

Transform Your IT Landscape with VMware Cloud Foundation

Workload Migration using HCX

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8/14/2024

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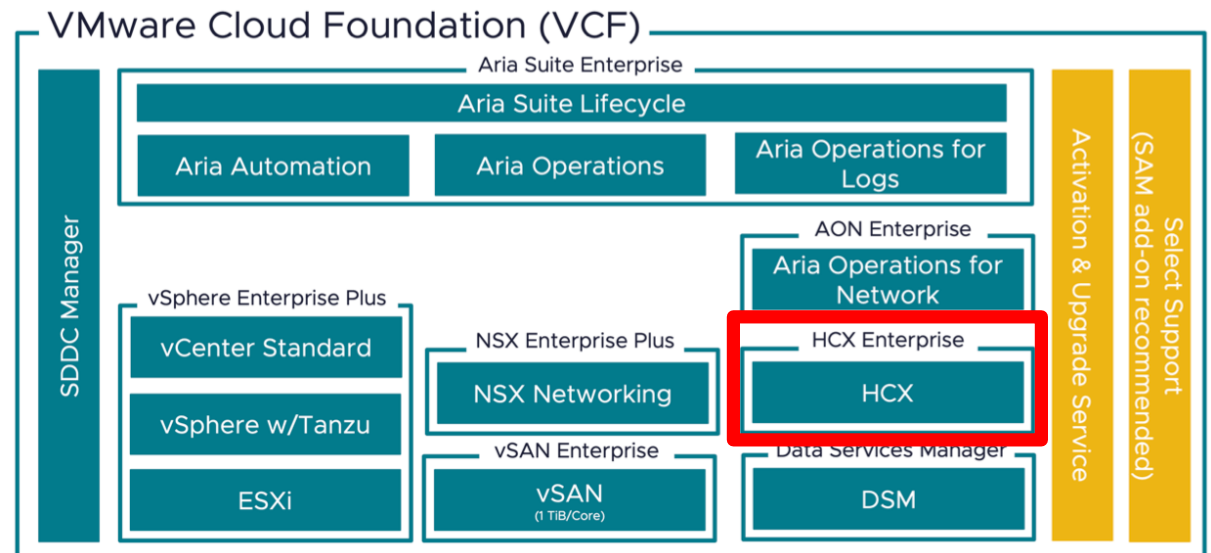
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Transform Your IT Landscape with VMware Cloud Foundation Series

Today's Session: Integrated Infrastructure Management with SDDC Manager

- SDDC Manager (7/31/2024)
- NSX Network Virtualization (8/7/2024)
- **HCX Enterprise (8/14/2024)**
- Aria Suite Enterprise (8/21/2024)
- Tanzu Platform (8/28/2024)



Agenda

- VMware Cloud Foundation (VCF) Overview
- HCX Overview
- HCX 4.1 Updates (Aligns with VCF 5.2)
 - HCX Assisted vMotion (HAV)
 - HCX Traffic Engineering
 - HCX OS Assisted Migration
- Demo



Modernize Private Cloud

Introducing VMware Cloud Foundation



VMware Cloud Foundation 5.2



Modernize Infrastructure

Infrastructure transformation and modernization



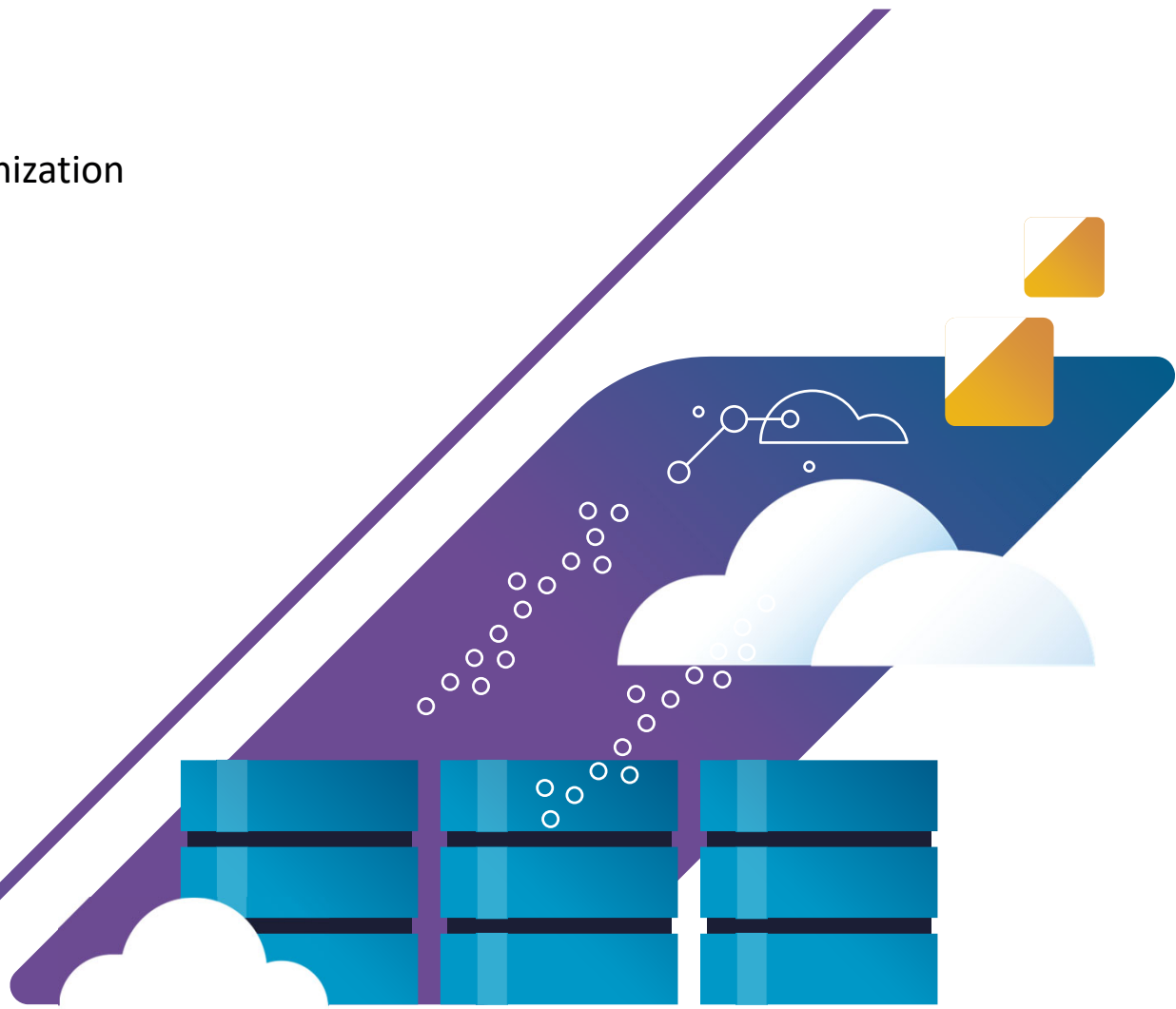
Build or modernize a private cloud infrastructure



Automate to provide IaaS via a self-service catalog

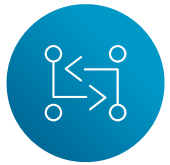


Extend your data center into the cloud



Cloud Experience for Developers

Modern application support and Private AI



Deliver **Infrastructure-as-Code**



Run business critical and **modern workloads** in production



Implement **Private AI** with NVIDIA (Private AI Foundation with NVIDIA)



Security and Resilience

Build, protect, and recover systems and data



Protect and recover from ransomware



Design and implement a disaster recovery-ready infrastructure



Build and integrate security, compliance and resilience into IT*

* Presales use case only, no discrete deliverable. Outcome leads back to cloud infrastructure capabilities relevant to security, compliance and resilience, also needs external mapping to ANS for any non-VCF Division security considerations (microseg, DFW, etc.)



Driving Modernization, Developer Productivity and Security

Key Outcomes of VCF 5.2



Improved Resource Utilization



Enhanced Developer Speed



Secure and Reliable

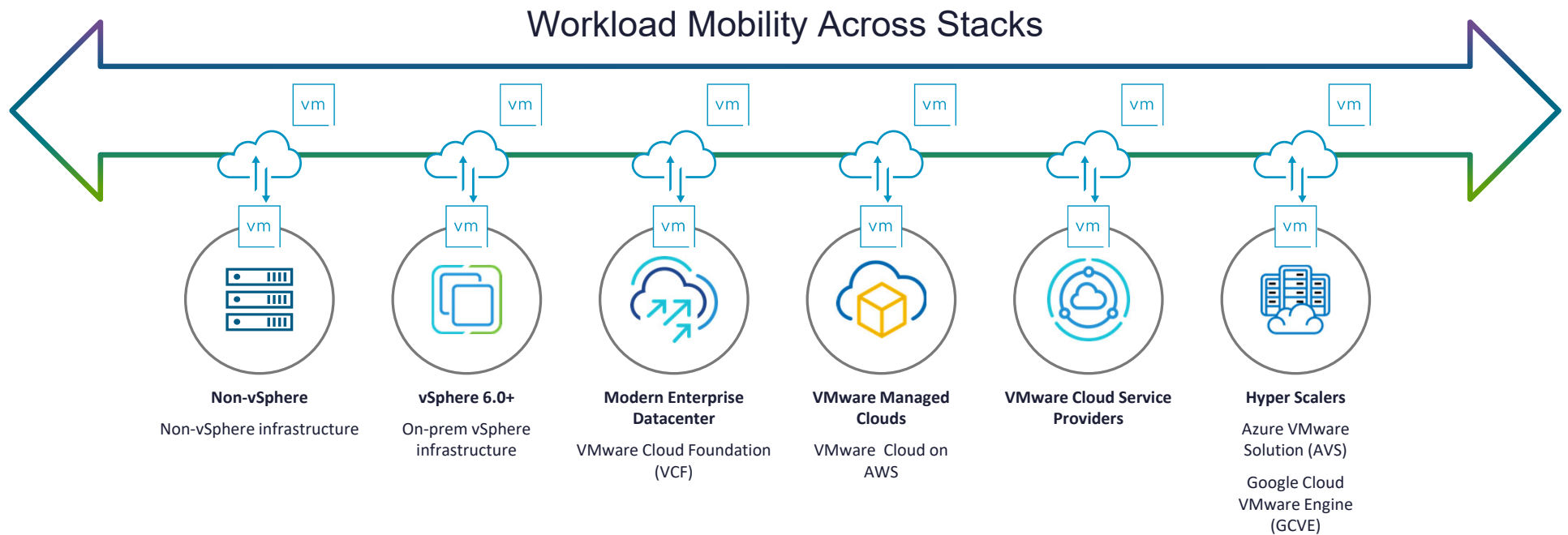


Faster Time to Value

Workload Migration

VMware HCX

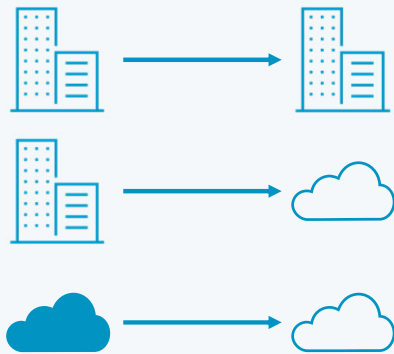
Application migration between clouds



Customer-driven Migration Use-cases

Driving business strategy and VMware value through workload mobility

Rehost

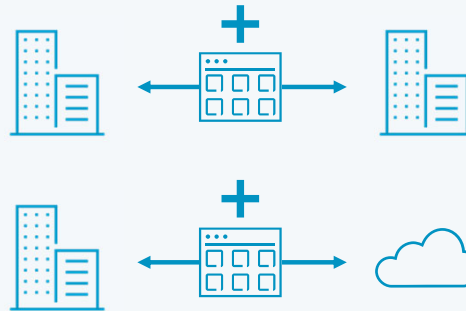


M&A/DC Consolidation

Repurpose Infrastructure

Cloud Adoption

Re-platform/Upgrade

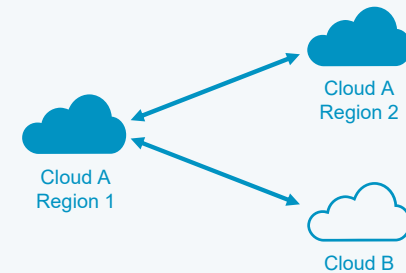


Modernize infrastructure

Capture New Workloads

Hybrid Connectivity

Rebalance



Optimize Cloud Footprint

Shift Cloud Providers

Hybrid-cloud Strategy

All HCX Features are included with VMware Cloud Foundation

Advanced



Hybrid Interconnect



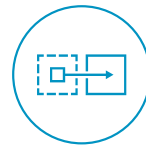
HCX Network Extension



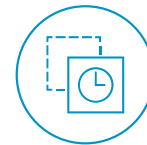
WAN Optimization



Disaster Recovery



vMotion Live Migration

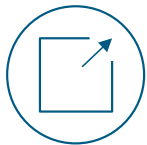


Bulk Migration w/reboot



Cloud to Cloud Migration

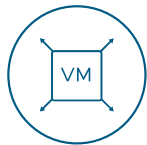
Enterprise



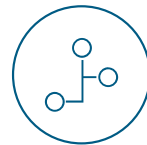
OS Assisted vMotion



Replication Assisted vMotion



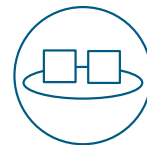
Mobility Groups



Traffic Engineering



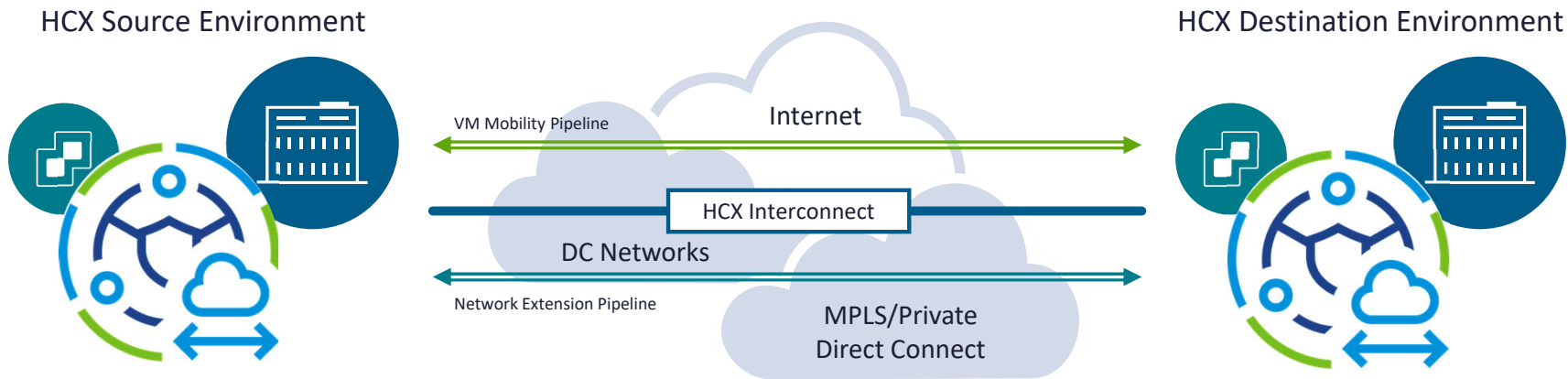
Mobility Optimized Networking



Network Extension HA

Source and Destination

Installation



HCX Connect

Always a Private Cloud

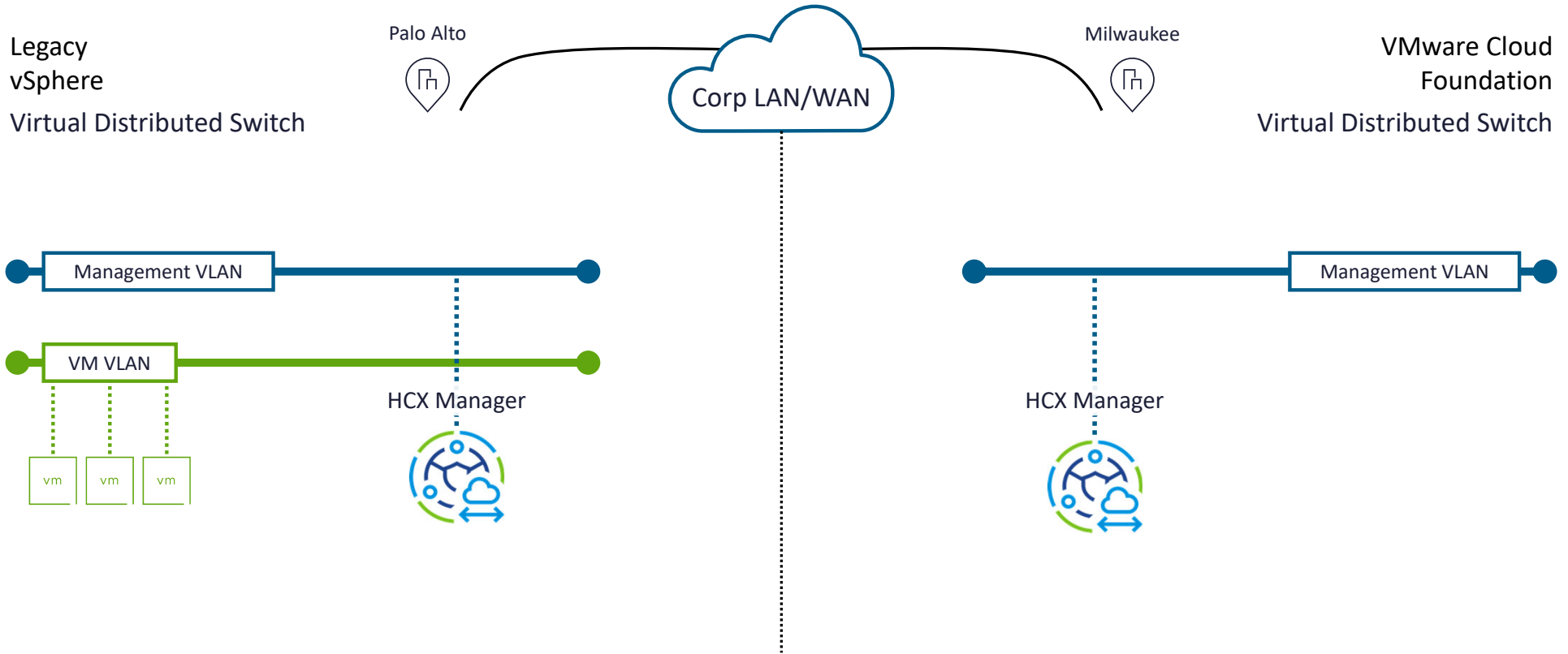
Does not require NSX on this site
This is typically the legacy source site

HCX Cloud

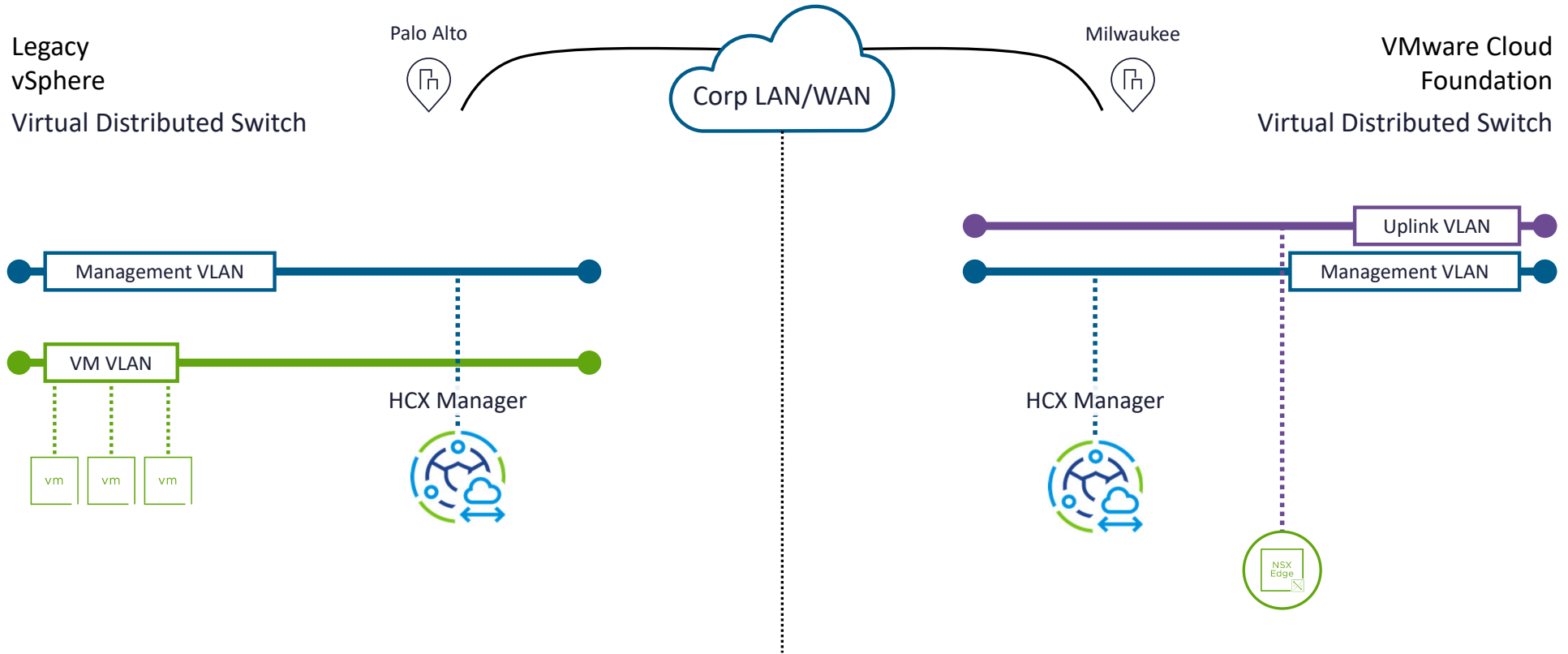
VMware Cloud Foundation

VMware Cloud Foundation site
Requires NSX on this site
This site is installed first

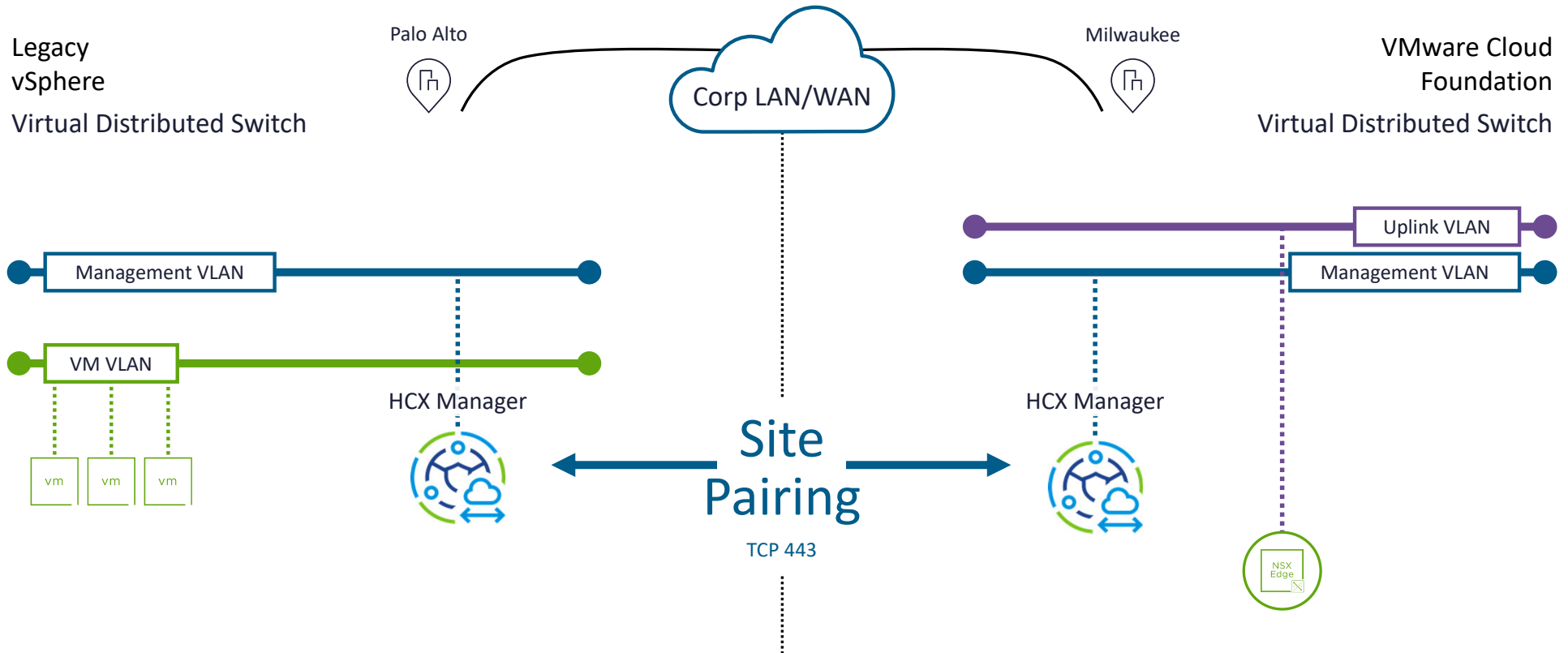
Step 1 – Install HCX Manager Appliances



Step 2 – Deploy NSX Edge with VCF



Step 3 – Site Pairing



HCX Service Appliances

Installation

Source



HCX Manager

Destination



HCX Manager



HCX Interconnect



Peer Interconnect



WAN Optimization



Peer Optimization



Network Extension



Peer Network Extension

Compute Profiles

Service appliance – automated installation

Source



Where to install

What vSphere clusters to provide HCX services to

What resource pool to install to

What storage to use for HCX appliances

What HCX services to install

Destination



Computer Profiles

Network Profiles

Service appliances

Source



Management Network

Uplink Network

vMotion Network

vSphere Replication Network

Guest Network

Which VDS to Extend

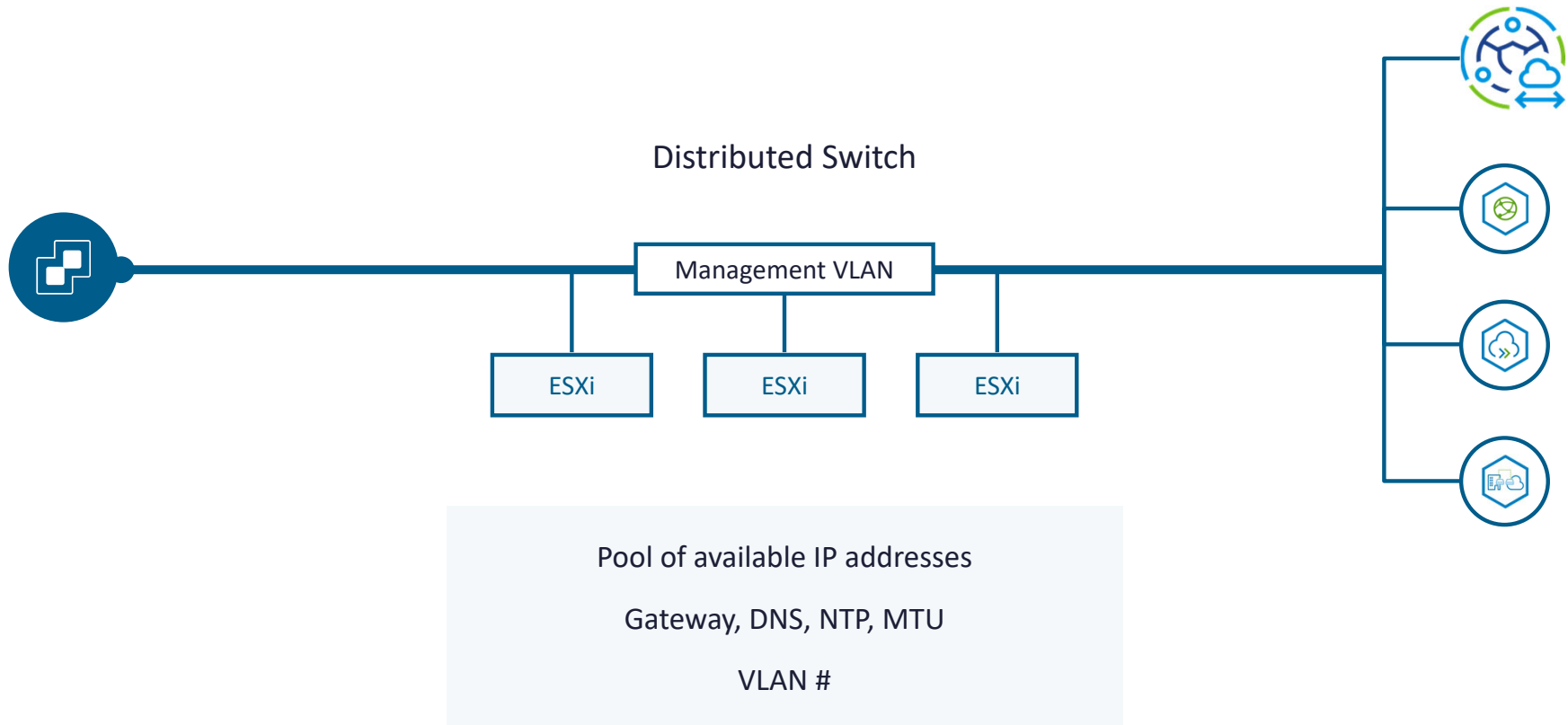
Network Profiles

Destination



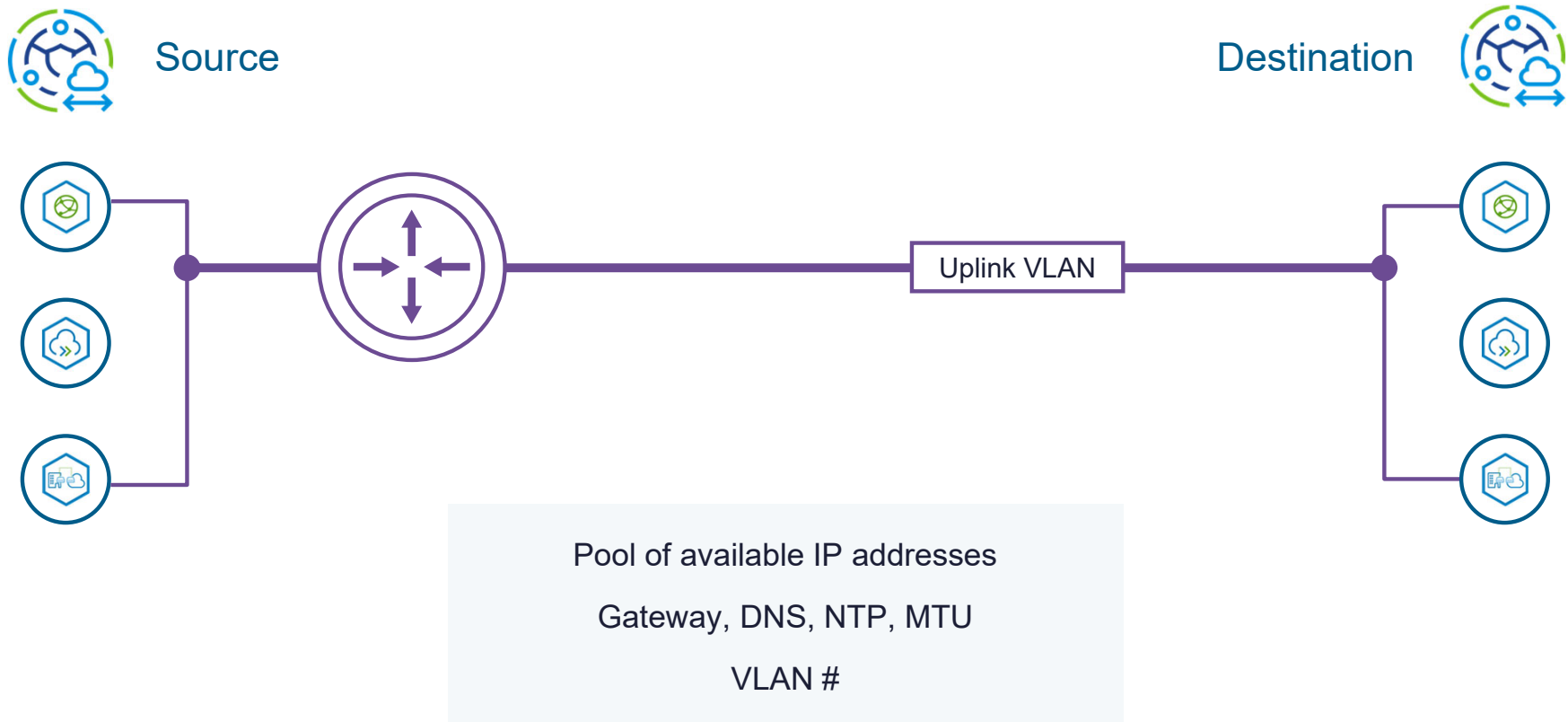
HCX - Management Network Profile

Networking



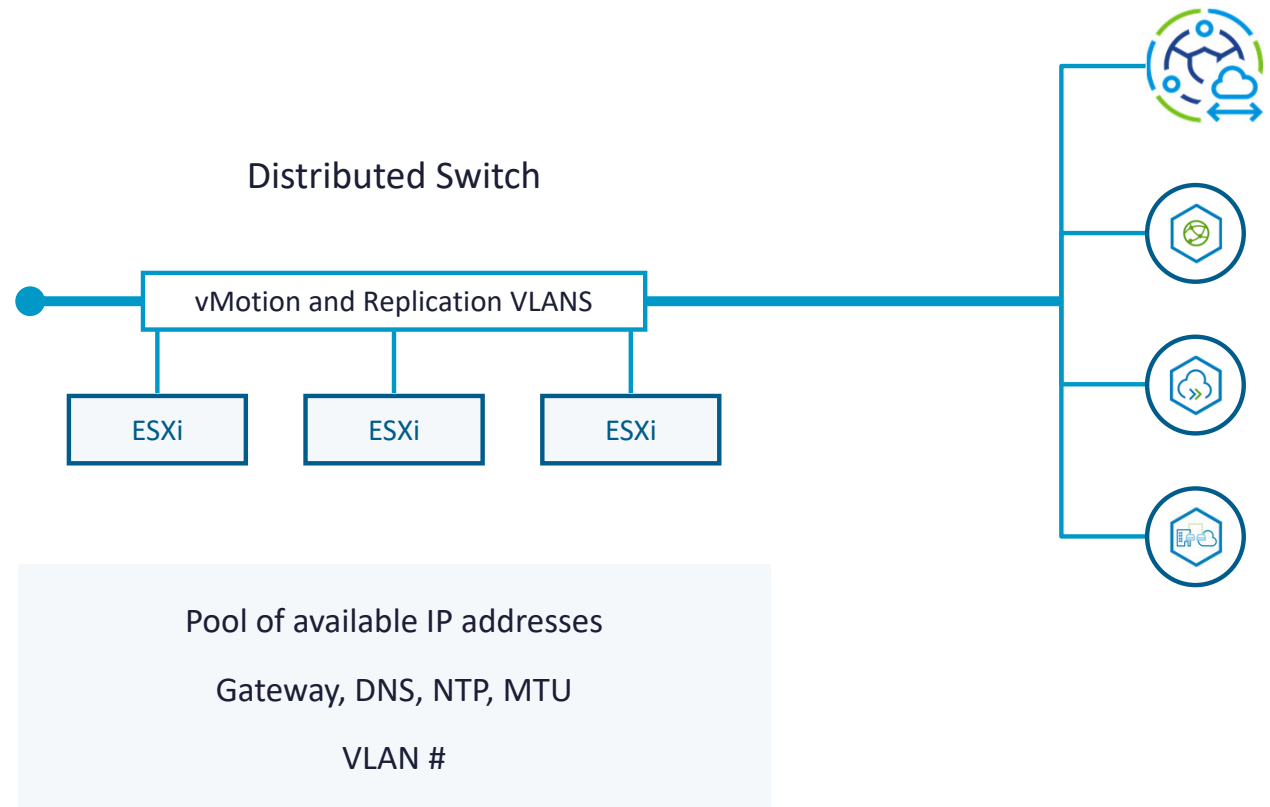
HCX - Uplink Network Profile

Networking

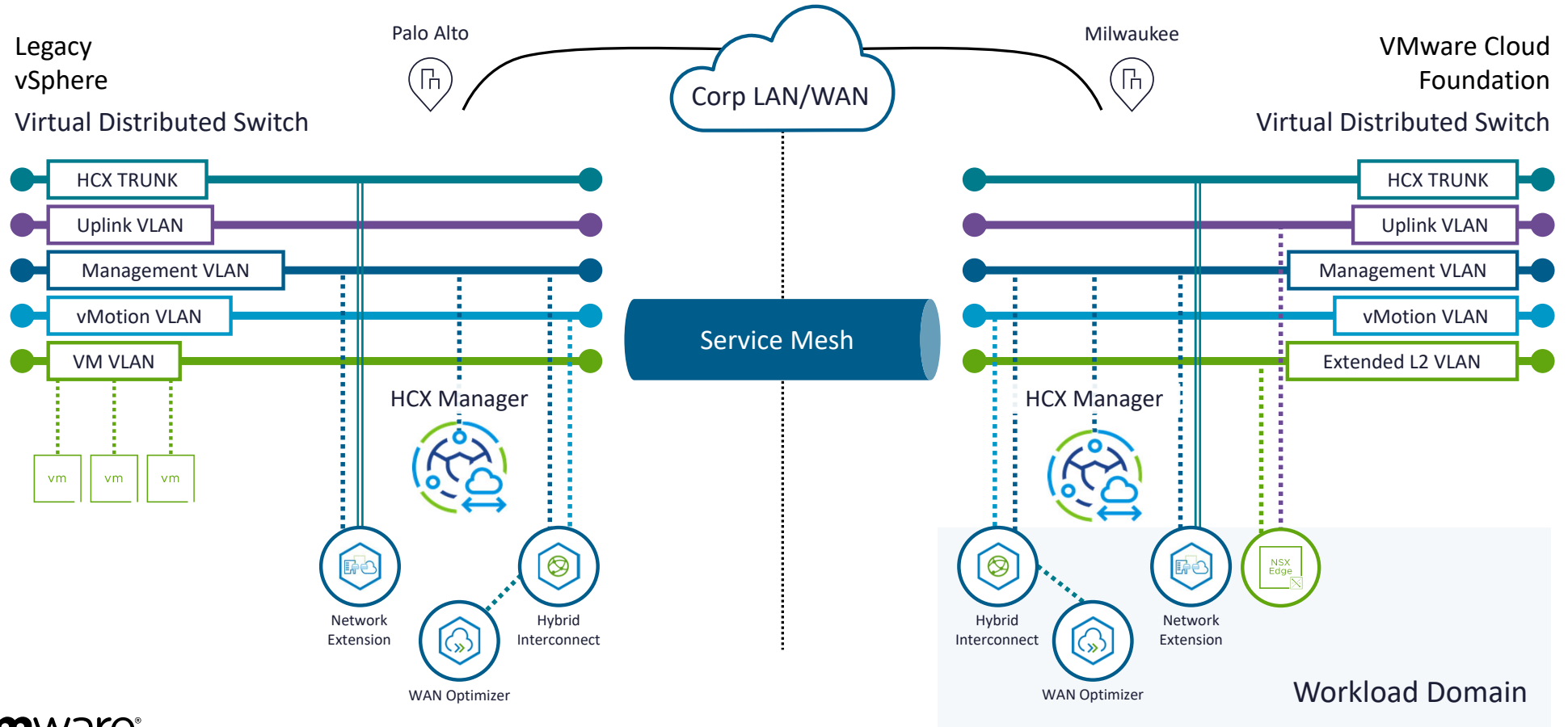


HCX – vMotion and vSphere Replication Network Profile

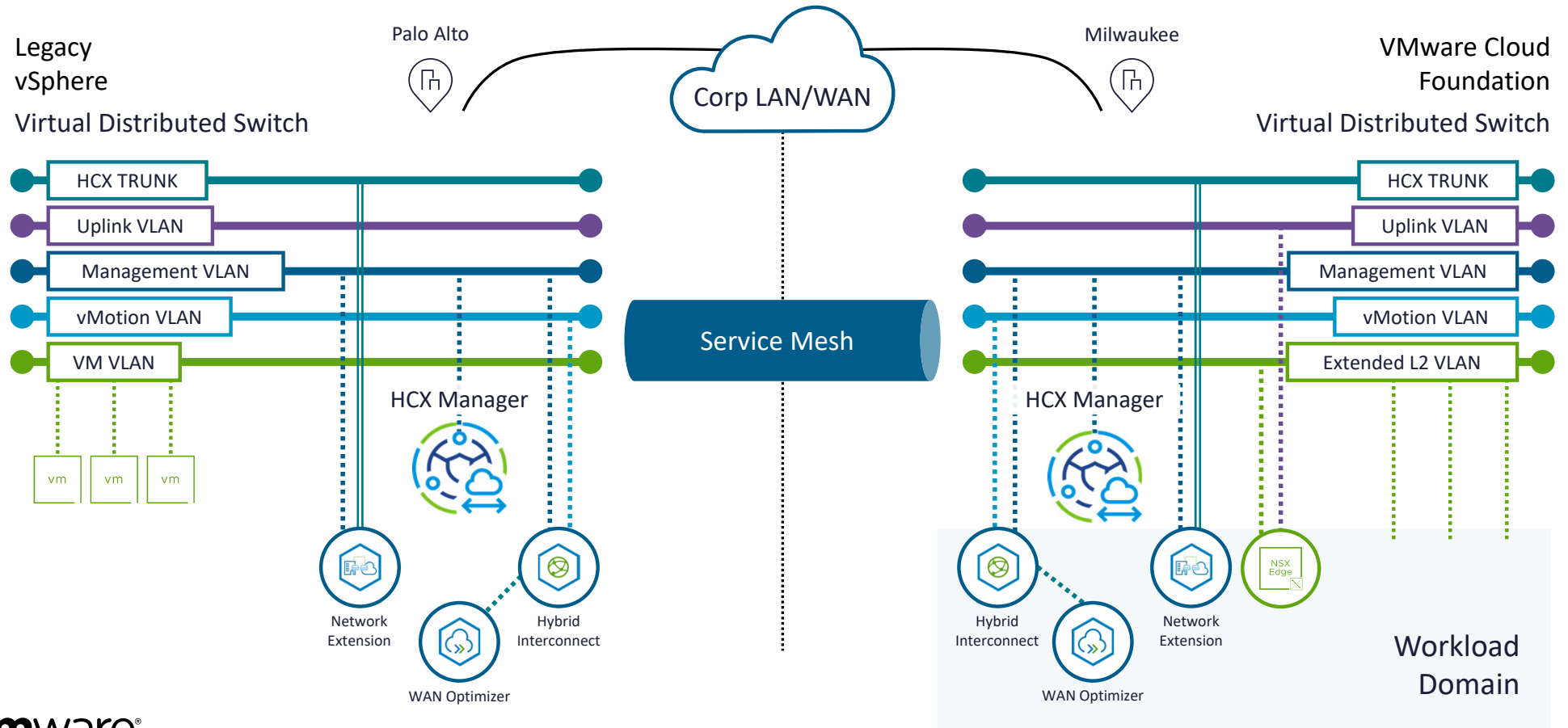
Networking



Step 4 – Create Service Mesh Tunnel



Step 5 – Migrate VM's



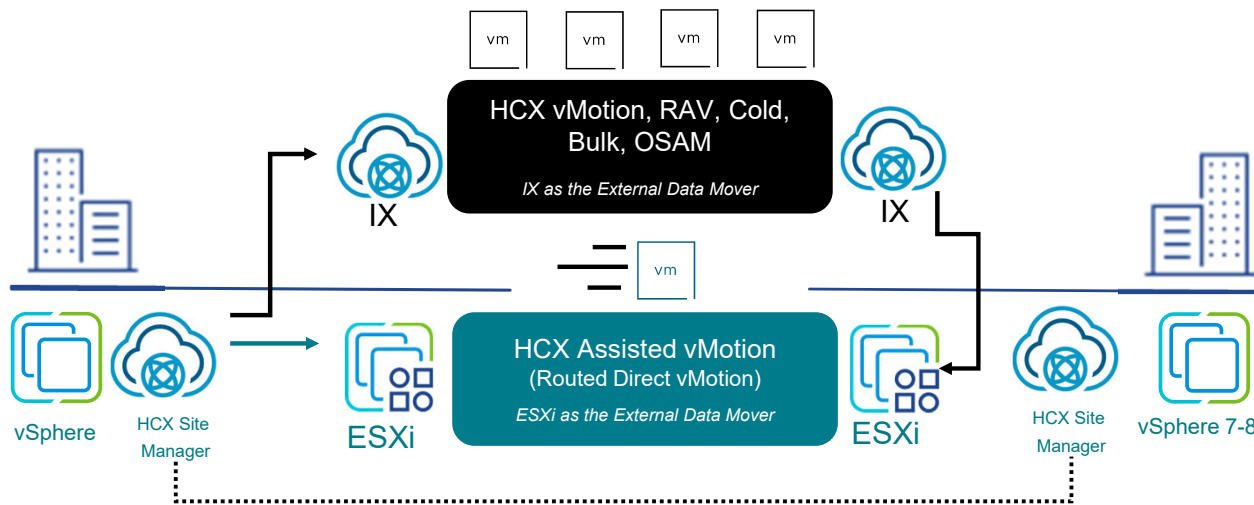
Best-In-Class: HCX Migration Options

| Migration using HCX | VM State | Data Transfer | VM Migration | |
|------------------------------|----------|---------------|--------------|----------------|
| HCX Bulk | On | HBR | Warm | HCX Advanced |
| HCX vMotion | On | vMotion | Live | |
| Cold Migration | Off | NCF | Cold | |
| Replication Assisted vMotion | On | HBR + vMotion | Live | HCX Enterprise |
| OS Assisted Replication | On | Agent | Warm | |

Note: Both HCX Advanced and HCX Enterprise licenses are included with VCF.

HCX Assisted vMotion (HAV)

HCX Migration Orchestration + ESXi vSphere vMotion



Feature

Orchestrated and optimized using vMotion datapath

Line rate migration:
25/40/100GbE with vSphere 7.0U2+

Benefits

HCX UI orchestration for Cross-vCenter Migration

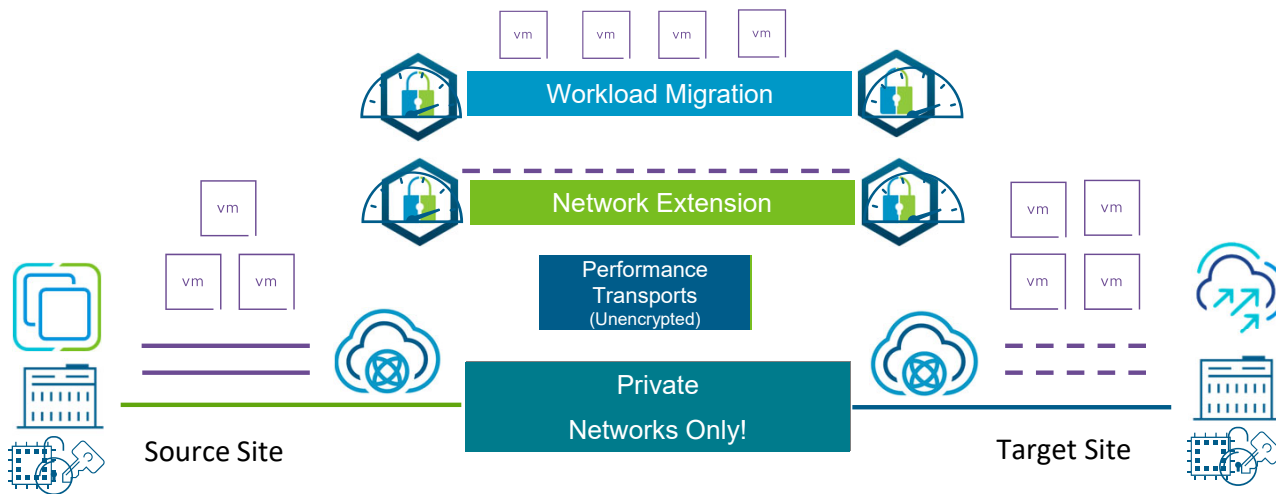
Host or Host + Datastore Migration

vGPU Workloads

Encrypted Virtual Machines

HCX Traffic Engineering - Configurable Transport Encryption

Data Plane Performance



Feature

Mobility Mesh Configurable Transport Encryption

New NE Appliance Limits

Per-Flow 3 Gbps (Improved 2X Per-flow)

Appliance 7-8 Gbps (1.4X faster NE)

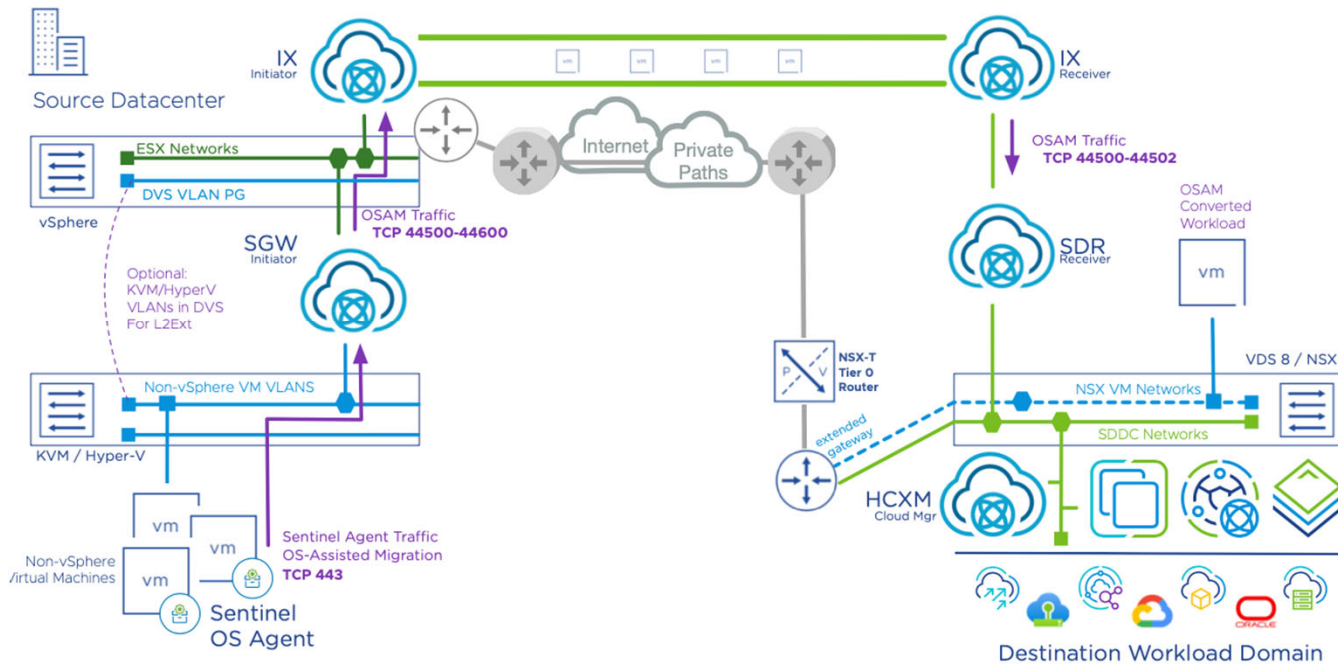
Benefit

Encrypted transports prioritize security in HCX over public networks (default mode)

Unencrypted transports are optimized for much higher NE per-flow performance in fully private datacenter networks

HCX OS Assisted Migration

Simplified Architecture



Feature

Consolidated OSAM architecture

- Single site manager
- Four appliances (SGW, IX-I, IX-R, SDR) replaced by one SRG

Benefit

Massive footprint reduction and simplified migration data path.

Proxy mode available



Thank You

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