

Architecting Multi-Cloud Horizon

Leveraging cloud-based capacity for your Horizon deployment

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The VMworld 2021 logo, featuring the word "vmworld" in a glowing, white, sans-serif font with a registered trademark symbol, and the year "2021" in a larger, glowing, white, sans-serif font below it. The background is a dark blue space with white stars and glowing white orbital lines.

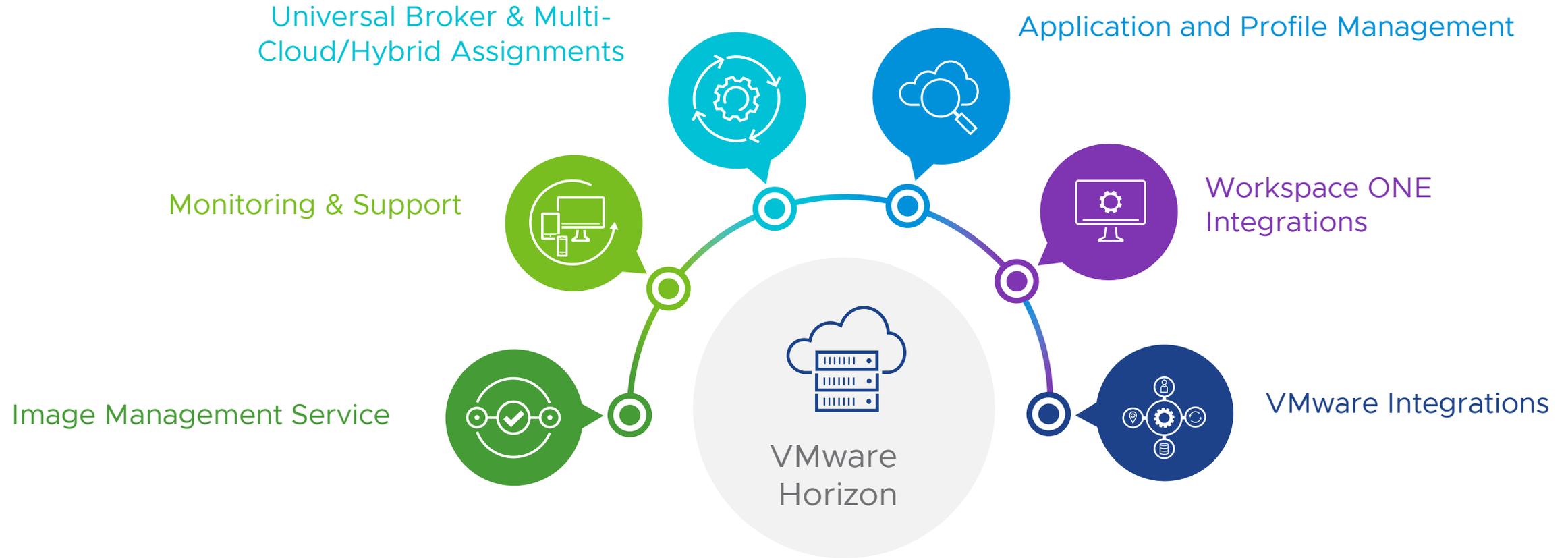
1. Horizon Service Overview
2. Horizon Cloud on Microsoft Azure
3. Horizon Cloud Connector
4. Horizon on vSphere Clouds Overview
5. Horizon on VMware Cloud on AWS
6. Horizon on Azure VMware Solution (AVS)
7. Horizon on Google Cloud VMware Engine (GCVE)

Horizon Service

Overview

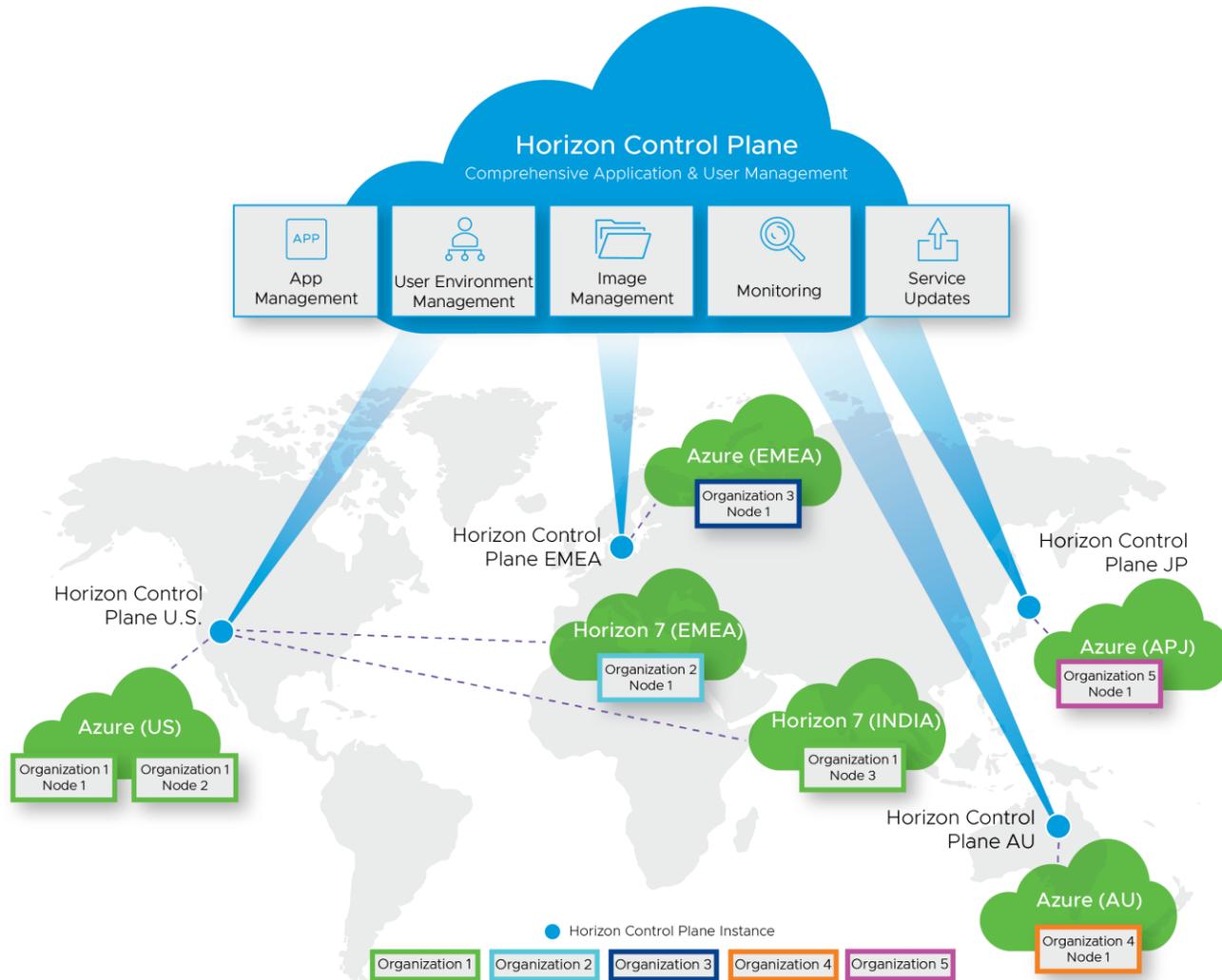
Horizon Cloud Services

Cloud Services via Control Plane



Enabling Customers to Move to the Cloud

Manage on-premises and cloud environments together



Customers can move to the cloud at their own pace
No huge up-front migration
Delivers ultimate flexibility connecting users with workloads, applications, and data

Connecting Horizon to Horizon Cloud Service



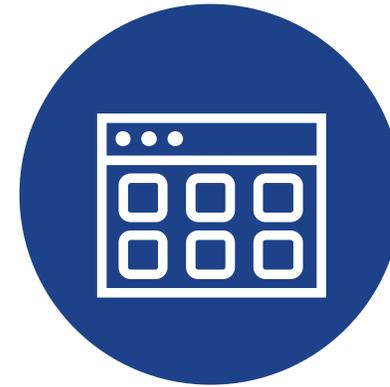
Horizon
Subscription
Licenses



Download &
Deploy
Horizon
Connector
OVA



Apply a valid
CA-signed
Certificate



Register AD
Domain with
Horizon Cloud
(Optional)



Configure and
use Horizon
Services
(Optional)

Horizon Control Plane Services

Architecture Resources

RA Landing page:

<https://techzone.vmware.com/reference-architecture>

Horizon Control Plane Service Architecture:

<https://techzone.vmware.com/resource/horizon-control-plane-services-architecture>

Horizon Service Journey Page

<http://via.vmware.com/hsj>



Horizon Cloud on Microsoft Azure

High-level architecture

Horizon Cloud on Microsoft Azure

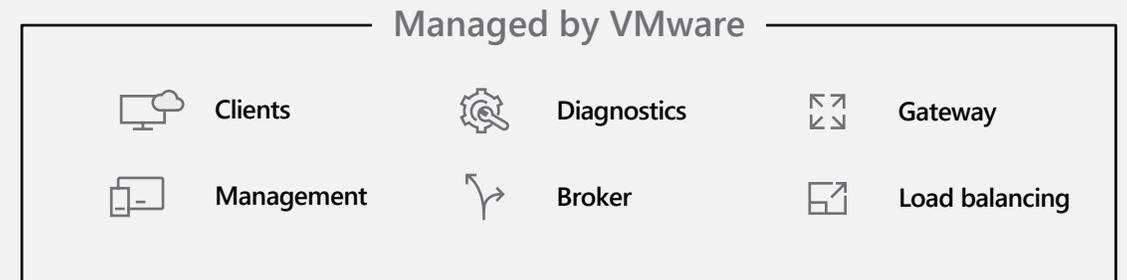
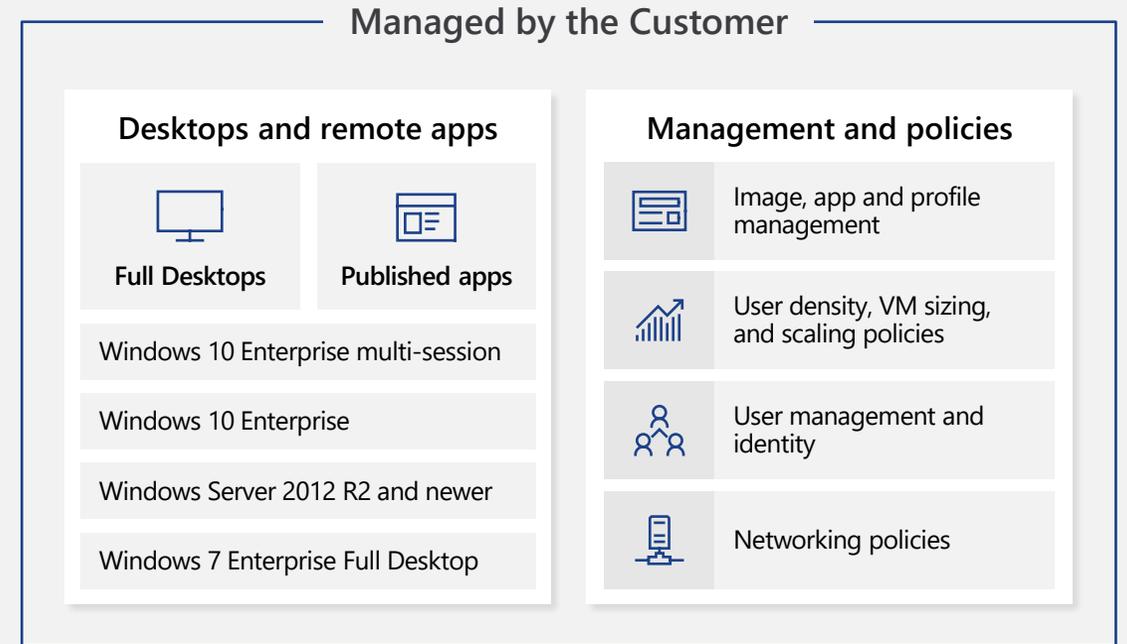
Provides desktop virtualization infrastructure as a managed service in customer's Azure subscription

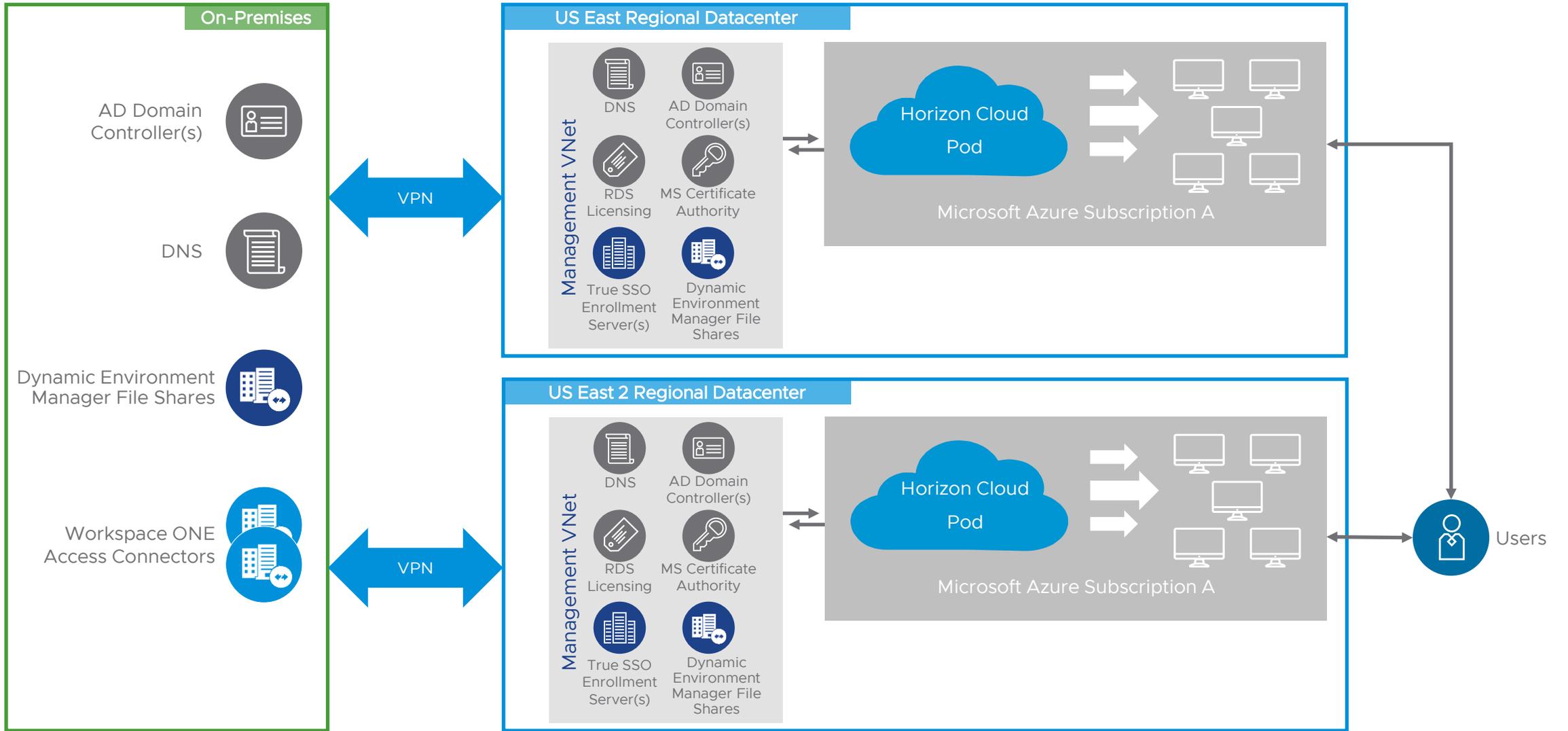
Deploy and manage virtual machines in customer's Azure subscription

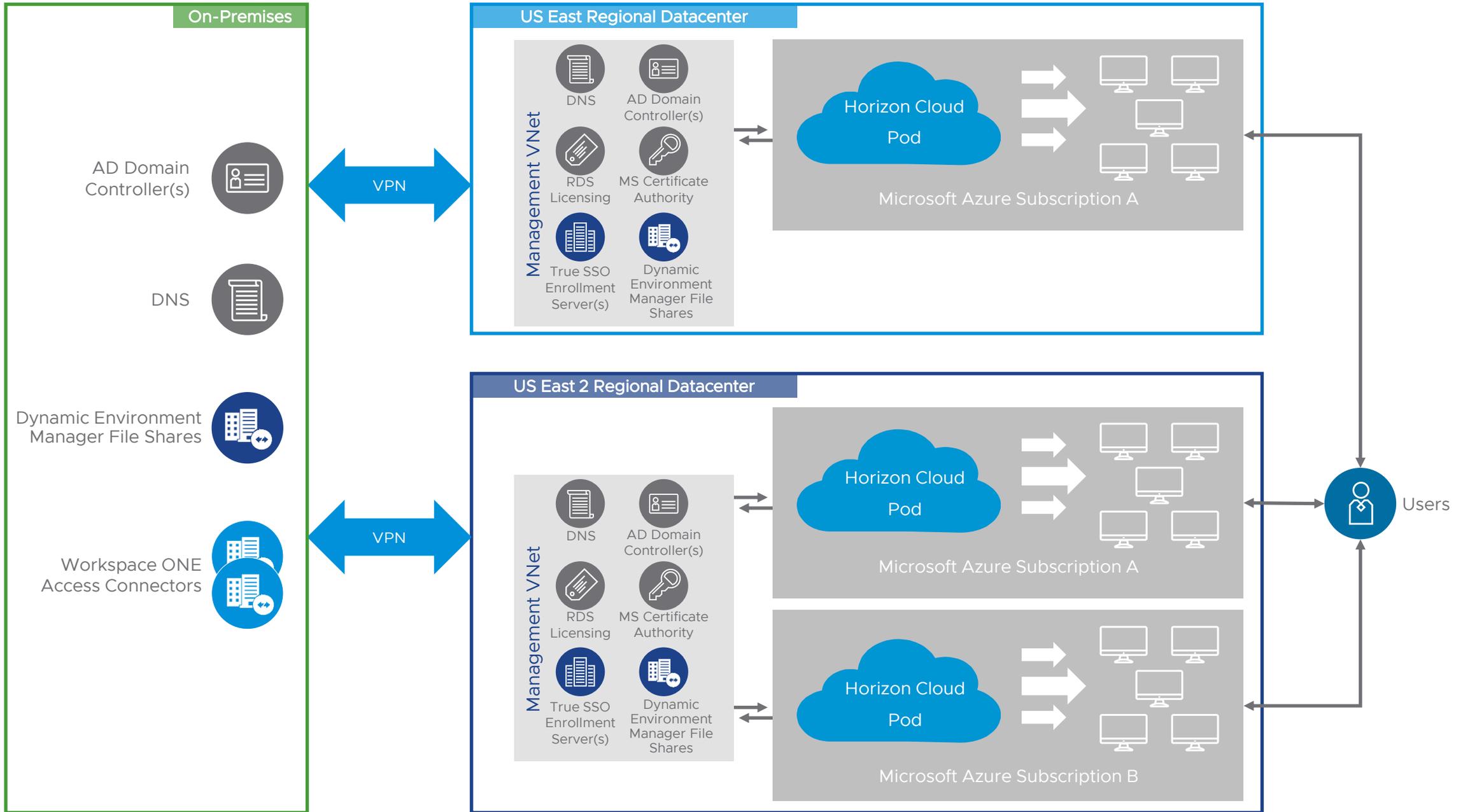
Leverages customer's Azure Virtual Desktop benefit

Integrates with Horizon Control Plane, which includes:

- Hybrid support so admins can manage on-premises and cloud environments from one pane of glass
- Monitoring & Help desk capabilities
- Advanced application and user environment management with VMware App Volumes and Dynamic Environment Manager
- Cloud-based Universal Broker that routes users to any workload regardless of location







Next Steps....

Horizon Cloud on Microsoft Azure

RA Landing page:

<https://techzone.vmware.com/reference-architecture>

Architecture:

<https://techzone.vmware.com/resource/horizon-cloud-on-microsoft-azure-architecture>

Horizon Control Plane Service Architecture:

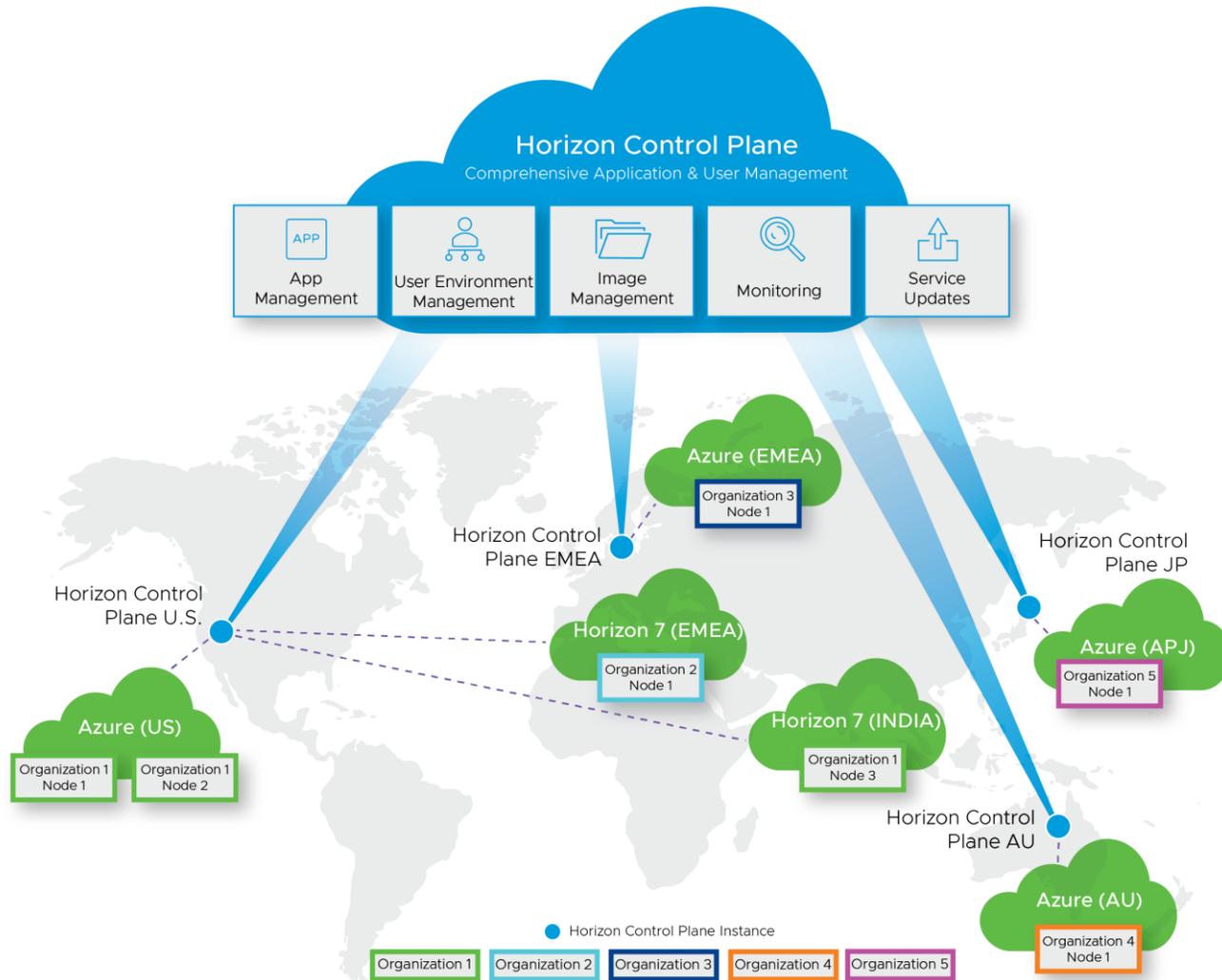
<https://techzone.vmware.com/resource/horizon-control-plane-services-architecture>



Horizon Cloud Connector

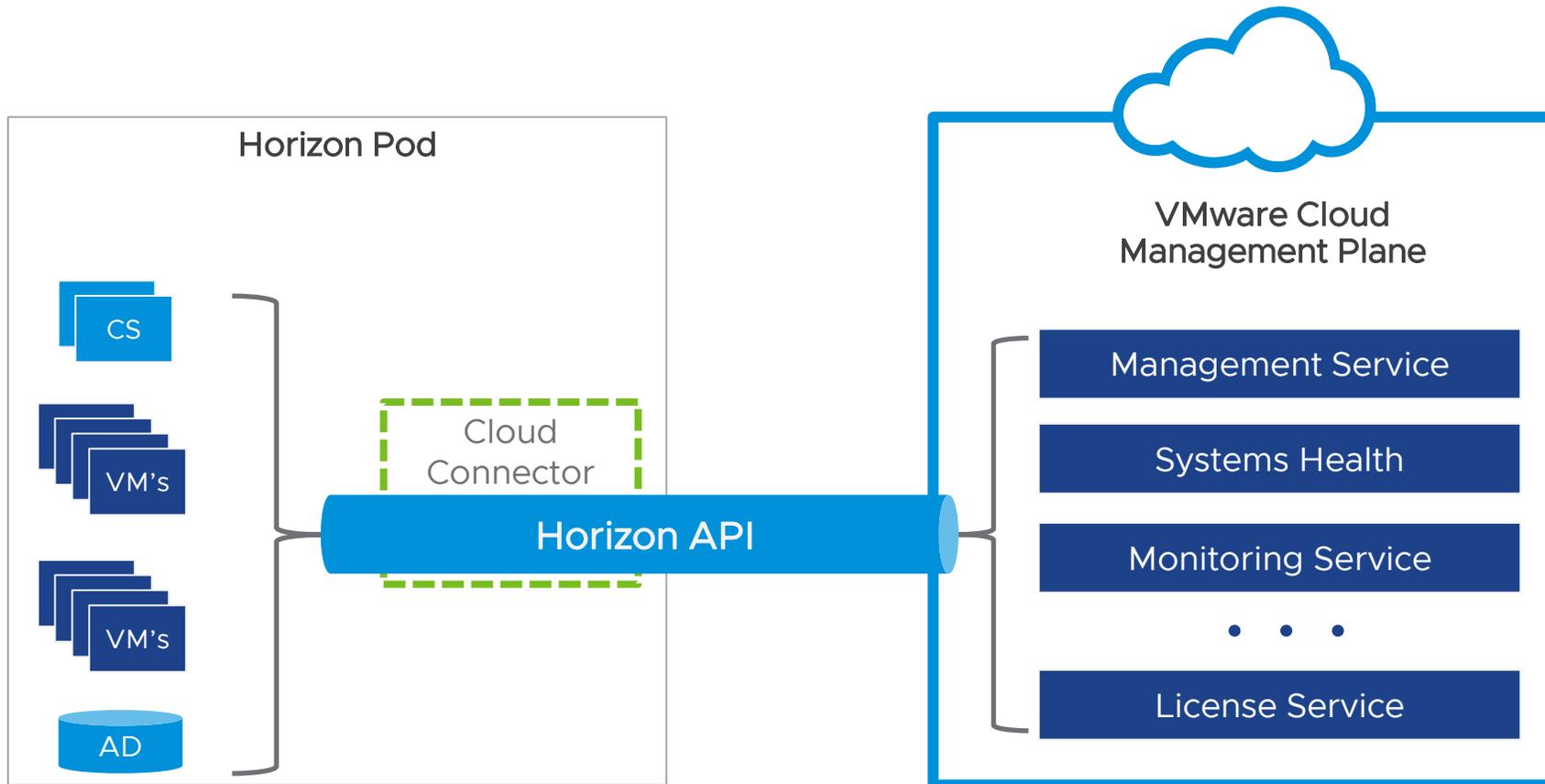
Enabling Customers to Move to the Cloud

Manage on-premises and cloud environments together



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Connecting Horizon to Horizon Control Plane



1. Tenant creation & services enabled in cloud management plane
2. Download and install the Horizon Cloud Connector (OVA file)
3. Pair the Horizon Cloud Connector with Horizon 7/8 pod, domain bind, and Horizon Cloud Management Plane via port 443
4. Centralized, aggregated management & insight across all connected Horizon pods

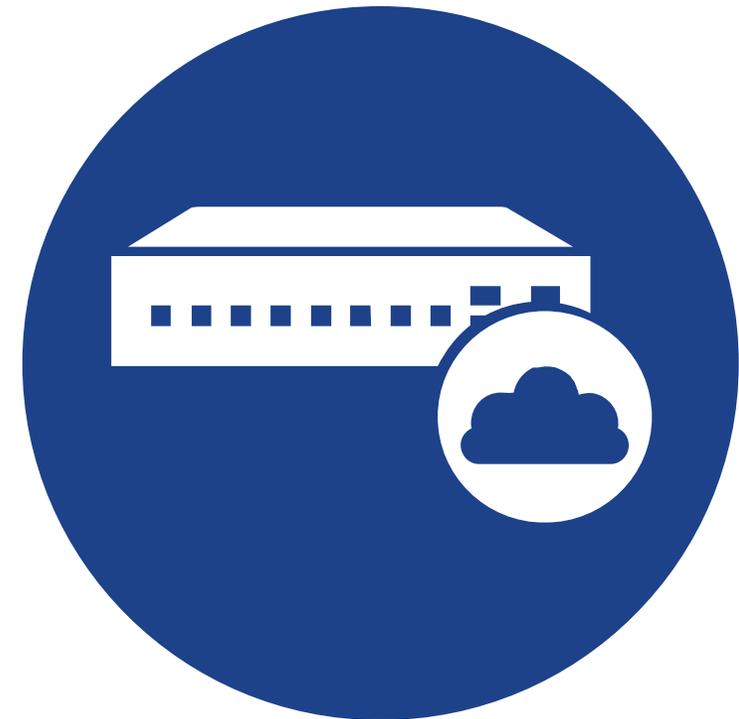
Horizon Cloud Connector

What is it?

The salient features of the cloud connector are listed below:

- The Cloud Connector is a pure add-on appliance and doesn't require any changes on the Horizon infrastructure.
- It pairs the Horizon infrastructure with Horizon Control Plane.
- It allows Horizon Control Plane to interact with the infrastructure using the Horizon APIs including the View APIs and the REST APIs.
- It provides a platform to run components as docker images so that optional cloud-based features can be enabled on the existing Horizon infrastructure.

The lifecycle of the Cloud Connector itself can either be managed fully from the cloud or by the Horizon infrastructure administrator .



Horizon Cloud Connector

How does it work & Considerations

Horizon Cloud Connector runs as vSphere appliance

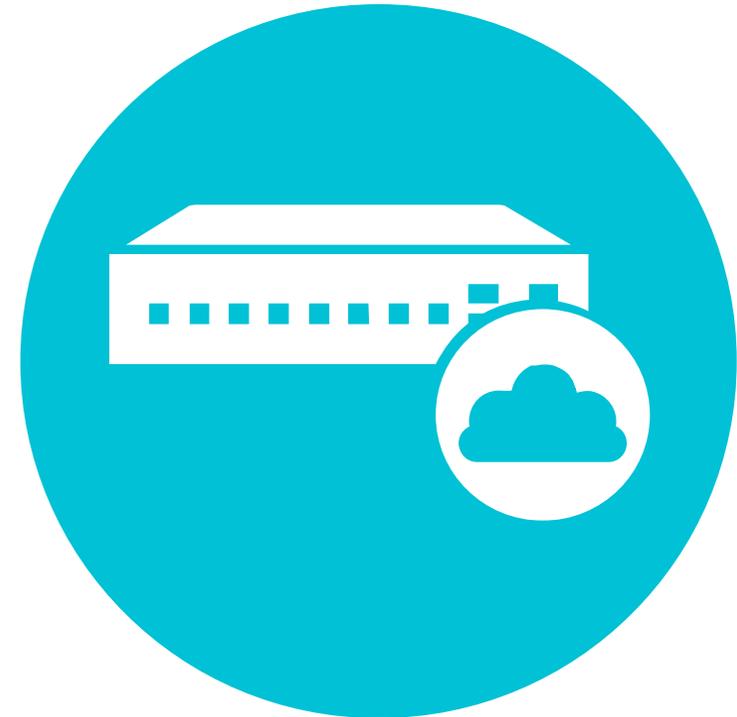
- You must use vSphere Client or vSphere Web Client to deploy.
- Do not deploy the appliance directly into the ESXi host.

HTTPS Websocket Connection over Port 443

- Open all the time
- DNS names for relevant Horizon Control Plane services must be correct
- Must be able to communicate with `cloud.horizon.vmware.com`
- Proxy SSL configuration is not supported for the self-signed certificate for the Horizon Cloud Connector virtual appliance.
- All in product docs

Deployment details may be different on different SDDC services.

- Details in the product docs



Pre-Check Script

[Troubleshooting detail in KB 79859](#)

Troubleshooting Horizon Cloud Connector Connectivity Issues (79859)

Last Updated: 7/10/2020

Categories: Troubleshooting

Total Views: 1564



Language: English



▼ Symptoms

While accessing the onboarding page, you experience this symptom:

A **502** gateway error comes due to which the expected page is not displayed in browser.

▼ Purpose

This article explains how to identify root cause of connectivity issues for Horizon Cloud Connector.

▼ Cause

This issue may occur due to proxy / firewall configurations in your network.

▼ Resolution

To resolve this issue:

Pre-Check Script

Execute the pre-check script (`/opt/vmware/bin/precheck.sh`) to see if the Cloud Proxy Service component shows failure. Failure would mean that there is out-bound connectivity issue.

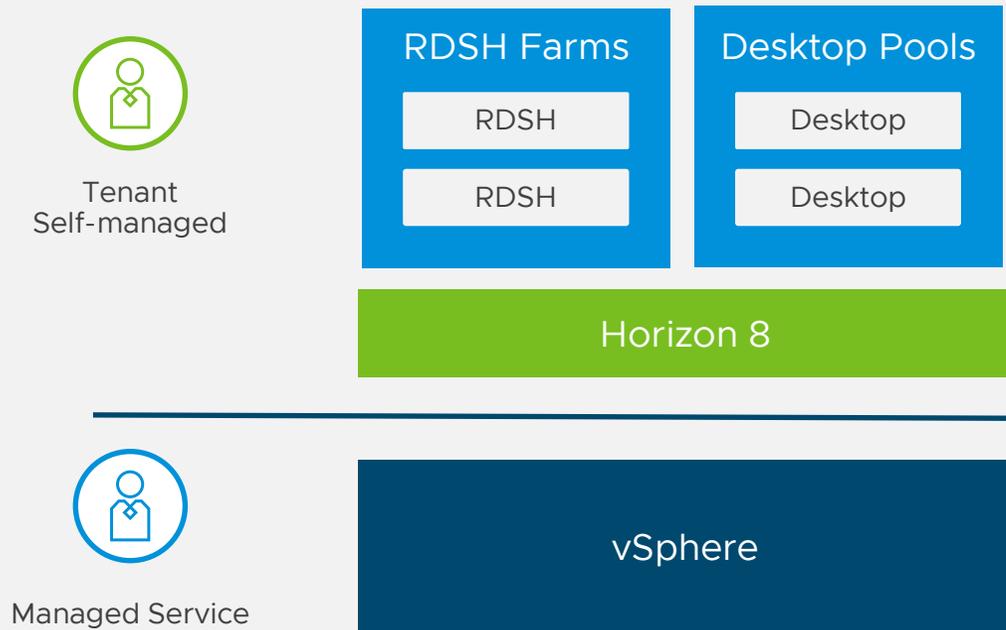
For example:

```
/opt/vmware/bin/precheck.sh <CS IP/FQDN>
```

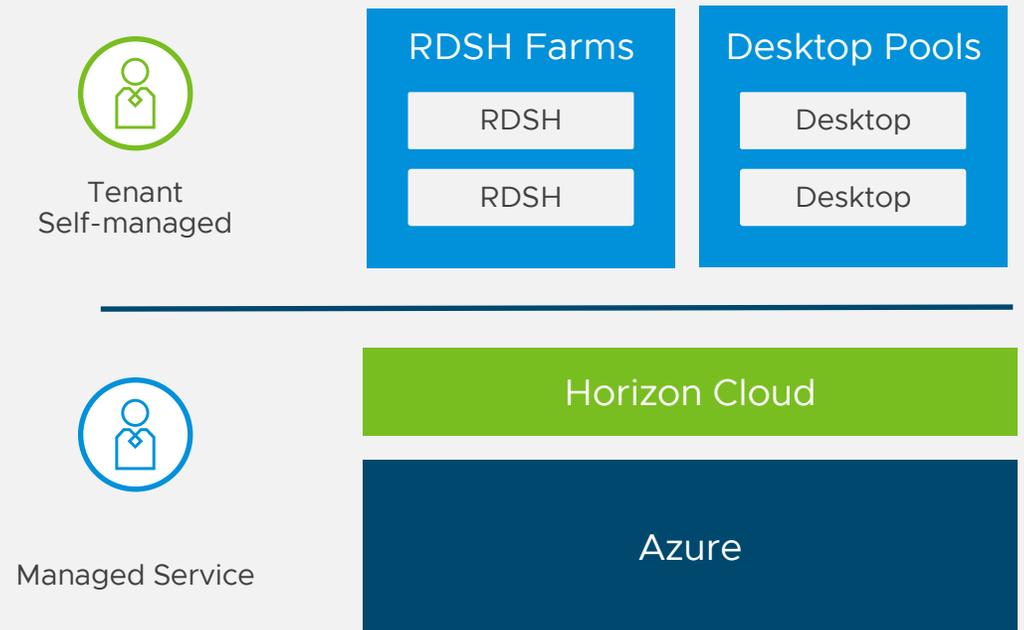
Horizon on vSphere Clouds

Horizon with vSphere Cloud Solutions \neq DaaS

Horizon with vSphere Cloud Solution (IaaS Model)

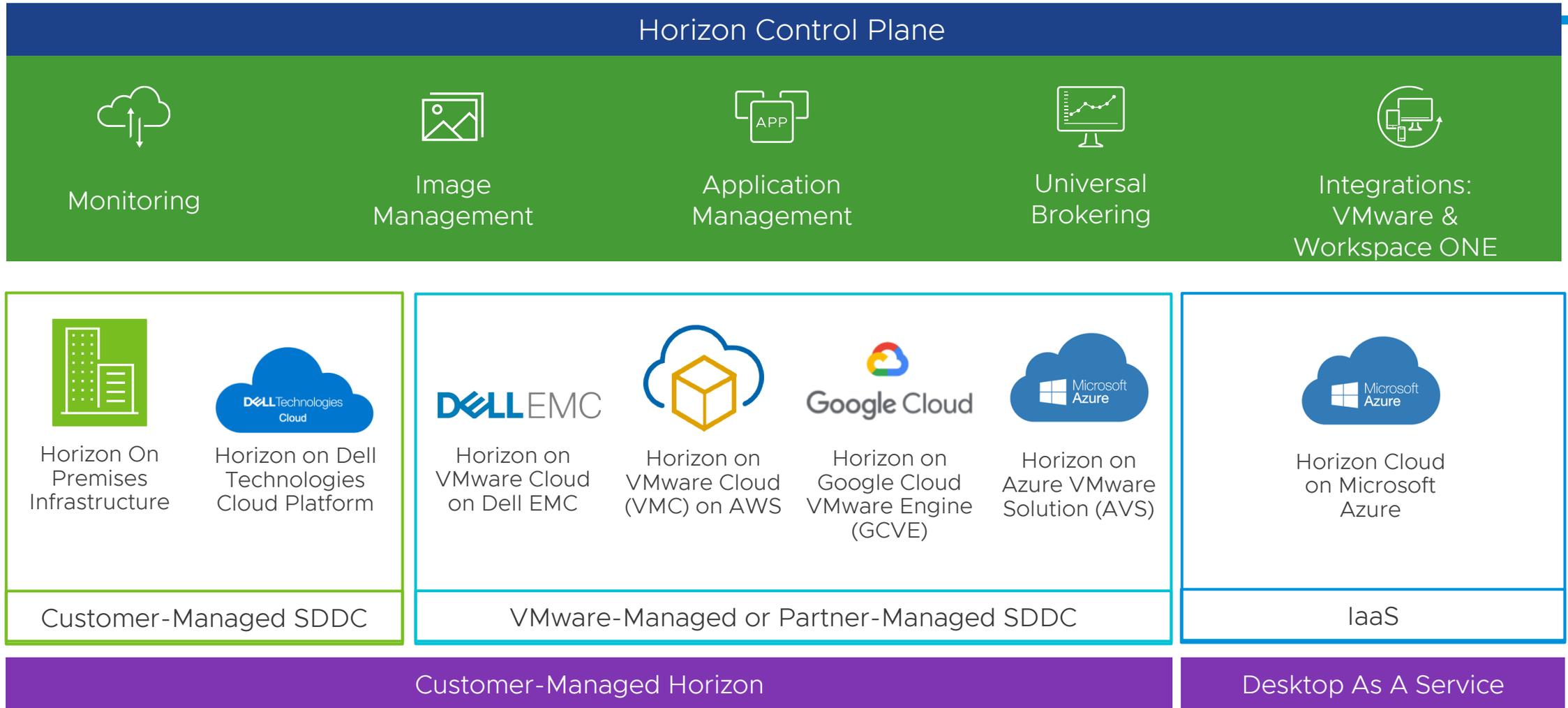


Horizon Cloud on Azure (DaaS Model)

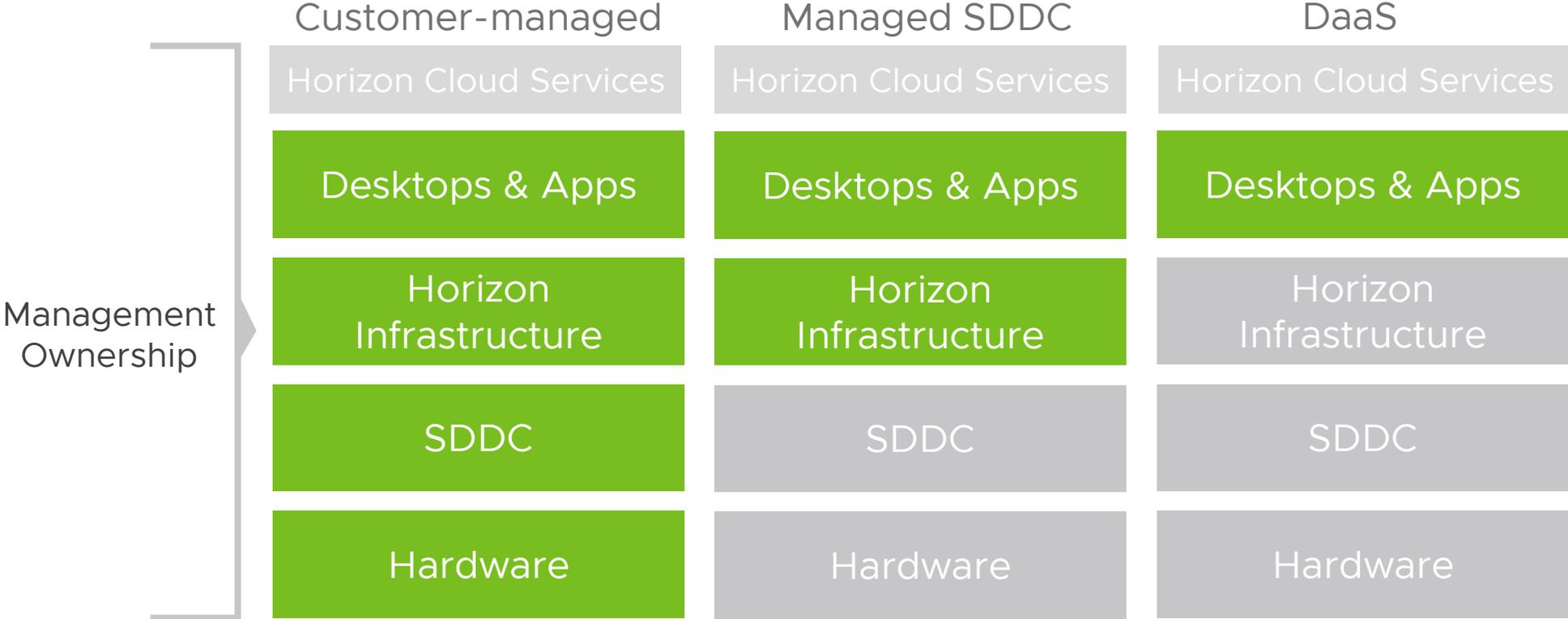


Horizon Cloud Services

Leverage Cloud Resources for Hybrid Delivery and Management



Providing Choice with Horizon Subscription



On Premises / Private Cloud



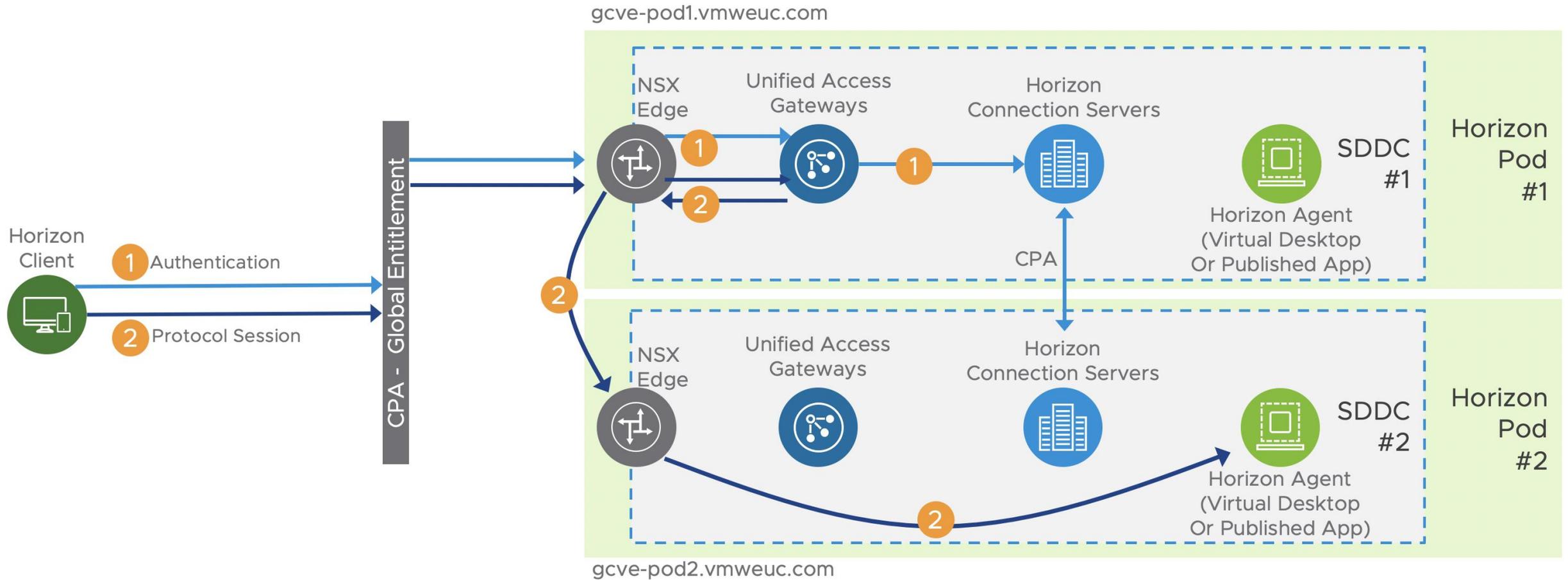
VMware Cloud – AWS, AVS, GCVE



Public Cloud – Azure
(+ Support for Private cloud, VMware Cloud coming soon)

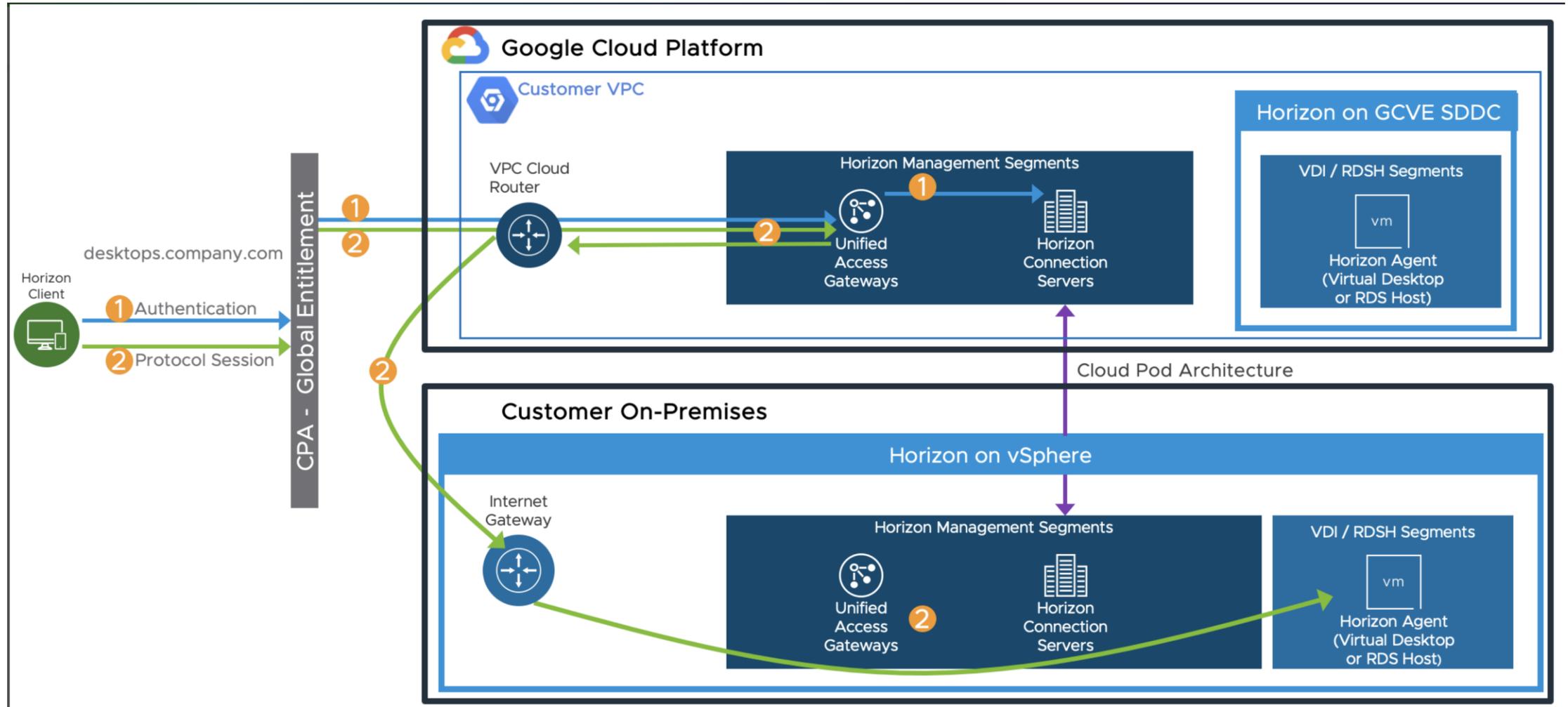
Hair Pinning Concerns – Cloud Pod Architecture

Horizon Protocol Traffic Hair-Pinning

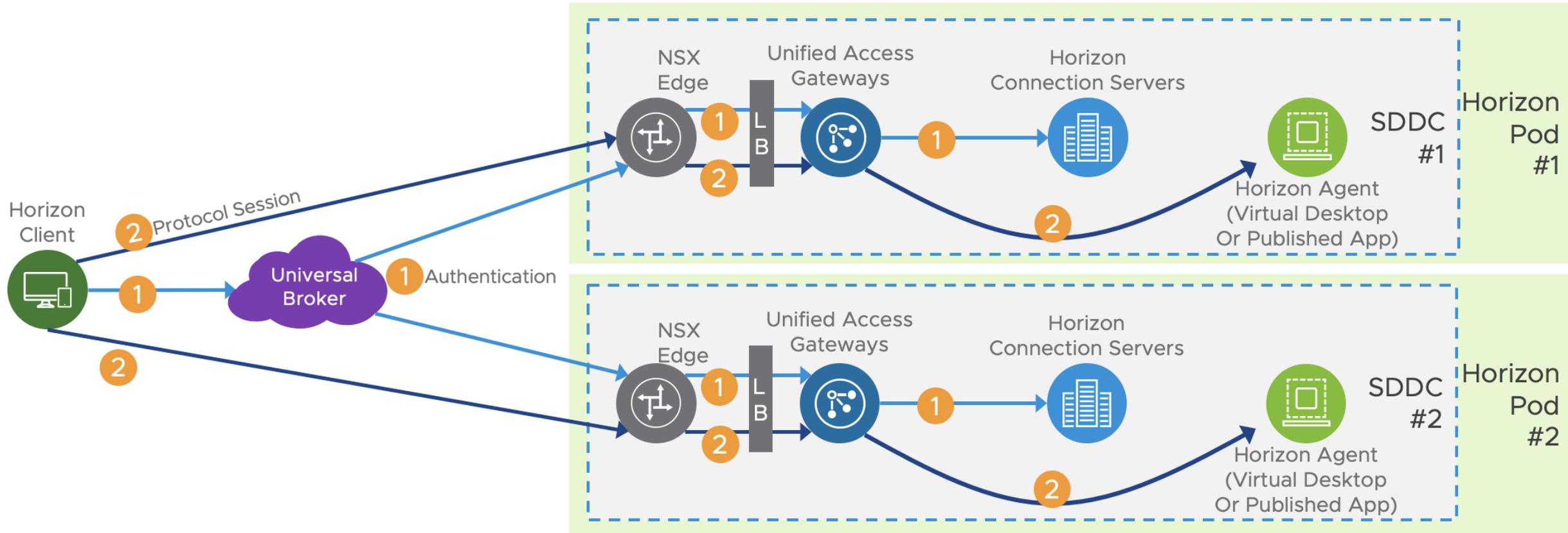


Hair Pinning Between on Premises and Cloud

Cloud Pod



Universal Broker Architecture



Federated Architecture

Horizon Management Component in a Cloud Native Virtual Network (VPC/vNET)

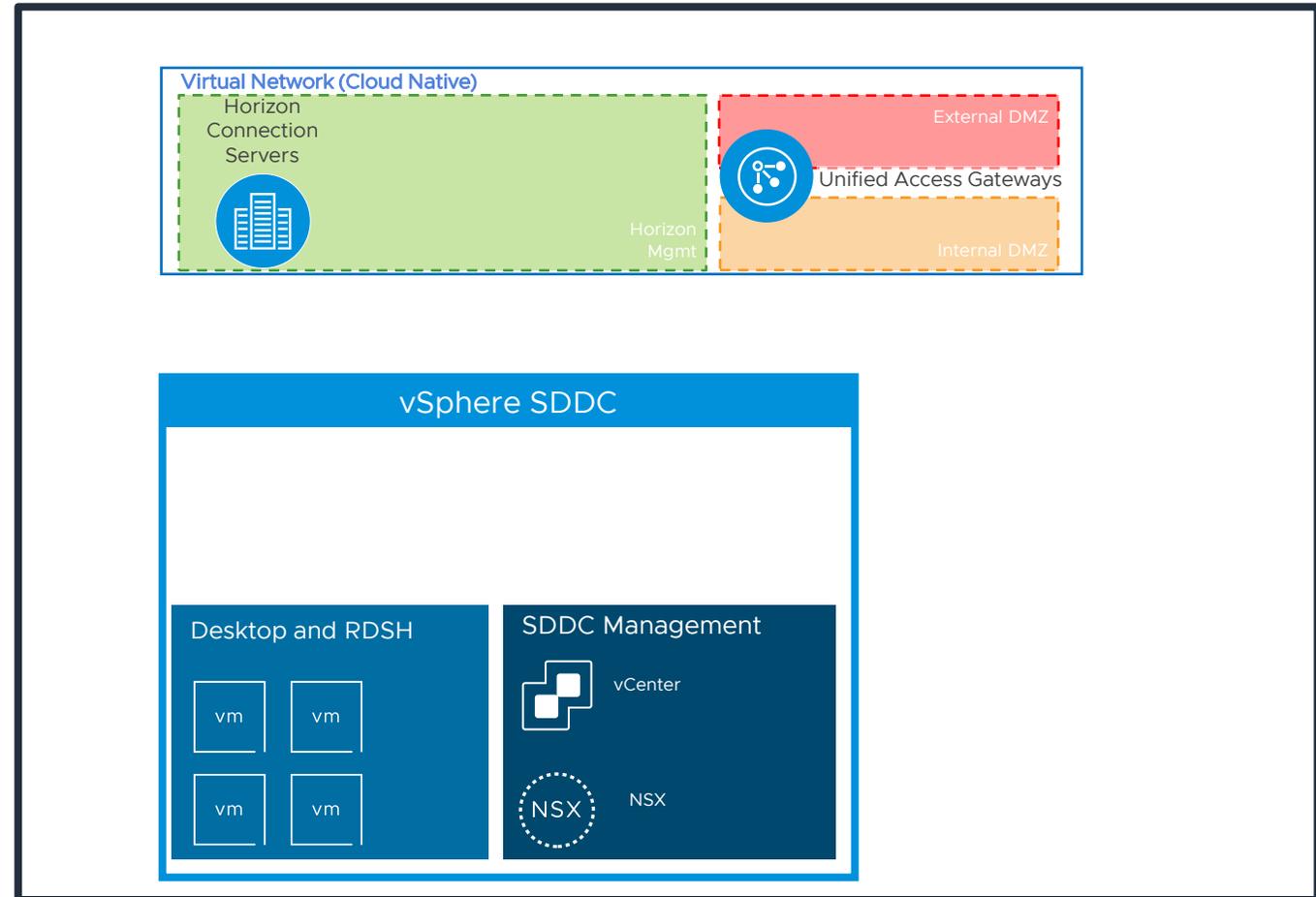
Azure VMware Solution (AVS)

Google Cloud VMware Engine (GCVE)

- Medium/Large Design

VMware Cloud on AWS

- Large Design



SDDC Architecture

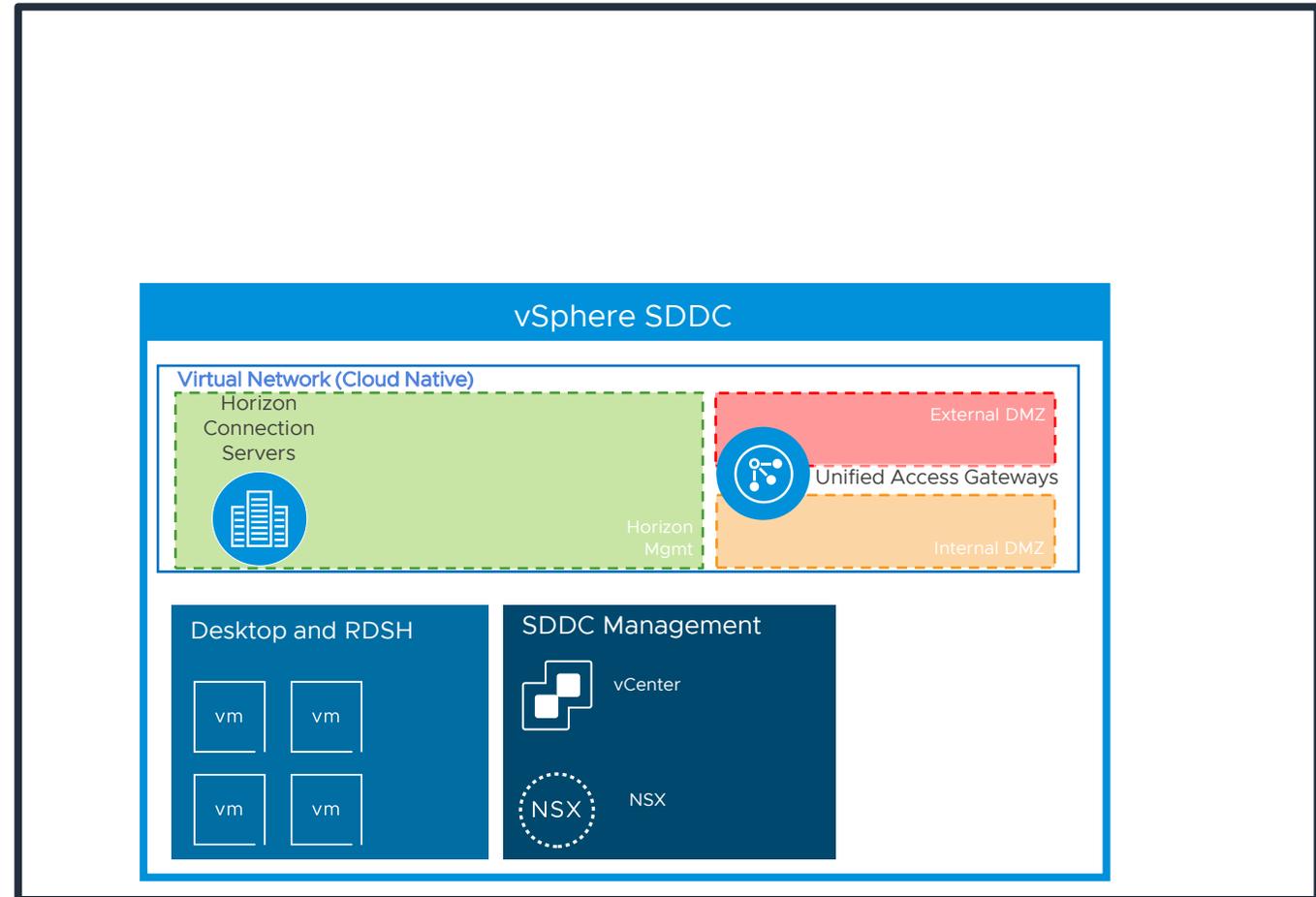
Horizon Management Component in vSphere SDDC

Google Cloud VMware Engine (GCVE)

- Small Design
- Does have a load balancer as VPC entry point
- Maximum of two PODs

VMware Cloud on AWS

- Small/Medium Design



Cross Cloud Infrastructure as Pure Capacity

Features in Horizon 8 (2106) to enable “bursting”

Overview

Choose vCenter Type to support on prem managing Cloud Burst capacity

- Up to ~120ms latency between Agents and Connection server

Benefits

Separate Horizon infrastructure from VDI workloads.

Third-Party can manage the Connection Server on behalf of the customers as a service

Reduce the overhead of deploying Horizon on public clouds. Instead of standing up a separate pod on the public cloud, customers can simply extend their on-premises pod infrastructure and use the public cloud capacity as an additional block

The screenshot shows the 'Add vCenter Server' configuration wizard. The 'vCenter Information' step is selected in the left-hand navigation pane. The main form area contains the following fields:

- Server address:** https://vc-vdi.betavmweuc.com
- User Name:** betavmweuc\chalstead
- Password:** (masked with dots)
- Description:** (empty text area)
- Port:** 443
- Deployment Type:** A dropdown menu with 'General' selected. A red box highlights the dropdown list, which includes: General, VMware Cloud on AWS, Azure VMware Solution (AVS), VMware Cloud on Dell EMC, Google Cloud VMware Engine (GCVE), and Oracle Cloud VMware Solution (OCVS).
- Port (bottom):** 20

At the bottom right, there are 'Cancel', 'Previous', and 'Next' buttons.

Choose vCenter Type for Cloud Burst - Detail

Horizon 8 (2106)

Overview

Add remote desktop capacity by adding a Virtual Center to existing Horizon POD

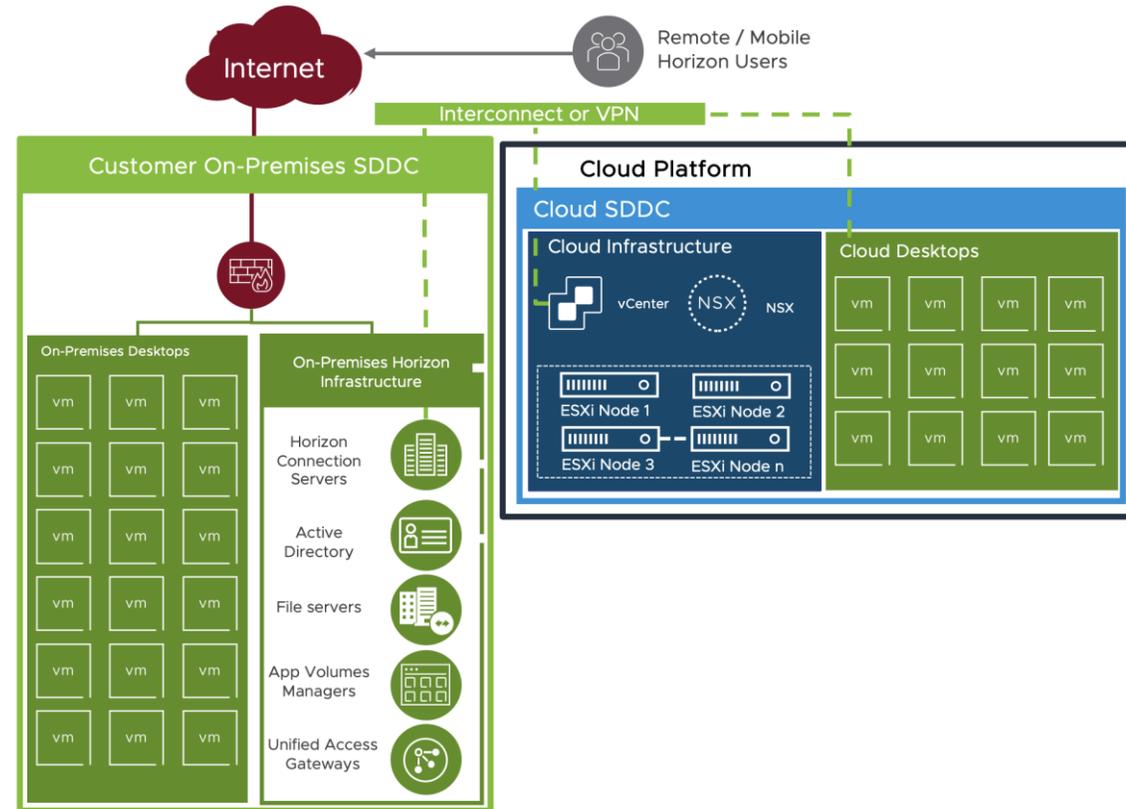
- General
- VMware Cloud on AWS
- Azure VMware Solution (AVS)
- VMware Cloud on Dell/EMC
- Google Cloud VMware Engine (GCVE)

Connection Server must have line of sight to vCenter / Agents

- VPN / Direct Connection
- No more than ~120ms latency

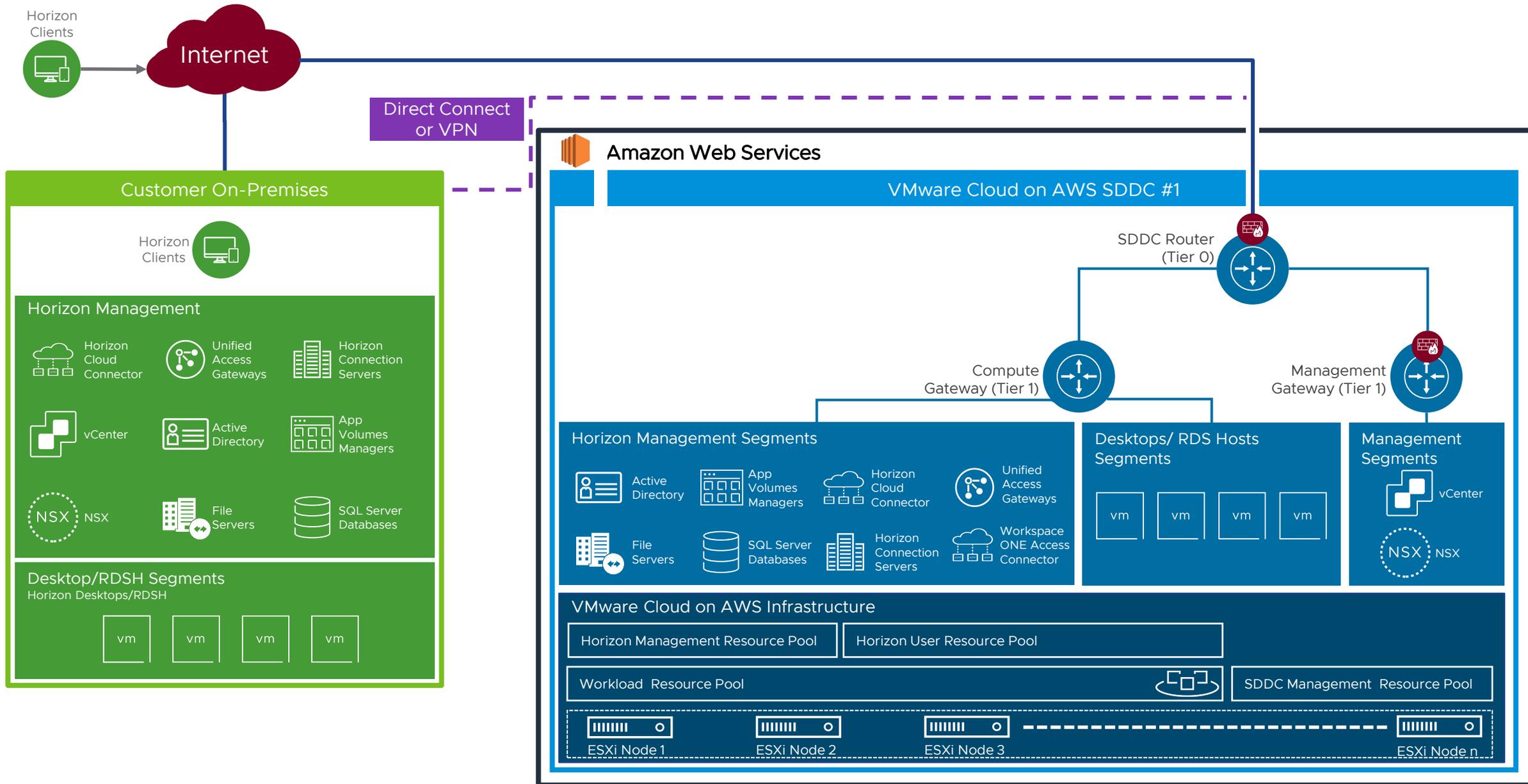
Unified Access Gateways in the existing Horizon POD must have line of sight to Agents.

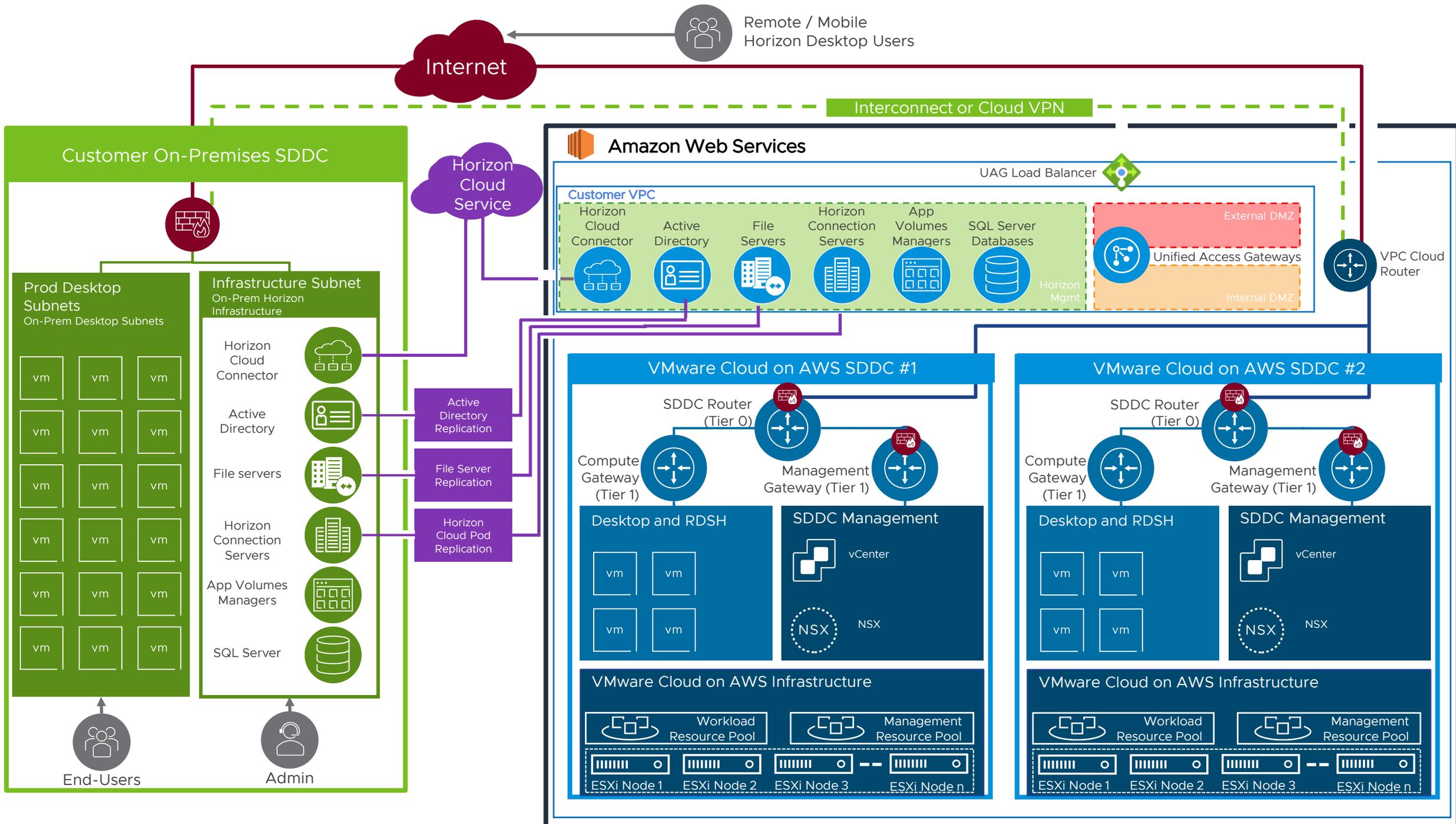
- Connection flow - UAG in initial site direct to Agent at site used for burst



VMware Cloud on AWS







Next steps...

Horizon on VMware Cloud on AWS

Review the Reference Architecture guides

- [Horizon on VMware Cloud on AWS Architecture](#)
- [Horizon on VMware Cloud on AWS Configuration](#)

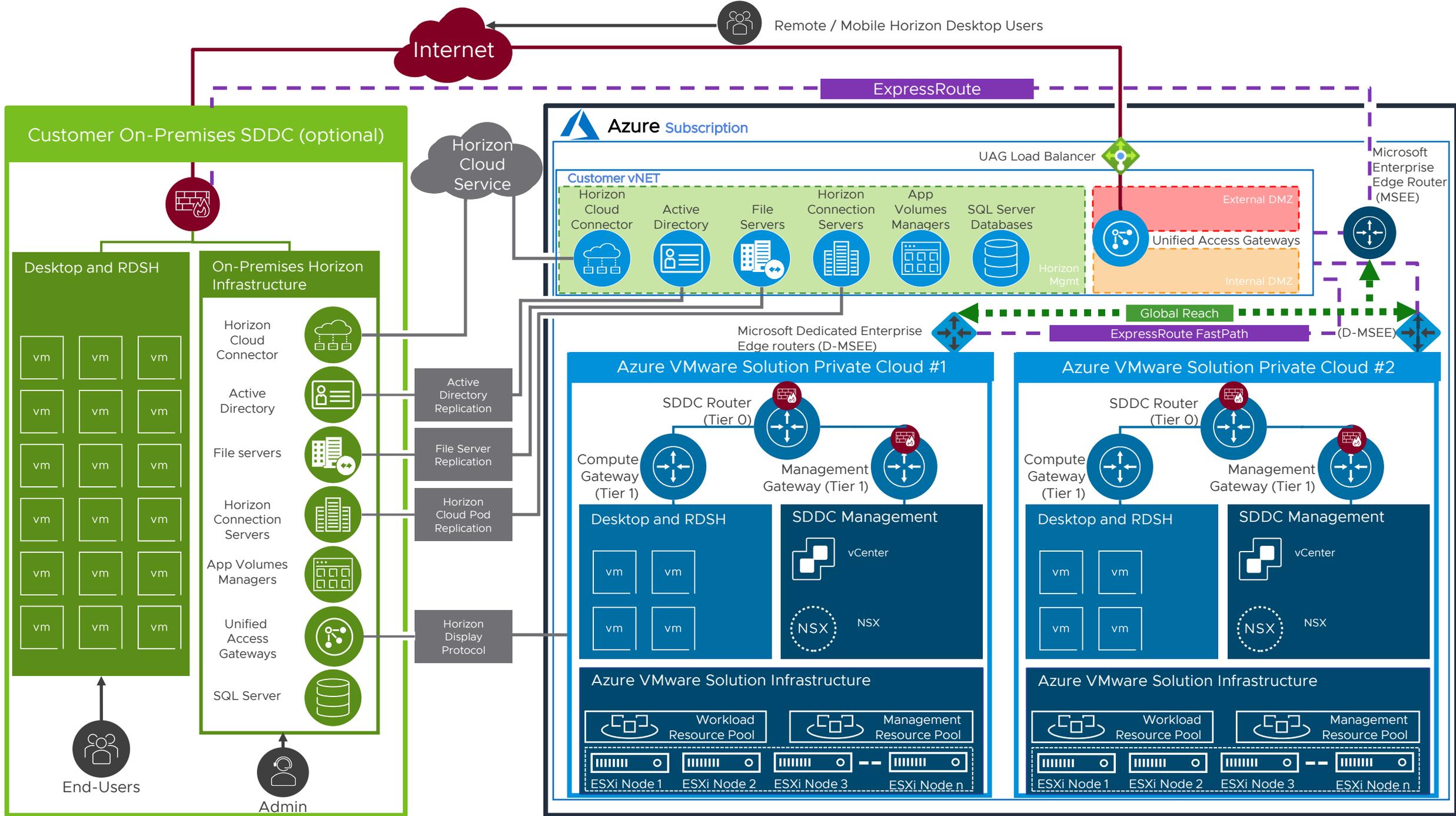
Review VMware Cloud on AWS Documentation

- <https://docs.vmware.com/en/VMware-Cloud-on-AWS/index.html>



Horizon on
VMware Cloud
on AWS

Azure VMware Solution



Next steps...

Horizon on Azure VMware Solution

Review the Reference Architecture guides

- [Horizon on AVS Architecture](#)
- [Horizon on AVS Configuration](#)

Review AVS Documentation

- <https://docs.microsoft.com/en-us/azure/azure-vmware/tutorial-create-private-cloud>



Horizon on
Azure VMware
Solution
Configuration

Google Cloud VMware Engine

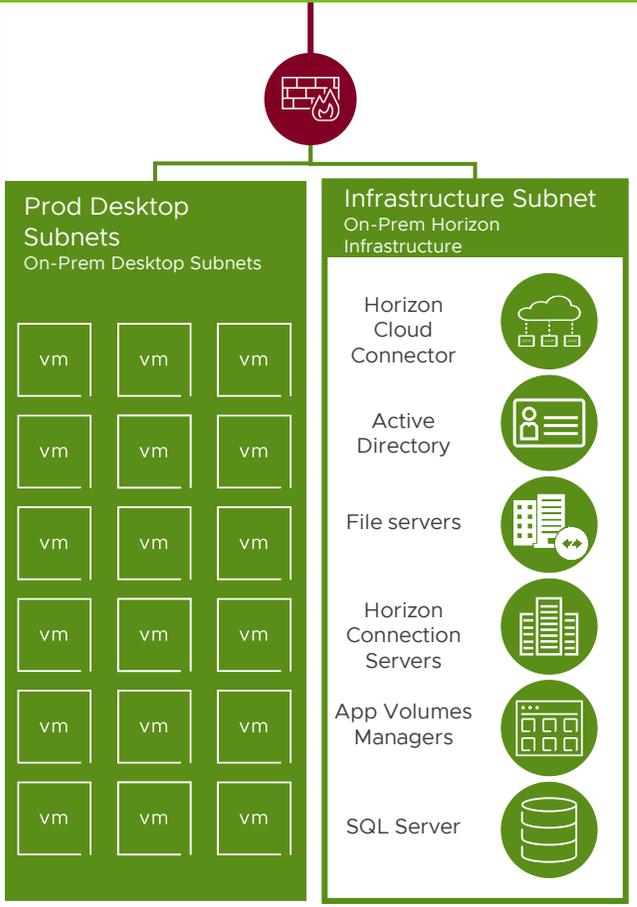
Chris Halstead
Senior Staff Architect

Remote / Mobile
Horizon Users

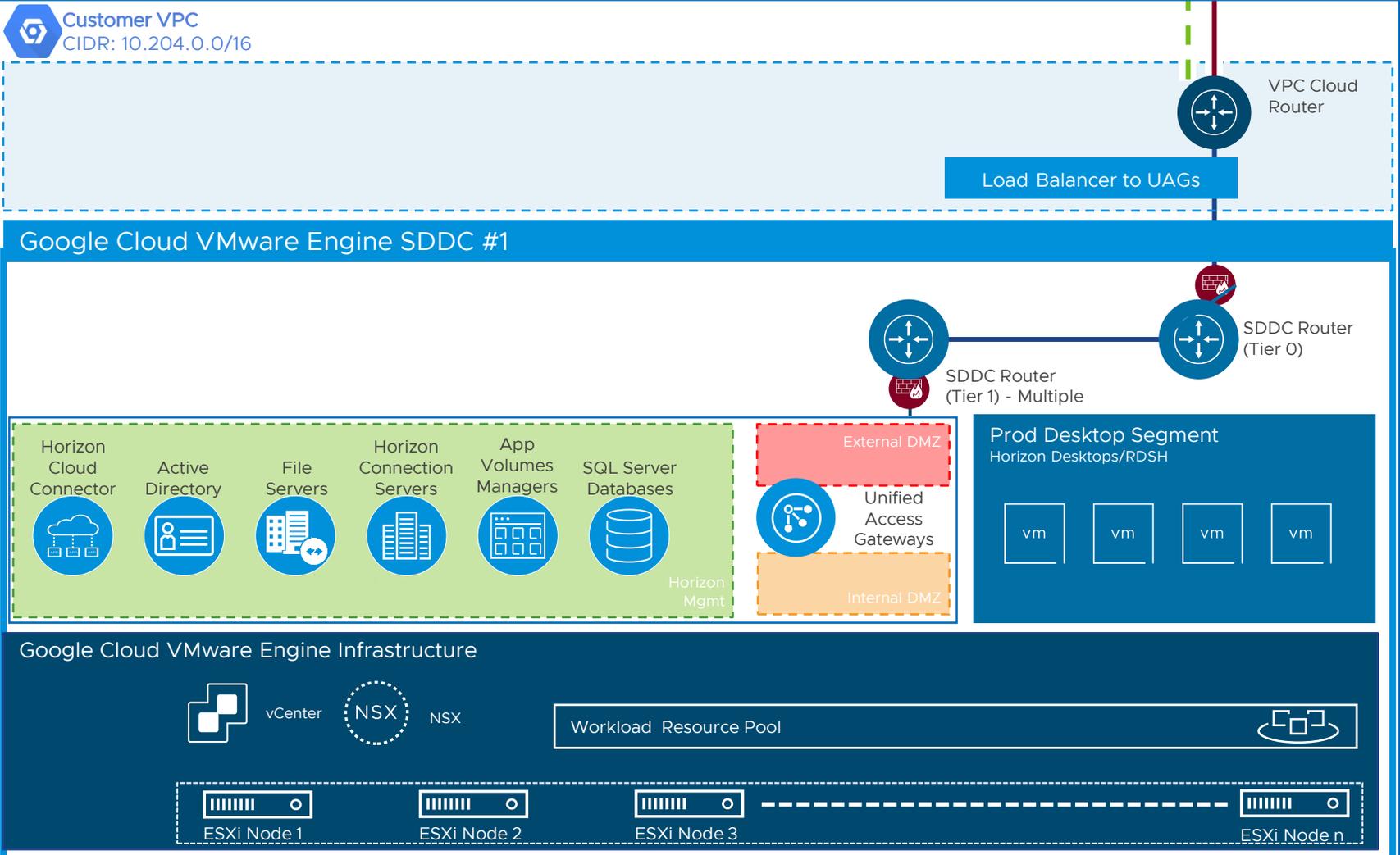


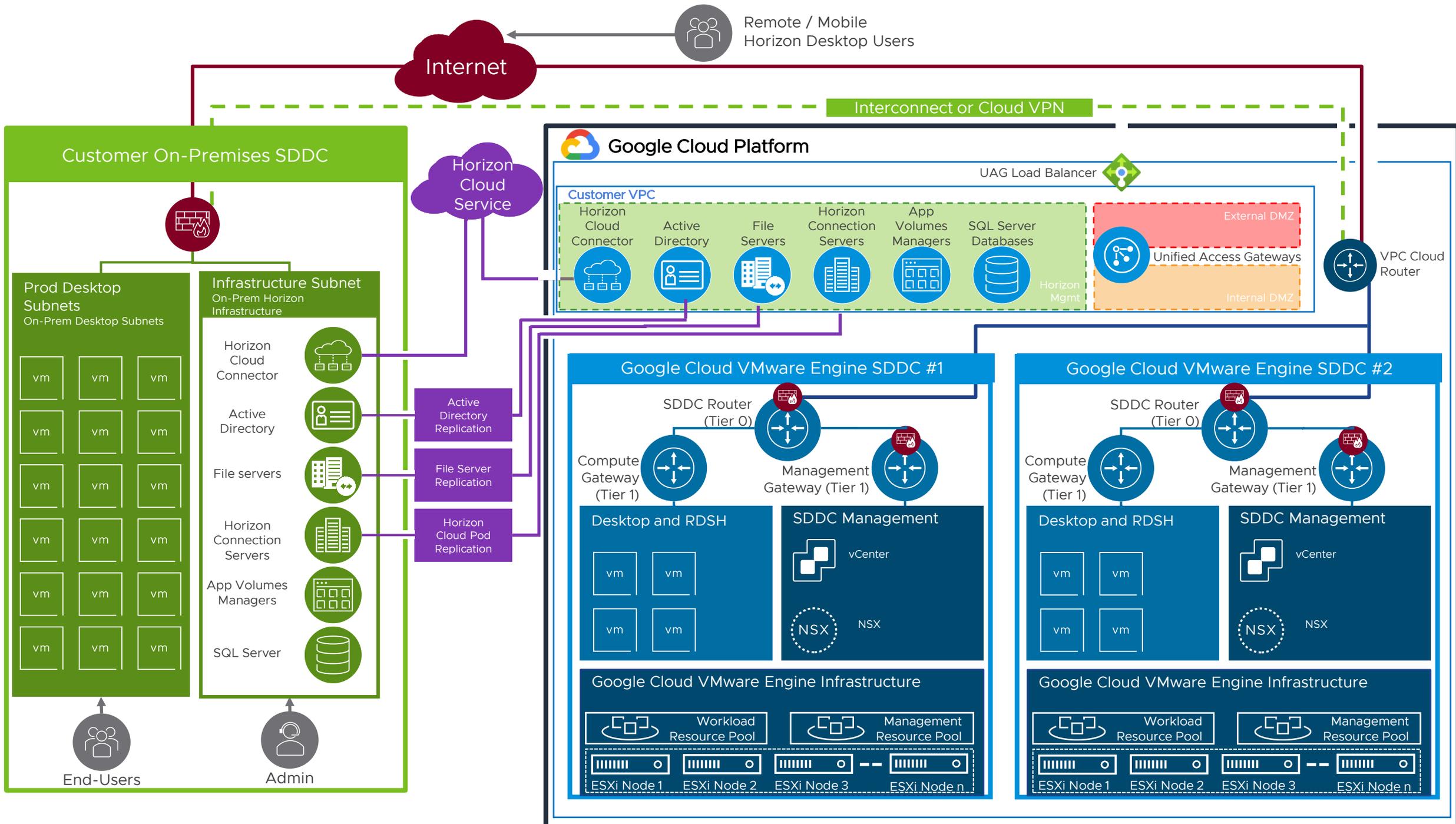
Interconnect or VPN

Customer On-Premises SDDC



Google Cloud Platform





Next steps...

Horizon on Google Cloud VMware Engine

Review the Reference Architecture guides

- [Horizon on GCVE Architecture](#)
- [Horizon on GCVE Configuration](#)

Review GCP Documentation

- <https://cloud.google.com/docs>
- Sign up for a trial if possible

Review GCVE Documentation / Quick Start Guides

- <https://cloud.google.com/vmware-engine/docs>

Review NSX-T Documentation

- <https://docs.vmware.com/en/VMware-NSX-T-Data-Center/index.html>
- How to create segments / DHCP



Horizon on
Google Cloud
VMware Engine
Configuration

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CARBON BLACK TECH ZONE

carbonblack.vmware.com

THE CLOUD PLATFORM TECH ZONE

core.vmware.com

NETWORKING AND SECURITY TECH ZONE

nsx.techzone.vmware.com

DIGITAL WORKSPACE TECH ZONE

techzone.vmware.com

VMWARE CLOUD TECH ZONE

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IMAGINE

that