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IT
UP
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The bridge to possible

AI-Ops for your business Apps

Automating your infrastructure and containers lifecycle

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BRKCLD-2036

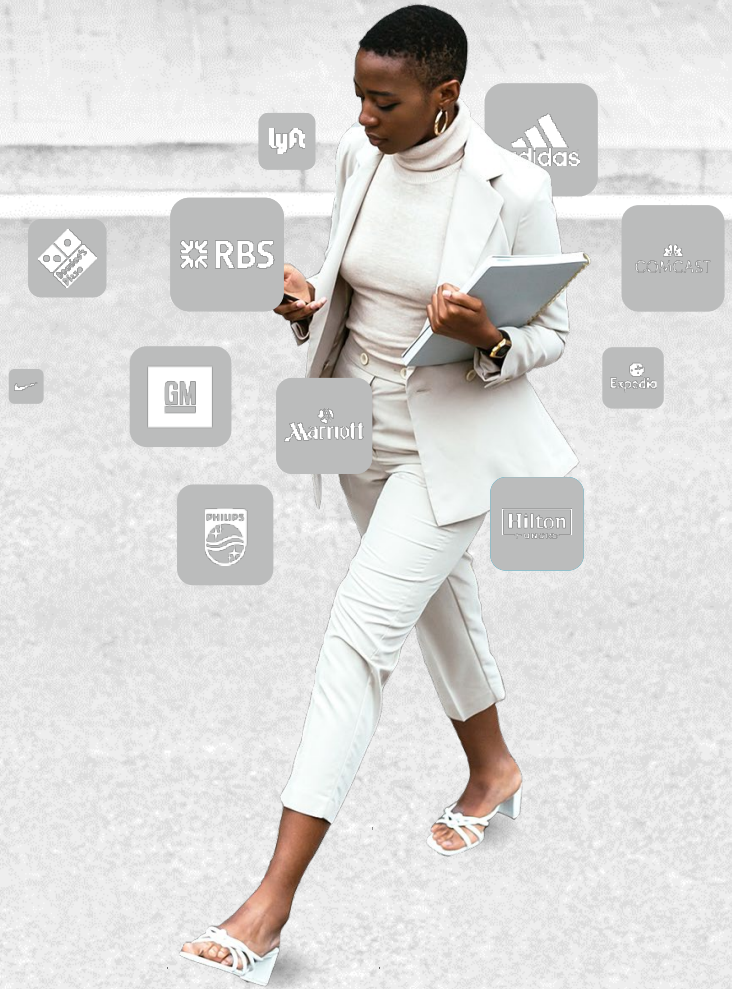
Agenda

- Multicloud
- DevOps and NetDevOps
- IaC and programmable infrastructure
- Feedback loop and optimization
- Demo

The digital experience is the brand

Applications are the gateway to the customer…

…and need to stack up against the new user expectation bar



The penalty for poor application experience is high

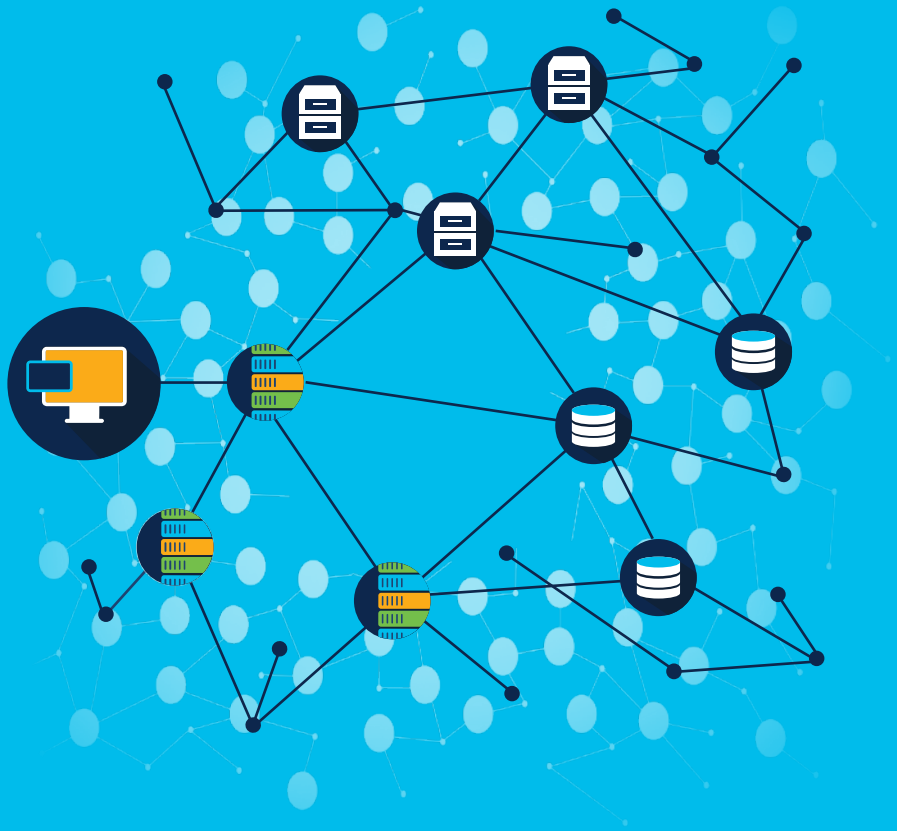
1. The App Attention Intdex, 2019
2. Akami Online Retail Performance 2017

Apps and infrastructure,
more distributed and complex

Datacenter, edge, and multicloud

VMs, containers, bare metal and cloud services

App and infrastructure interdependencies



How efficient is your IT?

- How long does it take to complete and release a new application?
- How fast can you introduce new features (or solve issues)?
- What is the impact of human errors?
- What about performances?
- Are your clients (customers/LOB) happy?

Streamlining the lifecycle of applications

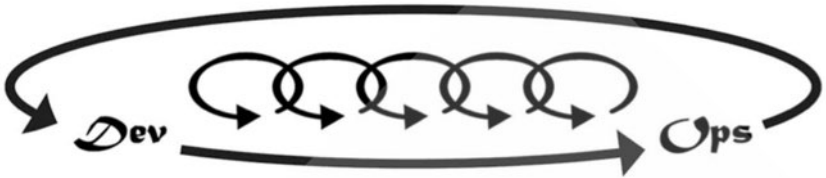
Not suggesting that you adopt DevOps in one month! ☺

The “three ways”

Ref. The Three Ways: The Principles Underpinning DevOps by Gene Kim

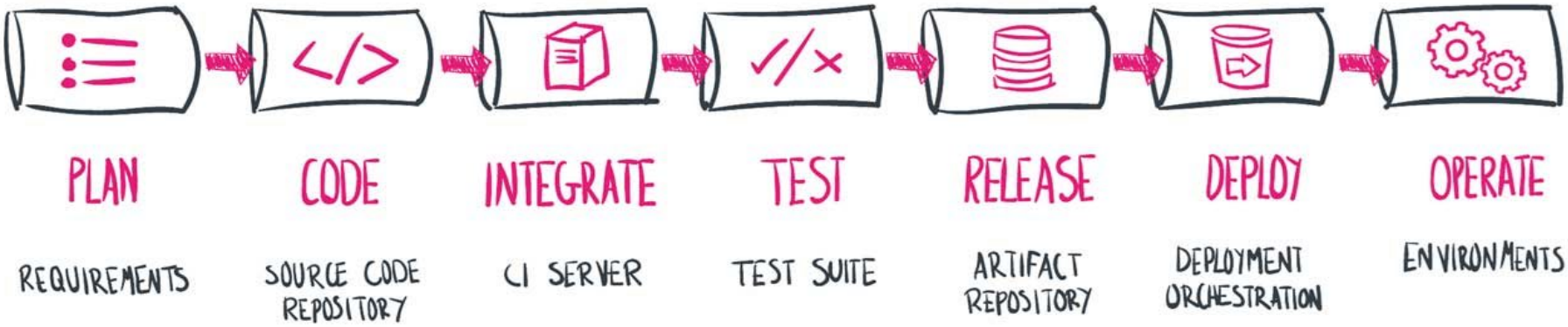
Flow

Feedback

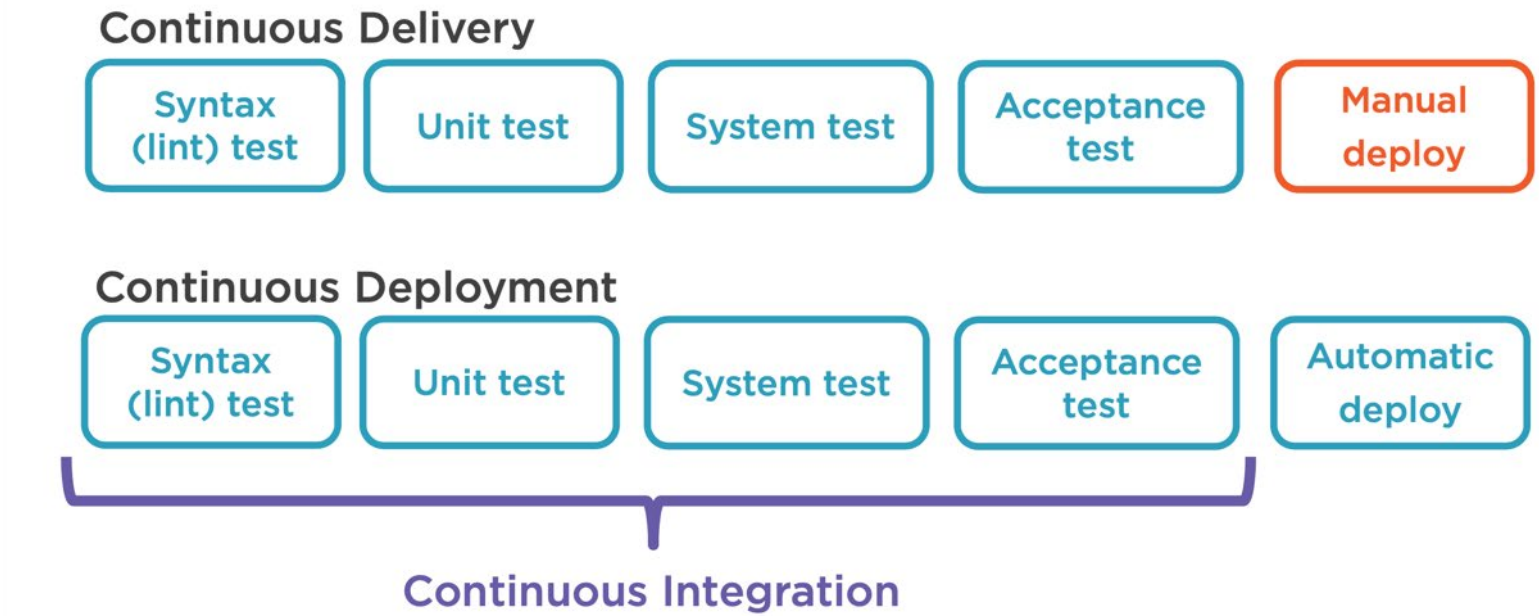


Continuous improvement

Automating the lifecycle



CI/CD Pipelines – DevOps, NetDevOps, DevSecOps

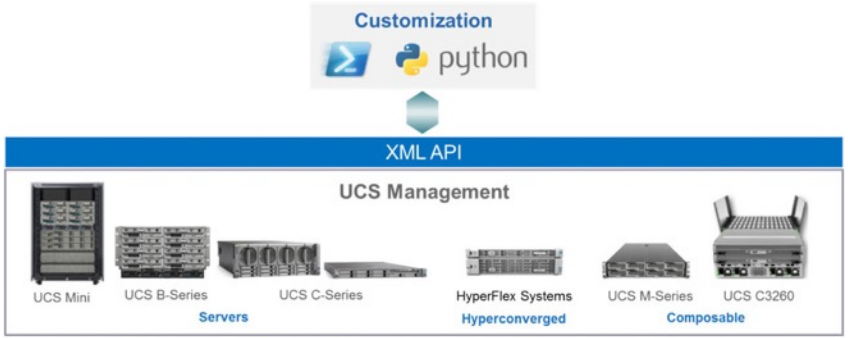


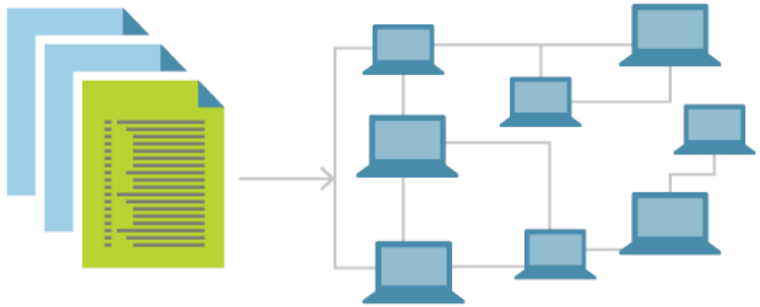
DevOps friendly technologies

Microservices	Independent building blocks
Containers	Faster and easier lifecycle
PaaS	Reusable services to streamline development
SD-everything	No dependencies on hardware operations
Infrastructure as Code	Provision & Configuration versioned and automated
Automation	Faster and error proof, self documenting
Visibility & Insight	Full control and optimization, from infra to business KPI

Infrastructure as Code

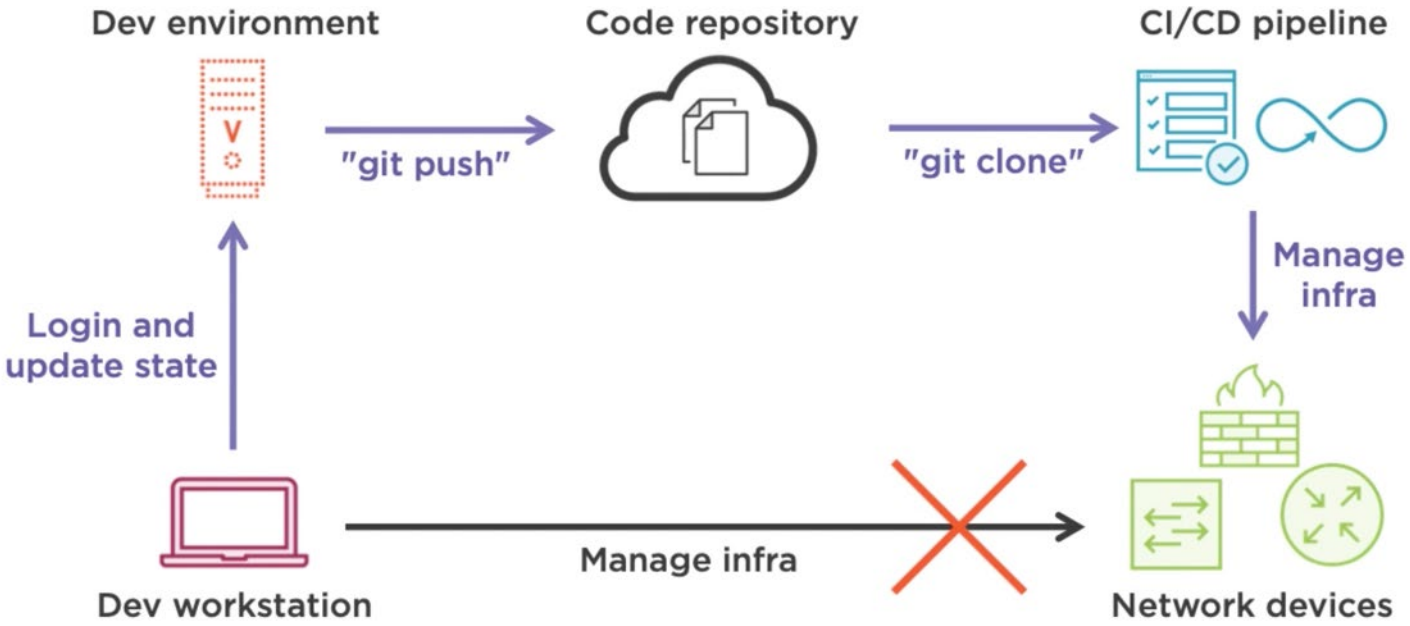
- Descriptive model, not commands
- Treat infrastructure like software (source control, single source of truth)
- Provision and configure entire environments
- Solve the problem of environment drift
- Ensure idempotence





Infrastructure as Code

Infrastructure as Code

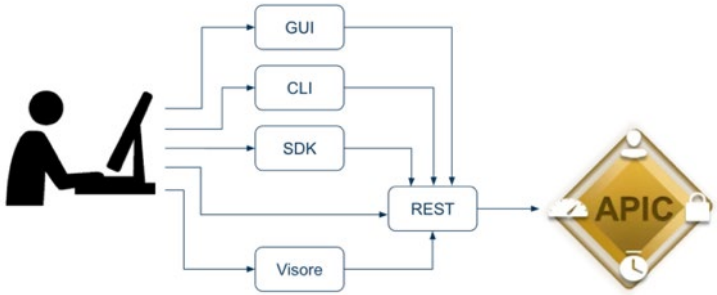


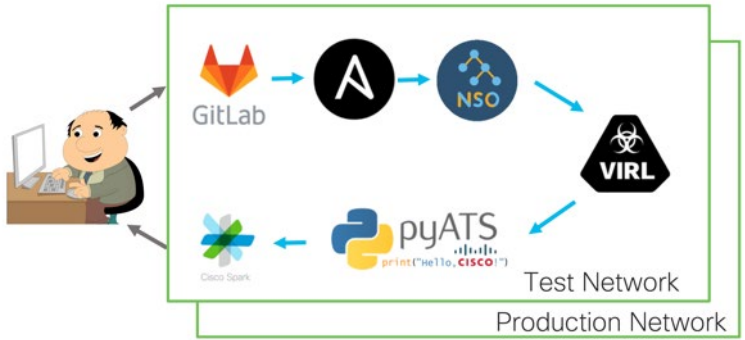
Unit testing, functional testing, and integration testing.

Deploy via API

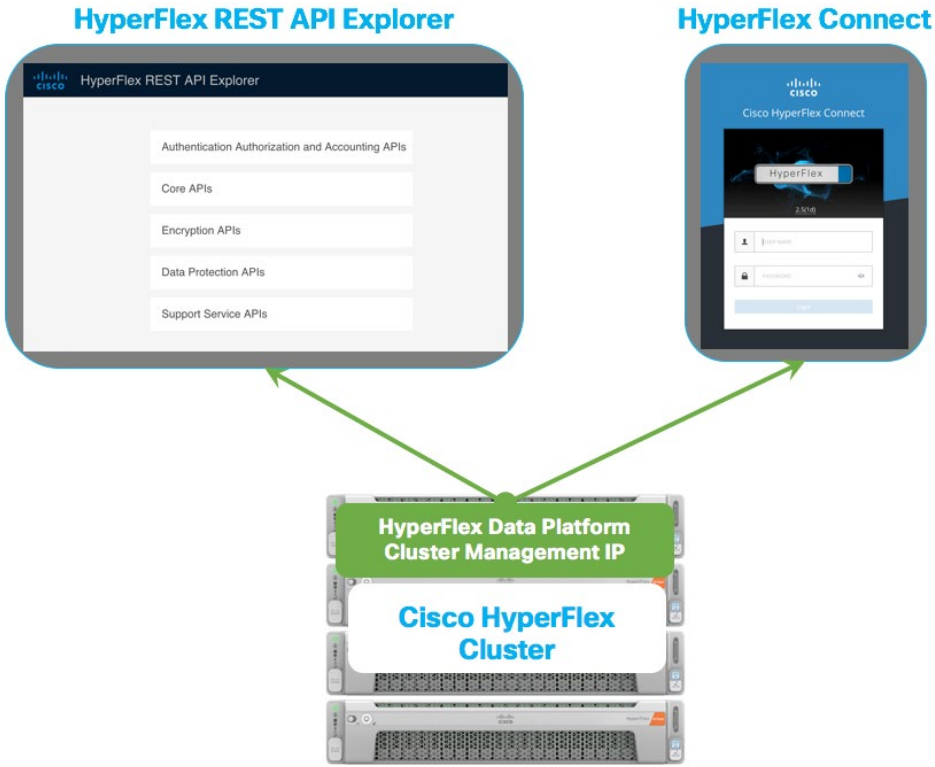
Infrastructure as Code – why Cisco?

- Excellent API
- Software controllers and orchestrators
- Apply to bare metal, virtualization, containers, cloud
- Include Servers, Network, Storage, Security, Collab
- DevNet: examples, labs, sandbox
- Github public repositories
- Testing tools like pyATS, VIRL, etc.
- Ansible playbooks and Terraform providers for:
- UCS, HX, ACI, IOS XE, NX OS, ASA, CSR, DNAC, SD-WAN, Meraki, etc.





Hyperflex is one example
manage HXDP & HXAP via API



Hyper converged infrastructure
Software defined storage (& compute & network)
Scalable cluster
In the DC and edge, managed remotely

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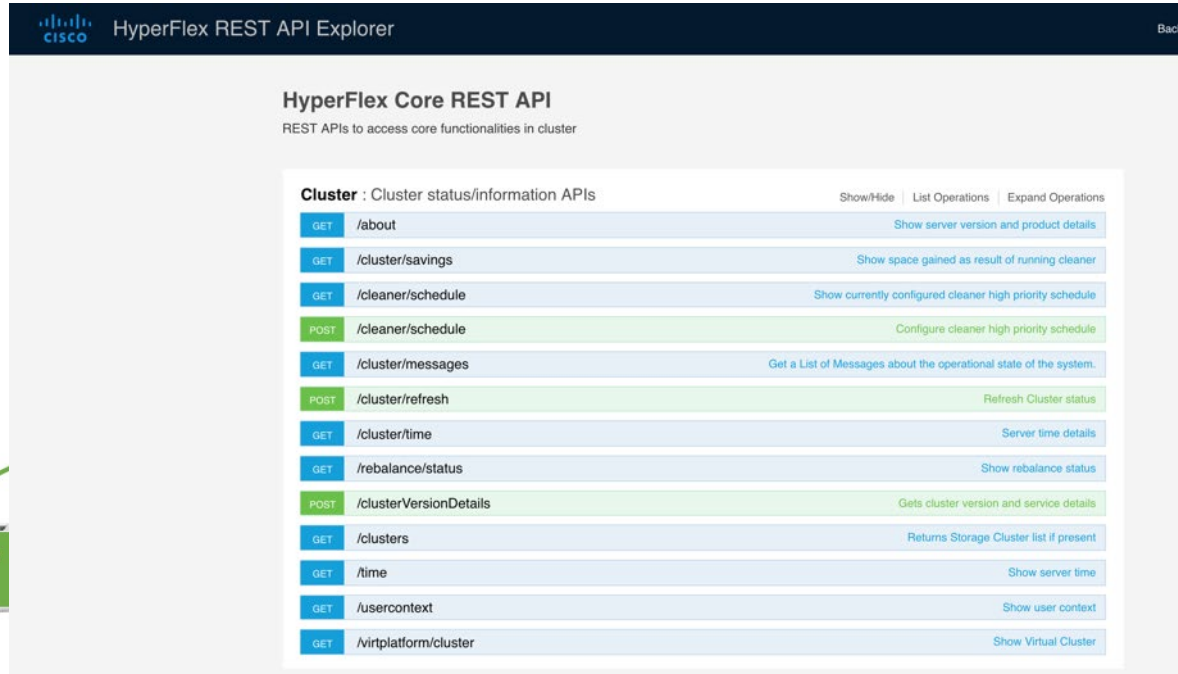

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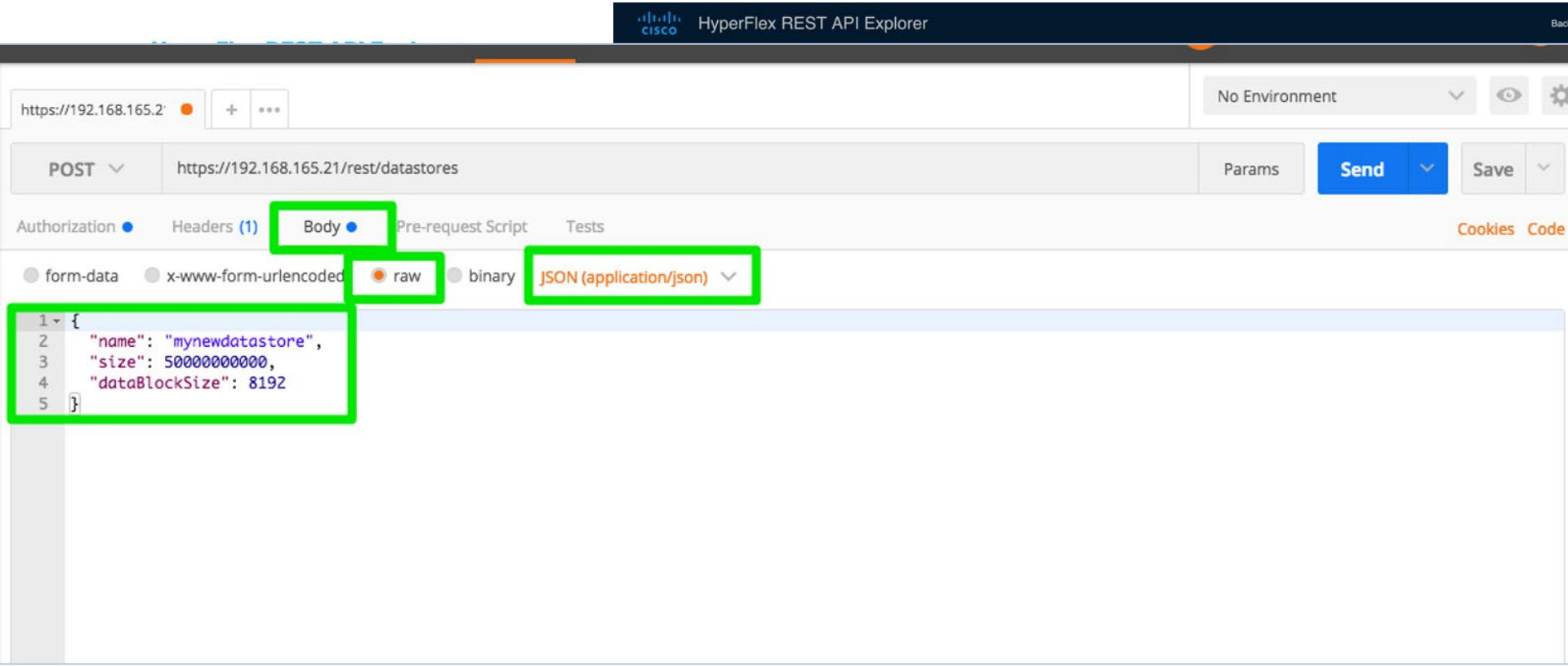

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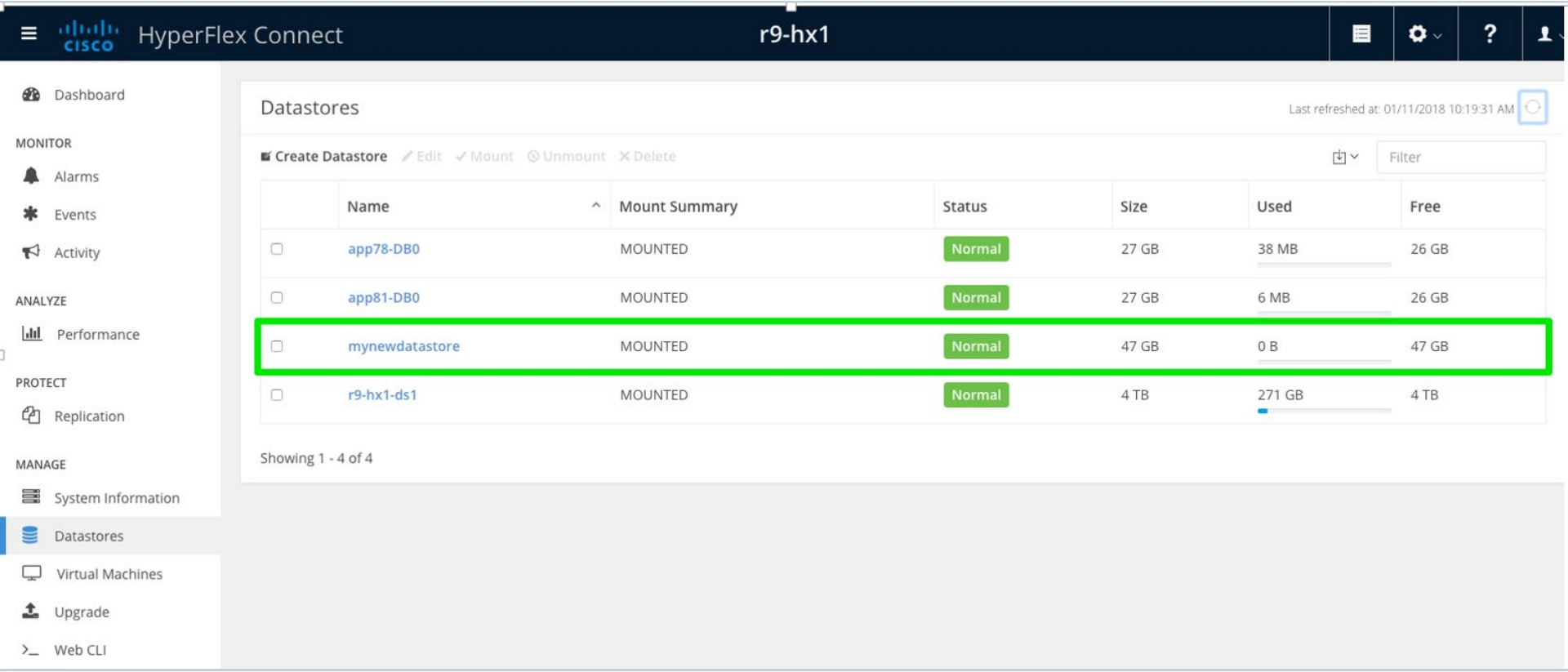


Intersight – A New Operating Framework

Integrating everything together

Multi Cloud Cost & Management

Workload Optimization

Application Deployment

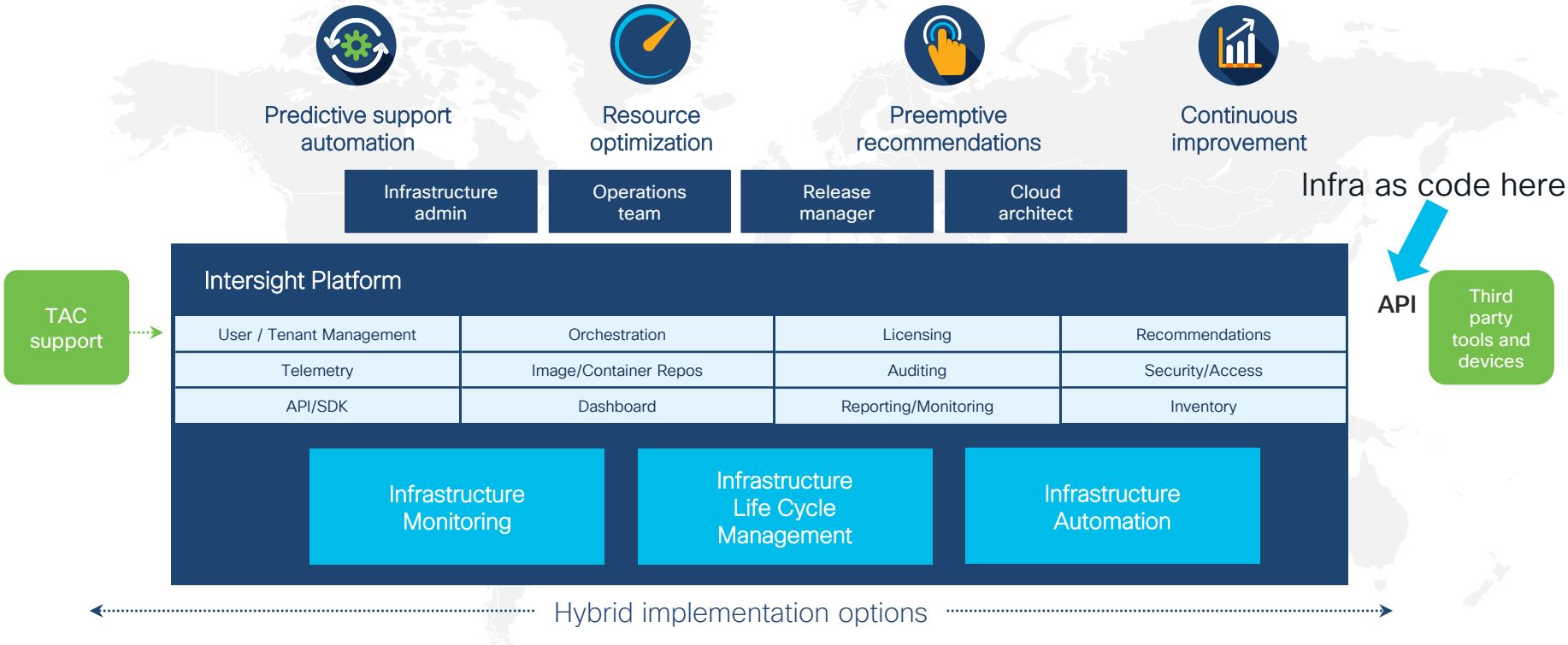
Health Monitoring

Infrastructure Management

Bare Metal	*Virtual Machines*	*Containers*

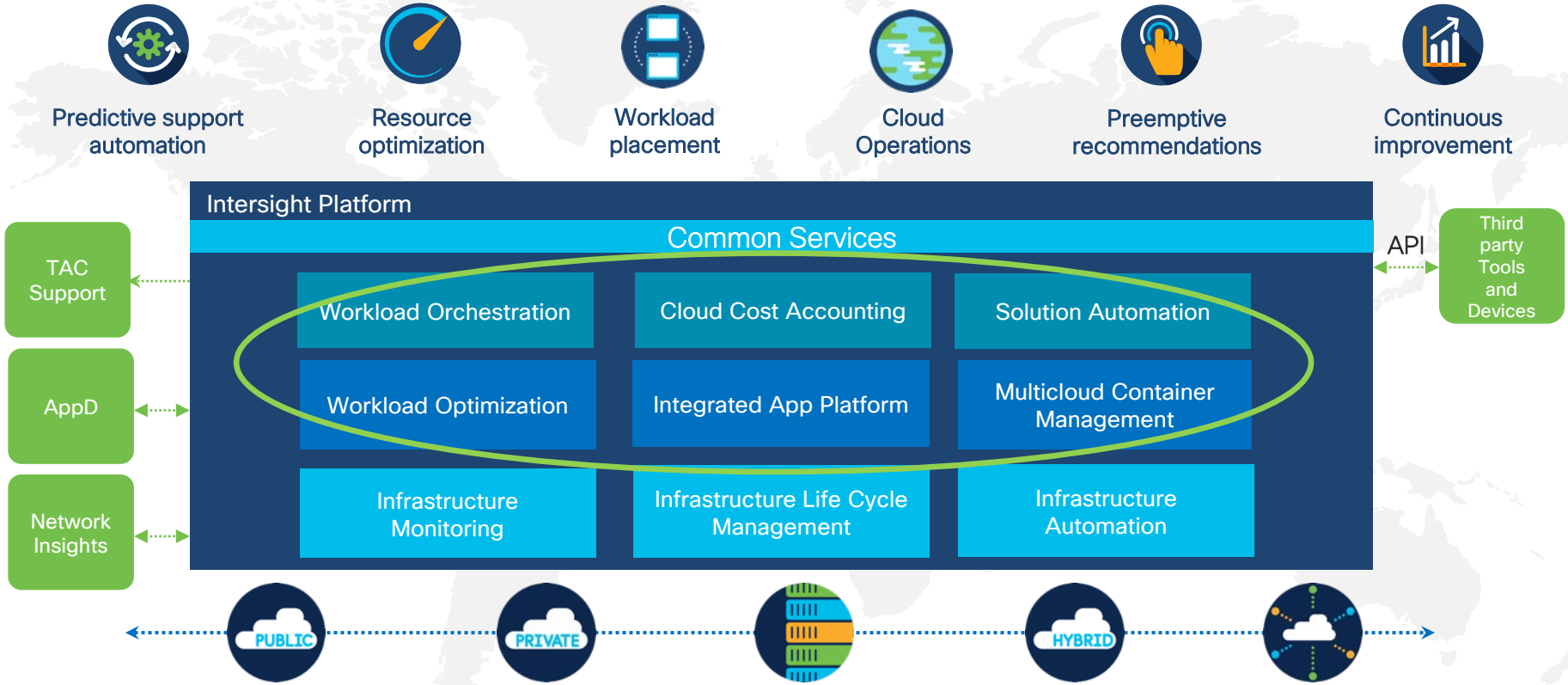
Intersight Today

Control plane for UCS/HX infrastructure management and automation

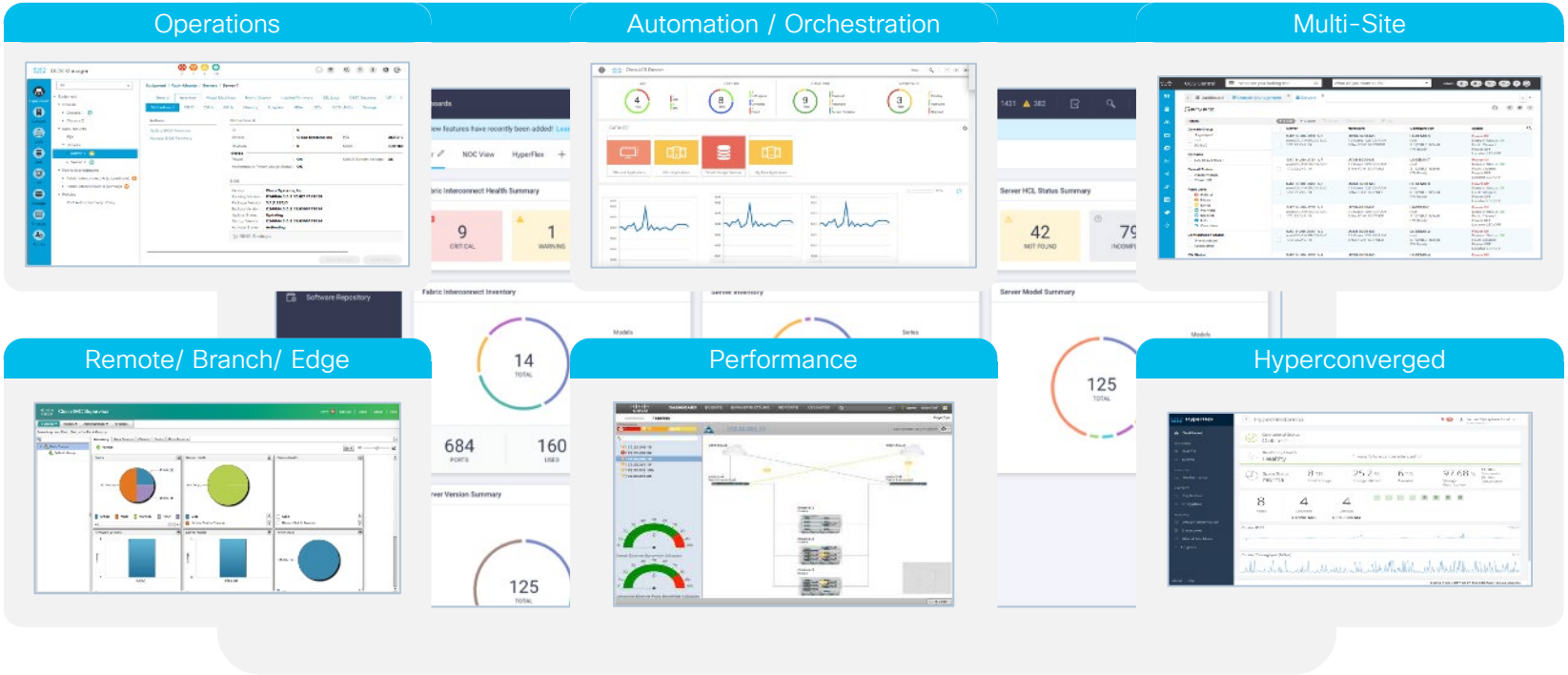


Intersight Vision

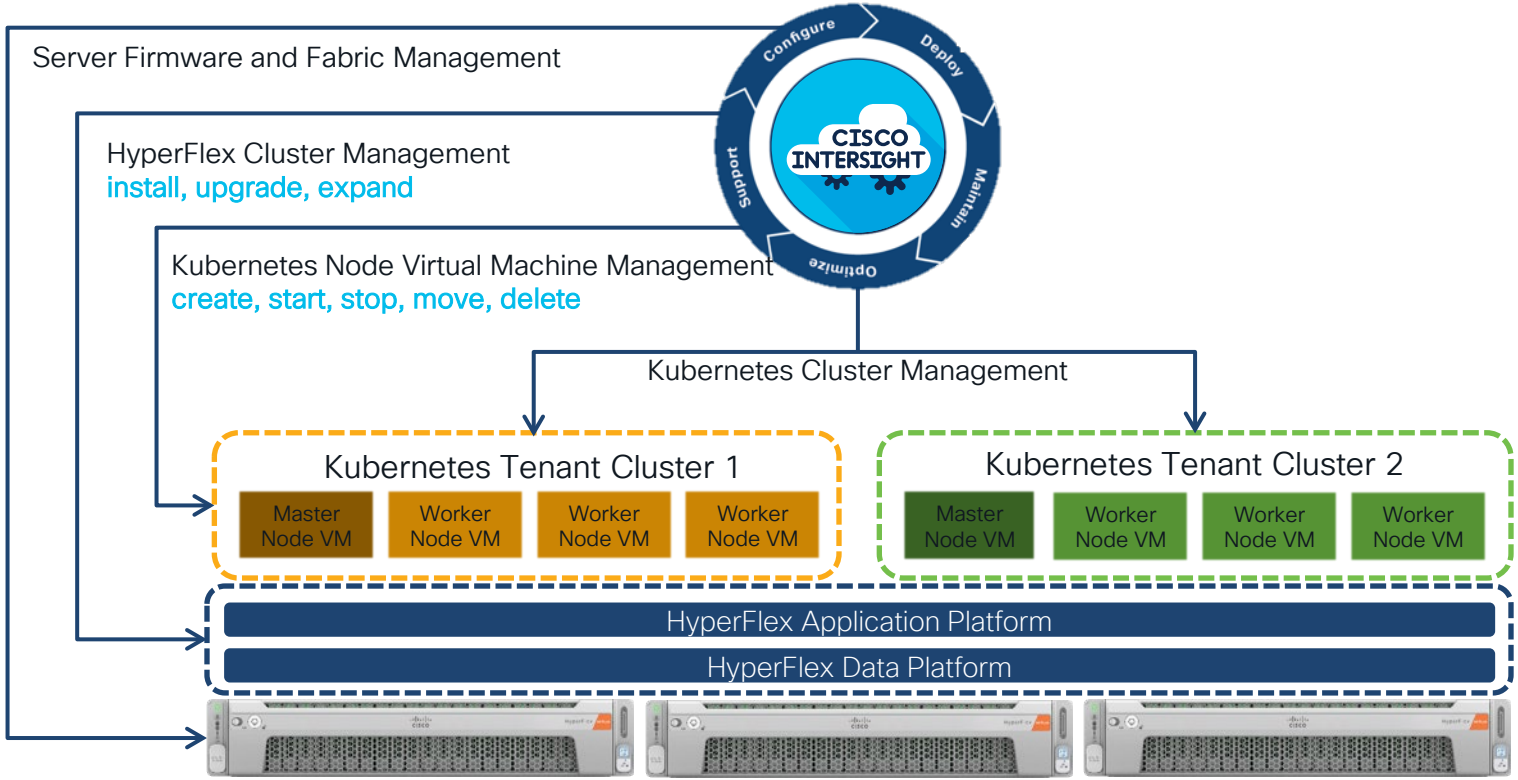
Operating Model for Hybrid and Multicloud



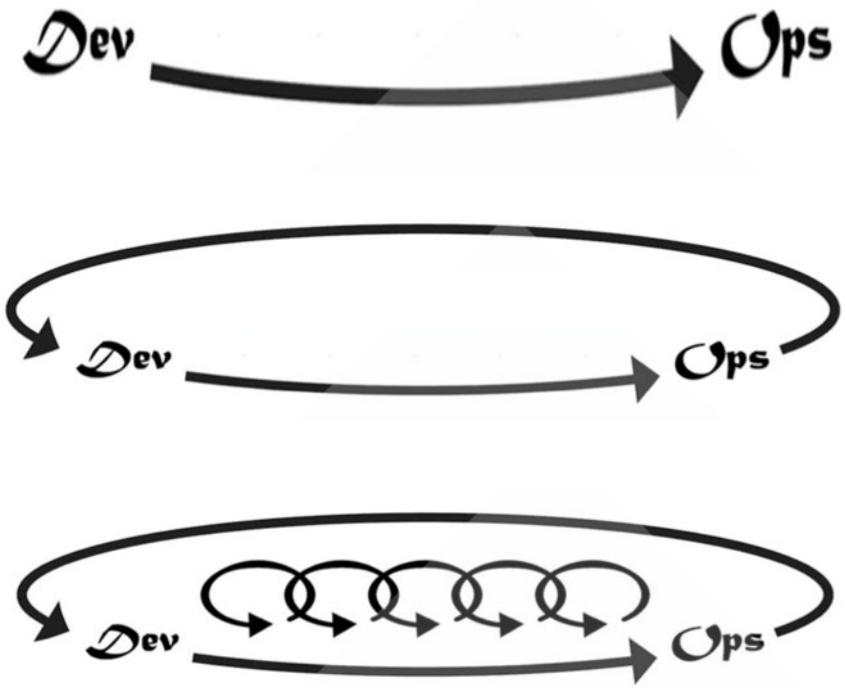
Cisco Intersight: a radical simplification...



Intersight Kubernetes Service (IKS) on HXAP



The “three ways”

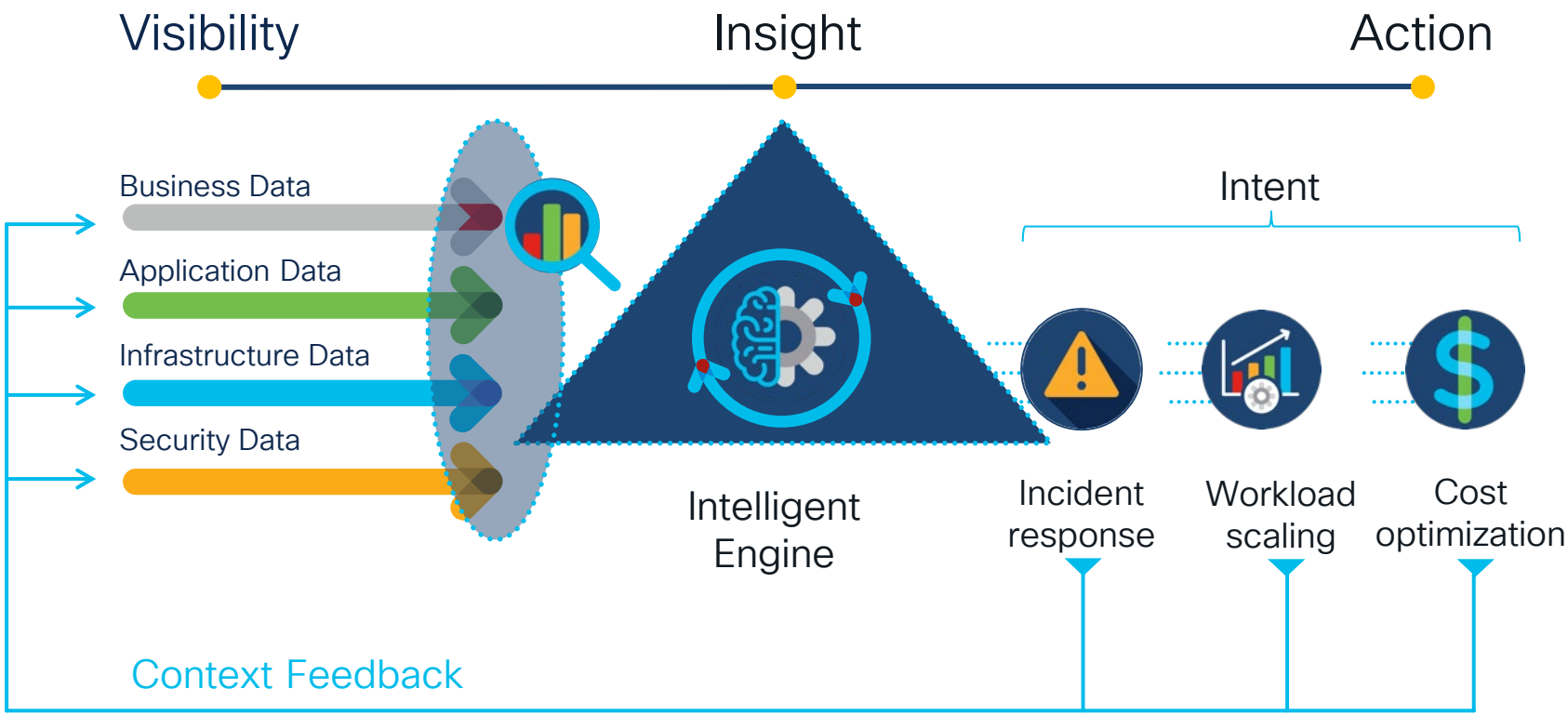


Flow

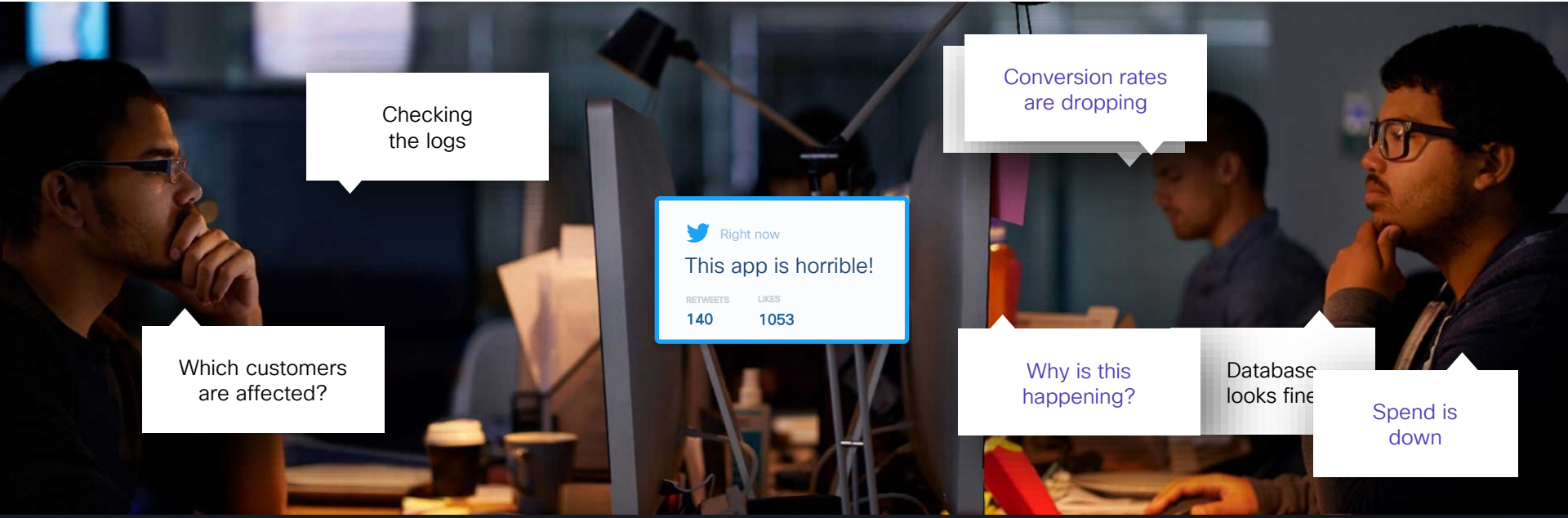
Feedback

Continuous improvement

Cisco business value framework

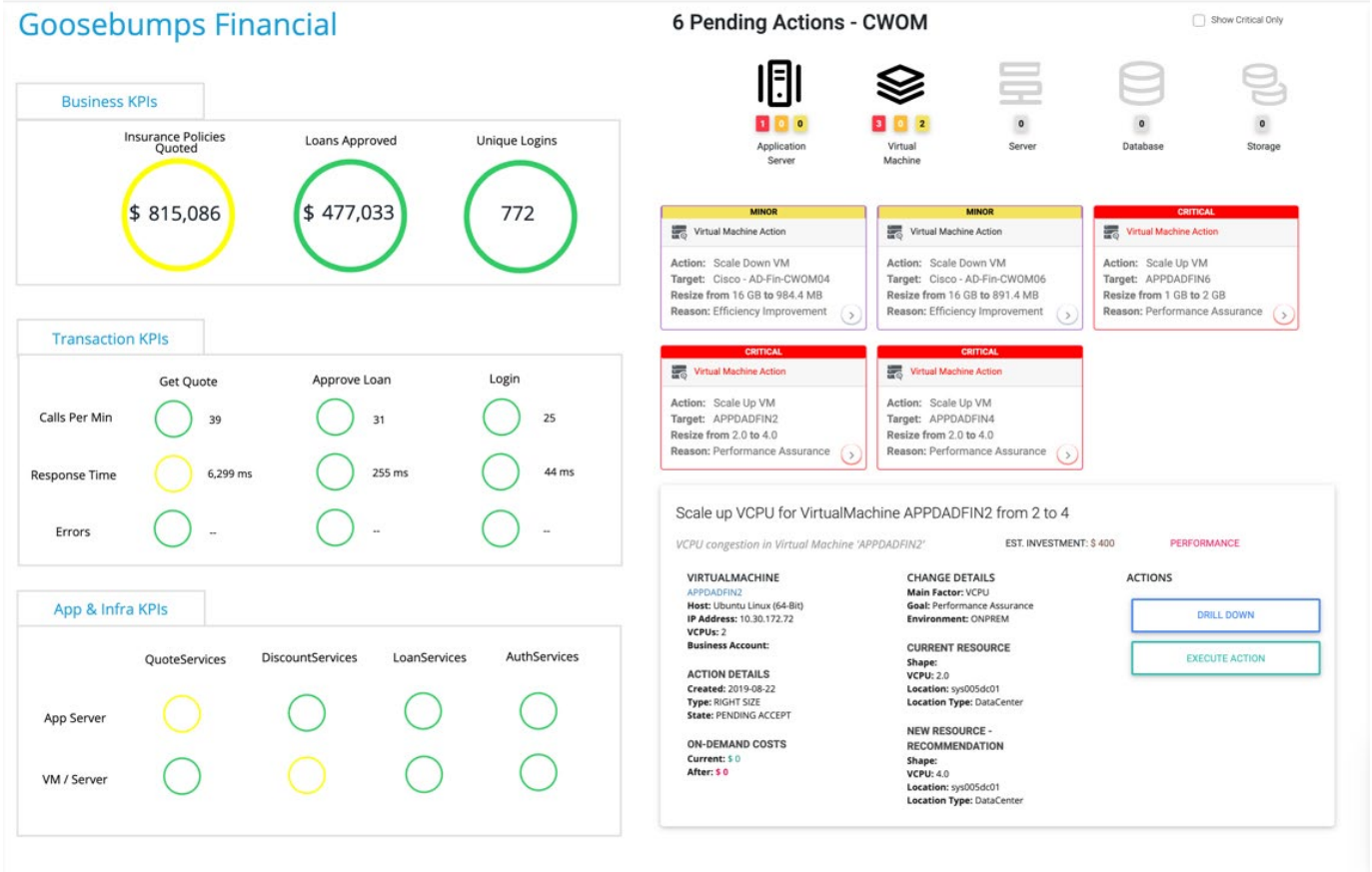


Siloed Teams Solve Siloed Problems



The War Room

Business and Infrastructure KPI → Action



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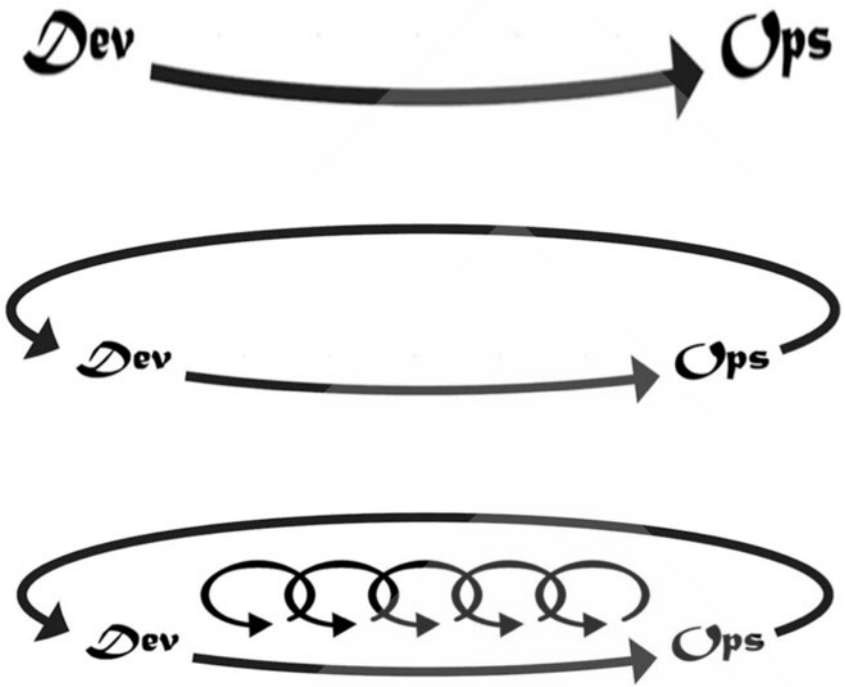


Flow

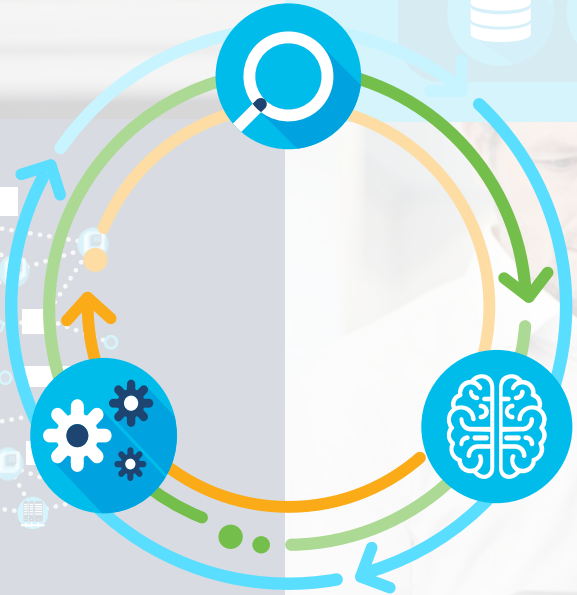
Feedback

Continuous improvement

A system that self optimizes

Visibility

Applications and infra interdependencies
and impact on business performance



Action

Full-stack automation to
continuously optimize
resources to the app

Insight

Analytics to
drive the right
resource decisions

Owning the Application Experience from a unified platform

On-premises AND cloud workload capabilities delivered as SaaS

Optimizes Performance & Costs | On-Prem Multicloud Multi-Vendor | Cloud-Native & Container

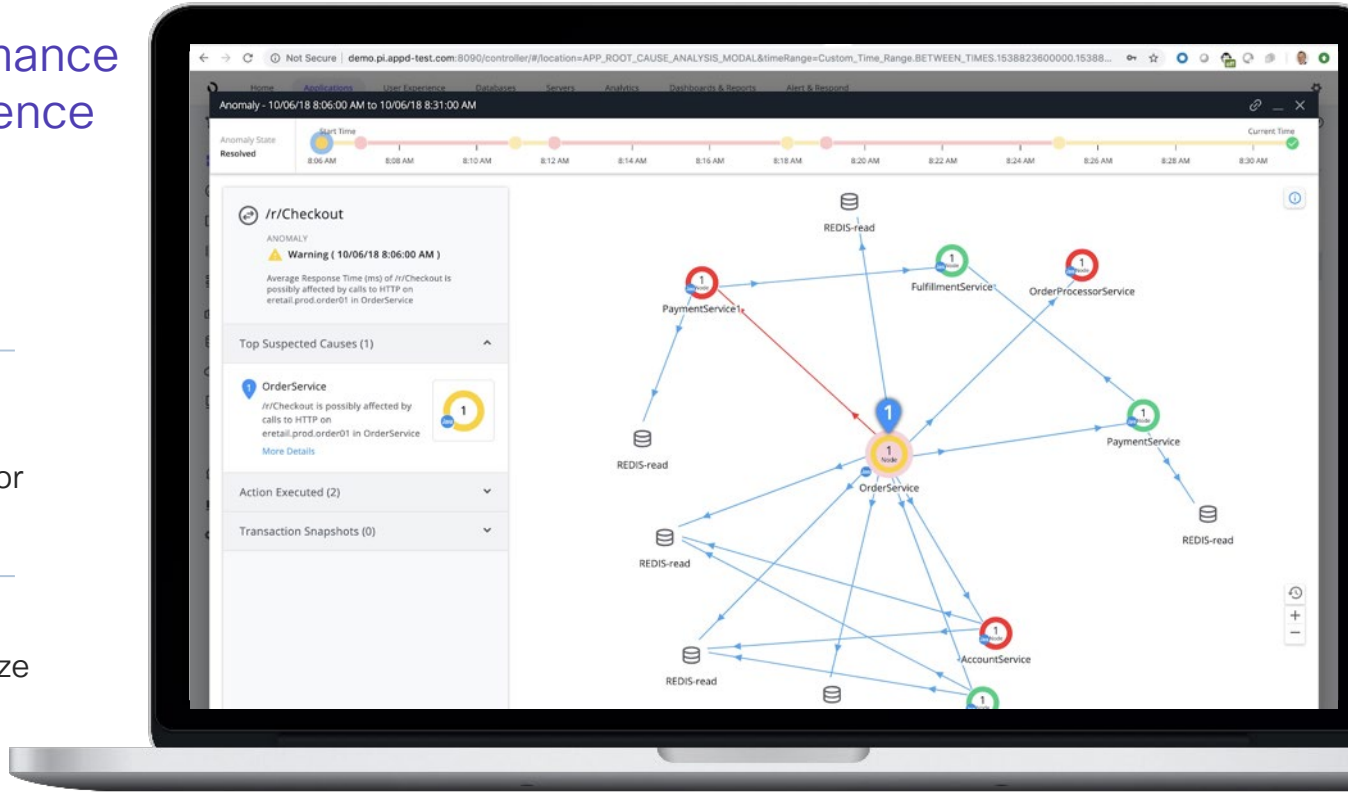
Application Performances

Optimize app performance and customer experience

Complete application topology provides end to end visibility - from user to infrastructure

ML / AI-powered insights proactively detect performance issues and analyze root cause for fast remediation

Insight into every user's experience to understand analyze business impact



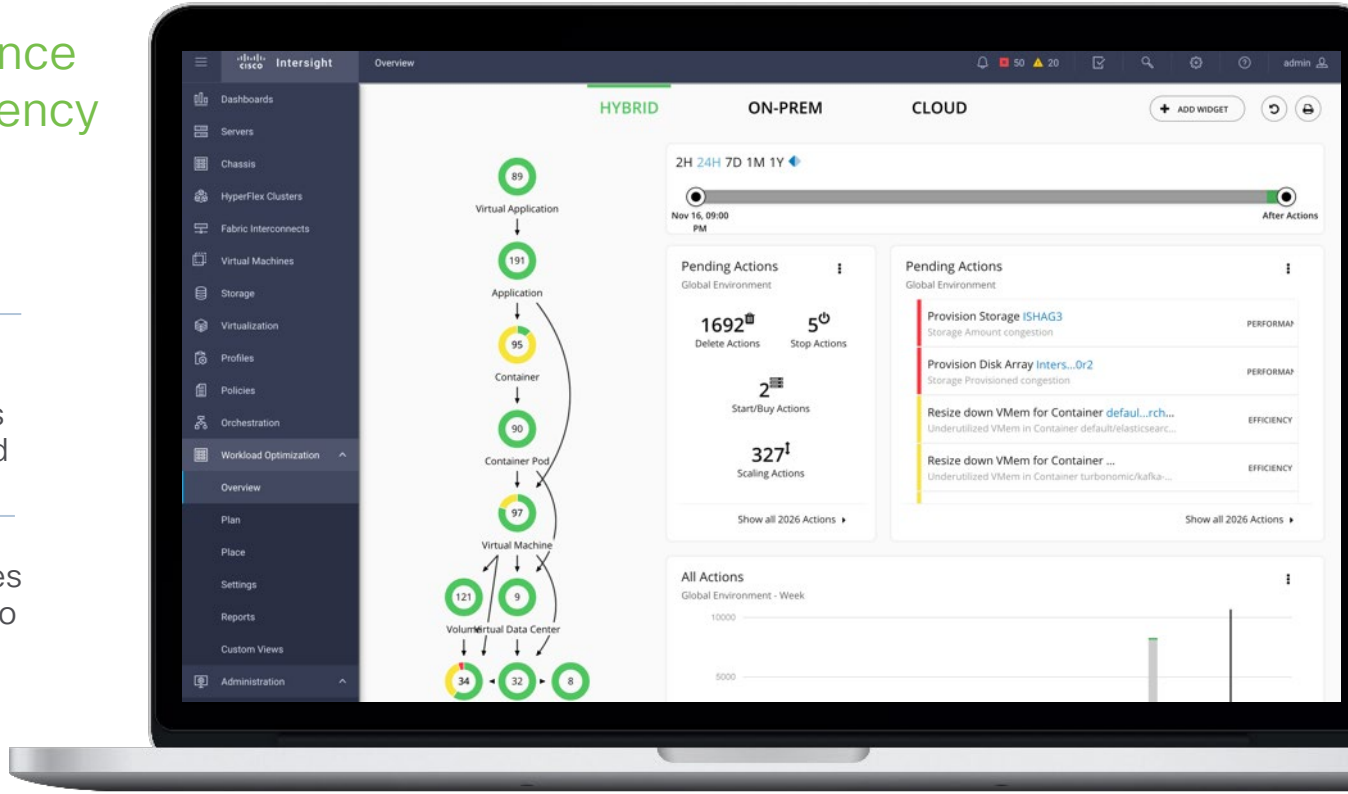
Infrastructure Optimization

Ensure app performance and operational efficiency

Understanding app resource needs at every layer

Machine intelligence to drive automated resourcing decisions on-prem and in the public cloud

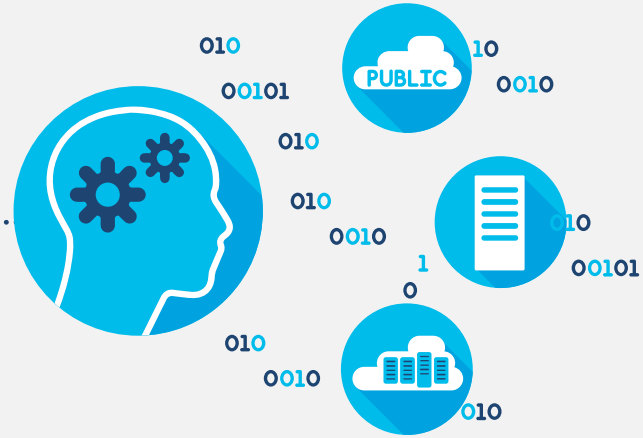
Continuous optimization matches application resource demands to the underlying infrastructure



Cisco Intersight Workload Optimizer

Always simultaneously solving
Performance, cost and compliance

Real-time decision engine
What workload to run where, when and why



Demo

The bridge to possible

Thank you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