

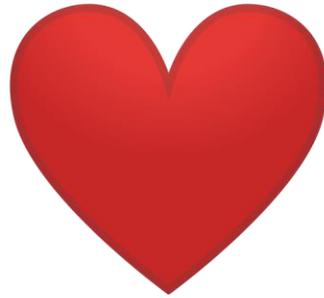
# 쿠버네티스, 어디까지 가봤니?

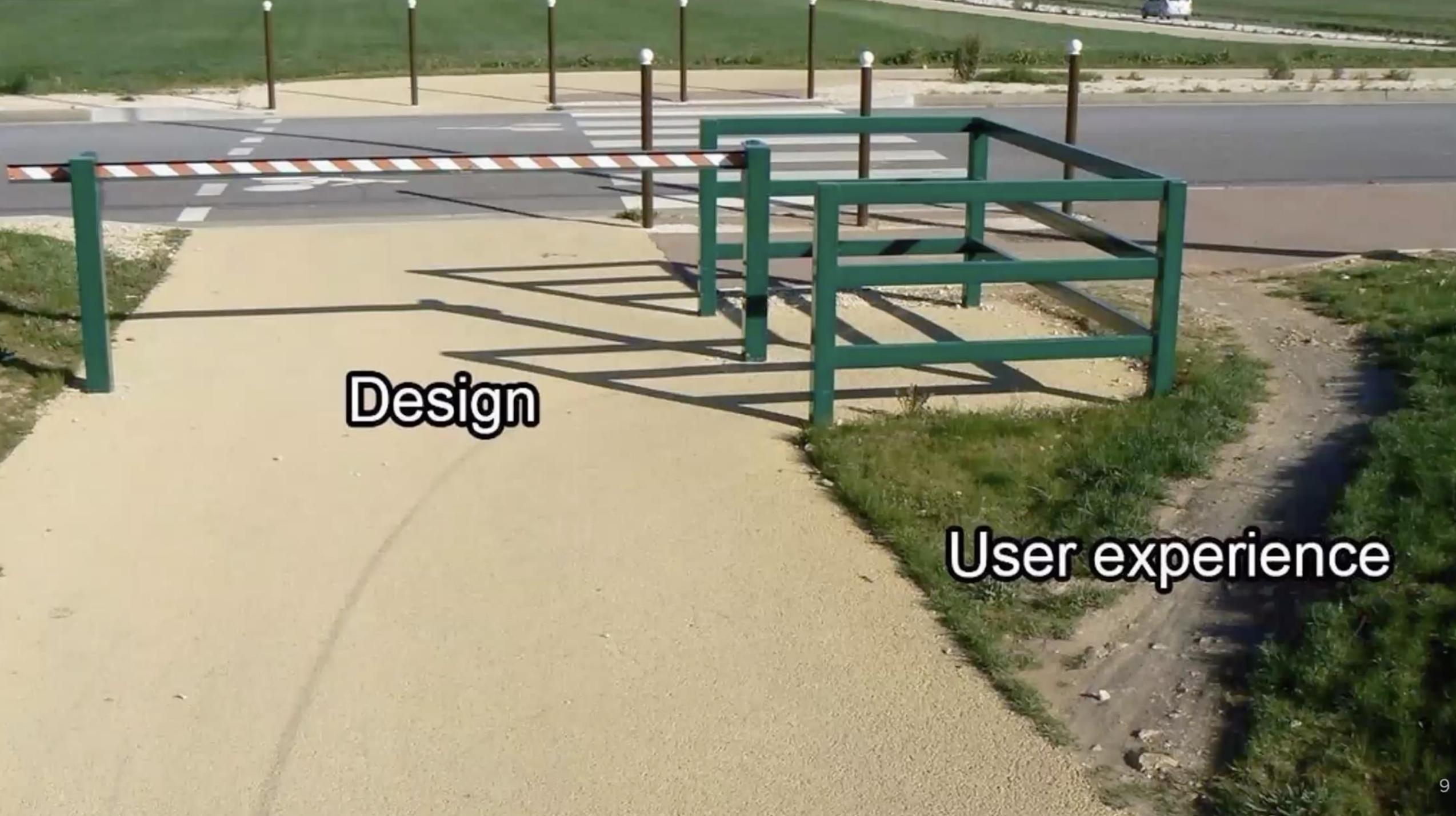
쿠버네티스가 vSphere를 만났을 때

신혜원 이사 (haewons@vmware.com)

Solution Engineer / Tanzu Team

August, 2020





**Design**

**User experience**

Current IaaS

Lack thereof

**Design**

**User experience**

Current IaaS

Lack thereof

**Design**



**User experience**

An ecosystem of tools & knowledge to consume AWS



Automated SW Lifecycle (CI/CD)



Current IaaS

Lack thereof

**Design**

**User experience**

An ecosystem of tools & knowledge to consume ~~AWS~~

Kubernetes



Automated SW Lifecycle (CI/CD)



**BUILD**

Modern software supply chain



**VMware Tanzu**

**RUN**

Ubiquitous Kubernetes

**MANAGE**

Multi-cluster  
Multi-team  
management

# 첫 시작

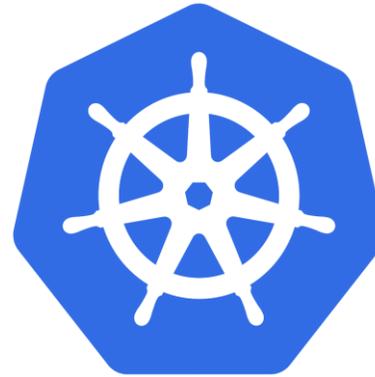
## 쿠버네티스 도입 과정



Single Team



Single App



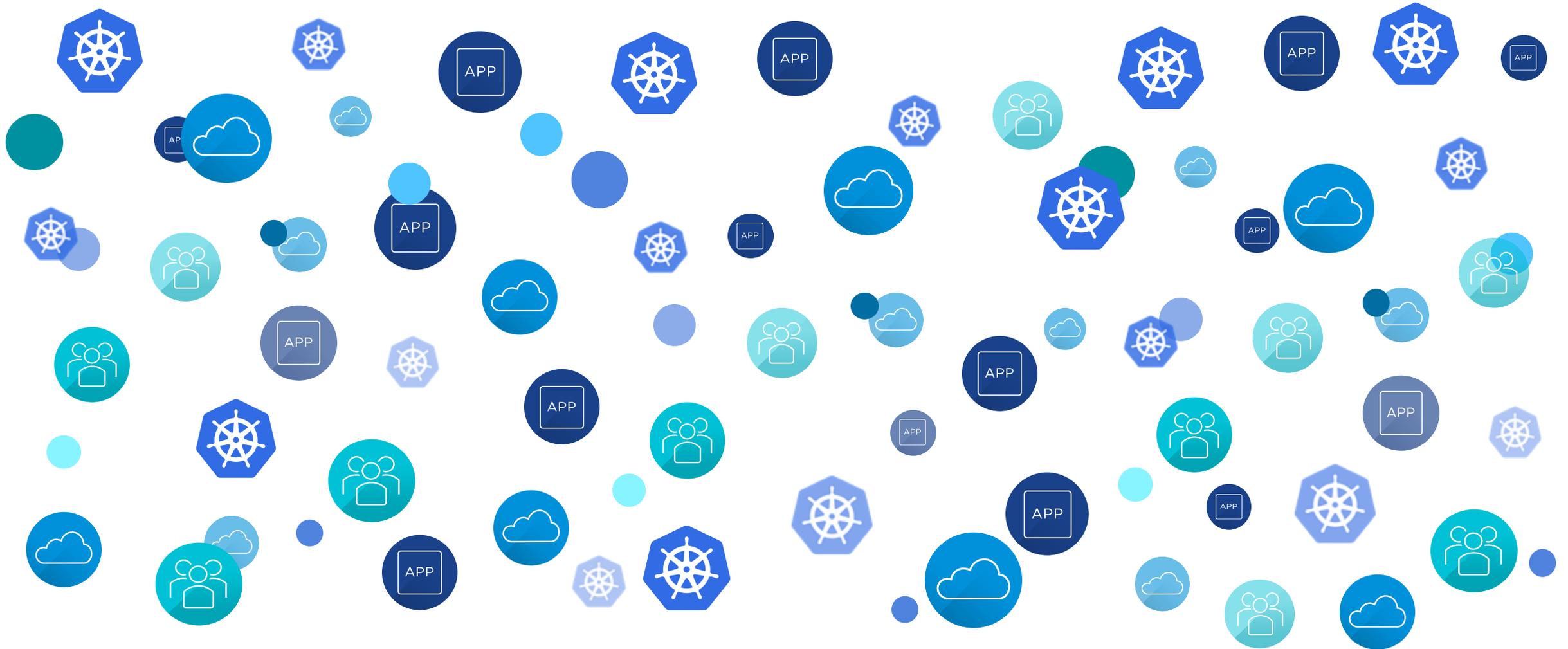
Single Cluster



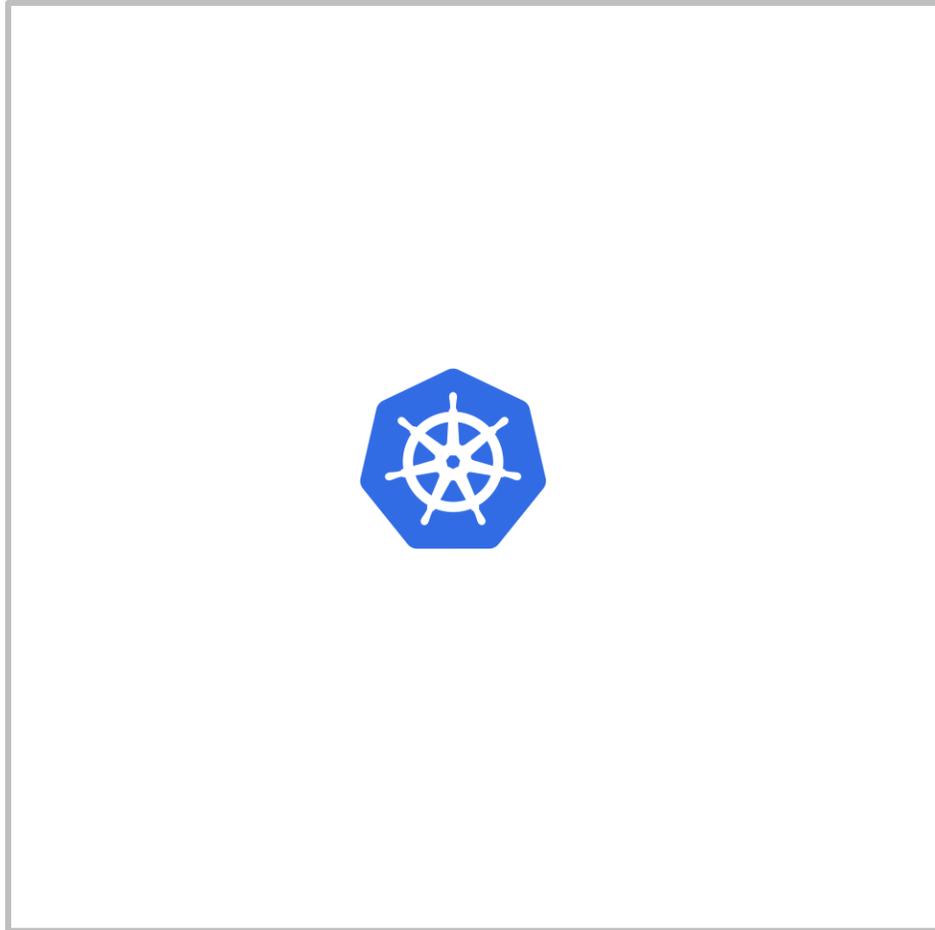
Single Cloud

# 확장기

## 쿠버네티스 도입 과정



## One Big Cluster



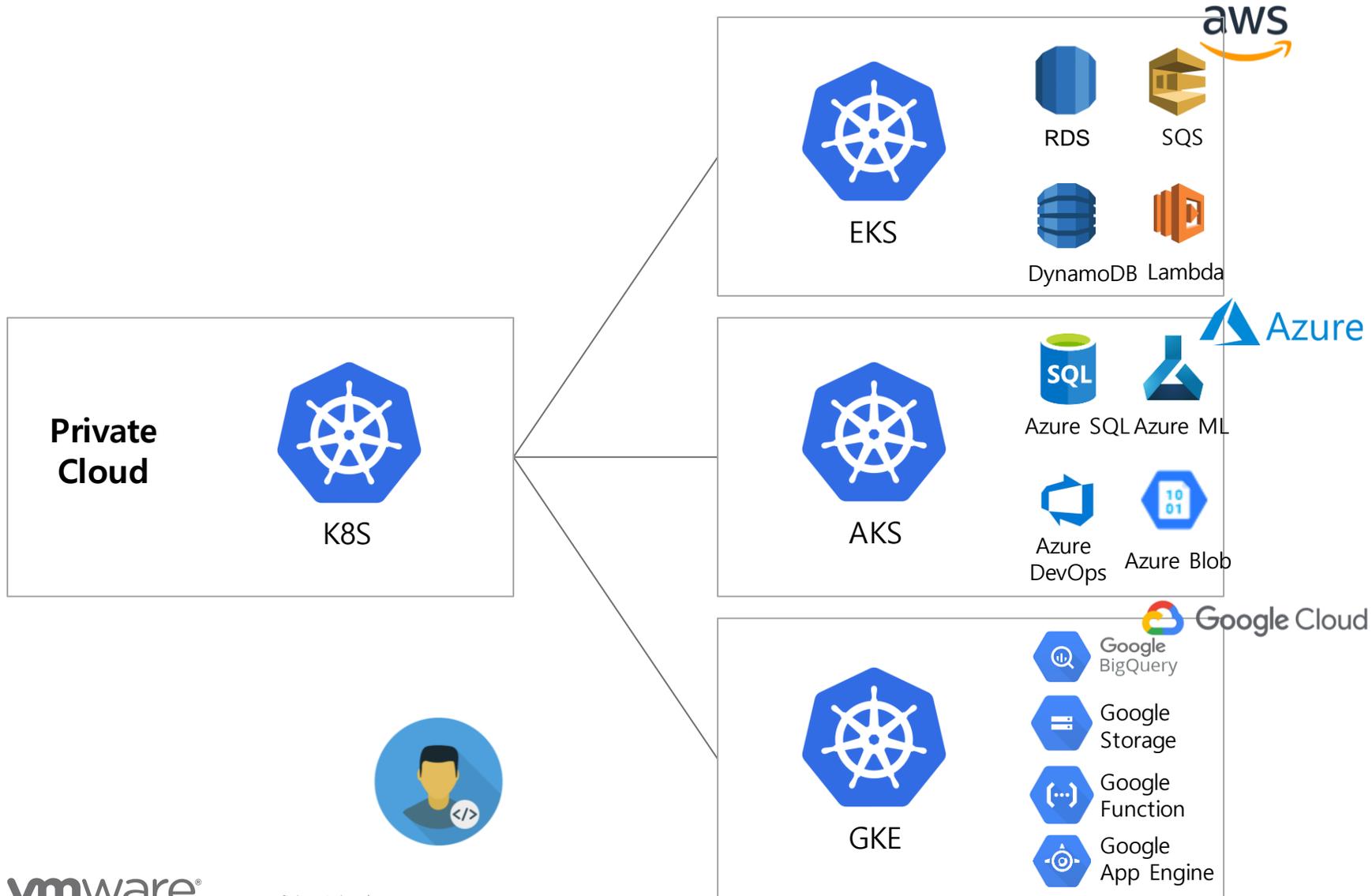
VS

## ✓ Many Small Clusters



⋮

# 멀티 클라우드 쿠버네티스 플랫폼의 통합 관리



# 멀티 클라우드 쿠버네티스 플랫폼의 통합 관리

1. K8S 기반 에코시스템

2. IaaS: 단일화된 운영 관리

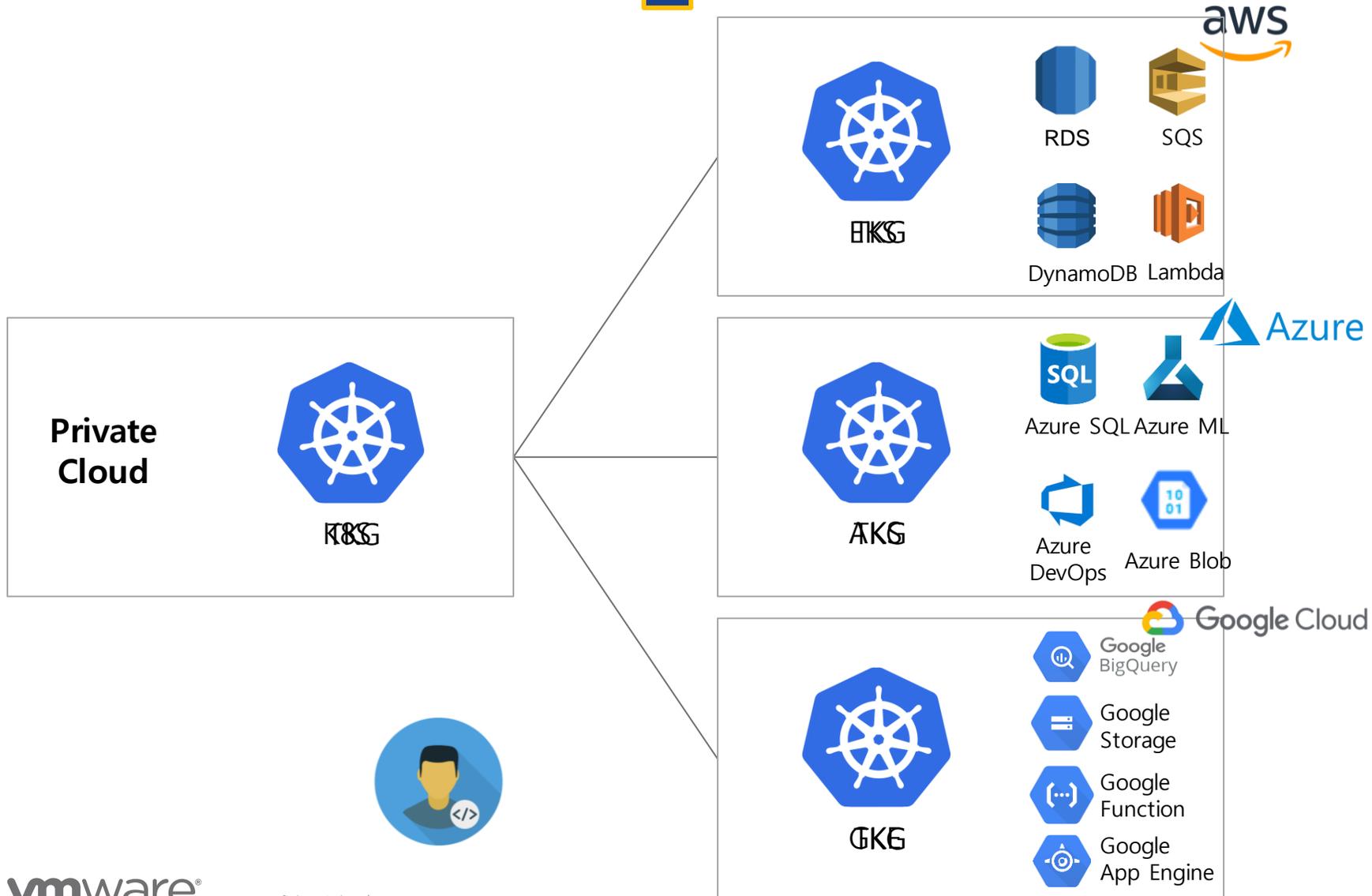
3. 멀티 클러스터 환경 관리

# 1. K8S 기반 에코시스템

멀티 클라우드 쿠버네티스 플랫폼의 통합 관리

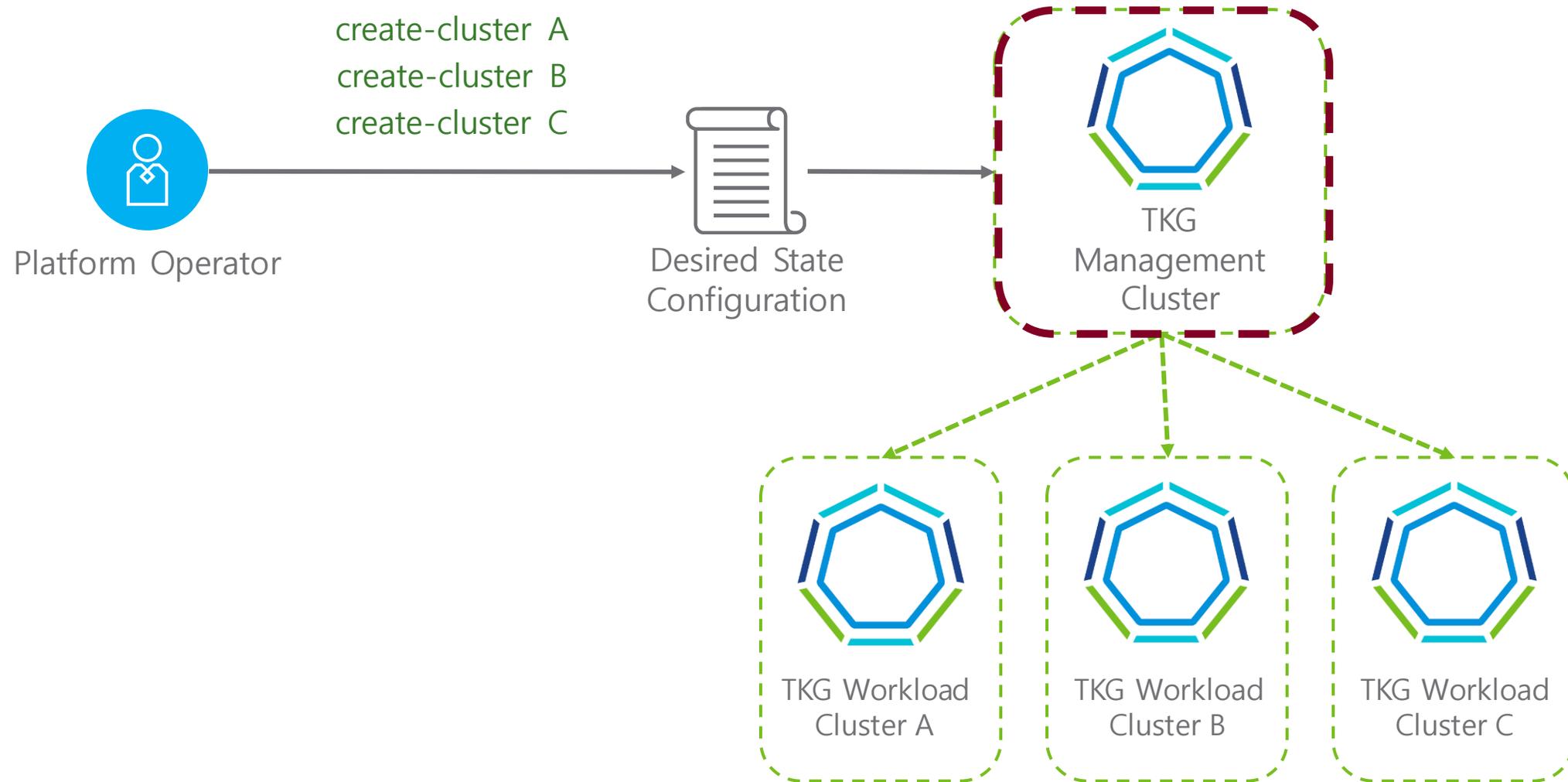
# 멀티 클라우드 쿠버네티스 플랫폼의 통합 관리

## 1 K8S 기반 에코시스템



# 자동화된 클러스터 생성 및 관리 (tkg CLI)

쿠버네티스의 라이프사이클 관리 용이



# TKG를 사용할 수 있는 2가지 방식

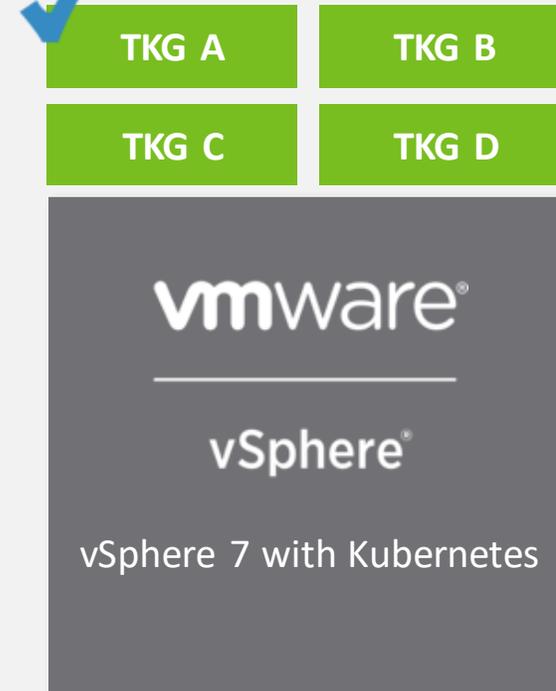
## ✓ TKG Standalone

설치형으로 Public, Private Cloud, Edge 환경에 설치해서 사용할 수 있음



## vSphere 7 Built-in

vSphere 7의 하이퍼바이저 레벨에서 통합되어 출시



# TKG를 사용할 수 있는 2가지 방식

## TKG Standalone

설치형으로 Public, Private Cloud, Edge 환경에 설치해서 사용할 수 있음

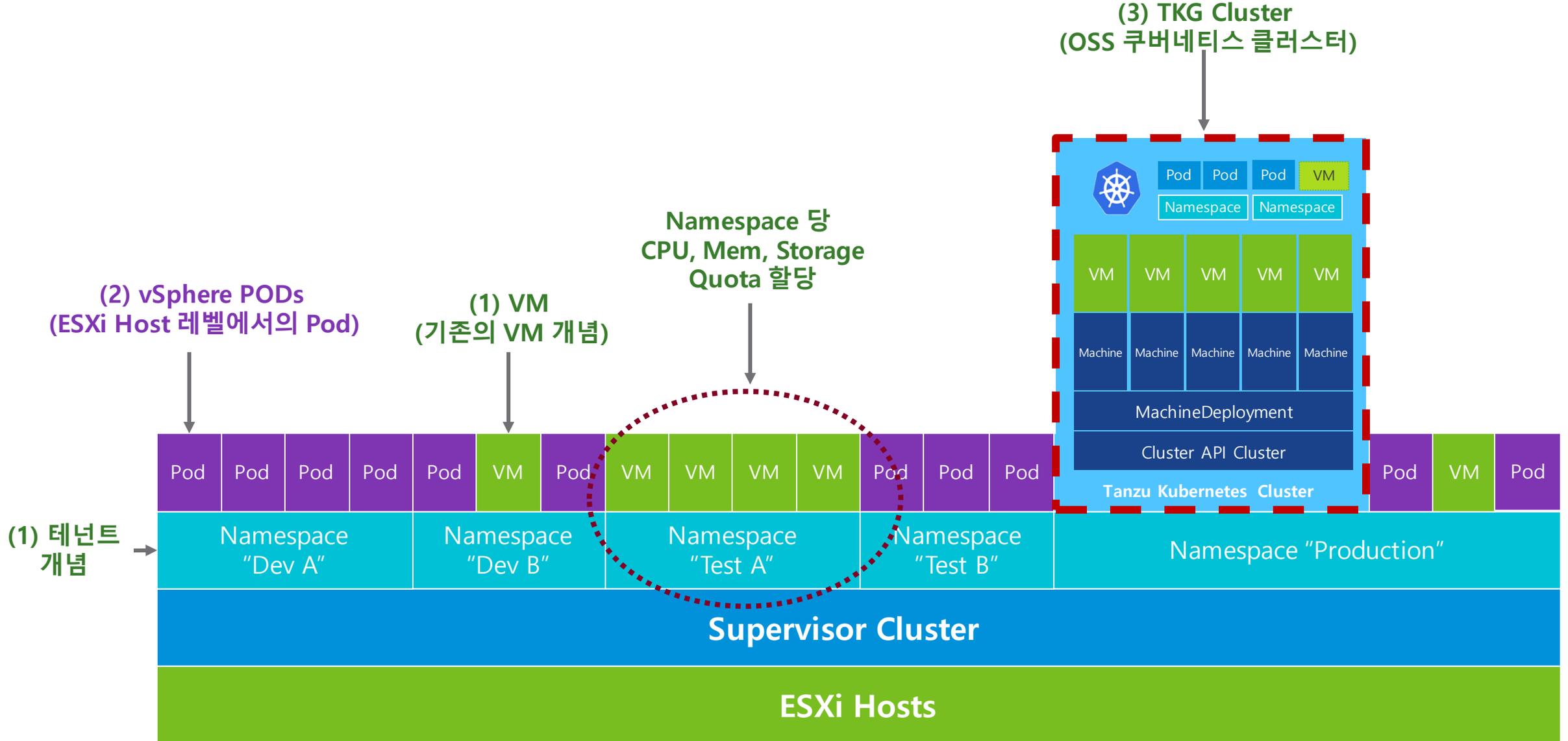


## ✓ vSphere 7 Built-in

vSphere 7의 하이퍼바이저 레벨에서 통합되어 출시

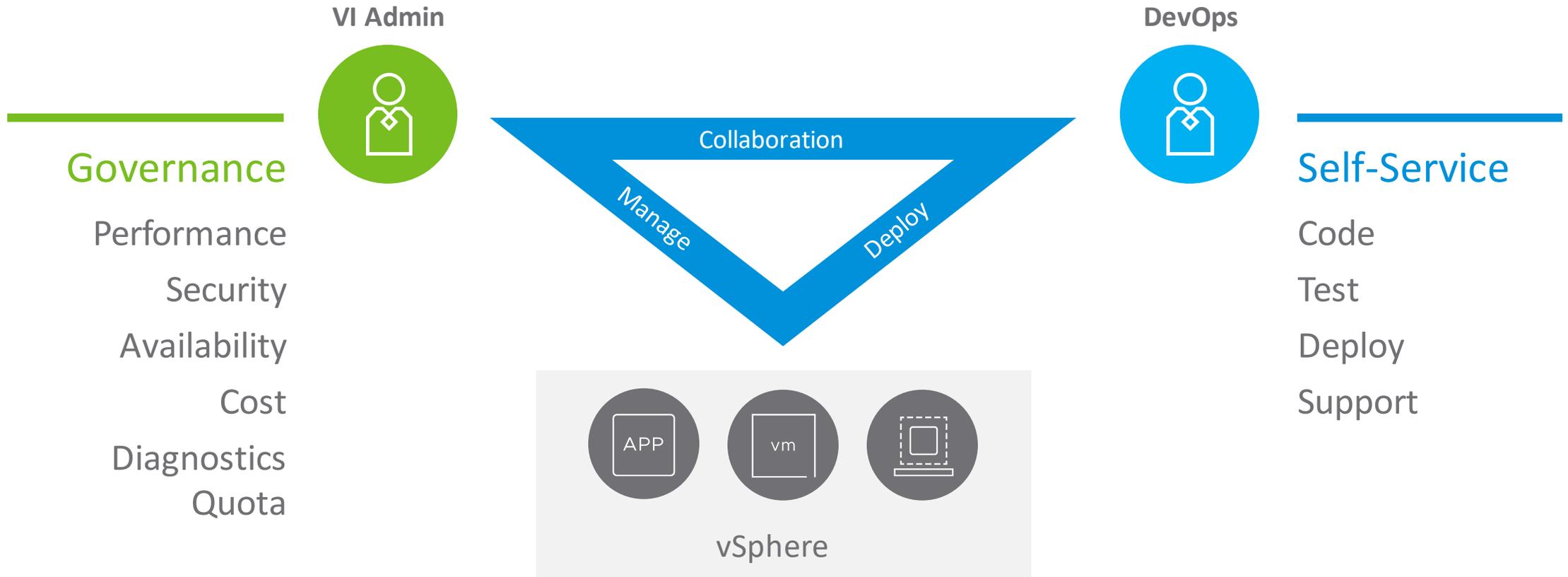


# vSphere with Kubernetes : 개발자에게 Self Service 권한 부여



# DevOps 문화의 확산을 위한 필수 요소

DevOps 와 VI Admin을 연결해주는 플랫폼으로서의 VMware



# 주요 컴포넌트를 K8S 문법으로 모두 제어

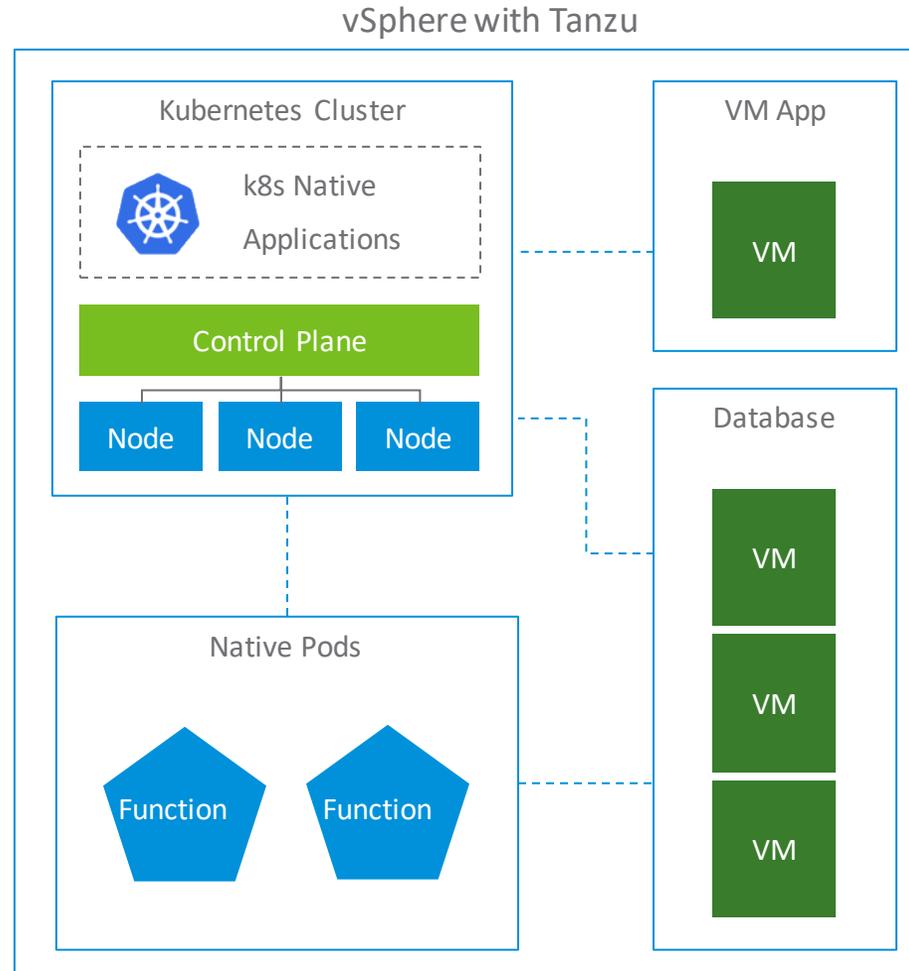
kubectl apply -f

```
kind: KubernetesCluster
apiVersion: vks.vmware.com/v1
metadata:
  name: My Application
spec:
  topology:
    workers:
      count: 3
      class: small
      distribution: v1.15.1
```



kubectl apply -f

```
kind: Pod
apiVersion: v1
metadata:
  name: Function 1
spec:
  containers:
    - name: func1
      image: func1
  ports:
    - containerPort: 80
```



kubectl apply -f

```
kind: VirtualMachine
apiVersion: vms.vmware.com/v1
metadata:
  name: COTSapp
spec:
  className: large
  imageName: my-app.ova
  powerState: poweredOn
  policy:
    restartPolicy: OnFailure
```

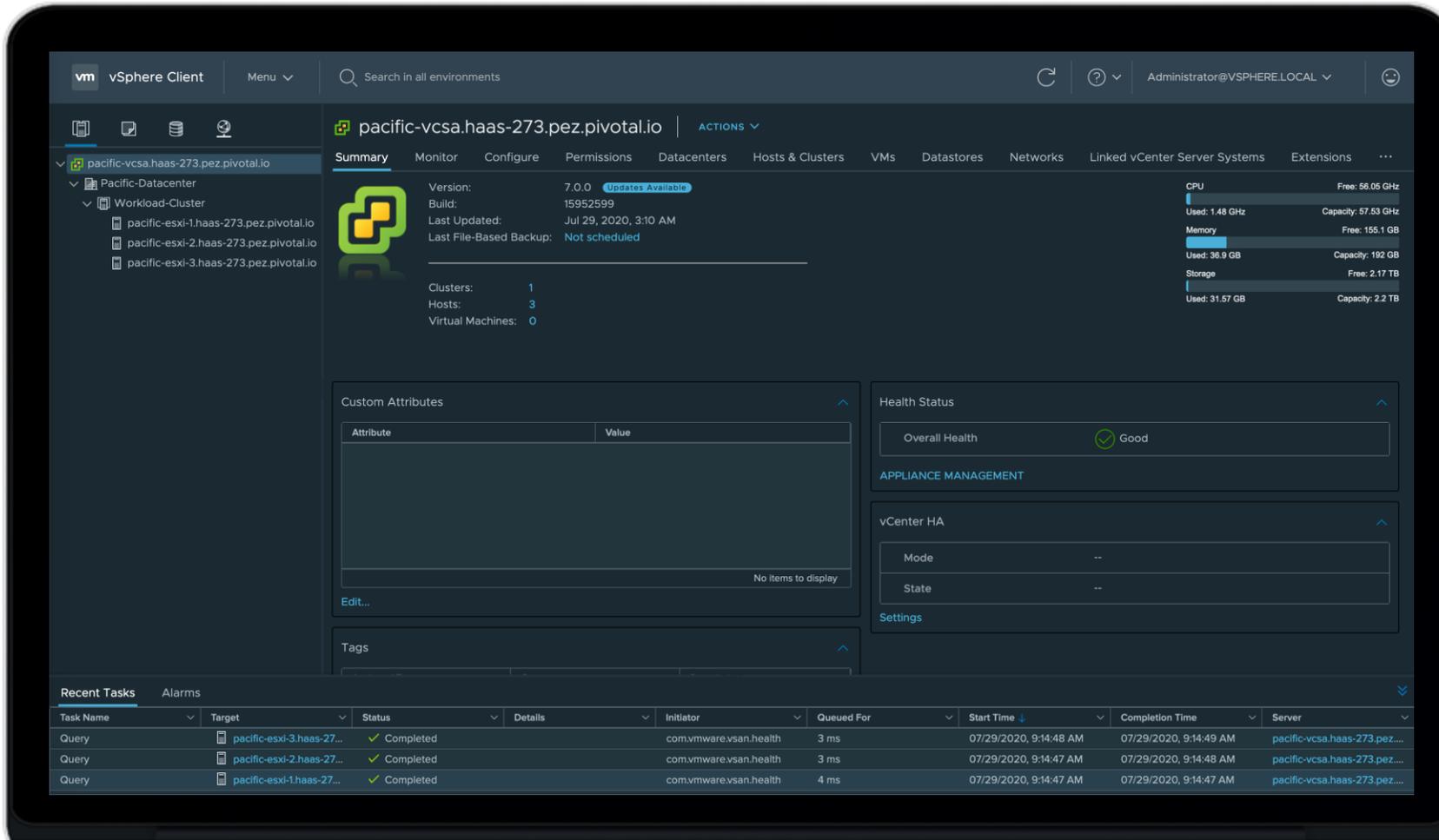


kubectl apply -f

```
kind: HanaDatabase
apiVersion: hana.sap.com/v1
metadata:
  name: ERP database
spec:
  nodes: 3
  class: extra-large
```



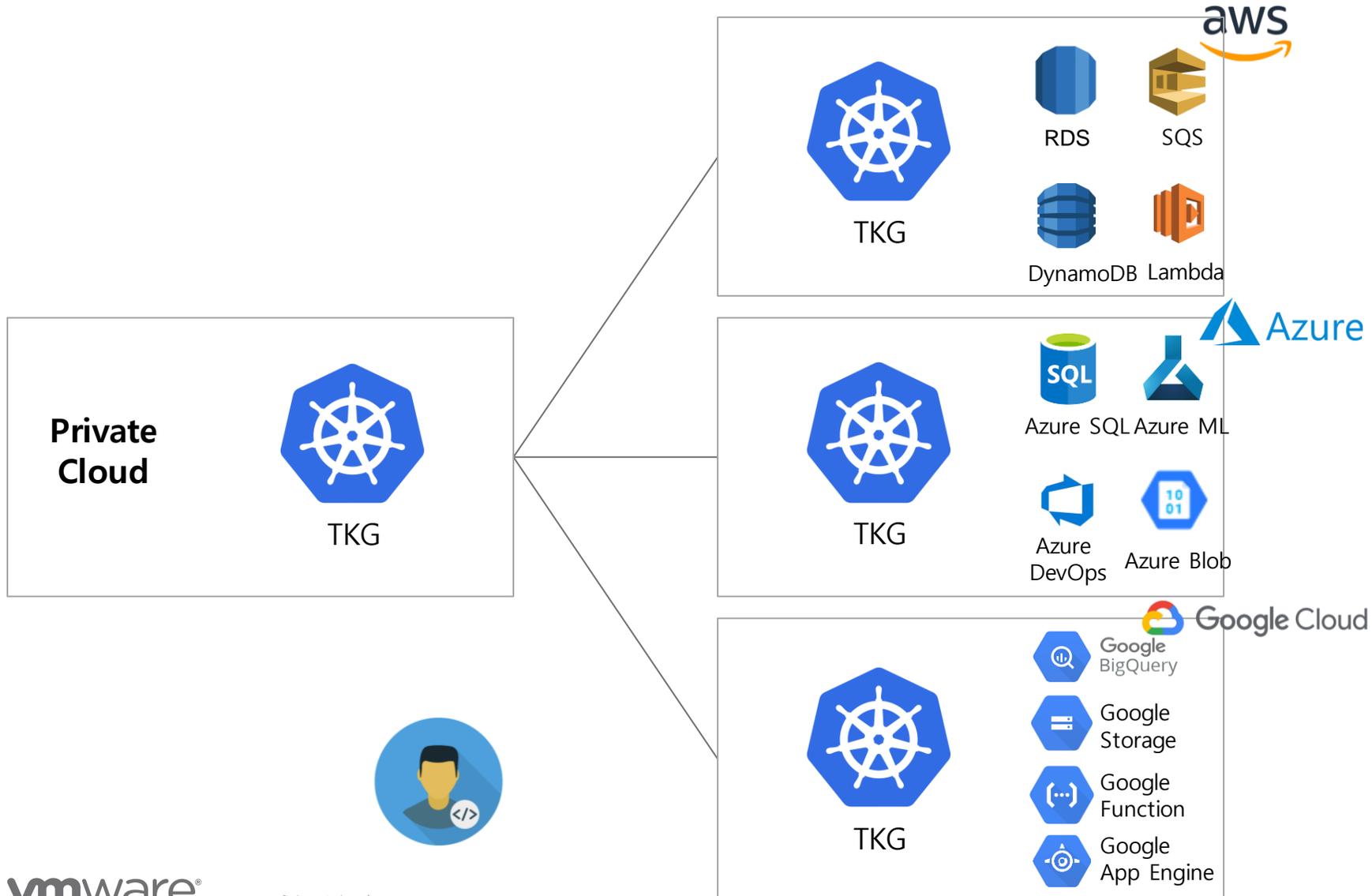
# Demo: vSphere with Kubernetes



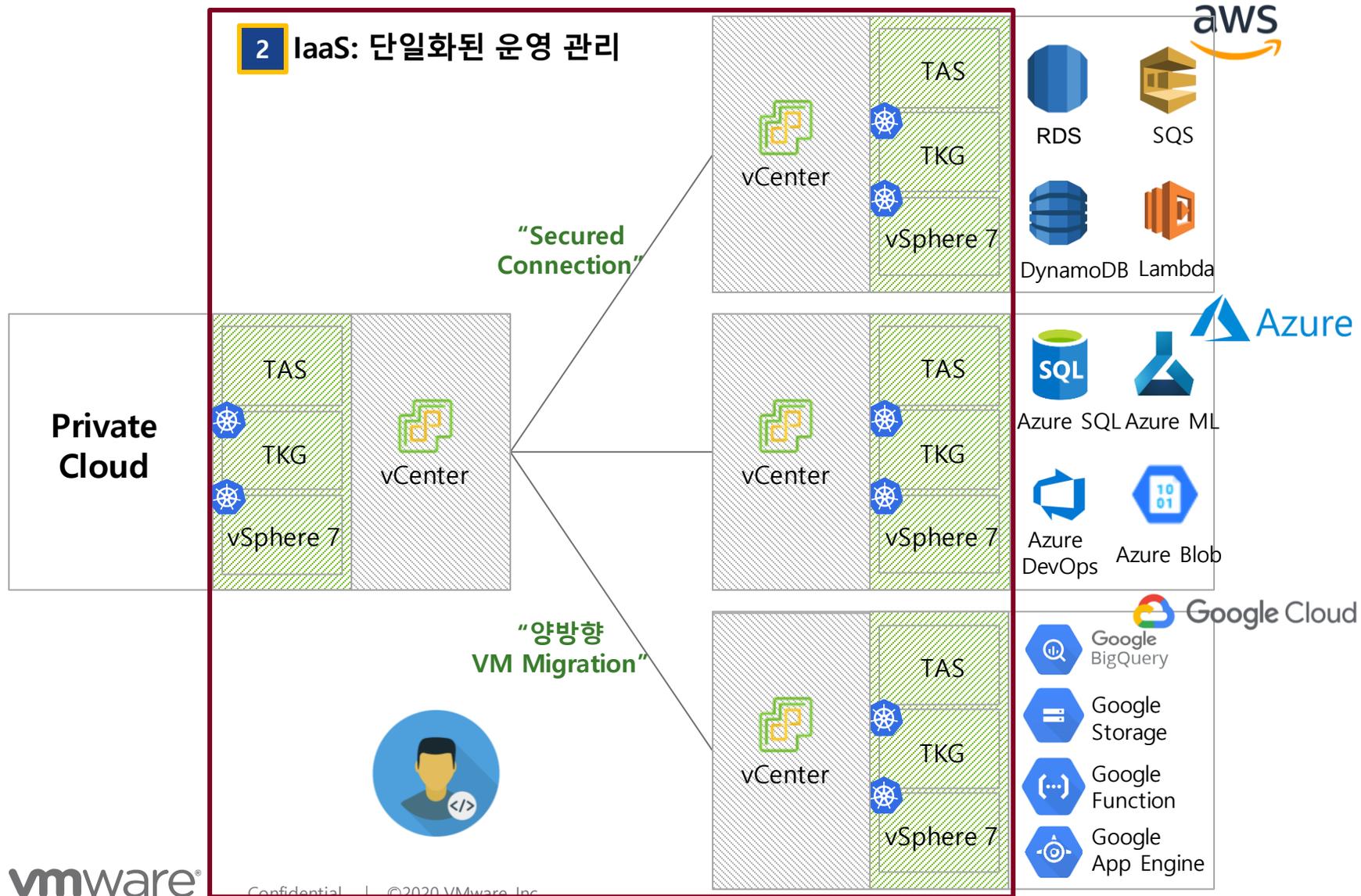
## 2. IaaS: 단일화된 운영 관리

멀티 클라우드 쿠버네티스 플랫폼의 통합 관리

# 멀티 클라우드 쿠버네티스 플랫폼의 통합 관리



# 멀티 클라우드 쿠버네티스 플랫폼의 통합 관리



# Hybrid Linked Mode – 전체 리소스에 단일 뷰 제공

The screenshot displays the vSphere Client interface for a cluster named 'Cluster-1'. The left-hand navigation pane is highlighted with a red box, showing a hierarchical tree structure of the environment. The main content area is divided into several sections:

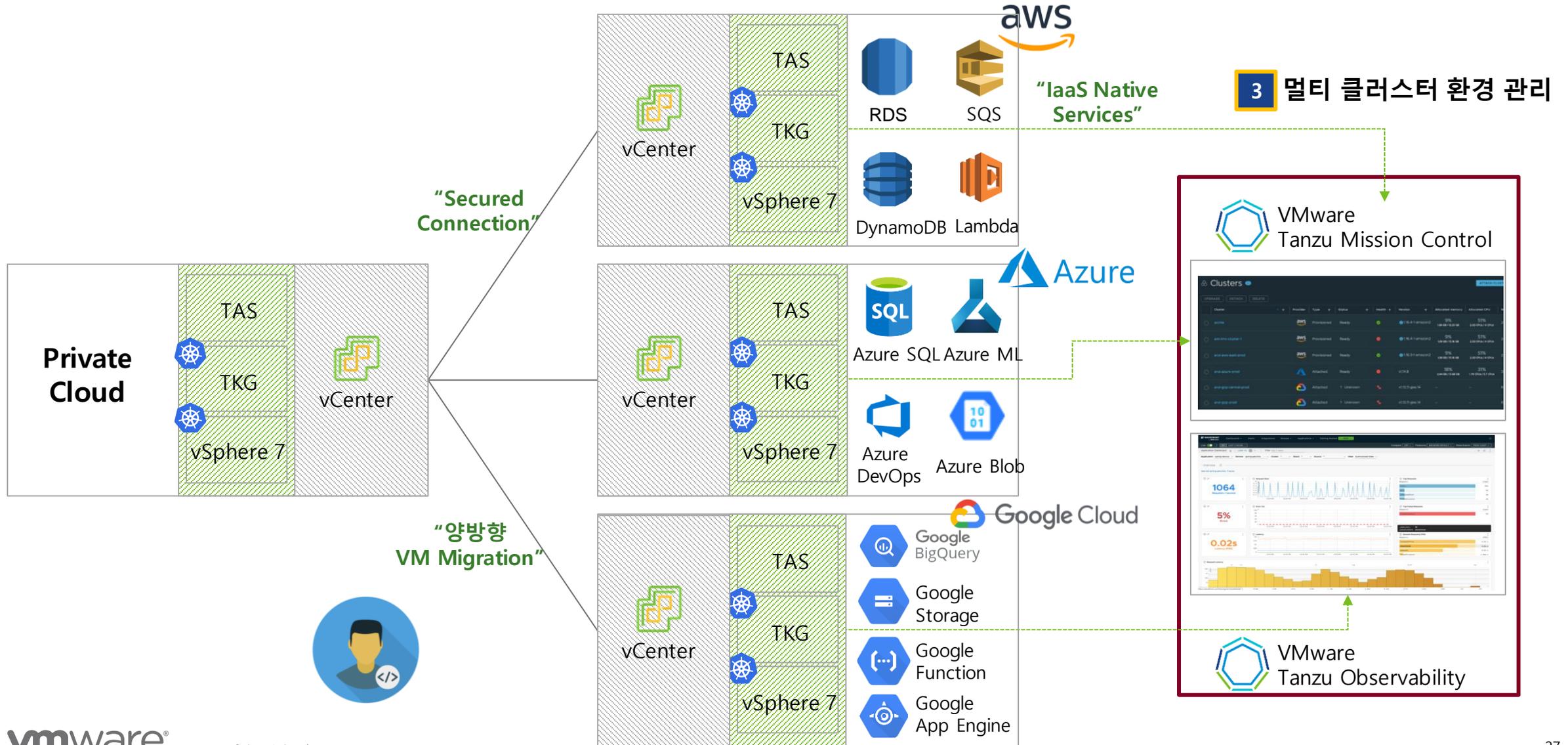
- Summary:** Shows 'Total Processors: 144' and 'Total vMotion Migrations: 2'.
- Related Objects:** Lists 'Datacenter' as 'SDDC-Datacenter'.
- vSphere HA:** Displays a 'Protected' status with a bar chart for CPU and Memory. Below the chart, it lists: CPU reserved for failover: 25%, Memory reserved for failover: 25%, Proactive HA: Disabled, Host Monitoring: Enabled, and VM Monitoring: VM and Application Monitoring.
- vSphere DRS:** Shows a 'Balanced' status with a green progress bar. Configuration includes: Migration automation level: Fully Automated, Migration threshold: Apply priority 1, priority 2, and priority 3 re, Power management automation level: Off, DRS recommendations: 0, and DRS faults: 0.
- Cluster Consumers:** A section for listing consumers.
- Cluster Resources:** A table showing 'Hosts: 4 Hosts' and 'EVC mode: Disabled'.

Recent Tasks Alarms

# 3. 멀티 클러스터 환경 관리

멀티 클라우드 쿠버네티스 플랫폼의 통합 관리

# 멀티 클라우드 쿠버네티스 플랫폼의 통합 관리



# VMware Tanzu Mission Control



Multi-cloud



Multi-cluster



Multi-team

멀티 팀, 멀티 클라우드 상의 쿠버네티스 인프라와 모던 애플리케이션을  
일관되게 운영하기 위한 통합 관리 플랫폼

## 생산성

개발자가 구동중인  
쿠버네티스에 대해  
셀프서비스로 접근 가능

## 일관성

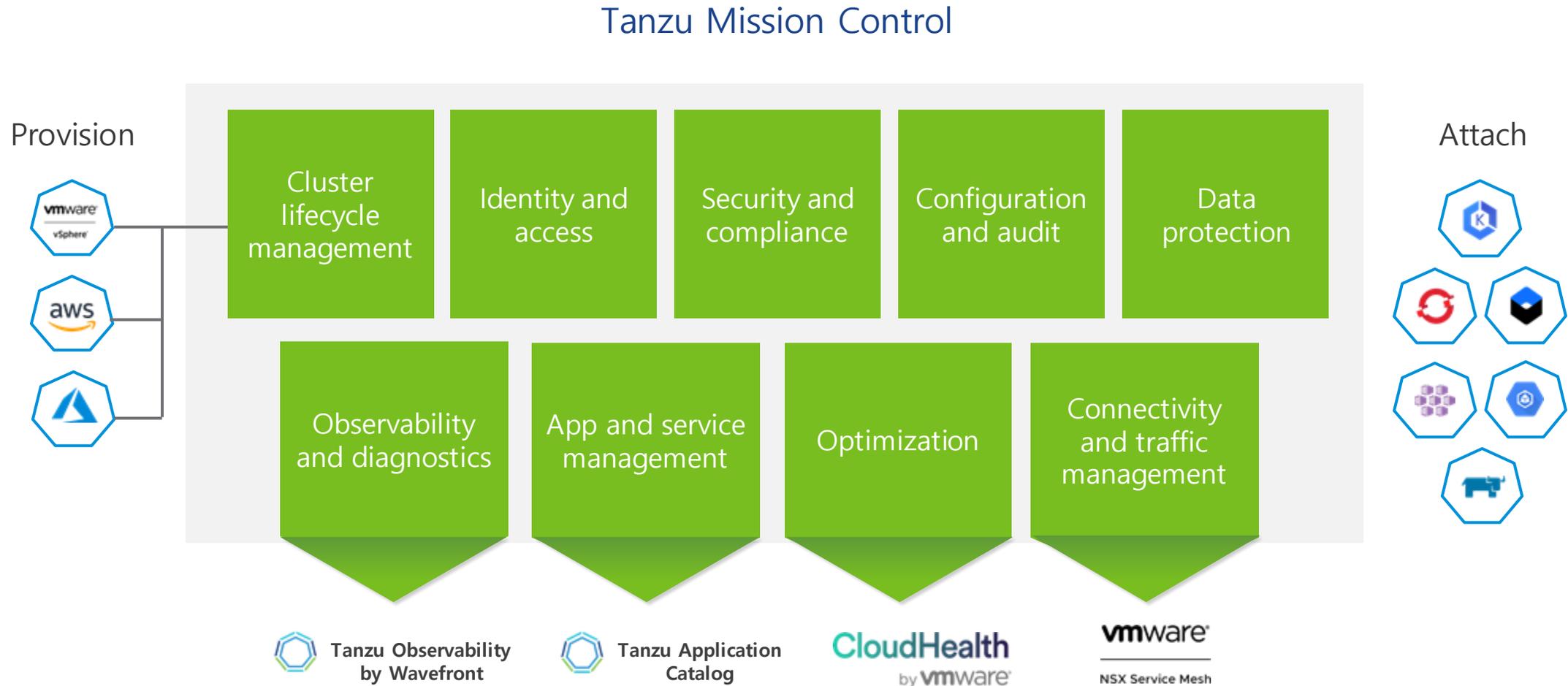
대규모 쿠버네티스  
클러스터 및 어플리케이션을  
중앙에서 운영 및 관리

## 보안

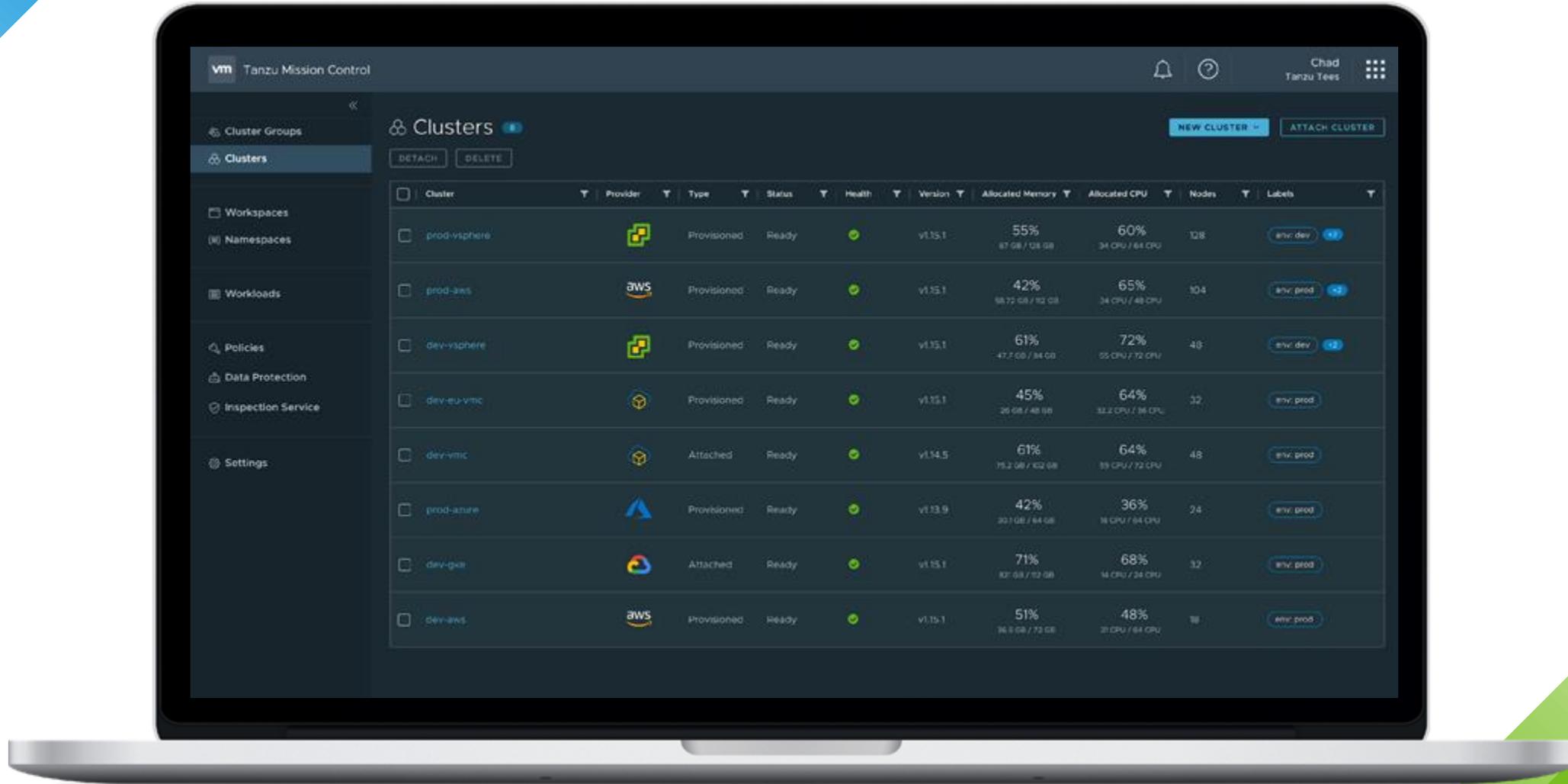
전체 쿠버네티스에 대해  
보안 및 컴플라이언스를  
효율적으로 관리

# VMware Tanzu Mission Control

## Key Capabilities



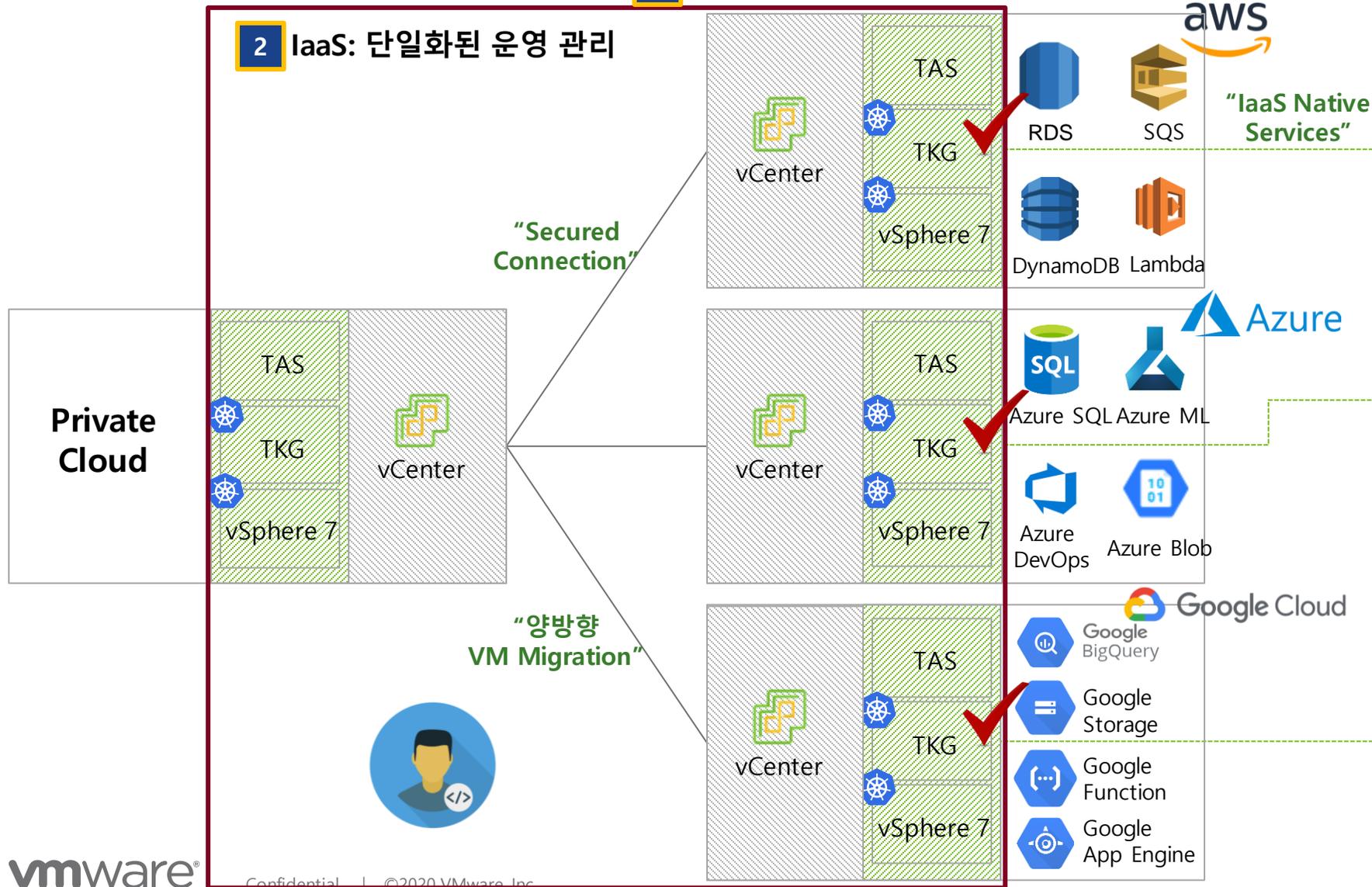
# Demo: Tanzu Mission Control



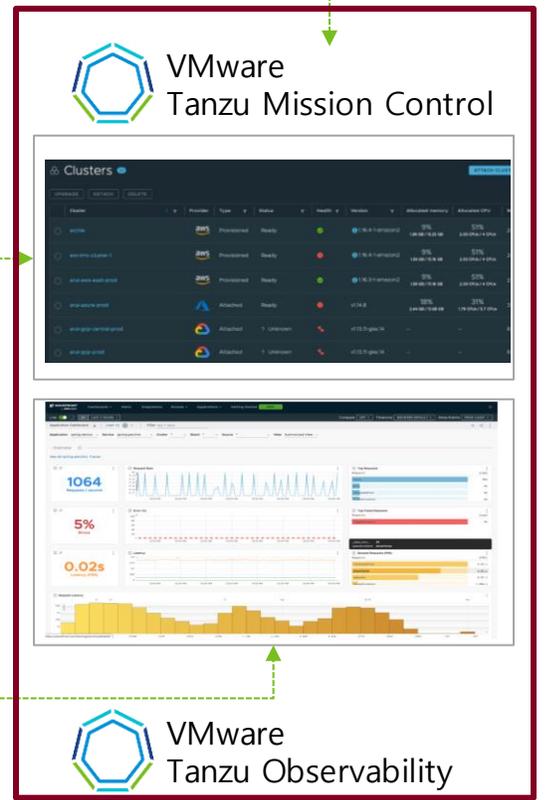
# 멀티 클라우드 쿠버네티스 플랫폼의 통합 관리

## 1 K8S 기반 에코시스템

### 2 IaaS: 단일화된 운영 관리



### 3 멀티 클러스터 환경 관리





# Thank You

# Demo

## vSphere with Kubernetes

# Workload-Cluster

ACTIONS ...

- Summary
- Monitor
- Configure
- Permissions
- Hosts
- VMs
- Namespaces**
- Datastores
- Networks
- Updates

Namespaces Pods

NEW NAMESPACE

## 네임스페이스 상태

## Quota 설정

Filter

- Namespaces
  - ns1
  - ns2
    - tkg-cluster-1-vsph...
    - tkg-cluster-1-vs...
    - tkg-cluster-1-vs...
    - sample-pod
  - vmware-system-regi...
  - SupervisorControlPla...
  - SupervisorControlPla...
  - SupervisorControlPla...
  - jumpbox

Namespaces	Cluster
ns1	Workload-Cluster
ns2	Workload-Cluster
vmw...	Workload-Cluster

Config Status
Running
Running
Running

CPU (Used   Limit)	Memory (Used   Limit)	Storage (Used   Limit)
0   No Limit	122 MB   No Limit	0   No Limit
0   1 GHz	339 MB   No Limit	0   No Limit
0   No Limit	1 GB   No Limit	200 GB   No Limit

네임스페이스들

네임스페이스 이름

쿠버네티스 클러스터 VM

쿠버네티스 컨테이너 (Pod)



ns2

ACTIONS ...

Summary Monitor Configure Permissions Compute Storage Network

네임스페이스 상태

네임스페이스 별 유저관리

**Status** Created 7/30/20

Config Status *i*

**Running**

Kubernetes Status *i*

**Active**

Location

- Workload-Cluster
- pacific-vcsa.haas-415.pez.pivo...

Link to CLI Tools

Copy link *i* Open *i*

**Permissions**

You haven't given any devops access to this namespace. Add some permissions to let your devops team directly manage this namespace.

**ADD PERMISSIONS**

**Storage**

Persistent Volume Claims

**Storage Policies** 1

pacific-gold-storage-pol... | No limit

**EDIT STORAGE**

**Capacity and Usage**

CPU 1 GHz Limit

0 MHz

Memory No limit

**339** MB

Storage No limit

0 MB

**EDIT LIMITS**

**Pods**

**네임스페이스 내 Pod 관리**

1

— Running — Pending — Failed

**Tanzu Kubernetes**

1

**네임스페이스 내 쿠버네티스 관리**

Tanzu Kubernetes Clusters

Control Plane Nodes 1

**Healthy Nodes** 1



ns2

ACTIONS ...

Summary Monitor Configure Permissions Compute Storage Network

Core Kubernetes

- Pods
- Deployments
- Daemon Sets
- Replica Sets
- Replication Controllers
- Stateful Sets
- Jobs

VMware Resources

- Tanzu Kubernetes
- Virtual Machines

Pods

Filter

Name	YAML	Phase	Creation Date	Clu
sample-pod	<a href="#">View YAML</a>	Running	Jul 30, 2020, 11:36:49 P...	10



1 item





ns2

ACTIONS ...

Summary Monitor Configure Permissions Compute **Storage** Network

- Storage Policies
- Config Map
- Secrets
- Persistent Volume Claims

### Storage Policies

EDIT

Storage Policy	Available Capacity	Limit	Persistent Volume Claims
pacific-gold-storage-policy	2 TB	-	0



1 - 1 of 1 items



# 개발자가 관리

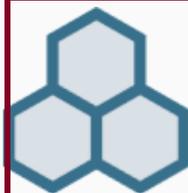


## tkg-cluster-1-vsphere

Developer Managed

ACTIONS ...

- Summary
- Monitor
- Configure
- Permissions
- Resource Pools
- VMs



VMs and Templates: 2 / 2  
 Powered on VMs: 2 / 2  
 Child Resource Pools: 0 / 0  
 Child vApps: 0 / 0

This pool / Total

### 클러스터 기본 정보

CPU Free: 1 GHz  
 Used: 0 Hz Capacity: 1 GHz  
 Memory Free: 117.37 GB  
 Used: 148 MB Capacity: 117.51 GB

### Resource Settings

### 리소스 할당

Scalable Shares Scaled (and descendants' shares scale)

#### CPU

Shares Normal (4000)  
 Reservation Expandable  
 Limit Unlimited  
 Worst Case Allocation 800 MHz

#### Memory

Shares Normal (163840)  
 Reservation Expandable  
 Limit Unlimited  
 Worst Case Allocation 800 MB

### Related Objects

Cluster Workload-Cluster

### Tags

Assigned Tag	Category	Description

# Demo

## Tanzu Mission Control

ATTACH CLUSTER CREATE A CLUSTER

Last updated 2 minutes ago

# Clusters 22

- Cluster groups
- Clusters
- Workspaces
- Namespaces
- Workloads
- Policies
- Inspections
- Administration
- Automation center

Logs

Name	Health	Provider	Version	Allocated memory	Allocated CPU	Cluster group
yujita-aws	Healthy	AWS	1.17.3-1-amazon2	12% (1.77 GB/15.16 GB)	54% (2.17 CPUs/4 CPUs)	yujita-demo
tkgs-2	Healthy	vSphere	v1.17.7+vmware.1	37% (2.81 GB/7.70 GB)	67% (2.67 CPUs/4 CPUs)	sринi-tango
tkgi-dsc-test2	Healthy	vSphere	v1.17.8+vmware.1	46% (3.50 GB/7.69 GB)	33% (1.32 CPUs/4 CPUs)	lloyd-demo
tkgi-dsc-test1	Healthy	vSphere	v1.17.8+vmware.1	46% (3.50 GB/7.69 GB)	33% (1.32 CPUs/4 CPUs)	lloyd-demo
tkg-cluster-1-aws	Healthy	AWS	1.18.4-1-amazon2	12% (1.90 GB/15.33 GB)	56% (2.22 CPUs/4 CPUs)	hshin-cluster
tkg-cluster-1	Healthy	vSphere	v1.16.8+vmware.1	12% (1.77 GB/15.39 GB)	33% (2.67 CPUs/8 CPUs)	hshin-cluster
tkg-aws-prod-01	Healthy	AWS	1.18.3-1-amazon2	4% (1.90 GB/44.79 GB)	10% (2.47 CPUs/24 CPUs)	jupil-cluster-group
tkg-aws-dev-02	Healthy	AWS	1.16.10-1-amazon2	12% (1.77 GB/15.25 GB)	54% (2.17 CPUs/4 CPUs)	jupil-cluster-group
tkg-aws-dev-01	Healthy	AWS	1.17.6-1-amazon2	3% (1.90 GB/59.72 GB)	9% (2.72 CPUs/32 CPUs)	jupil-cluster-group
pks-pks4	Healthy	Google Cloud	v1.16.7+vmware.1	45% (8.66 GB/19.22 GB)	50% (5.05 CPUs/10 CPUs)	derrick-clusters
pks-karankapoor-in	Healthy	Google Cloud	v1.17.5+vmware.1	39% (4.46 GB/11.53 GB)	46% (2.76 CPUs/6 CPUs)	kapoorka
mufg-demo	Healthy	AWS	1.17.3-1-amazon2	12% (1.77 GB/15.16 GB)	54% (2.17 CPUs/4 CPUs)	mufg-demo
mhoshi-tkg1	Healthy	vSphere	v1.16.12+vmware.1	12% (1.77 GB/15.39 GB)	33% (2.67 CPUs/8 CPUs)	mhoshi
lloyd-gke-usc1-1	Healthy	Google Cloud	v1.15.12-gke.2	38% (2.99 GB/7.91 GB)	81% (2.28 CPUs/2.82 CPUs)	lloyd-demo
lloyd-aws-uswest-1	Healthy	AWS	1.17.4-1-amazon2	12% (1.77 GB/15.16 GB)	54% (2.17 CPUs/4 CPUs)	lloyd-demo
lloyd-aks-uswest-1	Healthy	Microsoft Azure	v1.17.0	18% (3.21 GB/18.24 GB)	31% (2.33 CPUs/7.6 CPUs)	lloyd-demo

클러스터 정보들...

tkg-cluster-2-aws Healthy

Last updated a few seconds ago ACTIONS

- Overview
- Nodes
- Node pools
- Namespaces
- Workloads
- Inspections
- Data protection

<b>Cluster group</b>	hshin-cluster	<b>Control plane nodes</b>	1 (m5.large)	<b>Total memory</b>	15.25 GB	<b>Service CIDR</b>	10.96.0.0/12
<b>Provider</b>	AWS	<b>Worker nodes</b>	1	<b>Total cores</b>	4 CPUs	<b>VPC CIDR</b>	10.0.0.0/16
<b>Version</b>	1.18.3-2-amazon2 <span>i</span>	<b>Namespaces</b>	6	<b>Account name</b>	hshin-aws	<b>SSH key name</b>	hshin-aws
<b>Region</b>	ap-southeast-1	<b>Pods</b>	34	<b>Pod CIDR</b>	192.168.0.0/16	<b>Created</b>	21 minutes ago

**Labels** owner: hshin tmc.cloud.vmware.com/creator: haewons

업그레이드

- Access this cluster
- Upgrade**
- Edit labels
- Move
- View policies
- Disable data protection
- Delete

Allocated CPU  
**56%**  
2.22 CPUs / 4 CPUs

Allocated memory  
**12%**  
1.90 GB / 15.25 GB

Component health

- ✓ controller-manager
- ✓ etcd-0
- ✓ kube-apiserver
- ✓ scheduler

Worker nodes 1

- ✓ 1 nodes healthy

Agent and extensions health

- ✓ agent-updater
- ✓ cluster-health-extension
- ✓ data-protection
- ✓ extension-manager
- ✓ extension-updater
- ✓ gatekeeper-operator
- ✓ inspection
- ✓ intent-agent
- ✓ policy-sync-extension
- ✓ sync-agent
- ✓ tmc-observer

Inspection

Run your first inspection to ensure your cluster follows best practices

[RUN INSPECTION](#)

Data protection

Run a backup to protect your cluster data

[CREATE BACKUP](#)

- Cluster groups
- Clusters
- Workspaces
- Namespaces
- Workloads
- Policies
- Inspections
- Administration

# tkg-cluster-2-aws Healthy

Last updated 3 minutes ago **ACTIONS**

- Overview
- Nodes**
- Node pools
- Namespaces
- Workloads
- Inspections

Hostname	Status	Kubelet version	Allocated CPU	Allocated memory	Created
ip-10-0-1-13.ap-southeast-1.compute.internal <span>Control plane</span>	<span>Healthy</span>	v1.18.3+vmware.1	63% (1.25 CPUs/2 CPUs)	7% (496 MB/7.58 GB)	2020-07-31T14:58:50Z
ip-10-0-1-181.ap-southeast-1.compute.internal	<span>Healthy</span>	v1.18.3+vmware.1	51% (1.02 CPUs/2 CPUs)	18% (1.40 GB/7.66 GB)	2020-07-31T14:58:50Z

**노드 정보**

### ip-10-0-1-181.ap-southeast-1.compute.internal Healthy

Last updated a few seconds ago

Cluster group	hshin-cluster	kube-proxy version	v1.18.3+vmware.1
Cluster	tkg-cluster-2-aws	Machine ID	ec236fb2b64d042eff4b5684d240b9d7
Region	global	System UUID	EC236FB2-B64D-042E-FF4B-5684D240B9D7
Kernel version	4.14.181-142.260.amzn2.x86_64	Boot ID	cac41b2c-bd47-4f6b-atc6-9197cf282521
OS image	Amazon Linux 2	Pod CIDR	192.168.1.0/24
Container runtime	containerd://1.3.4	Created	11 minutes ago
kubelet version	v1.18.3+vmware.1		

Labels

Allocated CPU	46%	Allocated memory	17%
0.92 CPUs / 2 CPUs		1.27 GB / 7.66 GB	

Node Conditions

- Network Unavailable Memory Pressure Disk Pressure PID Pressure Ready

Pods

Name	Status	Namespace	Created
agentupdater-workload-1596207720-q9c9t	Succeeded	vmware-system-tmc	a minute ago
calico-node-98nld	Running	kube-system	11 minutes ago
cluster-health-extension-59c7b4b7f4-778m2	Running	vmware-system-tmc	11 minutes ago
data-protection-6894cd854f-bhpkh	Running	vmware-system-tmc	a minute ago

**Pod 정보**

### cluster-health-extension-59c7b4b7f4-778m2

Last updated

Cluster	tkg-cluster-2-aws	Node	ip-10-0-1-181.ap-southeast-1.compute.internal	Initialized	True
Workspace	--	Node selectors	--	Ready	True
Namespace	vmware-system-tmc	Tolerations	node.kubernetes.io/not-ready:NoExecute for 300s	Pod scheduled	True
Type	Pod	IP	192.168.132.70	Controlled by	--

CPU usage: **100m** | Memory usage: **128Mi**

Containers

Name	State	Image
cluster-health-extension	Running	sha256:03800c6fc24ea4d443e4ff5597ac85093db1e5d4d2d8b25592789da17e377435

Source (YAML)

```

3 generateName: cluster-health-extension-59c7b4b7f4-
4 namespace: vmware-system-tmc
5 apiFieldManager: /api/v1/namespaces/vmware-system-tmc/pods/cluster-health-extension-59c7b4b7f4-778m2
6 uid: 15bb5e6c-f7ee-4181-8239-99213b3c50cd
7 resourceVersion: '2286'
8 creationTimestamp: '2020-07-31T14:58:50Z'
9 seconds: '1596207133'
10 labels:
11   app: cluster-health-extension
12   pod-template-hash: 59c7b4b7f4
13   tmc-extension-name: cluster-health-extension
14 annotations:
15   cnf.projectcalico.org/podIP: 192.168.132.70/32

```

- Cluster groups
- Clusters
- Workspaces
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- Logs

# ← tkg-cluster-2-aws Healthy

↻ Last updated a few seconds ago ACTIONS

- Overview
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▼ **default-node-pool** Ready

<b>Name</b> default-node-pool	<b>Availability zone</b> ap-southeast-1b
<b>Description (optional)</b>	<b>Node label</b> key value
<b>Worker instance type</b> m5.large	<b>Cloud label</b> key value
<b>Number of worker nodes</b> 1	

CANCEL SAVE

> [New node pool](#)

**노드 스케일**

- Cluster groups
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# ← tkg-cluster-2-aws Healthy

Refresh Last updated a minute ago ACTIONS

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ATTACH NAMESPACES

CREATE NAMESPACE

## 네임스페이스 정보

Hide Tanzu namespaces Hide system namespaces

<input type="checkbox"/>	Name	Managed	Workspace	Labels
<input type="checkbox"/>	default	No		
<input type="checkbox"/>	kube-node-lease	No		
<input type="checkbox"/>	kube-public	No		
<input type="checkbox"/>	kube-system	No		
<input type="checkbox"/>	velero	No		component: velero
<input type="checkbox"/>	vmware-system-tmc	No		control-plane: extension-manager +2

1 to 6 of 6 Namespaces | Page navigation: 1 / 1

<<

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 Logs

 DARK

←  tkg-cluster-2-aws ✔ Healthy

 Last updated 2 minutes ago
 ACTIONS ▾

Overview
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워크로드 정보

Hide Tanzu workloads
  Hide system workloads

Name	Object	Health	Pods	Namespace	Workspace	Labels	Created
agent-updater	Deployment	✔	1	vmware-system-tmc		app: agent-updater +5	14 minutes ago
agent-updater-5c8576b8b7	ReplicaSet	✔	1	vmware-system-tmc		app: agent-updater +4	14 minutes ago
calico-kube-controllers	Deployment	✔	1	kube-system		k8s-app: calico-kube-controllers	14 minutes ago
calico-kube-controllers-675d8749dd	ReplicaSet	✔	1	kube-system		k8s-app: calico-kube-controllers +1	14 minutes ago
calico-node	DaemonSet	●	2	kube-system		k8s-app: calico-node	14 minutes ago
calico-typha	Deployment	✔	0	kube-system		k8s-app: calico-typha	14 minutes ago
calico-typha-6c6947b746	ReplicaSet	✔	0	kube-system		k8s-app: calico-typha +1	14 minutes ago
cluster-health-extension	Deployment	✔	1	vmware-system-tmc		app: cluster-health-extension +3	13 minutes ago
cluster-health-extension-59c7b4b7f4	ReplicaSet	✔	1	vmware-system-tmc		app: cluster-health-extension +2	13 minutes ago
coredns	Deployment	✔	2	kube-system		k8s-app: kube-dns	14 minutes ago
coredns-dbbffcb66	ReplicaSet	✔	2	kube-system		k8s-app: kube-dns +1	14 minutes ago
data-protection	Deployment	✔	1	vmware-system-tmc		app: data-protection +3	3 minutes ago
data-protection-6894cd854f	ReplicaSet	✔	1	vmware-system-tmc		app: data-protection +2	3 minutes ago
extension-manager	Deployment	✔	1	vmware-system-tmc		app: extension-manager +6	14 minutes ago
extension-manager-658fb4c7f7	ReplicaSet	✔	1	vmware-system-tmc		control-plane: extension-manager +4	14 minutes ago



# ← tkg-cluster-1-aws ✔ Healthy

🔄 Last updated a few seconds ago

ACTIONS ▾

- Overview
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## 클러스터 검사

RUN INSPECTION ▾

Inspection	Result	Started
⋮ Conformance	❗ Failure (1/278 tests failed)	a day ago
⋮ CIS benchmark	❗ Failure (11/88 tests failed, 11/88 tests warning)	a day ago
⋮ Lite	✔ Success	a day ago

1 to 3 of 3 Inspections    ⏪ < 1 / 1 > ⏩

- Administration
- Automation center

📄 Logs

# tkg-cluster-1-aws Healthy

Last updated a minute ago ACTIONS

- Overview
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**Last backup** ✓ August 1st, 2020, 12:45 AM

**Last restore** --

## 클러스터 백업 및 복구

## Backups

RESTORE DELETE

CREATE BACKUP

Name	Status	Creation Time	Storage Location	Snapshot Location
tkg-cluster-1-aws-backup	<span>✓</span> Ready	a few seconds ago	hshin-aws-dp	default-aws

## Restores

DELETE

Name	Status
 No viewable restores. Restores that you have permission to view will show up here.	

### ← Create backup

✓ What to backup Back up the entire cluster tkg-cluster-1-aws

- Back up the entire cluster, tkg-cluster-1-aws
- Back up selected namespaces
- Back up resource using a label selector

NEXT

✓ Back up retention Remove backup after 30 days

Retention:  days

NEXT

3. Name and create Name this back up and create it

Name:

Name must be lowercase letters, numbers and hypens

CREATE

# Policies **다양한 정책 설정**

Last updated a minute ago

Access Image registry Network Security <sup>BETA</sup> Quota

Sync Issues

CLUSTERS WORKSPACES

- Cluster groups
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- hashi-cluster
- hshin-cluster**
  - tkg-cluster-1
    - default
  - tkg-cluster-1-aws
  - tkg-cluster-1-vsphere
  - tkg-cluster-2-aws
- idfcdemo
- j-k8s-security
- jay-cluster
- jc-clusters
- jupil-cluster-group
- kapooraka
- ldonghee-cluster-group
- ldonghee-cluster-tsm-group
- lloyd-demo
- markp-cluster-group
- mhoshi
- mufg-demo
- nec-demo

## Policies for cluster group hshin-cluster

### Inherited clustergroups access policies

MAPBU-APJ	
Role <b>organization.admin</b>	Identities csp.org_owner tmc.admin
Role <b>organization.credential.view</b>	Identities tmc.member
Role <b>cluster.admin</b>	Identities olive

### Direct access policies

hshin-cluster
---------------

[CREATE ROLE BINDING](#)

동일한 정책을 적용할 네임스페이스 그룹 (앱이 배포되는 공간)