CMP305

VMware Cloud on AWS: Deep Dive

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What problem are we trying to solve?

vmware ® **+** **aws**

October 2016
Partnership announced

August 2017
Initial availability
one region

November 2018
14 releases—200+ features
8 regions—24 AZs

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VMware Cloud on AWS

Software Defined Data Center

vSphere
NSX
vSAN
ESXi

SDDC as an on-demand cloud service
Zero to workload ready in 90 minutes
Add host capacity in 12 minutes

Managed by VMware
Patching, updates, and upgrades
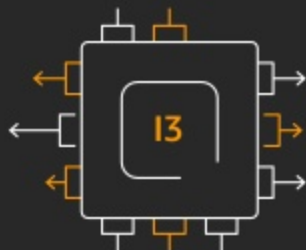Auto host remediation

Elasticity and agility
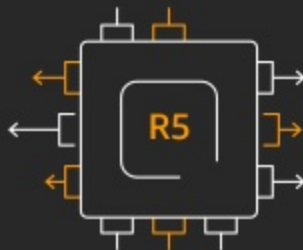Clusters from three to 32 hosts
Up to 10 Clusters per SDDC

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Instance Types

i3.metal
36 cores/72 vCPUs
512 GiB memory
25Gb ENA
VSAN with instance storage

r5.metal
48 cores / 96 vCPUs
768 GiB memory
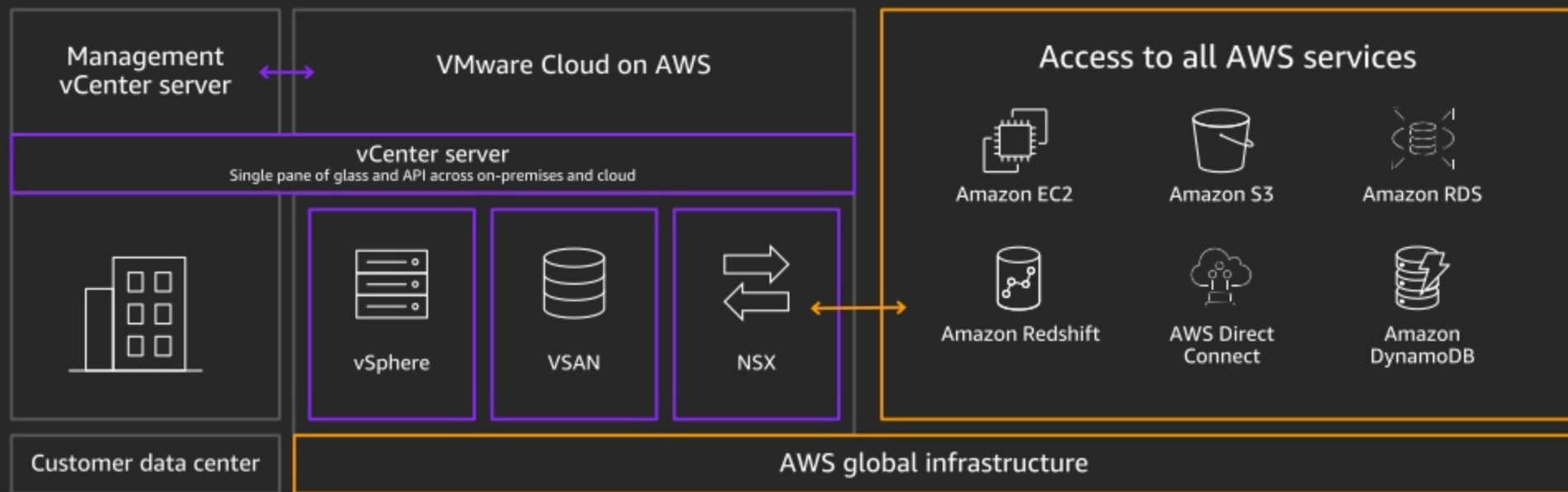25Gb ENA
EBS backed VSAN

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Account structure

VMware Cloud SDDC account

A new AWS account to run SDDC resources

Is owned, operated, and paid directly by VMware

Single tenant for all SDDC resources

AWS customer owned account

Is owned, operated, and paid directly by the customer

Private connectivity to VMware Cloud SDDC

Full access to the native AWS services

VMware Cloud on AWS architecture

Management vCenter server ←→ **VMware Cloud on AWS**

Access to all AWS services

vCenter server
Single pane of glass and API across on-premises and cloud

vSphere   VSAN   NSX ←→

Amazon EC2   Amazon S3   Amazon RDS

Amazon Redshift   AWS Direct Connect   Amazon DynamoDB

Customer data center

AWS global infrastructure

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VMware Cloud on AWS target use cases

Stagecoach	Playtika	PHH Mortgage / PHH	BRINKS
Cloud migrations	**Data center extension**	**Disaster recovery**	**Next-generation applications**
Consolidate > Migrate	Maintain / Expand	Primary <-> Secondary	Primary
Application specific	Footprint expansion	Protect additional workloads	Application modernization
Data center wide	On-demand capacity	DR data center replacement	Next-gen app build out
Infrastructure refresh	Test/dev	Add or modernize DR solutions	Enterprise workloads

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Customer momentum

Rapid innovation

Quarterly release

10 regions thus far

200+ features

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Innovation jointly engineered by VMware and AWS

Connectivity

AWS Direct
Connect

**High availability
and reliability**

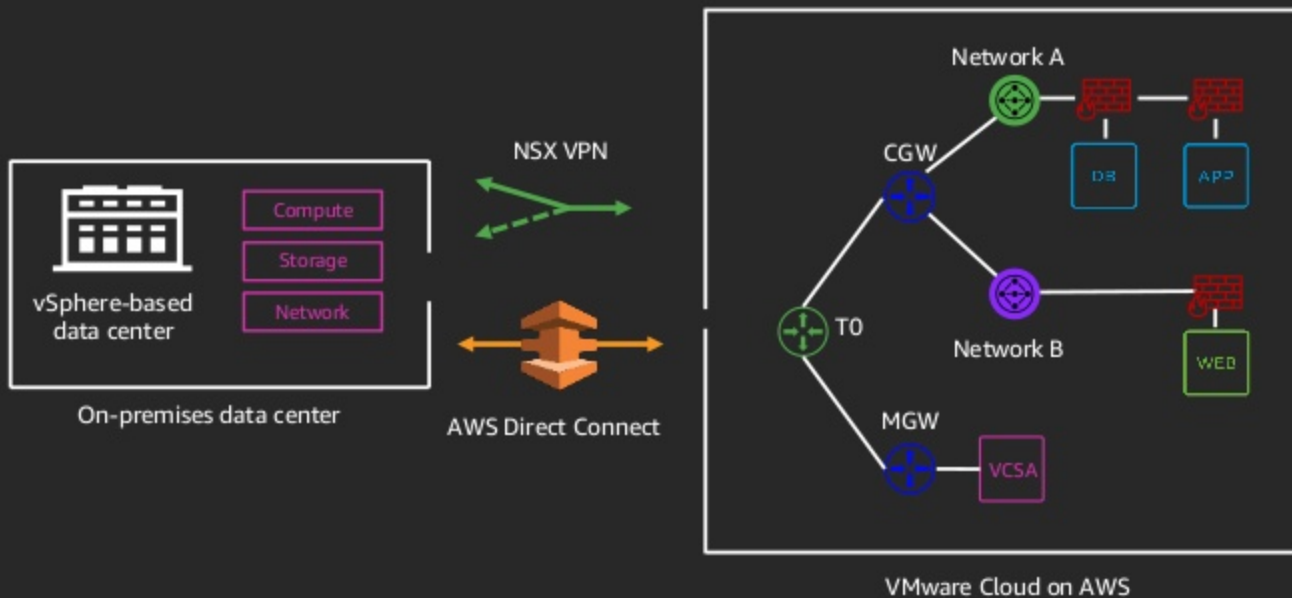Stretch cluster

Security

Distributed Firewall

Storage

vSAN and EBS

Integration

Access to
AWS services

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Connectivity

vSphere-based data center
- Compute
- Storage
- Network

On-premises data center

NSX VPN

AWS Direct Connect

Network A

CGW

T0

Network B

MGW

DB

APP

WEB

VCSA

VMware Cloud on AWS

Distributed firewalling
- Micro-segmentation security for VMware Cloud on AWS workloads

Simplified hybridity
- Data center and VMware Cloud on AWS interconnectivity with AWS Direct Connect for all traffic types, without need for VPN tunnels

Route-based VPN and redundancy
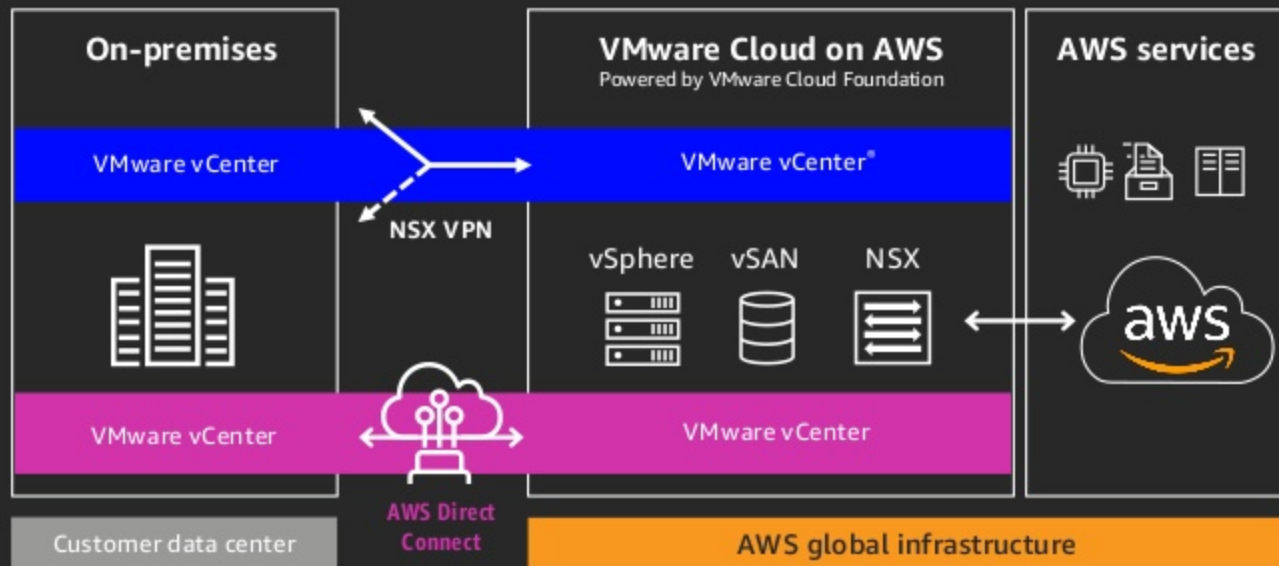- Dynamic routing protocol simplifies redundancy

Achieve high-performance connectivity

AWS Direct Connect

Private, dedicated network connection with guaranteed connectivity performance

Best suited for customers with critical workloads that need predictable throughput

On-premises	VMware Cloud on AWS	AWS services
	Powered by VMware Cloud Foundation	

VMware vCenter

VMware vCenter®

NSX VPN

vSphere   vSAN   NSX

VMware vCenter

VMware vCenter

AWS Direct Connect

Customer data center

AWS global infrastructure

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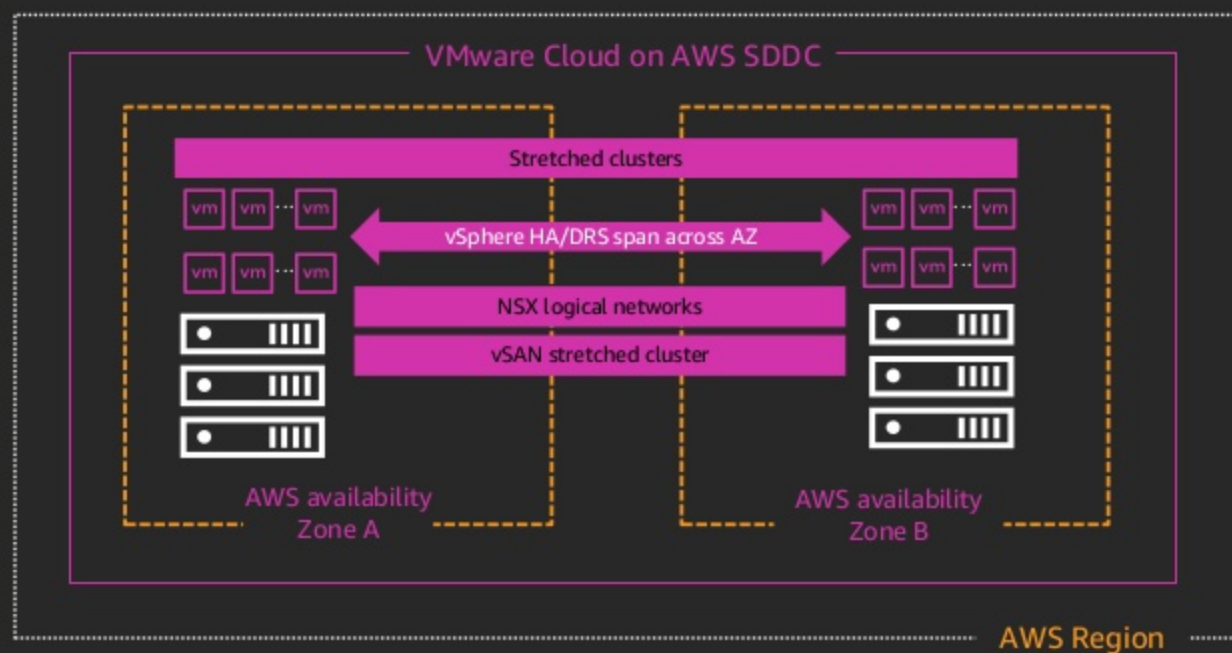
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Stretched clusters for VMware Cloud on AWS

Zero RPO high availability across AZs

No necessity to architect in the application

Common logical networks with vSphere HA/DRS enabled

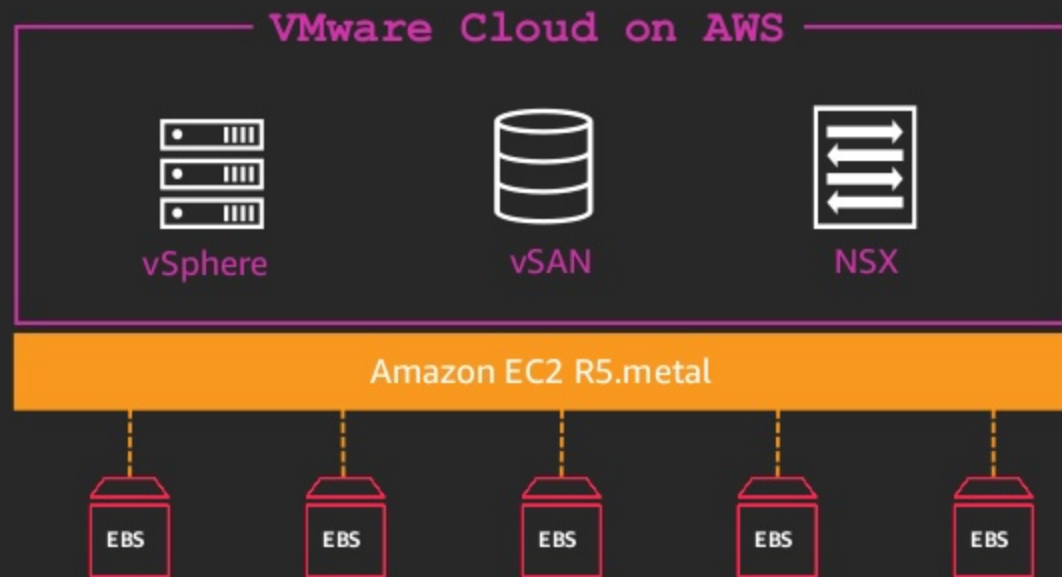Synchronous replication between AZs for mission-critical applications

AZ availability treated as vSphere HA

VMware Cloud on AWS SDDC

Stretched clusters

vm vm ··· vm

vSphere HA/DRS span across AZ

vm vm ··· vm

NSX logical networks

vSAN stretched cluster

vm vm ··· vm

vm vm ··· vm

AWS availability Zone A

AWS availability Zone B

AWS Region

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New high-capacity storage option backed by AWS EBS

VMware Cloud on AWS

vSphere vSAN NSX

Amazon EC2 R5.metal

EBS   EBS   EBS   EBS   EBS

Amazon Elastic Compute Cloud (Amazon EC2) R5.metal instance with flexible storage

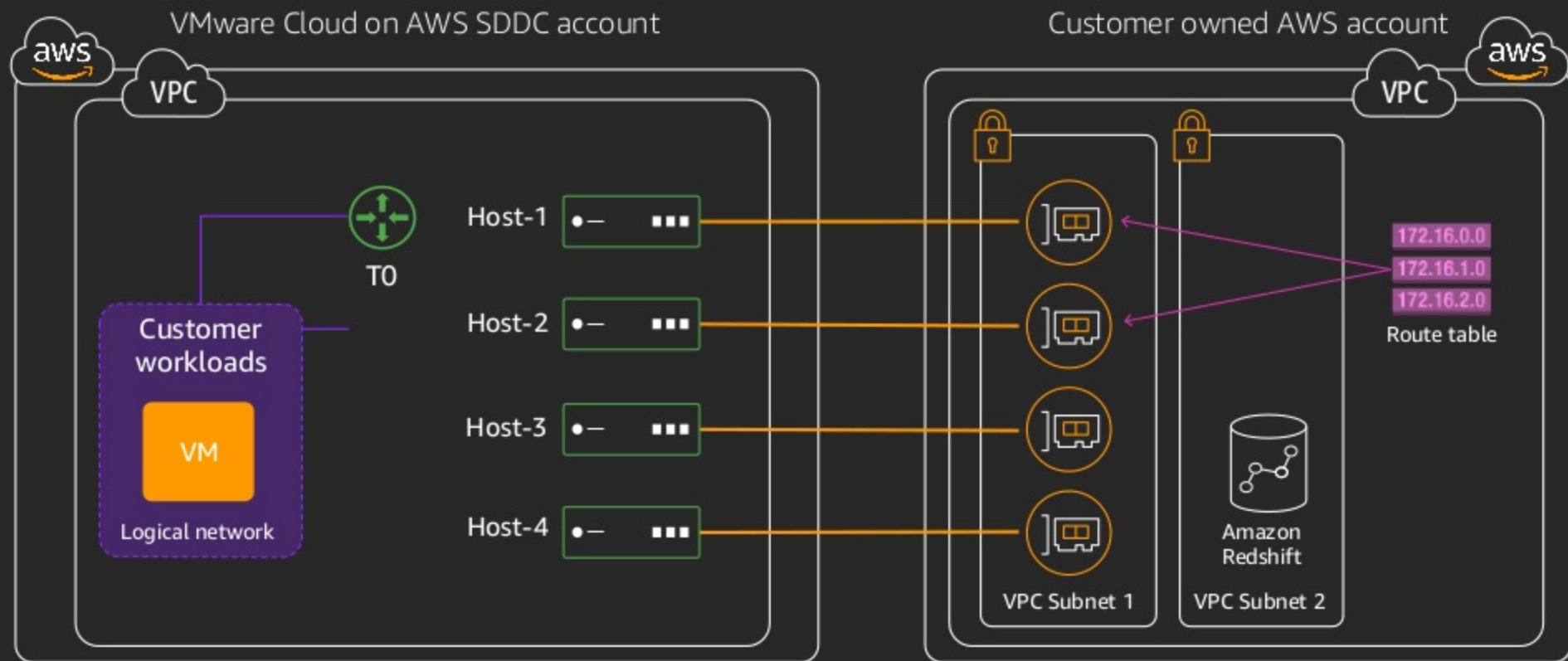Storage per host range from 15 to 35 TB in increments of 5 TB

Choose the amount of storage used on all hosts within the cluster

R5.metal clusters can be added to an existing SDDC with at least one existing provisioned cluster

R5.metal instances are based on 2.5 GHz Intel Platinum 8000 series (Skylake-SP) processors. Each host has 2 sockets, 48 cores, 96 hyper-threads, and 768 GiB RAM

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AWS integration

VMware Cloud on AWS SDDC account

Customer owned AWS account

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VPC

VPC

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T0

Host-1

Host-2

172.16.0.0
172.16.1.0
172.16.2.0

Route table

Customer
workloads

VM

Logical network

Host-3

Host-4

Amazon
Redshift

VPC Subnet 1

VPC Subnet 2

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Expanding global reach by launching five regions in 2018

New

Available 🔴	Announcing 🟣	Q1 2019 🟣	Q2 2019 🟣	H2 2019 🟣
US West - Oregon	Asia Pacific -Tokyo	Asia Pacific - Singapore	So. America - Sao Paulo	Middle East - Bahrain
US East - N. Virginia	Europe - Ireland	Asia Pacific - Mumbai	China - Hong Kong	GovCloud (US East)
Europe - London	US West - N. California	Canada - Central	Asia Pacific - Osaka	Europe -Sweden
Europe - Frankfurt	US East - Ohio	Europe - Paris	Asia Pacific - Seoul	
Asia Pacific - Sydney	GovCloud (US West)			

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Demo

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Use with application load balancer (ALB)

Customer AWS account

VMware Cloud on AWS SDDC account

Visitor

VPC

IGW

ALB

ENI

172.29.1.0/24

WAF

IP target group
172.31.1.100
172.31.1.101

VPC

T0

VM

VM

Logical network
172.31.1.0/24
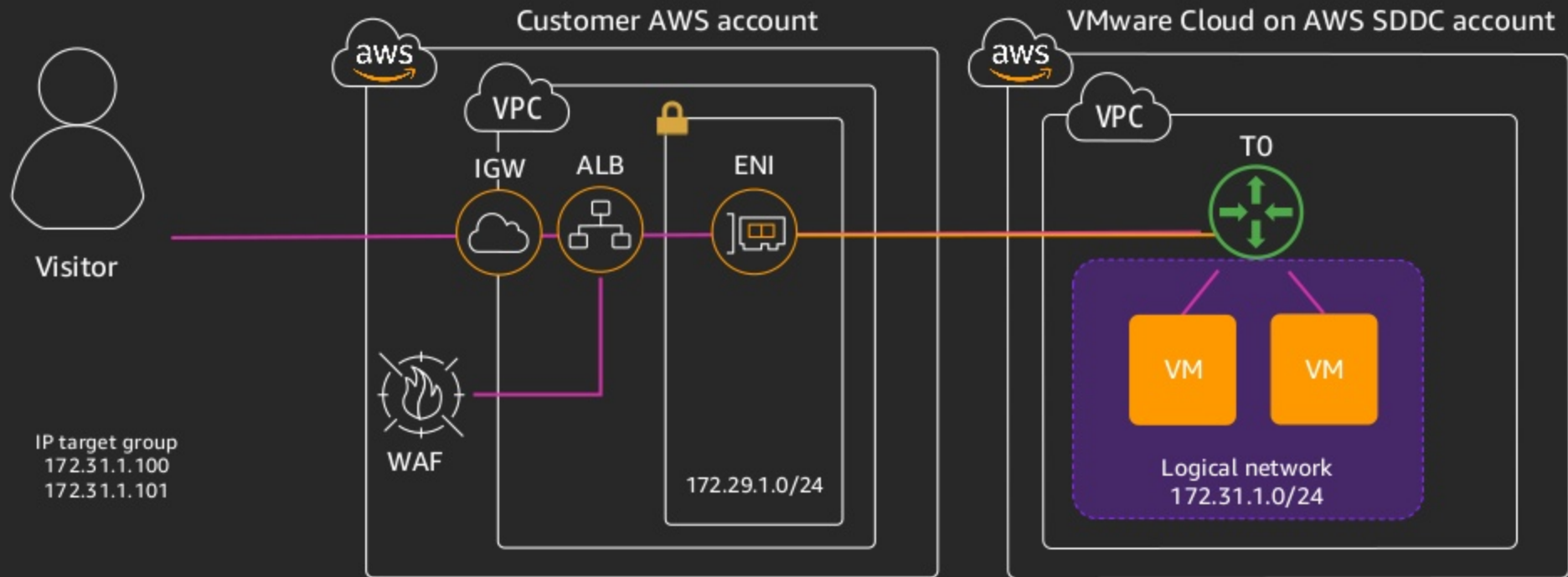
Get started with VMware Cloud on AWS!

VMware Cloud on AWS

What	Details	Learn more!
Hands-on lab	Test drive VMware Cloud on AWS in hosted environment	https://www.vmware.com/try-vmware/vmc-aws-hol-labs.html
Starter Single Host SDDC	30-day trial period	http://vmwa.re/vmc1host
Three host SDDC	Three hosts for the price of two	http://vmwa.re/vmc3host

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Other related sessions

Session ID	Name	Time
CMP 360	Supercharge VMware Cloud on AWS Environments with Native AWS Services	Mon (1:45), Tue (4:00), and Wed(3:15)
ENT 215	Top Strategic Priorities You Can Tackle with VMware Cloud on AWS	Mon (2:30) and Thu (2:30)
ENT313	Running Production Workloads in VMware Cloud on AWS	Wed (4:45)
ENT329	Get Hands on with VMware Cloud on AWS	Tue (8:30) and Wed (6:15)
GPSBUS204	Tapping into Key Enterprise Workloads: SAP, VMware, & Microsoft on AWS	Wed (1:45)
GPSCT206	Migrating to VMware on AWS as the First Step Toward the AWS Cloud	Mon (5:30)
GPSTEC307	Networking, Storage, and Data Protection Deep Dive with VMware Cloud on AWS	Mon (4:45)
HLC403	VMware on AWS for Healthcare	Wed (11:30)
NET307	Networking for VMware Cloud on AWS	Tues (7:00) and Fri (11:30)
NET321	Connectivity Options for VMware Cloud on AWS Software Defined Data Center	Mon (2:30)
WIN328	Running Hybrid Microsoft Applications on VMware Cloud on AWS	Tue (1:00)

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Thank you!

@reedyornot

@jinz1

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