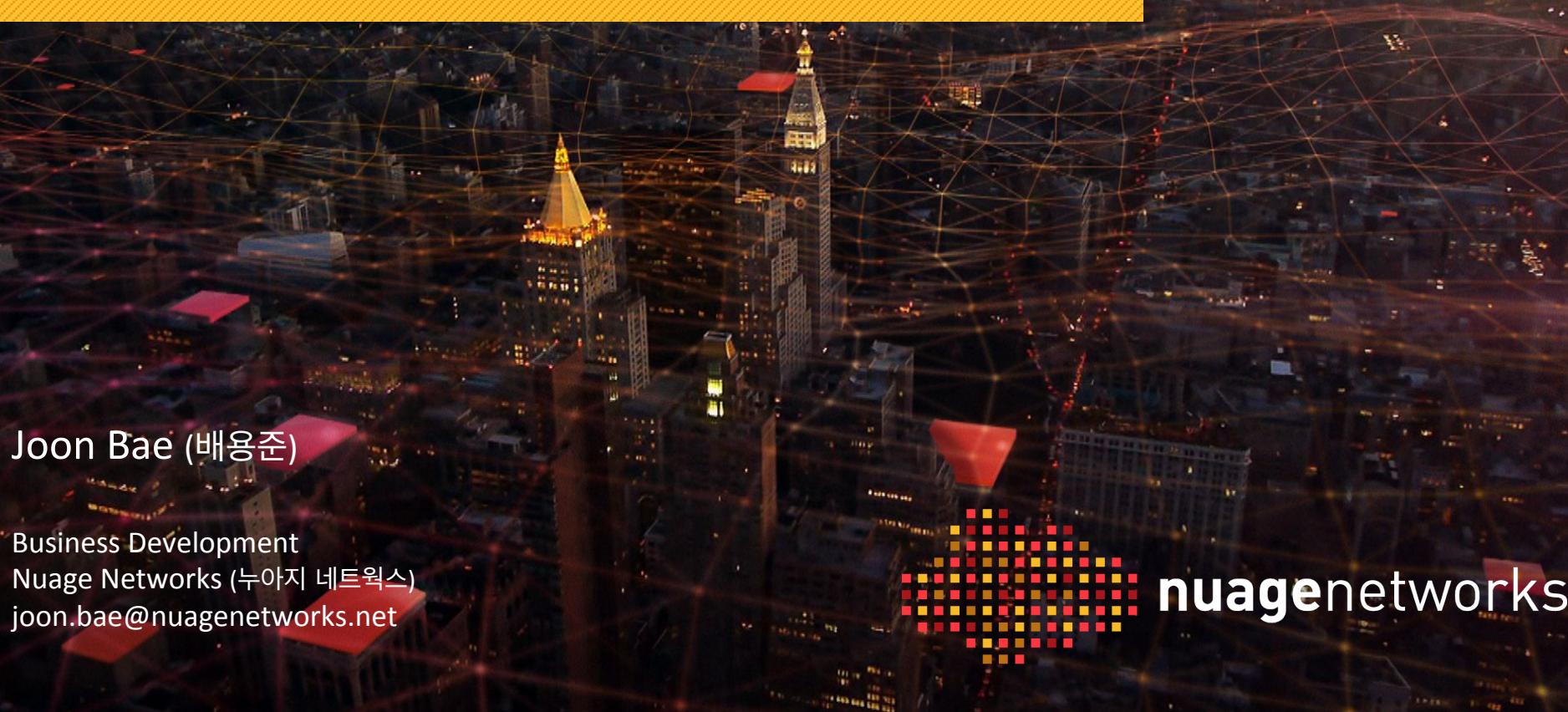


Cloud-ready Network: Nuage Networks



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Pets & Cattle

Pattern: Scale-out, not UP

Scale Up: (Virtual*)
Servers are like pets



garfield.company.com

You name them
and when they get
sick, you nurse
them back to
health

Scale Out: (Virtual*)
Servers are like cattle



web001.company.com

You number them
and when they get
sick, you shoot
them



attribution: Bill Baker, Distinguished Engineer, Microsoft
* added by yours truly ...

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cloudscaling

Don't forget the herding dogs



- The herding dogs keep the cattle safe
- The control plane matters

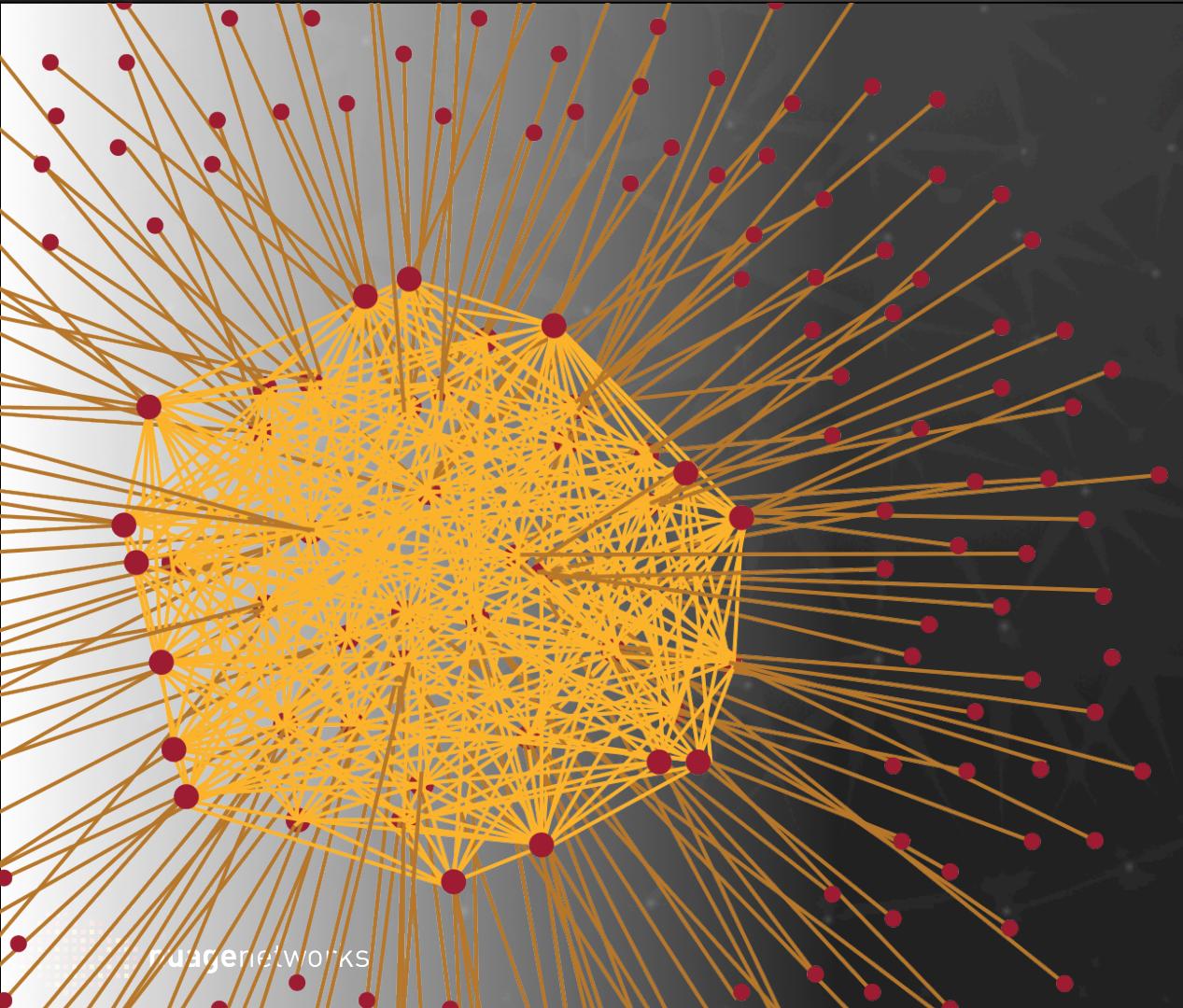
(<http://javacruff.wordpress.com/2014/06/18/168k-instances/>)

Nuage Networks Overview

- Nuage is based in Silicon Valley with a team around the world
- An Alcatel-Lucent venture focused on **datacenter network evolution** for the cloud era
 - Leverage Alcatel-Lucent infrastructure and key technologies
- Create an **Abstraction & Automation** layer between Network features and hardware equipment
- Policy-driven **networking design** reflecting business directives not network protocols

Explosion

- Server & Storage are heavily virtualized
- More endpoints
- Dynamic connections
- Pretty much everything changed....



The “Consumption shift”

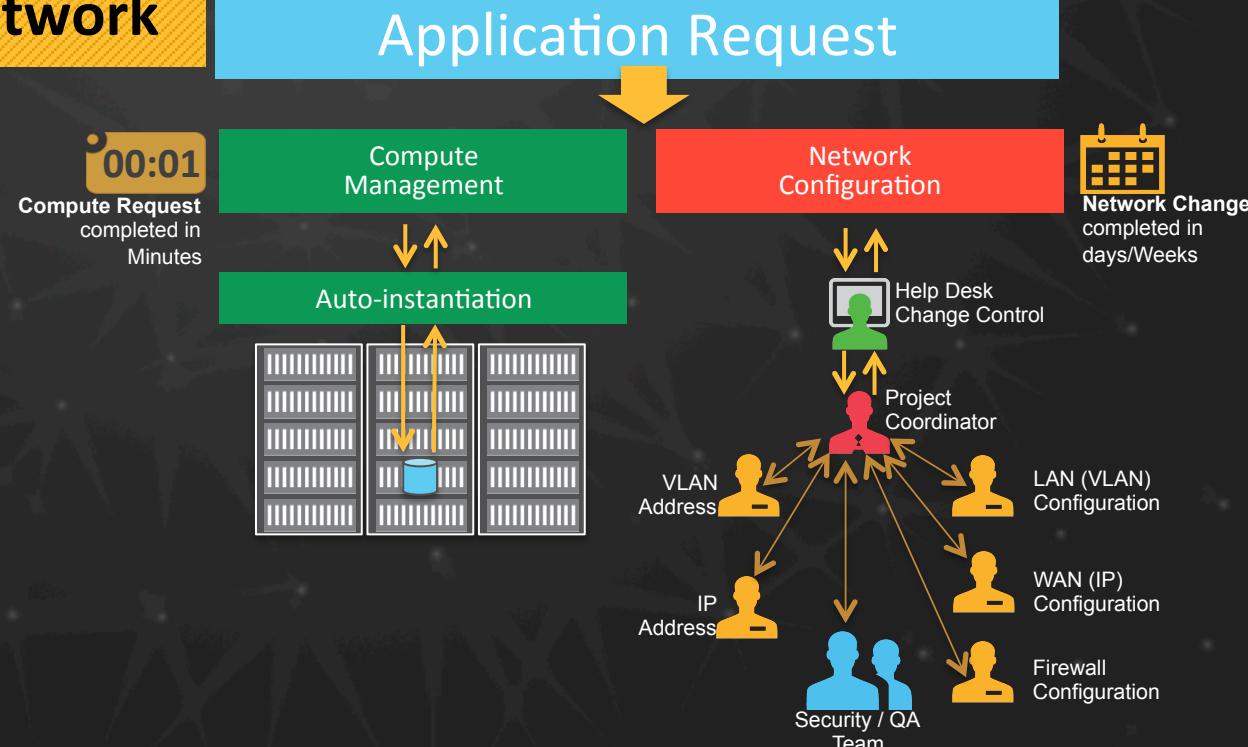
- Cloud is changing the way technology is being consumed
- From “order and wait”
- To “instant gratification”



Consumer expectations are shifting

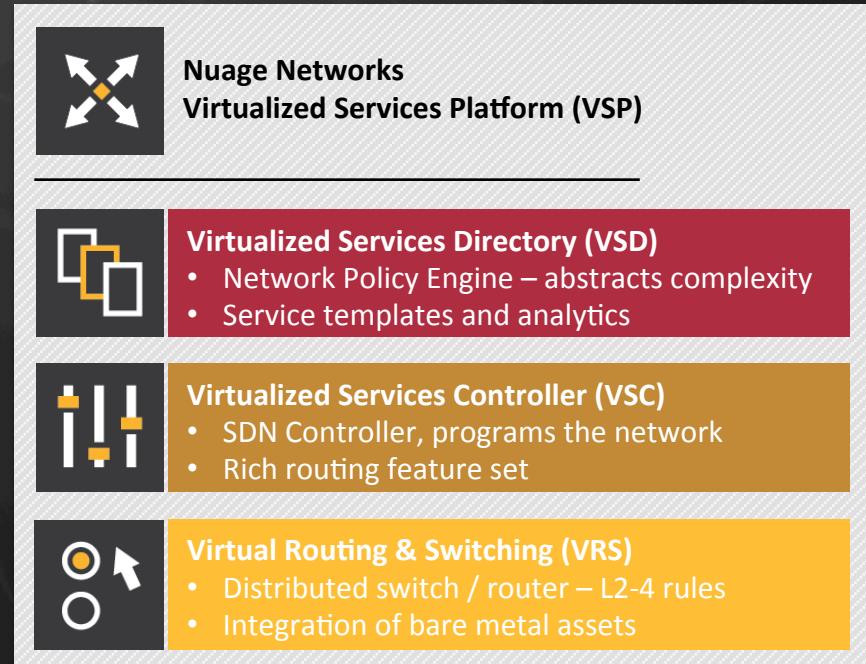
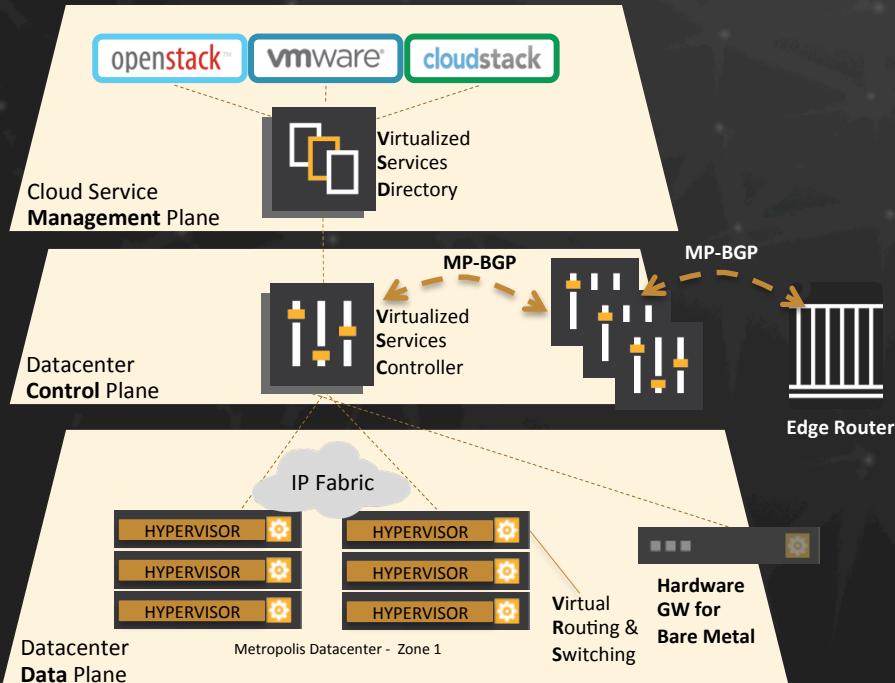
Current Datacenter Network

- Compute is Virtualized
 - Available in Minutes
- Network is Partially Virtualized
 - Configuration takes Days/Weeks



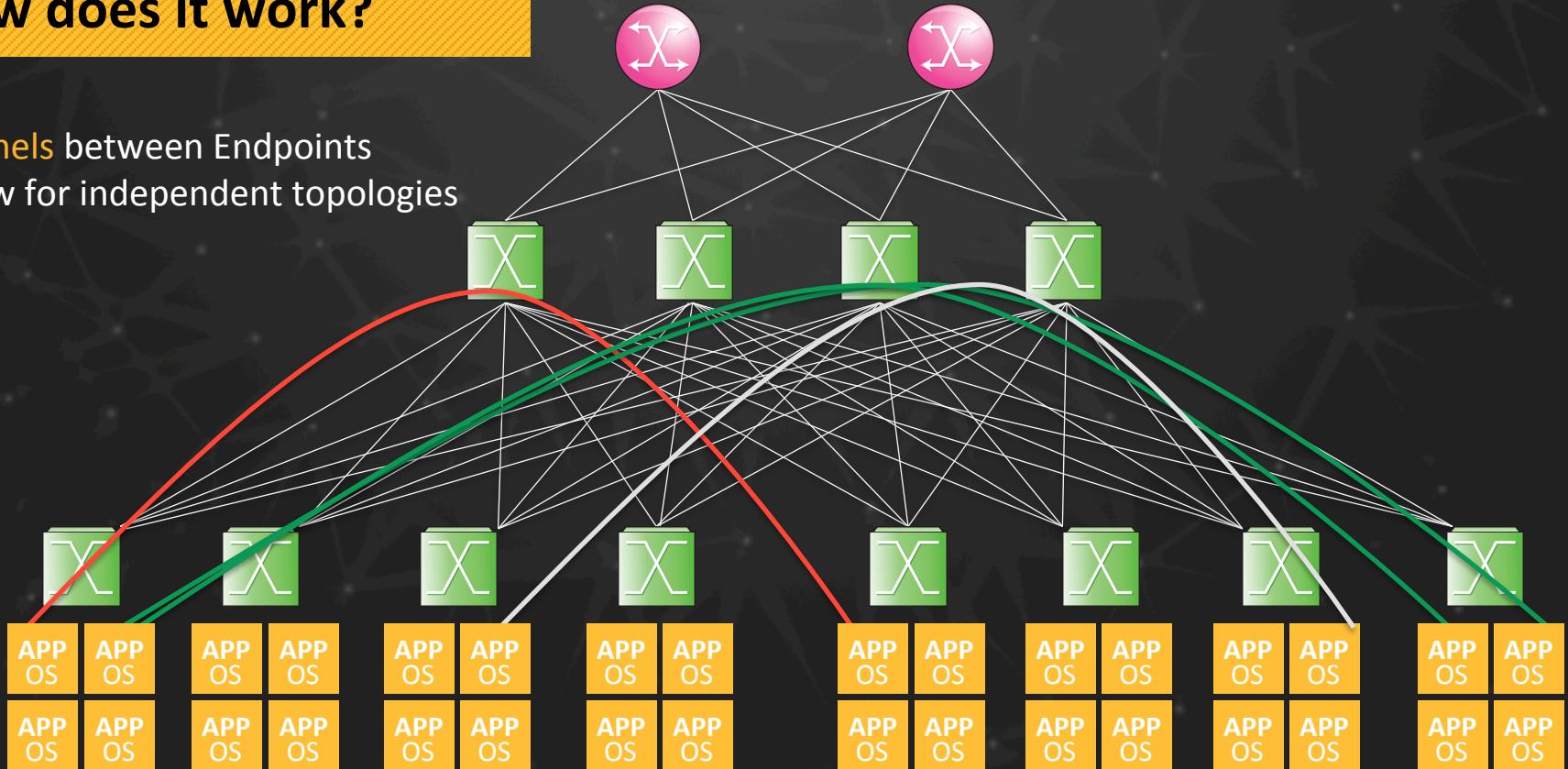
Service velocity is hindered by manual network process

Nuage Networks Virtual Services Platform



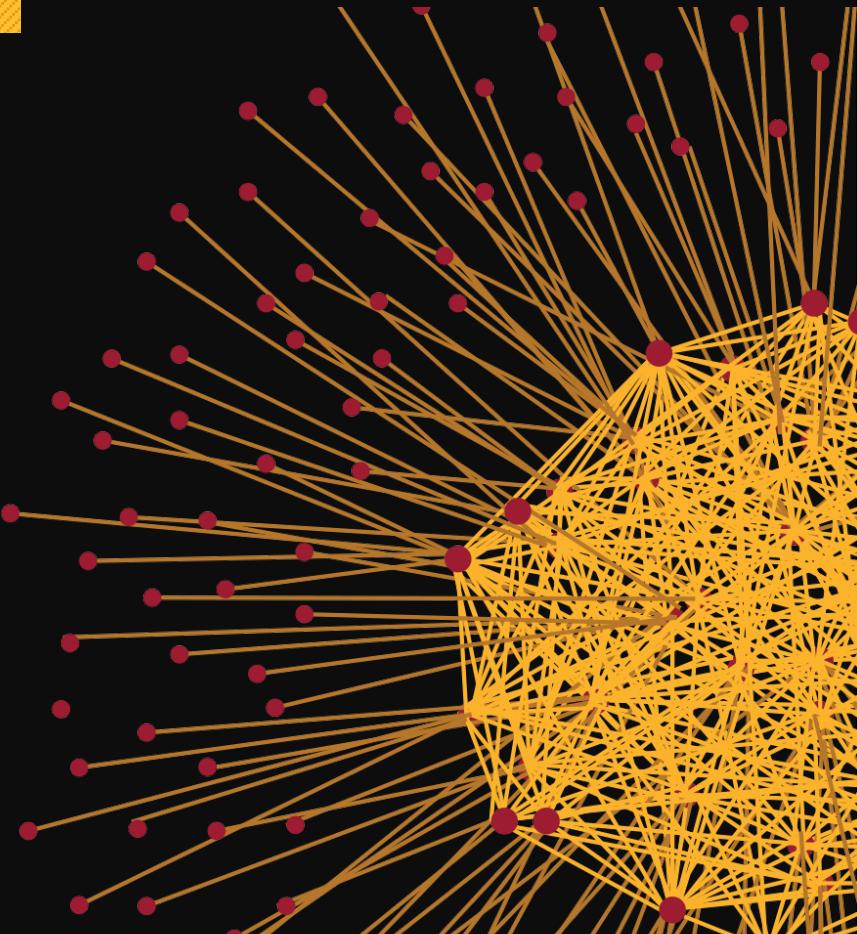
How does it work?

Tunnels between Endpoints
allow for independent topologies

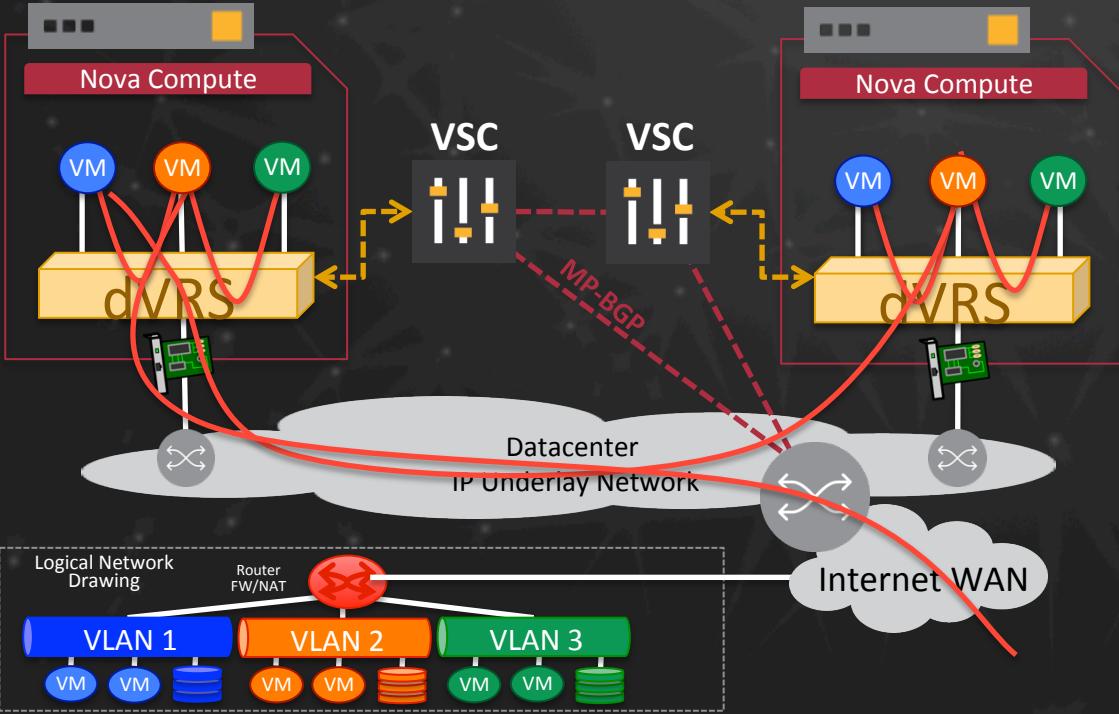


OpenStack Cloud and beyond

- Scalable Federated Control Plane
- Advanced Policy Framework
- Multi-hypervisor & Multi-CMS Support
- Scalable Security Group Functionality
- Distributed L2-4 Services
- Bare Metal/Existing Infrastructure Integration
- Direct WAN Integration using BGP E-VPN

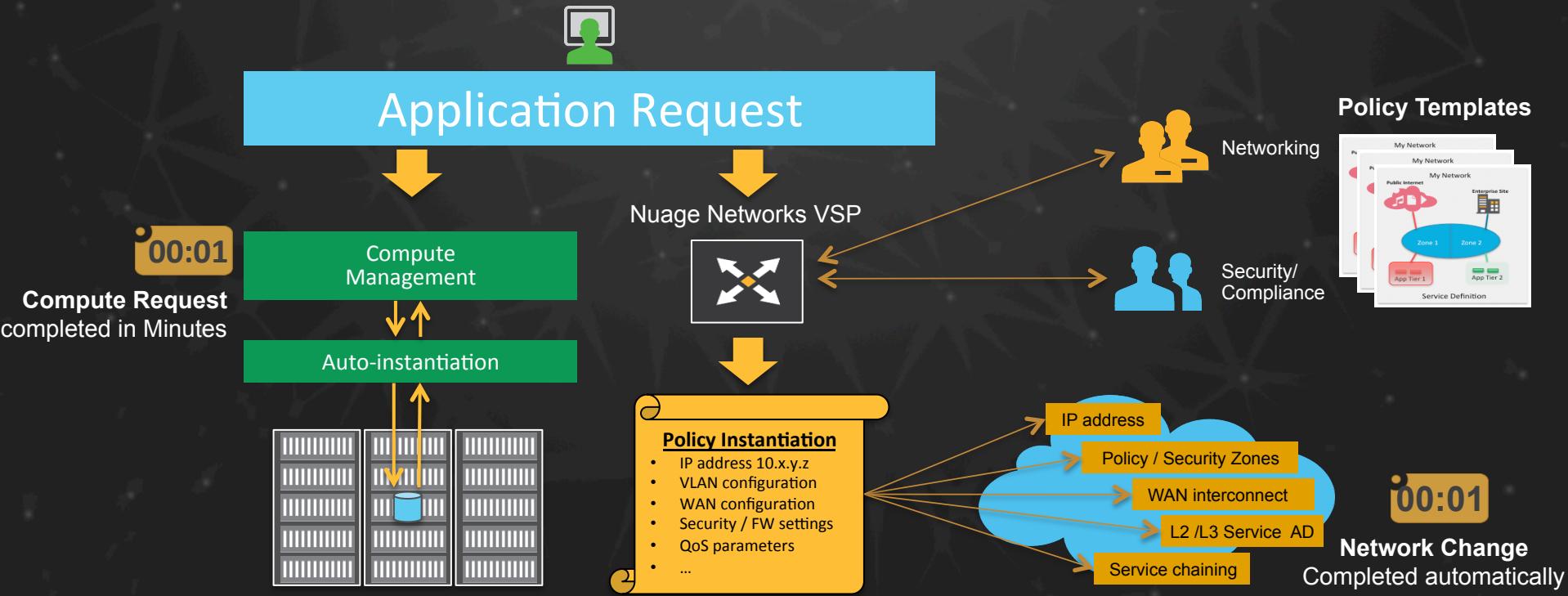


Advantages of Nuage / Neutron Solution



- No congestion issues
- All traffic takes a direct path reducing congestion, lowering latency, and providing consistent application performance
- East/West between local VM's can be routed locally
- East/West between VM's on different hosts sent directly
- North/South traffic is sent directly to a PE/GW router

Nuage Networks policy templates and role-based workflow



Service velocity is not hindered by manual network process

Nuage is committed to an Open, Best of Breed Ecosystem

Any Cloud Management System

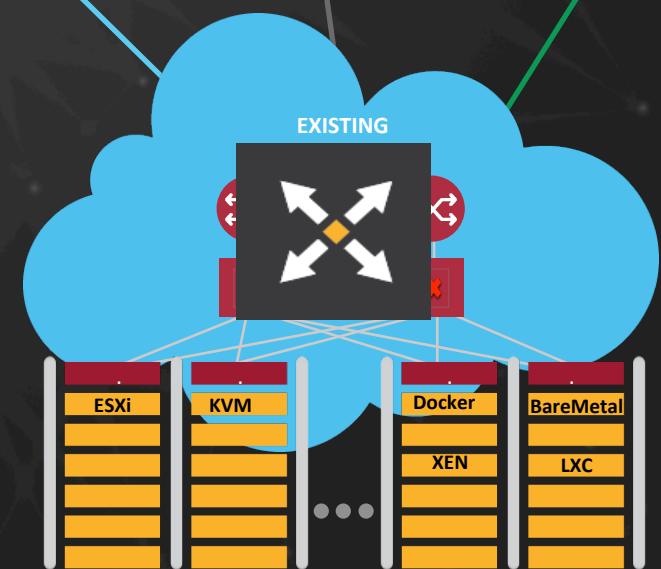
Any Datacenter Network Infrastructure

Any Server or Hypervisor or Container

openstack™

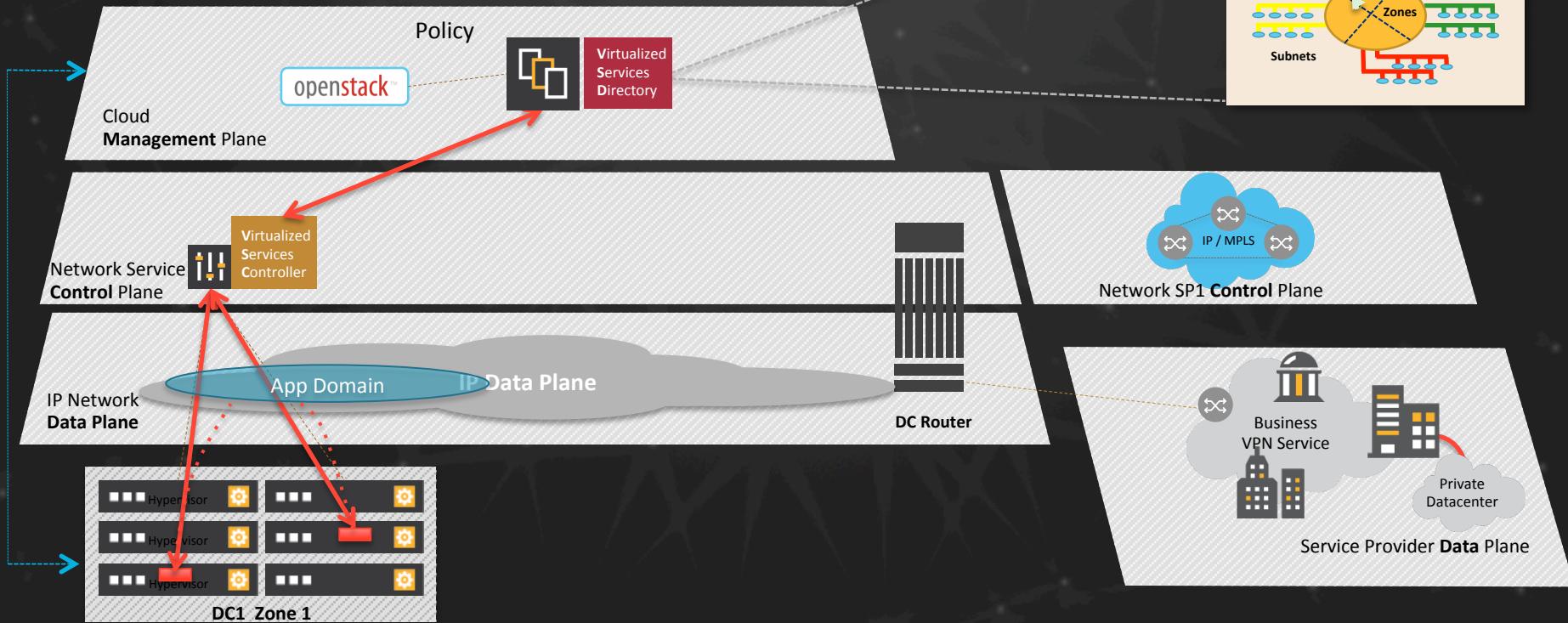
vmware®

cloudstack

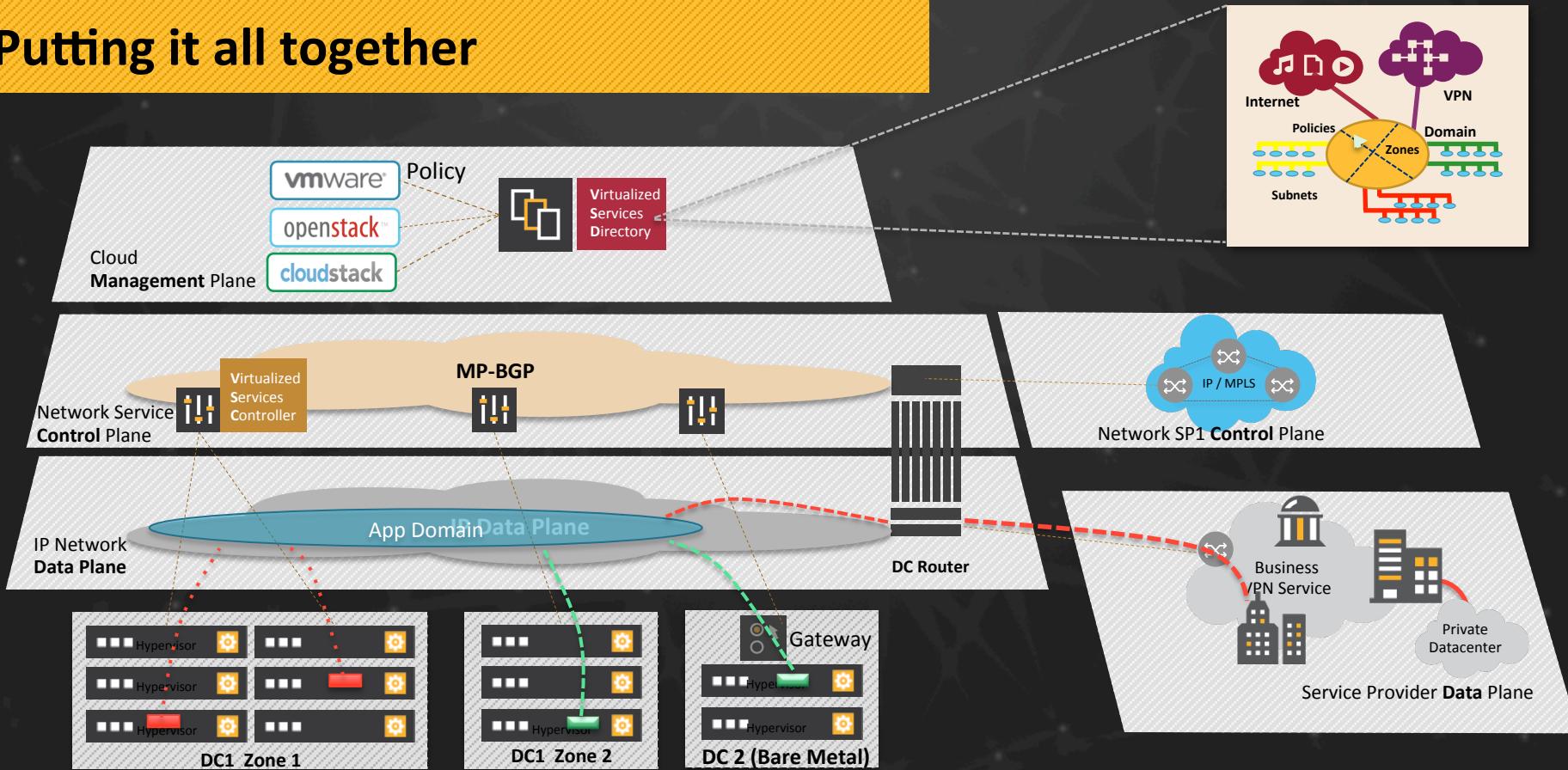


Consistent capabilities across all platforms

Putting it all together



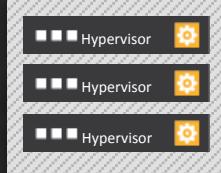
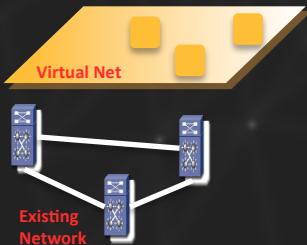
Putting it all together



A SDN Journey..... Delivering value over the network

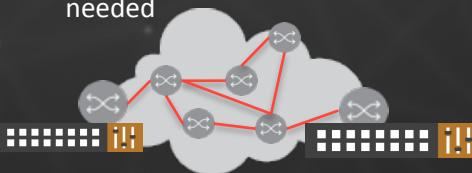
Value

- 40% Increase asset utilization
- 50% Opex reduction
- 10x improve service time
- Build “modern networks” on top of your existing infra
- Extend life of Net HW and increase utilization
- Break dependency between features and HW supplier



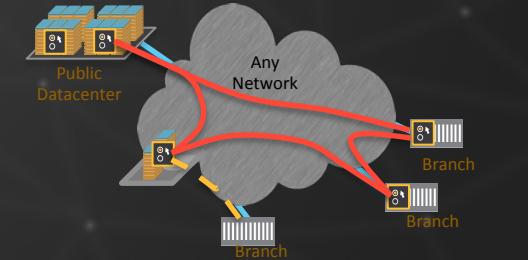
Datacenter

- Increase resiliency
- Enable Hybrid/Public Cloud
- “Follow the sun” apps. Support where you move workloads where/when needed



WAN

- Allow workloads to move from one Datacenter to another
- Keep the same net profile/security regardless of the location



Branch locations

Time

- Re-Use existing network infrastructure
- COTS hardware CPE
- Advanced features in SW versus bounded to HW
- Central/common policy engine reflecting business values vs net capabilities
- Automated bootup process



Nuage Networks
Virtualized Service Platform (VSP)

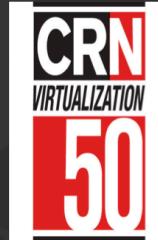
Nuage Demo...

Nuage Momentum

Gartner

Nuage provides an SDN solution that nicely stitches the overlay & underlay and **cleanly extends beyond a single datacenter...**"

– Andrew Lerner



Nuage is one of the very best of the SDN approaches, with more strategic potential than perhaps anything out there from anyone of any size..." – Tom Nolle

"... there will be significant forward movement in SDN in 2014, and **Nuage Networks is among the best positioned** to make the most immediate impact." – Tim McElligott

Stratecast

FROST & SULLIVAN

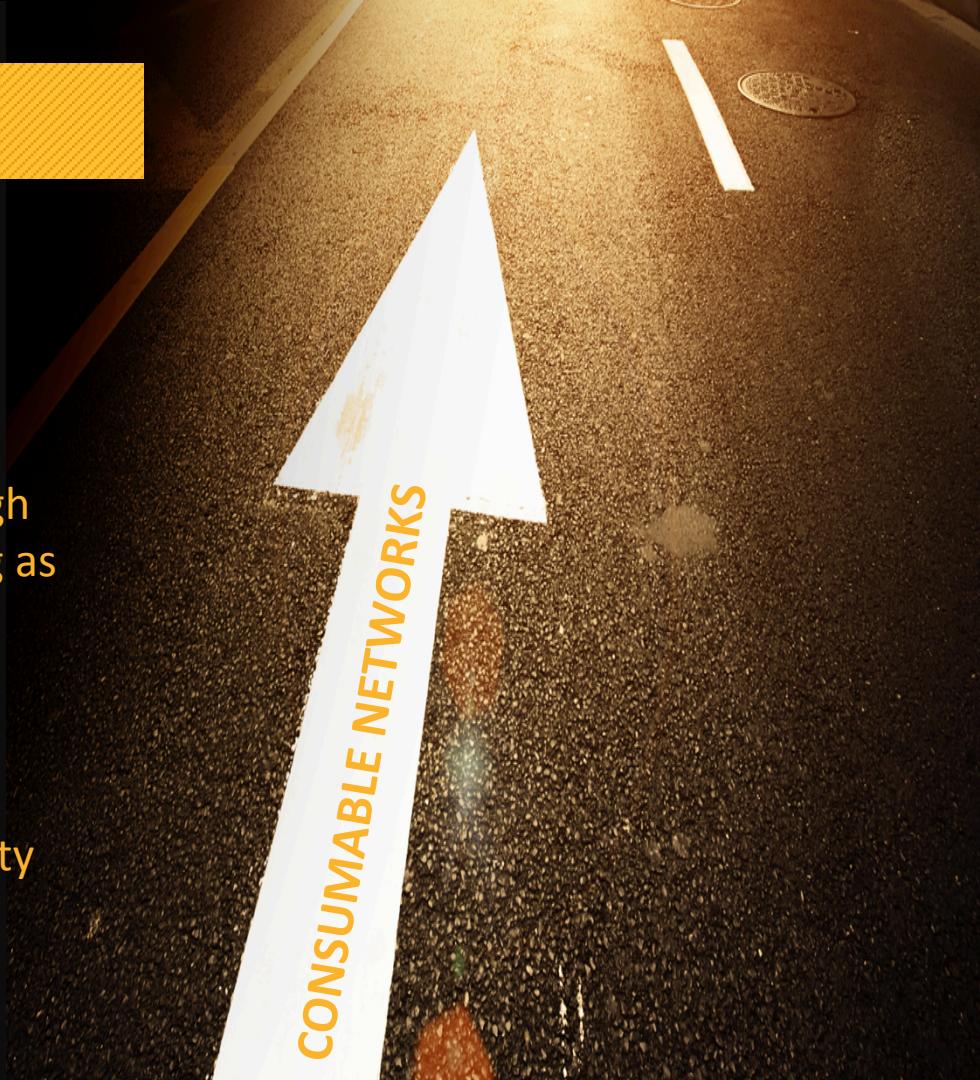


Publicly Announced Nuage Wins



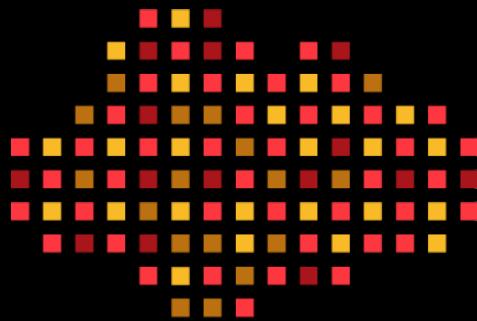
In Conclusion

- Moving networking features closer to the applications
- Neutron is by far not the bottleneck in a high performance OpenStack installation as long as the right SDN system is used
- Accelerating Hybrid Cloud
- Major OPEX saving
- Policy driven approach for enhanced security
- Easily consume networks!



CONSUMABLE NETWORKS

Delivering the Power and Value of SDN **NOW**



nuagenetworks