

Migrating your VMware workloads to the cloud with

VMware Cloud™ on AWS

Talha Kalim

Specialist Solutions Architect

Learning Objectives

In this session you will learn:

- The available migration options for VMware Cloud on AWS.
- How to setup your environment for Hybrid Migration with vMotion
- How to setup VMware Hybrid Cloud Extension for Hybrid Migration

Hybrid Migration Tools and Strategies

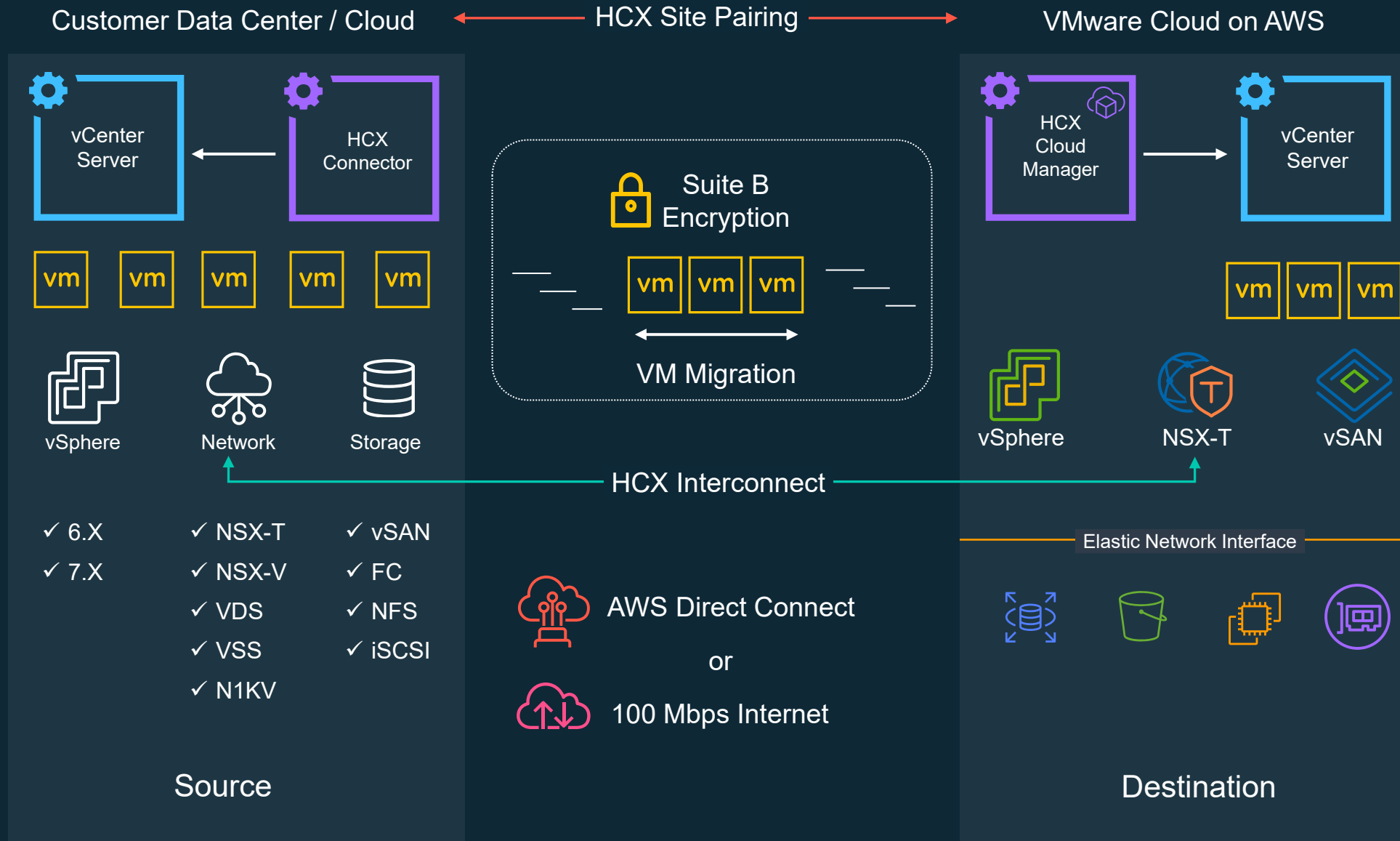
vMotion with Hybrid Linked Mode (HLM)

- Single management view across VMware Cloud on AWS and on-premises datacenter
- Simple process to enable and disable linking
- Maintain separate permissions between Cloud SDDC and on-premises datacenter
- Use stretched Layer 2 networks using L2VPN for live vMotion.

The screenshot shows the vSphere Client interface for a Hybrid Linked Mode (HLM) configuration. The left sidebar displays a tree view of the vCenter hierarchy, including 'vcenter.aws.vmlab' and 'vcenter.sddc-34-206-210-58.v...'. The main pane shows the 'Resource Cluster' view with tabs for Summary, Monitor, Configure, Permissions, Hosts, and VMs. The Summary tab is active, displaying resource usage for CPU, Memory, and Storage. Two orange callout boxes highlight 'On-Premises' and 'VMware Cloud on AWS'.

Resource	Used	Capacity	Free
CPU	5.93 GHz	302.4 GHz	296.47 GHz
Memory	249.65 GB	2 TB	1.76 TB
Storage	13.93 TB	41.92 TB	27.99 TB

VMware Hybrid Cloud Extension™ (HCX) Service



Included with subscription for VMware Cloud on AWS

Supports vSphere 6.x, 7.x (check interoperability)

Agnostic to on-prem vMotion network design

Online and offline VM migration at scale options

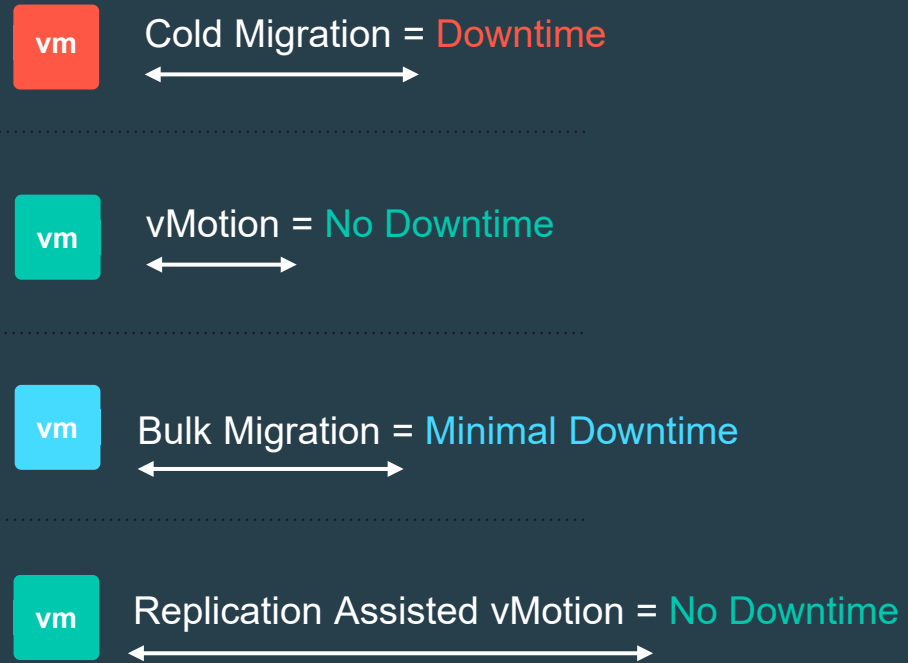
Built-in WAN optimization, de-dupe, & compression

Accessible via

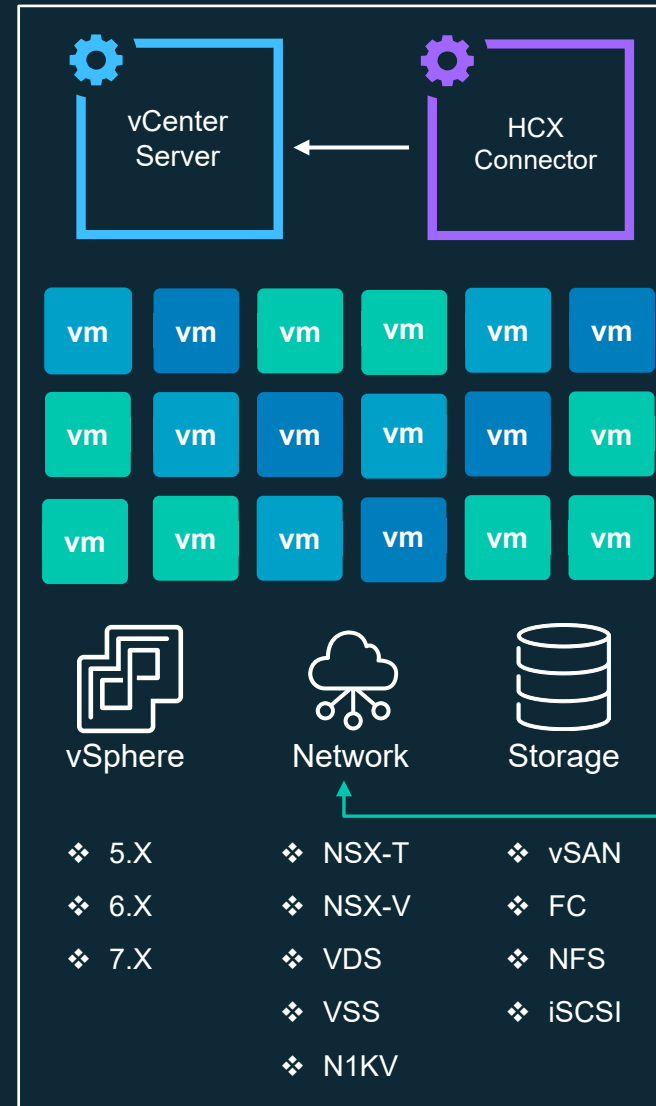
- vSphere HTML5 plugin
- HCX standalone client
- HCX API & PowerCLI

HCX migration methods

HCX Migration Types

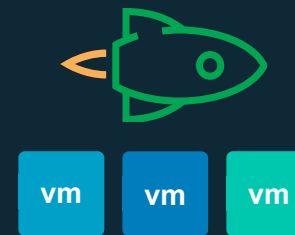


Customer Data Center / Cloud

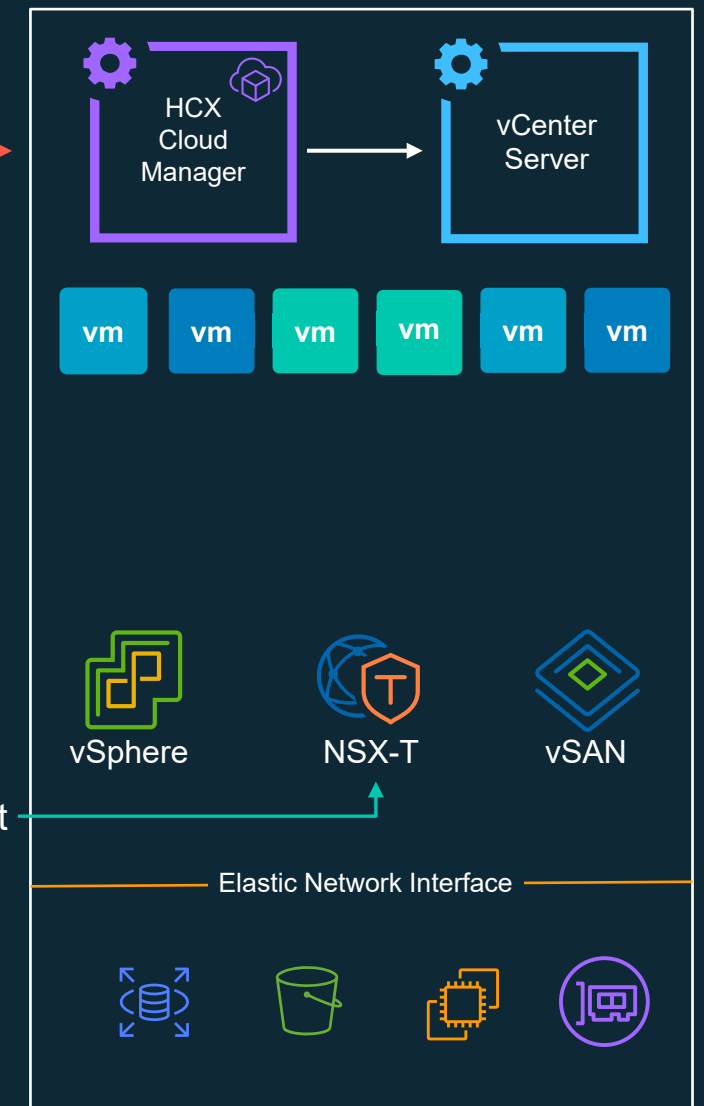


Source

HCX Site Pairing



VMware Cloud on AWS



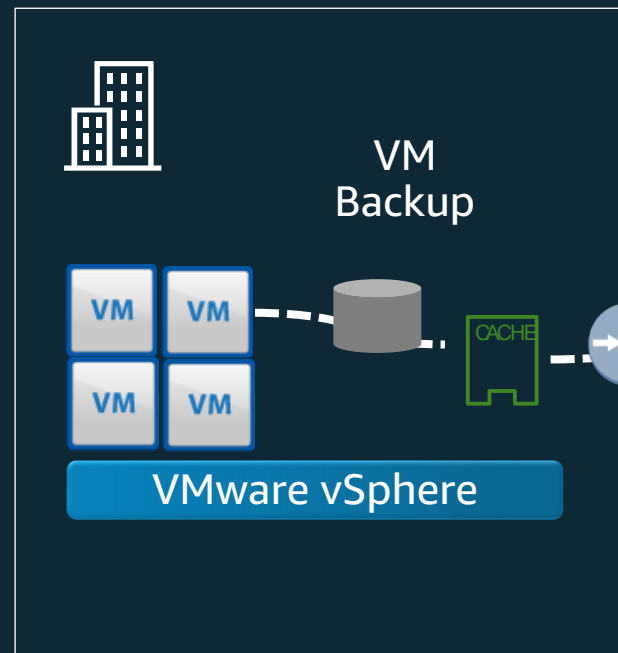
Destination

HCX Interconnect

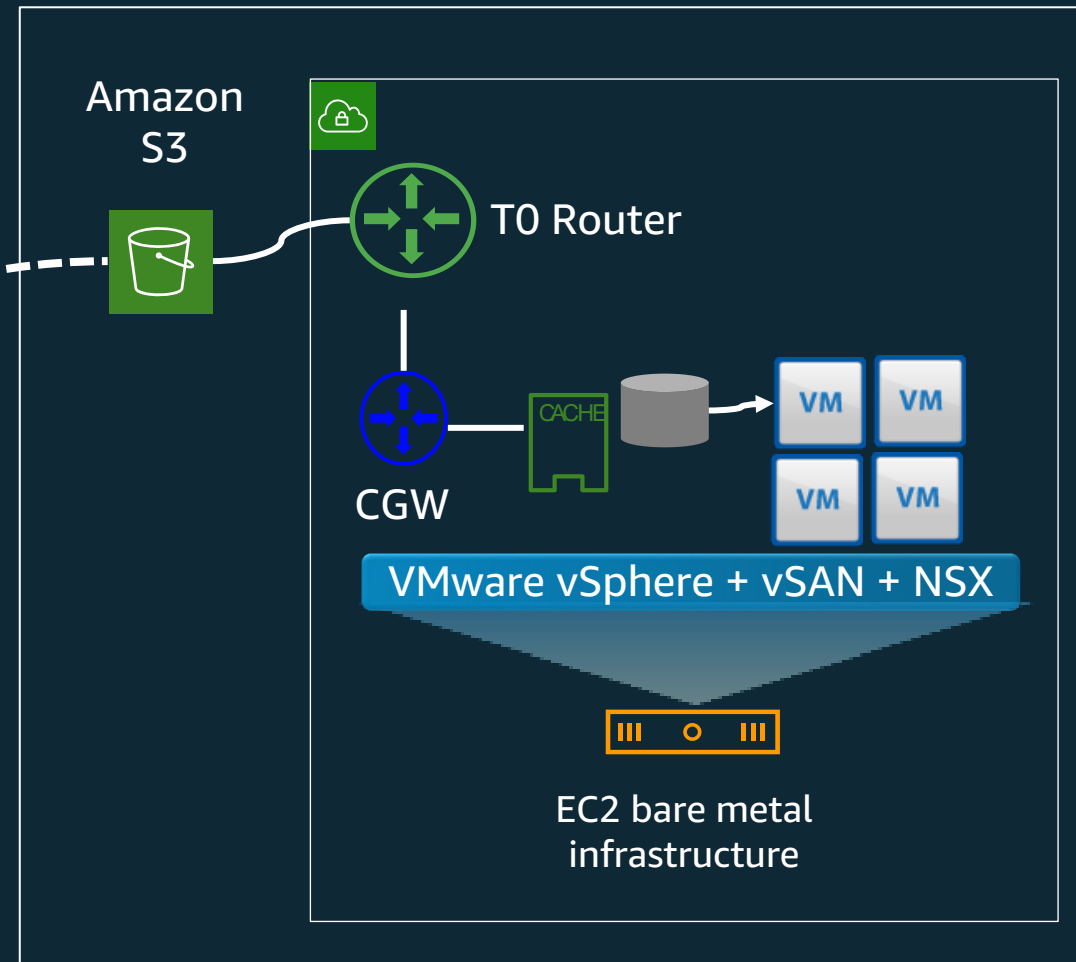
Elastic Network Interface

Backup and Restore

On-Premises



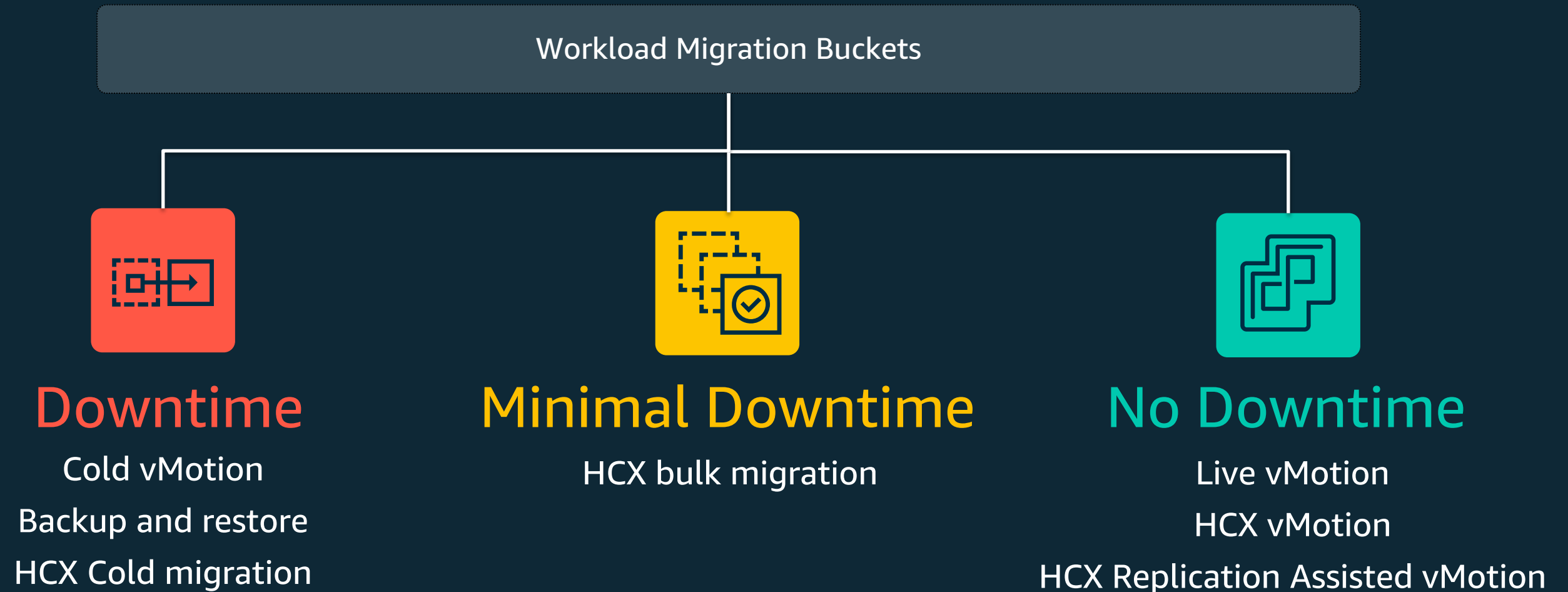
VMware Cloud on AWS



Selecting a migration method

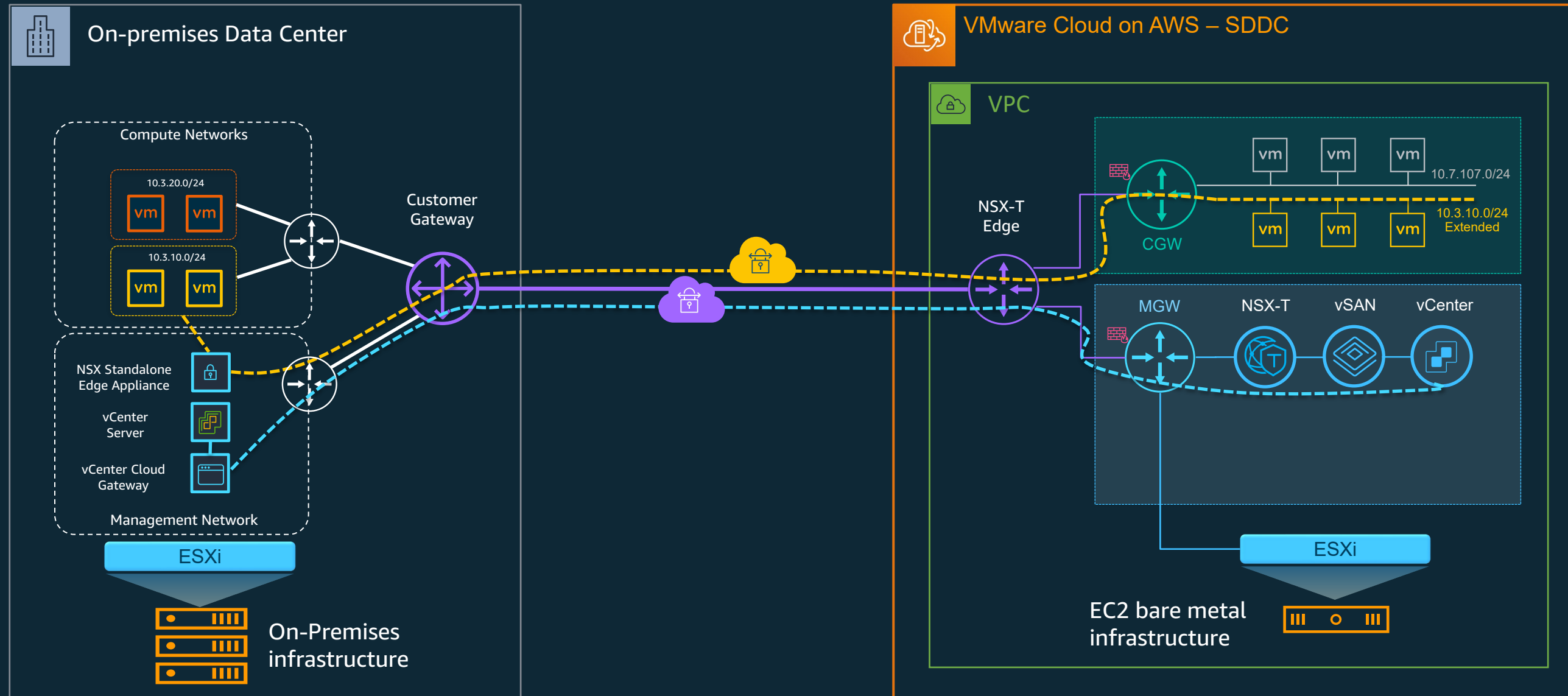
- Understand business requirements and application dependencies
- Hardware and Software compatibility as well as inter-operability for vSphere products
- The type and speed of connectivity to the VMware Cloud SDDC

Migration methods




Hybrid Migration using vMotion

Connectivity for HLM VMotion - Internet

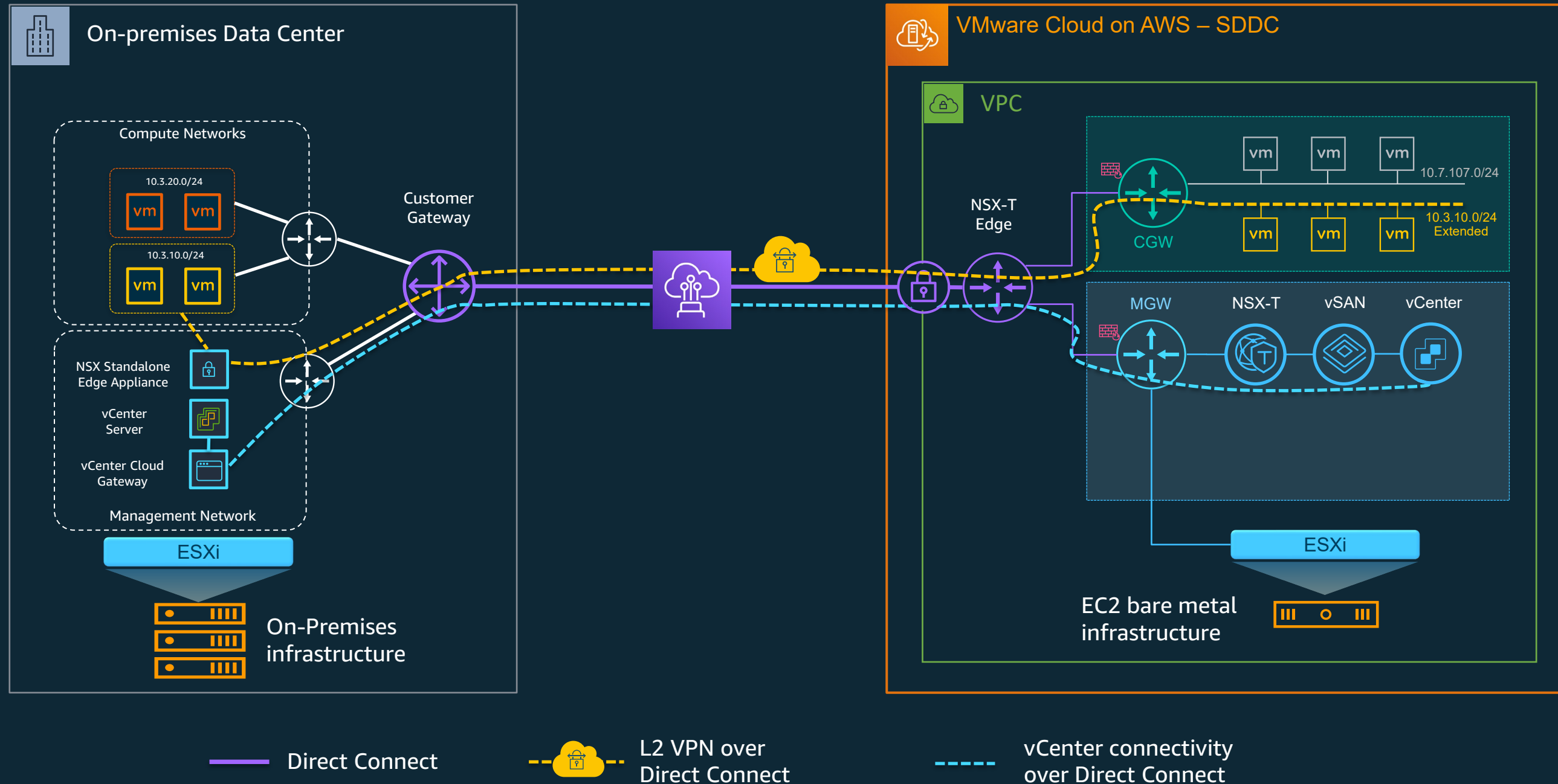


 IPsec VPN over Internet

 L2 VPN over Internet

 vCenter connectivity over IPsec VPN

Connectivity for HLM VMotion - Direct Connect



Setting up Hybrid Linked Mode and L2VPN

Preparing for vMotion using HLM

- Connectivity between on-premises and VMware Cloud on AWS SDDC
- SDDC configured for vCenter to resolve to private IP.
- Synchronized time using NTP or other authoritative time source
- An AD group with users that will get Cloud Administrator permissions
- On-premises deployment of the Cloud Gateway Appliance
- Firewall ports configured to allow communication between on-premises vCenter, Cloud Gateway appliance and SDDC vCenter.
- L2 Network extended using NSX-T Standalone Edge Appliance



Scan to view
documentation

Understanding NSX Edge Appliance Interfaces

Deploy OVF Template

- Select an OVF template
- Select a name and folder
- Select a compute resource
- Review details
- Configuration
- Select storage
- Select networks**
- Customize template
- Ready to complete

Select networks

Select a destination network for each source network.

Source Network	Destination Network
Network 0	Management
Network 1	Uplink
Network 2	Trunk for Extended VLANs
Network 3	High Availability

4 items

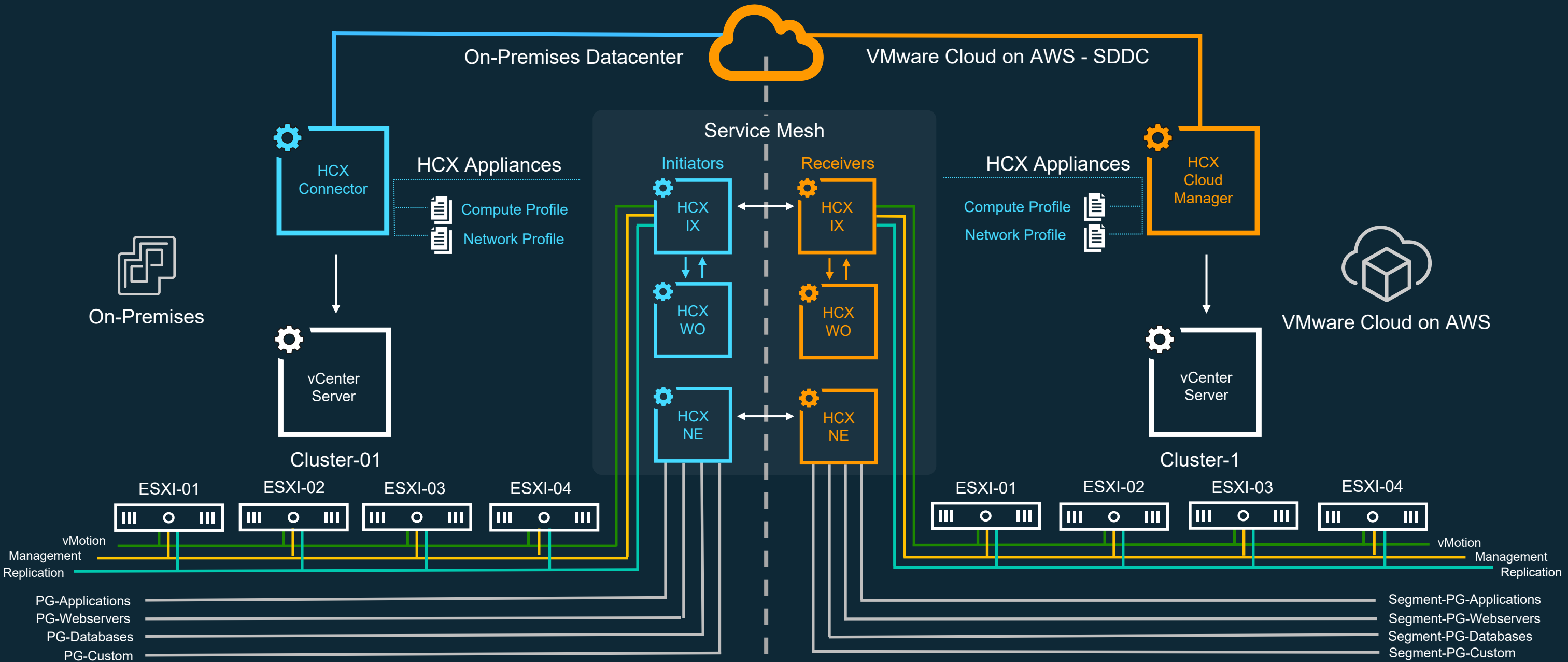
IP Allocation Settings

IP allocation: Static - Manual

IP protocol: IPv4

Hybrid Migration with HCX

HCX Service Mesh



Network Profiles

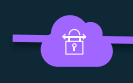
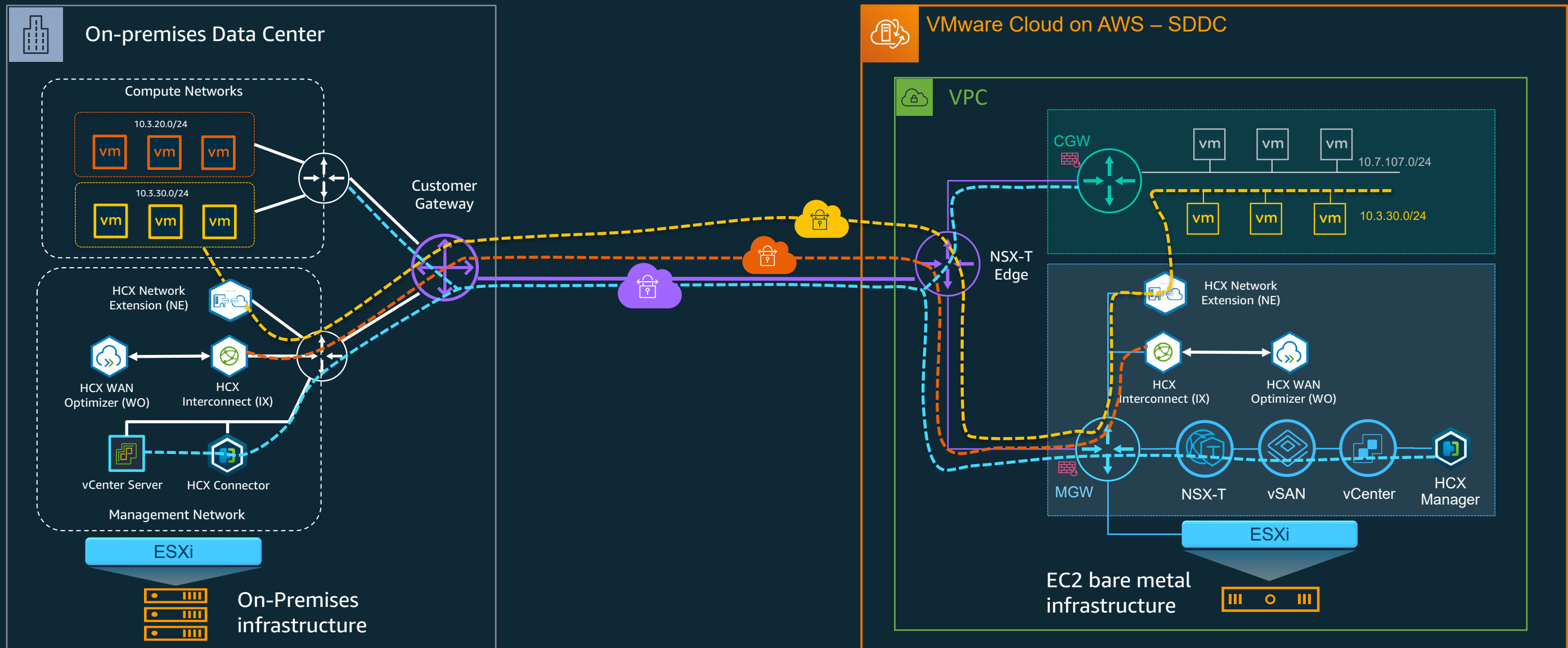
HCX Network Traffic Types	Description
HCX Uplink	<p>Defines how HCX Interconnect and Network extension appliances connect to their peer appliances.</p> <ul style="list-style-type: none">• In VMware Cloud on AWS:<ul style="list-style-type: none">• Public IPs – Two IPs are automatically allocated at deployment. Additional can be added if needed• Private Subnet over Direct Connect – When direct connect is present a defined range of private IPs can be used which automatically creates a network advertised to on-premises• On-Premise:<ul style="list-style-type: none">• Use a network that can reach the public IPs or Direct Connect IPs of peer appliances. Create this dedicated profile only if HCX Management profile cannot be used for uplink.
HCX Management	<p>Defines how HCX Interconnect and Network extension appliances connects to HCX Manager, vCenter Server, NTP, DNS. Create the profile using the vCenter / ESXi Management network for simplest configuration.</p>
HCX vMotion	<p>Defines how HCX Interconnect connects to the ESXi cluster vMotion network for vMotion-based services. Create the profile using the ESXi vMotion network for simplest configuration.</p>
HCX Replication	<p>Defines how HCX Interconnect connects to the ESXi cluster Replication network for Replication-based services. Usually not needed unless the ESXi cluster has dedicated Replication vmkernel adapters.</p>

Compute Profiles

Compute profiles define the deployment parameters for the service mesh including:

- HCX services to be enabled on the service mesh (e.g. WAN Optimization, Network Extension)
- Service Cluster where workload to be migrated resides
- Deployment Cluster where HCX service appliance will be deployed
- The Management, Uplink, vMotion and Replication Network profiles are selected

Connectivity for HCX – Internet



IPsec VPN over Internet



L2 Network Extension over Internet

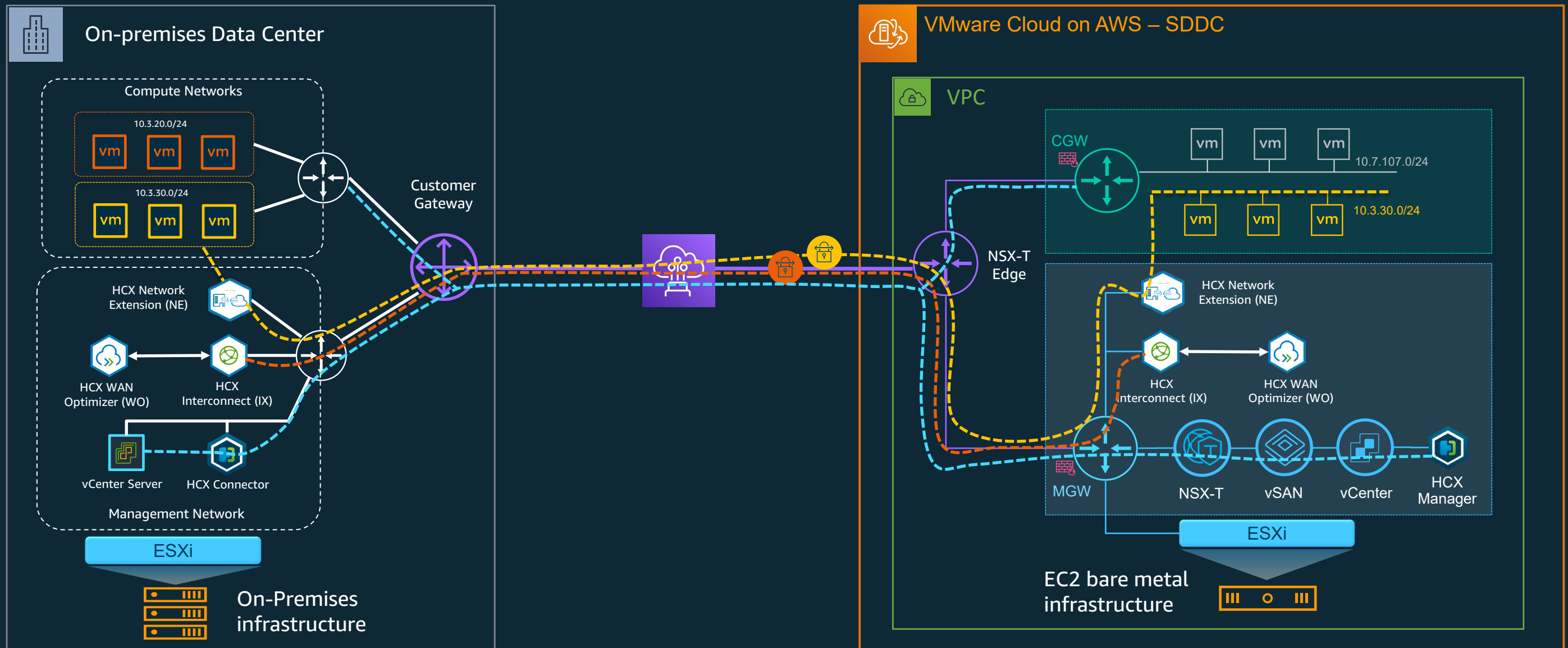


HCX Interconnect over Internet



Workload connectivity over IPsec VPN

Connectivity for HCX – Direct Connect



HCX migration setup

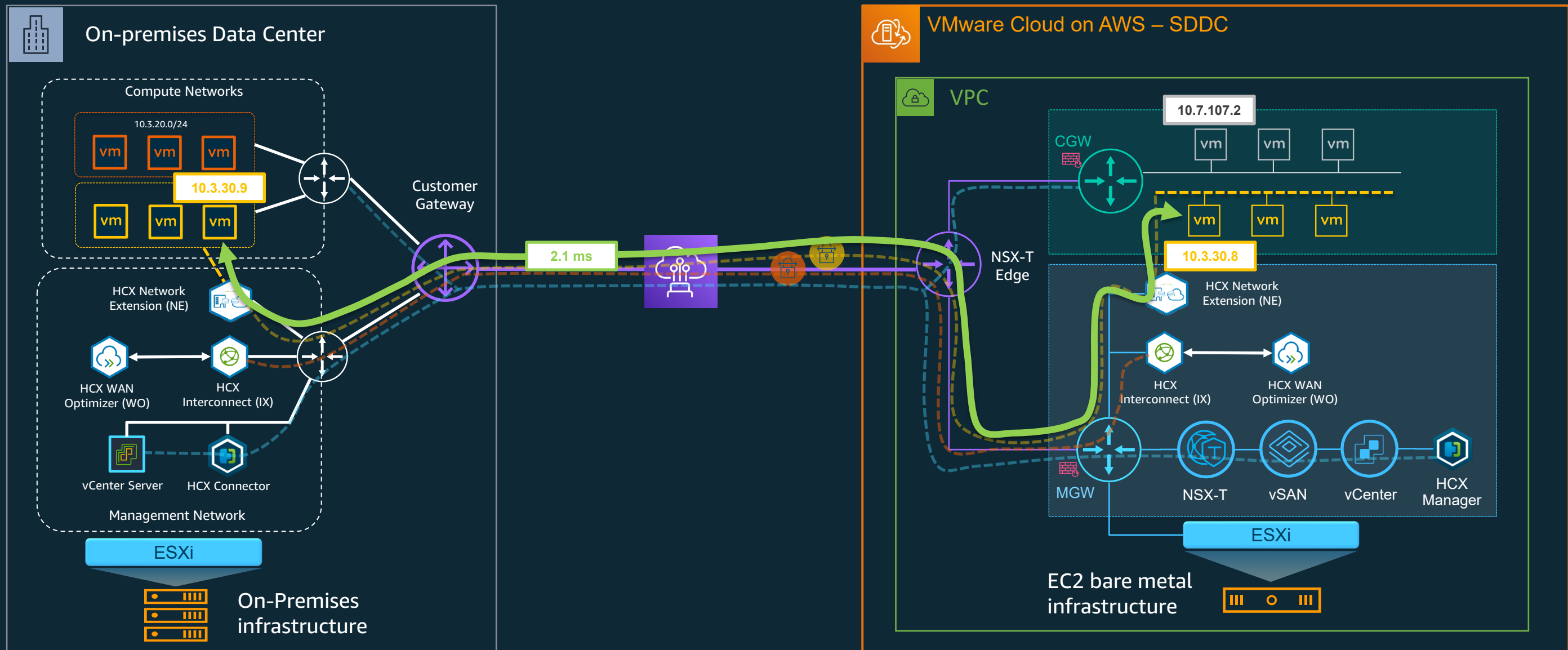
Preparing for HCX Installations

- Ensure that you have the resources to deploy the HCX appliances
- Validate the software version requirements align with your on-premises environment.
- Ensure that network connectivity and firewall rules are in place
- Verify your requirements with the configuration and service limits for VMware HCX.



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Mobility Optimized Networking - Disabled



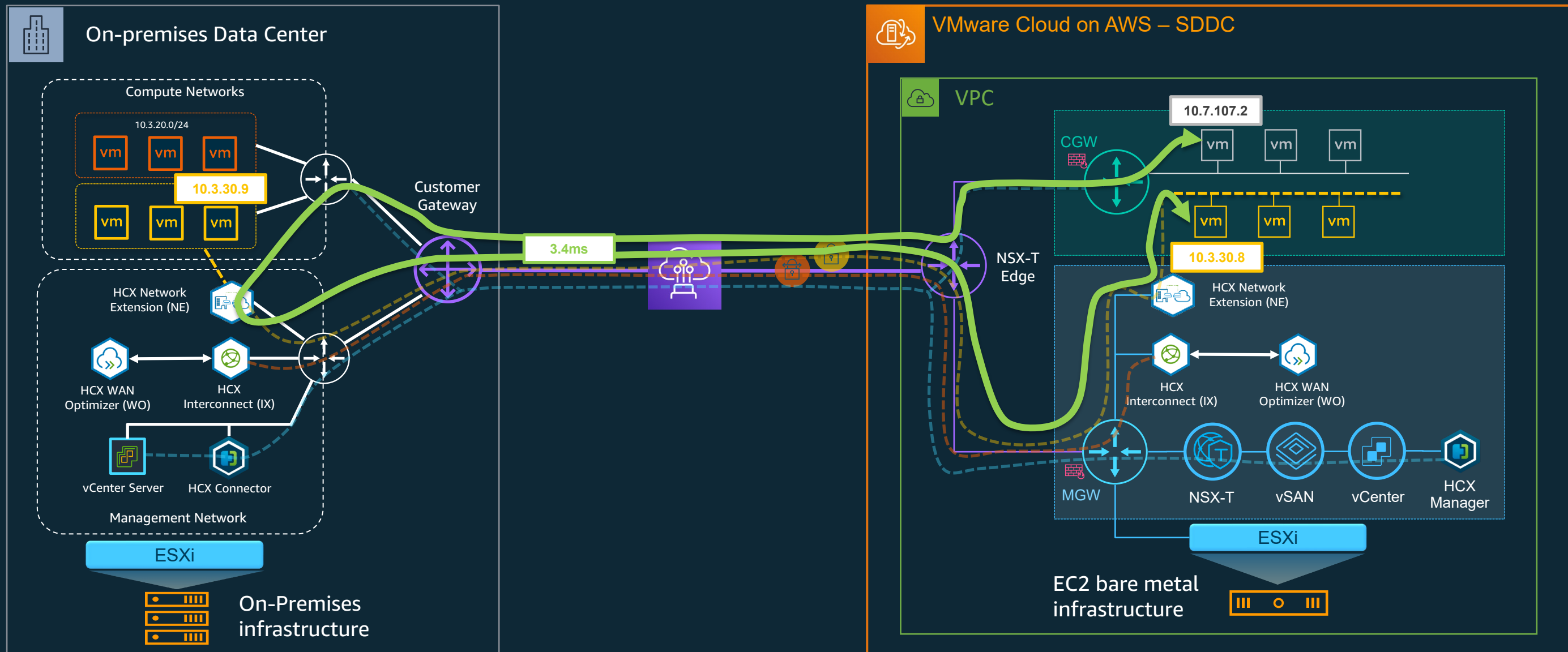
— Direct Connect (DX)

— L2 Network Extension over DX

— HCX Interconnect over DX

--- Workload connectivity over DX

Mobility Optimized Networking - Disabled



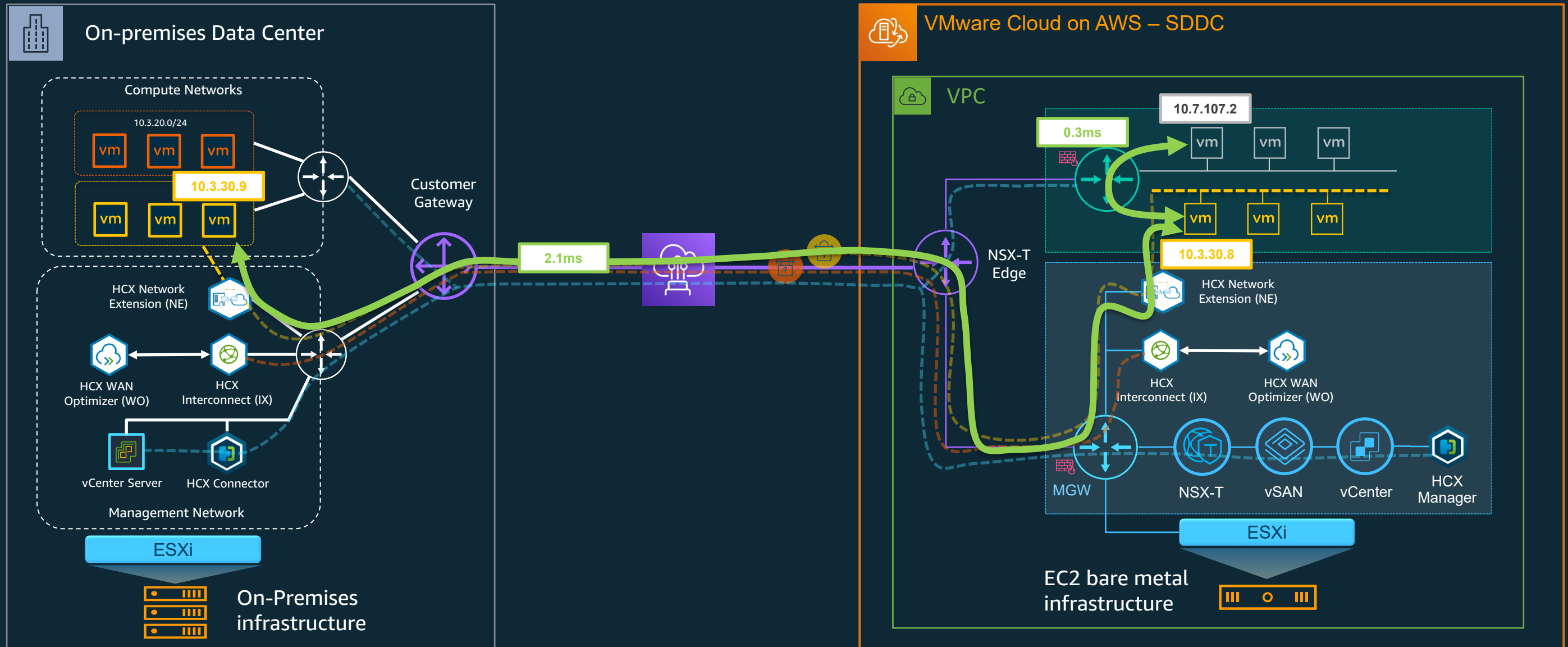
— Direct Connect (DX)

- L2 Network Extension over DX

- HCX Interconnect over DX

- Workload connectivity over DX

Mobility Optimized Networking - Enabled



Thank you !