



Data Center Innovation Day

Journey to the Multicloud





Hybrid Cloud and Multicloud

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Data Center, ASEAN Sales



Agenda

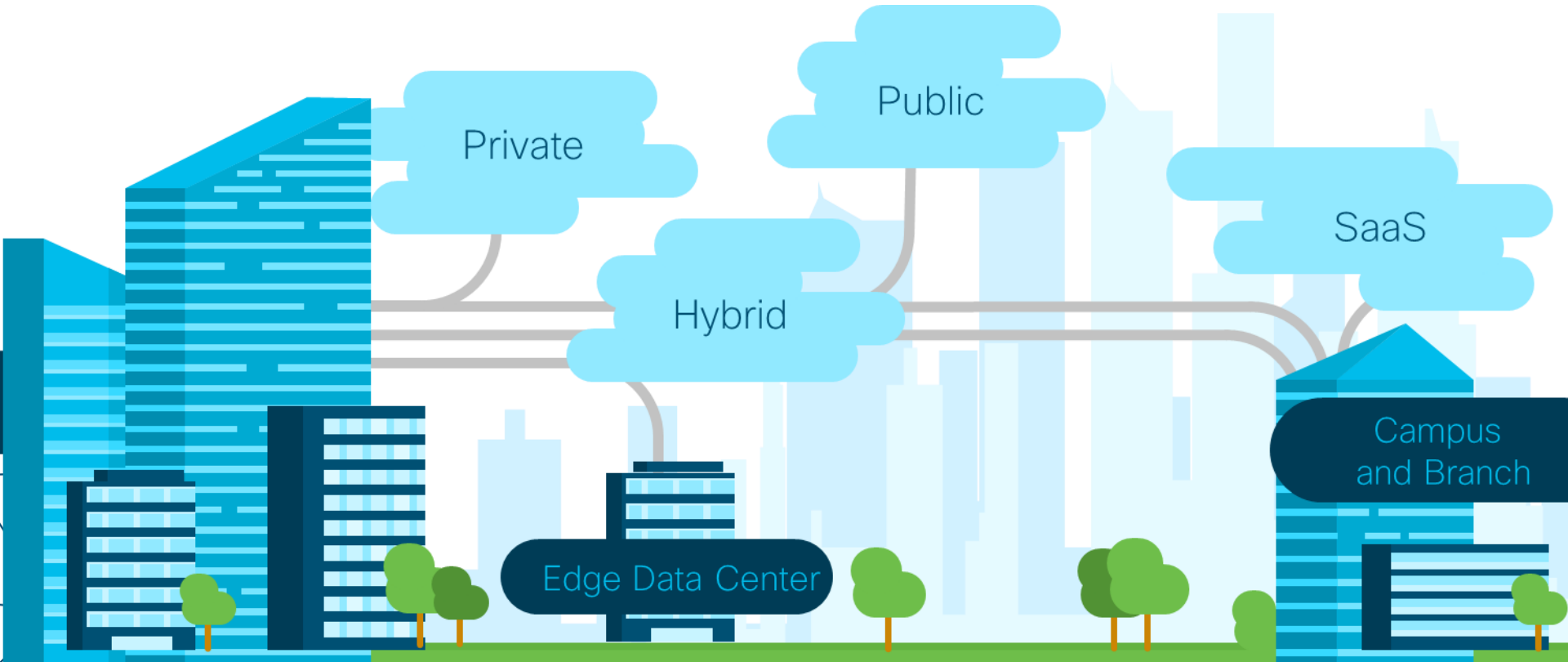
1 Industry Insight

2 Cisco SDN Beyond
Multicloud


3 Cloud Native Apps

4 Demo

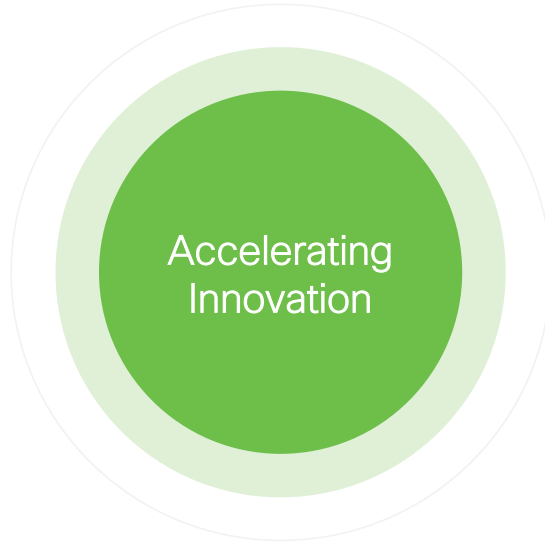
Multicloud. The Distributed Datacenter




New app innovations finding common ground

vm  Application
Modernization

Evolving
on-premises
environment



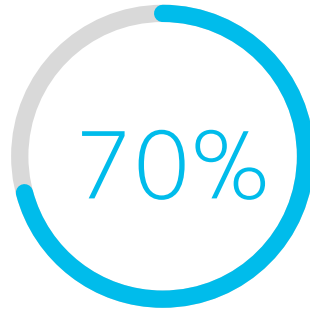
 Cloud
Native Apps

Adopting
public cloud

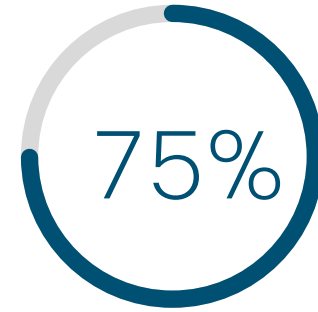
Current operating models aren't working



Network Changes Performed Manually



Policy Violations Due to Human Error



OpEx Spent on Network Changes and Troubleshooting

\$60B

Spent on Network Operations Labor and Tools

Source: McKinsey study conducted for Cisco in 2016

Customer Reference & Benefits

	Key Performance Index	AS-WAS		AS-IS
Resource Saving	New Service Readiness	3-4 weeks	97% down	Within 1 day
	Network configuration	Avg 5 times	5 times up	Avg 1 time
	Network CSR processing	4.0 days	30% down	2.8 days
High Performance & Availability	Network Throughput	101.2Mpps	20 times up	1,904.8Mpps
	Server connection	1G	10 times up	10G
	Fail-over time	30 sec	Near 0 down time	200 ms
Risk Reduction	Latency	5,835 nsec	75% down	1,600 nsec
	DC security	N/A	Security	Available
	Vertical (customer-app-traffic) traffic visibility	N/A	Traffic Visibility	Available

Intent-Based Networking is the future

Cisco Data Center
Intent-Based
Networking



Translation

Capture intent, translate to policy, and check integrity

Activation

Orchestrate policies and configure systems

Assurance

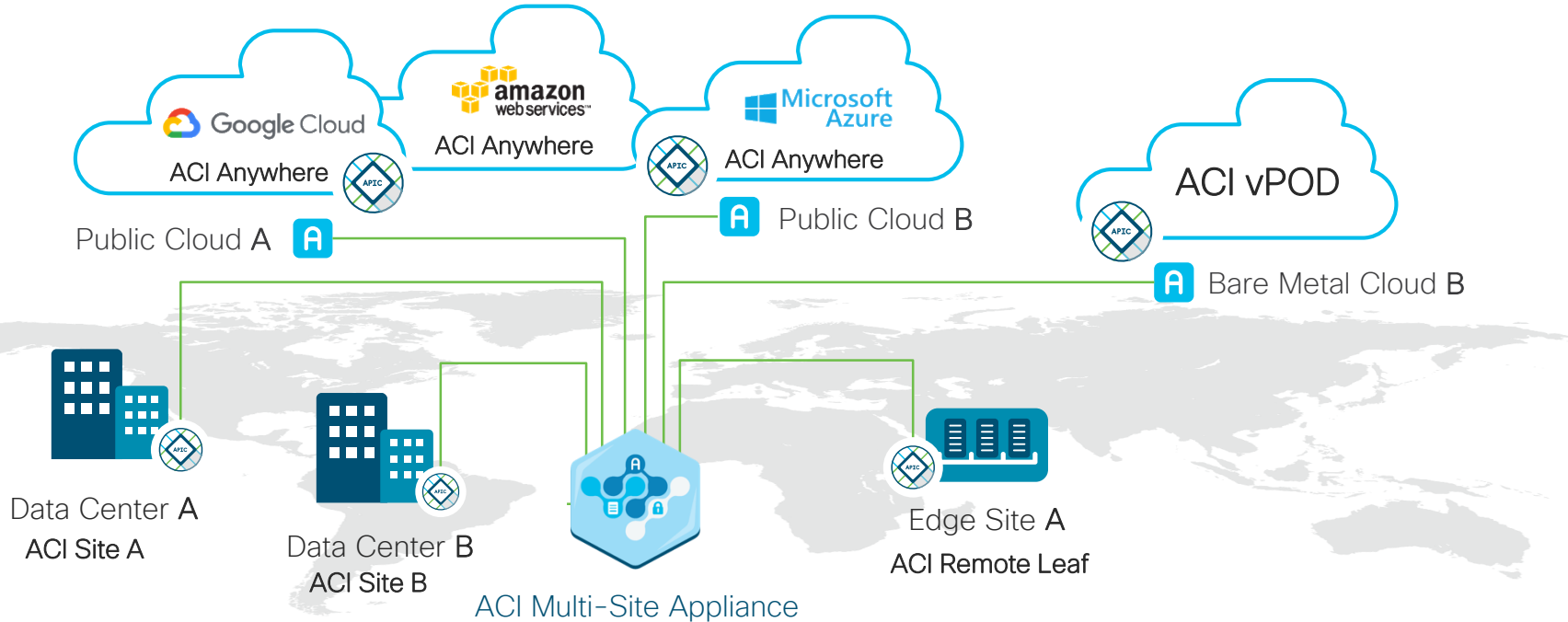
Continuous verification, insights and visibility, and corrective actions

Application-Centric
Infrastructure

Network Assurance
Engine

Cisco Tetration

Network policy that goes where you go



Consistent Network and Policy across clouds



Seamless Workload Migration



Single Point of Orchestration

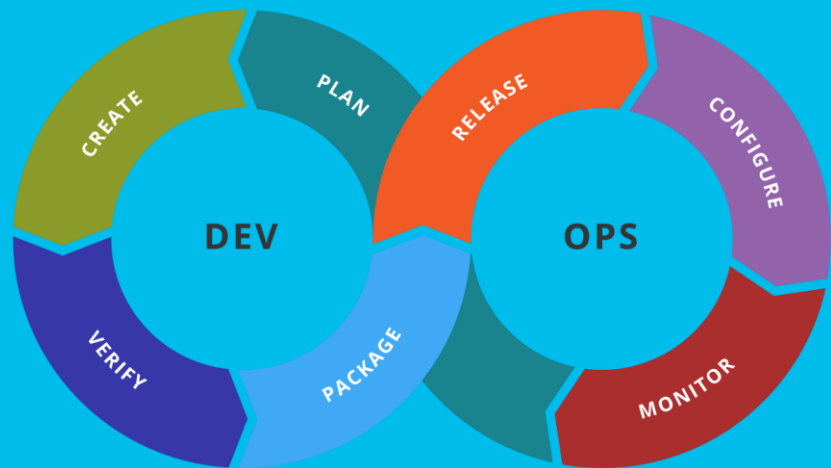


Secure Automated Connectivity

A white network diagram graphic on a blue background, consisting of several white circular nodes connected by thin white lines, forming a complex web-like structure.

“Cloud native” On-Premises



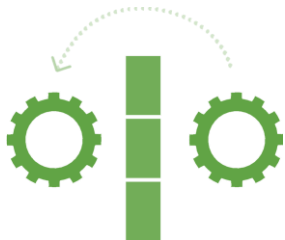


Today, **Applications define the business**. Understanding cloud native application design and development is **critical** for Infrastructure Engineers if we are to successfully **become relevant** to Application Developers and Business.

IT Operating Models Change

FROM

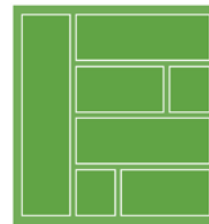
Not My Problem
Separate Tools,
Varied Incentives, Opaque Process



Release Once Every 6 Months
More Bugs in Production



Tightly Coupled Components
Slow Deployment Cycles Waiting
on Integrated Tests Teams



TO

DevOps

Shared Responsibility
Common Incentives,
Tools, Process and Culture



Continuous Delivery

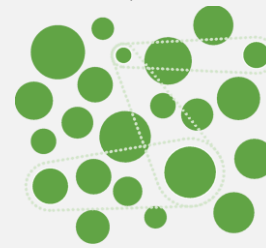
Release Early and Often
Higher Quality of Code



Cloud Native

Microservices

Loosely Coupled Components
Automated Deploy Without Waiting on Individual
Components



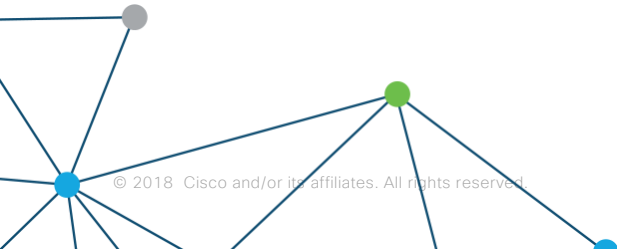
Operations World

- Care About
 - Everything is stable
 - Standards
 - Templates
 - Not getting bothered at 2:00 am
- Success
 - Software is stable
 - Backup and restore works
 - Systems are operating within defined thresholds



Developers World

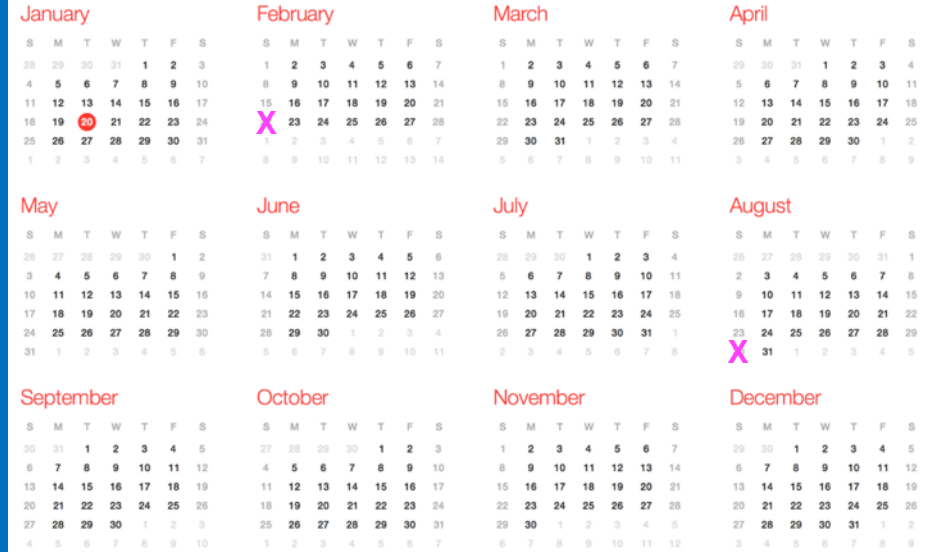
- Care About
 - Writing Software
 - Working Code
 - APIs
 - Libraries
 - Sprints
- Success
 - Software works – Laptop and Test
 - Finished Sprint



Completed Functions



Change Windows

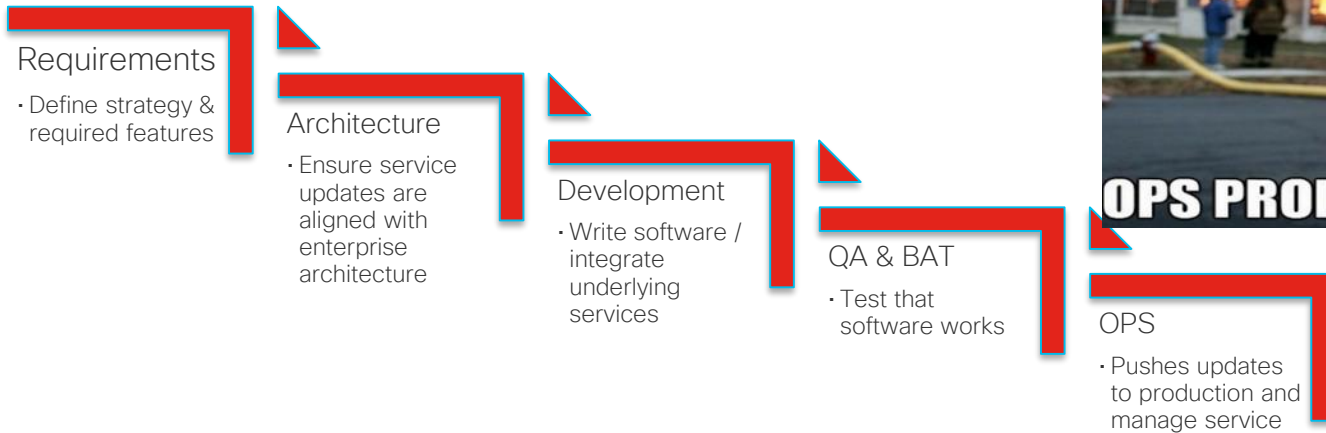


Change

Stability

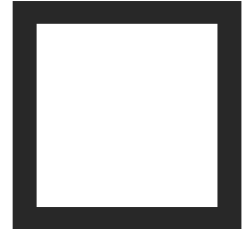
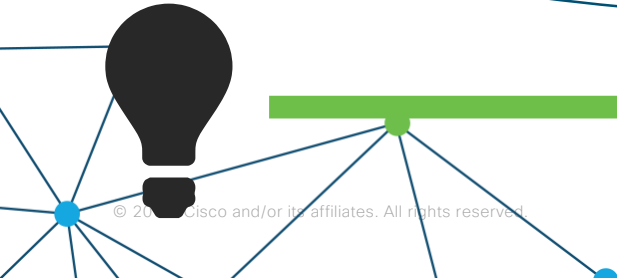
Business

Traditional IT service delivery: Slow, manual, and error prone



The more complex a project becomes, the longer the schedule, and the higher the probability of scope and schedule surprises.

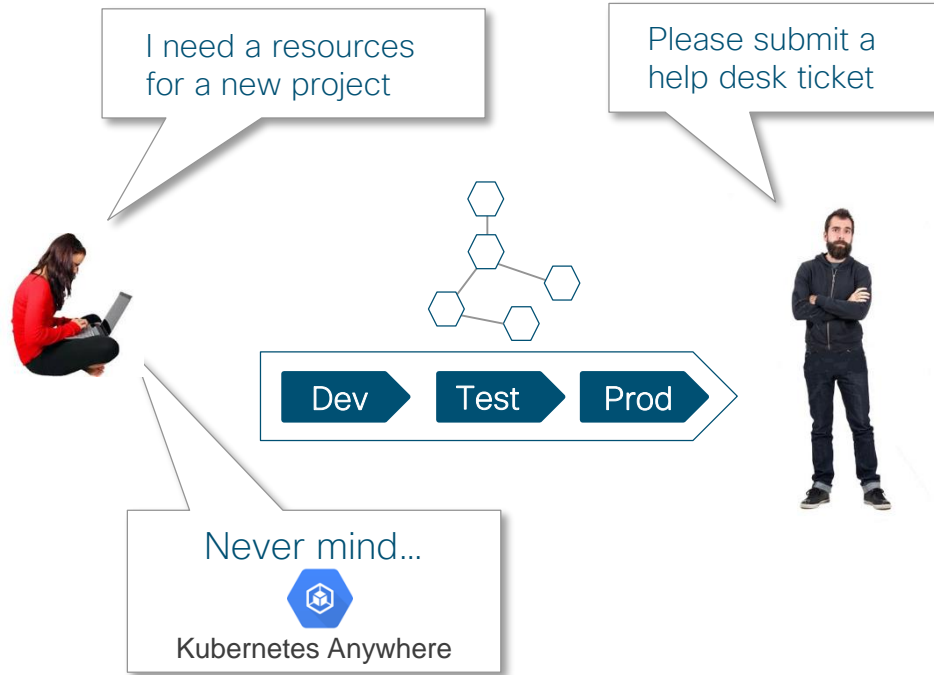
Lean, Agile, and DevOps Combined



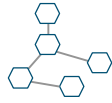
2013



2018



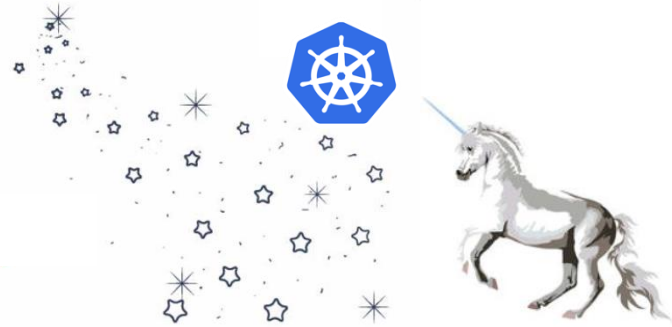
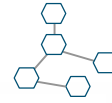
On Premises



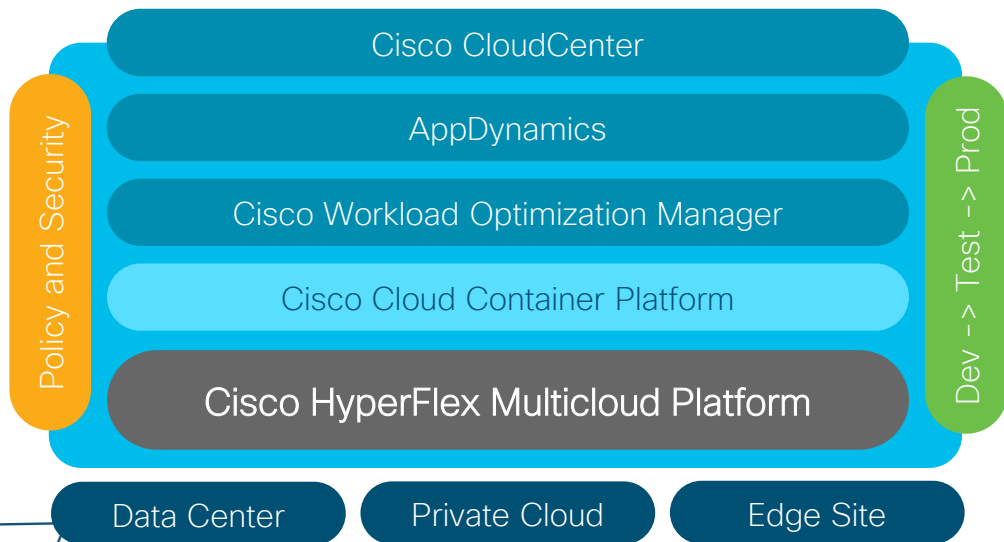
Blood and Sweat



Cloud



Bringing the cloud experience on-premises



HYPERFLEX Multicloud Platform

Any app. Any cloud. Any scale

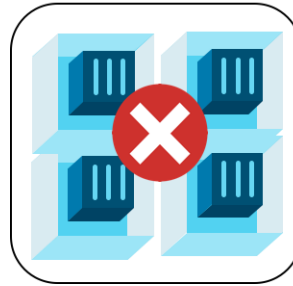
- Pathway to microservices
- Full stack monitoring and security
- Agile resource provisioning
- Packaged workload management
- Easy consumption model



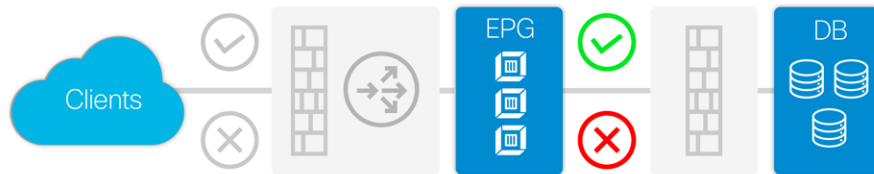
Intent-based Networking with ACI Anywhere

Dual level Policy Enforcement for Containers

“Kubernetes Network Policy” and “ACI Policy” are enforced in the Linux kernel of every server node that containers run on.



```
apiVersion: networking.k8s.io/v1
kind: NetworkPolicy
metadata:
  name: default-deny
spec: podSelector: {}
policyTypes:
  - Ingress
  - Egress
```



Containers are mapped and enforced by the network fabric.

Both policy mechanisms can be used in conjunction.

Demo

Hybrid Cloud Platform

Turn-key Hybrid Cloud solution stack for On-premises

Demos:

Application Operator—

Deploy and optimize containerized applications without writing pod manifest file (.yaml)

Cluster Operator—

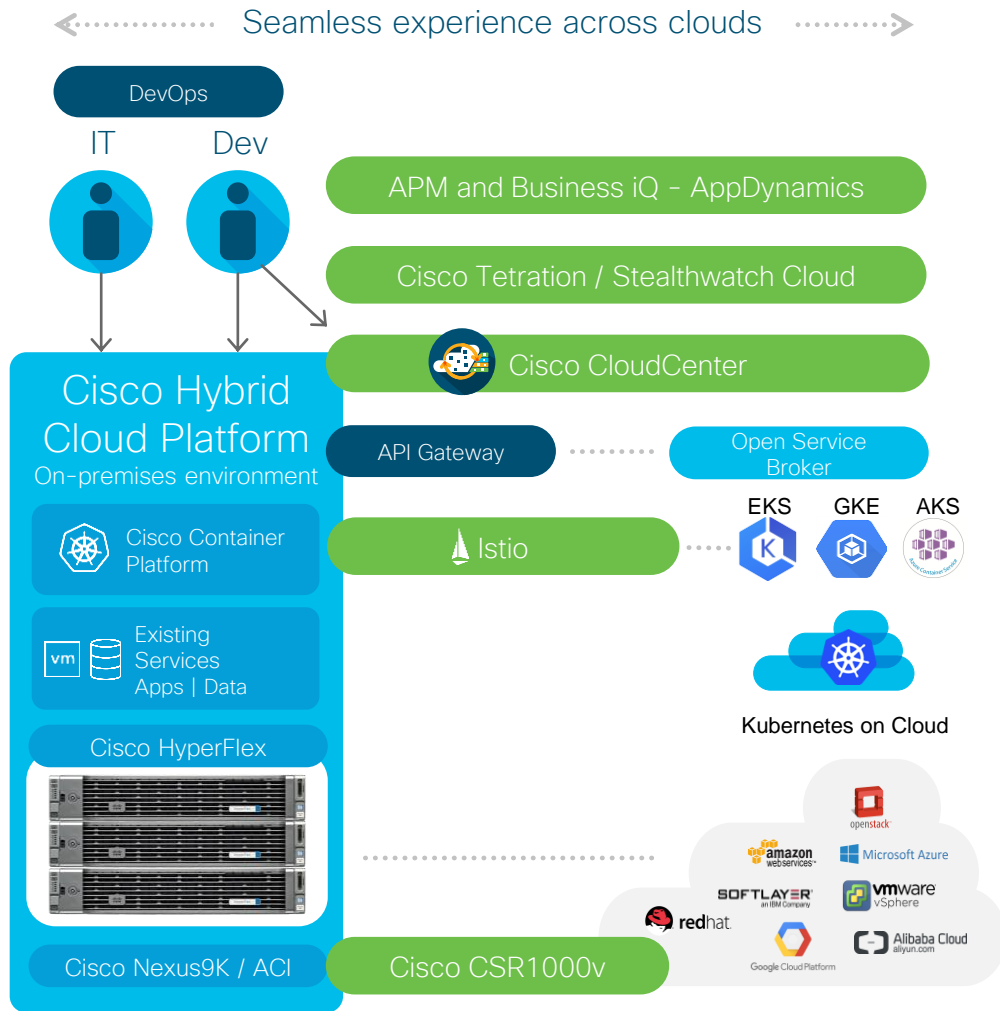
Deploy and lifecycle management Kubernetes clusters on premises

Network Integration—

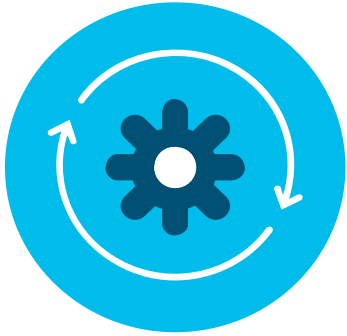
Single pane of glass of Virtual Machines, Containers and Baremetal with ACI

Authentication—

AD connector and RBAC access management to Kubernetes Clusters



Cisco Multicloud Platform Delivers



Single Point
of Orchestration



Seamless
Workload Migration



Secure Automated
Connectivity



Consistent
Network and Policy
across clouds

