Cloud Foundation NSX – Networking for Private Cloud

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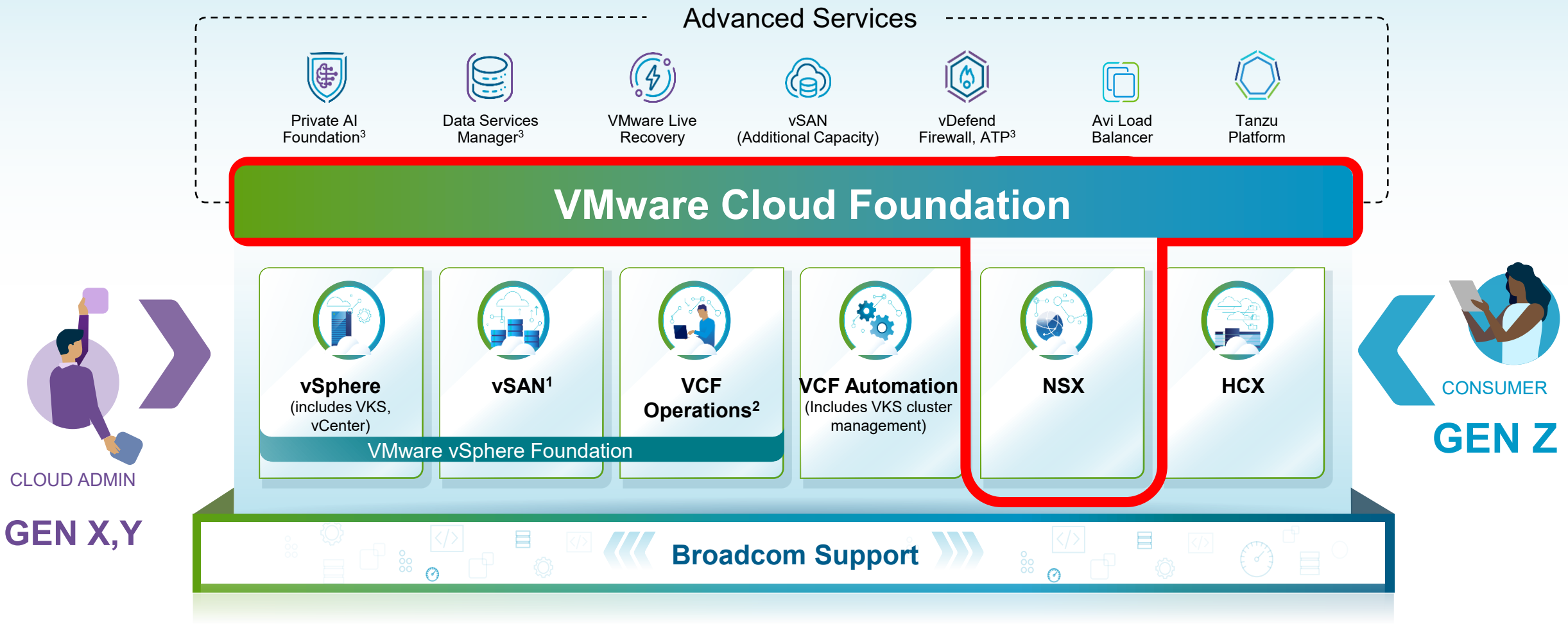
The Challenge

COMPUTE

NETWORKING

STORAGE

VCF Division Primary Offers



[1] For VCF vSAN is licensed 1 TiB/Core, For VVF vSAN is licensed 0.25 TiB/Core
[2] VVF customer receive VCF Operations for VVF
[3] For VCF only; not available for VVF

Virtual Private Clouds

Goal for VCF: Enabling Public Cloud Experience in Your Private Cloud

Virtual Private Clouds (VPCs) are the core building blocks for this capability.

VPCs

Rely on NSX virtual networking, which is included in VCF

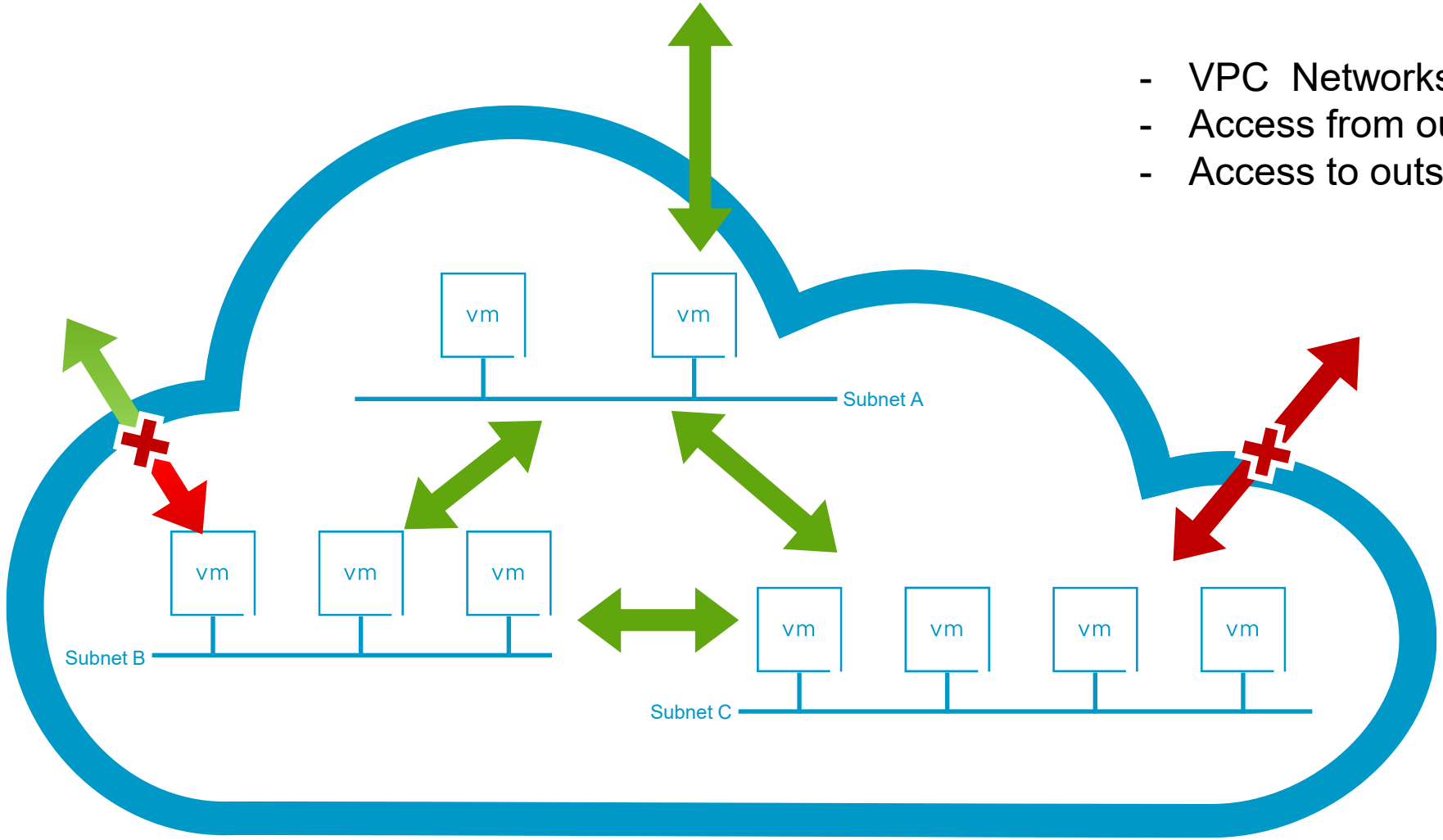
Can be managed in vCenter

Are used in vCenter, VCF automation, VCF operations, VMware Kubernetes Services (VKS), and HCX

New VPC Model in VCF 9.0

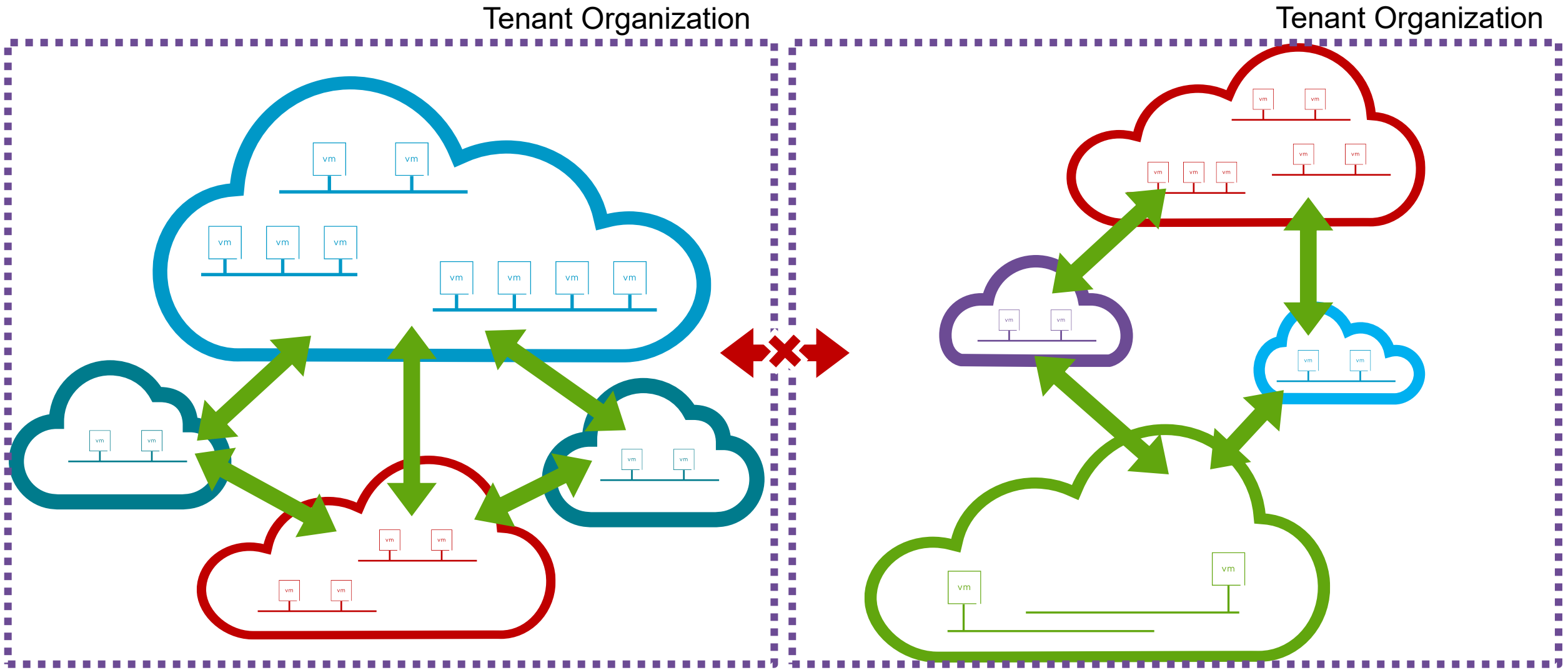
The previous model remains available but won't be covered here

Control of connectivity within a VPC

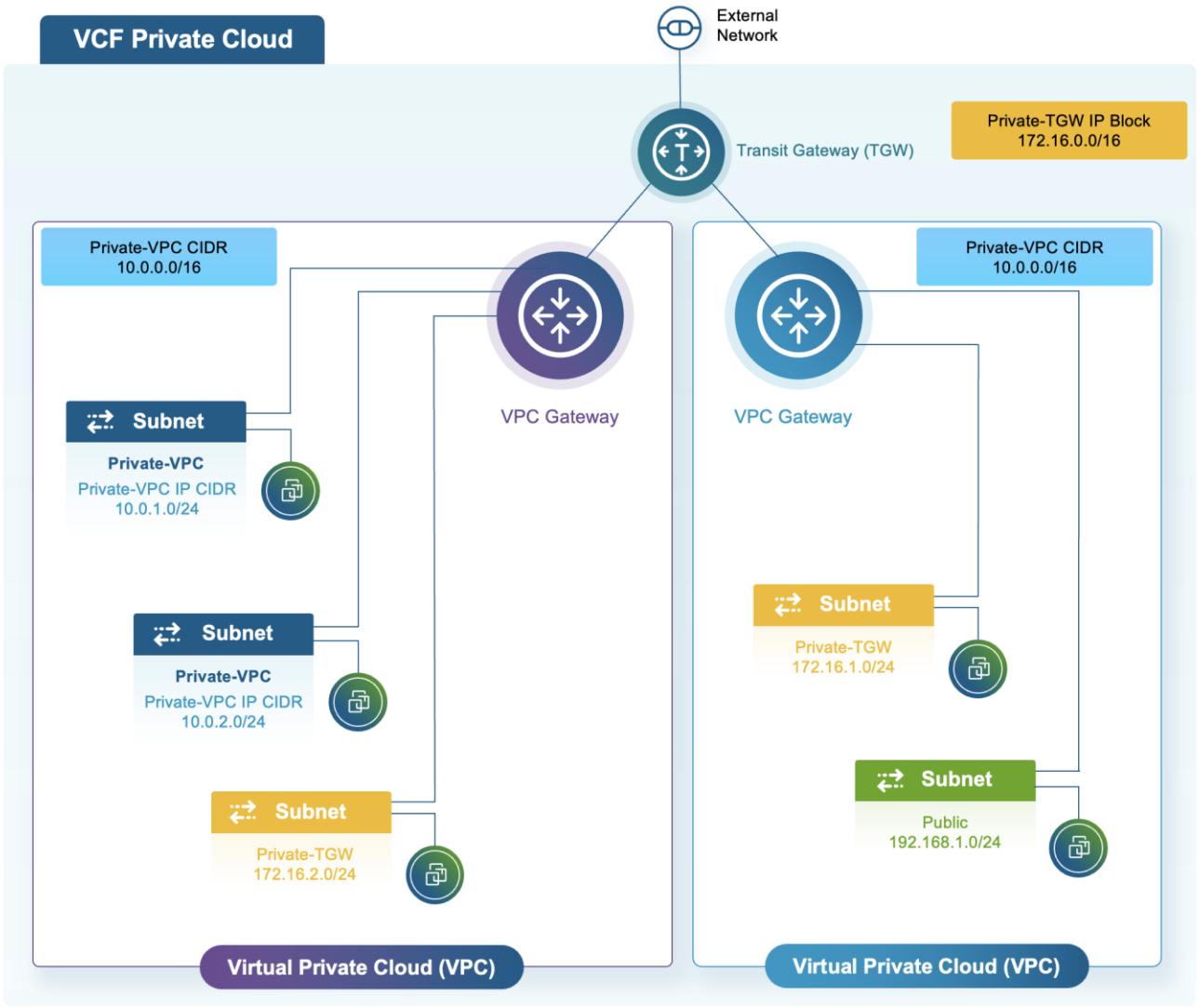


- VPC Networks are interconnected
- Access from outside is controlled
- Access to outside is controlled

VPCs Can Be Grouped by Tenant and Isolated



VPC Key Concept



VPC + VPC Gateway

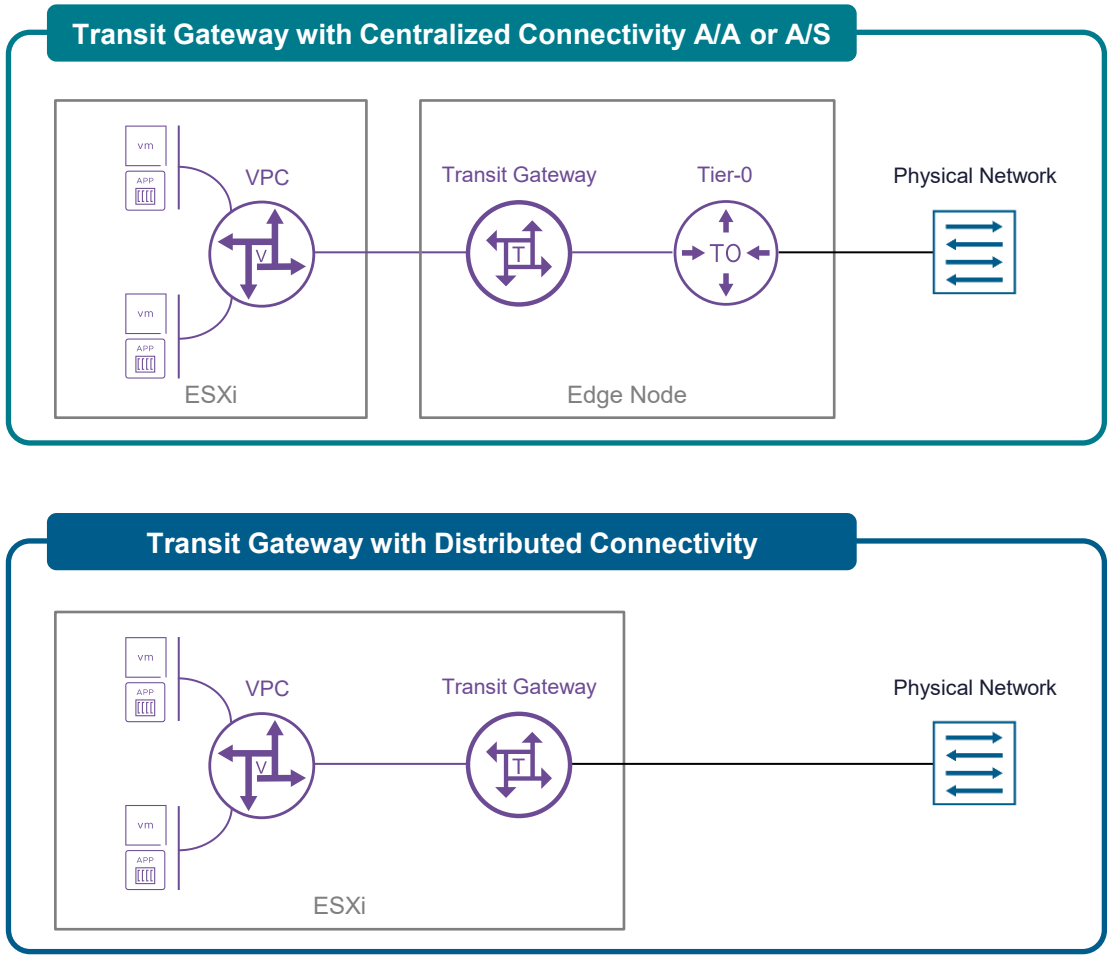
Private-VPC

Public

Transit Gateway TGW

Private-TGW

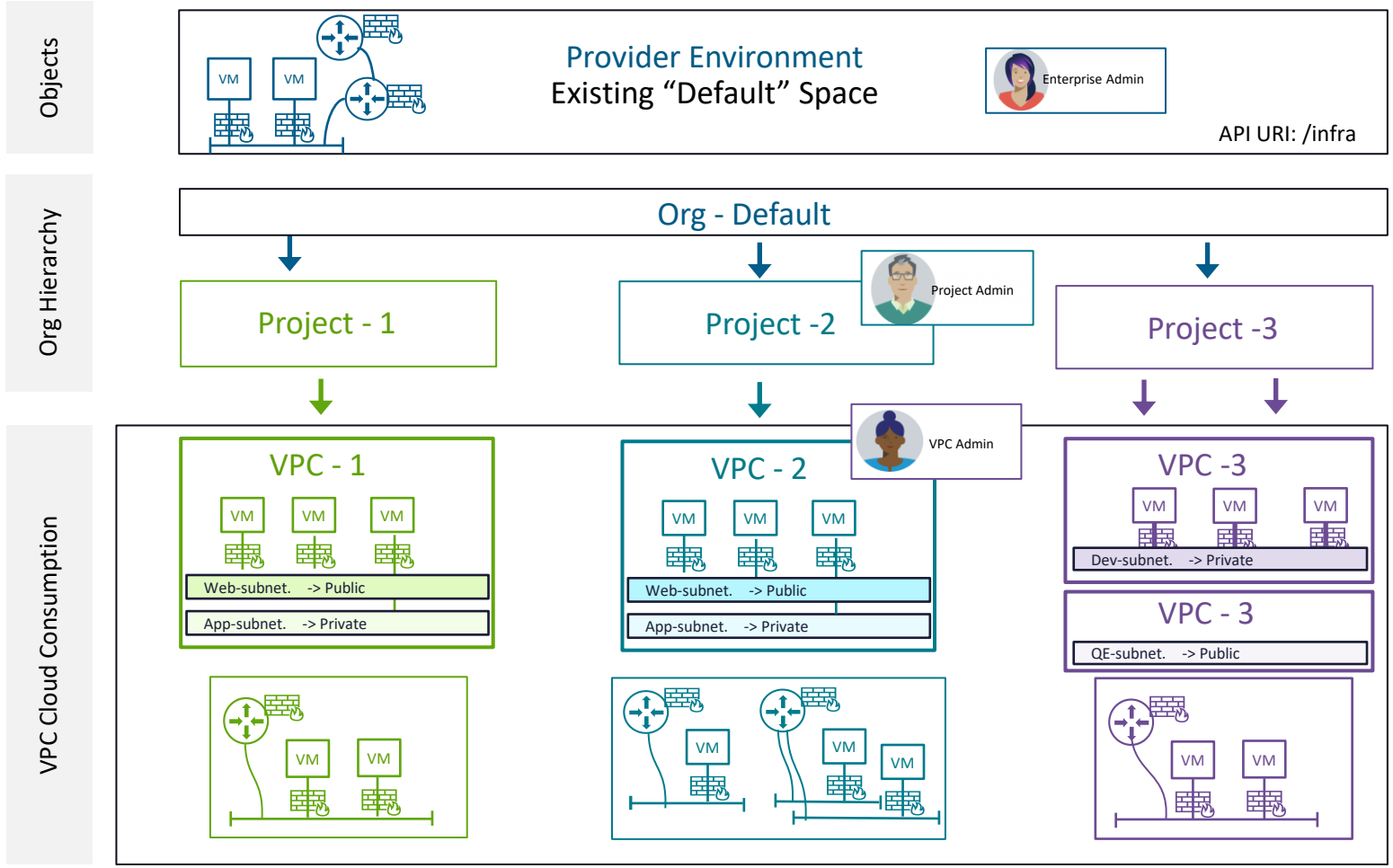
Edgeless networking



- New in NSX 9.0
- Offer connectivity between VPCs and the External Networks
- Two options:
  - Centralized
    CTGW are connected to T0 A/A or A/S
  - Distributed
    DTGW are directly connected to the physical network (VLAN)

NSX Management Plane Multi-Tenancy

Introducing Virtual Private Clouds (VPCs)



Feature

VPC are a second layer of tenancy

Consumption-oriented abstraction

Inspired by Public Cloud / CMPs

Benefit

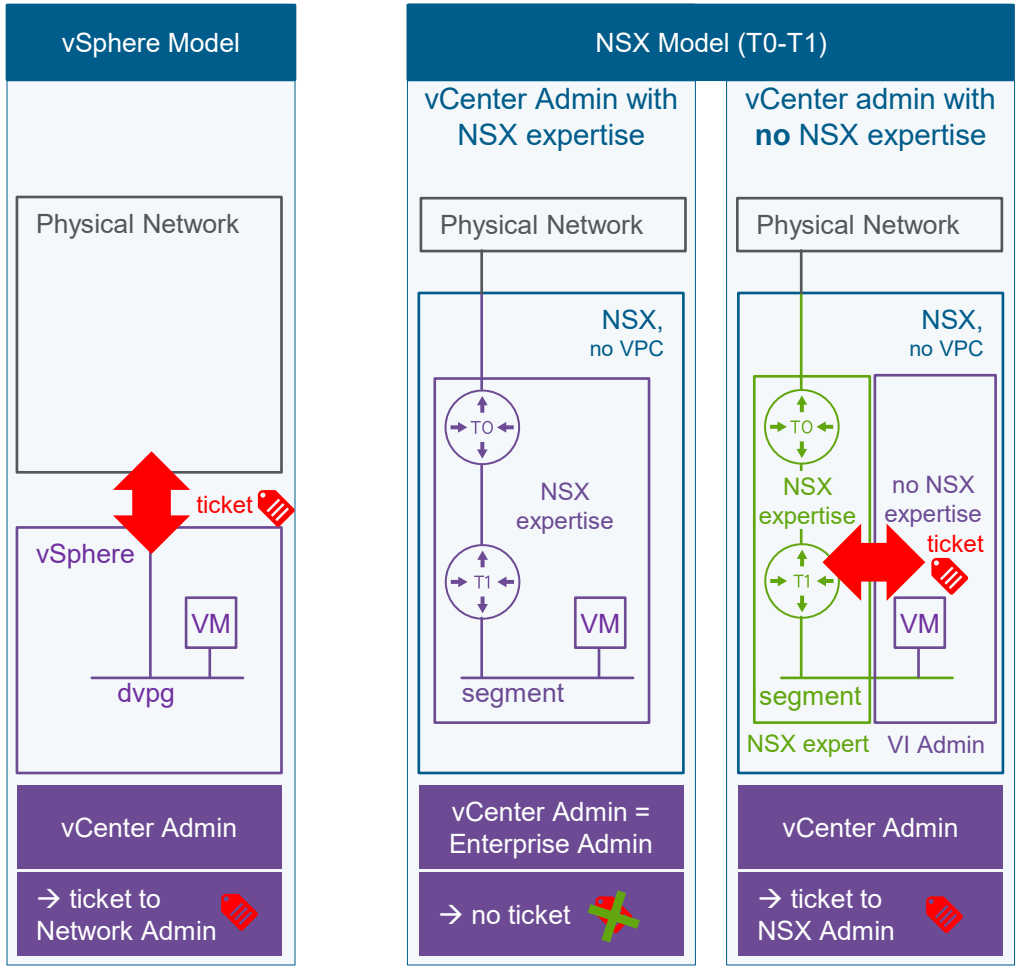
Granular Tenancy

Extend consumption of NSX in terms of Persona for direct API consumption / DevOps tools (Terraform, Ansible)

Simpler integration in third party solutions

VCF Networking models and new concept of VPC

Example: deploying a network for a new VM



Network Operations and Use-Cases

VMware Cloud Foundation Operations

Search for an object or select a category from the list below; like metric, feature, dashboard and more ...

- Home
- Inventory
- Infrastructure Operations
- Workload Operations
- Fleet Management
- Capacity
- Security
- License Management
- Administration
- Developer Center
- Plugins

Home

Overview | Launchpad

All VMware Clouds
Accounts: 9

vCenter
Accounts: 9

VMware Cloud Foundation
No accounts

Monitoring Accounts

7
vCenter

Inventory

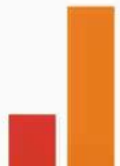
10 Datacenter
15 Cluster Compute Resource
26 Host System
310 Virtual Machine
33 Datastore
12 vSphere Distributed Switch
268
VIEW INVENTORY

Appliances Health & Management

Ensure high availability, scalability, and performance of the VCF stack through, monitoring, diagnosing, and security, and incident response.

Findings

13
Total Findings



4 Critical
9 Immediate
0

Configuration Drifts

Certificates

Mastering Day 2: The Path to "Hero"

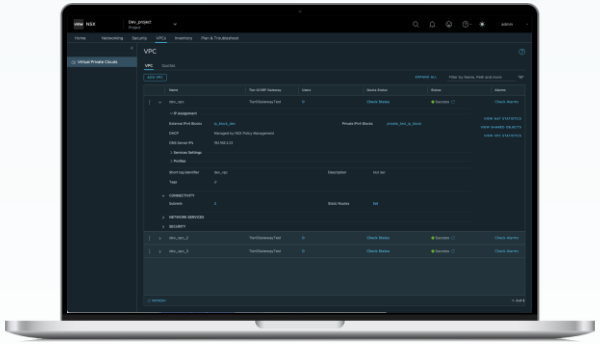
Cloud Like Experience for all Personas

For Cloud Admins

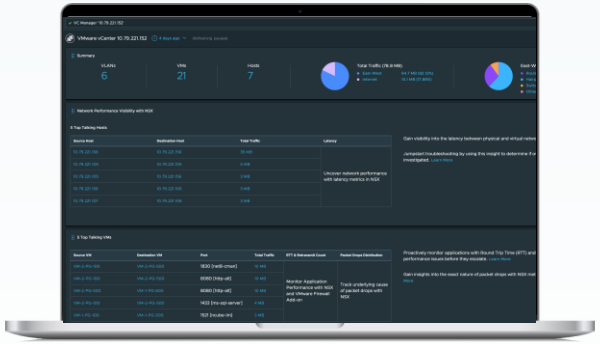
VPC in vCenter

VPC Support in HCX

Advanced Networking Configuration in NSX

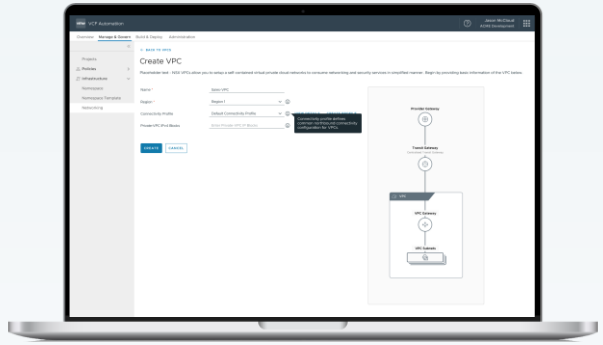


VPC Support in VCF Operation for Networks

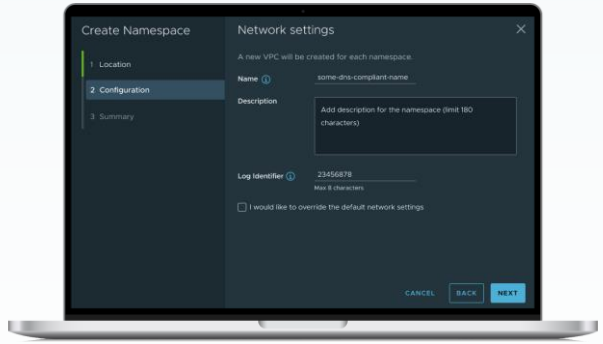


For Cloud Users and Developers

VPC in VCF Automation



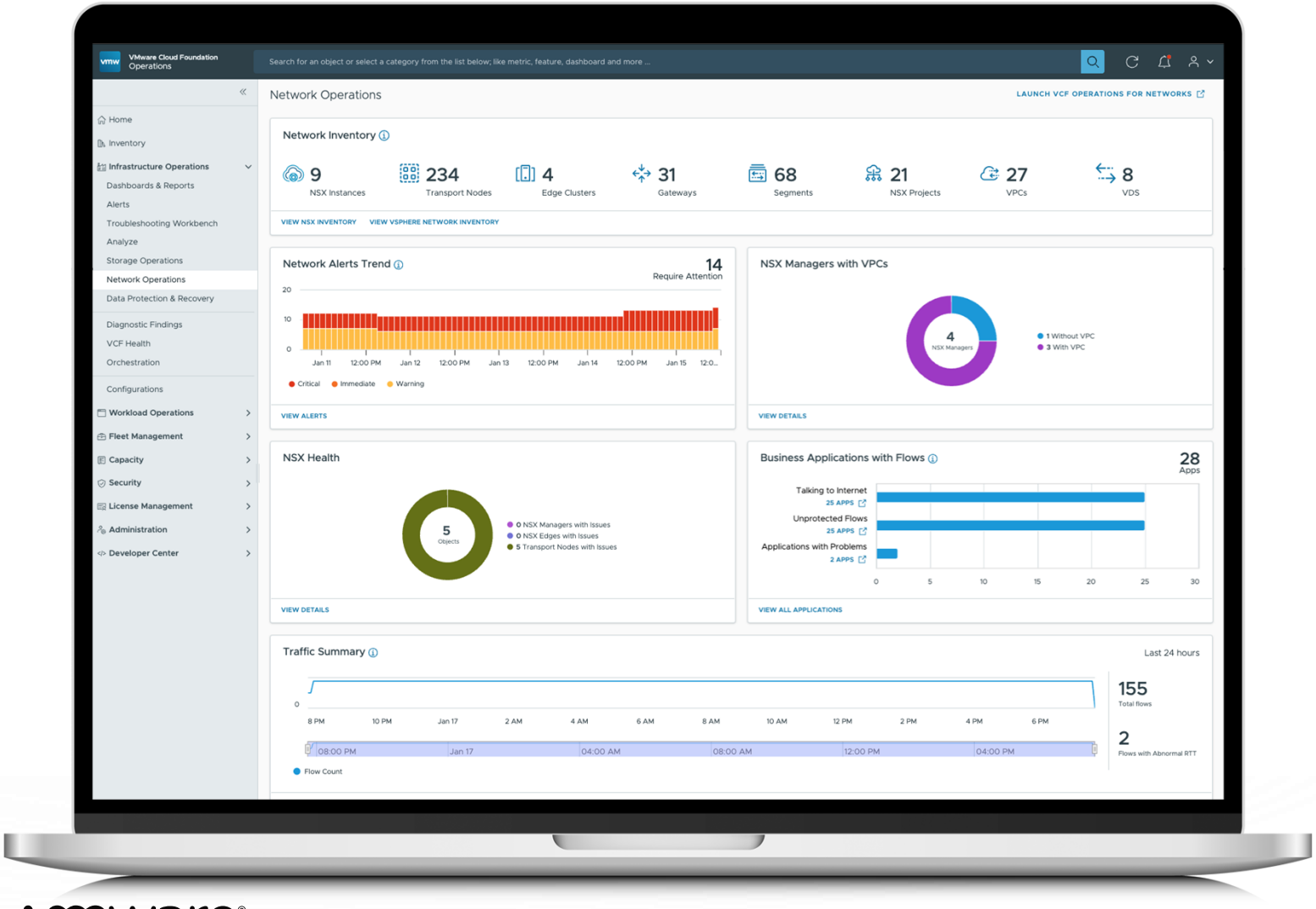
VPC for VKS Cluster



The images in this presentation are for illustrations purposes only.

VCF Operations - Integrated Network Operations

Network monitoring and troubleshooting



A comprehensive view of the entire VCF network in one place.

Accelerated troubleshooting of traffic issues through flow insights.

Overview of VCF network inventory

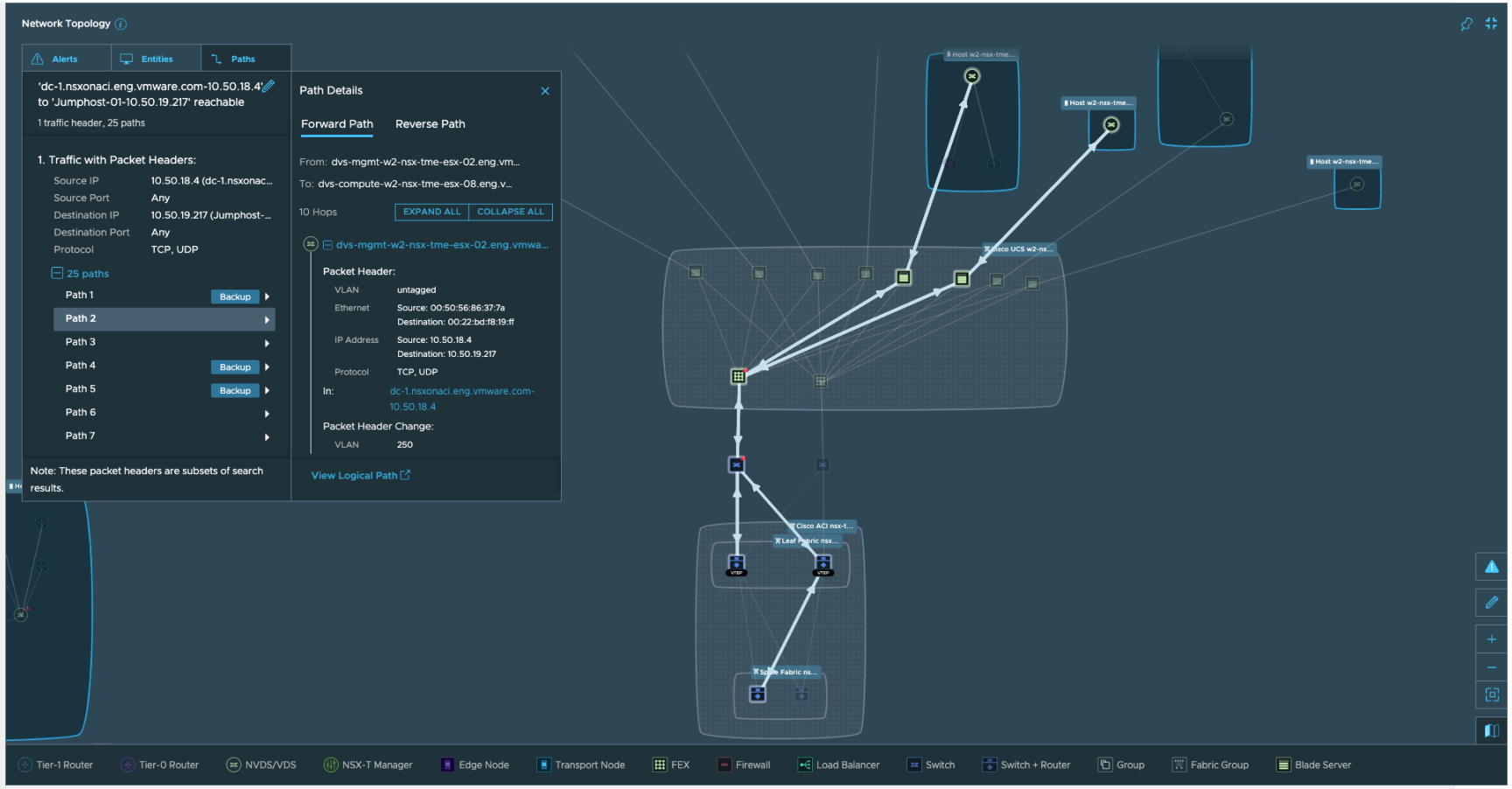
Monitor health of network components

Traffic summary and analyze flows

Application insights

Visibility with VCF Operations for Networks

Providing NSX networking visibility over switch fabrics



More end-to-end visibility

Troubleshooting is more complete with path search capabilities between NSX and Cisco ACI topologies

Cisco ACI support for End Point Groups, including EPG Gateway, L3Out Contracts, L3Out EPG

Now, it is easier to pinpoint issues in complex scenarios between vendors more easily

Where to Use VPC for Maximum Impact

Some Real-World Use Cases

Tenant or Application based VPCs

Tenant-Based VPCs:
Ideal for service providers or large enterprises creating isolated environments for different customers or business units.

Application-Specific VPCs:
Each major application gets its own dedicated VPC, ensuring its network environment is tailored and isolated.

Lifecycle-Based VPCs

Dev/Test/Prod:
Create separate VPCs for development, testing, and production to ensure isolation and enable safe testing of changes.

Sandboxes:
Quickly spin up and tear down fully isolated environments for development and testing, ensuring no interference between projects.

Security Zone VPCs

Secure DMZ Deployments:
Design VPCs to represent specific security zones (e.g., DMZ, PCI compliance zone, internal trusted zone) with distinct security policies.

Secure VDI Deployments:
Provide dedicated, isolated network environments for Virtual Desktop Infrastructure (VDI) pools, enhancing security and simplifying management.

Thank You