

VMware NSX Service Mesh

Overview

KubeCon NA
San Diego

November 2019

VMware Multi-Cluster, Multi-Cloud Strategy

VMware Tanzu

VMware NSX



Build



Run



Manage



Connect



Protect



VMware's Enterprise-Class Service Mesh Vision



Discovery



Visibility



Control



Security



Users



Services



Data



Kubernetes



Public Clouds



VMs



SaaS



Serverless

The Ideal Solution: Enterprise-Class Service Mesh

Consistent visibility, control, and security across any cloud

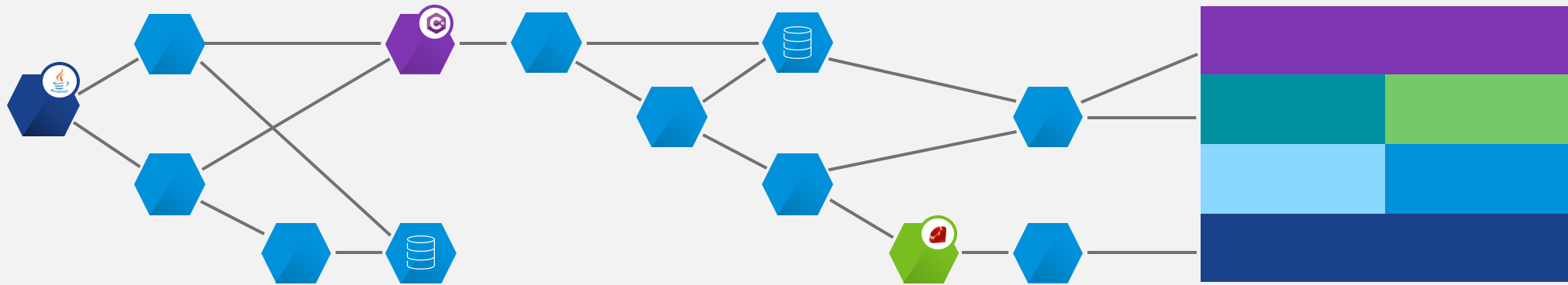
Multi-platform and multi-cloud federation

Centralized visibility and remediation

Global policies for users, services and data

Centralized security, audit, and compliance

No changes to application code



Kubernetes



Public Clouds



VMs



SaaS




Serverless

NSX Service Mesh Use Cases

Across Users, Services, and Data

Agility



Hybrid and Multi-Cloud Application Patterns

The icon shows two clouds connected by a line. The top cloud contains three hexagons, and the bottom cloud contains three hexagons and a database cylinder.


Business Continuity



High Availability and Failover

The icon shows a central circle at the top with two lines leading down to two dashed boxes. Each dashed box contains three hexagons.

Security



E2E Encryption for Compliance

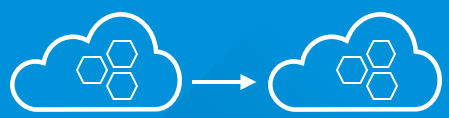
The icon shows a person icon on the left, an arrow pointing to a hexagon, another arrow pointing to a database cylinder with a padlock icon above it.

Visibility



Visibility for DevOps, SREs, and SecOps

The icon shows a person icon on the left, a magnifying glass icon above a hexagon, and a database cylinder on the right.



App Mobility and Migration

The icon shows two clouds connected by an arrow. The left cloud contains three hexagons, and the right cloud contains three hexagons.




App SLO Policies & Intelligent Autoscaling

The icon shows a dashed box containing a cluster of hexagons.



Context-based Security Policies w/ Auditing

The icon shows a person icon on the left, an arrow pointing to a hexagon with a warning triangle above it, and another arrow pointing to a database cylinder.



Controlled Service Deployments and Upgrades

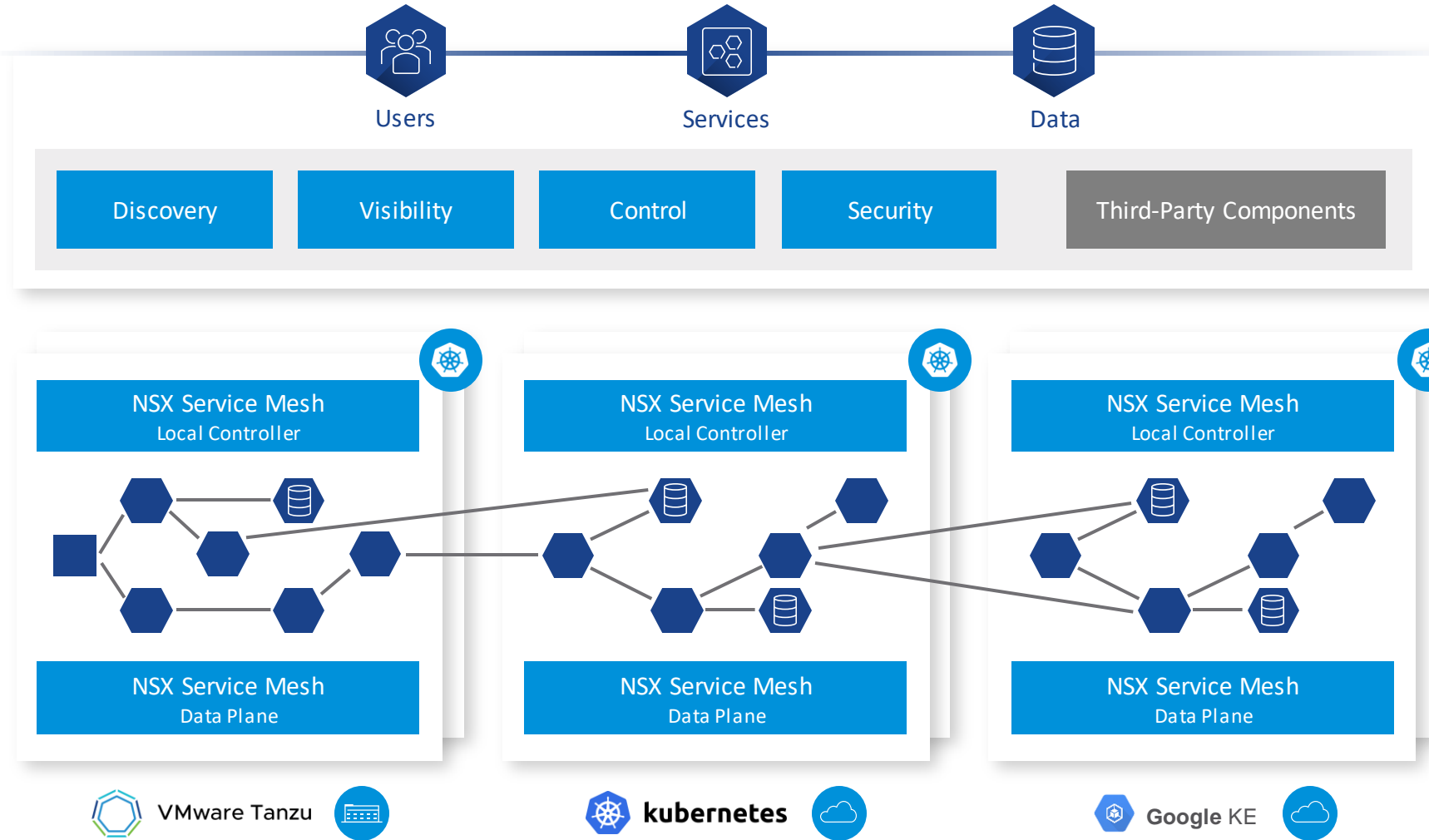
The icon shows a hexagon labeled 'v1' on the left, an arrow pointing to a hexagon labeled 'v2' on the right.

Backup

Connect and Secure Kubernetes Clusters on Any Cloud

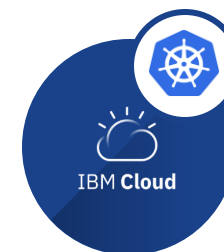
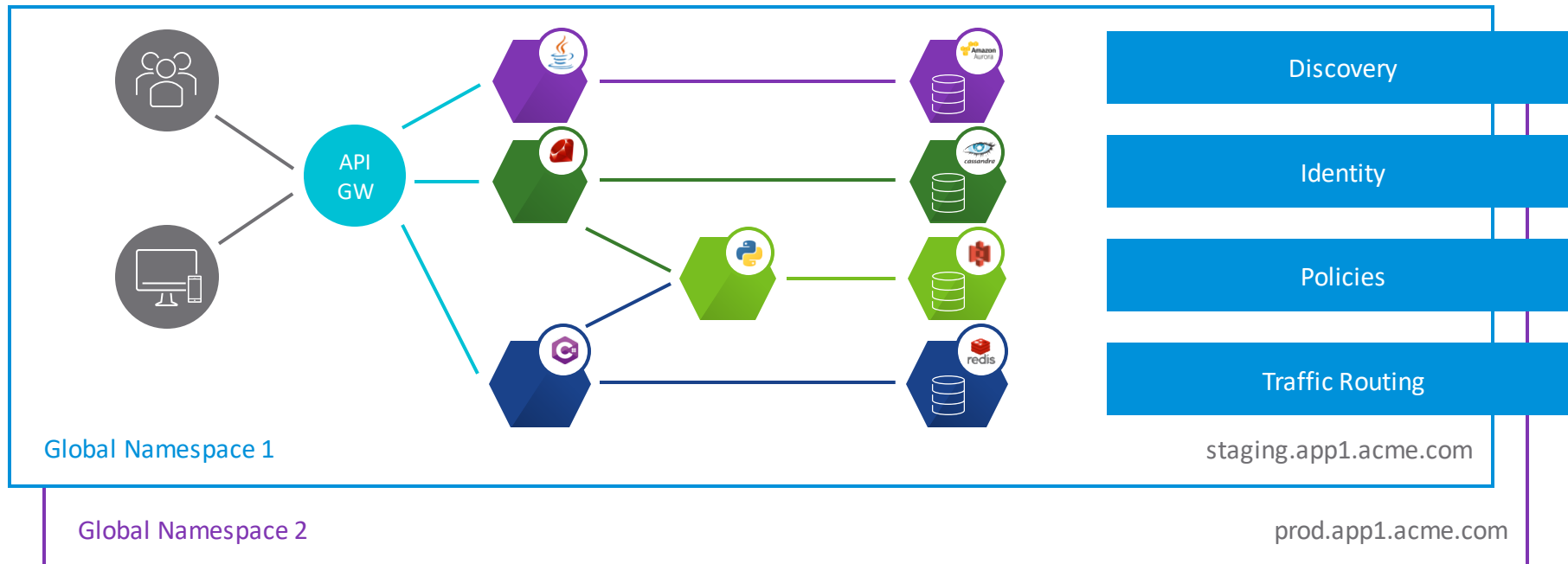
Multi-Cluster, Multi-Platform

NSX Service Mesh
Control Plane



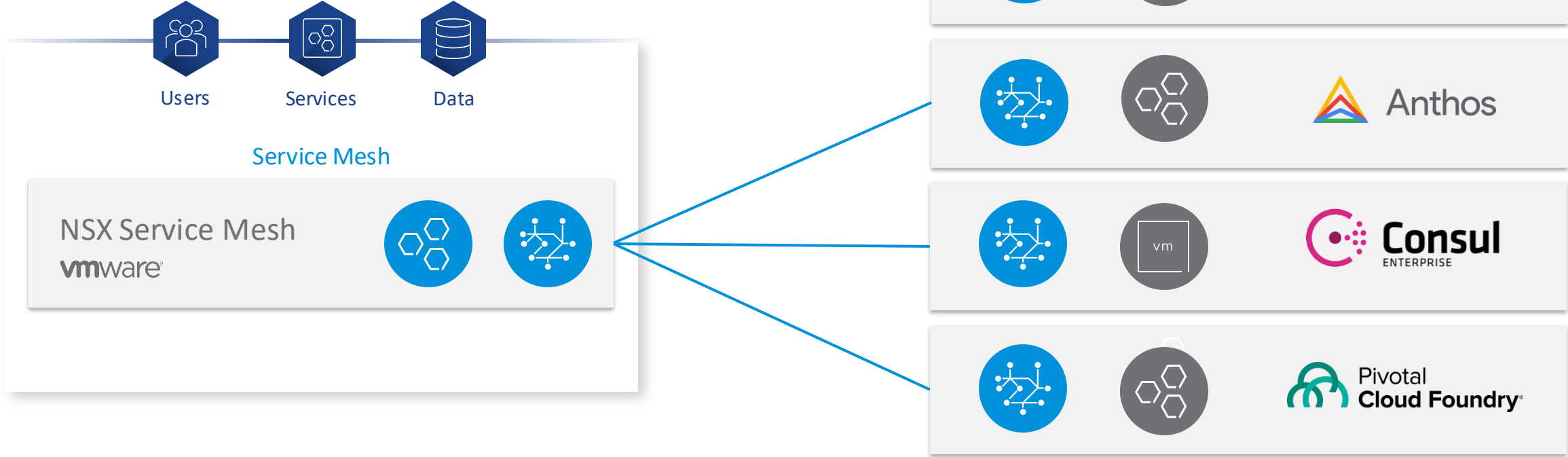
Discover, Observe, Connect, and Secure

Apps wherever they are deployed across Kubernetes clusters



Federation and Interoperability

Mesh Federation community efforts



Interoperability via Federation APIs | Control and data plane neutral | Identity, Service Discovery, mTLS

Open Source Community Collaborations and Contributions

Teams Using NSX Service Mesh

Development Velocity



App Developers and
Service Owners

Consistent Operations



DevOps, SREs, PREs, and
Platform Owners

Secure by Default



Security, SecOps, and
Compliance Owners

On any platform or any cloud

Application Transformation Challenges

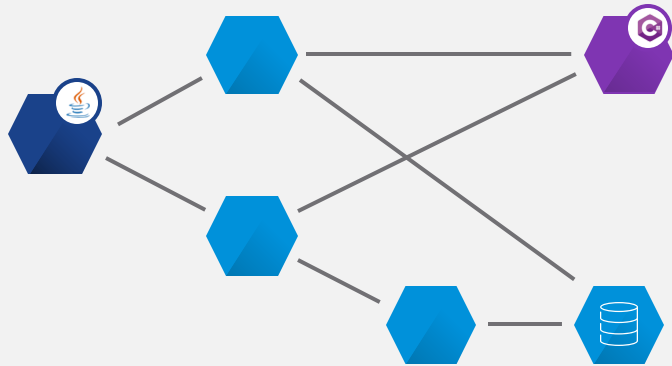
How to consistently connect, control, monitor, and remediate cloud native apps?

App silos—running in multiple platforms and clouds

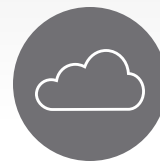
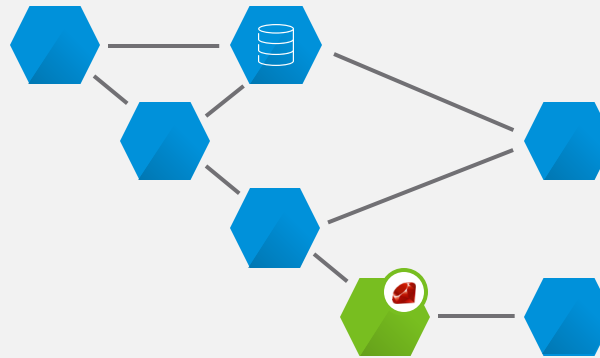
Many endpoints to monitor, scale, and make resilient

Inconsistent operational and remediation policies

Disjointed security, auditing, and compliance



Kubernetes



Public Clouds



VMs / Monoliths

Why enterprises are pursuing Application Transformation

Monolithic Application



Microservices Application



Traditional Service Mesh Limited to Microservices



NSX Service Mesh Extends Istio



What you get with Istio

- ✓ Focus on service to service communications
- ✓ Control the flow of traffic and API calls between services
- ✓ Enforce authn/z and encryption for service communications
- ✓ Telemetry data – traces, metrics, and logs to enable observability



Additions with NSX-SM

- ⊕ Expands the service mesh to services, users, and data
- ⊕ Rich set of policies and tools for developers, operations, and security
- ⊕ Advanced federation across multiple clouds and application platforms
- ⊕ Makes service mesh enterprise-grade for application platform teams

Connecting and Securing Services

Across any infrastructure

NSX Service Mesh
Control Plane



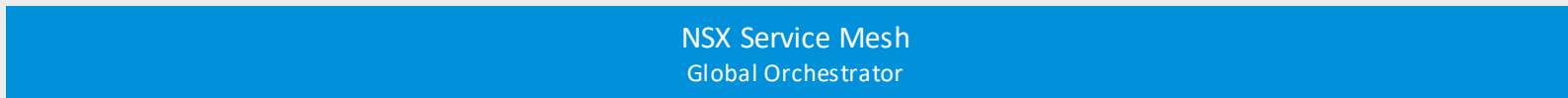
Users



Services



Data



Global
Orchestrator

Customer
Clusters with
Service Mesh

Sidecars



Containers

Sidecars /
Federation



Public Clouds

Integrations



VMs



SaaS



Serverless