



Intersight & IWO

박한진 이사 Technical Solution Architect

Korea CISG (Cloud Infrastructure & Software Group) SE Team

CISCO *Engage*



Intersight 클라우드 운영 플랫폼



Edge



Branch



Data center



Colo



Public Cloud

DevOps



서비스관리



지원



거버넌스 및 보안



인프라스트럭처



가상화



컨테이너



애플리케이션 자원 관리



Infrastructure as Code



자동화



클라우드 네이티브



Intersight Infrastructure Services

Intersight Virtualization Service

Intersight Kubernetes Service

Intersight Workload Optimizer

Intersight Service for Terraform

Intersight Cloud Orchestrator

Intersight Workload Engine

The Intersight Cloud Operating Platform



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Infrastructure Services

Intersight 어플라이언스를 통해 로컬에서 클라우드를 통해 온-프레미스 서버 인프라를 운영

Connecte Tac을 통한 지속적인 인프라 관리.
Intersight는 하드웨어 결함, 소프트웨어 비 호환성, 보안 취약성에 대해 시스템을 사전에 평가하고 모범 사례를 권장합니다.

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인프라스트럭처

가상화

컨테이너

애플리케이션 자원 관리

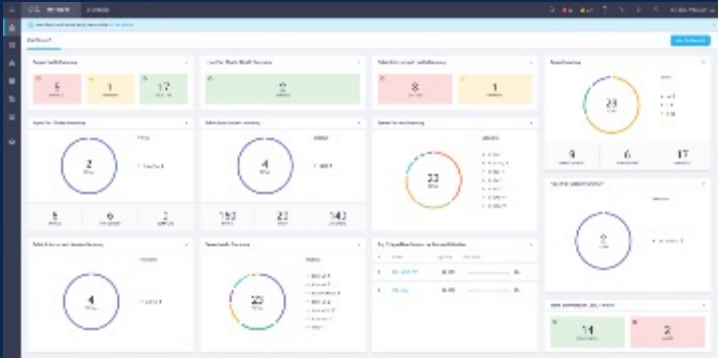
Infrastructure as Code

자동화

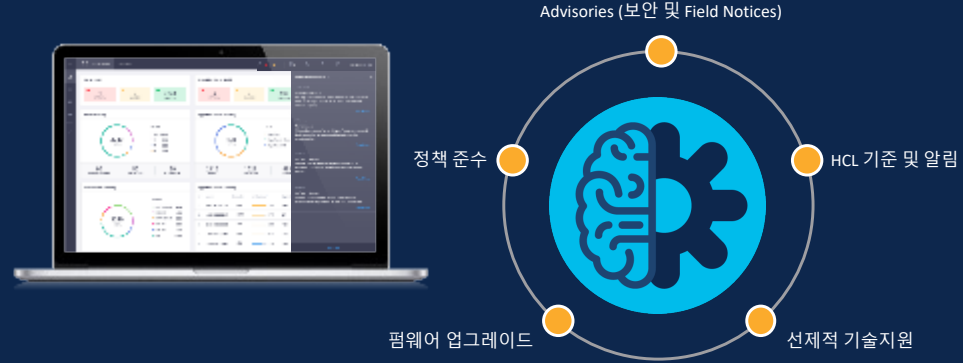
클라우드 네이티브

TOOLS

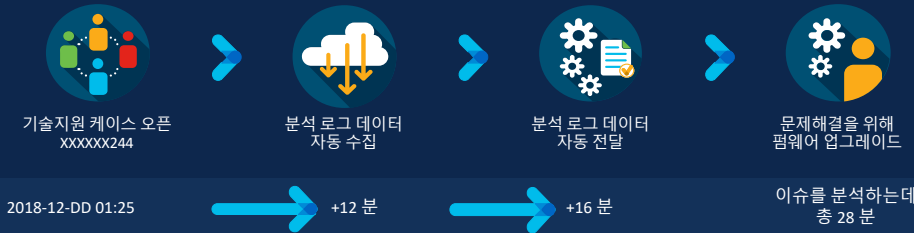
Intersight – 대시보드



Intersight: Active Protection



Intersight: Connected TAC



Intersight: Proactive RMA



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Intersight Workload Engine



Virtualization Service

VMware vCenter 와 연동하여 온프레미스에 가상 머신 배포 및 관리를 완벽하게 지원하는 클라우드 기반 Management.

온프레미스 어플라이언스를 통하여 관리 및 운영을 제공 "클라우드와 같은" 방식으로 VM 또는 컨테이너를 배포 할 수 있습니다.

Intersight에서 AWS 계정을 연동(Claim)

The screenshot displays the Intersight interface for claiming an Amazon Web Services (AWS) target. The breadcrumb navigation shows 'ADMIN > Targets > Claim a New Target'. The left sidebar is categorized into 'MONITOR', 'OPERATE', and 'ADMIN'. The 'ADMIN' section is expanded, and the 'Targets' option is highlighted with a red box. The main content area is titled 'Claim Amazon Web Services Target' and includes a sub-header 'To claim your target, you must have the proper credentials for your target type'. Below this, the 'General' configuration section is highlighted with a red box and contains three required fields: 'Name *', 'Access Key *', and 'Secret Access Key *'. The 'Regional Distribution' section below it shows 'Region Group *' set to 'Public-Region' and 'Region(s) *' set to 'No Region(s) Selected', both of which are also highlighted with red boxes. A blue informational banner states: 'Regions selection is not applicable to Intersight Workload Optimizer. Learn more at Help Center'.

vCenter와 AWS VM을 단일 view에서 !!

The screenshot displays the Cisco Intersight interface for managing Virtual Machines. The main view shows a list of VMs, with a summary card at the top indicating 254 total VMs, all in a 'Running' status. The summary card also shows the top 5 used instance types and OS distributions.

Provider/Platform Summary:

- VMware vSphere: 244
- Amazon Web Services: 6
- Cisco IWE: 4

Status: 254 Running

Top 5 Used Instance Types:

- t3a.small: 3
- c5.xlarge: 2
- m5.zlarge: 1

OS Distribution:

- Ubuntu Linux (64-bit): 65
- Red Hat Enterprise Linux...: 30
- CentOS 7/5 or later (64-b...): 26
- Other (32-bit): 21
- Other: 112

CPU Utilization: 3 WARNING, 245 OK

Memory Utilization: 14 CRITICAL, 234 OK

Name	Provider/Platform	Status	CPUs	CPU Capa...	CPU Utilization	Memory Capa...	IP Address	Placement
eks-vault-cluster	Amazon Web Services	Running	1	-	100%	2.00 GiB	10.249.2.28, 54.252.248.99	(2) vault
se-cis-sw_flowensor1	VMware vSphere	Running	1	2.60 GHz	1.0%	4.00 GiB	10.66.113.84	nsd5
Mike-Jumpbox	VMware vSphere	Running	1	2.60 GHz	0.0%	16.00 GiB	fe80::859:dd79:6505:a6bd, 169.254.166.189, 192.16...	(5) nsd5
se-cis-sw_udpdirector1	VMware vSphere	Running	1	2.60 GHz	2.0%	4.00 GiB	10.66.113.83	nsd5
GSSO-WSA1	VMware vSphere	Running	1	2.60 GHz	19.0%	4.00 GiB	-	nsd5
eks-vault-cluster	Amazon Web Services	Running	1	-	100%	2.00 GiB	10.249.3.121, 3.104.37.40	(2) vault
csr-head1-internet	VMware vSphere	Running	1	2.00 GHz	9.0%	4.00 GiB	-	nsd5
win10-dhenwood	VMware vSphere	Running	1	2.60 GHz	3.0%	4.00 GiB	fe80::e160:cd84:ccc7:5f88, 10.66.112.23	(2) nsd5
CBA NAD 1	VMware vSphere	Running	1	2.60 GHz	32.0%	4.00 GiB	-	nsd5
csr-head2-mpls	VMware vSphere	Running	1	2.00 GHz	37.0%	4.00 GiB	-	nsd5
se-cis-sw_flowensor2	VMware vSphere	Running	1	2.60 GHz	1.0%	4.00 GiB	10.66.113.85	nsd5
panda_csr	VMware vSphere	Running	1	2.19 GHz	31.0%	4.00 GiB	-	mel-dc-ng-datacenter
stCIVM-FCH18097X4Z	VMware vSphere	Running	1	2.79 GHz	0.0%	512.00 MiB	-	mel-dc-ng-datacenter
panda_csr	VMware vSphere	Running	1	2.19 GHz	30.0%	4.00 GiB	-	mel-dc-ng-datacenter
eks-vault-cluster	Amazon Web Services	Running	1	-	100%	2.00 GiB	10.249.1.49, 3.104.75.197	(2) vault

The Intersight Cloud Operating Platform



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Intersight Workload Engine



Workload Optimiser

실시간 풀 스택 가시성을 통해 모든 환경에서 애플리케이션 리소스를 관리하여 단일 도구로 성능 및 더 나은 비용 제어를 보장합니다.

인프라, 운영 체제, 미들웨어, 클라우드 및 애플리케이션 텔레메트리의 상황 인식을 통한 지능적인 의사 결정.

문제가 발생하기 전에 사전 조치 가능.

Application Resource Management (ARM)

인프라 리소스 분석을 통해 풀-스택
관계 종속성을 시각화

IT 운영 및 기업용 비즈니스
애플리케이션(LOB)에 대한 단일 뷰
제공과 운영이 가능

크리티컬 비즈니스 애플리케이션
중단을 방지하고 애플리케이션 성능을
지속적으로 보장

인프라 효율성 향상

하이브리드 클라우드 운영의 지출
최적화

IWO enables IT teams to:



37%

애플리케이션 응답시간
향상



87%

인프라 가용성
20%이상 증가



55%

관리자의 티켓발생 수 20%
이상 감소



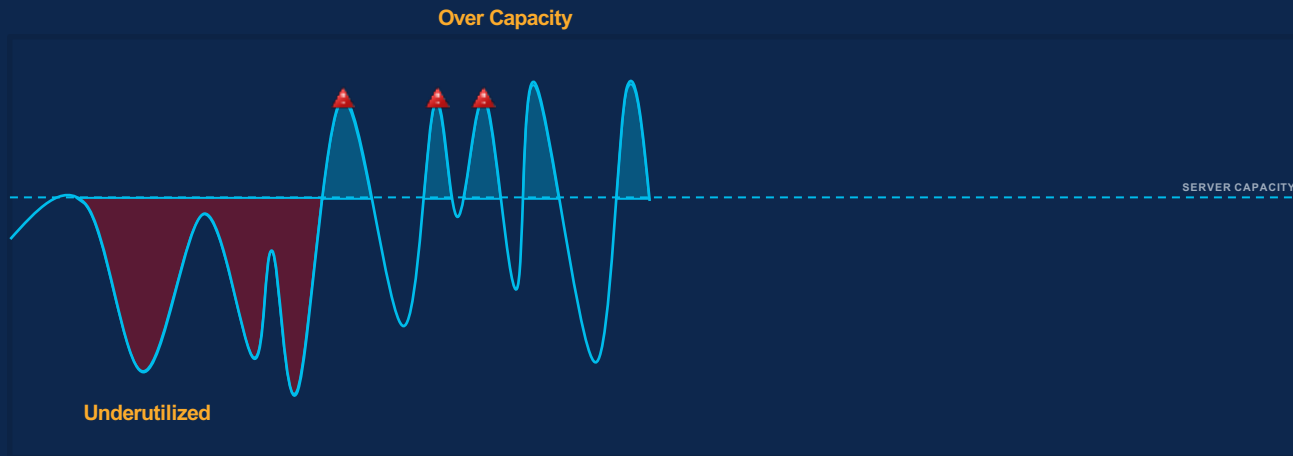
91%

90일 경과 시 ROI

가시성과 통찰력

Visibility

Insight

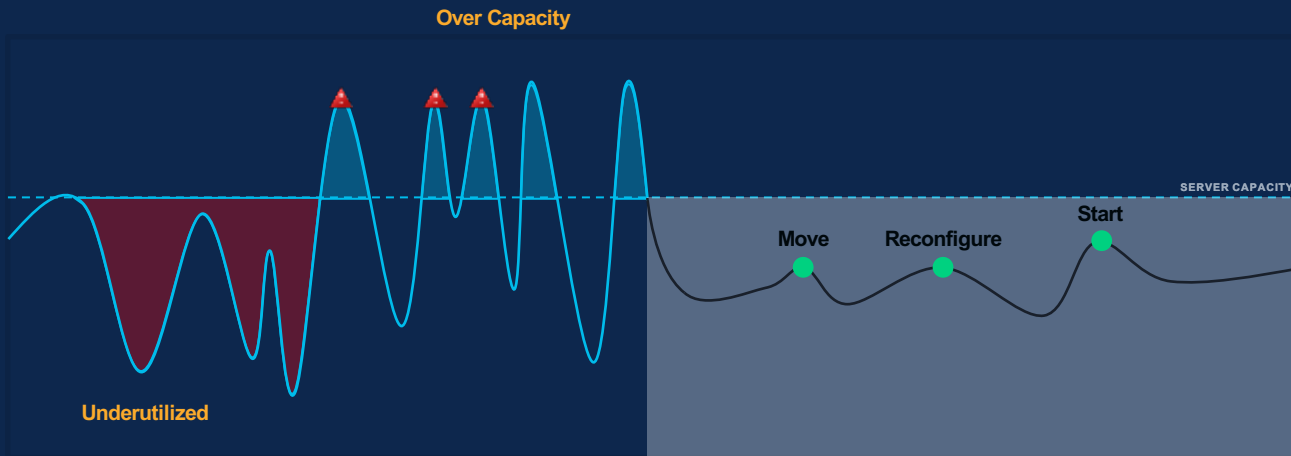


가시성과 통찰력

Visibility

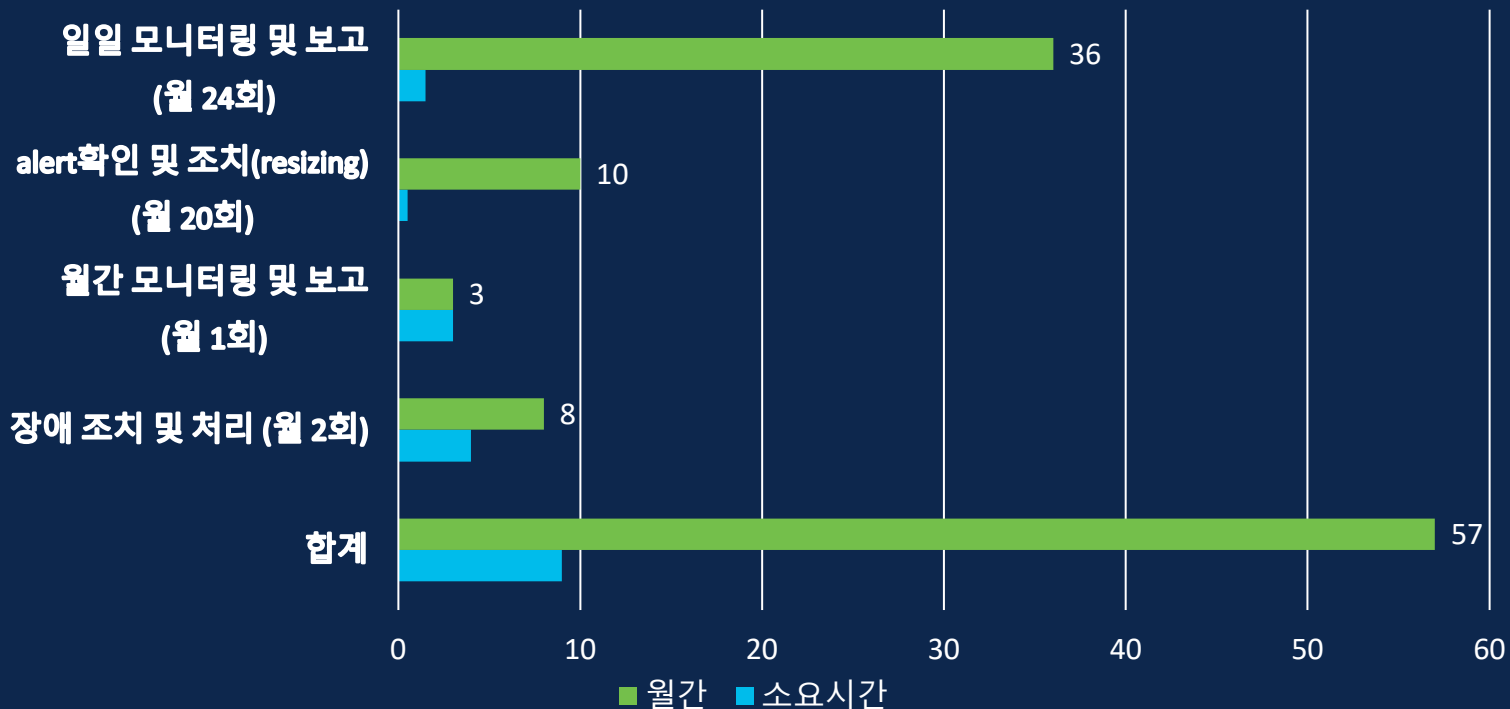
Insight

Action



워크로드 배치 및 크기
조정을 자동화하여
고객 경험 보장

시스템 운영자의 반복 업무 및 소요 시간은?



지속적인 애플리케이션 성능을 보장하려면 ?

지속적이고 AI기반의
운영 분석 및 자동화



완벽한 가시성

앱 / 가상머신 / 컨테이너 / 물리서버 /
네트워크 / 스토리지 까지

Visibility



실시간 분석

올바른 자원 결정을 내리기 위해

Insights

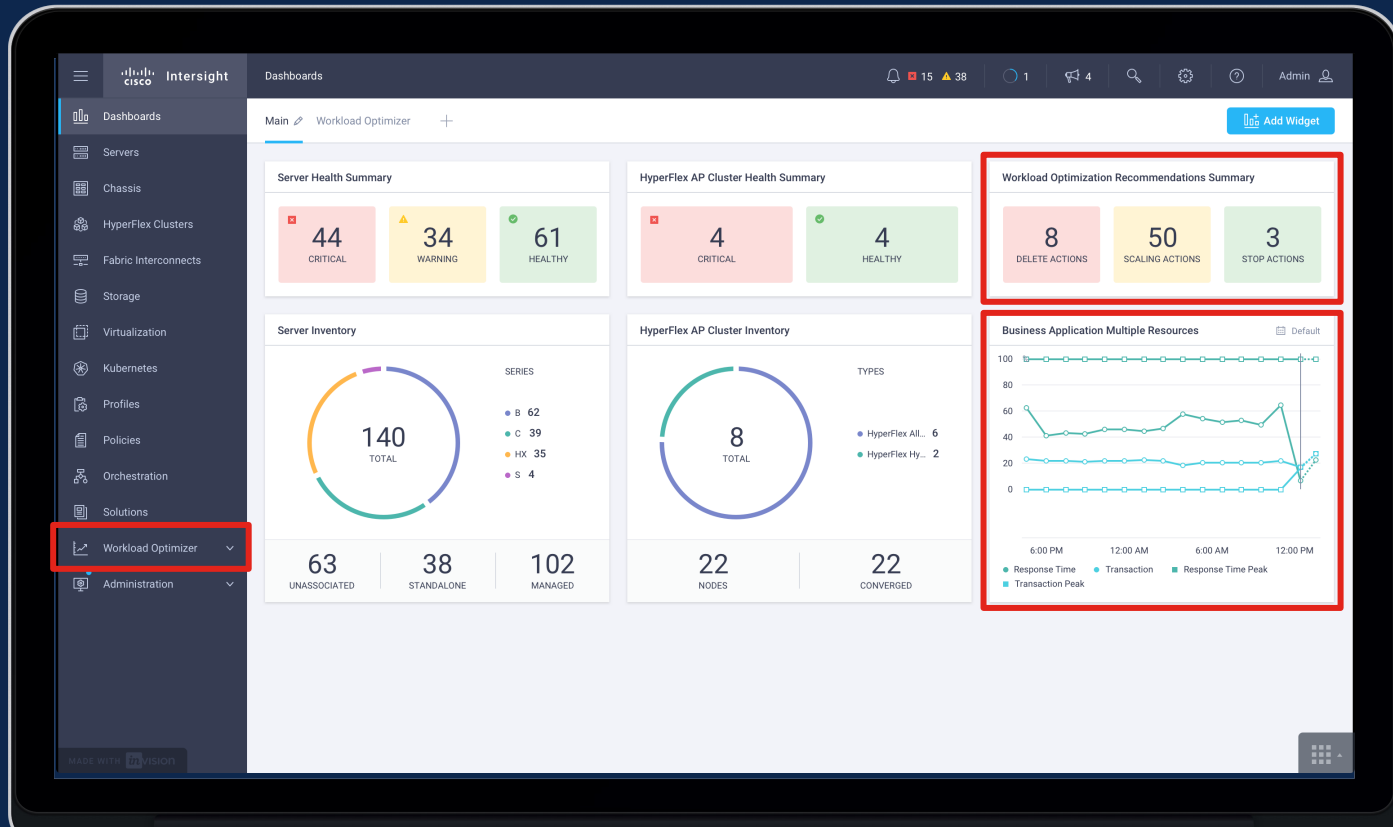


Full-stack 자동화

실시간으로 리소스 할당 및 최적화

Action

IWO Demo





Risk and costs 최소화 = 최적의 성능



온 프레미스 및 퍼블릭 클라우드 리소스를 모두 고려하여
지능형 권장 가이드를 제공하며 복잡한 워크로드 배치 결정을
자동화합니다.

실시간 지능형 워크로드 배치 및 리소스 권장 사항으로
성능 SLA를 충족하면서 비용을 절감합니다.

CISCO

Intersight Service for Container

박한진 이사 Technical Solution Architect

Korea CISG (Cloud Infrastructure & Software Group) SE Team

CISCO *Engage*

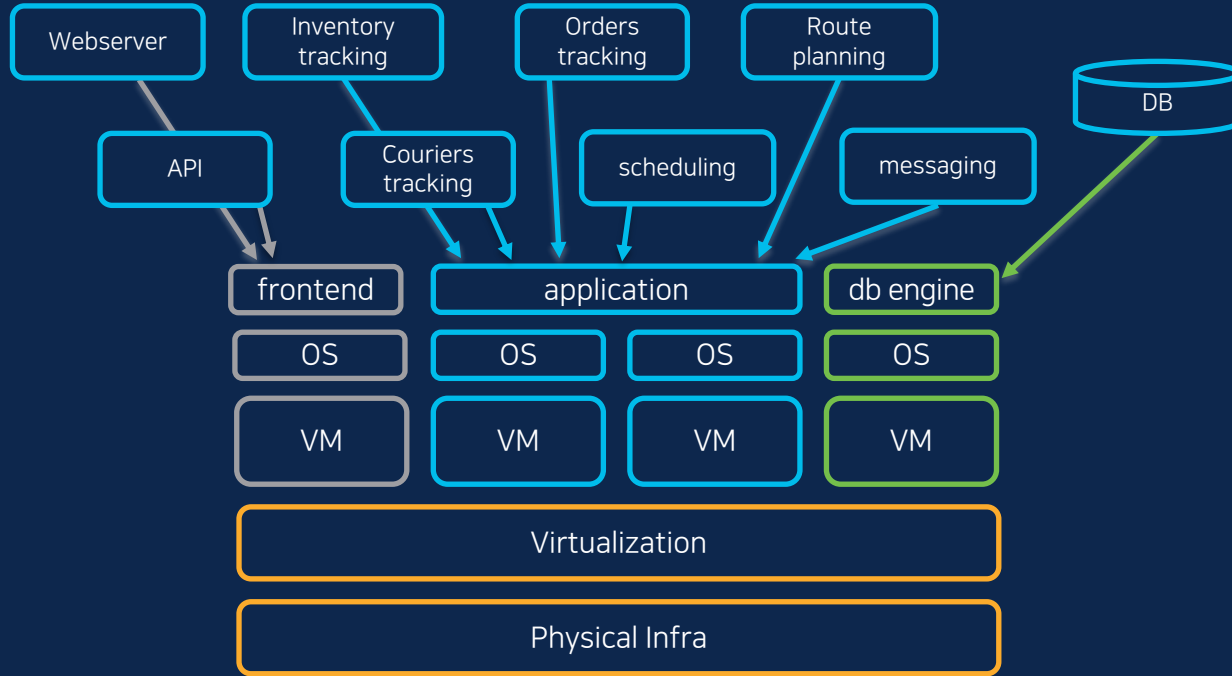


하이브리드, 멀티 클라우드, App 중심의 인프라



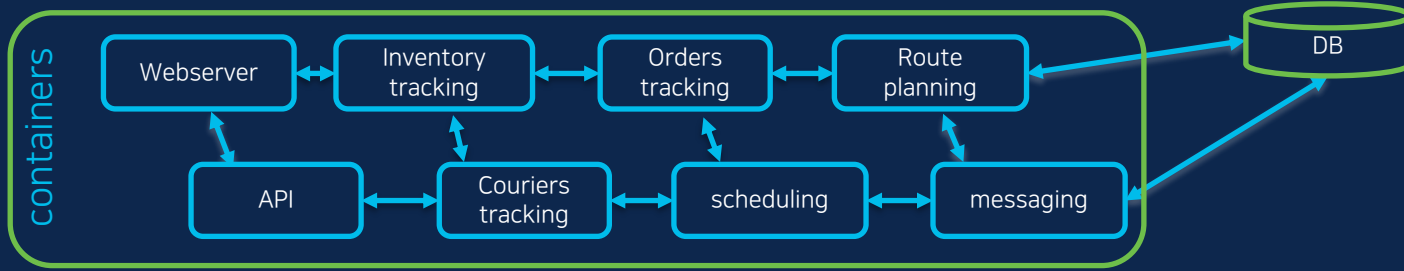
전통적인 어플리케이션 아키텍처

features



- 확장성 & 가용성
- 배포 & 수동적인 관리
- VM 기반의 관리

클라우드 네이티브 아키텍처



CI/CD

container registry

build server

Kubernetes


OS OS OS OS


VM VM VM VM

Virtualization

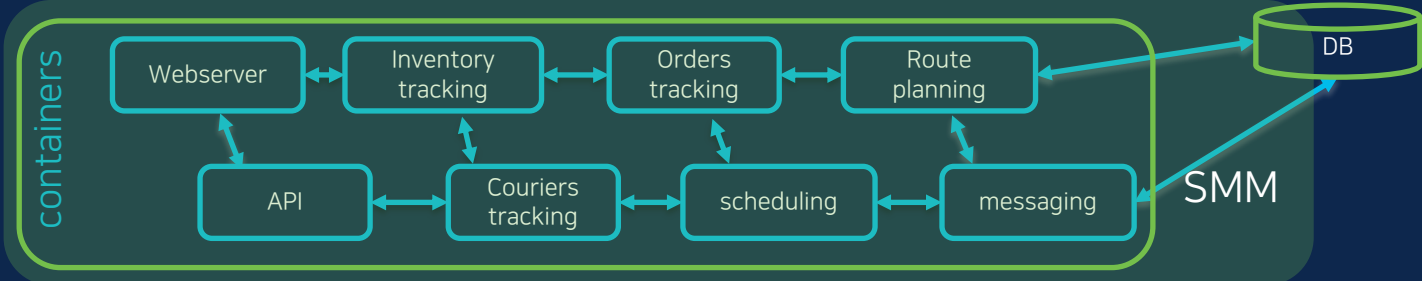
Physical Infra

 멀티 클라우드

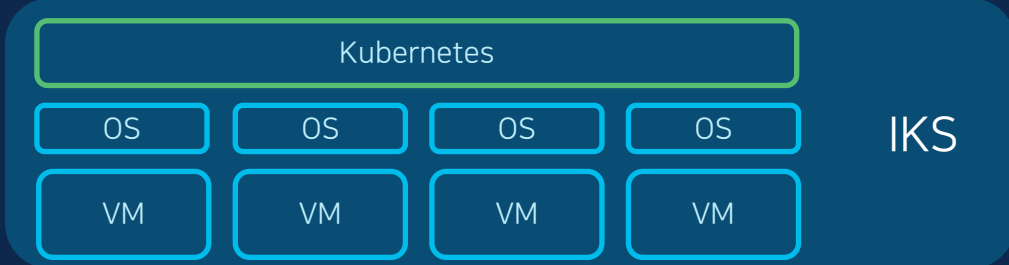
 고가용성 & 확장성

 운영 효율성 및 민첩성 향상

Intersight - 클라우드 네이티브 솔루션 제공



- CI/CD
- container registry
- build server

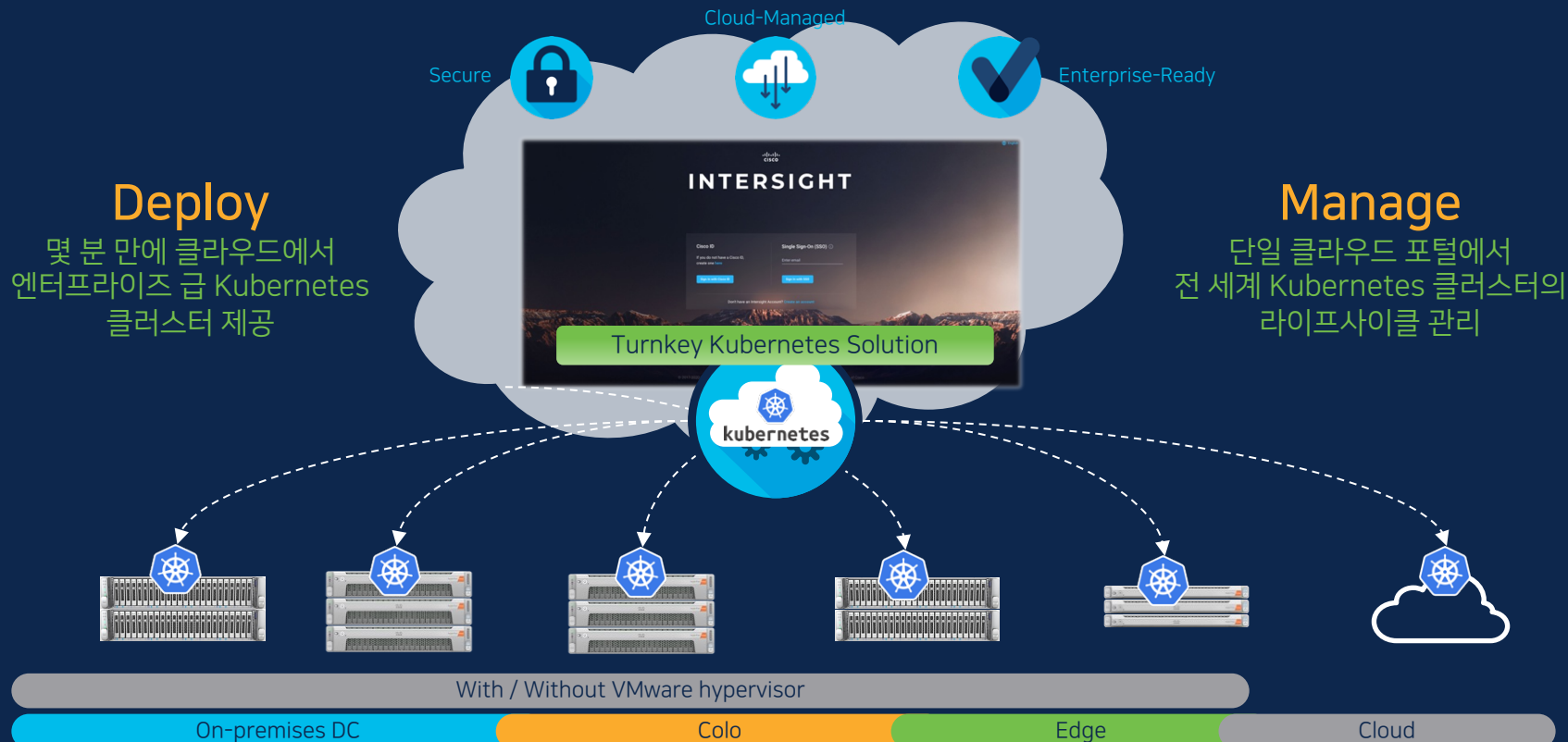


-  Fully 자동화
-  as-a-Service 기반 제공
-  안정성 & 보안적합

Intersight 하이브리드 클라우드 운영 플랫폼



Intersight Kubernetes Service



Intersight Kubernetes Service

5 Step에 끝나는 손쉬운 K8S 클러스터 배포

1. User/DNS/NTP

Step 2 Cluster Configuration
Network, System, and SSH

IP Pool *
Selected IP Pool: 87.170.180

Load Balancer Count *
1

SSH User *
iksadmin

SSH Public Key *
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdihhYNTYAAA

Policies

- DNS, NTP and Time Zone (han-test-sys-config-policy)
 - Timezone * Asia/Seoul
 - DNS Suffix
 - DNS Server * 10.72.86.153
 - NTP Server 10.72.86.153
- Network CIDR
- Trusted Registries (Optional Policy)
- Container Runtime Policy (Optional Policy)

Buttons: < Back, Close, Next >

Intersight Kubernetes Service

5 Step에 끝나는 손쉬운 K8S 클러스터 배포

The screenshot displays the Cisco Intersight web interface for configuring a Kubernetes cluster. The main content area is titled "Step 2 Cluster Configuration" and "Network, System, and SSH". A blue callout box highlights "2. Network CIDR".

The configuration steps are listed in a progress bar on the left:

- 1 General
- 2 Cluster Configuration
- 3 Control Plane Node Pool Configuration
- 4 Worker Node Pools Configuration
- 5 Add-ons Configuration
- 6 Summary

The configuration fields include:

- IP Pool ***: Selected IP Pool: 87.170-180
- Load Balancer Count ***: 1
- SSH User ***: kksadmin
- SSH Public Key ***: ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHIyNTYAAA

Policies

- + DNS, NTP and Time Zone (han-test-sys-config-policy)
- Network CIDR (han-test-network-policy)

Network CIDR Details:

POD Network CIDR	Service CIDR
192.168.0.0/16	10.72.87.0/24

Additional policies shown:

- + Trusted Registries (Optional Policy)
- + Container Runtime Policy (Optional Policy)

Navigation buttons at the bottom: < Back, Close, Next >

Intersight Kubernetes Service

5 Step에 끝나는 손쉬운 K8S 클러스터 배포

The screenshot displays the Cisco Intersight web interface for configuring a Kubernetes cluster. The main window is titled "Step 3: Control Plane Node Pool Configuration". A blue callout box at the top center reads "3. Cntl Node".

The interface includes a left-hand navigation menu with sections for MONITOR, OPERATE, CONFIGURE, OPTIMIZE, and ADMIN. The CONFIGURE section is expanded to show Profiles, Templates, Policies, Pools, Overview, Plan, Placement, and More.

The main configuration area is divided into several panels:

- Control Plane Node Pool Configuration:** This panel contains the following fields:
 - Desired Size: 1
 - Min Size: 1
 - Max Size: 3
 - Kubernetes Version: Selected Version: 1.19.5-iks-0
 - IP Pool: Selected IP Pool: 87.170-180
 - Kubernetes Labels: A table with columns for Key and Value.
 - Virtual Machine Infrastructure Configuration: Selected Virtual Machine Infra Config: HX-Node
 - Virtual Machine Instance Type: Selected Instance Type: 4Core16G
- 1.19.5-iks-0 (General):** A pop-up window showing:
 - Name: 1.19.5-iks-0
 - Organization: default
 - Kubernetes Version: v1.19.5
 - Name: 1.19.5-iks-0
 - Boot Iso: ki-20210224-2.1.19.5-ubuntu18...
 - Ova Image Template: ki-20210224-2.1.19.5-ubuntu18...
 - Oocw2 Node Template: ki-20210224-2.1.19.5-ubuntu18...
 - Oocw2 Virtual Machine Template: ki-20210224-2.1.19.5-ubuntu18...
- HX-Node (General):** A pop-up window showing:
 - Name: HX-Node
 - Organization: default
 - ESXi Cluster: HXES2
 - Datastore: 20T
 - Interface #3: -
 - Resource Pool: -
- 4Core16G (General):** A pop-up window showing:
 - Name: 4Core16G
 - Organization: default
 - CPU: 4
 - System Disk Size (GiB): 30
 - Memory (MiB): 16384

At the bottom of the interface, there are "Back" and "Close" buttons on the left, and a "Next" button on the right.

Intersight Kubernetes Service

5 Step에 끝나는 손쉬운 K8S 클러스터 배포

The screenshot displays the Cisco Intersight web interface for configuring a Kubernetes cluster. The top navigation bar shows 'CONFIGURE > Profiles' and the user 'Han Jin Park'. The left sidebar contains navigation menus for 'MONITOR', 'OPERATE', 'CONFIGURE', and 'ADMIN'. The 'OPERATE' menu is expanded to show 'Profiles', which is further expanded to 'Kubernetes'. A 'Progress' sidebar on the left indicates the current step: 4. Worker Node Pools Configuration. The main content area is titled 'Step 4 Worker Node Pools Configuration' and includes an 'Add Worker Node Pool' button. Below this, a configuration card for 'Worker Node Pool 1' is shown with the following fields: Name (Worker), Worker Node Counts (Desired size: 1, Min Size: 1, Max Size: 3), Kubernetes Version (Selected: 1.19.5-iks-0), and IP Pool (Selected: 87.170-180). A table for 'Kubernetes Labels' is also visible with columns for 'Key' and 'Value'. At the bottom, there are 'Back', 'Close', and 'Next' buttons.

Intersight Kubernetes Service

5 Step에 끝나는 손쉬운 K8S 클러스터 배포

5. Addon choose

Step 5
Add-ons Configuration
Storage and Optional Add-ons

Add Add-on

Add-on 1

Add-on Name *
kubernetes-dashboard

Add-on Policy *
Selected Add-on: kubernetes-dashboard <> | x

Overrides

Install Strategy: Always Upgrade Strategy: Reinstall on Failure

kubernetes-dashboard

General	
Name	kubernetes-dashboard
Organization	default

Policy Details

Add-on Definition	kubernetes-dashboard
Overrides	-
Install Strategy	Always
Release Namespace	-
Upgrade Strategy	Reinstall on Failure

< Back Close Next >

Intersight Kubernetes Service

손쉬운 배포, 다양한 Addons 지원



- 기본 제공
 - Metal LB
 - Nginx
 - Cert manager
 - Docker registry
- 선택적 Plugin 제공
 - Monitoring: Prometheus & Grafana
 - Kubernetes Dashboard
 - Service Mesh Manager

Intersight Workload Engine

최신 클라우드 네이티브 워크로드를 위한 차세대 아키텍처



워크로드 관리

클러스터 관리

서버 관리

올인원 통합 플랫폼

VM 및 K8을 통합으로 관리

엔터프라이즈급 성능 및 가용성

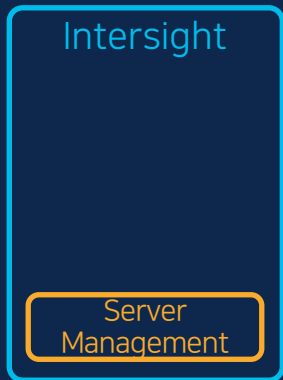
단순화된 클라우드기반 관리 제공

Engineered for Cisco HyperFlex
Integrated hyperconverged architecture

Intersight Workload Engine

3단계로 만나는 End to End 컨테이너 솔루션

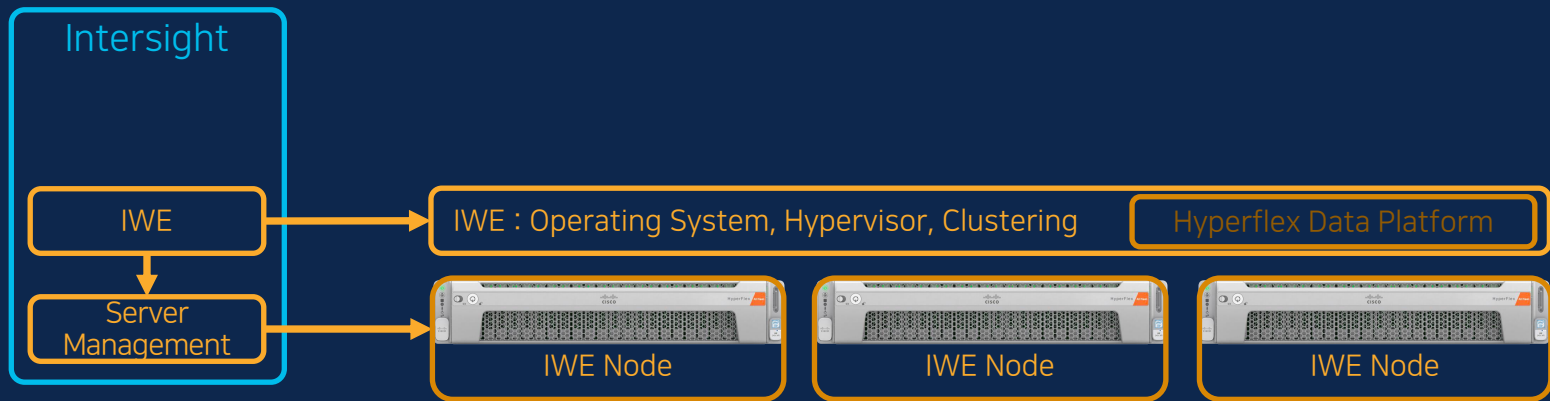
Step 1: Claim your Servers



Intersight Workload Engine

3단계로 만나는 End to End 컨테이너 솔루션

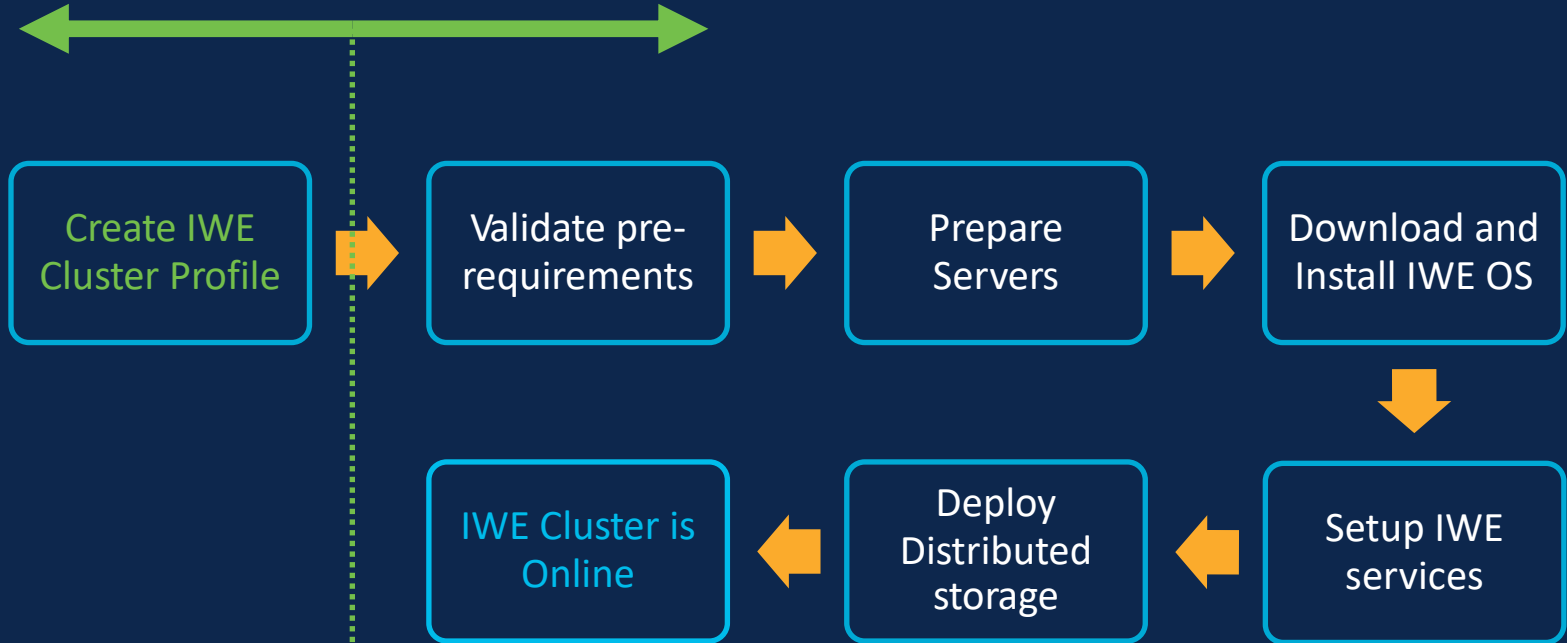
Step 2: Create & Deploy IWE Profile



Intersight Workload Engine

수동 구성

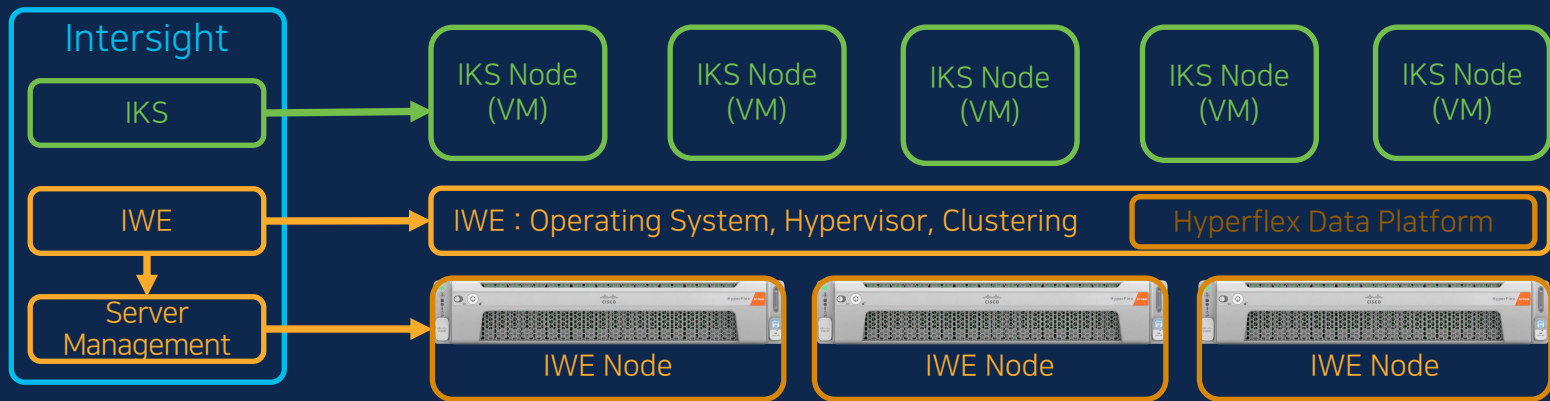
Intersight를 통한 전 과정 자동화



Intersight Workload Engine

3단계로 만나는 End to End 컨테이너 솔루션

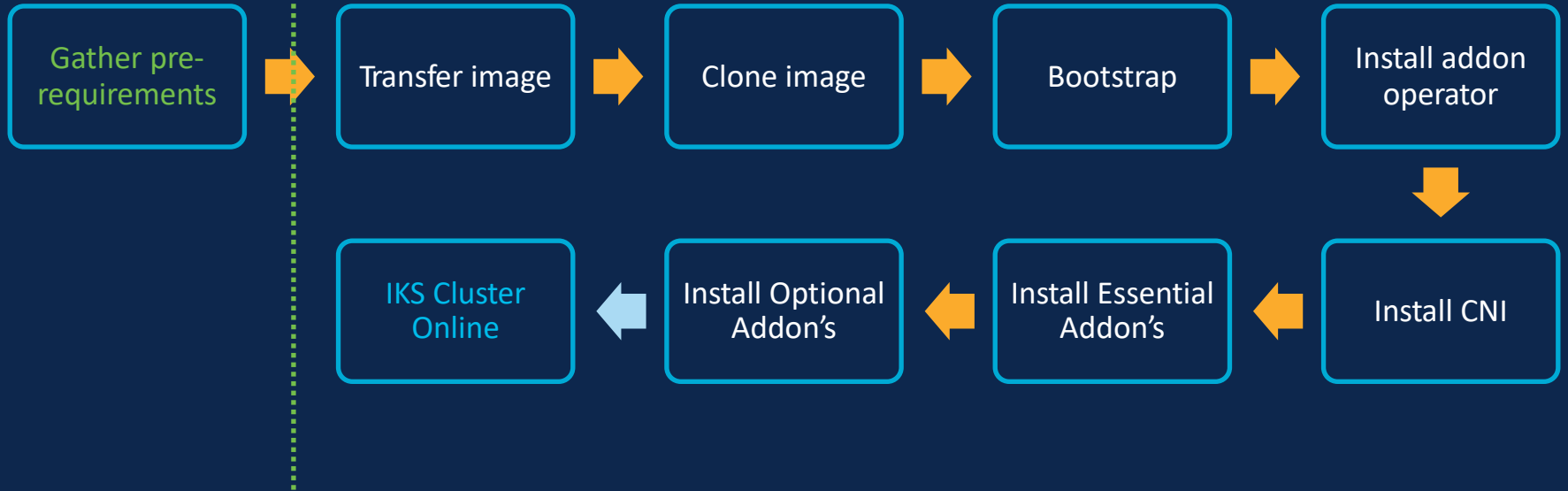
Step 3: Create & Deploy IKS Profile



Intersight Workload Engine

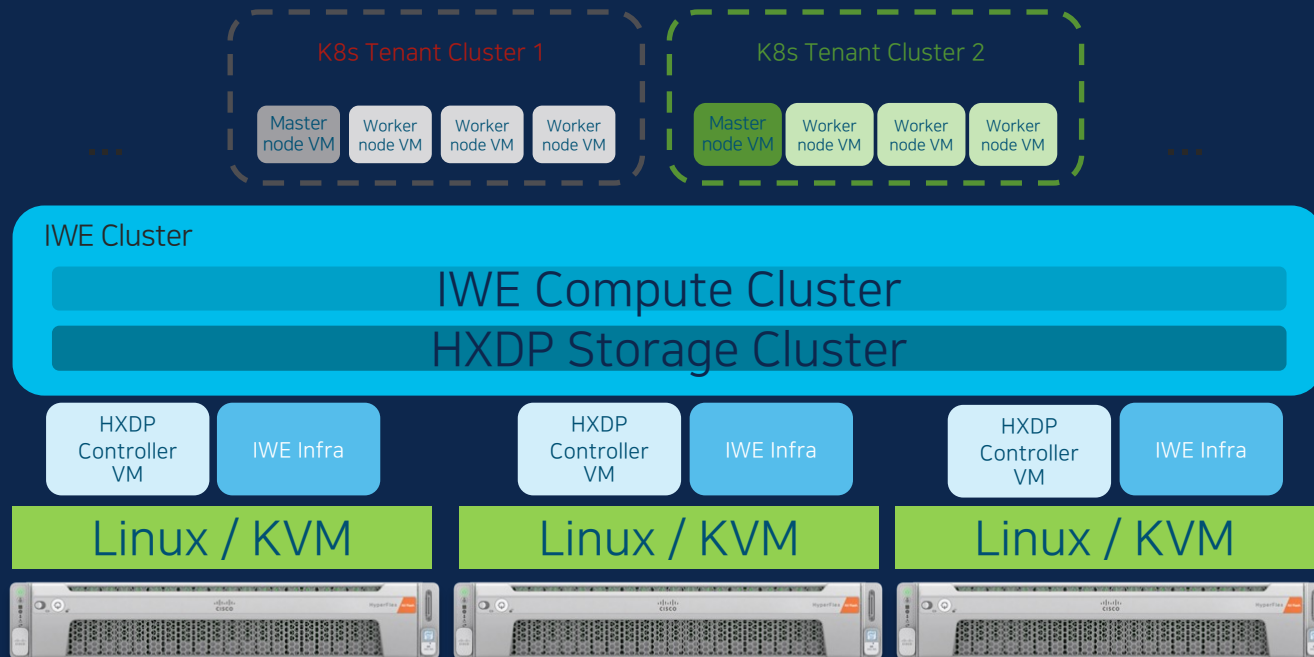
수동 구성

Intersight를 통한 전 과정 자동화



Intersight Workload Engine

3단계로 만나는 End to End 컨테이너 솔루션



테넌트 기반의 클러스터 제공

IWE Infra and HXDP 가 VM을 위한 Kubernetes Cluster 구성

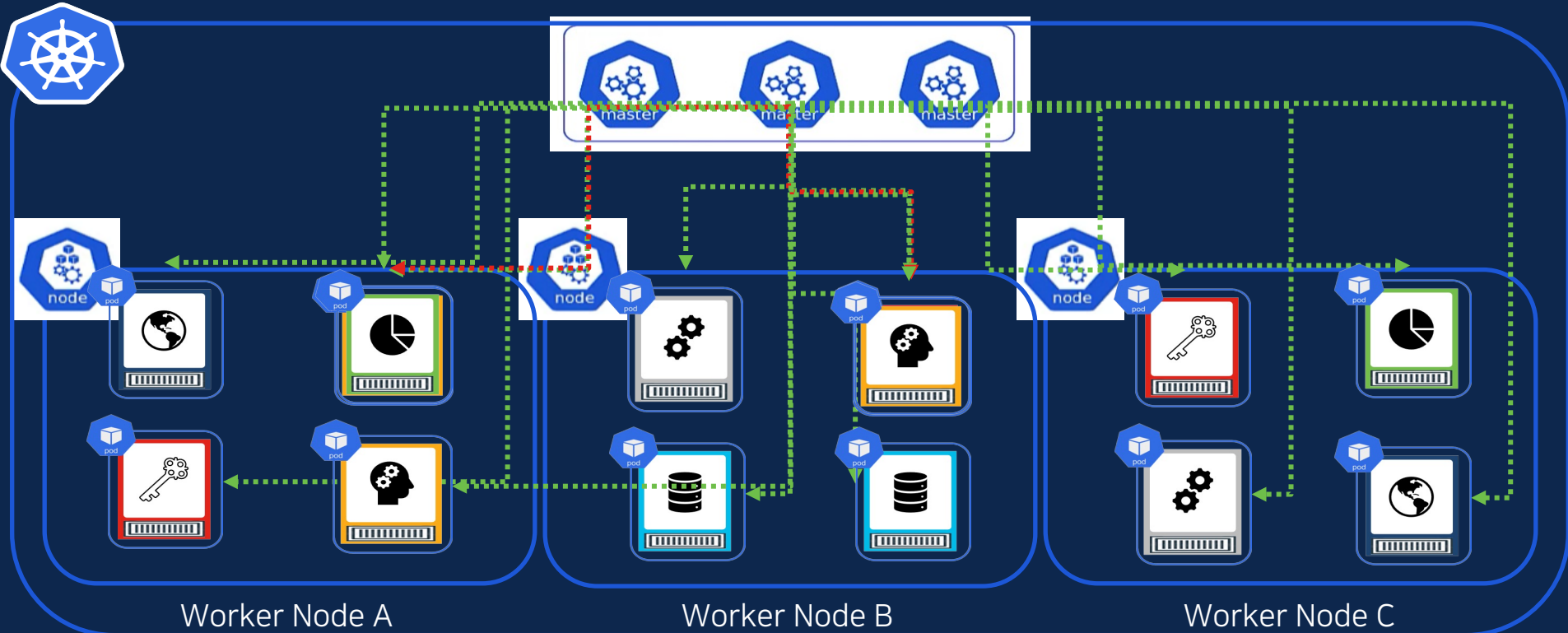
IWE Infra 가 각 node에서 compute cluster 제공

HXDP Controller VM 이 각 node에서 storage cluster 제공

각 host는 Linux / KVM 가 운영됨

Kubernetes의 일반적인 환경

Kubernetes Control Plane



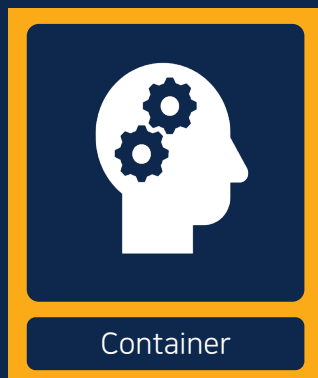
Service Mesh의 필요성

Kubernetes 환경은?



Service Mesh의 필요성

Kubernetes 환경은?



Service Mesh의 필요성

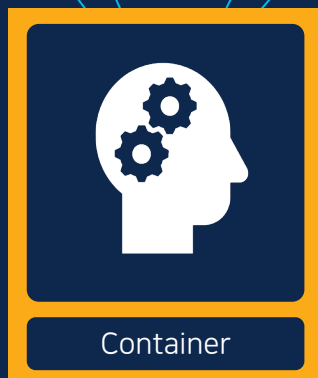
Kubernetes 환경은?

Service Mesh를 사용하면
마이크로서비스를 연결, 보호,
제어 및 관찰할 수 있습니다.



Benefits:

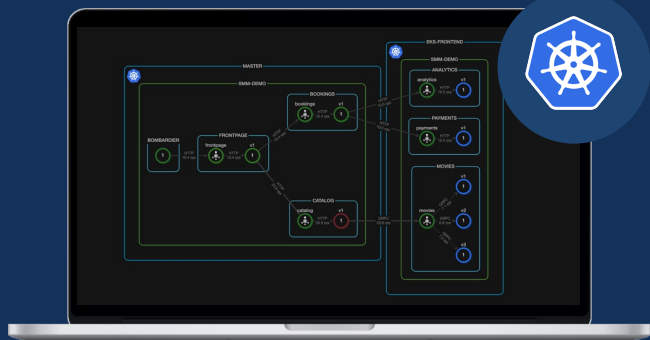
- 일관된 개발
- 일관된 배포
- 마이크로서비스의 일관된 보안
- 마이크로서비스 아키텍처의 확장성



Service Mesh Manager

Intersight Kubernetes Service의 애드온 서비스

Cisco Service Mesh Manager



Operationalize the service mesh

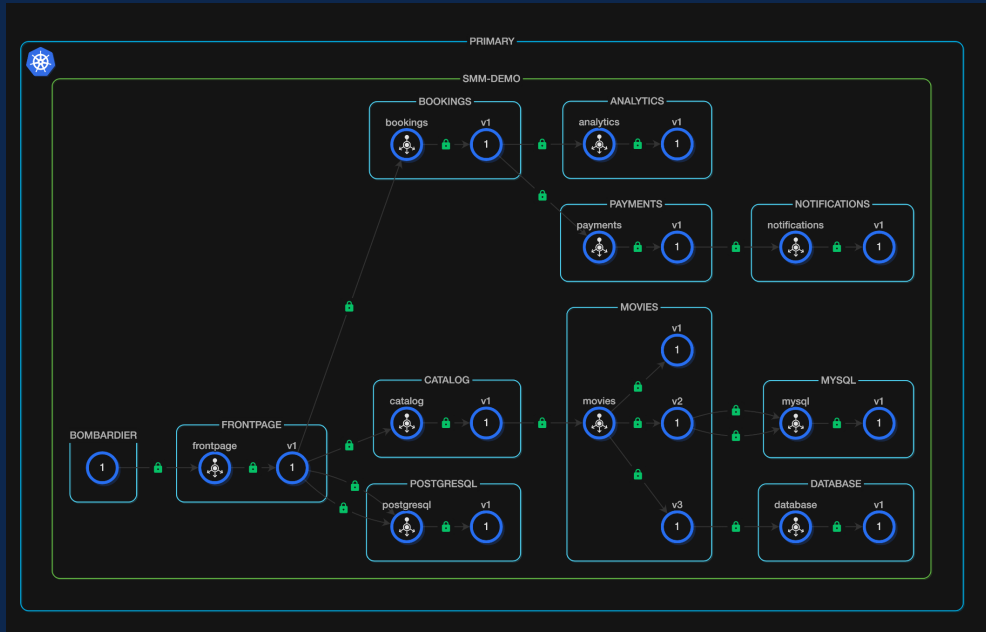
상세한 가시성 제공

편리한 관리

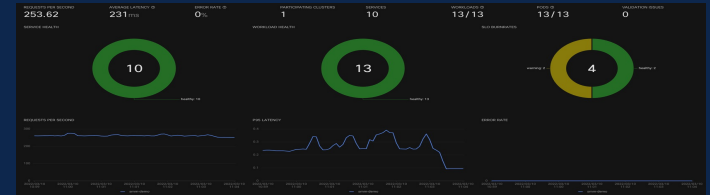
정책 기반의 보안

Service Mesh Manager

Pod 및 컨테이너 간의 서비스 가시성 확보
토폴로지 뷰 제공



Service & Health 관리



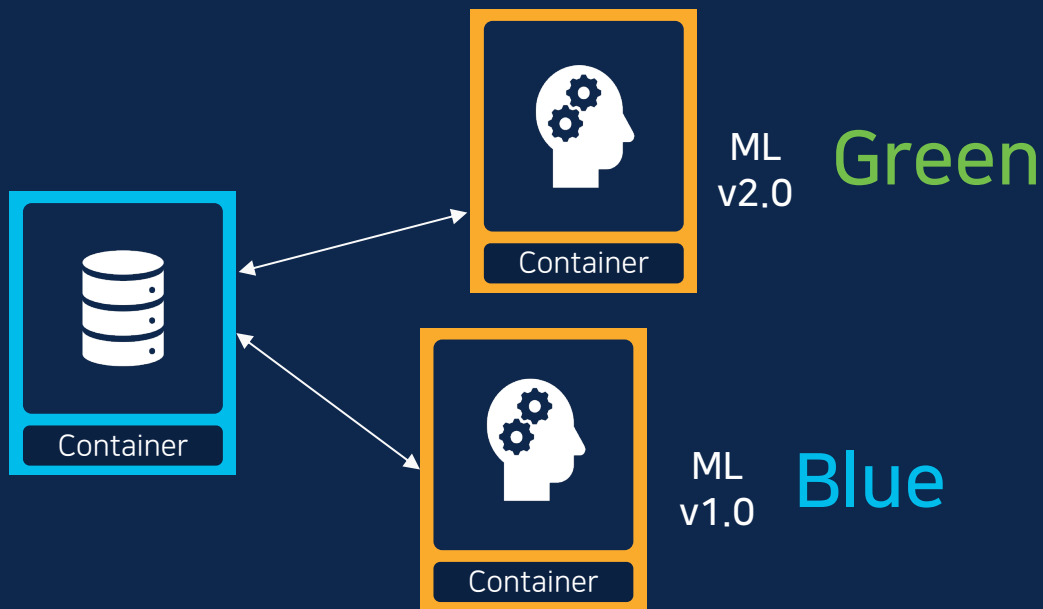
Service 단위 관리

The interface shows the configuration and monitoring of Service Level Objectives (SLOs) for the 'movies' service. It includes tabs for OVERVIEW, TRAFFIC MANAGEMENT, CIRCUIT BREAKER, MTLS POLICIES, and HEALTH. The current view is for the 'movies' service, showing its namespace (smm-demo) and app (movies). Below this, there is a table of ports and their protocols. A health indicator shows the service is 'healthy'. The SLOs section lists objectives like availability and latency with their current burn rates and error budgets.

NAME	CURRENT BURN RATE	ERROR BUDGET CONSUMED	ALERTS	CREATE NEW
movies-30d-rolling-availability	-1.127	-112.65%	▲ 1 / 3	✎
gRPC request success rate should be above 99.9% for a rolling period of 30 days				
movies-30d-rolling-latency	-0.048	-4.76%	0 / 3	✎
99th percentile gRPC response latency should be below 250 milliseconds for a rolling period of 30 days				

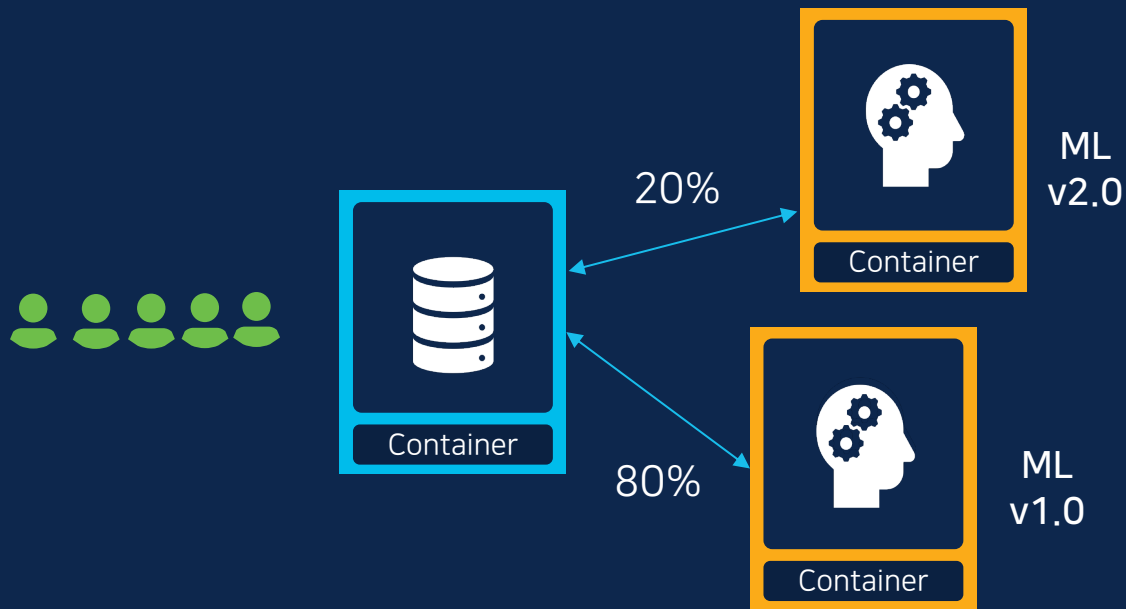
Service Mesh Manager

Blue-Green 방식 배포 지원



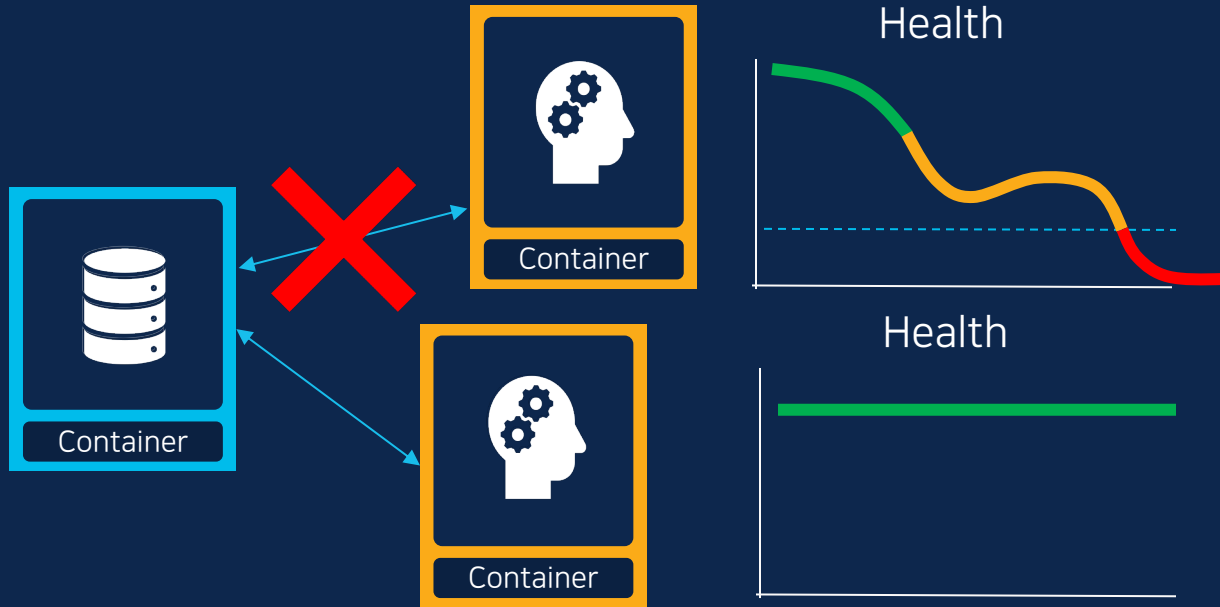
Service Mesh Manager

트래픽 기반의 Canary 배포 지원



Service Mesh Manager

서비스 기반의 Circuit Breakers



Service Mesh Manager

Intersight를 통한 컨테이너 환경의 life-cycle 관리



Service Level 정의:
SLO 정의, 측정 및 경고



URL Rewrite:

서비스 메시에 URL을 다시 작성하여 동일한 서비스에 대한 새 URL 생성



Tracing:

필터링 및 자세한 메타데이터가 포함된 실시간 트래픽 확인



L7 Traffic Routing:

가동 전에 프로덕션의 일부 사용자에게 대해 기능 테스트 수행



상호 TLS를 통한 보안:

어플리케이션 언어와 상관없이 트래픽 암호화 보장



Canary 배포 지원:

새로운 릴리스로 트래픽을 점진적으로 늘리고 필요한 경우 쉽게 롤백

Intersight Adopted Clusters

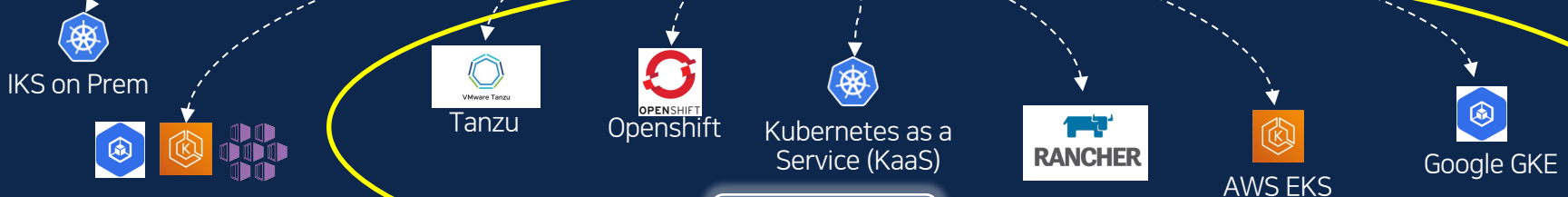
Secure  Cloud-Managed  Enterprise-Ready 

Service Mesh Manager

*Multi Cluster Observability

*Streaming Data Manager

*Open Policy Agent
*Knative
*KubeDB
etc...



Adopted Clusters

* Roadmap Item





The bridge to possible